Oracle® Communications Diameter Signaling Router

Diameter Common User's Guide

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Oracle® Communications Diameter Common User's Guide

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Chapter 1

Introduction

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The *Diameter Common User's Guide* and Help provide information about how to use the Diameter Common GUI pages to configure Network Identifiers and MP Profiles, and how to export and import configuration data for Diameter, Diameter Common, IPFE, MAP-Diameter Interworking, and DSR Applications.

Overview

The *Diameter Common User's Guide* and Help provide information about how to use the Diameter Common GUI pages to perform configuration and DSR Bulk Import/Export tasks.

The document provides the following types of information:

- Procedures to configure Diameter Common components
- Procedures to perform DSR Bulk Import/Export operations

Scope and Audience

The Diameter Common documentation is intended for anyone responsible for configuring and using the Diameter Common functions.

Users of this manual must have a working knowledge of telecommunications, of network installations, and of the product that is using the Diameter Common functions.

The Diameter Common software component is shared by multiple applications in the product line. For this reason, this document includes references to the shared applications, and describes GUI options that are not visible or applicable to SDM. For example, DSR applications (such as RBAR, FABR, CPA, and Policy DRA) and IPFE are currently not used by SDM, so disregard any references to these applications.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1: Admonishments

Icon	Description
	**Danger**: (This icon and text indicate the possibility of *personal injury*.)
	**Warning**: (This icon and text indicate the possibility of *equipment damage*.)

Icon	Description
	**Caution**: (This icon and text indicate the possibility of *service interruption*.)
	**Topple**: (This icon and text indicate the possibility of *personal injury* and *equipment damage*.)

Manual Organization

This manual is organized into the following chapters:

- *Introduction* contains general information about the Diameter Common help documentation, the organization of this manual, and how to get technical assistance.
- *Diameter Common on the NOAM* describes the configuration of the MCCMNC and MCCMNC Mapping Network Identifiers on the NOAM.
- *Diameter Common on the SOAM* describes the configuration of the MCC Ranges Network Identifiers and MPs (Profiles and Assignments) on the SOAM.
- *Diameter Common Bulk Import and Export* provides procedures and CSV file formats for use in DSR Bulk Import and Export of Diameter, Diameter Common, IPFE, and DSR Application configuration data on the NOAM and SOAM.

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.

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.

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

Diameter Common on the NOAM

Topics:

- *Overview.....14*
- *MCCMNC Configuration.....14*
- *MCCMNC Mapping Configuration.....18*

The **Diameter Common** GUI pages on the NOAM can be used for configuration of MCCMNC and MCCMNC Mapping Network Identifiers and for Bulk Import and Export functions.

Overview

The Diameter Common menu items on the NOAM provide access to GUI pages to perform the following tasks:

- Configure Diameter Common > Network Identifiers >MCCMNC (see *MCCMNC Configuration*)
- Configure Diameter Common > Network Identifiers >MCCMNC Mapping (see *MCCMNC Mapping Configuration*)
- Perform DSR Bulk Import/Export operations (see *Diameter Common Bulk Import and Export*)

MCCMNC Configuration

The **Diameter Common > Network Identifiers > MCCMNC** GUI pages are used to configure up to 2500 distinct combinations of Mobile Country Code (MCC) and Mobile Network Code (MNC).

The configured MCCMNC entries can be mapped to Diameter Realms, MSIN prefix digits, and CC+NDC combinations, using the **Diameter Common > Network Identifiers > MCCMNC Mapping** GUI page (see *MCCMNC Mapping Configuration*).

MCCMNC combinations are used by Address resolution applications like Full Address Based Resolution (FABR) and Range Based Address Resolution (RBAR), which need to categorize User Identities (digit strings) decoded from the Diameter Request AVPs as either MSISDN or IMSI, to allow looking up the User Identity in the appropriate lookup table.

Most of the time, these applications can clearly categorize the decoded User Identity based on:

- The configured Routing Entity Type
- The contents of the AVP

  For instance, if the User Identity has been decoded from a SIP URI that has a "+" sign before the digits (such as sig:+1-919-460-5500@oracle.com), it can be directly categorized as an MSISDN.

- The number of digits in the User Identity

In certain cases, none of these methods allow a clear categorization (for example, if the number of digits needs to be used and the received number of digits are applicable to both IMSIs and MSISDNs, and thus leads to an ambiguous determination; or if there is no ""+" sign before the digits). In such cases, a tie breaker procedure is required to categorize the digits as an IMSI or an MSISDN. The configured MCCMNC combinations can be used to provide a tie breaker mechanism in such cases, as follows:

- if FABR has been configured to decode an IMPU from a User Identity (digit string) but cannot determine whether the User Identity is an IMSI or an MSISDN based on digit analysis, FABR needs a tie breaker to categorize the User Identity properly.

  FABR extracts the first 5 or 6 digits of the User Identity and compares them against the list of configured 5-digit and 6-digit MCC-MNC combinations on the **Diameter Common > Network Identifiers > MCCMNC** GUI page.

  If a match occurs, the User Identity is considered to be an IMSI and is used for an IMSI lookup.

If a match does not occur, the User Identity is considered to be an MSISDN and is used for an MSISDN lookup.

- if RBAR has been configured to decode an IMPU/MSISDN from a User Identity (digit string) but cannot determine whether the User Identity is an IMSI or an MSISDN based on digit analysis, RBAR needs a tie breaker to categorize the user identity properly.

  RBAR extracts the first 5 or 6 digits of the User Identity and compares them against the list of configured 5-digit and 6-digit MCC-MNC combinations on the **Diameter Common > Network Identifiers > MCCMNC** GUI page .

  If a match occurs, the User Identity is considered to be an IMSI. RBAR will bypass the AVP; as RBAR does not support decoding an IMSI from a Routing Entity of IMPU or MSISDN.

  If a match does not occur, the User Identity is considered to be an MSISDN and is used for MSISDN lookup.

As described in *MCCMNC Mapping Configuration*, MCCMNC combinations and MCCMNC Mapping are used by:

- The MAP-Diameter Interworking Function to translate a Diameter Request message to a MAP Request message (ITU) or a MAP Request message to a Diameter Request message.
- Diameter Mediation to populate the Destination-Realm AVP based on the IMSI value present in a Request message.

On the **Diameter Common > Network Identifiers > MCCMNC** page, you can perform the following actions:

- Filter the list of entries, to display only the desired entries.
- Sort the list entries in ascending or descending order by by clicking the column heading. By default, the list is sorted by **MCC** and **MNC** in ascending ASCII order.
- Click the **Insert** button.

  The **Diameter Common > Network Identifiers > MCCMNC [Insert]** page opens. You can add new MCCMNC entries. If the maximum number of MCCMNC entries (2500) already exists in the system, the **Diameter Common > Network Identifiers > MCCMNC [Insert]** page will not open, and an error message is displayed.

- Select an MCCMNC entry in the list, and click the **Edit** button.

  The **Diameter Common > Network Identifiers > MCCMNC [Edit]** page opens. The selected MCCMNC entry can be edited.

- Select an MCCMNC entry in the list, and click the **Delete** button to remove the selected entry.

MCCMNC Elements

Table 2: MCCMNC Elements describes the fields on the **Diameter Common > Network Identifiers > MCCMNC** pages.

Table 2: MCCMNC Elements

Field (* indicates a required field)	Description	Value
* MCC	Mobile Country Code.	Format: Text box; numeric. Valid values are 0-999. Range: 3 digits
* Country Name	Country Name corresponding to the MCC.	Format: text box; alphanumeric string. Range: Up to 128 characters.
* MNC	Mobile Network Code	Format: Text box; numeric. Valid values are 0-999. Range: 2 or 3 digits
* Network Name	Network Name corresponding to the MNC.	Format: text box; ASCII printable characters; alphanumeric string. Range: Up to 128 characters.

Viewing MCCMNC Entries

Use this task to view all configured MCCMNC entries.

MCCMNC fields are described in *MCCMNC Elements*.

On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC**.

The **Diameter Common > Network Identifiers > MCCMNC** page appears with a list of configured **MCCMNC** entries.

Adding MCCMNC Entries

Use this task to configure new **MCCMNC** entries.

MCCMNC fields are described in *MCCMNC Elements*.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC**.

   The **Diameter Common > Network Identifiers > MCCMNC** page appears.

2. Click **Insert**.

   The **Diameter Common > Network Identifiers > MCCMNC [Insert]** page appears.

   If the maximum number of **MCCMNC** entries (2500) has already been configured in the system, the **Diameter Common > Network Identifiers > MCCMNC [Insert]** page will not open, and an error message will appear.

3. Enter a value for each field.
4. Click:

- **OK** to save the new entry and return to the **Diameter Common > Network Identifiers > MCCMNC** page.
- **Apply** to save the new entry and remain on this page. The data displayed on the page is updated.
- **Cancel** to return to the **Diameter Common > Network Identifiers > MCCMNC** page without saving any changes.

If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

- Any fields contain a value that is out of the allowed range
- Any required field is empty (not entered)
- Adding the new **MCCMNC** entry would cause the allowed maximum number of entries (2500) to be exceeded
- The combination of the **MCC** and **MNC** field values is not unique (already exists)

Editing MCCMNC Entries

Use this task to change **MCCMNC** entries.

MCCMNC fields are described in *MCCMNC Elements*.

When the **Diameter Common > Network Identifiers > MCCMNC [Edit]** page opens, the fields are populated with the current configured values.

Note: The **MCC** and **MNC** field values cannot be changed.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC**.

   The **Diameter Common > Network Identifiers > MCCMNC** page appears.

2. Select the **MCCMNC** entry to be changed.
3. Click the **Edit** button.

   The **Diameter Common > Network Identifiers > MCCMNC [Edit]** page appears.

4. Edit the fields that need to be changed.
5. Click:

   - **OK** to save the changes and return to the **Diameter Common > Network Identifiers > MCCMNC** page.
   - **Apply** to save the changes and remain on this page.
   - **Cancel** to return to the **Diameter Common > Network Identifiers > MCCMNC** page without saving any changes.

   If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

   - Any field contains values that are not valid or are out of range
   - Any required field is empty (not entered)

Deleting MCCMNC Entries

Use this task to delete an **MCCMNC** entry.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC**.

The **Diameter Common > Network Identifiers > MCCMNC** page appears.

2. Select the **MCCMNC** entry to be deleted.
3. Click the **Delete** button.

   A popup window appears to confirm the delete.

4. Click:
   - **OK** to delete the **MCCMNC** entry.
   - **Cancel** to cancel the delete function and return to the **Diameter Common > Network Identifiers > MCCMNC** page.

   If **OK** is clicked and the selected **MCCMNC** entry no longer exists (it was deleted by another user), an error message is displayed.

MCCMNC Mapping Configuration

The **Diameter Common > Network Identifiers > MCCMNC Mapping** pages are used to configure mapping of MCC+MNC combinations to Diameter Realms, MSIN prefix digits, and CC+NDC combinations.

The MCC+MNC combinations must first be configured using the **Diameter Common > Network Identifiers > MCCMNC** GUI pages (see *MCCMNC Configuration*) before the MCCMNC Mapping configuration is performed.

MCCMNC combinations and MCCMNC Mapping are used by:

- The MAP-Diameter Interworking Function to translate:
  - A Diameter Request message to a MAP Request message (ITU)

    If a Diameter Request message does not contain a Destination Host AVP, but does contain IMSI digits in a User-Name AVP, the MCCMNC Mapping configuration is used to translate the MCC and MNC in the IMSI to the CC and NDC that are populated in the SCCP Called Party Address (CdPA) of the MAP Request. A longest prefix match of IMSI digits (MCC+MNC+prefix digits) is performed.
  - A MAP Request message to a Diameter Request message

    If the GTA digits are in IMSI format (for ANSI this occurs if the SCCP CdPA Translation Type is 9, and for ITU this occurs if the SCCP CdPA Numbering Plan is E.212), then the MCCMNC Mapping configuration is used to translate the MCC and MNC in the IMSI to a Diameter Realm.

    The Diameter Realm is populated into the Destination-Realm AVP of the Diameter Request message.
- Diameter Mediation to populate the Destination-Realm AVP based on the IMSI value present in a Request message.

  Mediation retrieves the IMSI value from one of the following AVPs in the Request:

  1. Subscription-Id(Subscription-Id-Type=1)
  2. User-Name

- The first instance of an AVP that contains an IMSI is used.
- The Mediation Set Diameter Realm Action extracts the MCC and MNC values from the IMSI by prefix matching against the MCCMNC combinations configured on the **Diameter Common > Network Identifiers > MCCMNC** GUI page. The MCC and MNC cannot be extracted from the IMSI if there is no match found on this page.
- The Destination-Realm AVP is added or populated with the Realm that corresponds to the MCCMNC combination configured on the **Diameter Common > Network Identifiers > MCCMNC Mapping** GUI page.
- If no Realm is specified for the MCCMNC combination, the Destination-Realm is populated in 3GPP format "epc.mnc<MNC>.mcc<MCC>.3gppnetwork.org" , where <MNC> and <MCC> fields correspond to the MNC and MCC values extracted from the AVP containing the IMSI present in the Request.
- If the Destination-Realm AVP is not present in the message, the Action adds it.

On the **Diameter Common > Network Identifiers > MCCMNC Mapping** page, you can perform the following actions:

- Filter the list of entries, to display only the desired entries.
- Sort the list entries in ascending or descending order by clicking the column heading. By default, the list is sorted by **MCC** and **MNC** in ascending ASCII order.
- Click the **Insert** button.

  The **Diameter Common > Network Identifiers > MCCMNC Mapping [Insert]** page opens. You can add new MCCMNC Mapping entries. If the maximum number of MCCMNC Mapping entries (2500) already exists in the system, the **Diameter Common > Network Identifiers > MCCMNC Mapping [Insert]** page will not open, and an error message is displayed.

- Select an MCCMNC Mapping entry in the list, and click the **Edit** button.

  The **Diameter Common > Network Identifiers > MCCMNC Mapping [Edit]** page opens. The selected MCCMNC Mapping entry can be edited.

- Select an MCCMNC Mapping entry in the list, and click the **Delete** button to remove the selected entry.

MCCMNC Mapping Elements

Table 3: MCCMNC Mapping Elements describes the fields on the **Diameter Common > Network Identifiers > MCCMNC Mapping** pages.

