Oracle® Communications Policy Management

Mediation Server User's Guide

Release 12.4

E89538 Revision 01

March 2018

ORACLE®

Table of Contents

List of Figures

List of Tables

Chapter

1

About This User's Guide

Topics:

This chapter describes the content and structure of the user's guide, indicates how to obtain help, details where to find related documentation, and provides other general information.

Introduction

This guide describes variables that can be used in policy rules. These variables provide information about the device, subscriber, or quota for which a policy rule is being executed.

How This Guide is Organized

The information in this guide is presented in the following order:

- *About This User's Guide* provides general information about the organization of this guide, related documentation, and how to get technical assistance.
- *Introduction to the Mediation Server* provides an overview of the Mediation server and how it fits into the Configuration Management Platform (CMP) server.
- *Managing Mediation Servers* describes how to use the CMP server to manage Mediation servers, groups, and sub-groups.
- *Configuring a Mediation Server* describes how to configure a Mediation server.
- *Trace Log* describes how to configure and view a Mediation server's trace log.
- *Configuring FTP Settings* describes how to configure FTP settings for a Mediation server.
- *Mediation Server Reports* describes how to view the reports on a Mediation server.
- *Batch Task Status* describes how to view the status of batch operations performed by a Mediation server.
- *Mapping Fields* describes how to map BOSS attribute fields to SPR fields.
- *Sample SOAP Requests and Responses* provides example SOAP requests and responses.
- *SOAP Error Codes* lists the SOAP error codes returned by SOAP requests and responses.

Scope and Audience

This guide is intended for service personnel who are responsible for configuring and monitoring of Mediation servers in Policy Management systems.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, *http://docs.oracle.com*. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at *http://www.adobe.com*.

1. Access the Oracle Help Center site at *http://docs.oracle.com*.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.

The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."

4. Click on your Product and then the Release Number.
   A list of the entire documentation set for the selected product and release appears.

5. To download a file to your location, right-click the `PDF` link, select `Save target as` (or similar command based on your browser), and save to a local folder.

Related Publications

For information about additional publications related to this document, refer to the Oracle Help Center site. See *Locate Product Documentation on the Oracle Help Center Site* for more information on related product publications.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, *http://docs.oracle.com*. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at *http://www.adobe.com*.

1. Access the Oracle Help Center site at *http://docs.oracle.com*.

2. Click **Industries**.

3. Under the Oracle Communications subheading, click the `Oracle Communications documentation` link.
   The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."

4. Click on your Product and then the Release Number.
   A list of the entire documentation set for the selected product and release appears.

5. To download a file to your location, right-click the `PDF` link, select `Save target as` (or similar command based on your browser), and save to a local folder.

Customer Training

Oracle University offers training for service providers and enterprises. Visit our web site to view, and register for, Oracle Communications training:

http://education.oracle.com/communication

To obtain contact phone numbers for countries or regions, visit the Oracle University Education web site:

www.oracle.com/education/contacts

My Oracle Support (MOS)

MOS (*https://support.oracle.com*) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at *http://www.oracle.com/us/support/contact/index.html*. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select **2** for New Service Request
2. Select **3** for Hardware, Networking and Solaris Operating System Support
3. Select one of the following options:

    - For Technical issues such as creating a new Service Request (SR), Select **1**
    - For Non-technical issues such as registration or assistance with MOS, Select **2**

You will be connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at *http://www.oracle.com/us/support/contact/index.html*. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Chapter

2

Introduction to the Mediation Server

Topics:

This chapter provides an introduction to the Mediation server and its role in Oracle Communications Policy Management.

Refer to *Configuration Management Platform Wireless User Guide* for details on the Policy Management system and using the Configuration Management Platform (CMP) server to manage policy management devices.

About Mediation Servers

The Mediation server provides the interface between a Subscriber Profile Repository (SPR) database and a Business and Operation Support System (BOSS) client to manage subscriber data.

The SPR database contains subscriber or subscription information. An example of an SPR is the Oracle Communications User Data Repository (UDR) database.

The Mediation server uses SOAP messaging over HTTP/HTTPS protocol to process subscriber profile and service subscription data. The Mediation server provides the following functionality:

• Batch SPR data provisioning

The Mediation server provides the functionality to add, update, or delete subscriber profiles in batch which could be used for initializing SPR data.

• SPR provisioning

The Mediation server processes the request and response between the BOSS and the UDR database.
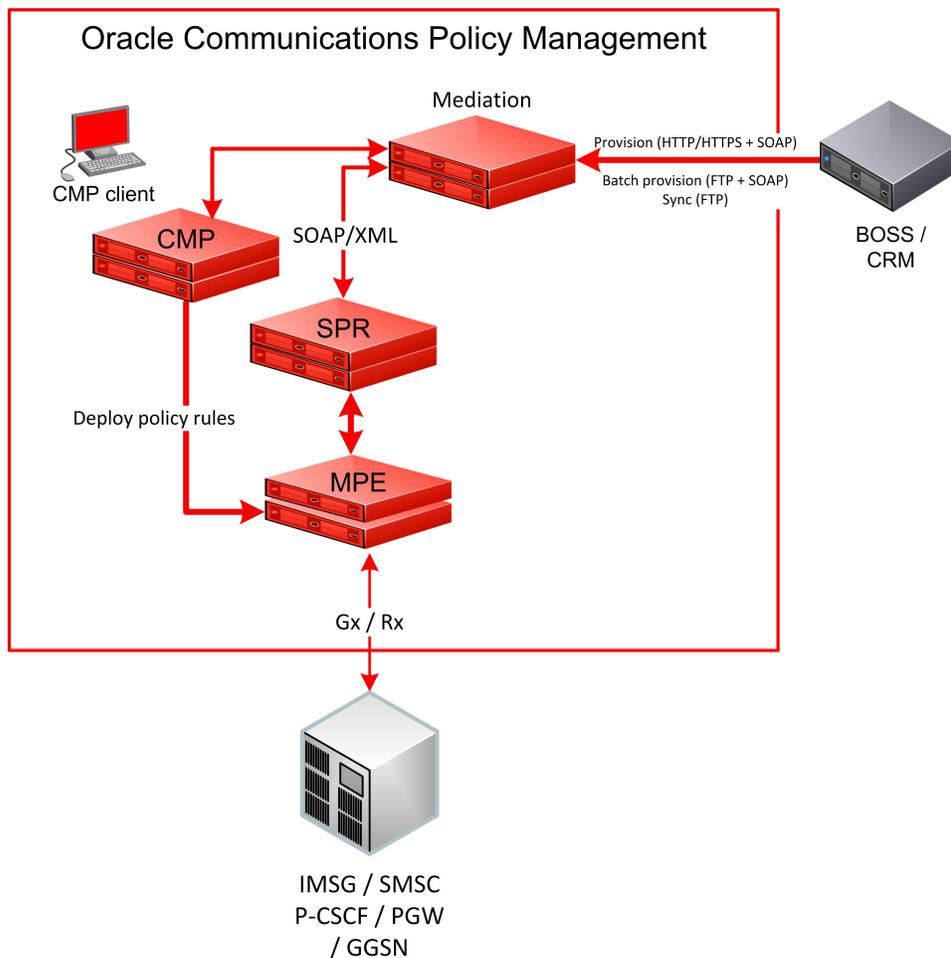
Figure 1: Oracle Communications Policy Management with Mediation Server

The CMP server manages the elements of the Oracle Communications Policy Management system, including the Mediation server. The CMP database stores the configuration information for Mediation servers, as well as the other devices required for policy management.

For details on managing and configuring Mediation servers, see the following sections:

- *About Mediation Server Profiles*
- *About Mediation Server Groups and Sub-Groups*
- *About Configuring a Mediation Server*

Configuration Management Platform Server

The Configuration Management Platform (CMP) server provides centralized management and administration of policy rules, Policy Management devices, associated applications, and manageable objects, all from a single management console. This browser-based management console supports the following features and functions:

- Configuration and management of MPE devices
- Configuration and management of MRA devices
- Configuration and management of Mediation devices
- Configuration of connections to subscriber profile repository (SPR) servers, including Oracle Communications User Data Repository (UDR) and Oracle Communications Enhanced Subscriber Profile Repository (ESPR) systems
- Definition of network elements
- Management and deployment of policy rules
- Management of objects that can be included in policy rules
- Monitoring of individual product subsystem status
- Administration and management of CMP users
- Upgrading the software on Policy Management devices

Specifications for Using the CMP Server

You interact with the CMP server through a browser-based graphical user interface (GUI). To use the GUI, Oracle recommends the following:

Web Browsers for Wireless and Cable modes	• Mozilla Firefox® release 31.0 or later • Google Chrome version 40.0 or later
Monitor	• Resolution of 1024 x 768 or greater

CMP Icons

The CMP interface provides the following icons to perform actions or indicate status:

Add	Use this icon to add an item to a list.
Calendar	Use this icon to select a date and, in some cases, a time.

Clone	Use this icon to duplicate a selection in a list.
Critical error	Displays in reports to indicate a critical error during the server replication process.
or ✕ Delete	When visible in the work area, selecting the Delete icon deletes an item, removing it from the device. **Note:** Deleting an item from the **ALL** folder also deletes the item from any associated group. A delete verification window opens when this icon is selected.
Details	This binoculars icon displays when there is more details for an item.
Edit	Use this icon to modify a selection in a list.
External Connection	When visible in the work area, indicates which server currently has the external connection (the active server).
Gear	Displays when a policy references another policy or policy group.
Hide	When visible in the work area, selecting this icon removes the item from the current view but does not delete the item. **Note:** The item is only hidden during the current session. The item will be visible the next time a user logs into the CMP server.
Manual	Displays when a field is configured by the user. Hover over this icon to see the name of the device.
Major error	Displays in reports to indicate a major error during the server replication process.
Minor error	Displays in reports to indicate a minor error during the server replication process.
or ▲▼ Up/Down	These arrow icons are displayed when you can change the sequential order of items in a list.
<-- --> Left/Right	These arrow icons are displayed when it is possible to move an item from one list to another.
OK status	Displays in reports to indicate a that the blade replication process completed without error.
Remove	Removes an item from the group. The item is still listed in the **ALL** group and any other group that has an association with the item. For example, if you remove the device PS_1 from group PS_Group2, PS_1 still displays in the **ALL** group.
Selection	This icon occurs in the Policy Wizard. The icon is used to select conditions and actions to add to a policy rule.
Synch broken	When visible in the Upgrade Manager, indicates that the CMP server does not have current information on a server.
Template	Displays when a field is configured by template. Hover over this icon to see the name of the template. Click the icon to view the template.
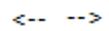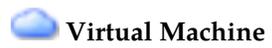
Virtual Machine	Displays when a Policy Management application is running on a virtual machine (VM).
View Cart	Displays the list of configurable objects selected for the **Export** action.

