Oracle® Communications Diameter Signaling Router

Diameter Common User's Guide

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Oracle Communications Diameter Signaling Router Diameter Common User's Guide

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Introduction

Topics:

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.

Revision History

Date	Description

December 2016	• New CSV format table for Signaling Firewall
	• Modified existing CSV format tables
	  • System Options CSV format table
	  • Peer Routing Rule CSV format table
	  • AppRouteRule CSV format table
	  • Routing Option Set CSV format table
	  • Policy DRA Options CSV format table

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 UDR. For example, DSR applications (such as RBAR, FABR, CPA, and PCA) and IPFE are currently not used by UDR, so disregard any references to these applications.

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.
- *User Interface Introduction* describes the organization and usage of the application user interface. In it you can find information about how the interface options are organized, how to use widgets and buttons, and how filtering and other page display options work.
- *Diameter Common on the NOAM* describes the configuration of the Dashboard, Metric and Dashboard Elements, 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.

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*.)
	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*.)

Related Specifications

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

Locate Product Documentation on the Oracle Help Center Site

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

1. Access the Oracle Help Center site at *http://docs.oracle.com*.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.
   The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."
4. Click on your Product and then the Release Number.
   A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the **PDF** link, select **Save target as** (or similar command based on your browser), and save to a local folder.

Customer Training

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

http://education.oracle.com/communication

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

www.oracle.com/education/contacts

My Oracle Support (MOS)

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

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

1. Select **2** for New Service Request
2. Select **3** for Hardware, Networking and Solaris Operating System Support
3. Select one of the following options:
   - For Technical issues such as creating a new Service Request (SR), Select **1**
   - For Non-technical issues such as registration or assistance with MOS, Select **2**

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

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

Emergency Response

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

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

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

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

Chapter 2

User Interface Introduction

Topics:

This section describes the organization and usage of the application's user interface. In it you can find information about how the interface options are organized, how to use widgets and buttons, and how filtering and other page display options work.

User Interface Organization

The user interface is the central point of user interaction within an application. It is a Web-based graphical user interface (GUI) that enables remote user access over the network to an application and its functions.

The core framework presents a common set of Main Menu options that serve various applications. The common Main Menu options are:

- Administration
- Configuration
- Alarms and Events
- Security Log
- Status and Manage
- Measurements
- Help
- Legal Notices
- Logout

Applications build upon this framework to present features and functions. Depending on your application, some or all of the following Main Menu options may appear on the Network Operation, Administration, and Maintenance (NOAM) GUI:

- Communication Agent
- Diameter Common
- Diameter
- UDR (User Data Repository)
- MAP-Diameter IWF
- RADIUS (Remote Authentication Dial-In User Service)
- SBR (Session Binding Repository)
- Policy and Charging
- DCA (DOIC Capabilities Announcement) Framework

The DSR System OAM GUI may present even more Main Menu options as listed below. The end result is a flexible menu structure that changes according to the application needs and features activated.

- Transport Manager
- SS7/Sigtran
- RBAR (Range Based Address Resolution)
- FABR (Full Address Based Resolution)
- GLA (Gateway Location Application)
- MAP-Diameter IWF
- RADIUS
- SBR
- Mediation
- Policy and Charging
- DCA Framework
- IPFE (IP Front End)

Note that the System OAM (SOAM) Main Menu options differ from the Network OAM (NOAM) options. Some Main Menu options are configurable from the NOAM server and view-only from the SOAM (SOAM) server. This remains true for other applications.

User Interface Elements

Table 2: User Interface Elements describes elements of the user interface.

Table 2: User Interface Elements

Element	Location	Function
Identification Banner	Top bar across the web page	The left side of the banner provides the following information: • Displays the company name, • product name and version, and • the alarm panel. The right side of the banner: • Allows you to pause any software updates. • Links to the online help for all software. • Shows the user name of the currently logged-in user. • Provides a link to log out of the GUI.
Main Menu	Left side of screen, under banners	A tree-structured menu of all operations that can be performed through the user interface. The plus character (+) indicates a menu item contains subfolders. • To display submenu items, click the plus character, the folder, or anywhere on the same line. • To select a menu item that does not have submenu items, click on the menu item text or its associated symbol.
Work Area	Right side of panel under status	Consists of three sections: Page Title Area, Page Control Area (optional), and Page Area. • Page Title Area: Occupies the top of the work area. It displays the title of the current page being displayed, date and time, and includes a link to context-sensitive help. • Page Control Area: Located below the Page Title Area, this area shows controls for the Page Area (this area is optional). When available as an option, filter controls display in this area. The Page Control Area contains the optional layout element toolbar, which displays different elements depending on which GUI page is selected. For more information, see *Optional Layout Element Toolbar*. • Page Area: Occupies the bottom of the work area. This area is used for all types of operations. It displays all options, status, data, file, and query screens. Information

Element	Location	Function
		or error messages are displayed in a message box at the top of this section. A horizontal and/or vertical scroll bar is provided when the displayed information exceeds the page area of the screen. When a user first logs in, this area displays the application user interface page. The page displays a user-defined welcome message. To customize the message, see *Customizing the Login Message*.
Session Banner	Across the bottom of the web page	The left side of the banner provides the following session information: • The name of the machine to which the user is connected, and whether the user is connected via the VIP or directly to the machine. • The HA state of the machine to which the user is connected. • The role of the machine to which the user is connected. The right side of the banner shows the alarm panel.

Main Menu Options

Table 3: Main Menu Options describes all main menu user interface options.

Note: The menu options can differ according to the permissions assigned to a user's log-in account. For example, the Administration menu options do not appear on the screen of a user who does not have administrative privileges.

Note: Some menu items are configurable only on the Network OAM and view-only on the System OAM; and some menu options are configurable only on the System OAM.

Note: Some features do not appear in the main menu until the features are activated.

Table 3: Main Menu Options

Menu Item	Function
Administration	The Administration menu allows the user to: • General Options. Configure options such as password history and expiration, login message, welcome message, and the number of failed login attempts before an account is disabled • Set up and manage user accounts • Configure group permissions • View session information • Manage sign-on certificates • Authorize IP addresses to access the user interface • Configure SFTP user information • View the software versions report • Upgrade management including backup and reporting

Menu Item	Function
	• Authenticate LDAP servers • Configure SNMP trapping services • Configure an export server • Configure DNS elements
Configuration	On the NOAM, allows the user to configure: • Network Elements • Network Devices • Network Routes • Services • Servers • Server Groups • Resource Domains • Places • Place Associations • Interface and Port DSCP
Alarms and Events	Allows the user to view: • Active alarms and events • Alarm and event history • Trap log
Security Log	Allows the user to view, export, and generate reports from security log history.
Status and Manage	Allows the user to monitor the individual and collective status of Network Elements, Servers, HA functions, Databases, KPIs, system Processes, and Tasks. The user can perform actions required for server maintenance, database management, data, and ISO file management.
Measurements	Allows the user to view and export measurement data.
Transport Manager (optional)	On the SOAM, allows the user to configure adjacent nodes, configuration sets, or transports. A maintenance option allows the user to perform enable, disable, and block actions on the transport entries. This option only appears with the DSR application.
Communication Agent (optional)	Allows the user to configure Remote Servers, Connection Groups, and Routed Services. The user can perform actions to enable, disable, and block connections. Also allows the user to monitor the status of Connections, Routed Services, and HA Services.
SS7/Sigtran (optional)	On the SOAM, allows the user to configure various users, groups, remote signaling points, links, and other items associated with SS7/Sigtran; perform maintenance and troubleshooting activities; and provides a command line interface for bulk loading SS7 configuration data. This option only appears with the DSR application.

Menu Item	Function
Diameter Common (optional)	Allows the user to view or configure: • Dashboard, configure on the NOAM; view on both OAMs • Network Identifiers on the SOAM - MCC Ranges • Network Identifiers on the NOAM - MCCMNC and MCCMNC Mapping • MPs (on the SOAM) - editable Profile parameters and Profile Assignments The DSR Bulk Import and Export functions are available on both OAMs for the data configured on that OAM.
Diameter (optional)	Allows the user to configure, modify, and monitor Diameter routing: • On the NOAMP, Diameter Topology Hiding and Egress Throttle List configuration • On the SOAM, Diameter Configuration, Maintenance, Reports, Troubleshooting with IDIH, AVP Dictionary, and Diameter Mediation configuration
UDR (User Data Repository) (optional)	Allows the user to add, edit, store, and manage subscriber and pool data. The user can also monitor the import, export, and subscribing client status. This option only appears with the UDR application.
RBAR (Range-Based Address Resolution) (optional)	Allows the user to configure the following Range-Based Address Resolution (RBAR) settings: • Applications • Exceptions • Destinations • Address Tables • Addresses • Address Resolutions • System Options This is accessible from the SOAM only. This option only appears with the DSR application.
FABR (Full Address Based Resolution) (optional)	Allows the user to configure the following Full Address Based Resolution (FABR) settings: • Applications • Exceptions • Default Destinations • Address Resolutions • System Options This is accessible from the SOAM only. This option is only available with the DSR application.
Gateway Location Application (optional)	On the SOAM, allows the user to perform configuration tasks, edit options, and view elements for: • Exceptions

Menu Item	Function
	• Options GLA can deploy with Policy DRA (in the same DA-MP or a separate DA-MP). This option only appears with the DSR application.
MAP-Diameter Interworking (optional)	On the SOAM, allows the user to perform configuration tasks, edit options, and view elements for the DM-IWF DSR Application: • DM-IWF Options • Diameter Exception On the NOAMP, allows the user to perform configuration tasks, edit options, and view elements for the MD-IWF SS7 Application: • MD-IWF Options • Diameter Realm • Diameter Identity GTA • GTA Range to PC • MAP Exception • CCNDC Mapping This option only appears with the DSR application.
RADIUS (Remote Authentication Dial-In User Service) (optional)	Allows the user to perform configuration tasks, edit system options, and view elements for: • Network Options • Message Authenticator Configuration Sets • Shared Secret Configuration Sets • Ingress Status Server Configuration Sets • Message Conversion Configuration Sets • NAS Node This option only appears with the DSR application.

SBR (Session Binding Repository) (optional)	Allows the user to perform configuration tasks, edit system options, and view elements for:
	• SBR Databases
	• SBR Database Resizing Plans
	• SBR Data Migration Plans
	• Database Options
	Additionally, on the NOAMP, users are allowed to perform maintenance tasks, edit options, and view elements for:
	• Maintenance
	  • SBR Database Status
	  • SBR Status
	  • SBR Database Reconfiguration Status
	This option only appears with the DSR application.

Menu Item	Function
Mediation	Allows the user to make routable decisions to end the reply, drop the message, or set the destination realm.

Policy and Charging (optional)	On the NOAMP, allows the user to perform configuration tasks, edit options, and view elements for:
	• General Options
	• Access Point Names
	• Policy DRA
	  • PCRF Pools
	  • PCRF Sub-Pool Selection Rules
	  • Network-Wide Options
	• Online Charging DRA
	  • OCS Session State
	  • Realms
	  • Network-Wide Options
	• Alarm Settings
	• Congestion Options
	Additionally on the NOAMP, users are allowed to perform maintenance tasks, edit options, and view elements for:
	• Maintenance
	  • SBR Database Status
	  • SBR Status
	  • SBR Database Reconfiguration Status
	  • Policy Database Query
	On the SOAM, allows the user to perform configuration tasks, edit options, and view elements for:
	• General Options
	• Access Point Names
	• Policy DRA
	  • PCRFs
	  • Binding Key Priority
	  • PCRF Pools
	  • PCRF Pool to PRT Mapping
	  • PCRF Sub-Pool Selection Rules
	  • Policy Clients
	  • Suspect Binding Removal Rules
	  • Site Options
	• Online Charging DRA
	  • OCSs
	  • CTFs

Menu Item	Function
	• OCS Session State • Realms • Error Codes • Alarm Settings • Congestion Options This option only appears with the DSR application.
DCA Framework (optional)	Allows the user to perform configuration tasks, edit system options, and view elements for DCA applications: • Custom MEALs (Measurements, Events, Alarms, and Logs) • General Options • Trial MPs assignment • Application Control • System Options
IPFE (optional)	Allows the user to configure IP Front End (IPFE) options and IP List TSAs. This is accessible from the SOAM server only. This option only appears with the DSR application.
Help	Launches the Help system for the user interface
Legal Notices	Product Disclaimers and Notices
Logout	Allows the user to log out of the user interface

Missing Main Menu options

Permissions determine which Main Menu options are visible to users. Permissions are defined through the **Group Administration** page. The default group, **admin**, is permitted access to all GUI options and functionality. Additionally, members of the **admin** group set permissions for other users.

Main Menu options vary according to the group permissions assigned to a user's account. Depending on your user permissions, some menu options may be missing from the Main Menu. For example, Administration menu options do not appear on your screen if you do not have administrative permissions. For more information about user permissions, see *Group Administration* in the OAM section of the online help, or contact your system administrator.

Common Graphical User Interface Widgets

Common controls allow you to easily navigate through the system. The location of the controls remains static for all pages that use the controls. For example, after you become familiar with the location of the display filter, you no longer need to search for the control on subsequent pages because the location is static.

Supported Browsers

This application supports the use of Microsoft® Internet Explorer 8.0, 9.0, or 10.0.

is designed to work with most modern HTML5 compliant browsers and uses both JavaScript and cookies. Please refer to the *Oracle Software Web Browser Support Policy* for details

System Login Page

Access to the user interface begins at the System Login page. The System Login page allows users to log in with a username and password and provides the option of changing the password upon login. The System Login page also features a date and time stamp reflecting the time the page was last refreshed. Additionally, a customizable login message appears just below the **Log In** button.

The user interface is accessed via HTTPS, a secure form of the HTTP protocol. When accessing a server for the first time, HTTPS examines a web certificate to verify the identity of the server. The configuration of the user interface uses a self-signed web certificate to verify the identity of the server. When the server is first accessed, the supported browser warns the user that the server is using a self-signed certificate. The browser requests confirmation that the server can be trusted. The user is required to confirm the browser request to gain access.

Customizing the Login Message

Before logging in, the **System Login** page appears. You can create a login message that appears just below the **Log In** button on the **System Login** page.

Figure 1: Oracle System Login

1. From the **Main Menu**, click **Administration** > **General Options**.
   The **General Options Administration** page appears.
2. Locate **LoginMessage** in the **Variable** column.
3. Enter the login message text in the **Value** column.
4. Click **OK** or **Apply** to submit the information.
   A status message appears at the top of the Configuration Administration page to inform you if the operation was successful.

The next time you log in to the user interface, the login message text displays.

Accessing the DSR Graphical User Interface

In DSR, some configuration is done at the NOAM server, while some is done at the SOAM server. Because of this, you need to access the DSR graphical user interface (GUI) from two servers. Certificate Management (Single Sign-On) can be configured to simplify accessing the DSR GUI on the NOAM and the SOAM.