Table 3: MCCMNC Mapping Elements

Field (* indicates a required field)	Description	Value
* MCCMNC	Country and Network Code.	Format: Pulldown list. Range: Configured MCCMNC entries
Country Name	Country Name corresponding to the MCC.	Read-only field

Field (* indicates a required field)	Description	Value
		Format: text box; alphanumeric string. Range: Country Name configured for selected MCCMNC entry.
Network Name	Network Name corresponding to the MNC.	Read-only field Format: text box; ASCII printable characters; alphanumeric string. Range: Network Name configured for selected MCCMNC entry.
MSIN Prefix Digits	Optional MSIN prefix digits that form a "MCC+MNC+MSIN prefix digits" string. An empty MSIN prefix digits entry (0 digits) is used to map MCC+MNC to configuration data. If MSIN prefix digits are specified, it maps "MCC+MNC+ MSIN prefix digits" to configuration data.	Format: text box; numeric string. Valid values are 0-9999999999 Range: 0-10 digits Default: Empty string (null)
CCNDC	Optional Country Code (CC) plus National Destination Code (NDC) that is associated with the "MCC+MNC+ optional MSIN Prefix Digits".	Format: text box; numeric string. Valid values are 0-999999999999999 Range: 0-15 digits Default: Empty string (null)
Realm	Diameter Realm that is associated with the "MCC+MNC+ optional MSIN Prefix Digits"	Format: string consisting of a list of labels separated by dots. A label can contain letters, digits, dash (-), and underscore (_). A label must begin with a letter, digit, or underscore, and must end with a letter or digit. Underscore can be used only as the first character. Range: A valid Realm; Realm - up to 255 characters; label - up to 63 characters
Description	Optional description or note about this entry.	Format: text box Range 0-255 characters

Viewing MCCMNC Mapping Entries

Use this task to view all configured MCCMNC Mapping entries.

MCCMNC fields are described in *MCCMNC Mapping Elements*.

On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC** > **Mapping**.

The **Diameter Common > Network Identifiers > MCCMNC Mapping** page appears with a list of configured **MCCMNC Mapping** entries.

Adding MCCMNC Mapping Entries

Use this task to configure new **MCCMNC Mapping** entries.

MCCMNC Mapping fields are described in *MCCMNC Mapping Elements*.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC Mapping**.

   The **Diameter Common > Network Identifiers > MCCMNC Mapping** page appears.

2. Click **Insert**.

   The **Diameter Common > Network Identifiers > MCCMNC Mapping [Insert]** page appears.

   If the maximum number of **MCCMNC** entries (2500) has already been configured in the system, the **Diameter Common > Network Identifiers > MCCMNC Mapping [Insert]** page will not open, and an error message will appear.

3. Enter a value for each field.
4. Click:

   - **OK** to save the new entry and return to the **Diameter Common > Network Identifiers > MCCMNC Mapping** page.
   - **Apply** to save the new entry and remain on this page. The data displayed on the page is updated.
   - **Cancel** to return to the **Diameter Common > Network Identifiers > MCCMNC Mapping** page without saving any changes.

   If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

   - Any fields contain a value that is out of the allowed range
   - Any required field is empty (not entered)
   - Adding the new **MCCMNC Mapping** entry would cause the allowed maximum number of entries (2500) to be exceeded
   - The **MCC+MNC+MSIN Prefix Digits** entry is not unique (already exists)

Editing MCCMNC Mapping Entries

Use this task to change **MCCMNC Mapping** entries.

MCCMNC fields are described in *MCCMNC Mapping Elements*.

When the **Diameter Common > Network Identifiers > MCCMNC Mapping [Edit]** page opens, the fields are populated with the current configured values.

Note: The **MCC** and **MNC** field values cannot be changed.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC Mapping**.

   The **Diameter Common > Network Identifiers > MCCMNC Mapping** page appears.

2. Select the **MCCMNC Mapping** entry to be changed.
3. Click the **Edit** button.

   The **Diameter Common > Network Identifiers > MCCMNC Mapping [Edit]** page appears.

4. Change the field values as needed.
5. Click:

   - **OK** to save the changes and return to the **Diameter Common > Network Identifiers > MCCMNC Mapping** page.
   - **Apply** to save the changes and remain on this page.
   - **Cancel** to return to the **Diameter Common > Network Identifiers > MCCMNC Mapping** page without saving any changes.

   If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

   - Any field contains values that are not valid or are out of range
   - Any required field is empty (not entered)

Deleting MCCMNC Mapping Entries

Use this task to delete an **MCCMNC Mapping** entry.

1. On the NOAM, select **Diameter Common** > **Network Identifiers** > **MCCMNC Mapping**.

   The **Diameter Common > Network Identifiers > MCCMNC Mapping** page appears.

2. Select the **MCCMNC Mapping** entry to be deleted.
3. Click the **Delete** button.

   A popup window appears to confirm the delete.

4. Click:

   - **OK** to delete the **MCCMNC Mapping** entry.
   - **Cancel** to cancel the delete function and return to the **Diameter Common > Network Identifiers > MCCMNC Mapping** page.

   If **OK** is clicked and the selected **MCCMNC Mapping** entry no longer exists (it was deleted by another user), an error message is displayed.

Chapter 3

Diameter Common on the SOAM

Topics:

- *Overview.....24*
- *MCC Ranges Configuration.....24*
- *MPs.....27*

The **Diameter Common** GUI pages on the SOAM can be used for configuration of the MCC Ranges Network Identifiers, and for Bulk Import and Export functions.

Overview

The Diameter Common menu items on the SOAM provide access to GUI pages to perform the following tasks:

- Configure Diameter Common > Network Identifiers >MCC Ranges (see *MCC Ranges Configuration*)
- Configure Diameter Common > MPs > Profiles and Diameter Common > MPs > Profile Assignments (see *MPs*)
- Perform DSR Bulk Import/Export operations (see *Diameter Common Bulk Import and Export*)

MCC Ranges Configuration

The **MCC Ranges** component defines up to 10 distinct, non-overlapping Mobile Country Code (MCC) Ranges, which are the first 3 digits of the IMSI. The FABR and RBAR applications consider an IMSI to be invalid for address lookup if the MCC portion of the decoded IMSI falls within any of the Reserved MCC Range configured by the user.

While searching for an IMSI in the Diameter message AVPs, if the MCC digits portion of decoded IMSI digits fall within one of the configured **MCC Ranges**, the IMSI digits will NOT be used for further Address Resolution. The FABR and RBAR applications will continue to search other AVP instances (if present) , or next priority AVP (if configured) or next Routing Entity (if configured) for a valid address.

The two following MCC Ranges are reserved by telephony standards and are recommended to be configured in addition to other user-specified ranges:

- 000-199
- 800-899

On the **Diameter Common > Network Identifiers > MCC Ranges** page, you can perform the following actions:

- Filter the list of **MCC Ranges**, to display only the desired **MCC Ranges**.
- Sort the list entries in ascending or descending order by **Start MCC** values or **End MCC** values by clicking the column heading. By default, the list is sorted by **Start MCC** values in ascending ASCII order.
- Click the **Insert** button.

  The **Diameter Common > Network Identifiers > MCC Ranges [Insert]** page opens. You can add new MCC Ranges. If the maximum number of MCC Ranges (10) already exists in the system, the **Diameter Common > Network Identifiers > MCC Ranges [Insert]** page will not open, and an error message is displayed.

- Select an MCC Range in the list, and click the **Edit** button.

  The **Diameter Common > Network Identifiers > MCC Ranges [Edit]** page opens. The **Start MCC**, **End MCC**, or both for the selected MCC Range can be edited.

- Select an MCC Range in the list, and click the **Delete** button to remove the selected MCC Range.

MCC Ranges Elements

Table 4: MCC Ranges Elements describes the fields on the **Diameter Common > Network Identifiers > MCC Ranges** pages.

Table 4: MCC Ranges Elements

Field (* indicates a required field)	Description	Value
* Start MCC	The start value of the Reserved Mobile Country Code Range.	Format: text box; numeric. Range: 0-999
* End MCC	The end value of the Reserved Mobile Country Code Range.	Format: text box; numeric. Range: 0-999

Viewing MCC Ranges

Use this task to view all configured MCC Ranges.

MCC Ranges fields are described in *MCC Ranges Elements*.

On the SOAM, select **Diameter Common** > **Network Identifiers** > **MCC Ranges**.

The **Diameter Common > Network Identifiers > MCC Ranges** page appears with a list of configured **MCC Ranges**.

Adding MCC Ranges

Use this task to configure new **MCC Ranges**.

MCC Ranges fields are described in *MCC Ranges Elements*.

1. On the SOAM, select **Diameter Common** > **Network Identifiers** > **MCC Ranges**.

   The **Diameter Common > Network Identifiers > MCC Ranges** page appears.

2. Click **Insert**.

   The **Diameter Common > Network Identifiers > MCC Ranges** page appears.

   If the maximum number of **MCC Ranges** (10) has already been configured in the system, the **Diameter Common > Network Identifiers > MCC Ranges [Insert]** page will not open, and an error message will appear.

3. Enter a value for the **Start MCC** field.
4. Enter a value for the **End MCC** field.
5. Click:
   - **OK** to save the new **MCC Range** and return to the **Diameter Common > Network Identifiers > MCC Ranges** page.

- **Apply** to save the new **MCC Range** and remain on this page. The data displayed on the page is updated.
- **Cancel** to return to the **Diameter Common > Network Identifiers > MCC Ranges** page without saving any changes.

If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

- Any fields contain a value that is out of the allowed range
- Any required field is empty (not entered)
- Adding the new **MCC Range** would cause the maximum number of **MCC Ranges** (10) to be exceeded
- The **Start MCC** field value is greater than the End MCC field value
- The **MCC Range** created lies within the ranges of other **MCC Ranges**

Editing MCC Ranges

Use this task to change **MCC Ranges**.

MCC Ranges fields are described in *MCC Ranges Elements*.

When the **Diameter Common > Network Identifiers > MCC Ranges [Edit]** page opens, the fields are populated with the current configured values.

1. On the SOAM, select **Diameter Common** > **Network Identifiers** > **MCC Ranges**.

   The **Diameter Common > Network Identifiers > MCC Ranges** page appears.

2. Select the **MCC Range** to be changed.
3. Click the **Edit** button.

   The **Diameter Common > Network Identifiers > MCC Ranges [Edit]** page appears.

4. Change the **Start MCC** value, the **End MCC** value, or both.
5. Click:

   - **OK** to save the changes and return to the **Diameter Common > Network Identifiers > MCC Ranges** page.
   - **Apply** to save the changes and remain on this page.
   - **Cancel** to return to the **Diameter Common > Network Identifiers > MCC Ranges** page without saving any changes.

   If **OK** or **Apply** is clicked and any of the following conditions exist, an error message appears:

   - The selected **MCC Range** no longer exists; it has been deleted by another user
   - Any field contains values that are out of range
   - Any required field is empty (not entered)
   - The **Start MCC** field value is greater than the **End MCC** field value
   - The **MCC Range** created lies within the ranges of other MCC Ranges

Deleting MCC Ranges

Use this task to delete an **MCC Ranges** entry.

1. On the SOAM, select **Diameter Common** > **Network Identifiers** > **MCC Ranges**.

   The **Diameter Common > Network Identifiers > MCC Ranges** page appears.

2. Select the **MCC Ranges** entry to be deleted.
3. Click the **Delete** button.

   A popup window appears to confirm the delete.

4. Click:

   - **OK** to delete the **MCC Ranges** entry.
   - **Cancel** to cancel the delete function and return to the **Diameter Common > Network Identifiers > MCC Ranges** page.

   If **OK** is clicked and the selected **MCC Ranges** entry no longer exists (it was deleted by another user), an error message is displayed.

MPs

A Diameter Agent Message Processor (DA-MP) is a computer or blade hosting the Diameter base protocol and one or more DSR Applications. Multiple DA-MPs are supported in a DSR system.

An SS7 Message Processor (SS7-MP) is a computer or blade hosting the MD-IWF SS7/TCAP Application that is used in translating MAP Request messages to Diameter Request messages.

An MP Profile defines maximum and threshold values for an MP. An MP Profile must be assigned to each DA-MP and SS7-MP in the system configuration. Select the appropriate MP Profile according to the hardware and application or applications that are running on the MP, as shown in *Table 5: MP Profile Selection*. The only supported combination of session and database applications running on the same DA-MP is Policy DRA and RBAR.

Note: The profiles listed here and that appear on the MPs GUI pages might not include all of the profiles that are available for all Oracle Communications products. Product-specific profiles and instructions for assigning them are included in the *Installation Guide* for each product.

Table 5: MP Profile Selection

Hardware	Application(s)	MP Profile
DA-MPs		
G6 half height blade	Diameter Relay	G6:Relay
G8 half height blade	Diameter Relay	G8:Relay
G7 full height blade	Diameter Relay	G7:Relay
Virtual DA-MP	Diameter Relay	VM:Relay
G6 half height blade	Diameter Relay + FABR or RBAR	G6:Database
G8 half height blade	Diameter Relay + FABR or RBAR	G8:Database

Hardware	Application(s)	MP Profile
G7 full height blade	Diameter Relay + FABR or RBAR	G7:Database
Virtual DA-MP	Diameter Relay + FABR or RBAR	VM:Database
G6 half height blade	Diameter Relay + CPA or Policy DRA	G6:Session
G8 half height blade	Diameter Relay + CPA or Policy DRA	G8:Session
G7 full height blade	Diameter Relay + CPA or Policy DRA	G7:Session
Virtual DA-MP	Diameter Relay + CPA or Policy DRA	VM:Session
G6 half height blade	Diameter Relay + RBAR + Policy DRA	G6:Session_Database
G8 half height blade	Diameter Relay + RBAR + Policy DRA	G8:Session_Database
G7 full height blade	Diameter Relay + RBAR + Policy DRA	G7:Session_Database
SS7-MPs		
G8 half height blade	MAP-to-Diameter Interworking Function (MD-IWF) Application	G8:MD-IWF
Virtual SS7 -MP	MAP-to-Diameter Interworking Function (MD-IWF) Application	VM:MD-IWF

MPs Profiles Elements describes the user-configurable and engineering-configured values in an MP Profile.

Note: The Ingress Message Rate Alarm Threshold values for the Policy DRA application are user-configurable on the NOAM **Policy DRA > Configuration > Congestion Options** GUI page; they are not shown in *MPs Profiles Elements*.

MPs Profiles Elements

Table 6: MPs Profiles DA-MP Elements describes the fields on the DA-MP tab on the **Diameter Common > MPs > Profiles** page. **The Data Input Notes** apply only to the DA-MP Configurable elements.

Table 7: MPs Profiles SS7-MP Elements describes the view-only fields on the SS7-MP tab on the **Diameter Common > MPs > Profiles** page.