Chapter

3

Managing Mediation Servers

Topics:

This chapter describes how to manage Mediation servers and Mediation server groups. The Mediation server is the interface between Business and Operation Support System (BOSS) and an Subscriber Profile Repository (SPR).

About Mediation Server Profiles

A Mediation server profile contains the configuration information for a Mediation server. The CMP server stores Mediation server profiles in a configuration database. After you define profiles, you deploy them to Mediation servers across the network.

The following sections describe how to manage Mediation server profiles:

- *Creating a Mediation Server Profile*
- *Modifying a Mediation Server Profile*
- *Deleting a Mediation Server Profile*

Creating a Mediation Server Profile

To create a Mediation server profile:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the **ALL** group.
   The **Mediation Server Administration** page opens in the work area.

3. Click **Create Mediation Server**.
   The **New Mediation Server** page opens.

4. Select the **Associated Cluster** from the list.

   Select the server cluster to associate with this Mediation server profile.

5. Enter a **Name** for the Mediation server profile.

   The default value is the cluster name. A name is subject to the following rules:

   - Is case insensitive (that is, uppercase and lowercase are treated as the same)
   - Must be no longer than 255 characters
   - Must not contain quotation marks (") or commas (,)

6. Enter a **Description / Location** (optional).

   Information that defines the function or location of the Mediation server.

7. Select to use a **Secure Connection**.
   If selected, the server uses HTTPS protocol.

8. Click **Save**.

You have created a Mediation server profile. You are ready to proceed with configuring the Mediation server. See *About Configuring a Mediation Server*

Modifying a Mediation Server Profile

To modify a Mediation server profile:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server that you want to modify.

The **Mediation Server Administration** page opens in the work area.

3. Select the **System** tab and click **Modify**.

4. Make the needed changes.

   You can change the following:

   • Associated Cluster
   • Name
   • Description/Location
   • Secure Location

5. Click **Save**.

   a) Click **Save**.

The Mediation server profile is modified.

Deleting a Mediation Server Profile

To delete a Mediation server profile:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the **ALL** group.
   The **Mediation Server Administration** page opens in the work area.

3. Use one of the following methods to delete a Mediation server profile:

   • From the work area, click 🗑 (Delete icon) located on the row of the server profile you want to delete.
   • From the Mediation server group tree:

      1. Select the Mediation server.

         The **Mediation Server Administration** page opens.

      2. Select the **System** tab and click **Delete**.

   Note: Deleting a Mediation server profile from the **ALL** group also deletes it from any associated groups and sub-groups.

   A confirmation message displays.

4. Click **OK**.

The Mediation server profile is deleted.

About Mediation Server Groups and Sub-Groups

For organizational purposes, you can collect Mediation servers into sub-groups and groups. After a Mediation server group is created, you can define sub-groups and populate the group or sub-groups with individual Mediation servers.

The following sections describe how to manage Mediation server groups and sub-groups:

- *Creating a Mediation Server Group or Sub-Group*
- *Modifying a Mediation Server Group or Sub-Group*
- *Adding a Mediation Server to a Group or Sub-Group*
- *Removing a Mediation Server from a Group or Sub-Group*
- *Deleting a Mediation Server Group or Sub-Group*

Creating a Mediation Server Group or Sub-Group

To create a Mediation server group or sub-group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
    The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the **ALL** group.
    The **Mediation Server Administration** page opens in the work area.

3. To create a group or sub-group:

    - Click **Create Group**.
    - Select a group and click **Create Sub-Group**.

    The **Create Group** page opens.

4. Enter the **Name** of the new Mediation server group or sub-group.

    The name can be up to 255 characters long and cannot contain quotation marks (") or commas (,).

    Note: Each group and sub-group **Name** must be unique.

5. Click **Save**.

The Mediation server group or sub-group is created and appears in the content tree.

Adding a Mediation Server to a Group or Sub-Group

To add a Mediation server to a Mediation server group or sub-group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
    The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server group or sub-group to which you want to add
    the Mediation server.
    The **Mediation Server Administration** page opens in the work area.

3. Click **Add Mediation Server**.

    Note: A Mediation server can be a member of one or more groups or sub-groups.

    The **Add Mediation Server** page opens, listing the Mediation servers that are not in the group or
    sub-group.

4. Select the Mediation server you want to add to the group or sub-group.

    Press the Ctrl or Shift key to select multiple Mediation servers.

5. Click **Save**.

The selected Mediation server is added to the Mediation server group or sub-group.

Removing a Mediation Server from a Group or Sub-Group

Note: Removing a Mediation server from a Mediation server group or sub-group does not delete the Mediation server profile. To delete a Mediation server profile, see *Deleting a Mediation Server Profile*.

To remove a Mediation server from a Mediation server group or sub-group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server group or sub-group that contains the Mediation server you want to remove.
   The **Mediation Server Administration** page opens in the work area.

3. Click the ✂ (Remove icon) located to the right of the Mediation server you want to remove.

The Mediation server is removed from the group or sub-group immediately.

Modifying a Mediation Server Group or Sub-Group

To modify a Mediation server group or sub-group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server group or sub-group you want to modify.
   The **Mediation Server Administration** page opens in the work area.

3. Click **Modify**.
   The **Modify Group** page opens.

4. Edit the **Name**.

5. Click **Save**.

The Mediation server group or sub-group is modified.

Deleting a Mediation Server Group or Sub-Group

Note: Deleting a Mediation server group or sub-group does not delete any Mediation servers associated with the deleted group or sub-group. Mediation server profiles remain in the ALL group. You cannot delete the ALL group.

To delete a Mediation server group or sub-group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server group or sub-group to delete.
   The **Mediation Server Administration** page opens in the work area, listing the Mediation servers associated with the selected group or sub-group.

3. To delete the selected group or sub-group, click **Delete**.
   A confirmation message displays.

4. To delete a sub-group from the selected group, click 🗑 (Delete icon).
   A confirmation message appears.

5. Click **OK**.

The selected Mediation server group or sub-group is deleted.

Chapter
4

Configuring a Mediation Server

Topics:

This chapter describes how to configure a Mediation server.

About Configuring a Mediation Server

You must configure the Mediation server to function within your Oracle Communications Policy Management system. You can configure the following settings in a Mediation server profile:

- *Configuring Trace Log Settings*
- *Configuring Mediation Server Interface Settings*
- *Configuring Mediation Server Advanced Settings*
- *Configuring a Data Source Connection*

To reapply the configuration settings to a Mediation server, see *Reapplying the Configuration to a Mediation Server*.

To configure the FTP setting for the Mediation server, see *Configuring FTP Settings*.

Configuring Mediation Server Interface Settings

Before you can configure interface settings, the Mediation server must exist in the CMP server. See *Creating a Mediation Server Profile* for details.

To configure interface settings for a Mediation server:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server you want to configure.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **Settings** tab.
   The current settings appear on the page.
4. Click **Modify**.
   The **Settings** tab becomes editable.
5. Configure the interface options.

   Configurable interfaces include:

   - *SOAP Interface Options*
   - *Load Shedding Options*

6. Click **Save**.

The Mediation server's interface options are configured.

You can proceed with *Configuring Mediation Server Advanced Settings* or another option.

SOAP Interface Options

Soap User Name	User name for authenticating the SOAP request.
Soap Password	Password for authenticating the SOAP request.

Enable HTTP Service	Enable to use the HTTP server.
	Note: Either the HTTP Service or the HTTPS Service or both should be enabled.
HTTP Port	The port number of the HTTP server.
Enable HTTPS Service	Enable to use the HTTPS server.
	Note: Either the HTTP Service or the HTTPS Service or both should be enabled.
HTTPS Port	The port number of the HTTPS server.
Equipment Serial No	The serial number of the MPE device.

Load Shedding Options

Enabled   If checked, the Mediation server uses load shedding to protect itself during times of severe overload. The server enter a "too busy" state when the amount of queued traffic exceeds a predefined threshold. While in this state of busyness, requests may receive a TOO_BUSY result code or silently discarded. The default value is enabled.

If unchecked, Load Shedding is disabled.

Configuring Mediation Server Advanced Settings

Caution: Do not attempt to add or change a service override without first consulting with My Oracle Support.

To configure advanced settings on a Mediation server:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server you want to configure.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **Settings** tab.
   The current settings appear on the page.
4. Click **Advanced**.

   The **Other Advanced Configuration Settings** page opens.

5. To add a configuration key to the table, click **Add**.

   The **Add Configuration Key Value** dialog appears.
   a) Enter the **Configuration Key** attribute name.
   b) Enter the **Value** for the attribute.
   c) Click **Save**.

> ⚠️ **CAUTION**
>
> **Caution:** The CMP server does not perform input validation on the configuration key name or value. If you overwrite a setting that is already configurable using the CMP interface, the value used by the Mediation server is undetermined.

The table contains the added configuration key and its value.

6. (Optional) To clone, edit, or delete a configuration key, use the following methods:

   - Cloning an entry in the table

     1. Select an entry in the table.
     2. Click 🗐 **Clone**. The **Clone** window opens with the information for the entry.
     3. Make changes as required.
     4. Click **Save**. The entry is added to the table.

   - Editing an entry in the table

     1. Select the entry in the table.
     2. Click 📝 **Edit**. The **Edit Response** window opens, displaying the information for the entry.
     3. Make changes as required.
     4. Click **Save**. The entry is updated in the table.

   - Deleting a value from the table

     1. Select the entry in the table.
     2. Click ✕ **Delete**. A confirmation message displays.
     3. Click **Delete** to remove the entry. The entry is removed from the table.

7. Click **Save**.

The advanced settings for the Mediation server are configured.

UDR Connection

MEDIATION.spr.InitConnections	The initial connection number in connection pool to UDR database. The default value is 1.
MEDIATION.spr.MaxConnections	The maximum number of connections. The default value is 100.
MEDIATION.spr.timeout	Sets the number of seconds to wait before timeout for UDR connection response. (UDR default configuration *Maximum Provisioning Backend Response Timeout* is 7 seconds; Mediation server sets the timeout as 8 seconds to ensure the UDR database has enough time to handle request.) The default value is 8 seconds.

