Oracle® Communications
Diameter Signaling Router

IDIH Operations, Administration, and Maintenance Administrator's Guide

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Chapter 1

Introduction

Topics:

This chapter contains an overview of the OAM application of the Integrated Diameter Intelligence Hub. The contents include sections on the organization, scope, and audience of the documentation, as well how to receive customer support assistance.

Overview

This document provides information about the OAM application of the Integrated Diameter Intelligence Hub (IDIH).

The OAM application provides functionality to configure IDIH mediation for processing and storing TDR records. It also provides configuration so a user can view TDR record in the IDIH ProTrace application.

The OAM application is only available to users logging into IDIH as "idihadmin."

Scope and Audience

This documentation is intended for personnel who maintain operation of the DSR.

The integration of DIH capabilities into the DSR product allows for troubleshooting of issues that might be identified with the Diameter traffic that transmits on the DSR. These capabilities can supplement other network monitoring functions to help pinpoint quickly the root cause of signaling issues associated with connections, peer signaling nodes, or individual subscribers.

This manual does not describe how to install or replace software or hardware.

Manual Organization

Introduction contains general information about this document, how to contact *My Oracle Support (MOS)*, *Locate Product Documentation on the Oracle Technology Network Site*.

IDIH OAM Configuration provides information about configuring the IDIH OAM application.

Related Publications

For information about additional publications that are related to this document, refer to the *Related Publications Reference* document, which is published as a separate document on the Oracle Technology Network (OTN) site. See *Locate Product Documentation on the Oracle Technology Network Site* for more information.

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 **2** for Non-technical issue

You will be connected to a live agent who can assist you with MOS registration and provide Support Identifiers. Simply mention you are a Tekelec Customer new to MOS.

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.

Locate Product Documentation on the Oracle Technology Network Site

Oracle customer documentation is available on the web at the Oracle Technology Network (OTN) 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 *www.adobe.com*.

1. Log into the Oracle Technology Network site at *http://docs.oracle.com*.
2. Under **Applications**, click the link for **Communications**.
   The **Oracle Communications Documentation** window opens with Tekelec shown near the top.
3. Click **Oracle Communications Documentation for Tekelec Products**.
4. Navigate to your Product and then the Release Number, and click the **View** link (the **Download** link will retrieve the entire documentation set).

5. To download a file to your location, right-click the PDF link and select **Save Target As**.

Chapter 2

IDIH OAM Configuration

Topics:

This chapter provides information about how to configure the IDIH OAM application.

Accessing OAM

To open OAM, follow these steps:

1. Log in to IDIH .
   The IDIH Application board is displayed.
2. Click **OAM**.
   The OAM home page is displayed.

Setting User Preferences on IDIH Dashboard

Once inside IDIH, a user can set User Preferences. These include:

- Time specifications (date format, time zone, etc.)
- Enumeration values (numerals vs. text)

Setting Time Format

Follow these steps to set the time format:

1. Click **User Preferences** on the Application board.
   The User Preferences screen is displayed.
2. Click the **Date/Time** tab.
   The Date/Time screen is displayed. The red asterisk denotes a required field.

   Note: Use the tips on the screen to help configure the time format.

3. Enter the format for these time-related displays.
   - **Date format**
   - **Time format**
   - **Date and time fields**
4. Select the formats for these time-related displays by using the drop-down arrow.
   - **Duration fields** - how the hours, minutes, seconds, and milliseconds of the Time format is displayed
   - **Time zone**

     Note: The local time zone must be chosen to get local time.
5. To reset the time-related displays to default settings, click **Reset**.
6. Click **Apply** to save settings.

Setting Mapping Preferences

The user can set the Mapping settings using the User Preferences feature.

Follow these steps to set Mapping preferences.

1. Click **User Preferences** in the Application board.
   The User Preferences screen is displayed.
2. Click the **Mapping** tab.
   The Mapping screen is displayed.
3. Check **Translate ENUM values** to display text instead of numerals.

   Enumeration is used by TDRs to display text values instead of numeric. Rather than showing the numeral for Alarm Severity, the user interface will show the actual word, such as "Major" or "Critical."
4. Check **IP Address to Node Name** to translate an IP Address to a textual Node Name.
5. To reset the Mapping values to the default, click **Reset**.
6. Click **Apply** to save the changes.