Table 6: MPs Profiles DA-MP Elements

Field (* indicates required field)	Description	Data Input Notes
DA-MP Configurable		
* CL1 Discard Percent	The percentage below DA-MP Engineered Ingress MPS that DA-MP Overload Control will police the total DA-MP ingress MPS when the DA-MP is in congestion level 1.	Format: text box Range: 0 - 50% Default: 0
* CL2 Discard Percent	The percentage below DA-MP Engineered Ingress MPS that DA-MP Overload Control	Format: text box

Field (* indicates required field)	Description	Data Input Notes
	will police the total DA-MP ingress MPS to when the DA-MP is in congestion level 2.	Range: 10 - 50% Default: 20
* CL3 Discard Percent	The percentage below DA-MP Engineered Ingress MPS that DA-MP Overload Control will police the total DA-MP ingress MPS to when the DA-MP is in congestion level 3.	Format: text box Range: 20 - 50% Default: 40
* Congestion Discard Policy	The order of priority and/or color-based traffic segments to consider when determining discard candidates for the application of treatment during DA-MP Congestion processing.	Format: pulldown list Range: Priority Only, Color Within Priority, Priority Within Color Default: Priority Only
* DOC Message Discard Percentage	The percent of total DA-MP ingress MPS above DA-MP Engineered Ingress MPS that DA-MP Overload Control will discard when the DA-MP is in danger of congestion.	Format: text box Range: 0 - 50 % Default: 20
DOC Discard Policy	The order of priority and/or color-based traffic segments to consider when determining discard candidates for the application of treatment during DA-MP DOC processing.	Format: pulldown list Range: Priority Only, Color Within Priority, Priority Within Color Default: Priority Only
DA-MP View-Only		
Maximum Connections	The maximum number of Diameter connections the DA-MP can have configured at any one time	Engineering-configured
Engineered Ingress MPS	The maximum ingress message rate, in messages per second, that the DA-MP will support without overload. This value limits the total Reserved Ingress MPS of all Diameter Connections assigned to the DA-MP.	Engineering-configured
Maximum Ingress Message Rate Minor Alarm Set Threshold	The ingress message rate, in messages per second, above which a minor alarm is raised.	Engineering-configured
Maximum Ingress Message Rate Minor Alarm Clear Threshold	The ingress message rate, in messages per second, below which a minor alarm is cleared.	Engineering-configured
Maximum Ingress Message Rate Major Alarm Set Threshold	The ingress message rate, in messages per second, above which a major alarm is raised.	Engineering-configured

Field (* indicates required field)	Description	Data Input Notes
Maximum Ingress Message Rate Major Alarm Clear Threshold	The ingress message rate, in messages per second, below which a major alarm is cleared.	Engineering-configured
Maximum Ingress Message Rate Critical Alarm Set Threshold	The ingress message rate, in messages per second, above which a critical alarm is raised.	Engineering-configured
Maximum Ingress Message Rate Critical Alarm Clear Threshold	The ingress message rate, in messages per second, below which a critical alarm is cleared.	Engineering-configured
Routing Message Rate Minor Alarm Set Threshold	The Diameter message processing rate, in messages per second, above which a minor alarm is raised.	Engineering-configured
Routing Message Rate Minor Alarm Clear Threshold	The Diameter message processing rate, in messages per second, below which a minor alarm is cleared.	Engineering-configured
Routing Message Rate Major Alarm Set Threshold	The Diameter message processing rate, in messages per second, above which a major alarm is raised.	Engineering-configured
Routing Message Rate Major Alarm Clear Threshold	The Diameter message processing rate, in messages per second, below which a major alarm is cleared.	Engineering-configured
Routing Message Rate Critical Alarm Set Threshold	The Diameter message processing rate, in messages per second, above which a critical alarm is raised.	Engineering-configured
Routing Message Rate Critical Alarm Clear Threshold	The Diameter message processing rate, in messages per second, below which a critical alarm is cleared.	Engineering-configured
RBAR Receive Message Rate Minor Alarm Set Threshold	The ingress request rate for the RBAR Application, in messages per second, above which a minor alarm is raised.	Engineering-configured
RBAR Receive Message Rate Minor Alarm Clear Threshold	The ingress request rate for the RBAR Application, in messages per second, below which a minor alarm is cleared.	Engineering-configured
RBAR Receive Message Rate Major Alarm Set Threshold	The ingress request rate for the RBAR Application, in messages per second, above which a major alarm is raised.	Engineering-configured
RBAR Receive Message Rate Major Alarm Clear Threshold	The ingress request rate for the RBAR Application, in messages per second, below which a major alarm is cleared.	Engineering-configured

Field (* indicates required field)	Description	Data Input Notes
RBAR Receive Message Rate Critical Alarm Set Threshold	The ingress request rate for the RBAR Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
RBAR Receive Message Rate Critical Alarm Clear Threshold	The ingress request rate for the RBAR Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
FABR Receive Message Rate Minor Alarm Set Threshold	The ingress request rate for the FABR Application, in messages per second, above which a minor alarm is raised.	Engineering-configured
FABR Receive Message Rate Minor Alarm Clear Threshold	The ingress request rate for the FABR Application, in messages per second, below which a minor alarm is cleared.	Engineering-configured
FABR Receive Message Rate Major Alarm Set Threshold	The ingress request rate for the FABR Application, in messages per second, above which a major alarm is raised.	Engineering-configured
FABR Receive Message Rate Major Alarm Clear Threshold	The ingress request rate for the FABR Application, in messages per second, below which a major alarm is cleared.	Engineering-configured
FABR Receive Message Rate Critical Alarm Set Threshold	The ingress request rate for the FABR Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
FABR Receive Message Rate Critical Alarm Clear Threshold	The ingress request rate for the FABR Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
CPA Receive Message Rate Minor Alarm Set Threshold	The ingress request rate for the CPA Application, in messages per second, above which a minor alarm is raised.	Engineering-configured
CPA Receive Message Rate Minor Alarm Clear Threshold	The ingress request rate for the CPA Application, in messages per second, below which a minor alarm is cleared.	Engineering-configured
CPA Receive Message Rate Major Alarm Set Threshold	The ingress request rate for the CPA Application, in messages per second, above which a major alarm is raised.	Engineering-configured
CPA Receive Message Rate Major Alarm Clear Threshold	The ingress request rate for the CPA Application, in messages per second, below which a major alarm is cleared.	Engineering-configured
CPA Receive Message Rate Critical Alarm Set Threshold	The ingress request rate for the CPA Application, in messages per second, above which a critical alarm is raised.	Engineering-configured

Field (* indicates required field)	Description	Data Input Notes
CPA Receive Message Rate Critical Alarm Clear Threshold	The ingress request rate for the CPA Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
DM-IWF Receive Message Rate Minor Alarm Set Threshold	The ingress request rate for the DM-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
DM-IWF Receive Message Rate Minor Alarm Clear Threshold	The ingress request rate for the DM-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
DM-IWF Receive Message Rate Major Alarm Set Threshold	The ingress request rate for the DM-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
DM-IWF Receive Message Rate Major Alarm Clear Threshold	The ingress request rate for the DM-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
DM-IWF Receive Message Rate Critical Alarm Set Threshold	The ingress request rate for the DM-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
DM-IWF Receive Message Rate Critical Alarm Clear Threshold	The ingress request rate for the DM-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured

Table 7: MPs Profiles SS7-MP Elements

Field	Description	Data Input Notes
SS7-MP View-Only		
MD-IWF Receive Message Rate Minor Alarm Set Threshold	The ingress request rate for the MD-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
MD-IWF Receive Message Rate Minor Alarm Clear Threshold	The ingress request rate for the MD-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
MD-IWF Receive Message Rate Major Alarm Set Threshold	The ingress request rate for the MD-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured
MD-IWF Receive Message Rate Major Alarm Clear Threshold	The ingress request rate for the MD-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured
MD-IWF Receive Message Rate Critical Alarm Set Threshold	The ingress request rate for the MD-IWF Application, in messages per second, above which a critical alarm is raised.	Engineering-configured

Field	Description	Data Input Notes
MD-IWF Receive Message Rate Critical Alarm Clear Threshold	The ingress request rate for the MD-IWF Application, in messages per second, below which a critical alarm is cleared.	Engineering-configured

Viewing MP Profiles

Use this task to view the available MP Profiles.

For information about the MP Profile values see *MPs*. and *MPs Profiles Elements*

1. On the SOAM, select **Diameter Common** > **MPs** > **Profiles**.
   The **Diameter Common > MPs > Profiles** page appears.
2. Click the DA-MP tab and the MP type tabs at the top of the table to view the MP Profile settings for the DA-MP types.
3. Click the SS7-MP tab and the MP type tabs at the top of the table to view the MP Profile settings for the SS7-MP types.

Editing Configurable MP Profile Parameters

Use this task to edit the values for configurable parameters in each MP Profile type that will be assigned to a DA-MP in the DSR.

The configurable parameters are described in *MPs Profiles Elements*.

1. Select **Diameter Common** > **MPs** > **Profiles**.
   The **Diameter Common> Configuration > MPs > Profiles** page appears.
2. For each MP Profile type, edit the values for the configurable parameters.
3. Click:
   - **Apply** to save the edited parameter values.
   - **Cancel** to reset the parameter values to their previous setting.

MPs Profile Assignments Elements

Table 8: MPs Profile Assignments Elements describes the fields on the **Diameter Common > MPs > Profile Assignments** page.

Table 8: MPs Profile Assignments Elements

Field	Description	Data Input Notes
DA-MP SS7-MP	The Hostname of the MP. Active and Standby MP pairs are listed on the same line; they have the same type of Profile assigned.	View-only

Field	Description	Data Input Notes
	MPs that are stand-alone or that belong to multi-active server groups will have lines of their own.	
MP Profile	MP Profile assigned to the MP.	Format: Pulldown list Range: Valid Profiles for the type of MP
current value	The current MP Profile for each MP, and a description of the MP.	View-only

Assigning MP Profiles to MPs

Use this task to assign an MP Profile to each DA-MP and SS7-MP in the system.

Note: An MP Profile assignment does not take effect until the MP has been restarted.

MPs Profile Assignments Elements describes the MP Profile Assignments elements.

1. Select **Diameter Common** > **MPs** > **Profile Assignments**.
   The **Diameter Common > MPs > Profile Assignments** page appears.
2. For each DA-MP or SS7-MP, select one of the available MP Profiles. See *Table 5: MP Profile Selection* for help in selecting the appropriate MP Profile.
3. Click:
   - **Assign** to assign the selected MP Profiles to the MPs.
   - **Cancel** to reset the MP Profile assignments to their previous setting.

   To correct a warning that a Standby MP has a different MP Profile assignment than its corresponding Active MP, reassign the desired MP Profile to the Active/Standby MP pair on this page.

Chapter 4

Diameter Common Bulk Import and Export

Topics:

- *DSR Bulk Import.....36*
- *DSR Bulk Export.....45*

The **Diameter Common > Import** and **Diameter Common > Export** GUI pages provide access to functions for exporting and importing configuration data for Diameter and Diameter Common components, IPFE, MAP-Diameter Interworking, and DSR Applications.

DSR Bulk Import

The DSR Bulk Import operations use configuration data in ASCII Comma-Separated Values (CSV) files (.csv), to insert new data into, update existing data in, or delete existing data from the Diameter Configuration and Diameter Common, IPFE Configuration, or DSR Applications (FABR, RBAR, Policy DRA, GLA, CPA and Charging SBR; and MD-IWF and DM-IWF) configuration data in the system.

Import CSV Files

Import CSV files can be created by using a DSR Bulk Export operation, or can be manually created using a text editor. The CSV file formats are described in *Diameter and Diameter Common CSV File Formats and Contents*.

Caution: The format of each Import CSV file record must be compatible with the configuration data in the current DSR release in the system.

- Configuration data refers to any data that is configured for one of the **Export Application** types (Diameter, FABR, RBAR, CPA, Policy DRA, GLA, SBR, MDIWF; IPFE).
- For the "Diameter" **Export Application** type, configuration data refers to any data that is configured using the GUI pages that are available from the **Diameter Configuration** menu folder, and the **Diameter Common > Network Identifiers** and **Diameter Common > MPs** menu folders.

  Note: Diameter > AVP Dictionary configuration data cannot be imported using the Bulk Export function.

  Note: Diameter Mediation configuration data cannot be imported with DSR Bulk Import operations; Mediation has its own Import and Export functions.

- Each file can contain one or more records of the same format (for one configuration component, such as records for several Diameter Configuration Connections); the entire format for each record must be contained in one line of the file.

Files that are created using the DSR Bulk Export operation can be exported either to the Status & Manage File Management Directory (**Status & Manage > Files** page), or to the local Export Server Directory.

For files that are exported to the Export Server Directory,

- If a remote Export Server has been configured (see the **Administration > Remote Servers > Data Export** page), the files in the Export Server Directory are automatically transferred to the configured remote Export Server and are deleted from the Export Server Directory. The transferred files do not appear in the list on the local system **Status & Manage > Files** page or in the list on the **Diameter > Configuration > Import** page.
- If a remote Export Server has not been configured, the files in the Export Server Directory appear in the list on the **Status & Manage > Tasks > Active Tasks** page, and also appear in the list on the local system **Status & Manage > Files** page, but not on the **Diameter > Configuration > Import** page.

For files that are exported to the File Management Directory,

- The files appear in the File Management area list on the local system **Status & Manage > Files** page and in the list on the **Diameter > Configuration > Import** page.

- The files can be downloaded, edited, uploaded, and used for Import operations.
  - Import CSV files must be in the File Management area of the local system before they can be used for Import operations on the local system.
  - The **Download** function on the **Status & Manage > Files** page can be used to download the files to a location off of the local system for editing or transfer to another system.
  - The **Upload** function on the **Status & Manage > Files** page can be used to upload the files to the File Management area of the local system.

For files that are created manually using a text editor on a computer,

- Import CSV files that are located off of the local system must be uploaded to the File Management area of the local system before they can be used for Import operations on the local system.
- The **Upload** function on the **Status & Manage > Files** page can be used to upload the files to the File Management area of the local system.

Import Operations

Caution: Bulk Import can degrade the performance of the DA-MP and should be performed only in the maintenance window.

The CSV files that are used for Import operations must be in the local File Management area on the OAM where the data can be configured:

- The NOAM for Diameter Topology Hiding data, network-wide Policy DRA data, and MAP-Diameter Interworking data for MD-IWF
- The SOAM for the rest of the Diameter data, site-specific Policy DRA data, MAP-Diameter Interworking data for DM-IWF, IPFE data, MP Profiles and Profile Assignments data, and data for other DSR Applications.

The **Diameter Common > Import** page lists all files in the File Management area (on the **Status & Manage > Files** page) that have the .csv file extension.

The **File Management** button on the **Diameter Common > Import** page opens the **Status & Manage > Files** page.

The following Import operations can be performed:

Note: The **Application Type**, **Keyword**, and **Key** fields in each file record are used to identify the configuration data entry in the system.