Batch Operations

MEDIATION.BatchOperation.SubscriberBatchFields	The format of batch operation *Subscriber* data fields.

```
|usrIdentifier |usrNotifyMSISDN
|usrIMSI |usrBillingType
|usrGrade |usrStatus
|usrBillCycleDate |PackageType
```

MEDIATION.BatchOperation.ServiceBatchFields	The format of batch operation *Service* data fields.

```
|usrIdentifier |ServiceCode
|ServiceBillingType
|ServiceStartDateTime
|ServiceEndDateTime
|ServiceUsageState
```

MEDIATION.BatchOperation.UsrPolicyBatchFields	The format of batch operation *UsrSessionPolicy* data fields.

```
|usrIdentifier
|usrSessionPolicyCode
|NotificationCycle |TerminalType
|SessionPolicyStartDateTime
|SessionPolicyEndDateTime
```

Batch Cleanup

MEDIATION.CleanUp.EnableBatchCleanupTask	If true, the server will run cleanup batch data/log file task according to start time and interval setting. If false, the server will not run cleanup batch data/log file task. The default value is true.
MEDIATION.CleanUp.BatchRetentionPeriod	Sets the retention period (in days) for data/log file. The default value is 30.
MEDIATION.CleanUp.BatchTaskExpiredForComcol	Sets the retention period (in days) for cleanup batch task status info from High Availability database table `MediationBatchTask`. The default value is 365 days.
MEDIATION.CleanUp.BatchCleanUpTaskStartTime	Sets the daily start for the cleanup task. The format is `HH:mm`. The default value is **23:00**.
MEDIATION.CleanUp.BatchCleanUpTaskInterval	Sets the interval number of hours between running the cleanup task. The default value is every 24 hours.

Load Shedding

ADMISSION.Control	If true, enables admission function on the Mediation server. If false, disables admission control. The default value is true.
ADMISSION.CalculationTaskRunTime	The number of milliseconds between executions of the admission calculation task. This task performs the calculations to determine which busy level is currently active. The default value is 100 ms.
ADMISSION.CONTROLLER.MediationRejectThreshold	The threshold for the Mediation server to enter admission control level 1. The default value is 2000.
ADMISSION.CONTROLLER.MediationRejectClearThreshold	The threshold for the Mediation server to exit admission control level 1. The default value is 1000.
ADMISSION.CONTROLLER.MediationDropThreshold	The threshold for the Mediation server to enter admission control level 2. The default value is 4000.
ADMISSION.CONTROLLER.MediationDropClearThreshold	The threshold for the Mediation server to exit admission control level 2. The default value is 1500.
ADMISSION.NUMCONFIGUREDLEVELS	Mediation server is preconfigured with two busy levels. If this value is set to: • -1 – (default) system default (two levels) • 1 – only level 1 • 2 – levels 1 and level 2

Throttle

MEDIATION.ProvisionTokenBucket.Valid	If true, enables the *TokenBucket*. If false, disables the *TokenBucket*. The default value is true

MEDIATION.ProvisionTokenBucket.Rate	The average transaction rate in *MDFAdaptor* per second used for sending request to the SPR database. This is the Token Bucket rate.
	The default value is 2500.
MEDIATION.ProvisionTokenBucket.BurstSize	The number of transactions that can be simultaneously processed before rate limiting. This is the Token Bucket size.
	The default value is 2500.
MEDIATION.ProvisionTokenBucket.Interval	The Token Bucket fill interval is the time in milliseconds to wait before crediting tokens to the bucket.
	The default value is 100.

Configuring a Data Source Connection

To configure a data source connection:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server you want to configure.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **Data Sources** tab.
   The table lists the currently defined connections and their configuration settings.
4. To add a data source, click **Modify**.
   The page becomes editable.
5. Click 🗄 **Add** and select the data source type from the list.

   The available data source types include:

   - **Prov** – provisioning
   - **Sh** – Diameter interface

     Note: The Mediation server does not support the Diameter Sh interface.

   The **Add Data Source** dialog appears.
6. To configure the data source settings:
   a) Select to enable the **Admin State**.

      If unchecked, the data source is inactive. The default value is enabled.
   b) Enter a **Unique Name**.

      The unique identifier for the data source.
   c) Enter the **Host** IP address (in IPv4 or IPv6 format) of the data source server.

      Note: The IP addresses of different data source servers must be unique.

   d) Enter the destination **Port** of the data source server.
      The default port is 62001.

e) Enter the **User Name** for the Mediation server to use to access the data source.

This field is used for authentication before connecting to the UDR database. The default is `admin`.

f) Enter the **Password** for the Mediation server to use to access the data source.

g) Enter the **Module Name**.

This field is used for authentication. The default value is `Mediation`.

h) Enter the **Key Transform Pattern**.

This value allows routing between the Mediation server and the data source server if the pattern matches. The default value is `*` (asterisk).

7. (Optional) To clone, edit, delete, or order data sources use the following functions:

- Cloning a data source in the table

  1. Select an existing data source in the table.
  2. Click **Clone**. The **Clone Data Source** window opens with the information for the data source.
  3. Make changes as required.
  4. Click **Save**. The data source is added to the table

- Editing a data source in the table

  1. Select the data source in the table.
  2. Click **Edit**. The **Edit Data Source** window opens, displaying the information for the data source.
  3. Make changes as required.
  4. Click **Save**. The data source is updated in the table.

- Deleting a data source from the table

  1. Select the data source in the table.
  2. Click ✕ **Delete**. A confirmation message displays.
  3. Click **Delete** to remove the data source entry. The data source is removed from the table.

- Ordering the list.

  If you define multiple entries, they are searched in the order displayed in this list. To change the order:

  1. Select an entry.
  2. Click ⬆ **Up** or ⬇**Down**. The search order is changed.

8. Click **Save**.

The data source connection is configured.

Viewing the Status of a Server or Group

The CMP server lets you view the status of Mediation servers, either collectively (all servers within the topology) or individually.

To view the status of a server or a Mediation server group:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the **System** tab or the Mediation server group.
   The **Mediation server Administration** page opens in the work area. The status information for the group or the server includes the following:

Server Profile View	The server's current operating status is either **On-line** or **Off-line**.
Group View	The display in the work area includes a status column that indicates the following states:

On-line	The servers in the cluster have completed startup, and their database services are synchronized.
Degraded	At least one server is not functioning properly (its database services are not synchronized or it has not completed startup) or has failed, but the cluster continues to function with the active server. This state sets alarm ID 70005 with severity Major.
	Note: If a cluster status is **Degraded**, but the server details do not show any failures or disconnections, then the cluster is performing a database synchronization operation. Until the synchronization process has completed, the server cannot perform as the active server.
Out of Service	Communication with the cluster has been lost.
No Data	This status occurs during the upgrade process and means that communication with the cluster has been lost.
	Note: This status value provides backward compatibility with earlier Policy Management releases.
Config Mismatch	The server configuration does not match the configuration stored in the CMP database. This status may also mean the mapping records on the Mediation server are inconsistent with the mapping records stored on the CMP database.

About Reapplying a Configuration

The CMP server allows you to reapply the configuration to a Mediation server. When you reapply the configuration, the CMP server completely reconfigures the Mediation server with topology information, ensuring that the server configuration matches the data in the CMP database.

This action is not needed during normal operation but is useful in the following situations:

Server replacement	When the Mediation servers of a cluster are replaced, the new servers initially power up with default values. Reapplying the configuration lets you redeploy the entire configuration rather than manually reconfiguring the server. Use the

Rediscover Cluster action (located on the **Reports** tab) to re-initialize the Cluster Information Report for the server and clear out the servers' status.

Software upgrade After upgrading the software on a Mediation server, Oracle recommends that you reapply the configuration from the CMP server to ensure that the upgraded servers and the CMP database are synchronized.

Server not synchronized There are situations where a Mediation server configuration becomes out of synchronization with the CMP server; for example, when a break in the network causes communication to fail between the CMP server and the server. If such a condition occurs, the CMP server displays the Mediation server status on its **System** tab with the notation `Config Mismatch`. You can click the link to view a report comparing the Mediation server configuration with the CMP database information. Reapplying the configuration returns the Mediation server to synchronization with the CMP database.

Reapplying the Configuration to a Mediation Server

To reapply the configuration associated with a Mediation server:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the **System** tab or the Mediation server group.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **System** tab.
4. Click **Reapply Configuration**.

   The CMP server reconfigures the server with configuration information, ensuring that the configuration matches the data in the CMP server.

The Mediation server is synchronized with the CMP server.

Chapter

5

Trace Log

Topics:

This chapter describes how to configure and view the trace log.

About the Trace Log

The trace log records application notifications, such as protocol messages, policy messages, and custom messages generated by policy actions, for individual Mediation servers. Trace logs are not replicated between Mediation servers in a cluster, but they persist after failovers.

You can configure the severity of messages that are recorded in the trace log. See *Configuring Trace Log Settings* for details. You can use the log to debug problems by tracing through application-level messages. See *Viewing the Trace Log* for more information about the trace log.

Configuring Trace Log Settings

To configure trace log settings:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server.
   The **Mediation server Administration** page opens in the work area.

3. Select the **Logs** tab.

4. Click **Modify**.
   The **Modify Trace Log Settings** page opens in the work area.

5. In the **Modify Trace Log Settings** section of the page, configure the Trace Log Level.

   This setting indicates the minimum severity of messages that are recorded in the trace log. These severity levels correspond to the syslog message severities from IETF RFC 3164. Adjusting this setting allows new notifications, at or above the configured severity, to be recorded in the trace log. The levels are:

   • **Emergency** — Provides the least amount of logging, recording only notification of events causing the system to be unusable.
   • **Alert** — Action must be taken immediately in order to prevent an unusable system.
   • **Critical** — Events causing service impact to operations.
   • **Error** — Designates error events which may or may not be fatal to the application.
   • **Warning** (default) — Designates potentially harmful situations.
   • **Notice** — Provides messages that may be of significant interest that occur during normal operation.
   • **Info** — Designates informational messages highlighting overall progress of the application.
   • **Debug** — Designates information events of lower importance.

   Caution: Before changing the default logging level, consider the implications. Lowering the log level setting from its default value (for example, from **Warning** to **Info**) causes more notifications to be recorded in the log and can adversely affect performance. Similarly, raising the log level setting (for example, from **Warning** to **Alert**) causes fewer notifications to be recorded in the log and may cause you to miss important notifications.

6. Click **Save**.

The trace log settings are configured.

Viewing the Trace Log

To view the trace log:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server.
   The **Mediation server Administration** page opens in the work area.

3. Select the **Logs** tab.
   Log information for the selected device is displayed.

4. Click **View Trace Log**.

   The **Trace Log Viewer** window opens. While data is being retrieved, the in-progress message
   Scanning Trace Logs displays.

   All events contain the following information:

   - **Date/Time**

     Event time-stamp. This time is relative to the server time.

   - **Code**

     The event code. For information about event codes and messages, refer to *Troubleshooting
     Reference*.

   - **Severity**

     Severity level of the event. Application-level trace log entries are not logged at a higher level
     than Error.

   - **Message**

     The message associated with the event. If additional information is available, the event entry
     shows as a link. Click on the link to see additional detail in the window-frame.

5. To refresh the display, click one of the following buttons:

   - **Show Most Recent**

     Applies filter settings and refreshes the display. This displays the most recent log entries that
     fit the filtering criteria.

   - **Next/Prev**

     When the number of trace log entries exceeds the page limit, pagination is applied. Use the **Prev**
     or **Next** buttons to navigate through the trace log pages. When the **Next** button is not visible,
     you have reached the most recent log entries; when the **Prev** button is not visible, you have
     reached the oldest log entries.