For information on configuring Single Sign-On certificates, see **OAM** > **Administration** > **Access Control** > **Certificate Management** in the DSR online help.

After the certificates have been configured, you can log into the DSR GUI on any NOAM or SOAM, and then access the DSR GUI on other servers (NOAM or other SOAMs) without having to re-enter your login credentials.

1. In the browser URL field, enter the fully qualified hostname of the NOAM server, for example https://dsr-no.yourcompany.com.

   When using Single Sign-On, you cannot use the IP address of the server.
2. When prompted by the browser, confirm that the server can be trusted.

   The System Login page appears.
3. Enter the Username and Password for your account.

   The DSR GUI for the NOAM appears.
4. To access the DSR GUI for the SOAM, open another browser window and enter the fully qualified hostname of the SOAM.

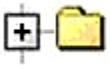
   The DSR GUI for the SOAM appears

You can toggle between the DSR GUI on the NOAM and the DSR GUI on the SOAM as you perform configuration tasks.

Main Menu Icons

This table describes the icons used in the **Main Menu**.

Table 4: Main Menu Icons

Icon	Name	Description
	Folder	Contains a group of operations. If the folder is expanded by clicking the plus (+) sign, all available operations and sub-folders are displayed. Clicking the minus (-) collapses the folder.
	Config File	Contains operations in an Options page.
	File with Magnifying Glass	Contains operations in a Status View page.
	File	Contains operations in a Data View page.
	Multiple Files	Contains operations in a File View page.
	File with Question Mark	Contains operations in a Query page.

Icon	Name	Description
	User	Contains operations related to users.
	Group	Contains operations related to groups.
	Task	Contains operations related to Tasks
	Help	Launches the Online Help.
	Logout	Logs the user out of the user interface.

Work Area Displays

In the user interface, tables, forms, tabbed pages, and reports are the most common formats.

Note: Screen shots are provided for reference only and may not exactly match a specific application's GUI.

Tables

Paginated tables describe the total number of records being displayed at the beginning and end of the table. They provide optional pagination with **First | Prev | Next | Last** links at both the beginning and end of this table type. Paginated tables also contain action links on the beginning and end of each row. For more information on action links and other page controls, see *Page Controls*.

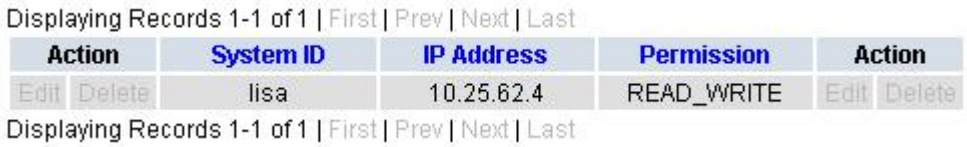
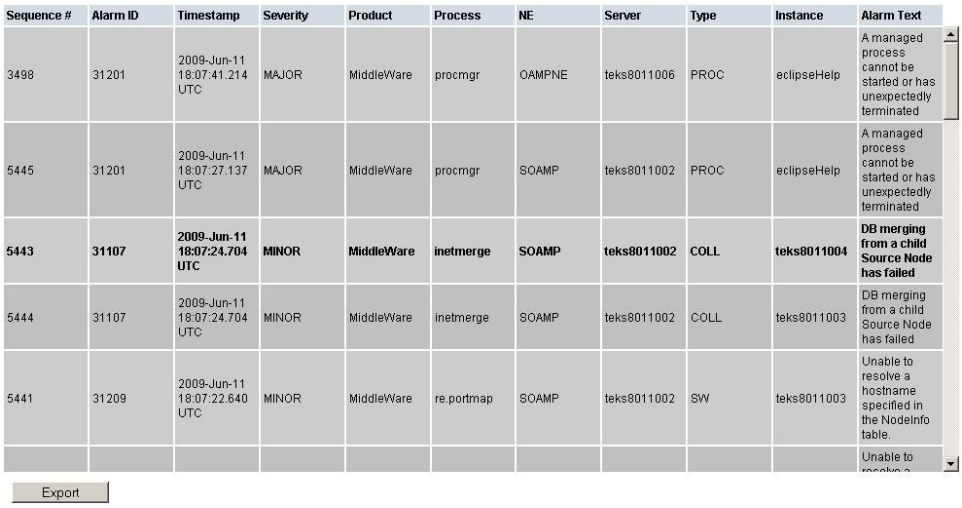


Figure 2: Paginated Table

Scrollable tables display all of the records on a single page. The scroll bar, located on the right side of the table, allows you to view all records in the table. Scrollable tables also provide action buttons that operate on selected rows. For more information on buttons and other page controls, see *Page Controls*.



Sequence #	Alarm ID	Timestamp	Severity	Product	Process	NE	Server	Type	Instance	Alarm Text
3498	31201	2009-Jun-11 18:07:41.214 UTC	MAJOR	MiddleWare	procmgr	OAMPNE	teks8011006	PROC	eclipseHelp	A managed process cannot be started or has unexpectedly terminated
5445	31201	2009-Jun-11 18:07:27.137 UTC	MAJOR	MiddleWare	procmgr	SOAMP	teks8011002	PROC	eclipseHelp	A managed process cannot be started or has unexpectedly terminated
5443	**31107**	**2009-Jun-11 18:07:24.704 UTC**	**MINOR**	**MiddleWare**	**inetmerge**	**SOAMP**	**teks8011002**	**COLL**	**teks8011004**	**DB merging from a child Source Node has failed**
5444	31107	2009-Jun-11 18:07:24.704 UTC	MINOR	MiddleWare	inetmerge	SOAMP	teks8011002	COLL	teks8011003	DB merging from a child Source Node has failed
5441	31209	2009-Jun-11 18:07:22.640 UTC	MINOR	MiddleWare	re.portmap	SOAMP	teks8011002	SW	teks8011003	Unable to resolve a hostname specified in the NodeInfo table.
										Unable to

Export

Figure 3: Scrollable Table

Note: Multiple rows can be selected in a scrollable table. Add rows one at a time using CTRL-click. Add a span of rows using SHIFT-click.

Forms

Forms are pages on which data can be entered. Forms are typically used for configuration. Forms contain fields and may also contain a combination of pulldown lists, buttons, and links.

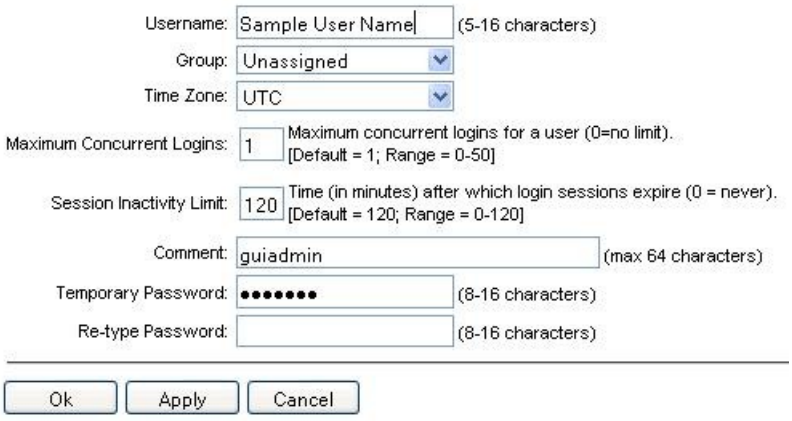
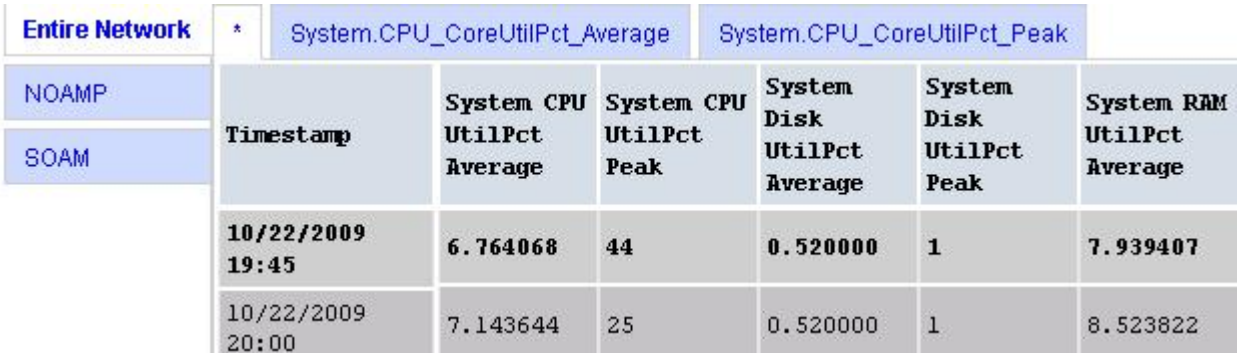


Figure 4: Form Page

Tabbed pages

Tabbed pages provide collections of data in selectable tabs. Click on a tab to see the relevant data on that tab. Tabbed pages also group Retrieve, Add, Update, and Delete options on one page. Click on the relevant tab for the task you want to perform and the appropriate fields populate on the page. Retrieve is always the default for tabbed pages.



Timestamp	System CPU UtilPct Average	System CPU UtilPct Peak	System Disk UtilPct Average	System Disk UtilPct Peak	System RAM UtilPct Average
10/22/2009 19:45	6.764068	44	0.520000	1	7.939407
10/22/2009 20:00	7.143644	25	0.520000	1	8.523822

Figure 5: Tabbed Pages

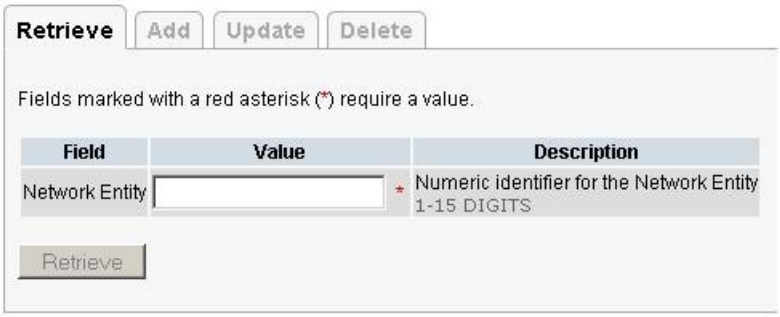


Figure 6: Tabbed Pages

Reports

Reports provide a formatted display of information. Reports are generated from data tables by clicking **Report**. Reports can be viewed directly on the user interface, or they can be printed. Reports can also be saved to a text file.

```
================================================================================

User Account Usage Report

================================================================================

Report Generated: Fri Jun 19 19:30:55 2009 UTC
From: Unknown Network OAM&P on host teks5001701
Report Version: 1.0
User: guiadmin

--------------------------------------------------------------------------------

Username          Date of Last Login    Days Since Last Login   Account Status
----------------  --------------------  ----------------------  ---------------
guiadmin          2009-06-19 19:00:17   0                       enabled

--------------------------------------------------------------------------------

End of User Account Usage Report

================================================================================
```

Figure 7: Report Output

Customizing the Splash Page Welcome Message

When you first log in to the user interface, the splash page appears. Located in the center of the main work area is a customizable welcome message. Use this procedure to create a message suitable for your needs.

1. From the **Main Menu**, click **Administration** > **General Options**.
2. Locate **Welcome Message** in the **Variable** column.
3. Enter the desired welcome message text in the **Value** column.
4. Click **OK** to save the change or **Cancel** to undo the change and return the field to the previously saved value.
   A status message appears at the top of the page to inform you if the operation was successful.

The next time you log in to the user interface, the new welcome message text is displayed.

Column Headers (Sorting)

You can sort a table by a column by clicking the column header. However, sorting is not necessarily available on every column. Sorting does not affect filtering.

When you click the header of a column that the table can be sorted by, an indicator appears in the column header showing the direction of the sort. See *Figure 8: Sorting a Table by Column Header*. Clicking the column header again reverses the direction of the sort.

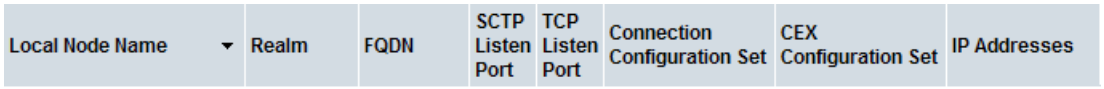


Figure 8: Sorting a Table by Column Header

Page Controls

User interface pages contain controls, such as buttons and links, that perform specified functions. The functions are described by the text of the links and buttons.

Note: Disabled buttons are grayed out. Buttons that are irrelevant to the selection or current system state, or which represent unauthorized actions as defined in **Group Administration**, are disabled. For example, **Delete** is disabled for users without Global Data Delete permission. Buttons are also disabled if, for example, multiple servers are selected for an action that can only be performed on a single server at a time.

Table 5: Example Action Buttons contains examples of Action buttons.

Table 5: Example Action Buttons

Action Button	Function
Insert	Inserts data into a table.
Edit	Edits data within a table.
Delete	Deletes data from table.

Action Button	Function
Change	Changes the status of a managed object.

Some Action buttons take you to another page.

Submit buttons, described in *Table 6: Submit Buttons*, are used to submit information to the server. The buttons are located in the page area and accompanied by a table in which you can enter information. The Submit buttons, except for **Cancel**, are disabled until you enter some data or select a value for all mandatory fields.

Table 6: Submit Buttons

Submit Button	Function
OK	Submits the information to the server, and if successful, returns to the View page for that table.
Apply	Submits the information to the server, and if successful, remains on the current page so that you can enter additional data.
Cancel	Returns to the View page for the table without submitting any information to the server.

Clear Field Control

The clear field control allows you to clear the value from a pulldown list. The clear field control is available only on some pulldown fields.

Click the **X** next to a pulldown list to clear the field.

Figure 9: Clear Field Control X

Optional Layout Element Toolbar

The optional layout element toolbar appears in the Page Control Area of the GUI.

Figure 10: Optional Layout Element Toolbar

The toolbar displays different elements depending on which GUI page is selected. The elements of the toolbar that can appear include:

- Filter – Allows you to filter data in a table.
- Errors – Displays errors associated with the work area.
- Info – Displays information messages associated with the work area.
- Status – Displays short status updates associated with the main work area.
- Warning – Displays warnings associated with the work area.

Notifications

Some messages require immediate attention, such as errors and status items. When new errors occur, the Errors element opens automatically with information about the error. Similarly, when new status items are added, the Status element opens. If you close an automatically opened element, the element stays closed until a new, unacknowledged item is added.

Figure 11: Automatic Error Notification

Note: Viewing and closing an error does not clear the Errors element. If you reopen the Errors element, previously viewed errors are still in the list.

When new messages are added to Warning or Info, the styling of the element changes to indicate new messages are available. The styling of the Task element changes when a task changes state (such as, a task begins or ends).

Opening an Element in the Toolbar

Use this procedure to open an element in the optional layout element toolbar.

1. Click the text of the element or the triangle icon to open an element.
   The selected element opens and overlays the work area.
2. Click **X** to close the element display.