- Insert new configuration data into the system

  Only data records that do not currently exist in the system are inserted. Any records in the file that do already exist in the system are treated and logged as failures.

- Update existing configuration data in the system

  Only data records that currently exist in the system can be updated. Any records in the file that do not already exist in the system, and any records that already exist in the system but are not updated in the file, are treated and logged as failures.

- Delete existing configuration data from the system

Only data records that currently exist in the system can be deleted. Any records in the file that do not exist in the system, and any records that exist in the system but are not changed in the file, are treated and logged as failures.

For the Import operation on each record in a file to be successful with no errors logged for the operation, each record must be valid for the configuration data format and for the Import operation that is being performed.

- Exported configuration data probably needs to be edited before the exported file is used for an Import operation on the same system.

  Insert from CSV operations - Records need to be added or edited to be able to insert new configuration data entries (such as connections or Route Lists). It is best to remove from the file any records for existing configuration data entries; they will be flagged as errors for an Insert operation. It might be difficult to distinguish between logged errors for existing data and for the records for the new entries.

  Update from CSV operations – Records need to be edited to change element values in existing configuration data entries. The Application Type, Keyword, and Key fields are NOT changed in the records, so that the entries can be identified as existing in the system. It is best to remove from the file any records for existing configuration data entries that are NOT being updated; they will be flagged as errors for an Insert operation. It might be difficult to distinguish between logged errors for existing records that are not updated and for the updated records.

  Delete from CSV operations – Using an exported file without editing it will remove from the system all of the configuration data entries in the exported records. If you do not want to delete all of the configuration data entries that are in the file records, edit the file and remove the records for the entries that are NOT to be deleted. Records for configuration data entries that do not exist in the system will be flagged as errors for a Delete operation. For example, if you want to delete 20 of 100 configured connections, edit the file and remove the records for the 80 connections that you do not want to delete.

- Files that were created using the DSR Bulk Export operation and are transferred to another system for importing configuration data on that other system may not need to be edited. Exceptions might be system-specific information such as IP addresses and MP Profiles.
- Manually created files can be created so that they contain only the configuration data that is needed for the desired Import operation.

  The files can be edited later for use with a different Import operation.

  Manually created CSV files are not required to contain a comment header. If a comment header is included in the file, it must be formatted using pound signs (#), as shown in the Export file header that is described in Export Results.

  Note: IPFE supports Import and Delete operations only. Due to the design of the IPFE database, import of a single table is not supported. Importing both *IpfeOption* and *IpListTsa* is required. You must import IpfeOption first followed by IpListTsa. IpfeOption defines part of the Target Set data used during validation of the IpListTsa.

Not all of the Import operations are valid for all types of configuration data. *Table 9: Valid Import Operations* indicates the valid operations for the listed types of configuration data.

Table 9: Valid Import Operations

Configuration Data	Insert	Update	Delete
Diameter and Diameter Common - SOAM			
Application Ids	X		X
CEX Parameters	X	X	X
Command Codes	X	X	X
Connection Configuration Sets	X	X	X
CEX Configuration Sets	X	X	X
Capacity Configuration Sets	X	X	X
Egress Message Throttling Configuration Sets	X	X	X
Message Priority Configuration Sets	X	X	X
Local Nodes	X	X	X
Peer Nodes	X	X	X
Connections	X	X	X
Route Groups	X	X	X
Route Lists	X	X	X
Peer Route Tables	X	X	X
Peer Routing Rules	X	X	X
Reroute on Answer	X		X
Application Routing Rules	X	X	X
Routing Option Sets	X	X	X
Pending Answer Timers	X	X	X
System Options		X	
DNS Options		X	
Trace (Troubleshooting with DIH)	X	X	X
Options (Troubleshooting with DIH)		X	
MCC Ranges	X	X	X
MP Profiles		X	
Profile Assignments		X	
Diameter and Diameter Common - NOAM			
Trusted Network List	X	X	X

Configuration Data	Insert	Update	Delete
Path Topology Hiding Configuration Set	X	X	X
S6a/S6d HSS Topology Hiding Configuration Set	X	X	X
MME/SGSN HSS Topology Hiding Configuration Set	X	X	X
Protected Network	X	X	X
MCCMNC	X	X	X
MCCMNC Mapping	X	X	X
Rbar			
Applications	X	X	X
Exceptions		X	
Destinations	X	X	X
Address Tables	X	X	X
Addresses	X	X	X
Address Resolution	X	X	X
System Options		X	
Fabr			
Applications	X	X	X
Exceptions		X	
Default Destinations	X	X	X
Address Resolution	X	X	X
System Options		X	
Cpa			
System Options		X	
Message Copy		X	
Sbr			
SBR		X	
SBR Subresource Mapping	Cannot be imported or exported		
Pdra			
PCRFs	X	X	X
PCRF Pools	X	X	C

Configuration Data	Insert	Update	Delete
PCRF Sub-Pool Selection Rules	X	X	X
PCRF Pool To PRT Mapping	X	X	X
Binding Key Priority		X	
Topology Hiding	X	X	X
Site Options		X	
Error Codes		X	
Alarm Settings		X	
Access Point Names	X	X	X
Network-Wide Options		X	
Congestion Options		X	
Ipfe			
IPFE Options	X		X
IPFE List Tsa	X		X
Gla			
Exception		X	
Option		X	
Alarm Setting		X	
Mapiwf			
Diameter Realm	X	X	X
Diameter Identity GTA	X	X	X
GTA Range to Point Code	X	X	X
MD-IWF Options		X	
DM-IWF Options		X	
Diameter Exception	X	X	X
MAP Exception	X	X	X
CCNDC Mapping	X	X	X

Import Operation Results

Each Import operation creates one or two files that appear in the File Management area:

- A log file that has the same name as the Import file, but with the .log extension

  For example, `ImportExportStatus/<import file name>.log`

  The Bulk Import operation can be configured with the **Abort On First Error** check box to:

- Log the error for each record that failed during the operation, and continue the Import operation.
- Log the error for just the first record that failed, and end the Import operation.

Information for records that succeed is not included in the log. The log file contains the Action (Import operation) that was performed; and the number of Successful Operations (records), Failed Operations (records), and Total Operations (records).

- A Failures file, if failures occurred during the Import operation

  The file is a .csv with the same name as the Import file, but contains _Failures in the file name.

  For example, if the Import file name is `October_2_SO_DSR1_Diameter_CmdCodes.csv`, the Failures file is named `October_2_SO_ DSR1_Diameter_CmdCodes_Failures.csv`

  A Failures file can be downloaded from the local File Management area to a computer off the local system, edited to correct each record that failed, uploaded to the local system File Management area, and used again to repeat the Import operation and successfully process the records.

Any Failures .csv files in the File Management Directory that remain unchanged for more than 14 days and any log files older than 14 days will be automatically removed. The task to remove these files runs once a day.

The Diameter Common > Import page

On the **Diameter Common > Import** page, you can perform the following actions:

- Sort the list of files by column, by clicking the column heading. The default sort is by File Name in ascending ASCII order.
- Select a file and click the **Insert From CSV** button, the **Update From CSV** button, or the **Delete From CSV** button.

  A popup window appears to confirm the selected Import operation.

  One import or export task at a time is allowed.

- Click **Tasks** to display the status and progress of an Import operation.

  The progress of the import operation can also be viewed on the **Status & Manage > Tasks > Active Tasks** page.

- Click the **File Management** button to open the **Status & Manage > Files** page.

  Exported .csv files can be viewed, downloaded to an external location, uploaded from an external location, and deleted.

  Log files from Import operations can be viewed and deleted.

- Click the **Abort On First Error** check box.

  When a check mark appears in the box, only the first record that failed is recorded in the log and the Failures .csv file. The Bulk Import operation stops after the error is detected and logged.

  When there is no check mark in the box (the default), all records that failed are recorded in the log and the Failures .csv file.

Bulk Import elements

Table 10: Bulk Import elements describes the fields on the **Diameter Common > Import** page.

Table 10: Bulk Import elements

Element	Description
File Name	The name of the .csv file from the Status & Manage File Management area.
Line Count	Number of lines in the file.
Time Stamp	The creation time and date of the file.

Using an Import File to insert DSR Configuration Data

Use the following procedure to insert into the system new configuration data entries from the records in a DSR Bulk Import CSV file.

1. Select **Diameter Common** > **Import**.

   The **Diameter Common > Import** page appears. The page lists all of the .csv files from the **Status & Manage > Files** File Management area.

2. Select the **File Name** for the file to be used to insert the configuration data.
3. Specify whether the Import operation should stop processing on the first error that occurs, or should continue processing if errors occur during the Import operation.
   - To continue processing when errors occur, click the **Abort On First Error** check box so that the box is empty (the default).
   - To stop processing on the first error, click the **Abort On First Error** check box so that a checkmark appears in the check box.
4. A popup window appears to confirm the file to use for the **Insert From CSV** operation.
5. On the popup window, do one of the following actions:
   - **OK** to perform the Import **Insert From CSV** operation.

     An indication is displayed that the operation is in progress.
   - **Cancel** to cancel the **Insert From CSV** operation and return to the **Diameter Common > Import** page.
6. To view the progress of the Import operation, you can:
   - Select the **Tasks** icon near the top left of the **Diameter > Configuration > Import** page.
   - Select **Status & Manage** > **Tasks** > **Active Tasks** to open the **Status & Manage > Tasks > Active Tasks (Filtered)** page.
7. To view the log file from the Import operation, and the Failures.csv file if one was created, click **File Management** button to open the **Status & Manage > Files (Filtered)** page.

Using an Import File to update DSR Configuration Data

Use the following procedure to use the contents of a DSR Bulk Import .csv file to update existing configuration data in the system.

1. Select **Diameter Common** > **Import**.

   The **Diameter Common > Import** page appears. The page lists all of the .csv files from the **Status & Manage > Files** File Management area.

2. Select the **File Name** for the file to be used to update the configuration data.
3. Specify whether the Import operation should stop processing on the first error that occurs, or should continue processing if errors occur during the Import operation.
   - To continue processing when errors occur, click the **Abort On First Error** check box so that the box is empty (the default).
   - To stop processing on the first error, click the **Abort On First Error** check box so that a checkmark appears in the check box.
4. A popup window appears to confirm the file to use for the **Update From CSV** operation.
5. On the popup window, do one of the following actions:
   - **OK** to perform the Import **Update From CSV** operation.

     An indication is displayed that the operation is in progress.
   - **Cancel** to cancel the **Update From CSV** operation and return to the **Diameter Common > Import** page.
6. To view the progress of the Import operation, you can:
   - Select the **Tasks** icon near the top left of the **Diameter > Configuration > Import** page.
   - Select **Status & Manage** > **Tasks** > **Active Tasks** to open the **Status & Manage > Tasks > Active Tasks (Filtered)** page.
7. To view the log file from the Import operation, and the Failures.csv file if one was created, click **File Management** button to open the **Status & Manage > Files (Filtered)** page.

Using an Import File to delete DSR Configuration Data

Use the following procedure to use the contents of a DSR Bulk Import .csv file to delete configuration data.

Note: This operation does NOT delete a .csv file from the list of files on the page.

1. Select **Diameter Common** > **Import**.

   The **Diameter Common > Import** page appears. The page lists all of the .csv files from the **Status & Manage > Files** File Management area.
2. Select the **File Name** for the file to be used to delete the configuration data.
3. Click the **Delete From CSV** button.

   A popup window appears to confirm the file that you want to use for the **Delete From CSV** operation.

4. On the popup window, click:
   - **OK** to perform the Import **Delete From CSV** operation.

     An indication is displayed that the operation is in progress.
   - Click **Cancel** to cancel the **Delete From CSV** operation and return to the **Diameter Common > Import** page.
5. To view the progress of the Import operation, you can:
   - Select the **Tasks** icon near the top of the **Diameter Common > Import** page.
   - Select **Status & Manage** > **Tasks** > **Active Tasks** to open the **Status & Manage > Tasks > Active Tasks (Filtered)** page.
6. To view the log file from the Import operation, click **File Management** button to open the **Status & Manage > Files (Filtered)** page.

DSR Bulk Export

The DSR Bulk Export operation creates ASCII Comma-Separated Values (CSV) files (.csv) containing Diameter and Diameter Common, IPFE, and DSR Application configuration data. Exported configuration data can be edited and used with the DSR Bulk Import operations to change the configuration data in the local system without the use of GUI pages. The exported files can be transferred to and used to configure another DSR system.

Note: Exported CSV files are not intended for long-term backup of configuration data. (Use the Database Backup function described in the *DSR Administration Guide* and DSR Administration Help for long-term backups of configuration data.)

Exported CSV Files

Each exported CSV file contains one or more records for the configuration data that was selected for the Export operation. The record formats and contents are described in *Diameter and Diameter Common CSV File Formats and Contents*.

The selected configuration data can be exported once immediately, or can be periodically automatically exported on a defined schedule.

- Configuration data refers to any data that is configured for one of the **Export Application** types (Diameter, FABR, RBAR, CPA, SBR, Policy DRA, GLA, Mdiwf; and IPFE).

  Note: GLA requires that Policy DRA Pooling is active. For more information, see *Gateway Location Application (GLA) User Guide* or *Policy DRA User Guide*.

  Exports must be performed on the OAM where the data can be configured - the NOAM for Diameter Topology Hiding, Diameter Common data, network-wide Policy DRA data, and MAP-Interwokring data for MD-IWF ; and the SOAM for the rest of the Diameter data, Diameter Common data, site-specific Policy DRA data, IPFE data, MAP-Diameter Interworking data for DM-IWF, and DSR Application data.

- For the "Diameter" **Export Application** type, configuration data refers to any data that is configured using the GUI pages that are available from the Diameter Configuration folders and the Diameter Common folders.

  Note: Diameter > AVP Dictionary configuration data cannot be imported using the Bulk Export function.

  Note: Diameter Mediation configuration data cannot be exported with DSR Bulk Export; Mediation has its own Import and Export functions.

The following configuration data can be exported in one Export operation:

- All exportable configuration data available on the OAM
- All exportable configuration data from the selected Export Application, on the OAM
- Exportable configuration data from a selected configuration component for the selected Export Application

When ALL is selected, the exported data for each configuration component appears in a separate .csv file.

For data that is exported once immediately, the default Output File Name has the following format; the name can be changed and is not required to keep this format: `NE Name_Timestamp-TimeZone_ApplicationType_DataType.csv.`

For data that is scheduled to be exported periodically, the default Task Name is DSR Configuration Export; the name can be changed.