   - **First/Last**

     When the number of trace log entries exceeds the page limit, pagination is applied. Use the **First**
     and **Last** buttons to navigate to the beginning or end of the trace log. When the **Last** button is

not visible, you have reached the last page; when the **First** button is not visible, you have reached the first page.

6. Click **Close**.

Filtering the Trace Log View

To filter the trace log view:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server.
   The **Mediation server Administration** page opens in the work area.
3. Select the **Logs** tab.
   Log information for the selected device is displayed.
4. Click **View Trace Log**.

   The **Trace Log Viewer** window opens. While data is being retrieved, the in-progress message `Scanning Trace Logs` displays.

   All events contain the following information:

   - **Date/Time**

     Event time-stamp. This time is relative to the server time.

   - **Code**

     The event code. For information about event codes and messages, refer to *Troubleshooting Reference*.

   - **Severity**

     Severity level of the event. Application-level trace log entries are not logged at a higher level than Error.

   - **Message**

     The message associated with the event. If additional information is available, the event entry shows as a link. Click on the link to see additional detail in the window-frame.

5. Specify the filtering options. You can filter the events displayed using the following options:

   - **Trace Log Viewer for Server**

     Select the individual Mediation server within the cluster.

   - **Start Date/Time**

     Click 🗓 (calendar icon), select the desired starting date and time, then click **Enter**.

   - **End Date/Time**

     Click 🗓 (calendar icon), select the desired ending date and time, then click **Enter**.

   - **Trace Codes**

Enter one or a comma-separated list of trace code IDs. Trace code IDs are integer strings up to 10 digits long.

- **Use timezone of remote server for Start Date/Time**

  Select to use the time of a remote server (if it is in a different time zone) instead of the time of the CMP server.

- **Severity**

  Filter by severity level. Events with the selected severity and higher are displayed. For example, if the severity selected is **Warning**, the trace log displays events with the severity level Warning.

- **Contains**

  Enter a text string to search for. For example, if you enter `connection`, all events containing the word connection display.

  Note: The **Start Date/Time** setting overrides the **Contains** setting. For example, if you search for events happening this month, and search for a string in events last month and this month, only results from this month are listed.

6. After entering the filtering information, click **Search**.
   The selected events are displayed. By default, the window displays 25 events per page. You can change this to 50, 75, or 100 events per page by selecting a value from the **Display results per page** list.

   Events that occur after the **Trace Log Viewer** opens are not visible until you refresh the display.

7. To refresh the display, click one of the following buttons:

- **Show Most Recent**

  Applies filter settings and refreshes the display. This displays the most recent log entries that fit the filtering criteria.

- **Next/Prev**

  When the number of trace log entries exceeds the page limit, pagination is applied. Use the **Prev** or **Next** buttons to navigate through the trace log pages. When the **Next** button is not visible, you have reached the most recent log entries; when the **Prev** button is not visible, you have reached the oldest log entries.

- **First/Last**

  When the number of trace log entries exceeds the page limit, pagination is applied. Use the **First** and **Last** buttons to navigate to the beginning or end of the trace log. When the **Last** button is not visible, you have reached the last page; when the **First** button is not visible, you have reached the first page.

8. Click **Close**.

The trace log view is filtered.

Chapter

6

Configuring FTP Settings

Topics:

This chapter describes how to configure FTP settings for a Mediation server.

About File Transfer Protocol

The Mediation server uses file transfer protocol (FTP) for performing batch provisioning.

Batch processing uses the following steps:

1. BOSS sends batch provisioning data files by FTP to the Mediation server.
2. BOSS sends SOAP request (containing the batch file name and operation time) to Mediation server.
3. The Mediation server parses the SOAP request.
4. If the Mediation server validates the data file, it creates a SOAP response for each operation in the data file and send to the SPR database.
5. BOSS periodically queries the Mediation server to check the status of batch operations.
6. The Mediation server sends a response code to BOSS.
7. After BOSS receives a `result code = 0` and `status = completed`, it can download the `log` file for analysis.

Configuring FTP Settings

Note: If you configure the FTP settings on the Mediation server, the configuration of the Mediation server stored on the CMP server automatically replicates to the C-level Mediation servers.

To configure the FTP settings:

1. From the **Mediation** section of the navigation pane, select **FTP Configuration**.
   The **FTP Configuration** page opens displaying the current FTP configuration settings.
2. Click **Modify**.
   The **FTP Configuration** page becomes editable.
3. Select **Enable**.

   If unchecked, the FTP service is disabled.

4. Configure the batch operation settings:
   a) Enter the **Data File Path** of the location of the data file.

      Only characters, digits, hyphens (-), and underscores (_) are allowed in the path. The default path is `/data`.

   b) Enter the **Log File Path** of the location of the log file.

      Only characters, digits, hyphens (-), and underscores (_) are allowed in the path. The default path is `/log.`

   c) The **User Name** is `ftpbatch`.

   ⚠ **Caution:** The user name cannot be modified.
   CAUTION

   d) Enter the **Password** for the `ftpbatch` user.

5. Click **Save**.

The FTP settings are configured.

Chapter

7

Mediation Server Reports

Topics:

This chapter describes how to view the reports for a Mediation server.

Viewing a Mediation Server Report

To view a report on a Mediation server:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server you want to view.
   The **Mediation server Administration** page opens in the work area.

3. Select the **Reports** tab.
   The reports for the selected server appear in the work area.

   - *Cluster Information Report*
   - *Protocol Statistics*

Cluster Information Report

The fields that are displayed in the Cluster Information Report section for the Mediation servers provide the following information:

Mode Shows whether data collection is currently:

- **Active** — Data is refreshed every 10 seconds
- **Paused** — Data is not refreshed
- **Absolute** — Displays statistics since the last reset
- **Delta** — Displays changes in the statistics during the last 10-second refresh period

Buttons The buttons let you navigate between reports or control the information displayed within the report. The following list describes the buttons; which buttons are available depend on your configuration and differ from one report page to the next:

- **Show Absolute/Show Deltas** — Switches between absolute mode (statistics since last reset) and delta mode (statistics since last display).
- **Reset Counters** — Resets the Blade Failures counter.
- **Rediscover Cluster** — Rediscovers the cluster, deleting any failed servers that have been removed from service.
- **Pause / Resume** — Stops or restarts automatic refreshing of displayed information. The refresh period is 10 seconds.
- **Cancel** — Returns to previous page.

Cluster Status Indicates the status of the cluster:

- **On-line** — If one Mediation server, it is active; if two servers, one is active and one is standby.
- **Degraded** — One server is active, but at least one other server is not available.
- **Out-Of-Service** — No server is active.
- **No Data** — The CMP server cannot reach the server.

Blades Also within the Cluster Information Report is a listing of all the Mediation servers (blades) contained within the cluster. A symbol () indicates which Mediation server currently

has the external connection (the active server). The report also lists the following server-specific information:

- **Overall** — Displays the current topology state (Active, Standby, or Forced-Standby), number of server (blade) failures, and total uptime (time providing active or standby policy or GUI service).
- **Utilization** — Displays the percentage utilization of disk (of the /var/camiant file system), average value for the CPU utilization, and memory.
- **Actions** — Provides links let you **Restart** the Oracle Communications Policy Management software on the Mediation server or **Reboot** the server itself.

Protocol Statistics

The Protocol Statistics section summarizes the protocol activity within the Mediation server. This information is presented as a table of summary statistics for each protocol. Some protocols are broken down into sub-entries to distinguish between the different types of protocol activity.

The protocol statistics are:

SOAP Statistics	Requests made using the SOAP protocol.
SPR Statistics	Requests made to UDR functionality.

You can click the name of each entry in the Protocol Statistics table to view a detailed report page. For most protocols, this report page displays a set of counters that break down the protocol activity by message type, message response type, errors, and so on.

Chapter

8

Batch Task Status

Topics:

This chapter describes how to view the status of batch tasks.

About Batch Tasks Status

You can view the status of batch tasks that the Mediation server is processing. The task types that are displayed in the Batch Status view are:

- addBatSubscriber
- updateBatSubscriber
- delBatSubscriber
- addBatService
- updateBatService
- delBatService
- addBatUsrSessionPolicy
- updateBatUsrSessionPolicy
- delBatUsrSessionPolicy

The following tasks allow you to manage batch tasks:

- *Viewing the Batch Task Status View*
- *Filtering Batch Task Status*
- *Exporting the Batch Task Status View*

Viewing the Batch Task Status View

Use the Batch Task Status View to see the current state of any batch operation.

To view the batch status messages:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server you want to view batch operations.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **Batch Task Status** tab.
   The **Batch Task Status** view opens.

See *Filtering Batch Task Status* for details on filtering the Batch Task Status view.

See *Exporting the Batch Task Status View* for details on exporting the Batch Status view to a text file.

Batch Operations Result Codes

This list details the result codes and their meaning.

0	Batch operation file passed validation.
5	Parameter format error.
7	Any internal error/exception when executing the operation.
240000	Batch operation file (identified in SOAP request filename) does not exist.

240001	Batch operation file format error:

- Head line format error
- First line of data format error
- Tail line format error

240002	Batch operation file size is zero (0). The file exists but the file size is zero.
240003	Batch operation file naming error:

- Batch operation file does not follow the naming rule.
- File name in head line is inconsistent with file name in SOAP request.

249999	Other file-level error. Buffered batch request no. exceeds the configured max (default 1000).

Filtering Batch Task Status

The Batch Task Status can contain a large number of status messages. To reduce the number of messages in the view, you can filter by date, ID, type or status.

To filter the information:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
   The content tree displays a list of Mediation server groups; the initial group is **ALL**.
2. From the content tree, select the Mediation server you want to view batch operations.
   The **Mediation Server Administration** page opens in the work area.
3. Select the **Batch Task Status** tab.
4. Specify the filtering parameters using any of the following fields:

- **Start Date/Time** — Click ▦ (calendar icon), specify a date and time and click **Enter**.
- **End Date/Time** — Click ▦ (calendar icon), specify a date and time and click **Enter**.
- **Task ID** — Enter the ID for the task.
- **Task Type** — Select one or more of the types from the list. Options are:

  - addBatSubscriber
  - updateBatSubscriber
  - delBatSubscriber
  - addBatService
  - updateBatService
  - delBatService
  - addBatUsrSessionPolicy
  - updateBatUsrSessionPolicy
  - delBatUsrSessionPolicy

- **Status** — Select the status of the task. Options are:

  - ALL (default)
  - PENDING
  - COMPLETED
  - ABORTING
  - RUNNING

5. Click **Filter**.
The filtered log displays.

Exporting the Batch Task Status View

You can export the Batch Task Status view to a text file.