Filters

Filters are part of the optional layout element toolbar and appear throughout the GUI in the Page Control Area. For more information about optional layout element toolbar functionality, see *Optional Layout Element Toolbar*.

Filters allow you to limit the data presented in a table and can specify multiple filter criteria. By default, table rows appear unfiltered. Three types of filters are supported, however, not all filtering options are available on every page. The types of filters supported include:

- Network Element – When enabled, the Network Element filter limits the data viewed to a single Network Element.

  Note: Once enabled, the Network Element filter affect all pages that list or display data relating to the Network Element.

- Collection Interval – When enabled, the collection interval filter limits the data to entries collected in a specified time range.
- Display Filter – The display filter limits the data viewed to data matching the specified criteria.

Once a field is selected, it cannot be selected again. All specified criteria must be met in order for a row to be displayed.

The style or format of filters may vary depending on which GUI pages the filters are displayed. Regardless of appearance, filters of the same type function the same.

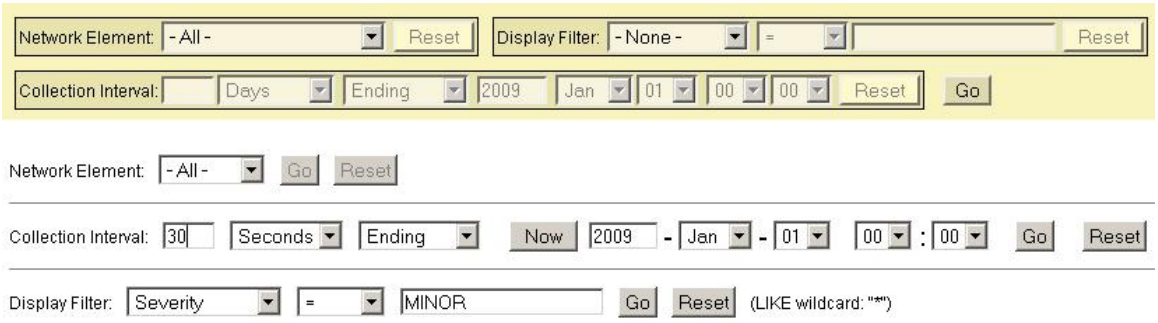


Figure 12: Examples of Filter Styles

Filter Control Elements

This table describes filter control elements of the user interface.

Table 7: Filter Control Elements

Operator	Description
=	Displays an exact match.
!=	Displays all records that do not match the specified filter parameter value.
>	Displays all records with a parameter value that is greater than the specified value.
>=	Displays all records with a parameter value that is greater than or equal to the specified value.
<	Displays all records with a parameter value that is less than the specified value.
<=	Displays all records with a parameter value that is less than or equal to the specified value.
Like	Enables you to use an asterisk (*) as a wildcard as part of the filter parameter value.
Is Null	Displays all records that have a value of **Is Null** in the specified field.

Note: Not all filterable fields support all operators. Only the supported operators are available for you to select.

Filtering on the Network Element

The global Network Element filter is a special filter that is enabled on a per-user basis. The global Network Element filter allows a user to limit the data viewed to a single Network Element. Once enabled, the global Network Element filter affects all sub-screens that display data related to Network Elements. This filtering option may not be available on all pages.

1. Click **Filter** in the optional layout element toolbar.
2. Select a Network Element from the **Network Element** pulldown menu.
3. Click **Go** to filter on the selection, or click **Reset** to clear the selection.

Records are displayed according to the specified criteria.

Filtering on Collection Interval

The Collection Interval filter allows a user to limit the data viewed to a specified time interval. This filtering option may not be available on all pages.

1. Click **Filter** in the optional layout element toolbar.
2. Enter a duration for the **Collection Interval** filter.

   The duration must be a numeric value.
3. Select a unit of time from the pulldown menu.

   The unit of time can be seconds, minutes, hours, or days.
4. Select **Beginning** or **Ending** from the pulldown menu.
5. Click **Go** to filter on the selection, or click **Reset** to clear the selection.

Records are displayed according to the specified criteria.

Filtering Using the Display Filter

Use this procedure to perform a filtering operation. This procedure assumes you have a data table displayed on your screen. This process is the same for all data tables. However, all filtering operations are not available for all tables.

1. Click **Filter** in the optional layout element toolbar.
2. Select a field name from the **Display Filter** pulldown menu.

   This selection specifies the field in the table that you want to filter on. The default is **None**, which indicates that you want all available data displayed.

   The selected field name displays in the **Display Filter** field.
3. Select an operator from the operation selector pulldown menu.
4. Enter a value in the value field.

   This value specifies the data that you want to filter on. For example, if you specify Filter=Severity with the equals (=) operator and a value of MINOR, the table would show only records where Severity=MINOR.
5. For data tables that support compound filtering, click **Add** to add another filter condition. Then repeat steps 2 through 4.

   Multiple filter conditions are joined by an AND operator.
6. Click **Go** to filter on the selection, or click **Reset** to clear the selection.

Records are displayed according to the specified criteria.

Pause Updates

Some pages refresh automatically. Updates to these pages can be paused by selecting the **Pause updates** checkbox. Uncheck the **Pause updates** checkbox to resume automatic updates. The **Pause updates** checkbox is available only on some pages.

Max Records Per Page Controls

Max Records Per Page is used to control the maximum number of records displayed in the page area. If a page uses pagination, the value of Max Records Per Page is used. Use this procedure to change the Max Records Per Page.

1. From the **Main Menu**, click **Administration** > **General Options**.
2. Change the value of the **MaxRecordsPerPage** variable.

   Note: Maximum Records Per Page has a range of values from 10 to 100 records. The default value is 20.

3. Click **OK** or **Apply**.

   OK saves the change and returns to the previous page.

   Apply saves the change and remains on the same page.

The maximum number of records displayed is changed.

Chapter 3

Diameter Common on the NOAM

Topics:

The **Diameter Common** GUI pages on the NOAM can be used for configuration of the DSR Dashboard, MCCMNC, MCCMNC Mapping Network Identifiers, as well as 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** > **Dashboard** > **Dashboard** (see *Dashboard*)
- Configure **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** (see *Metric Groups*)
- Configure **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** (see *Metric Threshold Configuration Sets*)
- Configure **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements** *Dashboard Network Elements*)
- Configure **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Networks** (see *Dashboard Networks*)
- 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*)

Dashboard

Dashboard on the NOAM

The Dashboard on the NOAM is viewed at **Diameter Common** > **Dashboard**.

The Dashboard provides high level Metrics, which provide an overall view of the health of one or more Network Elements (NEs) of a network, making Metrics the core component of the DSR Dashboard. Each column on the Dashboard contains the set of values for a particular Metric. The selection of which Metrics are displayed on the Dashboard is done via configuration.

The NOAM Dashboard shows both Network summary and NE summary Metrics.

The order that Metric Groups are displayed on the Dashboard is determined from configuration which cannot be modified. The order that Metrics are displayed within a Metric Group on the Dashboard display is determined from configuration which cannot be modified. Metrics selected for display on the Dashboard via configuration can be hidden/viewed via a Dashboard GUI control based on threshold level filters. A threshold level filter is used to limit which Metrics are displayed on the Dashboard based on a severity value. These limits are valuable because they focus on more potentially significant problems.

Horizontal and vertical scrolling allows any Metrics which do not fit onto a single physical screen to be seen.

The Dashboard also facilitates troubleshooting via Metric-specific hyperlinks on the Dashboard to assist in viewing more detailed information via existing DSR status and maintenance screens. The linkage between content on the Dashboard to DSR status and maintenance screens will be determined from configuration which cannot be modified.

Per Network Metrics are derived from per-NE summary Metrics. A Network is the set of one or more Dashboard Network Elements. The formula for calculating a Network Metric value is identical to that for calculating the per-NE Metric for that Metric.

Dashboard on the SOAM

The SOAM Dashboard shows the NE's summary Metrics, its per-Server Type summary Metrics and its per-Server Metrics.

A Server Type physically groups Metrics associated with a particular type of Server (e.g., DA-MP) onto the Dashboard display in order to create summary Metrics for Servers of a similar type. The order of Server Types on the SOAM Dashboard is determined from configuration which cannot be modified. The Server Types are predefined and cannot be modified. The DA-MP, SS7-MP, DSR, SBR, and SOAM Server Types are supported.

Server Metrics are maintained by each MP. Per-Server Metric values are periodically pushed to their local SOAM, where they are displayed on the SOAM Dashboard display.

Server Type Metrics show a roll-up of Server Metrics by Server type. The formula for calculating a Server Type Metric value is identical to that for calculating the per-NE Metric for that Metric.

Network Element (NE) Metrics are derived from per-Server Metrics. A Network Element is the set of servers managed by a SOAM. The formula for calculating a per-NE Metric value is Metric-specific although, in general, most NE Metrics are the sum of the per-Server Metrics. The set of servers which are managed by a SOAM is determined through standard NOAM configuration and cannot be modified via Dashboard configuration. An NOAM can manage up to 32 NEs.

Metric Groups

The **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page allows Dashboard Metric Groups to be configured.

A Metric Group establishes a collection of Metrics onto the Dashboard display and creates an aggregation status for a group of metrics. The "status" of a Metric Group is the worst-case status of the metrics within that group.

The name of a Metric Group is determined from configuration which cannot (initially) be modified.

The assignment of a Metric to a Metric Group is determined from configuration which cannot (initially) be modified.

The fields are described in *Metric Groups elements*.

Metric Groups elements

Table 8: Metric Groups Elements describes the fields on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page.

Table 8: Metric Groups Elements

Field (* indicates a required field)	Value	Description
*Metric Group Name	Format: Text Box	Name of the Metric Group. Metric Group names are not user-configurable.

Each Metric Group has its own unique metrics. To see the specific metrics within a particular Metric Group, click the **+**. Once expanded, the list of Metric Names also shows whether or not a given metric is displayed on the Dashboard.

For metrics to be displayed on the Dashboard, the metrics must be selected to do so. To select which metrics are displayed on the Dashboard, select a Metric Group and click **Edit**

Address Resolution Metrics elements

After selecting the Address Resolution Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 9: Address Resolution Metrics Elements* describes the fields for the specific Address Resolution Metrics.

Table 9: Address Resolution Metrics Elements

Metric Name	Display on Dashboard	Description
# RBAR Cong Instances	Format: Check Box	Total number of RBAR instances in congestion (CL1, CL2, or CL3) across included servers.
RBAR Avg Ing MPS	Format: Check Box	Average RBAR ingress MPS across included DA-MP servers.
RBAR Trans Rej %	Format: Check Box	Percentage of RBAR transactions rejected across included DA-MP servers.
# FABR Cong Instances	Format: Check Box	Total number of FABR instances in congestion (CL1, CL2, or CL3) across included servers.
FABR Avg Ing MPS	Format: Check Box	Average FABR ingress MPS across included DA-MP servers.
FABR Trans Rej %	Format: Check Box	Percentage of FABR transactions rejected across included DA-MP servers.

Alarms Metrics elements

After selecting the Alarms Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 10: Alarms Metrics Elements* describes the fields for the specific Alarms Metrics.

Table 10: Alarms Metrics Elements

Metric Name	Display on Dashboard	Description
# Critical Alarms	Format: Check Box	The total number of critical alarms currently being reported by all associated servers.
# Major Alarms	Format: Check Box	The total number of major alarms currently being reported by all associated servers.

Metric Name	Display on Dashboard	Description
# Minor Alarms	Format: Check Box	The total number of minor alarms currently being reported by all associated servers.

Connections Metrics elements

After selecting the Diameter Connections Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 11: Connections Metrics Elements* describes the fields for the specific Diameter Connections Metrics.

Table 11: Connections Metrics Elements

Metric Name	Display on Dashboard	Description
# Fixed Conns Unavail	Format: Check Box	Total number of fixed connections (Diameter or RADIUS) enabled, but unavailable, across included DA-MPs
# IPFE Conns Unavail	Format: Check Box	Total number of IPFE Diameter connections enabled, but unavailable, across included DA-MPs
# Conns Egress Cong	Format: Check Box	Total number of connections (Diameter or RADIUS) that are experiencing egress congestion, across included DA-MPs
# Conns Ingress Cong	Format: Check Box	Total number of connections (Diameter or RADIUS) that are experiencing ingress congestion, across included DA-MPs
# Peer Nodes Unavail	Format: Check Box	Total number of Peer Nodes unavailable, across included DA-MPs
# Peer Nodes Degraded	Format: Check Box	Total number of Peer Nodes degraded, across included DA-MPs
# Route Lists Unavail	Format: Check Box	Total number of Route Lists unavailable, across included DA-MPs
# Route Lists Degraded	Format: Check Box	Total number of Route Lists degraded, across included DA-MPs
# PTL ETGs Degraded	Format: Check Box	Total number of Pending Transaction Limiting Egress Throttle Groups Degraded, across included DA-MPs
# RL ETGs Degraded	Format: Check Box	Total number of Rate Limiting Egress Throttle Groups Degraded, across included DA-MPs
# TTPs with Loss more than zero percent loss	Format: Check Box	Total number of TTPs with Loss more than zero percent loss, across included DA-MPs
# TTPs with Loss more than Threshold	Format: Check Box	Total number of TTPs with Loss more than Threshold, across included DA-MPs, across included DA-MPs

Metric Name	Display on Dashboard	Description
# TTGs with Loss more than zero percent loss metric	Format: Check Box	Total number of TTGs with Loss more than zero percent loss metric, across included DA-MPs.

MAP Interworking Metrics elements

After selecting the MAP Interworking Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 12: MAP Interworking Metrics Elements* describes the fields for the specific MAP Interworking Metrics.

Table 12: MAP Interworking Metrics Elements

Metric Name	Display on Dashboard	Description
# DMIWF Cong Instances	Format: Check Box	Total number of DMIWF instances in congestion (CL1, CL2, or CL3) across included servers
DMIWF Avg Ing MPS	Format: Check Box	Average DMIWF ingress MPS across included DA-MP servers
DMIWF Trans Rej %	Format: Check Box	Percentage of DMIWF transactions rejected across included DA-MP servers
# MDIWF Cong Instances	Format: Check Box	Total number of MDIWF instances in congestion (CL1, CL2, or CL3) across included servers
MDIWF Avg Ing MPS	Format: Check Box	Average MDIWF ingress MPS across included SS7-MP servers
MDIWF Trans Rej %	Format: Check Box	Percentage of MDIWF transactions rejected across included SS7-MP servers
# SS7 Links Down	Format: Check Box	Total number of SS7 links enabled, but down, across included SS7-MPs
# SS7 Link Sets Down	Format: Check Box	Total number of SS7 link sets down across included SS7-MPs
# SS7 MTP3 Users Unavail	Format: Check Box	Total number of SS7 MTP3 remote users unavailable across included SS7-MPs
# SS7 Rmt Sig Pts Unavail	Format: Check Box	Total number of SS7 MTP3 remote signaling points unavailable across included SS7-MPs

Policy & Charging Metrics elements

After selecting the Policy & Charging Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 13: Policy & Charging Metrics Elements* describes the fields for the specific Policy and Charging Metrics.