All exported .csv files contain a comment header with the following information:

- Software revision used to generate the exported file
- Date and Time file was generated
- Name of each selected Data object exported
- Total number of exported records

The following example illustrates how the export file header might appear, but it might not look exactly as shown:

```
################################################################################
# Oracle Communications DSR Software Revision: <x.x.x-xxx.xx.x>
# Date/Time Generated: <yyyy/mon/dd hh:mm:ss timezone>
# Exported Application: <ApplicationType>
# Exported Object: <ObjectType>
# Number of Records: <nnn>
################################################################################
```

Export Operations

Exported files can be written to the File Management Directory in the Status & Manage File Management area (see the **Status & Manage > Files** page) or to the Export Server Directory.

Files that are created by a DSR Bulk Export operation must be in the local File Management area before they can be used for Bulk Import operations. See *DSR Bulk Import*.

For files that are exported to the local File Management Directory,

- The files appear in the File Management area list on the local system (see the **Status & Manage > Files** page) and in the list on the **Diameter > Configuration > Import** page.

- These files can be used for Import operations on the local system.

Any .csv files that are exported to the File Management Directory and remain unchanged for more than 14 days will be automatically removed. The task to remove these files runs once a day.

For files that are exported to the local Export Server Directory,

- If a remote Export Server has been configured (see **Administration > Remote Servers > Data Export**), the files in the local Export Server Directory are transferred to the configured remote Export Server location and are deleted from the local Export Server Directory. These transferred files do not appear in the File Management area on the local system, and cannot be used for Import operations on the local system.
- If a remote Export Server has not been configured, the files in the local Export Server Directory appear in the list on the **Status & Manage > Tasks > Active Tasks** page and in the File Management area list on the local system, but not on the **Diameter Common > Import** page. These files cannot be used for Import operations on the local system.

Export Results

If the export has any failures or is unsuccessful, the results of the export operation are logged to a log file with the same name as the exported file but with a ".log" extension. Successful export operations will not be logged.

The Diameter Common Export page

On the **Diameter Common > Export** page, you can perform the following actions:

- Manually export configuration data one time immediately in a CSV file to either the Export Server or the File Management area.
- Schedule periodic automatic exports of configuration data in CSV files to either the Export Server or the File Management area. Scheduled exports are listed on the **Status & Manage > Tasks > Scheduled Tasks** page.
- Click **Tasks** to display the status and progress of an Export operation.

  The progress of the export operation can also be viewed on the **Status & Manage > Tasks > Active Tasks** page.

- Click the **File Management** button on the **Diameter Common > Export** page to open the **Status & Manage > Files** page.

  On the **Status & Manage > Files** page, exported .csv files can be viewed, downloaded to an external location, uploaded from an external location, and deleted. Log files from Export operations can be viewed and deleted.

Bulk Export elements

Table 11: Bulk Export elements describes the fields on the **Diameter Configuration Export** page.

Table 11: Bulk Export elements

Element (* indicates required field)	Description	Data Input Notes
* Export Application	Diameter or activated DSR Application from which configuration data will be exported. **Diameter** includes Diameter Common configuration data.	Format: Pulldown list Range: ALL, **Diameter**, **IPFE**, all activated DSR Applications To clear the field, select **-Select-** in the list.
Export Data	Data to be exported. **Diameter**, **IPFE**, , or a specific activated DSR Application must be selected in Export Application before this list is available. This field is required when **Diameter** or a DSR Application is selected. **Diameter** includes Diameter Common configuration data.	Format: Pulldown list Range: ALL; configuration folders for **Diameter** (except Mediation folders), **IPFE**, or the selected DSR Application. To clear the field, select **-Select-** in the list.
Output File Name	Name of the .csv export file. The default name appears in this field when Export Frequency is **Once** and: • **ALL** is selected in Export Application • **Diameter**, **IPFE**, or a DSR Application is selected in Export Application, and **ALL** or a specific configuration folder is selected in Export Data **Diameter** includes Diameter Common data. The default file name can be changed, and is not required to follow the default format. This field is required when it is available.	Format: Valid characters are alphanumeric characters, dash (-), and underscore (_) Default file name: file name in the format NeName_ReportDate-TimeZone_ApplicationType_ReportType, with the following values: NeName = Host name of the NO or SO from which the configuration data will be exported. ReportDate = Current date in the format mmddyy. TimeZone = Current Time Zone. Application Type = the selected Export Application to export from ObjectType = the selected Data to export

Element (* indicates required field)	Description	Data Input Notes
* Task Name	Periodic Export Task name. This field is required when the Export Frequency is not **Once**.	Format: text box; length must not exceed 24 characters. Valid characters are alphanumeric, minus sign (-), and spaces between words. The first character must be an alpha character. The last character must not be a minus sign. Range: 1-24 characters Default: DSR Configuration Export
Description	Periodic Export Task description.	Format: text box; length must not exceed 255 characters. Valid characters are alphanumeric, minus sign (-), and spaces between words. The first character must be an alpha character. The last character must not be a minus sign. Range: 1-255 characters
Export Directory	Directory in which an export file will be placed. Files that are exported to the Export Server Directory will automatically be copied over to the remote if one is configured. The files will be deleted form the local system after the transfer to the remote Export Server is complete. Files that are exported to the File Management Directory, or are exported to the Export Server Directory when no remote Export Server is configured, can be viewed and imported on the local system.	Format: radio buttons Range: radio button for Export Server Directory, radio button for File Management Directory Default: Export Server Directory
Export Frequency	How often the data will be written to the Export Server Directory or File Management Directory.	Format: radio buttons Range: radio buttons for Once, Hourly, Daily, Weekly Default: Once

Element (* indicates required field)	Description	Data Input Notes
	When **Once** is selected, the export is performed immediately after **Ok** is clicked.	
Minute	The minute of each hour when the data will be exported. This field is available only when **Hourly** is selected for **Export Frequency**.	Format: text box with up and down selection arrows Range: 1-59 Default: 0
Time of Day	Time of day when data will be exported. This field is available only when **Daily** or **Weekly** is selected for **Export Frequency**.	Format: • Text box; the time can be typed in the format HH:MM AM or HH:MM PM. • Pulldown list; click in the box to display a 24-hour list of times that are at 15-minute intervals. Select the desired time in the list. Range: 12:00 AM through 11:45 PM in 15-minute intervals, or specified time Default: 12:00 AM
Day of the Week	Day of the week on which data will be exported. Thsi field is available only when **Weekly** is selected for **Export Frequency**.	Format: a radio button for each day of the week Range: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday Default: Sunday

Manually Exporting a Configuration Data File Once

Use the following procedure to export a configuration data .csv file once immediately to the **Status & Manage** File Management area or to the Export Server Directory.

Note: The exported file appears the File Management area list on the **Status & Manage > Files** page if the **File Management Directory** is selected as the **Export Directory**, or if the **Export Server Directory** is selected and no remote Export Server is configured.

1. Select **Diameter Common** > **Export**.

   The **Diameter Common > Export** page appears.

2. Verify that the **Once** radio button is selected in the **Export Frequency** list. (Select **Once** if another radio button is currently selected.)

3. In the **Export Application** pulldown list, select **ALL**, **Diameter**, **IPFE**, or the activated DSR Application from which the configuration data will be exported.

   If you selected **ALL**, go to *Step 5*.

4. In the **Export Data** pulldown list, select **ALL** or the configuration folder that contains the data that will be exported from the selected **Export Application** type.
5. Either use (do not change) the default **Output File Name**, or change the entry to the desired name.
6. Select the radio button for the **Export Directory** to which the file will be exported.

   Select either the Export Server Directory (the default), or the File Management Directory.

7. Select **Ok** to perform the Export operation.

   An indication is displayed that the operation is in progress.

8. To view the progress of the Export operation, you can:

   - Select the **Tasks** icon near the top of the **Diameter Common > Export** page.
   - Select **Status & Manage** > **Tasks** > **Active Tasks** to open the **Status & Manage > Tasks > Active Tasks (Filtered)** page.

9. To locate a file in the File Management area or to view the log file from an Export operation, click **File Management** button to open the **Status & Manage > Files (Filtered)** page.

Scheduling Periodic Automatic Exports of Configuration Data

Use the following procedure to schedule periodic automatic Exports of configuration data files to the local Export Server Directory or to the local File Management area.

Note: When the selected **Export Directory** is the **Export Server Directory,** the file is exported to a temporary Export directory on the local system. A remote Export Server must be configured before the exported file can be transferred to the specified directory on the configured remote Export Server. See the online help for the **Administration > Remote Servers > Data Export** page and Help for instructions to configure a remote Export Server.

If no remote Export Server is configured, or if the exported configuration data could be used for Import operations on the local system, select **File Management Directory** as the **Export Directory**.

1. Select **Diameter Common** > **Export**.

   The **Diameter Common > Export** page appears.

2. In the **Export Application** pulldown list, select **ALL**, **Diameter**, **IPFE**, or the activated DSR Application from which the configuration data will be exported.

   If you selected **ALL**, go to *Step 4*.

3. In the **Export Data** pulldown list, select **ALL** or the configuration folder that contains the data that will be exported from the selected **Export Application** type.
4. Select the radio button for the **Export Frequency** of the scheduled Exports. (Do not select **Once**.)
5. Either use the default **Task Name** (DSR Configuration Export), or change the name if desired for the Export operation.

   The **Task Name** is required when the **Export Frequency** is not **Once**.

6. If a description of the Export task is desired, enter the **Description** in the text box (up to 255 characters).

7. Select the radio button for the **Export Directory** to which the file will be exported.

   Select either the **Export Server Directory** (the default), or the **File Management Directory**.

   Select the **File Management Directory** if no remote Export Server has been configured.

8. Enter or select the time or day information to specify when the scheduled Export operations will occur.
   - If **Export Frequency** is **Hourly**, enter (type or click the arrows) the **Minute** of each hour (0-59) when the file will be exported.
   - If **Export Frequency** is **Daily**, enter (type, or click in the box and select from the pulldown list) the **Time of Day** when the file will be exported. Select from 15-minute intervals or enter a specific time.
   - If **Export Frequency** is **Weekly**,
     - Select the radio button for the **Day of Week** on which the file will be exported.
     - Enter (type, or click in the box and select from the pulldown list) the **Time of Day** when the file will be exported. Select from 15-minute intervals or enter a specific time.

9. Click **Ok** to save the schedule.

   To view, edit, or delete the saved schedule task, select **Status & Manage** > **Tasks** > **Active Tasks** or click the link in the indication to open the **Status & Manage > Tasks > Scheduled Tasks** page.

   The schedule can be changed or deleted on the **Status & Managed > Tasks > Scheduled Tasks** page.

10. To view the progress of an Export operation, you can:
    - Select the **Tasks** icon near the top of the **Diameter Common > Export** page.
    - Select **Status & Manage** > **Tasks** > **Active Tasks** to open the **Status & Manage > Tasks > Active Tasks (Filtered)** page.

11. To locate a file in the File Management area or to view the log file from an Export operation, click **File Management** button to open the **Status & Manage > Files (Filtered)** page.

Bulk Import and Export CSV File Formats and Contents

CSV File Formats and Contents

DSR Bulk Import and Export files support an ASCII Comma-Separated Values (CSV) file format.

- The configuration data described in each table in this help section is contained in a single line in the CSV file.
- The first field or column of each line defines the Application Type; see *Table 12: Application Types Supported by DSR Bulk Import and Export*.
- The second column describes the configuration data type, such as LocalNode, PeerNode, or RouteList.
- Subsequent fields or columns contain the associated configuration data.
- Fields containing text that includes spaces or commas are enclosed in double quotes.
- Element values that are selected using radio buttons on the GUI page are shown as separate fields or columns in the CSV Format tables. A selected value appears in its field or column; an unselected value is shown as just two commas in the file (...,,...) to maintain the positioning in the file.

- The CSV file can include optional comment lines for documenting within the file. Comment lines must begin with a pound sign (#) in the first column, and can be included on any line of the file.
- All text fields within the CSV file containing comma (,), double quotes ("), newline (\n), tab (\t), carriage return (\r) or their combinations are double quoted.

Table 12: Application Types Supported by DSR Bulk Import and Export

Application Type	Description
Diameter	Common Diameter PlugIn (DPI); includes Diameter Common data
RBAR	Range Based Address Resolution (RBAR)
FABR	Full Address Based Resolution (FABR)
CPA	Charging Proxy Application (CPA)
SBR	Session Binding Repository (Charging SBR)
PDRA	Policy Diameter Routing Agent (Policy DRA)
IPFE	IP Front End (IPFE)
GLA	Gateway Location Application (GLA)
MAPIWF	MAP-Diameter Interworking Function

Diameter and Diameter Common CSV File Formats and Contents

Diameter CSV File Formats

The following tables describe the CSV file content and attribute field or column positions for all Diameter configuration data supported by the **Diameter** Application Type.

Note: Diameter > AVP Dictionary configuration data cannot be imported and exported with the Bulk Import/Export functions in Diameter Common.