To export the view:

1. From the **Mediation** section of the navigation pane, select **Configuration**.
The content tree displays a list of Mediation server groups; the initial group is **ALL**.

2. From the content tree, select the Mediation server you want to view batch operations.
The **Mediation Server Administration** page opens in the work area.

3. Select the **Batch Task Status** tab.
The Batch Task Status view opens.

4. (Optional) Specify filtering parameters and click **Filter**.

See *Filtering Batch Task Status* for more information on the filtering fields.

5. Click **Export**.
A file named `batch_tasks_export.txt` is generated and a standard **File Download** window opens allowing you to save or open the file.

The batch task reports is exported to the specified location.

Chapter

9

Mapping Fields

Topics:

This chapter describes how to map BOSS attribute names to SPR field names.

About Field Mapping Profiles

For a Mediation server to interface successfully between an SPR data source and the Business & Operation Support System (BOSS), the attribute names of the BOSS SOAP requests must map to the field names used in the SPR database. If the names differ, the request will fail.

There are four types of mapping profiles:

- Subscriber
- Service
- User Session Policy
- User Location

These types are fixed and cannot be edited or deleted.

To manage Field Mapping Profiles use the following tasks:

- *Creating Field Mapping Profiles*
- *Viewing a Field Mapping Profile*
- *Modifying a Field Mapping Profile*
- *Deleting a Field Mapping Profile*

Note: A configuration mismatch occurs when the mapping records are inconsistent and requires that the configuration be reapplied to resolve the mismatch. See *Reapplying the Configuration to a Mediation Server* for details.

Creating Field Mapping Profiles

To create a Field Mapping Profile:

1. From the **Mediation** section of the navigation pane, select **Field Mapping Profiles**.
   The content tree displays the list of profile groups.

2. From the content tree, select the profile group.

   The available groups are:

   - **Subscriber** – see *Subscriber Mapping Fields*
   - **Service** – see *Service Mapping Fields*
   - **User Session Policy** – see *User Session Policy Mapping Fields*
   - **User Location** – see *User Location Mapping Fields*

   See *Sample SOAP Requests and Responses* for example SOAP requests by profile group.

3. Click **Create**.
   The **New Mapping Record** dialog appears.

4. Configure a field mapping enter the following parameters:
   a) **Name** — The name for the field mapping profile.
   b) **Sequence** — A numeric value specifying the order that the mapping records are displayed on the group page. The default value is `0`.
   c) **SOAP Field Name** — The name of the SOAP field.
   d) **SPR Field Name** — The name of the SPR field.

e) **Mandatory** — Determines if the field is required. The default value is **No**.

f) **Default Value**—The default value for the field.

g) **Validation Rules**—The regex-formatted rules used to validate the data in the field.

5. Click **Save**.

The mapping profile is created and added to the selected Field Mapping Profiles group.

Subscriber Mapping Fields

Table 1: Subscriber Field Mapping

SOAP Name	SPR Name	Mandatory	Default Value
usrIdentifier	MSISDN	Yes	NULL
usrNotifyMSISDN	usrNotifyMSISDN	No	NULL
usrIMSI	IMSI	No	NULL
usrBillingType	usrBillingType	No	1
usrGrade	Tier	No	NULL
usrStatus	State	No	1
usrBillCycleDate	BillingDay	No	1
PackageType	PackageType	No	NULL
operateTime	operateTime	Yes	NULL

Service Mapping Fields

Table 2: Service Field Mapping

Parameter Name	Definition	Mandatory	Default Value
usrIdentifier	Unique user identifier, MSISDN	Yes	NULL
ServiceCode	Unique service code subscribed by user	Yes	NULL
ServiceBillingType	Billing type	No	NULL: same subscriber's billing type
ServiceStartDateTime	Start time of service	No	NULL: no time limitation
ServiceEndDateTime	End time of service	No	NULL: not time limitation
ServiceUsageState	Usage state of service quota	No	1

Parameter Name	Definition	Mandatory	Default Value
operateTime	operateTime sent by BOSS	Yes	NULL

User Session Policy Mapping Fields

Table 3: User Session Policy Field Mapping

Parameter Name	Definition	Mandatory	Default Value
usrIdentifier	Unique user identifier, MSISDN	Yes	NULL
usrSessionPolicyCode	Unique session level policy code subscribed by user	Yes	NULL
NotificationCycle	Subscriber Policy Notification Cycle	No	NULL
TerminalType	Permitted Terminal Type	No	NULL
SessionPolicyStartDateTime	Policy Start Time	No	NULL
SessionPolicyEndDateTime	Policy End Time	No	NULL
operateTime	operateTime (sent by BOSS)	Yes	NULL

User Location Mapping Fields

Table 4: User Location Field Mapping

Parameter Name	Definition	Mandatory	Default Value
usrIdentifier	Unique user identifier, MSISDN	Yes	NULL
usrSessionPolicyCode	Subscribed policy code, indicating what user session policies required to be applied in this location	Conditional mandatory	NULL
ServiceCode	Service code, indicating what services required to be applied in this location	Conditional mandatory	NULL
UsrLocation	Permitted Location	Conditional mandatory	NULL

Parameter Name	Definition	Mandatory	Default Value
operateTime	operateTime sent by BOSS	Yes	NULL

Viewing a Field Mapping Profile

To view a Field Mapping Profile:

1. From the **Mediation** section of the navigation pane, select **Field Mapping Profiles**. The content tree displays a list of profile groups.
2. From the content tree, select the profile group. The groups are:

   - **Subscriber**
   - **Service**
   - **User Session Policy**
   - **User Location**

   The profiles defined for the group are displayed in the work area.
3. Select a profile.
   The mapping profile displays in the work area.

Modifying a Field Mapping Profile

To modify a Field Mapping Profile:

1. From the **Mediation** section of the navigation pane, select **Field Mapping Profiles**. The content tree displays a list of profile groups.
2. From the content tree, select the profile group.

   The available groups are:

   - **Subscriber**
   - **Service**
   - **User Session Policy**
   - **User Location**

   The profiles defined for the group are displayed in the work area.
3. Select a profile.
   The mapping configuration displays in the work area.
4. Click **Modify**.
   The **Modify Mapping Record** page opens.
5. Modify the configuration.
6. Click **Save**.

   a) Click **Save**.

The CMP server saves the changes to the mapping profile.

Deleting a Field Mapping Profile

To delete a Field Mapping Profile:

1. From the **Mediation** section of the navigation pane, select **Field Mapping Profiles**. The content tree displays a list of profile groups.

2. From the content tree, select the profile group.

    The available groups are:

    *   **Subscriber**
    *   **Service**
    *   **User Session Policy**
    *   **User Location**

    The profiles defined for the group are displayed in the work area.

3. Use one of the following methods to delete a Field Mapping Profile:

    *   From the work area, click 🗑 (trash can icon) located next to the profile you want to delete.
    *   From the profile group tree, select the profile. The profile displays in the work area. Click **Delete**.

    A confirmation message displays.

4. Click **OK** to delete.

The profile is removed from the profile group and the system.

Appendix

A

Sample SOAP Requests and Responses

Topics:

This appendix provides sample SOAP requests and responses between BOSS and the Mediation server.

Subscriber Profile Group

The following sections provide examples of SOAP requests and responses for the Subscriber profile group.

addSubscriber

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
        <pcrf:Header>
            <Address></Address>
            <Username>admin</Username>
            <Password>*****</Password>
            <time></time>
            <serial></serial>
        </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
        <pcrf1:addSubscriber>
            <inPara>
                <subscriber>
                  <attribute>
                    <key>usrIdentifier</key>
                    <value>008613705161111</value>
                  </attribute>
                  <attribute>
                    <key>usrNotifyMSISDN</key>
                    <value>008613705161111</value>
                  </attribute>
                  <attribute>
                    <key>usrIMSI</key>
                    <value>460000726001111</value>
                  </attribute>
                  <attribute>
                    <key>usrBillingType</key>
                    <value>1</value>
                  </attribute>
                  <attribute>
                    <key>usrGrade</key>
                    <value>1</value>
                  </attribute>
                  <attribute>
                    <key>usrStatus</key>
                    <value>2</value>
                  </attribute>
                  <attribute>
                    <key>usrBillCycleDate</key>
                    <value>1</value>
                  </attribute>
                  <attribute>
                    <key>PackageType</key>
                    <value>0</value>
```

```
              </attribute>
              <attribute>
                <key>operateTime</key>
                <value>20140620182010</value>
              </attribute>
            </subscriber>
          </inPara>
        </pcrf1:addSubscriber>
    </soapenv:Body>
</soapenv:Envelope>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[
        <req name="insert" resonly="y">
          <ent name="Subscriber"/>
          <set>
            <expr><attr name="MSISDN"/><value
val="008613705161101"/></expr>
            <expr><attr name="usrNotifyMSISDN"/><value
val="008613705161101"/></expr>
            <expr><attr name="IMSI"/><value val="460000722001101"/></expr>

            <expr><attr name="usrBillingType"/><value val="0"/></expr>
            <expr><attr name="Tier"/><value val="1"/></expr>
            <expr><attr name="BillingDay"/><value val="1"/></expr>
            <expr><attr name="PackageType"/><value val="0"/></expr>
            <expr><attr name="operateTime"/><value
val="20140513162800"/></expr>
            <expr>
              <attr name="State"/>
              <op value="="/>
              <cdata><![CDATA[<?xml version="1.0" encoding="UTF-8"?>
               <state>
                 <version>1</version>
                 <property>
                   <name>usrStatus</name>
                   <value>2</value>
                 </property>
               </state>
               ]]>
             </cdata>
            </expr>
          </set>
        </req>
      ]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
    <SOAP-ENV:Body>
      <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="insert" resonly="y">
          <res affected="1" error="0"/>
      </req>
      ]]>
      </ns1:message>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

updateSubscriber

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
      <pcrf:Header>
          <Address></Address>
          <Username>admin</Username>
          <Password>*****</Password>
          <time></time>
          <serial></serial>
      </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
      <pcrf1:updateSubscriber>
          <inPara>
            <subscriber>
              <attribute>
                <key>usrIdentifier</key>
                <value>008613705161111</value>
              </attribute>
              <attribute>
                <key>usrNotifyMSISDN</key>
                <value>008613705161111</value>
              </attribute>
              <attribute>
                <key>usrBillingType</key>
                <value>1</value>
              </attribute>
              <attribute>
                <key>usrGrade</key>
                <value>9</value>
              </attribute>
              <attribute>
                <key>usrStatus</key>
```