Table 13: Policy & Charging Metrics Elements

Metric Name	Display on Dashboard	Description
# PCA Cong Instances	Format: Check Box	Total number of PCA instances in congestion (CL1, CL2, or CL3) across included servers
PCA Avg Ing MPS	Format: Check Box	Average PCA ingress MPS across included DA-MP servers
PCA Trans Rej %	Format: Check Box	Percentage of PCA transactions rejected across included DA-MP servers
# GLA Cong Instances	Format: Check Box	Total number of GLA instances in congestion (CL1, CL2, or CL3) across included servers
GLA Avg Ing MPS	Format: Check Box	Average GLA ingress MPS across included DA-MP servers
GLA Trans Rej %	Format: Check Box	Percentage of GLA transactions rejected across included DA-MP server

Priority Service Metrics elements

After selecting the Priority Service Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 14: Priority Service Metrics Elements* describes the fields for the specific Priority Service Metrics.

Table 14: Priority Service Metrics Elements

Metric Name	Display on Dashboard	Description
NGN-PS Offered Rate	Format: Check Box	Rate of NGN-PS messages received from DSR peers
NGN-PS Transaction Pass %	Format: Check Box	Ratio of number of 2xx NGN-PS Answers sent to Peer/Number of NGN-PS messages Accepted by DSR
NGN-PS Transaction Fail Peers %	Format: Check Box	Ratio of number of non-2xx NGN-PS Answers received from Peer/Number of NGN-PS messages Accepted by DSR

Protocol Metrics elements

After selecting the Protocol Metric Group and clicking the **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 15: Protocol Metrics elements* describes the fields for the specific Protocol Metrics.

Table 15: Protocol Metrics elements

Metric Name	Display on Dashboard	Description
Avg D2D Trans Hold Tm	Format: Check Box	Average Diameter-to-Diameter Transaction Hold Time across included DA-MPs (ms)
Avg D2M Trans Hold TM	Format: Check Box	Average Diameter-to-MAP Transaction Hold Time across included SS7-MPs (ms)
Avg M2D Trans Hold Tm	Format: Check Box	Average MAP-to-Diameter Transaction Hold Time across included SS7-MPs (ms)
Success Trans %	Format: Check Box	Percentage of transactions completed successfully across included servers
Ext Node Rej %	Format: Check Box	Percentage of transactions rejected by external signaling nodes
Egress Answer Tmout %	Format: Check Box	Percentage of egress transactions with answer timeout
Orphan Answer %	Format: Check Box	Percentage of orphan answers detected across included servers

RADIUS Metrics elements

After selecting the Servers Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 16: RADIUS Metrics Elements* describes the fields for the specific RADIUS Metrics.

Table 16: RADIUS Metrics Elements

Metric Name	Display on Dashboard	Description
Avg RADIUS MPS	Format: Check Box	Average RADIUS MPS across included DA-MP servers
Avg RD-IWF MPS	Format: Check Box	Average RD-IWF MPS across included DA-MP servers

Servers Metrics elements

After selecting the Servers Metric Group and clicking **Edit** on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups** page, the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Groups [Edit]** page appears. *Table 17: Servers Metrics Elements* describes the fields for the specific Servers Metrics.

Table 17: Servers Metrics Elements

Metric Name	Display on Dashboard	Description
# Servers Unavail	Format: Check Box	The total number of associated servers administratively enabled, but not reporting status data
# Servers Exc Mem Thr	Format: Check Box	The total number of servers whose memory usage exceeds any defined threshold
# Servers Exc CPU Thr	Format: Check Box	The total number of servers whose CPU usage exceeds any defined threshold
# Servers Exc Proc Rate Thr	Format: Check Box	The total number of servers whose processing rate usage exceeds any defined threshold
# Servers Stack Congested	Format: Check Box	The total number of servers whose stack is in congestion (CL1, CL2, or CL3)
DA-MP Ingress MPS	Format: Check Box	Total ingress MPS across included DA-MP servers
SS7-MP Ingress MPS	Format: Check Box	Total ingress MPS across included SS7-MP servers
IPFE Ingress Pkts/sec	Format: Check Box	Total ingress packets per second across included IPFE servers
IPFE Ingress MB/sec	Format: Check Box	Total ingress MB per second across included IPFE servers
SBR Ingress Events/sec	Format: Check Box	Total ingress events per second across included SBR servers
SBR Sessions	Format: Check Box	Total sessions across included SBR servers
SBR Bindings	Format: Check Box	Total bindings across included SBR servers

Metric Threshold Configuration Sets

The **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page allows Dashboard Metric Threshold Configuration Sets to be configured.

A Metric Threshold Configuration Set (MTCfgSet) contains all the information defining up to three thresholds for every configured metric. MTCfgSets have two types - Server Thresholds and Summary Thresholds.

The Server Metric Threshold Configuration Set contains thresholds applied only at Server scope. Server Type thresholds cannot be edited, but can be viewed on the Server Type tab of the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page.

Summary Metric Threshold Configuration Sets can apply at Dashboard Network Element or Dashboard Network scope. These thresholds can be configured and viewed on the Summary Type tab of the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page.

Metric thresholds allow for visualization enhancements on the Dashboard. Visualization enhancements such as coloring are used on the Dashboard to attract attention to a potential problem. When a visual enhancement on the Dashboard is enabled when a user-defined threshold is exceeded, potential problems can be investigated by the inspection of additional information.

Metric thresholds are only used for Dashboard visualization enhancements and are not associated with alarms. Most (but not necessarily all) metrics have thresholds. Whether a Metric can be assigned thresholds is determined from configuration, which cannot be modified.

For information on how to create or edit a Metric Threshold Configuration Set, refer to *Inserting a Summary Metric Threshold Configuration Set* and *Editing a Summary Metric Threshold Configuration Set*.

Metric Threshold Configuration Sets elements

Table 18: Metric Threshold Configuration Sets Elements describes the elements on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets [Insert]** and **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets [Edit]** pages on the NOAM.

Table 18: Metric Threshold Configuration Sets Elements

Field (* Indicates Required Field)	Description	Data Input Notes
*Metric Threshold Configuration Set Name	A name that uniquely identifies the Metric Threshold Configuration Set	Format: Text box Default: N/A Range: A 32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.
Type	Summary type applies to Metrics at Network Element and Network scopes. Server type applies to Metrics at Server scope.	Format: Radio button Default: Summary Range: N/A

Table 19: Metric Threshold Elements

Metric Name	Metric Description	Data Input Notes
Alarms Metric Group		
# Critical Alarms	The total number of critical alarms currently being reported by all associated servers.	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Major Alarms	The total number of major alarms currently being reported by all associated servers.	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer

Metric Name	Metric Description	Data Input Notes
# Minor Alarms	The total number of minor alarms currently being reported by all associated servers.	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
Servers Metric Group		
# Servers Unavail	The total number of associated servers administratively enabled, but not reporting status data	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Servers Exc Mem Thr	The total number of servers whose memory usage exceeds any defined threshold	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Servers Exc CPU Thr	The total number of servers whose CPU usage exceeds any defined threshold	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Servers Exc Proc Rate Thr	The total number of servers whose processing rate usage exceeds any defined threshold	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Servers Stack Congested	The total number of servers whose stack is in congestion (CL1, CL2, or CL3)	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
DA-MP Ingress MPS	Total ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
SS7-MP Ingress MPS	Total ingress MPS across included SS7-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
IPFE Ingress Pkts/sec	Total ingress packets per second across included IPFE servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
IPFE Ingress MB/sec	Total ingress MB per second across included IPFE servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer

Metric Name	Metric Description	Data Input Notes
SBR Ingress Events/sec	Total ingress events per second across included SBR servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
SBR Sessions	Total sessions across included SBR servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
SBR Bindings	Total bindings across included SBR servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
Protocol Metric Group		
Avg D2D Trans Hold Tm	Average Diameter-Diameter Transaction Hold Time across included DA-MPs (ms)	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
Avg D2M Trans Hold TM	Average Diameter-to-MAP Transaction Hold Time across included SS7-MPs (ms)	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
Avg M2D Trans Hold Tm	Average MAP-to-Diameter Transaction Hold Time across included SS7-MPs (ms)	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
Success Trans %	Percentage of transactions completed successfully across included servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
Ext Node Rej %	Percentage of transactions rejected by external signaling nodes	Format: Text box Default: N/A Range: 0-100. Must be an integer
Egress Answer Tmout %	Percentage of egress transactions with answer timeout	Format: Text box Default: N/A Range: 0-100. Must be an integer
Orphan Answer %	Percentage of orphan answers detected across included servers	Format: Text box Default: N/A Range: 0-100. Must be an integer

Metric Name	Metric Description	Data Input Notes
Diameter Connections Metric Group		
# Fixed Diam Conns Unavail	Total number of fixed Diameter connections enabled, but unavailable, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# IPFE Conns Unavail	Total number of IPFE Diameter connections enabled, but unavailable, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Diam Conns Egress Cong	Total number of Diameter connections that are experiencing egress congestion, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Diam Conns Ingress Cong	Total number of Diameter connections that are experiencing ingress congestion, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Peer Nodes Unavail	Total number of Peer Nodes unavailable, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Peer Nodes Degraded	Total number of Peer Nodes degraded, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Route Lists Unavail	Total number of Route Lists unavailable, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# Route Lists Degraded	Total number of Route Lists degraded, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# PTL ETGs Degraded	Total number of Pending Transaction Limiting Egress Throttle Groups Degraded, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# RL ETGs Degraded	Total number of Rate Limiting Egress Throttle Groups Degraded, across included DA-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer

Metric Name	Metric Description	Data Input Notes
Policy & Charging Metric Group		
# PCA Cong Instances	Total number of PCA instances in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
PCA Avg Ing MPS	Average PCA ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
PCA Trans Rej %	Percentage of PCA transactions rejected across included DA-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
# GLA Cong Instances	Total number of GLA instances in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
GLA Avg Ing MPS	Average GLA ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
GLA Trans Rej %	Percentage of GLA transactions rejected across included DA-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
Address Resolution Metric Group		
# RBAR Cong Instances	Total number of RBAR instances in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
RBAR Avg Ing MPS	Average RBAR ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
RBAR Trans Rej %	Percentage of RBAR transactions rejected across included DA-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
# FABR Cong Instances	Total number of FABR instance in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A

Metric Name	Metric Description	Data Input Notes
		Range: 0-999999999999999. Must be an integer
FABR Avg Ing MPS	Average FABR ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
FABR Trans Rej %	Percentage of FABR transactions rejected across included DA-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
MAP Interworking Metric Group		
# DMIWF Cong Instances	Total number of DMIWF instances in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
DMIWF Avg Ing MPS	Average DMIWF ingress MPS across included DA-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
DMIWF Trans Rej %	Percentage of DMIWF transactions rejected across included DA-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
# MDIWF Cong Instances	Total number of MDIWF instances in congestion (CL1, CL2, or CL3) across included servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
MDIWF Avg Ing MPS	Average MDIWF ingress MPS across included SS7-MP servers	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
MDIWF Trans Rej %	Percentage of MDIWF transactions rejected across included SS7-MP servers	Format: Text box Default: N/A Range: 0-100. Must be an integer
# SS7 Links Down	Total number of SS7 links enabled, but down, across included SS7-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# SS7 Link Sets Down	Total number of SS7 link sets down across included SS7-MPs	Format: Text box Default: N/A

Metric Name	Metric Description	Data Input Notes
		Range: 0-999999999999999. Must be an integer
# SS7 MTP3 Users Unavail	Total number of SS7 MTP3 remote users unavailable across included SS7-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer
# SS7 Rmt Sig Pts Unavail	Total number of SS7 MTP3 remote signaling points unavailable across included SS7-MPs	Format: Text box Default: N/A Range: 0-999999999999999. Must be an integer

Viewing the Summary Metric Threshold Configuration Set

The Summary tab on **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page displays the name(s) of the Summary Metric Threshold Configuration Set(s).

Inserting a Summary Metric Threshold Configuration Set

1. On the Summary tab of the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page, click **Insert** to insert a new Summary Metric Threshold Configuration Set.
2. Fill in the fields on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets [Insert]** page.

   The fields are described in *Metric Threshold Configuration Sets elements*.

Editing a Summary Metric Threshold Configuration Set

1. On the Summary tab of the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page, click **Edit** to edit a Summary Metric Threshold Configuration Set.
2. Fill in the fields on the **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets [Edit]** page.

   The fields are described in *Metric Threshold Configuration Sets elements*.

Viewing the Server Metric Threshold Configuration Set

The Server tab on **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets** page displays the name of the Metric Threshold Configuration Set.

To view the details of the Metric Threshold Configuration Set, click the name of the set. Then, click **View**.
The **Diameter Common** > **Dashboard** > **Configuration** > **Metric Threshold Configuration Sets [Edit]** page appears, showing the current values for the existing Metric Threshold Configuration Set.

Dashboard Network Elements

The **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements** page allows Dashboard Network Elements to be configured.

A Dashboard Network Element contains all the information that defines a view into a single DSR site/Network Element (i.e., an SOAM Server Group and its subtending servers). Each Server Group within a site is associated with the Dashboard Network Element for that site.

Up to 32 Dashboard NEs are supported.

The fields are described in *Dashboard Network Elements elements*.

For information on how to create or edit a Dashboard Network Element, refer to *Inserting a Dashboard Network Element* and *Editing a Dashboard Network Element*.

Dashboard Network Elements elements

Table 20: Dashboard Network Elements Elements describes the elements on the **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements [Insert]** and **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements [Edit]** pages on the NOAM.

Table 20: Dashboard Network Elements Elements

Field (* Indicates Required Field)	Description	Data Input Notes
*Network Element	A name that uniquely identifies the Dashboard Network Element	Format: Pull down list Default: N/A Range: A 32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit.
Server Metric Threshold Configuration Set	The Server Metric Threshold Configuration Set used to determine Dashboard screen cell colorization of the Server-scoped Metric values in this Dashboard Network Element. **Note:** Selection is optional.	Format: Pull down list
Summary Metric Threshold Configuration Set	The Summary Metric Threshold Configuration Set used to determine Dashboard screen cell colorization of this Dashboard Network Element's Metric values. **Note:** Selection is optional.	Format: Pull down list
Display Administratively Disabled Servers	When checked, servers that are administratively disabled will be	Format: Check box

Field (* Indicates Required Field)	Description	Data Input Notes
	displayed on the SOAM Dashboard screen.	

Inserting a Dashboard Network Element

1. To insert a new Dashboard, click **Insert**.
2. Fill in the fields on the **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements [Insert]** page.

   The fields are described in *Dashboard Network Elements elements*.

Editing a Dashboard Network Element

1. To insert a new Dashboard, click **Edit**.
2. Fill in the fields on the **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Network Elements [Edit]** page.