Local Nodes

"Local Node Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 13: Local Node CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 13: Local Node CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**LocalNode** (Keyword)
2	Name (Key)
3	Fqdn
4	Realm
5	Tcp Port

Column	Data Description
6	Sctp Port
7	Connection Configuration Set Name
8	Cex Configuration Set Name
9	IP Address [0]
	(repeated x 128)
136	IP Address [127]
137	IP Type [0] (LocalIp, PeerIp, IpfeTsa)
	(repeated x 128)
264	IP Type [127] (LocalIp, PeerIp, IpfeTsa)

Peer Nodes

"Peer Node Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 14: Peer Node CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 14: Peer Node CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**PeerNode** (Keyword)
2	Name (Key)
3	Fqdn
4	Realm
5	Tcp Port
6	Sctp Port
7	Replace Destination Host (No, Yes)
8	Replace Destination Realm (No, Yes)
9	Minimum Connection Capacity
10	Alternate Route on Connection failure (SamePeer, DifferentPeer, SameConnection)
11	Alternate Route on Answer Timeout (SamePeer, DifferentPeer, SameConnection)
12	Alternate Route on Answer Result Code (SamePeer, DifferentPeer, SameConnection)
13	Alternate Implicit Route
14	Maximum Alternate Routing Attempts
15	IP Address [0]

Column	Data Description
	(repeated x 128)
142	IP Address [127]
143	Routing Option Set
144	Pending Answer Timer
145	Peer Route Table
146	Message Priority Setting
147	Message Priority Configuration Set
148	Application Route Table
149	Topology Hiding Status (Enabled, Disabled)

Route Groups

"Route Groups Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 15: Route Group CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 15: Route Group CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**RouteGrp** (Keyword)
2	Name (Key)
3	Type (Peer, Connection)
4	Peer Node 1 Name
5	Peer Node 1 Weight
	(repeated x 160) . . .
322	Peer Node 160 Name
323	Peer Node 160 Weight
324	Connection 1 Name
325	Connection 1 Weight
	(repeated x 160) . . .
643	Connection 160 Name
644	Connection 160 Weight

Route Lists

"Route List Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 16: Route List CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 16: Route List CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**RouteList** (Keyword)
2	Name (Key)
3	Minimum Route Group Availability Weight
4	Route Across Route Groups (Enabled, Disabled)
5	Route Group 1 Name
6	Route Group 1 Priority
7	Route Group 2 Name
8	Route Group 2 Priority
9	Route Group 3 Name
10	Route Group 3 Priority

Peer Routing Rules

"Peer Routing Rules Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 17: Peer Routing Rule CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 17: Peer Routing Rule CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**PeerRouteRule** (Keyword)
2	Name (Key)
3	Priority
4	param (DestHost, DestRealm, OrigHost, OrigRealm, CmdCode, AppID)
5	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
6	Value
7	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode, AppID)
8	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)

Column	Data Description
9	Value
10	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode, AppID)
11	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
12	Value
13	param (DestHost, DestRealm, OrigHost, OrigRealm, CmdCode, AppID)
14	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
15	Value
16	param (DestHost, DestRealm, OrigHost, OrigRealm, CmdCode, AppID)
17	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
18	value
19	param (DestHost, DestRealm, OrigHost, OrigRealm, CmdCode, AppID)
20	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
21	Value
22	Action (RouteToPeer, SendAnswer)
23	Route List Name
24	Diameter Answer Code
25	Answer Error Message
26	Message Priority (NC, PR0, PR1, PR2)
27	Message Copy Configuration Set
28	Vendor Id
29	Peer Route Table

Connections

"Connections Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 18: Connection CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 18: Connection CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**Conn** (Keyword)

Column	Data Description
2	Connection Name (Key)
3	Type (FullySpecified, LocalMpInitiator, LocalMpResponder)
4	Local Node Name
5	Peer Node Name
6	Protocol Type (Tcp, Sctp)
7	Connection Configuration Set Name
8	Cex Configuration Set Name
9	Cap Configuration Set Name
10	Primary Local IP Address
11	Secondary Local IP Address
12	Primary Peer IP Address
13	Secondary Peer IP Address
14	Transport Fqdn
15	Peer Identification (Ip, TransportFqdn, PeerFqdn)
16	Local Initiate Port
17	Transport Congestion Abatement Timeout
18	Remote Busy Usage (Enabled, Disabled)
19	Remote Busy Timeout
20	Message Priority Setting
21	Message Priority Configuration Set
22	Egress Message Throttling Configuration Set
23	Suppress Connection Unavailable Alarm (Yes, No)
24	Suppress Connections Attempts (Yes, No)
25	Test Mode (Yes, No)

Connection Configuration Sets

"Connection Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 19: Connection Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 19: Connection Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**ConnCfgSet** (Keyword)
2	ConnCfgSet Name (Key)
3	retransInitialTimeout
4	retransMinTimeout
5	retransMaxTimeout
6	retransMaxTimeoutInit
7	retransPathFailure
8	retransAssocFailure
9	retransInitFailure
10	sackDelay
11	heartbeatInterval
12	sctpSockSendSize
13	sctpSockReceiveSize
14	sctpNumInboundStreams
15	sctpNumOutboundStreams
16	burstMax
17	sctpDatagramBundlingEnabled (Yes, No)
18	tcpSockSendSize
19	tcpSockRecvSize
20	tcTimer
21	twinitTimer
22	tdpxTimer
23	tcexTimer
24	nagleEnabled (Yes, No)
25	provingTimeout
26	provingDwrsToSend
27	provingMode (Always, Suspect, Never)
28	pendTransPerConn
29	CexHostIpValidationEnabled(Yes, No)

Reroute on Answer

"Reroute On Answer Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 20: Reroute on Answer CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 20: Reroute on Answer CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**RerouteOnAns** (Keyword)
2	Answer Result-Code AVP Value
3	Application ID

Ssytem Options

"System Options Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 21: System Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 21: System Options CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**Options** (Keyword)
2	EMT Feature Enabled (Yes, No)
3	Fixed Connection Failure Major Aggregation Alarm Threshold
4	Fixed Connection Critical Aggregation Alarm Threshold
5	IPFE Connection Failure Major Aggregation Alarm Threshold
6	IPFE Connection Failure Critical Aggregation Alarm Threshold
7	Peer Node Failure Critical Aggregation Alarm Threshold
8	Route List Failure Critical Aggregation Alarm Threshold
9	Message Copy Feature Enabled (Enabled, Disabled)
10	Message Copy Disable Congestion Level (CL1, CL2)

DNS Options

"DNS Options Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 22: DNS Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 22: DNS Options CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**DnsOption** (Keyword)
2	Primary IP
3	Secondary IP
4	Query Duration Timer

CEX Configuration Sets

"CEX Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 23: CEX Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 23: CEX Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**CexCfgSet** (Keyword)
2	Name
3	Selected Application ID [1]
4	Selected Type [1]
5	Selected Vendor ID[1]
	(repeated x 10)
30	Selected Application ID [10]
31	Selected Type [10]
32	Selected Vendor ID [10]
33	Must Application ID [1]
34	Must Type [1]
35	Must Vendor ID[1]
	(repeated x 10)
60	Must Application ID[10]
61	Must Type [10]
62	Must Vendor ID[10]
63	Vendor ID [1]
	(repeated x 10)

Column	Data Description
72	Vendor ID [10]

Capacity Configuration Sets

"Capacity Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 24: Capacity Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 24: Capacity Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	CapCfgSet (Keyword)
2	Capacity Configuration Set Name (Key)
3	Reserved Ingress MPS
4	Maximum Ingress MPS
5	Ingress MPS Minor Alarm Threshold
6	Ingress MPS Major Alarm Threshold
7	Reserved Ingress MPS Abatement Time

Application Routing Rules

"Application Routing Rules Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 25: AppRouteRule CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 25: AppRouteRule CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**AppRouteRule** (Keyword)
2	Name (Key)
3	Priority
4	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)
5	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
6	Value
7	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)

Column	Data Description
8	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
9	Value
10	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)
11	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
12	Value
13	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)
14	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
15	Value
16	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)
17	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
18	value
19	param (DestHost, DestRealm, OrigHost,OrigRealm, CmdCode AppID)
20	condOperator (Present, Absent, Equal, Not Equal, StartsWith, EndsWith, DontCare, Always True)
21	Value
22	Application Name
23	Application Route Table

Application Ids

"Application Ids Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 26: Application ID CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 26: Application ID CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**Appids** (Keyword)
2	Application ID
3	Name
4	Routing Option Set
5	Pending Answer Timer

Column	Data Description
6	Peer Route Table
7	Application Route Table

CEX Parameters

"CEX Parameters elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 27: CEX Parameters CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 27: CEX Parameters CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**CexParameters** (Keyword)
2	Application ID
3	Vendor ID

Pending Answer Timers

"Pending Answer Timers Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 28: Pending Answer Timer CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 28: Pending Answer Timer CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**PendingAnswerTimer** (Keyword)
2	Name
3	Timer

Routing Option Sets

"Routing Option Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 29: Routing Option Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 29: Routing Option Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**RoutingOptionSet** (Keyword)
2	Name

Column	Data Description
3	Maximum Per Message Forwarding Allowed
4	Transaction Lifetime
5	Pending Answer Timer
6	Resource Exhausted Action
7	Resource Exhausted Result Code
8	Resource Exhausted Error Message
9	Resource Exhausted Vendor Id
10	No Peer Response Action
11	No Peer Response Result Code
12	No Peer Response Error Message
13	No Peer Response Vendor Id
14	Connection Failure Action
15	Connection Failure Result Code
16	Connection Failure Error Message
17	Connection Failure Vendor Id
18	Connection Congestion Action
19	Connection Congestion Result Code
20	Connection Congestion Error Message
21	Connection Congestion Vendor Id

Peer Route Tables

"Peer Route Tables Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 30: Peer Route Table CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 30: Peer Route Table CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**PeerRouteTable** (Keyword)
2	Name (Key)

Message Priority Configuration Sets

"Message Priority Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 31: Message Priority Configuration Set CSV Format* and

configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 31: Message Priority Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**MsgPriorityCfgSet** (Keyword)
2	Name
3	applId[1]
4	cmdCode[1]
5	msgPriority[1]
	(repeated x 50)
151	applId[50]
152	cmdCode[50]
153	msgPriority[50]

Egress Message Throttling Configuration Sets

"Egress Message Throttling Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 32: Message Throttling Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 32: Message Throttling Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**MsgThrottlingCfgSet** (Keyword)
2	Name
3	maxEMR
4	smoothFactor
5	abateTime
6	TT1
7	AT1
8	TT2
9	AT2
10	TT3
11	AT3

Message Copy Configuration Sets

"Message Copy Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 33: Message Copy Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 33: Message Copy Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	MessageCopyCfgSet (Keyword)
2	Message Copy Configuration Set Name (Key)
3	requestTypeForMessageCopy
4	originalAnswerForMessageCopy
5	routeListName
6	answerIncluded
7	dasAnswerResultCode
8	msgCopyMaxRetryAttempts

Application Route Tables

"Application Route Tables elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 34: Application Route Table CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 34: Application Route Table CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**ApplicationRouteTable** (Keyword)
2	Name (Key)

Egress Throttle Groups

"Egress Throttle Groups Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 35: Egress Throttle Groups CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited n the CSV files.

Table 35: Egress Throttle Groups CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**Etg** (Keyword)

Column	Data Description
2	Name (Key)
3	Maximum Egress Rate
4	RateSmoothFactor
5	RateAbateTime
6	RateOnsetThres1
7	RateAbateThres1
8	RateOnsetThres2
9	RateAbateThres2
10	RateOnsetThres3
11	RateAbateThres3
12	Maximum Number of Pending Transactions
13	PendTransAbateTime
14	PendTransOnsetThres1
15	PendTransAbateThres1
16	PendTransOnsetThres2
17	PendTransAbateThres2
18	PendTransOnsetThres3
19	PendTransAbateThres3
20	Peers
	repeated x 128
147	Conns
	repeated x 128

Command Codes

"Command Codes elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 36: Command Code CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 36: Command Code CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**CmdCodes** (Keyword)
2	cmdCode

Column	Data Description
3	name

Troubleshooting with DIH

Troubleshooting with DIH "Traces elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 37: Trace CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 37: Trace CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**Trace** (Keyword)
2	Scope Type
3	Scope Value
4	Duration Number of Matches
5	Duration Time
6	Content Type
7	Condition Name[0]
8	Condition Avp [0] (for AdHocAVP)
9	Condition Operator [0] (for AdHocAVP)
10	Condition Value [0]
	lines 8-11 repeated up to x 12 number of repetitions depends on Content Type
51	Condition Name[11]
52	Condition Avp [11] (for AdHocAVP)
53	Condition Operator [11] (for AdHocAVP)
54	Condition Value [11]

Troubleshooting with DIH "Options elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in zz and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 38: Options CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**TraceOptions** (Keyword)

Column	Data Description
2	Name (Key)
3	Max bandwidth
4	DIH IP address
5	DIH Visualization address

Diameter Topology Hiding

Trusted Network Lists

"Trusted Network Lists elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 39: Trusted Network List CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 39: Trusted Network List CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**TrustedNetworkList** (Keyword)
2	Name (Key)
3	trustedRealm [1]
	(repeated x 100)

Path Topology Hiding Configuration Sets

"Path Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 40: Path Topology Hiding Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 40: Path Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**PathTopologyHidingCfgSet** (Keyword)
2	Name (Key)
3	hostnameSuffix
	(repeated x 10)
13	pseudoRouteRecord
14	pseudoProxy
15	encryptionKey

S6a/S6d Topology Hiding Configuration Sets

"S5a/S6b Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 41: S6a/S6d HSS Topology Hiding Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 41: S6a/S6d HSS Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type
1	**HssTopologyHidingCfgSet** (Keyword)
2	Name (Key)
3	pseudoHssHostname

MME/SGSN Topology Hiding Configuration Sets

"MME/SGSN Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 42: MME/SGSN Topology Hiding Configuration Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 42: MME/SGSN Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**MmeTopologyHidingCfgSet** (Keyword)
2	Name (Key)
3	count
4	randomizeCount
5	autoGenerate
6	prefix
7	suffix
8	length
9	Action (SendAnswer, Forward, Abandon)
10	resultCode
11	vendorId
12	errMsg
13	actualHostname[1]
14	pseudoHostname1

Column	Data Description
15	pseudoHostname2
16	pseudoHostname3
	(combination of actual and pseudo hostnames repeated x 300)

Protected Networks

"Protected Network Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 43: Protected Network CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 43: Protected Network CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**ProtectedNetwork** (Keyword)
2	protectedRealm (Key)
3	trustedNetList
4	pathTopologyHidingCfgSet
5	mmeTopologyHidingCfgSet
6	hssTopologyHidingCfgSet

Diameter Common CSV File Formats

The following tables describe the CSV file content and attribute field or column positions for all Diameter Common configuration data supported by the **Diameter** Application Type.

MCCMNC

MCCMNC Elements describes the configuration data elements listed in *Table 46: Reserved MCC Ranges CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 44: MCCMNC CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**MccMnc** (Keyword)
2	Mobile Country Code (MCC)
3	Mobile Network Code (MNC)
4	Country Name
5	Network Name

MCCMNC Mapping

MCCMNC Mapping Elements describes the configuration data elements listed in *Table 46: Reserved MCC Ranges CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 45: MCCMNC Mapping CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**MccMncMapping** (Keyword)
2	Mobile Country Code (MCC)
3	Mobile Network Code (MNC)
4	Prefix
5	Country Name
6	Network Name
7	CCNDC
8	Realm
9	Description

MCC Ranges

MCC Ranges Elements describes the configuration data elements listed in *Table 46: Reserved MCC Ranges CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 46: Reserved MCC Ranges CSV Format

Column	Data Description
0	Application Type (Diameter)
1	**ReservedMccRanges** (Keyword)
2	startMccRange
3	endMccRange

MPs

MPs Profiles Elements describes the editable configuration data elements listed in zz *Table 48: MP Profile Assignments CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 47: MP Profile Parameters CSV Record Format

Column	Data Description
0	Application Type (Diameter)

Column	Data Description
1	**MpProfileRwParm** (Keyword)
2	profileName (key)
3	key (key)
4	value

MPs Profile Assignments Elements describes the configuration data elements listed in *Table 48: MP Profile Assignments CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 48: MP Profile Assignments CSV Record Format

Column	Data Description
0	Application Type (Diameter)
1	**MpProfileAssigment** (Keyword)
2	nodeName (key)
3	profileName

Range Based Address Resolution (RBAR) CSV File Formats and Contents

The following tables describe the CSV file content and attribute column positions for all configuration data supported by the RBAR Application Type.

Note: Address Individual and Address Range elements are in different CSV files for performance reasons.