```
                <value>99</value>
              </attribute>
              <attribute>
                <key>operateTime</key>
                <value>20140620182010</value>
              </attribute>
            </subscriber>
          </inPara>
      </pcrf1:updateSubscriber>
    </soapenv:Body>
 </soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
        <ns1:updateSubscriberResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
                <resultCode>0</resultCode>
            </result>
        </ns1:updateSubscriberResponse>
    </soap:Body>
</soap:Envelope>
```

Query Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
     <![CDATA[<req name="select" resonly="y">
        <ent name="Subscriber" ns="policy"/>
        <select>
          <expr>
            <attr name="State"/>
          </expr>
        </select>
        <where>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705161111"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Query Response from SPR to Mediation

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="select" resonly="y">
      <res affected="1" error="0"/>
      <rset>
        <row>
          <rv>
            <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
            <state>
              <version>1</version>
              <property>
                <name>usrStatus</name>
                <value>1</value>
              </property>
            </state>]]>
          </rv>
        </row>
      </rset>
      </req>]]>
    </ns1:message>
  </soapenv:Body>
</soapenv:Envelope>
```

updateSubscriber Request Between Mediation Server and SPR

```
<SOAP-ENV:Envelope
          xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
          xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
          xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
          xmlns:xsd="http://www.w3.org/2001/XMLSchema"
          xmlns:ns1="http://www.example.com/udr/">
  <SOAP-ENV:Body>
     <ns1:message error="0">
    <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
    <req name="update" resonly="y">
  <ent name="Subscriber" ns="policy"/>
  <set>
    <expr>
      <attr name="Tier"/>
      <value val="9"/>
    </expr>
    <expr>
      <attr name="operateTime"/>
      <value val="20140620182010"/>
    </expr>
    <expr>
      <attr name="usrNotifyMSISDN"/>
      <value val="008613705161111"/>
    </expr>
    <expr>
      <attr name="usrBillingType"/>
```

```
      <value val="1"/>
    </expr>
    <expr><attr name="State"/><op value="="/><cdata>
      <[CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <state>
        <version>1</version>
        <property>
          <name>usrStatus</name>
          <value>0</value>
        </property>
      </state>]]></cdata>
    </expr>
  </set>
  <where>
    <expr>
      <attr name="MSISDN"/>
      <op value="="/>
      <value val="008613705161111"/>
    </expr>
  </where>
</req>
      ]]>
      </ns1:message>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

updateSubscriber Response between SPR and Mediation

```
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="update" resonly="y">
        <res affected="1" error="0"/>
      </req>]]>
    </ns1:message>
```

delSubscriber

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
      <pcrf:Header>
        <Address></Address>
        <Username>admin</Username>
        <Password>*****</Password>
        <time></time>
        <serial></serial>
      </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
        <pcrf1:delSubscriber>
```

```
            <inPara>
                <subscriber>
                    <attribute>
                        <key>usrIdentifier</key>
                        <value>008613705161111</value>
                    </attribute>
                    <attribute>
                        <key>operateTime</key>
                        <value>20140620182010</value>
                    </attribute>
                </subscriber>
            </inPara>
        </pcrf1:delSubscriber>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
        <ns1:delSubscriberResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
                <resultCode>0</resultCode>
            </result>
        </ns1:delSubscriberResponse>
    </soap:Body>
</soap:Envelope>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="delete" resonly="y">
        <ent name="Subscriber" ns="policy"/>
        <where>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705161111"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation Server

```
  <ns1:message error="0">
    <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
    <req name="delete" resonly="y">
      <res affected="1" error="0"/>
    </req>]]>
  </ns1:message>
```

getSubscriber

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
      <pcrf1:getSubscriber>
         <inPara>
            <subscriber>
               <attribute>
                  <key>usrIdentifier</key>
                  <value>008613705161111</value>
               </attribute>
            </subscriber>
         </inPara>
      </pcrf1:getSubscriber>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
    <ns1:getSubscriberResponse xmlns:ns1="pcrf:soap">
      <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
        <resultCode>0</resultCode>
        <subscriber>
          <attribute>
            <key>usrIdentifier</key>
            <value>008613705161111</value>
          </attribute>
          <attribute>
            <key>usrNotifyMSISDN</key>
```

```
              <value>008613705161111</value>
            </attribute>
            <attribute>
              <key>usrIMSI</key>
              <value>460000726001111</value>
            </attribute>
            <attribute>
              <key>usrBillingType</key>
              <value>1</value>
            </attribute>
            <attribute>
              <key>usrGrade</key>
              <value>1</value>
            </attribute>
            <attribute>
              <key>usrStatus</key>
              <value>1</value>
            </attribute>
            <attribute>
              <key>usrBillCycleDate</key>
              <value>99</value>
            </attribute>
            <attribute>
              <key>PackageType</key>
              <value>0</value>
            </attribute>
          </subscriber>
        </result>
     </ns1:getSubscriberResponse>
    </soap:Body>
 </soap:Envelope>
```

getSubscriberAllInf

Request from BOSS to Mediation Server

```
<soapenv:Envelope
           xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
           xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
           xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
      <pcrf1:getSubscriberAllInf>
         <inPara>
            <subscriber>
               <attribute>
                  <key>usrIdentifier</key>
                  <value>008613705162222</value>
               </attribute>
```

```
                </subscriber>
            </inPara>
        </pcrf1:getSubscriberAllInf>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
        <ns1:getSubscriberAllInfResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
                <resultCode>0</resultCode>
                <subscriber>
                    <attribute>
                        <key>usrIdentifier</key>
                        <value>008613705162222</value>
                    </attribute>
                    <attribute>
                        <key>usrNotifyMSISDN</key>
                        <value>008613705162222</value>
                    </attribute>
                    <attribute>
                        <key>usrIMSI</key>
                        <value>460000726002222</value>
                    </attribute>
                    <attribute>
                        <key>usrBillingType</key>
                        <value>1</value>
                    </attribute>
                    <attribute>
                        <key>usrGrade</key>
                        <value>1</value>
                    </attribute>
                    <attribute>
                        <key>usrStatus</key>
                        <value>1</value>
                    </attribute>
                    <attribute>
                        <key>usrBillCycleDate</key>
                        <value>99</value>
                    </attribute>
                    <attribute>
                        <key>PackageType</key>
                        <value>0</value>
                    </attribute>
                </subscriber>
<!—If the subscriber has not subscribed any services, then below message
has 0 <subscribedUsrSessionPolicy> node -->
                <subscribedService>
                    <attribute>
                        <key>ServiceCode</key>
                        <value>210125012345678901234567889011111</value>
                    </attribute>
                    <attribute>
                        <key>ServiceStartDateTime</key>
                        <value>20140701000000</value>
                    </attribute>
                    <attribute>
                        <key>ServiceEndDateTime</key>
```

```
                    <value>20140801000000</value>
                </attribute>
                <attribute>
                    <key>ServiceBillingType</key>
                    <value>1</value>
                </attribute>
                <attribute>
                    <key>ServiceUsageState</key>
                    <value>1</value>
                </attribute>
            </subscribedService>
<!--If the subscriber has not subscribed any session policies, then below
 message has 0 <subscribedUsrSessionPolicy> node -->
            <subscribedUsrSessionPolicy>
                <attribute>
                    <key>usrSessionPolicyCode</key>
                    <value>11012501234567890123456789011111</value>
                </attribute>
                <attribute>
                    <key>NotificationCycle</key>
                    <value>0</value>
                </attribute>
                <attribute>
                    <key>TerminalType</key>
                    <value>PhoneType1</value>
                </attribute>
                <attribute>
                    <key>SessionPolicyStartDateTime</key>
                    <value>20140101000000</value>
                </attribute>
                <attribute>
                    <key>SessionPolicyEndDateTime</key>
                    <value>20141231120000</value>
                </attribute>
            </subscribedUsrSessionPolicy>
<!--If the subscriber has no location info, then below message has 0
<subscribedUsrLocation> node -->
            <subscribedUsrLocation>
                <attribute>
                    <key>usrSessionPolicyCode</key>
                    <value>11012501234567890123456789011111</value>
                </attribute>
                <attribute>
                    <key>UsrLocation</key>
                    <value>010</value>
                </attribute>
            </subscribedUsrLocation>
            <subscribedUsrLocation>
                <attribute>
                    <key>ServiceCode</key>
                    <value>21012501234567890123456789011111</value>
                </attribute>
                <attribute>
                    <key>UsrLocation</key>
                    <value>010</value>
                </attribute>
            </subscribedUsrLocation>
        </result>
     </ns1:getSubscriberAllInfResponse>
   </soap:Body>
</soap:Envelope>
```

Service Profile Group

The following sections provide examples of SOAP requests and responses for the Service profile group.

subscribeService

Request from BOSS to Mediation Server

```
<soapenv:Envelope
          xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
          xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
          xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
          <Address></Address>
          <Username>admin</Username>
          <Password>*****</Password>
          <time></time>
          <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
      <pcrf1:subscribeService>
         <inPara>
            <subscriber>
               <attribute>
                 <key>usrIdentifier</key>
                 <value>008613705162222</value>
               </attribute>
            </subscriber>
            <subscribedService>
            <attribute>
              <key>ServiceCode</key>
              <value>210125012345678901234567890111111</value>
            </attribute>
            <attribute>
              <key>ServiceBillingType</key>
              <value>1</value>
            </attribute>
            <attribute>
              <key>ServiceStartDateTime</key>
              <value>20140701000000</value>
            </attribute>
            <attribute>
              <key>ServiceEndDateTime</key>
              <value>20140801000000</value>
            </attribute>
            <attribute>
              <key>ServiceUsageState</key>
              <value>1</value>
            </attribute>
            <attribute>
              <key>operateTime</key>
              <value>20140620182010</value>
            </attribute>
            </subscribedService>
         </inPara>
```

```
        </pcrf1:subscribeService>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
        <ns1:subscribeServiceResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
                <resultCode>0</resultCode>
            </result>
        </ns1:subscribeServiceResponse>
    </soap:Body>
</soap:Envelope>
```

Request from Mediation to SPR

```
    <ns1:processTransaction>
      <![CDATA[<req name="insert" resonly="y">
        <ent name="Service" ns="policy"/>
        <set>
          <expr>
            <attr name="operateTime"/>
            <value val="20140620182010"/>
          </expr>
          <expr>
            <attr name="ServiceEndDateTime"/>
            <value val="20140801000000"/>
          </expr>
          <expr>
            <attr name="ServiceCode"/>
            <value val="210125012345678901234567789011111"/>
          </expr>
          <expr>
            <attr name="ServiceBillingType"/>
            <value val="1"/>
          </expr>
          <expr>
            <attr name="ServiceStartDateTime"/>
            <value val="20140701000000"/>
          </expr>
          <expr>
            <attr name="ServiceUsageState"/>
            <value val="1"/>
          </expr>
        </set>
        <where>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>
      ]]>
    </ns1:processTransaction>
```