   The fields are described in *Dashboard Network Elements elements*.

Dashboard Networks

The **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Networks** page allows Dashboard Networks to be configured.

A Dashboard Network is a set of Dashboard Network Elements, Metrics, and associated Network Metric Thresholds that is created by configuration defines the content and thresholds of a NOAM Dashboard display.

The set of Dashboard Network Elements assigned to Dashboard Network is determined from configuration and cannot be modified. Only one Dashboard Network is supported.

The fields are described in *Dashboard Networks elements*.

Dashboard Networks elements

Table 21: Dashboard Networks Elements describes the elements on the **Diameter Common** > **Dashboard** > **Configuration** > **Dashboard Networks** page.

Table 21: Dashboard Networks Elements

Field	Description	Data Input Notes
Dashboard Network Name	Name of the Dashboard Network **Note:** The Dashboard Network name is not user-configurable.	Format: Text box

Field	Description	Data Input Notes
Summary Metric Threshold Configuration Set	The Summary Metric Threshold Configuration Set used to determine Dashboard screen cell colorization of this Dashboard Network's Metric values.	Format: Pull down list
Dashboard Network Elements Display Order	The order in which the Dashboard Network Elements will be displayed on the NOAM Dashboard screen. To display a Dashboard Network, move it to the lower list. Use the up and down arrows next to the lower list to set the order in which the Dashboard Network Elements will be displayed.	Format: Display boxes with navigable buttons

MCCMNC Configuration

The **Diameter Common** > **Network Identifiers** > **MCCMNC** 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, MSISDN prefix digits, and CC+NDC combinations, using the **Diameter Common** > **Network Identifiers** > **MCCMNC Mapping** 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** 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** 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 **Insert**.

  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 **Edit**.

  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 **Delete** to remove the selected entry.

MCCMNC Elements

Table 22: MCCMNC Elements describes the fields on the **Diameter Common** > **Network Identifiers** > **MCCMNC** pages.

Table 22: 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 does not open, and an error message appears.

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 **Edit**.

   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 **Delete**.

   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** 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** 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** 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 **Insert**.

  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 **Edit**.

  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 **Delete** to remove the selected entry.

MCCMNC Mapping Elements

Table 23: MCCMNC Mapping Elements describes the fields on the **Diameter Common** > **Network Identifiers** > **MCCMNC Mapping** pages.

Table 23: 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 Format: text box; alphanumeric string. Range: Country Name configured for selected MCCMNC entry.

Field (* indicates a required field)	Description	Value
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 does not open, and an error message appears.

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 **Edit**.

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 **Delete**.

   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 4

Diameter Common on the SOAM

Topics:

The **Diameter Common** GUI pages on the SOAM can be used for viewing the DSR Dashboard, 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:

- View **Diameter Common** > **Dashboard** (see *Dashboard*)
- 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*)

Dashboard

Dashboard on the NOAM

The Dashboard on the NOAM is viewed at **Diameter Common** > **Dashboard**.

The Dashboard provides high level Metrics, which provide an overall view of the health of one or more Network Elements (NEs) of a network, making Metrics the core component of the DSR Dashboard. Each column on the Dashboard contains the set of values for a particular Metric. The selection of which Metrics are displayed on the Dashboard is done via configuration.

The NOAM Dashboard shows both Network summary and NE summary Metrics.

The order that Metric Groups are displayed on the Dashboard is determined from configuration which cannot be modified. The order that Metrics are displayed within a Metric Group on the Dashboard display is determined from configuration which cannot be modified. Metrics selected for display on the Dashboard via configuration can be hidden/viewed via a Dashboard GUI control based on threshold level filters. A threshold level filter is used to limit which Metrics are displayed on the Dashboard based on a severity value. These limits are valuable because they focus on more potentially significant problems.

Horizontal and vertical scrolling allows any Metrics which do not fit onto a single physical screen to be seen.

The Dashboard also facilitates troubleshooting via Metric-specific hyperlinks on the Dashboard to assist in viewing more detailed information via existing DSR status and maintenance screens. The linkage between content on the Dashboard to DSR status and maintenance screens will be determined from configuration which cannot be modified.

Per Network Metrics are derived from per-NE summary Metrics. A Network is the set of one or more Dashboard Network Elements. The formula for calculating a Network Metric value is identical to that for calculating the per-NE Metric for that Metric.

Dashboard on the SOAM

The SOAM Dashboard shows the NE's summary Metrics, its per-Server Type summary Metrics and its per-Server Metrics.

A Server Type physically groups Metrics associated with a particular type of Server (e.g., DA-MP) onto the Dashboard display in order to create summary Metrics for Servers of a similar type. The order of Server Types on the SOAM Dashboard is determined from configuration which cannot be modified. The Server Types are predefined and cannot be modified. The DA-MP, SS7-MP, DSR, SBR, and SOAM Server Types are supported.

Server Metrics are maintained by each MP. Per-Server Metric values are periodically pushed to their local SOAM, where they are displayed on the SOAM Dashboard display.

Server Type Metrics show a roll-up of Server Metrics by Server type. The formula for calculating a Server Type Metric value is identical to that for calculating the per-NE Metric for that Metric.

Network Element (NE) Metrics are derived from per-Server Metrics. A Network Element is the set of servers managed by a SOAM. The formula for calculating a per-NE Metric value is Metric-specific although, in general, most NE Metrics are the sum of the per-Server Metrics. The set of servers which are managed by a SOAM is determined through standard NOAM configuration and cannot be modified via Dashboard configuration. An NOAM can manage up to 32 NEs.

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 **Insert**.

  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 **Edit**.

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 **Delete** to remove the selected MCC Range.

MCC Ranges Elements

Table 24: MCC Ranges Elements describes the fields on the **Diameter Common** > **Network Identifiers** > **MCC Ranges** pages.

Table 24: 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 [Insert]** 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 does not open, and an error message appears.

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 **Edit**.

   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 **Delete**.

   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 25: MP Profile Selection*.

Note: The profiles listed in *Table 25: MP Profile Selection* 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 25: MP Profile Selection

Hardware	Application(s)	MP Profile
DA-MPs		
G6 half height blade	Diameter Relay	G6:Relay
G8/G9 half height blade	Diameter Relay	G8/G9:Relay
G7 full height blade	Diameter Relay	G7:Relay
Virtual DA-MP	Diameter Relay	VM:Relay

Hardware	Application(s)	MP Profile
		Note: If a virtualized version of DSR is being used, then the MP Profile can be VM:10K_MPS.
G6 half height blade	Diameter Relay + FABR or RBAR	G6:Database
G8/G9 half height blade	Diameter Relay + FABR or RBAR	G8/G9:Database
G7 full height blade	Diameter Relay + FABR or RBAR	G7:Database
Virtual DA-MP	Diameter Relay + FABR or RBAR	VM:Database **Note:** If a virtualized version of DSR is being used, then the MP Profile can be VM:10K_MPS.
G6 half height blade	Diameter Relay + CPA or PCA	G6:Session
G8/G9 half height blade	Diameter Relay + CPA or PCA	G8/G9:Session
G7 full height blade	Diameter Relay + CPA or PCA	G7:Session
Virtual DA-MP	Diameter Relay + CPA or PCA	VM:10K_MPS
G6 half height blade	Diameter Relay + RBAR + PCA	G6:Session_Database
G8/G9 half height blade	Diameter Relay + RBAR + PCA	G8/G9:Session_Database
G7 full height blade	Diameter Relay + RBAR + PCA	G7:Session_Database
SS7-MPs		
G8/G9 half height blade	MAP-to-Diameter Interworking Function (MD-IWF) Application	G8/G9: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 PCA application are user-configurable on the NOAM **Policy and Charging** > **Configuration** > **Congestion Options** page; they are not shown in *MPs Profiles Elements*.

MPs Profiles Elements

Table 26: MPs Profiles DA-MP Elements describes the fields on the DA-MP tab on the **Diameter Common** > **MPs** > **Profiles** page.

Note: The Data Input Notes apply only to the DA-MP Configurable elements.

Table 27: MPs Profiles SS7-MP Elements describes the view-only fields on the SS7-MP tab on the **Diameter Common** > **MPs** > **Profiles** page.

Table 26: 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 will police the total DA-MP ingress MPS to when the DA-MP is in congestion level 2.	Format: text box 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	Engineering-configured

Field (* indicates required field)	Description	Data Input Notes
	the total Reserved Ingress MPS of all Diameter Connections assigned to the DA-MP.	
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
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
Average Message Size Minor Alarm Set Threshold	The Average Message Size above which a minor alarm is set.	Engineering-configured

Field (* indicates required field)	Description	Data Input Notes
Average Message Size Minor Alarm Clear Threshold	The Average Message Size below which a minor alarm is cleared.	Engineering-configured
Average Message Size Major Alarm Set Threshold	The Average Message Size above which a major alarm is set.	Engineering-configured
Average Message Size Major Alarm Clear Threshold	The Average Message Size below which a major alarm is cleared.	Engineering-configured
Average Message Size Critical Alarm Set Threshold	The Average Message Size above which a critical alarm is set.	Engineering-configured
Average Message Size Critical Alarm Clear Threshold	The Average Message Size below which a critical alarm is cleared.	Engineering-configured
Average Hold Time Minor Alarm Set Threshold	The Average Hold Time above which a minor alarm is set.	Engineering-configured
Average Hold Time Minor Alarm Clear Threshold	The Average Hold Time below which a minor alarm is cleared.	Engineering-configured
Average Hold Time Major Alarm Set Threshold	The Average Hold Time above which a major alarm is set.	Engineering-configured
Average Hold Time Major Alarm Clear Threshold	The Average Hold Time below which a major alarm is cleared.	Engineering-configured
Average Hold Time Critical Alarm Set Threshold	The Average Hold Time above which a critical alarm is set.	Engineering-configured
Average Hold Time Critical Alarm Clear Threshold	The Average Hold Time 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

Field (* indicates required field)	Description	Data Input Notes
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
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

Field (* indicates required field)	Description	Data Input Notes
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
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 27: 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

Field	Description	Data Input Notes
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
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** > **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 28: MPs Profile Assignments Elements describes the fields on the **Diameter Common** > **MPs** > **Profile Assignments** page.

Table 28: 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. MPs that are stand-alone or that belong to multi-active server groups will have lines of their own.	View-only
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 25: 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 5

Diameter Common Bulk Import and Export

Topics:

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, PCA, GLA, CPA and Charging SBR, MD-IWF, DM-IWF, and RADIUS) 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, PCA, 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,

- 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 PCA data, and MAP-Diameter Interworking data for MD-IWF
- The SOAM for the rest of the Diameter data, site-specific PCA 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.

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 server 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 **Insert From CSV**, **Update From CSV**, or **Delete From CSV**.

  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 **File Management** 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 29: Bulk Import Elements describes the fields on the **Diameter Common** > **Import** page.

Table 29: 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. Click **Insert From CSV**.

   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** 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. Click **Update From CSV**.

   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** 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 **Delete From CSV**.

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** 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, RADIUS, FABR, RBAR, CPA, SBR, PCA, GLA, MDIWF and IPFE).

  Note: GLA requires that Policy DRA Pooling is active. For more information, see *Gateway Location Application (GLA) User Guide* or *PCA 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 PCA data, and MAP-Interwokring data for MD-IWF ; and the SOAM for the rest of the Diameter data, Diameter Common data, site-specific PCA 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 **File Management** 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 30: Bulk Export Elements describes the fields on the **Diameter Configuration Export** page.

Table 30: 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 activatedDSR 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
*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.

Element (* indicates required field)	Description	Data Input Notes
		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. When **Once** is selected, the export is performed immediately after **Ok** is clicked.	Format: radio buttons Range: radio buttons for Once, Hourly, Daily, Weekly Default: Once
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

Element (* indicates required field)	Description	Data Input Notes
		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. This 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**, **RADIUS**, 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** 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**, **RADIUS**, 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** 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 31: 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 31: 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)

Application Type	Description
SBR	Session Binding Repository (Charging SBR)
PCA	Policy and Charging Application (PCA)
IPFE	IP Front End (IPFE)
GLA	Gateway Location Application (GLA)
MAPIWF	MAP-Diameter Interworking Function
RADIUS	Remote Authentication Dial In User Service

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 Node Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 32: 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 32: Local Node CSV Format

Column	Data Description
0	Application Type (Diameter)
1	LocalNode (Keyword)
2	Name (Key)
3	Fqdn
4	Realm
5	Tcp Port
6	Sctp Port
7	Dtls Port
8	TlsPort
9	RADIUS UDP Server Ports [0]
	(repeated x 10)
19	Enable RADIUS UDP Client Ports (Yes/No)
20	RADIUS Client UDP Port Range Start
21	RADIUS Client UDP Port Range End

Column	Data Description
22	Verification Mode ('SslVerifyNone', 'SslVerifyPeer', 'SslVerifyPeerFailIfNoPeerCert' and 'SslVerifyPeerVerifyClientOnce')
23	Certificate Type
24	Certificate Name
25	Connection Configuration Set Name
26	Cex Configuration Set Name
27	IP Address [0]
	(repeated x 128)
153	IP Address [127]
154	IP Type [0] (LocalIp, PeerIp, IpfeTsa)
	(repeated x 128)
282	IP Type [127] (LocalIp, PeerIp, IpfeTsa)

"Peer Node Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 33: 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 33: Peer Node CSV Format

Column	Data Description
0	Application Type
1	PeerNode (Keyword)
2	Name (Key)
3	AAA Protocol (RADIUS, Diameter)
4	Fqdn
5	Realm
6	Tcp Port
7	Sctp Port
8	Dtls Port
9	Tls Port
10	RADIUS Server UDP Ports[0]
	(repeated x 10)
19	RADIUS Server UDP Ports[9]
20	Replace Destination Host (No, Yes)
21	Replace Destination Realm (No, Yes)

Column	Data Description
22	Minimum Connection Capacity
23	Alternate Route on Connection failure (SamePeer, DifferentPeer, SameConnection)
24	Alternate Route on Answer Timeout (SamePeer, DifferentPeer, SameConnection)
25	Alternate Route on Answer Result Code (SamePeer, DifferentPeer, SameConnection)
26	Alternate Implicit Route
27	Maximum Alternate Routing Attempts
28	IP Address [0]
	(repeated x 128)
155	IP Address [127]
156	Dynamic (No, Yes)
157	Routing Option Set
158	Pending Answer Timer
159	Peer Route Table
160	Message Priority Setting
161	Message Priority Configuration Set
162	Application Route Table
163	Topology Hiding Status (Enabled, Disabled)
164	Peer Node Group Name
165	Transaction Configuration Set
166	AVP Removal List

"Peer Node Group Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements list in *Table 34: Peer Node Group CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 34: Peer Node Group CSV Format

Column	Data Description
0	Application Type
1	PeerNodeGroup (Keyword)
2	Peer Node Group Name

"Route Groups Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 35: 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 35: Route Group CSV Format