Overview of the IDIH OAM

The IDIH OAM application provides functionality which configures IDIH mediation for processing, storing, and viewing TDR records. The configuration to process and store records is done automatically during installation. The IDIH OAM application is accessed from the IDIH application server and is restricted to user *idihadmin*. This application is not intended to be an everyday use application. Some of the actions should only ever be used by design level personnel in rare debugging situations. Other actions would be used during initial setup for customizing TDR record and decode viewing.

Actions only by design level personnel:

- Dictionary Delete
- Record Table Delete
- Dictionary Add
- Record Table Add
- DSR Diameter I/F <-> Record Table Mapping Change

Actions during setup (custom settings), could be accessed post setup:

- SSO Local Zone Change
- SSO Remote Zone(s) Add/Delete
- SSO Domain Change
- Dictionary Field Display Changes or Hiding
- AVP Display Hiding

Initial Launch of the IDIH OAM Application

The available main menus are:

- Home - Navigate to other applications available from the IDIH Portal.

  - Home - IDIH Portal
  - Maintenance
- Mediation - Navigate to the following IDIH Mediation views:
  - Server
  - Record Table
  - Dictionary
  - Data Warehouse
- Application - Navigate to IDIH OAM specific application views (DSR only supported at this time):
  - DSR
- System - Navigate to IDIH (DIH) System Configuration views:
  - Single Sign On Zones (SSO)
  - AVP Hiding
  - Apply Changes
- Help - Access to the user manual, etc.

Auto Configuration

The configuration required for the IDIH to receive, create, and store records is done automatically during IDIH product install/deployment. No further manual configuration is required from the IDIH OAM GUI for that chain of operations to occur.

View IDIH Mediation Server

Displays the internal configuration for the Application Server to communicate with the IDIH Mediation. Fields for display are:

- Name: There is only one preconfigured server for this release.
- Host/IP Address: Internal IP of the IDIH Mediation server.
- Port: The port on the server's internal interface used for communication by the Application server.
- Description: Free form text.
- Pending Update Applied: Indicates if an update has been applied

View IDIH Data Warehouse (DWH) Server

The Data Warehouse server contains all of the stored IDIH records form the IMP. Fields for display are:

- Name: There is only one preconfigured server for this release.
- Host/IP Address: Internal IP of the DWH server.

- Type: The type of DWH (e.g. Oracle, MySQL). There is only one Oracle DWH in this release.
- Description - Free form text.

View IDIH Dictionary List

A *Dictionary* contains metadata that describes the format of the data contained in a Record Table, or *data bucket*. All required dictionaries are pre-configured automatically during deployment. Fields displayed are:

- Name
- Version
- Type

Modifying Dictionary Display Fields

Some attributes of dictionary fields can be modified, masked, or set not to display at all.

The display changes to show the fields for the selected dictionary are shown on the *Dictionary Field Display* tab.

The following fields can be changed:

- Short Name
- Description
- Name
- Enumeration
- Filterable
- Displayable - If checked, field is displayed in ProTrace output
- Mask Action
  - None - No characters are hidden, *Masked Characters* value remains 0 (zero - not editable)
  - All - All characters are hidden, *Masked Characters* value remains 0 (zero - not editable)
  - From Start - Valid *Masked Characters* value is 0 - 2147483647
  - From End - Valid *Masked Characters* value is 0 - 2147483647

How to edit fields:

- To change a non-checkbox field, double click the field and enter/change the value. Pressing return or navigating to a new field/row will automatically save your changes.
- To change a checkbox field, just click the box to toggle the value. Again, pressing return or navigating away from the field will automatically the value.
- Use *Esc* key to discard a change while editing.

Modifying Enum Display Fields

If the dictionary field is an Enum field (field *Enumeration* check box has a check), then the Short Name value for each enumeration is editable. The enumeration values will appear automatically in a 2nd grid on the page, with a header of *Enum Value Mappings*.

Viewing the Dictionary Content

1. Select a row and click the **View Dictionary** icon.
   A read only dialog is displayed with the contents.
2. Click the **X (Cancel)** icon to close the dialog.

Deleting a Dictionary

1. Select a Dictionary row and click the **Delete** icon for that row.

   Note: Only dictionaries that are not associated with a Record Table could be successfully deleted.