Response from SPR to Mediation Server

```
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="insert" resonly="y">
        <res affected="1" error="0"/>
      </req>]]>
    </ns1:message>
```

updateSubscribedService

Request from BOSS to Mediation Server

```
<soapenv:Envelope
          xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
          xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
          xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
      <pcrf1:updateSubscribedService>
         <inPara>
            <subscriber>
               <attribute>
                <key>usrIdentifier</key>
                <value>008613705162222</value>
               </attribute>
            </subscriber>
            <subscribedService>
            <attribute>
              <key>ServiceCode</key>
              <value>210125012345678901234567890111111</value>
            </attribute>
            <attribute>
              <key>ServiceUsageState</key>
              <value>2</value>
            </attribute>
            <attribute>
               <key>operateTime</key>
               <value>20140620182010</value>
            </attribute>
            </subscribedService>
            </inPara>
      </pcrf1:updateSubscribedService>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
<ns1:updateSubscribedServiceResponse xmlns:ns1="pcrf:soap">
   <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
      <resultCode>0</resultCode>
   </result>
</ns1:updateSubscribedServiceResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="update" resonly="y">
        <ent name="Service" ns="policy"/>
        <set>
          <expr>
            <attr name="operateTime"/>
            <value val="20140620182010"/>
          </expr>
          <expr>
            <attr name="ServiceUsageState"/>
            <value val="2"/>
          </expr>
        </set>
        <where>
          <expr>
            <attr name="ServiceCode"/>
            <op value="="/>
            <value val="21012501234567890123456789011111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
   <SOAP-ENV:Body>
```

```
  <ns1:message error="0">
    <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
    <req name="update" resonly="y">
      <res affected="1" error="0"/>
    </req>]]>
  </ns1:message>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

unsubscribeService

Request from BOSS to Mediation Server

```
<soapenv:Envelope
         xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
         xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
         xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
      <pcrf1:unSubscribeService>
         <inPara>
            <subscriber>
               <attribute>
                <key>usrIdentifier</key>
                <value>008613705162222</value>
               </attribute>
            </subscriber>
            <subscribedService>
            <attribute>
              <key>ServiceCode</key>
              <value>2101250123456789012345678901111</value>
            </attribute>
            <attribute>
              <key>operateTime</key>
              <value>20140620182010</value>
            </attribute>
           </subscribedService>
         </inPara>
      </pcrf1:unSubscribeService>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
      <ns1:unSubscribeServiceResponse xmlns:ns1="pcrf:soap">
         <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
```

```
                <resultCode>0</resultCode>
            </result>
        </ns1:unSubscribeServiceResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="delete" resonly="y">
        <ent name="Service" ns="policy"/>
        <where>
          <expr>
            <attr name="ServiceCode"/>
            <op value="="/>
            <value val="21012501234567890123456789011111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
  <SOAP-ENV:Body>
   <ns1:message error="0">
     <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
     <req name="delete" resonly="y">
       <res affected="1" error="0"/>
     </req>]]>
   </ns1:message>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

getSubscriberAllService

Request from BOSS to Mediation Server

```
<soapenv:Envelope
          xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
          xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
          xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
        <pcrf:Header>
            <Address></Address>
            <Username>admin</Username>
            <Password>*****</Password>
            <time></time>
            <serial></serial>
        </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
        <pcrf1:getSubscriberAllService>
            <inPara>
                <subscriber>
                    <attribute>
                        <key>usrIdentifier</key>
                        <value>008613705162222</value>
                    </attribute>
                </subscriber>
            </inPara>
        </pcrf1:getSubscriberAllService>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
        <ns1:getSubscriberAllServiceResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
                <resultCode>0</resultCode>
                <subscriber>
                    <attribute>
                        <key>usrIdentifier</key>
                        <value>008613705162222</value>
                    </attribute>
                </subscriber>
<!—If the subscriber has not subscribed any session policies, then below
message has 0 <subscribedService> node -->
                <subscribedService>
                    <attribute>
                        <key>ServiceCode</key>
                        <value>21012501234567890123456789011111</value>
                    </attribute>
                    <attribute>
                        <key>ServiceStartDateTime</key>
                        <value>20140701000000</value>
                    </attribute>
                    <attribute>
                        <key>ServiceEndDateTime</key>
                        <value>20140801000000</value>
                    </attribute>
```

```
                <attribute>
                    <key>ServiceBillingType</key>
                    <value>1</value>
                </attribute>
                <attribute>
                    <key>ServiceUsageState</key>
                    <value>1</value>
                </attribute>
            </subscribedService>
        </result>
    </ns1:getSubscriberAllServiceResponse>
```

User Session Policy Profile Group

The following sections provide examples of SOAP requests and responses for the User Session Policy profile group.

subscribeUsrSessionPolicy

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
    <pcrf1:subscribeUsrSessionPolicy>
       <inPara>
         <subscriber>
           <attribute>
             <key>usrIdentifier</key>
             <value>008613705162222</value>
           </attribute>
         </subscriber>
         <subscribedUsrSessionPolicy>
           <attribute>
             <key>usrSessionPolicyCode</key>
             <value>11012501234567890123456789011111</value>
           </attribute>
           <attribute>
             <key>NotificationCycle</key>
             <value>0</value>
           </attribute>
           <attribute>
```

```
            <key>TerminalType</key>
            <value>PhoneType1</value>
          </attribute>
          <attribute>
            <key>SessionPolicyStartDateTime</key>
            <value>20140101000000</value>
          </attribute>
          <attribute>
            <key>SessionPolicyEndDateTime</key>
            <value>20141231120000</value>
          </attribute>
          <attribute>
            <key>operateTime</key>
            <value>20140620182010</value>
          </attribute>
        </subscribedUsrSessionPolicy>
      </inPara>
    </pcrf1:subscribeUsrSessionPolicy>
  </soapenv:Body>
</soapenv:Envelope>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="insert" resonly="y">
        <ent name="UsrSessionPolicy" ns="policy"/>
        <set>
          <expr>
            <attr name="operateTime"/>
            <value val="20140620182010"/>
          </expr>
          <expr>
            <attr name="TerminalType"/>
            <value val="PhoneType1"/>
          </expr>
          <expr>
            <attr name="SessionPolicyEndDateTime"/>
            <value val="20141231120000"/>
          </expr>
          <expr>
            <attr name="PolicyCode"/>
            <value val="11012501234567890123456789011111"/>
          </expr>
          <expr>
            <attr name="SessionPolicyStartDateTime"/>
            <value val="20140101000000"/>
          </expr>
          <expr>
            <attr name="NotificationCycle"/>
            <value val="0"/>
          </expr>
        </set>
        <where>
```

```
        <expr>
          <attr name="MSISDN"/>
          <op value="="/>
          <value val="008613705162222"/>
        </expr>
      </where>
    </req>]]>
   </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
   <SOAP-ENV:Body>
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="insert" resonly="y">
        <res affected="1" error="0"/>
      </req>]]>
    </ns1:message>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

updateUsrSessionPolicy

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
     <pcrf:Header>
        <Address></Address>
        <Username>admin</Username>
        <Password>*****</Password>
        <time></time>
        <serial></serial>
     </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
    <pcrf1:updateUsrSessionPolicy>
      <inPara>
        <subscriber>
          <attribute>
            <key>usrIdentifier</key>
            <value>008613705162222</value>
          </attribute>
        </subscriber>
```

```
        <subscribedUsrSessionPolicy>
          <attribute>
            <key>usrSessionPolicyCode</key>
            <value>110125012345678901234567890111111</value>
          </attribute>
          <attribute>
            <key>NotificationCycle</key>
            <value>2</value>
          </attribute>
          <attribute>
            <key>TerminalType</key>
            <value>PhoneType1</value>
          </attribute>
          <attribute>
            <key>operateTime</key>
            <value>20140620182010</value>
          </attribute>
        </subscribedUsrSessionPolicy>
      </inPara>
    </pcrf1:updateUsrSessionPolicy>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
      <ns1:updateUsrSessionPolicyResponse xmlns:ns1="pcrf:soap">
        <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
          <resultCode>0</resultCode>
        </result>
      </ns1:updateUsrSessionPolicyResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="update" resonly="y">
        <ent name="UsrSessionPolicy" ns="policy"/>
        <set>
          <expr>
            <attr name="operateTime"/>
            <value val="20140620182010"/>
          </expr>
          <expr>
            <attr name="TerminalType"/>
            <value val="PhoneType1"/>
          </expr>
          <expr>
            <attr name="NotificationCycle"/>
            <value val="2"/>
          </expr>
```

```
        </set>
        <where>
          <expr>
            <attr name="PolicyCode"/>
            <op value="="/>
            <value val="110125012345678901234567889011111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
  <SOAP-ENV:Body>
   <ns1:message error="0">
     <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
     <req name="insert" resonly="y">
       <res affected="1" error="0"/>
     </req>]]>
   </ns1:message>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

unsubscribeUsrSessionPolicy

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
    <pcrf1:unsubscribeUsrSessionPolicy>
```

```
        <inPara>
          <subscriber>
            <!--1 or more repetitions:-->
            <attribute>
              <key>usrIdentifier</key>
              <value>008613705162222</value>
            </attribute>
          </subscriber>
          <subscribedUsrSessionPolicy>
            <attribute>
              <key>usrSessionPolicyCode</key>
              <value>1101250123456789012345678901111</value>
            </attribute>
            <attribute>
              <key>operateTime</key>
              <value>20140620182010</value>
            </attribute>
          </subscribedUsrSessionPolicy>
        </inPara>
      </pcrf1:unsubscribeUsrSessionPolicy>
    </soapenv:Body>
 </soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
      <ns1:unsubscribeUsrSessionPolicyResponse xmlns:ns1="pcrf:soap">
         <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
            <resultCode>0</resultCode>
         </result>
      </ns1:unsubscribeUsrSessionPolicyResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="delete" resonly="y">
        <ent name="UsrSessionPolicy" ns="policy"/>
        <where>
          <expr>
            <attr name="PolicyCode"/>
            <op value="="/>
            <value val="1101250123456789012345678901111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
```

```
        </ns1:processTransaction>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
         xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
         xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xmlns:xsd="http://www.w3.org/2001/XMLSchema"
         xmlns:ns1="http://www.example.com/udr/">
    <SOAP-ENV:Body>
     <ns1:message error="0">
        <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
        <req name="delete" resonly="y">
          <res affected="1" error="0"/>
        </req>]]>
     </ns1:message>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

getSubscriberAllUsrSessionPolicy

Request from BOSS to Mediation Server

```
<soapenv:Envelope
         xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
         xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
         xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
     <pcrf1:getSubscriberAllUsrSessionPolicy>
        <inPara>
          <subscriber>
            <attribute>
              <key>usrIdentifier</key>
              <value>008613705162222</value>
            </attribute>
          </subscriber>
        </inPara>
     </pcrf1:getSubscriberAllUsrSessionPolicy>
    </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```xml
<ns1:getSubscriberAllUsrSessionPolicyResponse xmlns:ns1="pcrf:soap">
  <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
    <resultCode>0</resultCode>
    <subscriber>
      <attribute>
        <key>usrIdentifier</key>
        <value>008613705162222</value>
      </attribute>
    </subscriber>
    <!—If the subscriber has not subscribed any session policies, then
below message has 0 <subscribedUsrSessionPolicy> node -->
    <subscribedUsrSessionPolicy>
      <attribute>
        <key>usrSessionPolicyCode</key>
        <value>110125012345678901234567890111111</value>
      </attribute>
      <attribute>
        <key>NotificationCycle</key>
        <value>0</value>
      </attribute>
      <attribute>
        <key>TerminalType</key>
        <value>PhoneType1</value>
      </attribute>
      <attribute>
        <key>SessionPolicyStartDateTime</key>
        <value>20140101000000</value>
      </attribute>
      <attribute>
        <key>SessionPolicyEndDateTime</key>
        <value>20141231120000</value>
      </attribute>
    </subscribedUsrSessionPolicy>
  </result>
</ns1:getSubscriberAllUsrSessionPolicyResponse>
```