Column	Data Description
0	Application Type
1	RouteGrp (Keyword)
2	Name (Key)
3	Dynamic (No, Yes)
4	Type (Peer, Connection)
5	Peer Node 1 Name
6	Peer Node 1 Weight
	(repeated x 160)
323	Peer Node 160 Name
324	Peer Node 160 Weight
325	Connection 1 Name
326	Connection 1 Weight
	(repeated x 512)
1347	Connection 512 Name
1348	Connection 512 Weight

"Route List Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 36: 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 36: Route List CSV Format

Column	Data Description
0	Application Type
1	RouteList (Keyword)
2	Name (Key)
3	Dynamic (No, Yes)
4	Minimum Route Group Availability Weight
5	Route Across Route Groups (Enabled/Disabled)
6	Route Group 1 Name
7	Route Group 1 Priority
	(repeated x 3)
10	Route Group 3 Name

Column	Data Description
11	Route Group 3 Priority
12	Site Name[0]
13	Traffic Throttle Group[0]
14	Maximum Loss Percent Threshold[0]
15	Route Group Name[0]
	(repeated x 10)
48	Site Name[10]
49	Traffic Throttle Group[10]
50	Maximum Loss Percent Threshold[10]
51	Route Group Name[10]
	(12-51 repeated x 3)
92	Site Name[0]
93	Traffic Throttle Group[0]
94	Maximum Loss Percent Threshold[0]
95	Route Group Name[0]
	(repeated x 10)
128	Site Name[0]
129	Traffic Throttle Group[0]
130	Maximum Loss Percent Threshold[0]
131	Route Group Name[0]

"Peer Routing Rules Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 37: 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 37: 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)

Column	Data Description
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)
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, Forward To Peer Route Table, SendAnswer, Abandon With No Answer)
23	Target Peer Route Table Name
24	Route List Name
25	Diameter Answer Code
26	Answer Error Message
27	Message Priority (NC, PR0, PR1, PR2)
28	Message Copy Configuration Set
29	Vendor Id
30	Peer Route Table

"Connections Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 38: Connection CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 38: Connection CSV Format

Column	Data Description
0	Application Type
1	Conn (Keyword)
2	Connection Name (Key)
3	AAA Protocol (RADIUS, Diameter)
4	Type (FullySpecified, LocalMpInitiator, LocalMpResponder, RadiusServer, RadiusClient)
5	Local Node Name
6	Dynamic (No, Yes)
7	Peer Node Name
8	IPFE Initiator DAMP IP Address
9	Protocol Type (Tcp, Sctp, Dtls, Tls, Udp)
10	Connection Configuration Set Name
11	Cex Configuration Set Name
12	Cap Configuration Set Name
13	Primary Local IP Address
14	Secondary Local IP Address
15	Primary Peer IP Address
16	Secondary Peer IP Address
17	Transport Fqdn
18	Peer Identification (Ip, TransportFqdn, PeerFqdn)
19	Local Initiate Port
20	UDP Port
21	Transport Congestion Abatement Timeout
22	Remote Busy Usage (Enabled, Disabled)
23	Remote Busy Timeout
24	Message Priority Setting (None, RequestMessage, UserConfigured)
25	Message Priority Configuration Set
26	Egress Message Throttling Configuration Set

Column	Data Description
27	Shared Secret Configuration Set
28	Message Authenticator Configuration Set
29	Message Conversion Configuration Set
30	Ingress Status-Server Configuration Set
31	Suppress Connection Unavailable Alarm (Yes, No)
32	Suppress Connections Attempts (Yes, No)
33	Test Mode (Yes, No)

"Connection Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 39: 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 39: Connection Configuration Set CSV Format

Column	Data Description
0	Application Type
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	sctpSockRecvSize
14	burstMax
15	sctpNumInboundStreams
16	sctpNumOutboundStreams
17	sctpDatagramBundlingEnabled (Yes, No)
18	sctpMaxSegmentSize

Column	Data Description
19	sctpFragmentationEnabled (Yes, No)
20	sctpDataChunkDeliveryOrdered (Yes, No)
21	tcTimer
22	twinitTimer
23	tcexTimer
24	tdpxTimer
25	provingMode (Always, Suspect, Never)
26	provingTimeout
27	provingDwrsToSend
28	pendTransPerConn
29	cexHostIpValidationEnabled(Yes, No)
30	nagleEnabled (Yes, No)
31	tcpSockSendSize
32	tcpSockRecvSize
33	tcpMaxSegmentSize
34	tcpKeepAliveEnabled (Yes, No)
35	tcpKeepAliveIdleTime
36	tcpKeepAliveProbeInterval
37	tcpKeepAliveMaxCount
38	radiusPendTransPerConn
39	preventDupEgressRetrans
40	preventDupIngressRetrans
41	cachedResponseDur

"Reroute On Answer Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 40: 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 40: Reroute on Answer CSV Format

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

Column	Data Description
3	Application ID

"System Options Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 41: 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 41: System Options CSV Format

Column	Data Description
0	Application Type
1	Options (Keyword)
2	Fixed Connection Failure Major Aggregation Alarm Threshold
3	Fixed Connection Failure Critical Aggregation Alarm Threshold
4	IPFE Connection Failure Major Aggregation Alarm Threshold
5	IPFE Connection Failure Critical Aggregation Alarm Threshold
6	Peer Node Failure Critical Aggregation Alarm Threshold
7	Route List Failure Critical Aggregation Alarm Threshold
8	Excessive Reroute Onset Threshold
9	Excessive Reroute Abatement Threshold
10	Message Copy Feature Enabled (Enabled, Disabled)
11	Message Copy Disable Congestion Level (CL1, CL2)
12	Redirect Answer Processing Enabled (Yes, No)
13	Redirect Application Route Table
14	Redirect Peer Route Table
15	Client Socket Send Buffer Size
16	Client Socket Receive Buffer Size
17	Server Socket Send Buffer Size
18	Server Socket Receive Buffer Size
19	Encode FQDN In Lower Case (Yes, No)
20	Realm Expiration Minor Alarm Set Time
21	Realm Expiration Major Alarm Set Time
22	NGN-PS Admin State (Enabled, Disabled)
23	Minimum Answer Priority
24	Minimum Inviolable Priority

Column	Data Description
25	NGN-PS Maximum Message Rate Percent
26	NGN-PS Gx Admin State (Enabled, Disabled)
27	NGN-PS Gx ARP1
28	NGN-PS Gx ARP2
29	NGN-PS Gx ARP3
30	NGN-PS Gx ARP4
31	NGN-PS Gx ARP5
32	NGN-PS Gx Advance Priority Type (None, Spr, Hss)
33	NGN-PS Rx Admin State (Enabled, Disabled)
34	NGN-PS Rx MPS AVP Value
35	NGN-PS Cx/Dx Admin State (Enabled, Disabled)
36	NGN-PS Dh/Sh Admin State (Enabled, Disabled)

"DNS Options Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 42: 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 42: 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 Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 43: 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 43: CEX Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	CexCfgSet (Keyword)
2	Name
3	Dynamic (Yes, No)

Column	Data Description
4	Selected Application ID [1]
5	Selected Type [1]
6	Selected Vendor ID [1]
	(repeated x 10)
31	Selected Application ID [10]
32	Selected Type [10]
33	Selected Vendor ID [10]
34	Must Application ID [1]
35	Must Type [1]
36	Must Vendor ID [1]
	(repeated x 10)
61	Must Application ID [10]
62	Must Type [10]
63	Must Vendor ID [10]
64	Vendor ID [1]
	(repeated x 10)
73	Vendor ID [10]
74	DSR Feature Status AVP (Yes, No)

"Capacity Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 44: 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 44: 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	Ingress MPS Abatement Time

Column	Data Description
8	Convergence Time

"Application Routing Rules Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 45: AppRouteRule CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 45: AppRouteRule CSV Format

Column	Data Description
0	Application Type
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)
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)

Column	Data Description
21	Value
22	Application Name
23	Action (Route to Application, Forward To Egress Routing, Send Answer, Abandon With No Answer, Forward To Application Route Table, Forward To Peer Route Table)
24	Target Route Table Name (Application Route Table Name/Peer Route Table Name)
25	Answer Result-Code Value
26	Vendor Id
27	Answer Error Message
28	Gx-Prime (No, Yes)
29	Application Route Table

"Application Ids Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 46: 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 46: Application ID CSV Format

Column	Data Description
0	Application Type (Diameter)
1	Appids (Keyword)
2	Application ID
3	Name

"CEX Parameters elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 47: 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 47: CEX Parameters CSV Format

Column	Data Description
0	Application Type (Diameter)
1	CexParameters (Keyword)
2	Application ID
3	Application ID Type (Authentication, Accounting)
4	Vendor ID

"Pending Answer Timers Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 48: 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 48: Pending Answer Timer CSV Format

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

"Routing Option Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 49: 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 49: Routing Option Set CSV Format

Column	Data Description
0	Application Type
1	RoutingOptionSet (Keyword)
2	Name (Key)
3	Maximum Per Message Forwarding Allowed
4	Transaction Lifetime
5	Pending Answer Timer
6	Resource Exhausted Action
7	Resource Exhaustion 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

Column	Data Description
21	Connection Congestion Vendor Id
22	Peer Node Reported Congestion Action
23	Peer Node Reported Congestion Result Code
24	Peer Node Reported Congestion Error Message
25	Peer Node Reported Congestion Vendor Id
26	Destination Realm Not Served Action
27	Destination Realm Not Served Result Code
28	Destination Realm Not Served Error Message
29	Destination Realm Not Served Vendor Id
30	Nested ART/PRT Error Action
31	Nested ART/PRT Error Result Code
32	Nested ART/PRT Error Message
33	Nested ART/PRT Error Vendor Id

"Peer Route Tables Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 50: 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 50: Peer Route Table CSV Format

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

"Message Priority Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 51: 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 51: Message Priority Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	MsgPriorityCfgSet (Keyword)
2	Name
3	applId[1]
4	cmdCode[1]

Column	Data Description
5	msgPriority[1]
	(repeated x 50)
151	applId[50]
152	cmdCode[50]
153	msgPriority[50]

"Message Throttling Configuration Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 52: 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 52: 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 Set Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 53: MessagecopyCfgSet CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 53: MessagecopyCfgSet CSV Format

Column	Data Description
0	Application Type
1	MessagecopyCfgSet (Keyword)
2	Message Copy Configuration Set Name

Column	Data Description
3	Message Copy Request Type
4	Original Answer Result Code for Message Copy
5	Route List of the DAS node
6	Ingress Answer Included (No, Yes)
7	DAS Answer Result Code
8	Max DAS Retransmission Attempts

"Application Route Tables elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 54: 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 54: Application Route Table CSV Format

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

"Command Codes elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 55: 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 55: Command Code CSV Format

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

Troubleshooting with IDIH "Traces elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 56: Trace CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 56: Trace CSV Format

Column	Data Description
0	Application Type
1	Trace (Keyword)
2	Trace Name (Key)

Column	Data Description
3	Trace Location
4	Scope Type
5	Scope Value
6	Number of Matches
7	Time of Duration
8	Content Type
9	Condition 1 Name
10	Condition 1 AVP
11	Condition 1 Operator
12	Condition 1 Value
	(repeated x 13)
57	Condition 13 Name
58	Condition 13 AVP
59	Condition 13 Operator
60	Condition 13 Value
61	Notes

Troubleshooting with IDIH "Options elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 57: Trace Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 57: Trace Options CSV Format

Column	Data Description
0	Application Type (Diameter)
1	TraceOptions (Keyword)
2	Max Bandwidth
3	IDIH IP Address
4	IDIH Visualization IP address

Troubleshooting with IDIH "Global Options elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 58: Trace Global Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 58: Trace Global Options CSV Format

Column	Data Description
0	Application Type (Diameter)
1	TraceGlobalOptions (Keyword)
2	Max Active Network Traces

"Trusted Network Lists elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 59: 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 59: 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 Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 60: 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 60: 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 Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 61: 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 61: S6a/S6d HSS Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type
1	HssTopologyHidingCfgSet (Keyword)
2	Name (Key)
3	useSingleHssPseudoHostname
4	singleHssPseudoHostname
5	count
6	randomizeCount
7	autoGenerate
8	prefix
9	suffix
10	length
11	action (SendAnswer, Forward, Abandon)
12	resultCode
13	vendorId
14	errMsg
15	actualHostname
16	pseudoHostname1
17	pseudoHostname2
18	pseudoHostname3
	(combination of actual and pseudo hostnames repeated x 500)

"MME/SGSN Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 62: 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 62: MME/SGSN Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	MmeTopologyHidingCfgSet (Keyword)
2	Name (Key)
3	count

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

"S9 PCRF Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 63: S9 PCRF 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 63: S9 PCRF Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	S9PcrfTopologyHidingCfgSet (Keyword)
2	Name (Key)
3	count
4	randomizeCount
5	autoGenerate
6	prefix
fe7	suffix
8	length
9	action (SendAnswer, Forward, Abandon)
10	resultCode
11	vendorId

Column	Data Description
12	errMsg
13	actualHostname
14	pseudoHostname1
15	pseudoHostname2
16	pseudoHostname3
	(combination of actual and pseudo hostnames repeated x 600)

"S9 AF/pCSCF Topology Hiding Configuration Sets Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 64: S9 AF/pCSCF 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 64: S9 AF/pCSCF Topology Hiding Configuration Set CSV Format

Column	Data Description
0	Application Type (Diameter)
1	S9AfPcscfTopologyHidingCfgSet (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
15	pseudoHostname2
16	pseudoHostname3
	(combination of actual and pseudo hostnames repeated x 500)

"Protected Network Configuration Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 65: 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 65: 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
7	S9PcrfTopologyHidingCfgSet
8	S9AfPcscfTopologyHidingCfgSet

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 Elements" describes the configuration data elements listed in *Table 66: MCCMNC CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 66: 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 Elements" describes the configuration data elements listed in *Table 67: MCCMNC Mapping CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 67: 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 Elements" describes the configuration data elements listed in *Table 68: 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 68: Reserved MCC Ranges CSV Format

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

"Transaction Configuration Set Elements" describes the configuration data elements list in *Table 69: Transaction Configuration Group CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 69: Transaction Configuration Group CSV Format

Column	Data Description
0	Application Type
1	TransactionConfigurationSet(Keyword)
2	Name(Key)

'Transaction Configuration Rule Elements" describes the configuration data elements listed in *Table 70: Transaction Configuration Rule CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 70: Transaction Configuration Rule CSV Format

Column	Data Description
0	Application Type
1	TransactionConfigurationRule(Keyword)
2	Name(Key)
3	appId
4	cmdCode
5	routingOptionSet
6	pendingAnswerTimer
7	applicationRouteTable
8	peerRouteTable
9	transactionCfgSet

"MP Profiles Elements" describes the editable configuration data elements listed in *Table 71: MP Profile Parameters 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: MP Profile Parameters CSV Record Format

Column	Data Description
0	Application Type (Diameter)
1	MpProfileRwParm (Keyword)
2	profileName (key)
3	key (key)
4	value

"MP Profile Assignments Elements" describes the configuration data elements listed in *Table 72: 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 72: MP Profile Assignments CSV Record Format

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

"Rate Limiting Configuration Elements" describes the configuration data elements listed in *Table 73: Rate Limiting Configuration 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: Rate Limiting Configuration CSV Record Format

Column	Data Description
0	Application Type
1	RateCfgSet (Keyword)
2	Name (Key)
3	Maximum Egress Rate
4	RateConvergenceTime
5	RateAbatementTime
6	RateOnsetThres1
7	RateAbateThres1
8	RateOnsetThres2
9	RateAbateThres2
10	RateOnsetThres3
11	RateAbateThres3

"Pending Transaction Limiting Configuration Elements" describes the configuration data elements listed in *Table 74: Pending Transaction Limiting Configuration 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: Pending Transaction Limiting Configuration CSV Record Format

Column	Data Description
0	Application Type
1	PendTransCfgSet (Keyword)
2	Name (Key)
3	Maximum Number of Pending Transactions
4	PendTransOnsetThres1
5	PendTransAbateThres1
6	PendTransOnsetThres2
7	PendTransAbateThres2
8	PendTransOnsetThres3
9	PendTransAbateThres3

Column	Data Description
10	PendTransAbateTime3

"Egress Throttle List Elements" describes the configuration data elements listed in *Table 75: Egress Throttle List 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: Egress Throttle List CSV Record Format

Column	Data Description
0	Application Type
1	Etl (Keyword)
2	Name (Key)
3	siteName_1
4	etgName_1
5	connFailPctReduction_1
6	siteName_2
7	etgName_2
8	connFailPctReduction_2
9	siteName_3
10	etgName_3
11	connFailPctReduction_3
12	RateCfgSet
13	PendTransCfgSet

"Egress Throttle Group Elements" in the *Diameter User Guide* and Help describes the configuration data elements listed in *Table 76: Egress Throttle Group CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited n the CSV files.