"Applications configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 49: Supported Application CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 49: Supported Application CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**SuppAppl** (Keyword)
2	Application ID
3	Routing Mode (Proxy)

"Addresses configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 50: Address Individual CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 50: Address Individual CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**AddressIndv** (Keyword)
2	Table Name
3	Address
4	Destination
5	Pfx Length
6	Routing Entity (Imsi, Msisdn, Impi, Impu, Ipv4, Ipv6PfxAddr, Unsigned16)
7	Old Table Name
8	Old Address
9	Old Pfx Length

"Addresses configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 51: Address Range CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 51: Address Range CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**AddressRange** (Keyword)
2	Table Name
3	Start Address
4	End Address
5	Destination
6	Pfx Length
7	Old Table Name
8	Old Start Address
9	Old Pfx Length

"Address Tables configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 52: Address Table CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 52: Address Table CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**AddressTable** (Keyword)
2	Name
3	Comment
4	Routing Entity (Imsi, Msisdn, Impi, Impu, Ipv4, Ipv6PfxAddr, Unsigned16)

"Destinations configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 53: Destination Table CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 53: Destination Table CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**Destination** (Keyword)
2	Name
3	Realm
4	Fqdn
5	Avp Insertion (No, Yes)

"Exceptions configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 54: Routing Exception CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 54: Routing Exception CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**RoutingException** (Keyword)
2	Application ID
3	Exception Type (UnknownCmdCode, NoRoutingEntityAddress, NoDrtEntry)
4	Action (FwdUnchanged, FwdToDest, SendAnswer, SendAnsExp)
5	Destination Name
6	Answer Result Code
7	Vendor ID
8	Error Message

"Address Resolutions configuration elements" in the RBAR Help describes the configuration data elements listed in *Table 55: Address Resolution CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 55: Address Resolution CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**Resolution** (Keyword)
2	Application ID
3	CMD Code
4	CMD Name
5	Routing Entity 1 (Imsi, Msisdn, Impi, Impu, Ipv4, Ipv6PfxAddr, Unsigned16)
6	Re 1 Avp 1 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SvcInfoSubscrId4, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, SubscriptionId4, UserIdentityMsisdn, UserIdentityPublic, UserName, FramedIpAddress, FramedIpv6Prefix, SvcInfoPsInfo3gppcc, Unprovisioned)
7	Re 1 Avp 2 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SvcInfoSubscrId4, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, SubscriptionId4, UserIdentityMsisdn, UserIdentityPublic, UserName, FramedIpAddress, FramedIpv6Prefix, SvcInfoPsInfo3gppcc, Unprovisioned)
8	Re 1 Address Table Name
9	Routing Entity 2 (Imsi, Msisdn, Impi, Impu, Ipv4, Ipv6PfxAddr, Unsigned16)
10	Re 2 Avp 1 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SvcInfoSubscrId4, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, SubscriptionId4, UserIdentityMsisdn, UserIdentityPublic, UserName, FramedIpAddress, FramedIpv6Prefix, SvcInfoPsInfo3gppcc, Unprovisioned)
11	Re 2 Avp 2 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SvcInfoSubscrId4, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, SubscriptionId4, UserIdentityMsisdn, UserIdentityPublic, UserName, FramedIpAddress, FramedIpv6Prefix, SvcInfoPsInfo3gppcc, Unprovisioned)
12	Re 2 Address Table name

"System Options elements" in the RBAR Help describes the configuration data elements listed in *Table 56: Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 56: Option CSV Format

Column	Data Description
0	Application Type (Rbar)
1	**Option** (Keyword)

Column	Data Description
2	Uri Supported (No, Yes)
3	RemoveDestHost (No, Yes)
4	Exclude Space (No, Yes)
5	Allow Subsequent DSR App Invoc (No, Yes)
6	Realm
7	Fqdn
8	Resource Exhaustion Error Code
9	Resource Exhaustion Error Message
10	Resource Exhaustion Vendor ID
11	Unavailable Application Action (ContinueRouting, DefaultRoute, SendAnswer, SendAnsExp)
12	Unavailable Application Route List
13	Unavailable Application Result Code
14	Unavailable Application Error Message
15	Unavailable Application Vendor ID
16	ASCII Exluded List [0]
	(repeated x 20) . . .
35	ASCII Excluded List [19]
36	TBCD Excluded List [0]
	(repeated x 5) . . .
40	TBCD Excluded List [4]

Full Address Based Resolution (FABR) CSV File Formats and Contents

Full Address-Based Resolution (FABR) CSV File Formats

The following tables describe the CSV file content and attribute column positions for all configuration data supported by the FABR Application Type.

"Applications configuration elements" in the FABR Help describes the configuration data elements listed in *Table 57: Supported Application CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 57: Supported Application CSV Format

Column	Data Description
0	Application Type (Fabr)

Column	Data Description
1	**SuppAppl** (Keyword)
2	Application ID
3	Routing Mode (Proxy)

"Exceptions configuration elements" in the FABR Help describes the configuration data elements listed in *Table 58: Routing Exception CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 58: Routing Exception CSV Format

Column	Data Description
0	Application Type (FABR)
1	**RoutingException** (Keyword)
2	Application ID
3	Exception Type (UnknownCmdCode, NoRoutingEntityAddress, NoAddrMatch, DpErrors, DpCongestion)
4	Action (FwdUnchanged, FwdToDest, SendAnswer, SendAnsExp)
5	Destination Name
6	Answer Result Code
7	Vendor ID
8	Error Message

"Destinations configuration elements" in the FABR Help describes the configuration data elements listed in *Table 59: Default Destination Table CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 59: Default Destination Table CSV Format

Column	Data Description
0	Application Type (Fabr)
1	**Destination** (Keyword)
2	Name
3	Realm
4	Fqdn

"Address Resolutions configuration elements" in the FABR Help describes the configuration data elements listed in *Table 60: Address Resolution CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 60: Address Resolution CSV Format

Column	Data Description
0	Application Type (Fabr)
1	**Resolution** (Keyword)
2	Application ID
3	CMD Code
4	Routing Entity 1 (Imsi, Msisdn, Impi, Impu)
5	Re 1 Avp 1 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, UserIdentityMsisdn, UserIdentityPublic, UserName, WildCardedPubIdnty)
6	Re 1 Avp 2 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, UserIdentityMsisdn, UserIdentityPublic, UserName, WildCardedPubIdnty)
7	Re 1 Destination Type (ImsHss, LteHss, Pcrf, Ocs, Ofcs, Aaa, UserDefined1, UserDefined 2)
8	Routing Entity 2 (Imsi, Msisdn, Impi, Impu)
9	Re 2 Avp 1 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, UserIdentityMsisdn, UserIdentityPublic, UserName, WildCardedPubIdnty)
10	Re 2 Avp 2 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, UserIdentityMsisdn, UserIdentityPublic, UserName, WildCardedPubIdnty)
11	Re 2 Destination Type (ImsHss, LteHss, Pcrf, Ocs, Ofcs, Aaa, UserDefined1, UserDefined 2)

"System Options elements" in the FABR Help describes the configuration data elements listed in *Table 61: Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 61: Option CSV Format

Column	Data Description
0	Application Type (Fabr)
1	**Option** (Keyword)
2	RemoveDestHost (No, Yes)
3	Exclude Space (No, Yes)
4	Allow Subsequent DSR App Invoc (No, Yes)
5	Realm
6	Fqdn

Column	Data Description
7	Resource Exhaustion Error Code
8	Resource Exhaustion Error Message
9	Resource Exhaustion Vendor ID
10	Unavailable Application Action (ContinueRouting, DefaultRoute, SendAnswer, SendAnsExp)
11	Unavailable Application Route List
12	Unavailable Application Result Code
13	Unavailable Application Error Message
14	Unavailable Application Vendor ID
15	ASCII Excluded List [0]
	(repeated x 20) . . .
33	ASCII Excluded List [19]
35	TBCD Excluded List [0]
	(repeated x 5) . . .
39	TBCD Excluded List [4]

Policy DRA CSV File Formats and Contents

The following tables describe the CSV file content and attribute column positions for all configuration data supported by the Policy DRA Application Type.

"PCRFs elements" in the Policy DRA Help describes the configuration data elements listed in *Table 62: PCRFs CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 62: PCRFs CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**Pcrf** (Keyword)
2	PCRF Peer Node Name (Key)
3	Comments

"Binding Key Priority elements" in the Policy DRA Help describes the configuration data elements listed in *Table 63: Binding Key Priority CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 63: Binding Key Priority CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**BindPriority** (Keyword)
2	Priority 1
3	Binding Key Type 1 (Imsi, Msisdn, Ipv4, Ipv6)
4	Priority 2
5	Binding Key Type 2 (Imsi, Msisdn, Ipv4, Ipv6)
6	Priority 3
7	Binding Key Type 3 (Imsi, Msisdn, Ipv4, Ipv6)
8	Priority 4
9	Binding Key Type 4 (Imsi, Msisdn, Ipv4, Ipv6)

"Topology Hiding elements" in the Policy DRA Help describes the configuration data elements listed in *Table 64: Policy DRA Topology Hiding CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 64: Policy DRA Topology Hiding CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**TopoHiding** (Keyword)
2	Policy Client Peer Node Name (Key)
3	Comments

"Site Options elements" and "Network-Wide Options elements" in the Policy DRA Help describes the configuration data elements listed in *Table 65: Policy DRA Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 65: Policy DRA Options CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**PdraOptions** (Keyword)
2	Topology Hiding Enabled
3	Topology Hiding Scope
4	Topology Hiding FQDN

Column	Data Description
5	Topology Hiding Realm
6	Peer Route Table Name
7	Policy DRA Unavailable (Relay, Discard)
8	Origin-Host and Origin-Realm for Policy DRA generated RAR messages (Local Host, PCRF)
9	Default Stale Session Timeout
10	Enable PCRF Pooling
11	Audit Default Max Frequency
12	Early Binding Polling Interval
13	Maximum Early Binding Lifetime

"Error Codes elements" in the Policy DRA Help describes the configuration data elements listed in *Table 66: PDRA Error Codes CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 66: PDRA Error Codes CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**ErrorCodes** (Keyword)
2	Error Condition (Key) (PdraUnavailCong, BindingNotFound, BindingFoundButUnableToRoute, SbrError, BindingKeyNotFoundCondition, BindingNotCreatedUnableToRoute, MissingOrUnconfiguredApn)
3	Gx/Gxx Result Code
4	Gx/Gxx Vendor ID
5	Rx Result Code
6	Rx Vendor ID
7	S9 Result Code
8	S9 Vendor ID
9	Gx-Prime Result Code
10	Gx-Prime Vendor ID
11	All Result Code
12	All Vendor ID

"Access Point Names elements" in the Policy DRA Help describes the configuration data elements listed in *Table 67: Access Point Names CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 67: Access Point Names CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**AccessPointName** (Keyword)
2	Access Point Name
3	PCRF Pool Name
4	Stale Session Timeout
5	PCRF Sub-Pool Count (Read Only)
6	Last Updated Timestamp (Read Only)

"Alarm Settings elements" in the Policy DRA Help describes the configuration data elements listed in *Table 68: Alarm Settings CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 68: Alarm Settings CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**AlarmSupp** (Keyword)
2	Alarm Name 1 (PdraIngressMessageRate, OutstandingPdraSessionsThresholdExceeded)
3	Critical Alarm Threshold (Percent) 1
4	Suppress Critical 1 (Yes, No)
5	Major Alarm Threshold (Percent) 1
6	Suppress Major 1 (Yes, No)
7	Minor Alarm Threshold (Percent) 1
8	Suppress Minor 1 (Yes, No)
9	Alarm Name 2 (PsbrActiveSessionsThreshold)
10	Critical Alarm Threshold (Percent) 2
11	Suppress Critical 2 (Yes, No)
12	Major Alarm Threshold (Percent) 2
13	Suppress Major 2 (Yes, No)
14	Minor Alarm Threshold (Percent) 1
15	Suppress Minor 2 (Yes, No)
16	Alarm Name 3 (PdraActiveBindingsThreshold)

Column	Data Description
17	Critical Alarm Threshold (Percent) 3
18	Suppress Critical 3 (Yes, No)
19	Major Alarm Threshold (Percent) 3
20	Suppress Major 3 (Yes, No)
21	Minor Alarm Threshold (Percent) 3
22	Suppress Minor 3 (Yes, No)

"Congestion Options elements" in the Policy DRA Help describes the configuration data elements listed in *Table 69: Congestion Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 69: Congestion Options CSV Format

Column	Data Description
0	Application Type (Pdra)
1	**CongOptions** (Keyword)
2	Critical Alarm Onset Threshold 1
3	Critical Alarm Abatement Threshold 1
4	Major Alarm Onset Threshold 1
5	Major Alarm Abatement Threshold 1
6	Minor Alarm Onset Threshold 1
7	Minor Alarm Abatement Threshold 1
8	Congestion Level 1- Discard Session Creation Requests
9	Congestion Level 1- Discard Session Update Requests
10	Congestion Level 1- Discard Session Terminate Requests
11	Congestion Level 2- Discard Session Creation Requests
12	Congestion Level 2- Discard Session Update Requests
13	Congestion Level 2- Discard Session Terminate Requests
14	Congestion Level 3- Discard Session Creation Requests
15	Congestion Level 3- Discard Session Update Requests
16	Congestion Level 3- Discard Session Terminate Requests

"PCRF Pools elements" in the Policy DRA Help describes the PCRF Pools CSV Record elements listed in *Table 70: PCRF Pools CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 70: PCRF Pools CSV Record Format

Column	Data Description
0	Application Type (Pdra)
1	**PcrfPool** (Keyword)
2	PCRF Pool Name (Key)
3	Comments

"PCRF Sub-Pool Selection Rules elements" in the Policy DRA Help describes the PCRF Sub-Pool Selection Rules CSV Record elements listed in *Table 71: PCRF Sub-Pool Selection Rules CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 71: PCRF Sub-Pool Selection Rules CSV Record Format

Column	Data Description
0	Application Type (Pdra)
1	**SubPoolSelRules** (Keyword)
2	Rule Name (Key)
3	Priority
4	PCRF Pool Name
5	Condition Parameter (Origin-Host)
6	Condition Operator (Equals, StartsWith, EndsWith)
7	Condition Value
8	PCRF Sub-Pool Name
9	Last Updated Timestamp (Read Only)

"PCRF Pool To PRT Mapping CSV Record elements" in the Policy DRA Help describes the PCRF Pool To PRT Mapping CSV Record elements listed in *Table 72: PCRF Pool To PRT Mapping CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 72: PCRF Pool To PRT Mapping CSV Record Format

Column	Data Description
0	Application Type (Pdra)
1	**PcrfPoolToPrt** (Keyword)
2	PCRF Pool Name (Key)
3	Peer Route Table Name

Gateway Location Application (GLA) CSV File Formats and Contents

"Configure GLA Exceptions elements" in the GLA Help describes the Gateway Location Application (GLA) CSV Record elements listed in *Table 73: GLA Exception CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 73: GLA Exception CSV Record Format

Column	Data Description
0	Application Type (GLA)
1	**Exception** (Keyword)
2	Exception Type(EdlDecodeError, UnknownAppId, UnknownCmdCode, ImsiMsisdnPresent, ImsiMsisdnAbsent, PsbrQueryFailure, PsbrQueryTimeout, ResourceExhausted, UnableToProcess)
3	Exception Name
4	Action (SendAnswer, SendAnsExp, AbandonRequest)
5	Result Code
6	Vendor ID
7	Error String

"Configure GLA System Options elements" in the GLA Help describes the Gateway Location Application (GLA) CSV Record elements listed in *Table 74: GLA Option CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 74: GLA Option CSV Record Format

Column	Data Description
0	Application Type (GLA)
1	**Option** (Keyword)
2	Unavailable Action (ContinueRouting, DefaultRoute, SendAnswer, Discard)
3	Unavailable Application Result Code
4	Unavailable Application Vendor ID
5	Unavailable Application Error Message
6	Realm
7	FQDN
8	Unavailable Application Route List

"Configure GLA Alarm Settings elements" in the GLA Help describes the Gateway Location Application (GLA) CSV Record elements listed in *Table 75: GLA Alarm CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 75: GLA Alarm CSV Record Format

Column	Data Description
0	Application Type (GLA)
1	**Alarm** (Keyword)
2	Alarm Type (RxGlaMsgRate)
3	Severity(Critical, Major, Minor)
4	Action(Set, Clear)
5	Level

Charging Proxy Application (CPA) CSV File Formats and Contents

Charging Proxy Application (CPA) CSV File Formats

The following tables describe the CSV file content and attribute column positions for all configuration data supported by the CPA Application Type.