User Location Profile Group

The following sections provide examples of SOAP requests and responses for the User Location profile group.

addUsrLocation

Request from BOSS to Mediation Server

```xml
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
  <soapenv:Header>
```

```
        <pcrf:Header>
            <Address></Address>
            <Username>admin</Username>
            <Password>*****</Password>
            <time></time>
            <serial></serial>
        </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
     <pcrf1:addUsrLocation>
        <inPara>
            <subscriber>
              <attribute>
                <key>usrIdentifier</key>
                <value>008613705162222</value>
              </attribute>
            </subscriber>
            <subscribedUsrLocation>
                <attribute>
                  <key>ServiceCode</key>
                  <value>210125012345678901234567789011111</value>
                </attribute>
                <attribute>
                  <key>UsrLocation</key>
                  <value>010</value>
                </attribute>
                <attribute>
                  <key>operateTime</key>
                  <value>20140620182010</value>
                </attribute>
            </subscribedUsrLocation>
        </inPara>
     </pcrf1:addUsrLocation>
    </soapenv:Body>
 </soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
        <ns1:addUsrLocationResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.examplenetwork.com/PCRF/">
                <resultCode>0</resultCode>
            </result>
        </ns1:addUsrLocationResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
        <![CDATA[<req name="insert" resonly="y">
          <ent name="UsrLocation" ns="policy"/>
```

```
         <set>
           <expr>
             <attr name="operateTime"/>
             <value val="20140620182010"/>
           </expr>
           <expr>
             <attr name="UsrLocation"/>
             <value val="010"/>
           </expr>
           <expr>
             <attr name="codeType"/>
             <value val="ServiceCode"/>
           </expr>
           <expr>
             <attr name="Code"/>
             <value val="2101250123456789012345 6789011111"/>
           </expr>
         </set>
         <where>
           <expr>
             <attr name="MSISDN"/>
             <op value="="/>
             <value val="008613705162222"/>
           </expr>
         </where>
       </req>]]>
     </ns1:processTransaction>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
         xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
         xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xmlns:xsd="http://www.w3.org/2001/XMLSchema"
         xmlns:ns1="http://www.example.com/udr/">
   <SOAP-ENV:Body>
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="insert" resonly="y">
        <res affected="1" error="0"/>
      </req>]]>
    </ns1:message>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

updateUsrLocation

Request from BOSS to Mediation Server

```
<soapenv:Envelope
         xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
         xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
```

```
         xmlns:pcrf1="pcrf:soap">
    <soapenv:Header>
       <pcrf:Header>
          <Address></Address>
          <Username>admin</Username>
          <Password>*****</Password>
          <time></time>
          <serial></serial>
       </pcrf:Header>
    </soapenv:Header>
    <soapenv:Body>
     <pcrf1:updateUsrLocation>
        <inPara>
          <subscriber>
            <attribute>
               <key>usrIdentifier</key>
               <value>008613705162222</value>
            </attribute>
          </subscriber>
          <subscribedUsrLocation>
            <attribute>
               <key>ServiceCode</key>
               <value>210125012345678901234567890011111</value>
            </attribute>
            <attribute>
               <key>UsrLocation</key>
               <value>111</value>
            </attribute>
            <attribute>
               <key>operateTime</key>
               <value>20140620182010</value>
            </attribute>
          </subscribedUsrLocation>
        </inPara>
     </pcrf1:updateUsrLocation>
    </soapenv:Body>
 </soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
      <ns1:updateUsrLocationResponse xmlns:ns1="pcrf:soap">
         <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
            <resultCode>0</resultCode>
         </result>
      </ns1:updateUsrLocationResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
```

```
      <![CDATA[<req name="update" resonly="y">
        <ent name="UsrLocation" ns="policy"/>
        <set>
          <expr>
            <attr name="operateTime"/>
            <value val="20140620182010"/>
          </expr>
          <expr>
            <attr name="UsrLocation"/>
            <value val="1111"/>
          </expr>
          <expr>
            <attr name="codeType"/>
            <value val="ServiceCode"/>
          </expr>
        </set>
        <where>
          <expr>
            <attr name="Code"/>
            <op value="="/>
            <value val="2101250123456789012345678901111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
   <SOAP-ENV:Body>
    <ns1:message error="0">
      <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
      <req name="update" resonly="y">
        <res affected="1" error="0"/>
      </req>]]>
    </ns1:message>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

delUsrLocation

Request from BOSS to Mediation Server

```
<soapenv:Envelope
          xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
          xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
          xmlns:pcrf1="pcrf:soap">
   <soapenv:Header>
      <pcrf:Header>
         <Address></Address>
         <Username>admin</Username>
         <Password>*****</Password>
         <time></time>
         <serial></serial>
      </pcrf:Header>
   </soapenv:Header>
   <soapenv:Body>
    <pcrf1:delUsrLocation>
      <inPara>
        <subscriber>
          <attribute>
            <key>usrIdentifier</key>
            <value>008613705162222</value>
          </attribute>
        </subscriber>
        <subscribedUsrLocation>
          <attribute>
            <key>ServiceCode</key>
            <value>210125012345678901234567890111111</value>
          </attribute>
          <attribute>
            <key>operateTime</key>
            <value>20140620182010</value>
          </attribute>
        </subscribedUsrLocation>
      </inPara>
    </pcrf1:delUsrLocation>
   </soapenv:Body>
</soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
      <ns1:delUsrLocationResponse xmlns:ns1="pcrf:soap">
         <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
            <resultCode>0</resultCode>
         </result>
      </ns1:delUsrLocationResponse>
```

Request between Mediation Server and SPR

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
    xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

```
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xmlns:ns1="http://www.example.com/udr/">
  <soapenv:Body>
    <ns1:processTransaction>
      <![CDATA[<req name="delete" resonly="y">
        <ent name="UsrLocation" ns="policy"/>
        <where>
          <expr>
            <attr name="Code"/>
            <op value="="/>
            <value val="2101250123456789012345678901111"/>
          </expr>
          <expr>
            <attr name="MSISDN"/>
            <op value="="/>
            <value val="008613705162222"/>
          </expr>
        </where>
      </req>]]>
    </ns1:processTransaction>
  </soapenv:Body>
</soapenv:Envelope>
```

Response from SPR to Mediation

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:ns1="http://www.example.com/udr/">
  <SOAP-ENV:Body>
   <ns1:message error="0">
     <![CDATA[<?xml version="1.0" encoding="UTF-8"?>
     <req name="delete" resonly="y">
       <res affected="1" error="0"/>
     </req>]]>
   </ns1:message>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

getUsrLocation

Request from BOSS to Mediation Server

```
<soapenv:Envelope
        xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
        xmlns:pcrf="http://www.examplenetwork.com/PCRF/"
        xmlns:pcrf1="pcrf:soap">
  <soapenv:Header>
    <pcrf:Header>
        <Address></Address>
        <Username>admin</Username>
        <Password>*****</Password>
        <time></time>
```

```
                <serial></serial>
            </pcrf:Header>
        </soapenv:Header>
        <soapenv:Body>
          <pcrf1:getUsrLocation>
            <inPara>
              <subscriber>
                <attribute>
                  <key>usrIdentifier</key>
                  <value>008613705162222</value>
                </attribute>
              </subscriber>
            </inPara>
          </pcrf1:getUsrLocation>
        </soapenv:Body>
    </soapenv:Envelope>
```

Response from Mediation Server to BOSS

```
        <ns1:getUsrLocationResponse xmlns:ns1="pcrf:soap">
            <result xmlns:ns2="http://www.chinamobile.com/PCRF/">
                <resultCode>0</resultCode>
                <subscriber>
                    <attribute>
                        <key>usrIdentifier</key>
                        <value>008613705162222</value>
                    </attribute>
                </subscriber>
                <!—If the subscriber does not has any location info, then
below message has 0 <subscribedUsrLocation> node -->
                <subscribedUsrLocation>
                    <attribute>
                        <key>ServiceCode</key>
                        <value>2101250123456789012345678911111</value>
                    </attribute>
                    <attribute>
                        <key>UsrLocation</key>
                        <value>010</value>
                    </attribute>
                </subscribedUsrLocation>
            </result>
        </ns1:getUsrLocationResponse>
```

Appendix

B

SOAP Error Codes

Topics:

This appendix provides error codes resulting from Mediation server SOAP responses to BOSS.

Error Codes

0	All successful transactions.
1	Message length error
2	Decode error
3	Encode error
4	Name can not be parsed
5	Parameter error

For example:

- Validation of SOAP username/password fail.
- Validation of SOAP fields type/value range/mandatory or Optional fail.
- Add/update Service/UsrSessionPolicy, startDateTime >= endDateTime of Service/UsrSessionPolicy
- Add/update Service/UsrSessionPolicy, endDateTime < current system time
- operateTime in request is earlier than the operateTime in SPR.
- addUsrLocation but the location already existed.
- Add/Update duplicate Service/UsrSessionPolicy/UsrLocation in the same BOSS SOAP request.

6	Database error
7	Internal error that causes the transaction to not be processed
100000	System user does not exist
110000	Subscriber does not exist.
110001	Subscriber already exists.
110002	Subscriber account is frozen.
110007	Subscriber service quota does not exist.
110008	Service or user session policy does not exist.
110009	Service or user session policy already subscribed.
110010	Service or user session policy not subscribed.
110014	Cannot modify MSISDN of subscriber.
110016	Parameter error of subscriber
110017	Parameter error of Service or UsrSessionPolicy.
110018	Location information not exist for Service or UsrSessionPolicy
120000	License expires
120001	Reaching max subscriber number of SPR license

Total subscriber counter in mediation reaches SPR license limit (default limit is 50M).

139999	Other internal error
	Mediation server enters admission control state, and some of the new requests have been rejected.
140002	OperationType is different between batch file and SOAP request.
140003	When processing the batch file, the number of data lines exceeds the maximum (default 100k, excluding head line and tail line).