2. The selected Dictionary is deleted.

Record Table List

A *Record Table* is synonymous with a *data bucket*. It is the logical name of the table (bucket) in the data warehouse that holds records. In this application, the records will be Diameter TTRs or statistics about Diameter TTRs. The following Record Table fields are displayed:

- Name
- Dictionary Name
- Dictionary Version
- Data Warehouse name
- Description

Add Record Table

1. Click the **Record Table Add** icon.
2. The **Add** dialog pops up.
3. The user does the following:
   - Enters new record table name
   - Selects a dictionary
   - Selects a DWH
   - Enters description text
4. Click the **X (Cancel)** icon to close the dialog and return to the list

Delete Record Table

1. Click the **Delete** icon for the desired row.

   Note: Only record tables not associated with an Application (e.g. DSR Diameter) could be removed.

2. The selected record table is deleted.

Application DSR Diameter Interfaces to Record Table Map List

The *Diameter Record Table Map* table shows which Record Table contains which Diameter I/F records

This matrix simply maps which Diameter traffic is stored into which record table (data bucket). Fields displayed are:

- Interface (e.g. Rx, Base)
- Record Table name
- Data Warehouse - physical location of the stored records
- IDIH Mediation - The IDIH Mediation processing and storing the records
- Mediation Input Sources

Modify Diameter I/F to Record Table Mapping

1. Select a row, then click the **Modify Mapping** icon.
   The **Modify Diameter Map Entry** dialog is displayed
2. Select a **Record Table** from the list, then click **Save**.

   Note: Only Record Tables that have a dictionary that supports the selected interface will be in the list.

   When the **Save** button is pressed, the changes are saved to the application server configuration database. The changes are not propagated to the Mediation component at this point and the application server OAM is considered out of sync with the Mediation's configuration.
3. An indication below the main menus is displayed to the user in the GUI indicating change(s) need be applied.
4. Click on the **changes indicator** to display the *Apply Changes* window
5. Optionally click the *extension* icon to display details about the change(s).
6. Click the **Apply Changes** icon in the mediation row to send the listed change(s) to the IDIH Mediation element. Upon success, the *Apply Changes* window will close and the notification bar will disappear. If IDIH Mediation fails to process the change request, an error dialog is presented to the user and the change indicator remains.

Single Sign On (SSO) View Local and Remote Zones

A remote SSO zone entry is required to allow one click launch of the IDIH ProTrace application from the DSR OAM GUI to succeed *without* requiring an additional login prompt from IDIH. As part of IDIH post installation, the user will be instructed to copy the *DSR OAM Local Zone X.509 Certificate* value and paste it into an *IDIH Remote Zone X.509 Certificate* field.

Other SSO configurations that could be done are updating the *IDIH SSO Local Zone* and changing the *IDIH SSO Domain*.

Change the SSO Local Zone Value

1. Click the **Edit** button in the SSO Local Zone frame to enable the field for editing.

   Note: Local Zone Name value is 1-15 alpha-numeric characters.

2. When finished editing, click **Save**.

Add SSO Remote Zone

1. Click the **Add** Remote Zone button.
2. Enter the *Remote Zone Name* and corresponding *Certificate* contents into the dialog
3. When finished editing, click **Save**.

Delete SSO Remote Zone

Click the **Delete** Remote Zone button for the desired row.

View IDIH SSO Domain

Access the **SSO Parameters** tab by first selecting **Single Sign On** under the **System** menu:

Change IDIH SSO Domain

1. Click the **Edit** button.
2. Update the value.
3. Click **Save**.

View Hidden AVPs

1. Access the Diameter **AVP Hiding** view from the *System* menu

   The AVP Hiding view displays two lists. Displayed AVPs (not hidden) and Hidden AVPs. For those AVP values that a user does not want displayed in the ProTrace application, they are shown in the Hidden AVP list.

2. The user drags an AVP from the displayed list to the hidden list for the values to then be hidden in ProTrace. To change a hidden AVP back to displayable, drag the AVP item from the hidden list to the displayed list.

Set AVP from Displayed to Hidden

1. Drag the desired AVP to the *Hidden AVPs* List.
2. The *Hidden AVPs* list is updated with the change.