"System Options configuration elements" in the Charging Proxy Application (CPA) Help describes the configuration data elements listed in *Table 76: System Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 76: System Option CSV Format

Column	Data Description
0	Application Type (Cpa)
1	**Option** (Keyword)
2	id
3	name
4	unavailableAction (SendAnswer)
5	unavailableAppResultCode
6	unavailableActionVendorId
7	unavailableActionErrorMessage
8	application InvokedAvpInsertion (Yes, No)
9	shutdownMode (Graceful, Force)
10	shutdownTimer

Column	Data Description
11	generateAnswerResultCode
12	generateAnswerVendorId
13	generateAnswerErrorMessage
14	behaviorIfSessionLookupError (GenerateAnswer, ContinueRouting)

"Message Copy elements" in the Charging Proxy Application (CPA) Help describes the Message Copy configuration data elements listed in *Table 77: Message Copy CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 77: Message Copy CSV Format

Column	Data Description
0	Application Type (Cpa)
1	**Messagecopy** (Keyword)
2	messageCopyStatus
3	messageCopyRouteList1
4	messageCopyRouteList2
5	messageCopyRouteList3
6	messageCopyRouteList4
7	messageCopyRouteList5
8	messageCopyRouteList6
9	messageCopyRouteList7
10	messageCopyRouteList8
11	messageCopyRouteList9
12	messageCopyRouteList10
13	calledStationIdString1
14	calledStationIdString2
15	calledStationIdString3
16	calledStationIdString4

"SBR elements" in the Charging Proxy Application (CPA) Help describes the Session Binding Repository (SBR) configuration data elements listed in *Table 78: SBR CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 78: SBR CSV Format

Column	Data Description
0	Application Type (Sbr)
1	**Sbrconfig** (Keyword)
2	sbdbAuditStartTime
3	sbdbAuditStopTime
4	staleSbdbSessionBindingAge
5	maximumActiveSessionBindings
6	mostlyStalePercent

MAP-Diameter Interworkng Function CSV File Formats and Contents

The following tabiles describe the CSV file content and attribute column positions for all configuration data supported by the MDIWF Application Type, for the MD-IWF and DM-IWF applications.

"Diameter Realm elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 79: Mapiwf Diameter Realm CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 79: Mapiwf Diameter Realm CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**DiameterRealm** (Keyword)
2	Realm
3	Network (ANSI, ITUI, ITUN)
4	Authentication Interworking (Yes, No)
5	Default Access Point Name
6	MGT Conversion Needed (Yes, No, NA)

"Diameter Identity Global Title Address elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 80: Mapiwf DiamIdGta CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 80: Mapiwf DiamIdGta CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**DiamIdGta** (Keyword)

Column	Data Description
2	Host
3	Realm
4	GTA
5	Authentication Interworking (Yes, No, UseRealmSetting)
6	Default Access Point Name

"Global Title Address Range to Point Code elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 81: Mapiwf GtaRangeToPc CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 81: Mapiwf GtaRangeToPc CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**GtaRangeToPc** (Keyword)
2	Default Configuration (Yes, No)
3	GTA Start
4	GTA End
5	Network (ANSI, ITUI, ITUN)
6	Primary Point Code
7	Secondary Point Code
8	Load Sharing (Solitary, ActiveActive, ActiveStandby)

"MD-IWF Options elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 82: Mapiwf MD-IWF Option CSV FormatTable 65: Policy DRA Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 82: Mapiwf MD-IWF Option CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**MdiwfOption** (Keyword)
2	Diameter Timeout
3	MAP Timeout
4	EIR Host Name
5	EIR Realm

Column	Data Description
6	IWF HSS Destination Host
7	IWF HSS Destination Realm
8	EIR Destination GTA
9	Shutdown Mode (Forced, Graceful)
10	Shutdown Timer
11	ECR No Destination Host Action (Discard, SendAnswer, TranslateUsingEir)
12	ECR No Destination Host Result Code
13	ECR No Destination Host Vendor ID
14	ECR No Destination Host Error String
15	ECR Destination Host Action (Discard, SendAnswer, TranslateUsingEir)
16	ECR Destination Host Result Code
17	ECR Destination Host Vendor ID
18	ECR Destination Host Error String
19	DSR Node GTA (entityId_1)
20	DSR Node GTA (gta_1)
	-entityId and gta repeated total of 32 times…
81	DSR Node GTA (entityId_32)
82	DSR Node GTA (gta_32)

"DM-IWF Option elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 83: Mapiwf DM-IWF Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 83: Mapiwf DM-IWF Option CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**DmiwfOption** (Keyword)
2	Unavailable Action (ContinueRouting, DefaultRoute, SendAnswer)
3	Route List Name
4	Unavailable Action Result Code
5	Unavailable Action Vendor ID
6	Unavailable Action Error Message
7	AVP Insertion (Yes, No)

Column	Data Description
8	Shutdown Mode (Forced, Graceful)
9	Shutdown Timer
10	Realm
11	FQDN
12	Application Route Table (ART)
13	Peer Route Table (PRT)

"Diameter Exception elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 84: Mapiwf Diameter Exception CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 84: Mapiwf Diameter Exception CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**DiameterException** (Keyword)
2	Exception Type (InternalProcessingError, DiamToMapTransTimeout, TranslationError)
3	Exception Name
4	Action (Discard, SendAnswer, ApplyUnavailAction)
5	Result Code
6	Vendor ID
7	Error String

"MAP Exception elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 85: Mapiwf MAP Exception CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 85: Mapiwf MAP Exception CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**MapException** (Keyword)
2	Exception Type (InternalProcessingError, MapToDiamTransTimeout, TranslationError
3	Exception Name
4	Action (Discard, SendAnswer)
5	Abort Reason (UserDefined, ContextNotSupported, DialogRefused)

Column	Data Description
6	Error Cause (SystemFailure, DataMissing, UnexpectedDataValue, FacilityNotSupported, IncompatibleTerminal, ResourceLimitation)
7	Abort Choice (SpecificReason, ResourceLimitation, ResourceUnavailable)
8	Resource Unavailable Reason (ShortTermLimitation, LongTermLimitation)

"CCNDC Mapping elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 69: Congestion Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 86: Mapiwf CCNDC Mapping CSV Format

Column	Data Description
0	Application Type (Mapiwf)
1	**CcNdcMapping** (Keyword)
2	Ccndc
3	Realm
4	Description

IP Front End (IPFE) CSV File Formats and Contents

IP Front End CSV File Formats

The following tables describe the CSV file content and attribute column positions for all configuration data supported by the IP Front End (IPFE) Application Type.

Note: Both IPFE CSV formats must be included in the file for an IPFE Import operation (Insert or Delete). Bulk Import for IPFE does not support Insert or Delete for only IpfeOption or only IpfeListTsa.

"Configuration Options elements" in the IPFE Help describes the configuration data elements listed in *Table 87: IPFE IpfeOption CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 87: IPFE IpfeOption CSV Format

Column	Data Description
0	Application Type (Ipfe)
1	**Options** (Keyword)
2	Ipfe1IpAddress
3	Ipfe2IpAddress
4	Ipfe3IpAddress
5	Ipfe4IpAddress

Column	Data Description
6	StatSyncTcpPort
7	StateSyncReconnectS
8	ApplicationMinPort
9	ApplicationMaxPort
10	RejectOption (tcpreset, drop, icmphostunreachable, icmpportunreachable, icmpadminprohibited)
11	SctpRejectOption (drop, icmphostunreachable, icmpportunreachable, icmpadminprohibited)
12	OverloadStart
13	LeastLoadStart
14	GratuitousArpType
15	Accounting Support (enabled, disabled)
16	ConnectTryPort
17	ConnectTimeoutS
18	ConnectTryIntervalS
19	MonitorProtocol (tcpconnectonly, fullmonitoring, disabled)
20	PacketRateLimit
21	Tsa1DeleteAge
22	Tsa1IPAddress
23	Tsa1IPSecondaryAddress
24	Tsa1IPSecondaryPreferredIpfe
25	Tsa1LoadAlgorithm (hash, roundrobin, leasttraff, leastconns, leastload, leastloadtest)
26	Tsa1PreferredIpfe (1, 2, 3, 4)
27	Tsa1Protocols (SCTP, TCP, SCTP_AND_TCP)
28	Tsa1TsDisable (0, 1)
29	Tsa1AllowedDeviation (0-50)
30	Tsa1LoadFactorMPS (0-100)
31	Tsa1LoadFactorConn (0-100)
	(repeated x 31)
331	Tsa32DeleteAge
332	Tsa32IPAddress
333	Tsa132PSecondaryAddress

Column	Data Description
334	Tsa32IPSecondaryPreferredIpfe
335	Tsa32LoadAlgorithm (hash, roundrobin, leasttraff, leastconns, leastload, leastloadtest)
336	Tsa32PreferredIpfe
337	Tsa32Protocols (SCTP, TCP, SCTP_AND_TCP)
338	Tsa32TsDisable (0, 1)
339	Tsa32AllowedDeviation (0-50)
340	Tsa32LoadFactorMPS (0-100)
341	Tsa32LoadFactorConn (0-100)

"Target Sets configuration elements" in the IPFE Help describes the configuration data elements listed in *Table 88: IPFE IpfeListTsa CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 88: IPFE IpfeListTsa CSV Format

Column	Data Description
0	Application Type (Ipfe)
1	**IPListTsa** (Keyword)
2	tsa
3	server
4	ipAddress
5	description
6	Secondary Address

C

Charging Proxy Application	A DSR Application that is responsible for sending and receiving Diameter accounting messages.
CPA	Charging Proxy Application The Charging Proxy Application (CPA) feature defines a DSR-based Charging Proxy Function (CPF) between the CTFs and the CDFs. The types of CTF include GGSN, PGW, SGW, HSGW, and CSCF/TAS.

D

DA-MP	Diameter Agent Message Processor A DSR MP (Server Role = MP, Server Group Function = Diameter Signaling Router). A local application such as CPA can optionally be activated on the DA-MP. A computer or blade that is hosting a Diameter Signaling Router Application.
Diameter Agent Message Processor	A computer or blade that is hosting the DSR. Multiple instances of the DSR each execute on a separate physical DA-MP. Each instance shares run-time status information with all other instances for the Diameter connections that it controls. In inter-MP routing, an instance can route an ingress Answer message to another instance that performed routing for the corresponding ingress Request message. See DA-MP.

F

FABR	Full Address Based Resolution Provides an enhanced DSR routing capability to enable network operators to resolve the designated Diameter server addresses based on individual user identity addresses in the incoming Diameter request messages.
Full Address Based Resolution	See FABR.

M

MCC	Mobile Country Code A three-digit number that uniquely identifies a country served by wireless telephone networks. The MCC is part of the International Mobile Subscriber Identity (IMSI) number, which uniquely identifies a particular subscriber. See also MNC, IMSI.
MNC	Mobile Network Code A number that identifies a mobile phone carrier. Used in combination with a Mobile Country Code (MCC) to uniquely identify a mobile phone operator/carrier. See also MCC.
MP	Message Processor The role of the Message Processor is to provide the application messaging protocol interfaces and processing. However, these servers also have OAM&P components. All Message Processors replicate from their Signaling OAM's database and generate faults to a Fault Management System.

P

P

PCRF Pools	A logical grouping of PCRFs intended to provide policy decisions for subscribers associated with a particular APN. Policy DRA supports 7 PCRF Pools per Policy DRA Network. A PCRF Pool is selected using the configured mapping between the APN and the PCRF Pool. More than one APN may point to the same PCRF Pool.
Policy DRA	Policy Diameter Relay Agent. A scalable, geo-diverse DSR application that creates a binding between a subscriber and a PCRF, and routes all policy messages for a given subscriber to the PCRF that currently hosts that subscriber's policy rules. Policy DRA is capable of performing Topology Hiding to hide the PCRF from the Policy Client.

R

Range Based Address Resolution	See RBAR.
RBAR	Range Based Address Resolution A DSR enhanced routing application which allows the user to route Diameter end-to-end transactions based on Application ID, Command Code, "Routing Entity" Type, and Routing Entity address ranges.

S

SBR	Session Binding Repository - A highly available, distributed database for storing Diameter session binding data

S

Session Binding Repository	See SBR.
SS7	Signaling System #7 A communications protocol that allows signaling points in a network to send messages to each other so that voice and data connections can be set up between these signaling points. These messages are sent over its own network and not over the revenue producing voice and data paths. The EAGLE is an STP, which is a device that routes these messages through the network.

T

TCAP	Transaction Capabilities Application Part - A protocol in the SS7 protocol suite that enables the deployment of advanced intelligent network services by supporting non-circuit related information exchange between signaling points using the Signaling Connection Control Part connectionless service. TCAP also supports remote control - ability to invoke features in another remote network switch.

V

VM	Virtual Machine