Table 76: Egress Throttle Group CSV Format

Column	Data Description
0	Application Type
1	Etg (Keyword)
2	Name (Key)
3	EtgControlScope
4	RateCfgSet
5	PendTransCfgSet

Column	Data Description
6	Peers
	(repeated x 128)
133	Conns
	(repeated x 128)

"Dashboard Network Elements" describes the configuration data elements listed in *Table 77: Dashboard Network CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 77: Dashboard Network CSV Format

Column	Data Description
0	Application Type
1	DshNetwork (Keyword)
2	Network Name (always "Network" in DSR 7.1)
3	SOAM Server Group #1 Name
4	SOAM Server Group #1 Display Order
5-66	(31 additional SOAM SG pairs of rows)
67	Summary Threshold Configuration Set Name

"Dashboard Network Element Elements" describes the configuration data elements listed in *Table 78: Dashboard Network Element CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 78: Dashboard Network Element CSV Format

Column	Data Description
0	Application Type
1	DshNe (Keyword)
2	Network Element Name
3	Server Threshold Configuration Set Name (empty or "ServerThresholds" in DSR 7.1)
4	Summary Threshold Configuration Set Name
5	Display Administratively Disabled Servers ("Yes"/"No")

"Dashboard Metric Group Elements" describes the configuration data elements listed in *Table 79: Dashboard Metric Group CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 79: Dashboard Metric Group CSV Format

Column	Data Description
0	Application Type
1	DshMetricGroup (Keyword)
2	Metric Group Name
3	Metric #1 Name
4	Metric #1 Display on Dashboard ("Yes"/"No")
5-30	(13 additional SOAM SG pairs of rows)

"Dashboard Metric Threshold Configuration Set Elements" describes the configuration data elements listed in *Table 80: Dashboard Metric Threshold 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 80: Dashboard Metric Threshold Configuration Set CSV Format

Column	Data Description
0	Application Type
1	DshMetricThresholdCfgSet (Keyword)
2	MTCfgSet Name
3	MTCfgSet Type ("Server"/"Summary")
4	Metric #1 Name
5	Metric #1 Threshold 1
6	Metric #1 Threshold 2
7	Metric #1 Threshold 3
8	Metric #2 Name
9	Metric #2 Threshold 1
10	Metric #2 Threshold 2
11	Metric #2 Threshold 3
12-239	(57 additional groups of 4 rows per engineering-configured Metric)

"AVP Removal List Elements" describes the configuration data elements listed in *Table 81: AvpRemovalList CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 81: AvpRemovalList CSV Format

Column	Data Description
0	Application Type
1	AvpRemovalList (Keyword)
2	Name
3	Direction
4	Message Type
5	AVP Code_1
6	AVP Name_1
7	Vendor Id_1
8	Vendor Name_1
	(repeated x 10)
41	AVP Code_10
42	AVP Name_10
43	Vendor Id_10
44	Vendor Name_10

"Discovery Attributes Elements" describes the configuration data elements listed in *Table 82: DpdAttribute CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 82: DpdAttribute CSV Format

Column	Data Description
0	Application Type
1	DpdAttributeSet (Keyword)
2	Realm Name
3	DNS Set
4	Local Node
5	Connection Mode
6	Local Protocol Preference Override (No, Yes)
7	Application Id[1]
8	Application Type[1]
9	Vendor Id[1]
10	TCP Preference[1]

Column	Data Description
11	SCTP Preference[1]
12	TLS Preference[1]
13	DTLS Preference[1]
14	Max Num Peers[1]
15	Max Num Connections[1]
	(repeated x 10)
88	Application Id[10]
89	Application Type[10]
90	Vendor Id[10]
91	TCP Preference[10]
92	SCTP Preference[10]
93	TLS Preference[10]
94	DTLS Preference[10]
95	Max Num Peers[10]
96	Max Num Connections[10]
97	Local IP Address
98	IPFE Initiator DAMP
99	Connection Configuration Set
100	Capacity Configuration Set
101	Realm Prefix

"DNS Set Elements" describes the configuration data elements listed in *Table 83: DpdDnsSet CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 83: DpdDnsSet CSV Format

Column	Data Description
0	Application Type
1	DpdDnsSet (Keyword)
2	DNS Set Name
3	Primary DNS Server IP Address
4	Secondary DNS Server IP Address
5	DNS Query Timeout

Column	Data Description
6	Number Of Retries

"Dynamic Peer Discovery Realms Elements" describes the configuration data elements listed in *Table 84: DpdRealm CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 84: DpdRealm CSV Format

Column	Data Description
0	Application Type
1	DpdRealm (Keyword)
2	Realm Name

"Traffic Throttle Group Elements" describes the configuration data elements listed in *Table 85: TrafficThrottleGroup CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 85: TrafficThrottleGroup CSV Format

Column	Data Description
0	Application Type
1	TrafficThrottleGroup (Keyword)
2	Name
3	Traffic Throttle Point [1]
	(repeated x 20)
22	Traffic Throttle Point [20]
23	Application ID
24	Shared (No, Yes)

"Traffic Throttle Point Elements" describes the configuration data elements listed in *Table 86: TrafficThrottlePoint CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 86: TrafficThrottlePoint CSV Format

Column	Data Description
0	Application Type
1	TrafficThrottlePoint (Keyword)
2	Name
3	TTP Configuration Set

Column	Data Description
4	Max Loss Percent Threshold
5	Alternate Implicit Route
6	Peer Node
7	Application Id
8	Max ETR

"Traffic Throttle Point Configuration Elements" describes the configuration data elements listed in *Table 87: TrafficThrPointCfgSet CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 87: TrafficThrPointCfgSet CSV Format

Column	Data Description
0	Application Type
1	TrafficThrPointCfgSet (Keyword)
2	Name
3	Diversion Policy
4	Abatement Recovery Rate
5	Override Message Priority Threshold
6	Default Reduction Percentage
7	Default Validity Duration
8	Rate Convergence Time

Diameter Signaling Firewall Elements describes the configuration data elements listed in *Table 88: Signaling Firewall CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 88: Signaling Firewall CSV Format

Column	Data Description
0	Application Type
1	Signaling Firewall (Keyword)
2	Signaling Node Name
3	Signaling Firewall Administrative State

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 theRBAR Application Type.

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

"Applications configuration elements" in theRBAR Help describes the configuration data elements listed in*Table 89: 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 89: 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 theRBAR Help describes the configuration data elements listed in*Table 90: 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 90: 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	Old Table Name
7	Old Address
8	Old Pfx Length

"Addresses configuration elements" in theRBAR Help describes the configuration data elements listed in*Table 91: 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 91: Address Range CSV Format

Column	Data Description
0	Application Type (Rbar)
1	AddressRange (Keyword)
2	Table Name

Column	Data Description
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 theRBAR Help describes the configuration data elements listed in*Table 92: 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 92: 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 theRBAR Help describes the configuration data elements listed in*Table 93: 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 93: 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 theRBAR Help describes the configuration data elements listed in*Table 94: 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 94: 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 theRBAR Help describes the configuration data elements listed in*Table 95: 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 95: Address Resolution CSV Format

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

Column	Data Description
10	Re 2 Avp 2 (PublicIdentity, SvcInfoSubscrId0, SvcInfoSubscrId1, SvcInfoSubscrId2, SvcInfoSubscrId3, SvcInfoSubscrId4, SubscriptionId0, SubscriptionId1, SubscriptionId2, SubscriptionId3, SubscriptionId4, UserIdentityMsisdn, UserIdentityPublic, UserName, FramedIpAddress, FramedIpv6Prefix, SvcInfoPsInfo3gppcc, Unprovisioned)
11	Re 2 Address Table name

"System Options elements" in theRBAR Help describes the configuration data elements listed in*Table 96: Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 96: Option CSV Format

Column	Data Description
0	Application Type (Rbar)
1	Option (Keyword)
2	Uri Supported (No, Yes)
3	RemoveDestHost (No, Yes)
4	Exclude Space (No, Yes)
5	Allow SubsequentDSR 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 theFABR Application Type.

"Applications configuration elements" in theFABR Help describes the configuration data elements listed in*Table 97: 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 97: Supported Application CSV Format

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

"Exceptions configuration elements" in theFABR Help describes the configuration data elements listed in*Table 98: 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 98: 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, AbandonRequest)
5	Destination Name
6	Answer Result Code
7	Vendor ID
8	Error Message

"Destinations configuration elements" in theFABR Help describes the configuration data elements listed in*Table 99: 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 99: 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 theFABR Help describes the configuration data elements listed in*Table 100: 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 100: 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, UserDefined2)
12	Routing Entity 1 Search Prefix (Yes, No)
13	Routing Entity 2 Search Prefix (Yes, No)

Column	Data Description
14	Routing Entity 1 Search Blacklist (Yes, No)
15	Routing Entity 2 Search Blacklist (Yes, No)

"System Options elements" in theFABR Help describes the configuration data elements listed in*Table 101: Option CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 101: Option CSV Format

Column	Data Description
0	Application Type (Fabr)
1	Option (Keyword)
2	RemoveDestHost (No, Yes)
3	Exclude Space (No, Yes)
4	Allow SubsequentDSR App Invoc (No, Yes)
5	Realm
6	Fqdn
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]
40	Bundling Enabled (Yes, No)
41	Max Bundle Size
42	Prefix Search Enabled (Yes, No)

Column	Data Description
43	Blacklist Search Enabled (Yes, No)

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 102: 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 102: System Option CSV Format

Column	Data Description
0	Application Type (Cpa)
1	Option (Keyword)
2	unavailableAction (SendAnswer)
3	unavailableAppResultCode
4	unavailableActionVendorId
5	unavailableActionErrorMessage
6	application InvokedAvpInsertion (Yes, No)
7	shutdownMode (Graceful, Force)
8	shutdownTimer
9	generateAnswerResultCode
10	generateAnswerVendorId
11	generateAnswerErrorMessage
12	behaviorIfSessionLookupError (GenerateAnswer, ContinueRouting)

"Message Copy elements" in the Charging Proxy Application (CPA) Help describes the Message Copy configuration data elements listed in *Table 103: 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 103: Message Copy CSV Format

Column	Data Description
0	Application Type (Cpa)

Column	Data Description
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" describes the Session Binding Repository (SBR) configuration data elements listed in *Table 104: SBR CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 104: SBR CSV Format

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

Charging Session Binding Repository (CSBR) CSV File Formats and Contents

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

"SBR elements" describes the Session Binding Repository (SBR) configuration data elements listed in *Table 104: SBR CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 105: SBR CSV Format

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

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 106: 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 106: IPFE IpfeOption CSV Format

Column	Data Description
0	Application Type
1	Options (Keyword)
2	Ipfe1IpAddress
3	Ipfe2IpAddress
4	Ipfe3IpAddress
5	Ipfe4IpAddress
6	StatSyncTcpPort
7	StateSyncReconnectS
8	RejectOption (tcpreset, drop, icmphostunreachable, icmpportunreachable, icmpadminprohibited)

Column	Data Description
9	SctpRejectOption (drop, icmphostunreachable, icmpportunreachable, icmpadminprohibited)
10	OverloadStart
11	LeastLoadStart
12	GratuitousArpType
13	Accounting Support (enabled, disabled)
14	ConnectTryPort
15	ConnectTimeoutS
16	ConnectTryIntervalS
17	MonitorProtocol (tcpconnectonly, fullmonitoring, disabled)
18	PacketRateLimit
19	Tsa1DeleteAge
20	Tsa1IPAddress
21	Tsa1IPSecondaryAddress
22	Tsa1IPSecondaryPreferredIpfe
23	Tsa1LoadAlgorithm (hash, roundrobin, leasttraff, leastconns, leastload, leastloadtest)
24	Tsa1PreferredIpfe (1, 2, 3, 4)
25	Tsa1Protocols (SCTP, TCP, SCTP_AND_TCP)
26	Tsa1TsDisable (0, 1)
27	Tsa1AllowedDeviation (0-50)
28	Tsa1LoadFactorMPS (0-100)
29	Tsa1LoadFactorConn (0-100)
30	Tsa1PeerGroup (enabled, disabled)
31	Tsa1PeerGroupDelta (1-10)
	(fields 19 thru 31 repeated x 31 times) . . .
422	Tsa32DeleteAge
423	Tsa32IPAddress
424	Tsa32IPSecondaryAddress
425	Tsa32IPSecondaryPreferredIpfe
426	Tsa32LoadAlgorithm (hash, roundrobin, leasttraff, leastconns, leastload, leastloadtest)
427	Tsa32PreferredIpfe
428	Tsa32Protocols (SCTP, TCP, SCTP_AND_TCP)

Column	Data Description
429	Tsa32TsDisable (0, 1)
430	Tsa32AllowedDeviation (0-50)
431	Tsa32LoadFactorMPS (0-100)
432	Tsa32LoadFactorConn (0-100)
433	Tsa32PeerGroup (enabled, disabled)
434	Tsa32PeerGroupDelta (1-10)

"Target Sets configuration elements" in the IPFE Help describes the configuration data elements listed in *Table 107: 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 107: IPFE IpfeListTsa CSV Format

Column	Data Description
0	Application Type (Ipfe)
1	IPListTsa (Keyword)
2	tsa
3	server
4	ipAddress
5	description
6	ipSecondaryAddress
7	Initiator Port Start
8	Initiator Port Mid
9	Initiator Port End

Policy and Charging Application (PCA) 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 and Charging Application Type.

"PCRFs elements" in the PCA Help describes the configuration data elements listed in *Table 108: PCRFs CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 108: PCRFs CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	Pcrf (Keyword)

Column	Data Description
2	PCRF Peer Node Name (Key)
3	Comments

"Binding Key Priority elements" in the PCA Help describes the configuration data elements listed in *Table 109: 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 109: Binding Key Priority CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
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)

"Site Options elements" and "Network-Wide Options elements" in the PCA Help describes the configuration data elements listed in *Table 110: 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 110: Policy DRA Options CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	PdraOptions (Keyword)
2	Enable Topology Hiding
3	Topology Hiding Scope
4	Default Topology Hiding FQDN
5	Default Topology Hiding Realm
6	Topology Hiding Host
7	Topology Hiding Realm
8	Peer Route Table Name

Column	Data Description
9	Enable PCRF Pooling
10	PCRF Pooling Mode
11	Default APN for Non Specific Binding Correlation
12	Early Binding Polling Interval
13	Maximum Early Binding Lifetime
14	Suspect Binding Removal Events Ignore Interval
15	Suspect Binding Removal Events Reset Interval
16	Suspect Binding Removal Events Threshold
17	RAR Origin Host and Realm Option
18	Max Query RAR Rate Per Session Server Group
19	RarAttemptedThreshold
20	Max Release RAR Rate Per Session Server Group
21	Max Attempts Per Release RAR
22	Query RAR Queue Capacity Per Session Server Group
23	Release RAR Queue Capacity Per Session Server Group

"Error Codes elements" in the PCA Help describes the configuration data elements listed in *Table 111: PCA 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 111: PCA Error Codes CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	ErrorCodes (Keyword)
2	Error Condition (Key) (PdraUnavailCong, PcaFuncUnavailableOrDisabled, BindingNotFound, UnableToRoute, SbrError, BindingKeyNotFoundCondition, SessionNotFound, 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

Column	Data Description
10	Gx-Prime Vendor ID
11	Gy/Ro Result Code
12	Gy/Ro Vendor ID
13	All Result Code
14	All Vendor ID

"PCA Access Point Names elements" in the PCA Help describes the configuration data elements listed in *Table 112: PCA 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 112: PCA Access Point Names CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	AccessPointName (Keyword)
2	Access Point Name
3	Function Name
4	PCRF Pool Name
5	Maximum Allowed Sessions per IMSI
6	Per IMSI Session Exceeded Treatment (Reject, Route)
7	Stale Session Timeout
8	PCRF Sub-Pool Count (Read Only)
9	Last Updated Timestamp (Read Only)

"Alarm Settings elements" in the PCA Help describes the configuration data elements listed in *Table 113: 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 113: Alarm Settings CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	AlarmSupp (Keyword)
2	Alarm Name 1 (PcaIngressMessageRate, OutstandingPdraSessionsThresholdExceeded)
3	Critical Alarm Threshold (Percent) 1
4	Suppress Critical 1 (Yes, No)
5	Major Alarm Threshold (Percent) 1

Column	Data Description
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 (PsbrActiveBindingsThreshold)
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 PCA Help describes the configuration data elements listed in *Table 114: 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 114: Congestion Options CSV Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
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

Column	Data Description
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 PCA Help describes the PCRF Pools CSV Record elements listed in *Table 115: 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 115: PCRF Pools CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	PcrfPool (Keyword)
2	PCRF Pool Name (Key)
3	Is Pcrf SubPool
4	Comments

"PCRF Sub-Pool Selection Rules elements" in the PCA Help describes the PCRF Sub-Pool Selection Rules CSV Record elements listed in *Table 116: 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 116: PCRF Sub-Pool Selection Rules CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
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

Column	Data Description
8	PCRF Sub-Pool Name
9	Last Updated Timestamp (Read Only)

"PCRF Pool To PRT Mapping CSV Record elements" in the PCA Help describes the PCRF Pool To PRT Mapping CSV Record elements listed in *Table 117: 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 117: PCRF Pool To PRT Mapping CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	PcrfPoolToPrt (Keyword)
2	PCRF Pool Name (Key)
3	Peer Route Table Name

"General Options CSV Record elements" in the PCA Help describes the General Options CSV Record elements listed in *Table 118: General Options CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 118: General Options CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	GeneralOptions (Keyword)
2	Policy DRA Enabled
3	Online Charging DRA Enabled
4	Number of Policy Binding Server Groups
5	Number of Policy and Charging Session Sever Groups
6	Default Stale Session Timeout
7	Maximum Audit Frequency

"Online Charging DRA OCS Session State CSV Record elements" in the PCA Help describes the OCS Session State CSV Record elements listed in *Table 119: Online Charging DRA OCS Session State CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 119: Online Charging DRA OCS Session State CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)

Column	Data Description
1	OcsSessionState (Keyword)
2	OCS Realm
3	OCS FQDN
4	OCS Session State Enabled

"Online Charging DRA Realm CSV Record elements" in the PCA Help describes the OC-DRA Realm CSV Record elements listed in *Table 120: Online Charging DRA Realm CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 120: Online Charging DRA Realm CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	Realm (Keyword)
2	OCS Realm
3	Comment

"Online Charging DRA Network-Wide Options CSV Record elements" in the PCA Help describes the OC-DRA Network-Wide Options CSV Record elements listed in *Table 121: Online Charging DRA Network-Wide Options CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 121: Online Charging DRA Network-Wide Options CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	OcdraNwOptions (Keyword)
2	Session State Scope (None, All Messages, Specific Message)
3	Session State Unavailable Action (Send Answer, Route To Peer)
4	OCS Pool Selection Mode (Single Pool, Multiple Pools)

"PCA Policy Clients Options CSV Record elements" in the PCA Help describes the OC-DRA Network-Wide Options CSV Record elements listed in *Table 122: PDRA Policy Clients CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 122: PDRA Policy Clients CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)

Column	Data Description
1	PolicyClients (Keyword)
2	Policy Client Peer Node Name
3	Topology Hiding Enabled
4	Comments

"Online Charging DRA OCSs CSV Record elements" in the PCA Help describes the OC-DRA OCSs CSV Record elements listed in *Table 123: Online Charging DRA OCSs CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 123: Online Charging DRA OCSs CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	Ocs (Keyword)
2	OCS Peer Node Names
3	Comments

"Online Charging DRA CTFs CSV Record elements" in the PCA Help describes the OC-DRA CTFs CSV Record elements listed in *Table 124: Online Charging DRA CTFs CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 124: Online Charging DRA CTFs CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	Ctf (Keyword)
2	CTF Peer Node Names
3	Comments

"Suspect Binding Removal Rules Elements" in the PCA Help describes the Suspect Binding Removal Rules CSV elements listed in *Table 125: Suspect Binding Removal 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 125: Suspect Binding Removal Rules CSV Record Format

Column	Data Description
0	Application Type (Pca - Policy and Charging Application)
1	SuspectBindingRemovalRules (Keyword)

Column	Data Description
2	Rule Name (Key)
3	Application Name
4	Command Code
5	Error Scenario Category
6	Result Code
7	Vendor ID
8	Remove Suspect Binding Immediately
9	Comments

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 126: 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 126: Mapiwf Diameter Realm CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
1	DiameterRealm (Keyword)
2	Realm
3	Network (ANSI, ITUI, ITUN)
4	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 127: 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 127: Mapiwf DiamIdGta CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
1	DiamIdGta (Keyword)
2	Host
3	Realm

Column	Data Description
4	GTA

"Global Title Address Range to Point Code elements" in the MAP-Diameter Interworking Help describes the configuration data elements listed in *Table 128: 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 128: Mapiwf GtaRangeToPc CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
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 129: Mapiwf MD-IWF Option CSV FormatTable 110: 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 129: Mapiwf MD-IWF Option CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
1	MdiwfOption (Keyword)
2	Diameter Timeout
3	MAP Timeout
4	EIR Host Name
5	EIR Realm
6	IWF HSS Destination Host
7	IWF HSS Destination Realm
8	EIR Destination GTA
9	Shutdown Mode (Forced, Graceful)

Column	Data Description
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 130: 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 130: Mapiwf DM-IWF Option CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
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)
8	Shutdown Mode (Forced, Graceful)
9	Shutdown Timer
10	Realm
11	FQDN

Column	Data Description
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 131: 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 131: Mapiwf Diameter Exception CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
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 132: 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 132: Mapiwf MAP Exception CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
1	MapException (Keyword)
2	Exception Type (InternalProcessingError, MapToDiamTransTimeout, TranslationError
3	Exception Name
4	Action (Discard, SendAnswer)
5	Abort Reason (UserDefined, ContextNotSupported, DialogRefused)
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 114: 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 133: Mapiwf CCNDC Mapping CSV Format

Column	Data Description
0	Application Type (Mapiwf - MAP-Diameter Interworking)
1	CcNdcMapping (Keyword)
2	Ccndc
3	Realm
4	Description

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 134: 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 134: 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 135: 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 135: 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 136: 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 136: 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

RADIUS CSV File Formats and Contents

RADIUS CSV File Formats

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

"RADIUS Message Authentication Cfg Set elements" in the *RADIUS User's Guide* describes the configuration data elements listed in *Table 137: RADIUS Message Authentication Cfg Sets CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 137: RADIUS Message Authentication Cfg Sets CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	MsgAuthCfgSet (Keyword)
2	Message Authenticator Set Name (Keyword)
3	Encode Message-Authenticator in egress CoA-Request (YES, NO)
4	Encode Message-Authenticator in egress Disconnect-Request (YES, NO)
5	Encode Message-Authenticator in response to Status-Server (YES, NO)
6	Encode Message-Authenticator in egress CoA-NACK (YES, NO)
7	Encode Message-Authenticator in egress CoA-ACK (YES, NO)
8	Encode Message-Authenticator in egress Disconnect-ACK (YES, NO)
9	Encode Message-Authenticator in egress Disconnect NACK (YES, NO)
10	Encode Message-Authenticator in egress Access-Request (YES, NO)
11	Encode Message-Authenticator in egress Access-Accept (YES, NO)
12	Encode Message-Authenticator in egress Access-Reject (YES, NO)
13	Encode Message-Authenticator in egress Access-Challenge (YES, NO)

"RADIUS Shared Secret Cfg Set elements" in the *RADIUS User's Guide* describes the configuration data elements listed in *Table 138: RADIUS Shared Secret Cfg Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 138: RADIUS Shared Secret Cfg Set CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	SharedSecretCfgSet (Keyword)
2	Shared Secret Configuration Set Name
3	Shared Secret Configuration Set Key
4	Iv
5	Index

"RADIUS Ingress Status Server Cfg Set elements" in the *RADIUS User's Guide* describes the configuration data elements listed in *Table 139: RADIUS Ingress Status Server Cfg Set CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 139: RADIUS Ingress Status Server Cfg Set CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	IngressStatusServerCfgSet (Keyword)
2	Ingress Status-Server Set Name
3	Send Response to Status-Server (Yes, No)
4	Status Server Response Message Type (AccountingResponse, AccessAccept)

"RADIUS Message Conversion Cfg Set elements" in the *RADIUS User's Guide* describes the data elements listed in *Table 140: RADIUS Message Conversion Cfg Set CSV Format* and considerations for the data elements that must be observed when the elements are edited in the CSV files.

Note: Import of the Message Conversion Cfg Set is not supported because user configuration of this data is not supported.

Table 140: RADIUS Message Conversion Cfg Set CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	MsgConvCfgSet (Keyword)
2	Message Conversion Set Name
3	Message Conversion Set Rules

"RADIUS NAS Node elements" in the *RADIUS User's Guide* describes the configuration data elements listed in *Table 141: RADIUS NAS Node CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 141: RADIUS NAS Node CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	NasNode (Keyword)
2	NAS Node Name
3	FQDN
4	Realm
5	NAS Node Identifier
6	NAS IP Addresses [0]
	(repeated x 4)
9	NAS IP Addresses [3]

"RADIUS Network Options elements" in the *RADIUS User's Guide* describes the configuration data elements listed in *Table 142: RADIUS Network Options CSV Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 142: RADIUS Network Options CSV Format

Column	Data Description
0	Application Type (RADIUS)
1	NetworkOptions (Keyword)
2	Name
3	Shared Secret
4	Iv
5	Index

Subscriber Binding Repository (SBR) CSV File Formats and Contents

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

"SBR Database Elements" in the PCA Help describes the SBR Database CSV elements listed in *Table 143: SBR Database CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 143: SBR Database CSV Record Format

Column	Data Description
0	Application Type (SBR)
1	SbrDatabase (Keyword)
2	SBR Database Name (Key)
3	Database Type (Binding or Session)
4	Resource Domain Name
5	Number of Server Groups
6	Place Association Name

"SBR Database Resizing Elements" in the PCA Help describes the SBR Database Resizing CSV elements listed in *Table 144: SBR Database Resizing CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 144: SBR Database Resizing CSV Record Format

Column	Data Description
0	Application Type (SBR)

Column	Data Description
1	SbrDatabaseResizingPlan (Keyword)
2	SBR Database Resizing Plan Name (Key)
3	SBR Database Name
4	Target Resource Domain Name
5	Target Number of Server Groups

"SBR Data Migration Plan Elements" in the PCA Help describes the SBR Migration Plan CSV elements listed in *Table 145: SBR Data Migration Plan CSV Record Format* and configuration considerations for the data elements that must be observed when the elements are edited in the CSV files.

Table 145: SBR Data Migration Plan CSV Record Format

Column	Data Description
0	Application Type (SBR)
1	SbrDataMigrationPlan (Keyword)
2	SBR Data Migration Plan Name (Key)
3	Migration Type
4	Initial SBR Database Name
5	Target SBR Database Name

Glossary

A

AVP	Attribute-Value Pair The Diameter protocol consists of a header followed by one or more attribute-value pairs (AVPs). An AVP includes a header and is used to encapsulate protocol-specific data (for example, routing information) as well as authentication, authorization or accounting information.

C

Charging Proxy Application	A DSR Application that is responsible for sending and receiving Diameter accounting messages.
CTF	Charging Trigger Function

D

DA-MP	Diameter Agent Message Processor A DSR MP (Server Role = MP, Server Group Function = Diameter Signaling Router). A local application that can optionally be activated on the DA-MP. A computer or blade that is hosting a Diameter Signaling Router Application.
DCA	DOIC Capabilities Announcement
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

D

	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.
DNS	Domain Name System A system for converting Internet host and domain names into IP addresses.
DRA	Diameter Routing Agent A functional element in a 3G or 4G (such as LTE) wireless network that provides real-time routing capabilities to ensure that messages are routed among the correct elements in a network.
DSCP	Differentiated Services Code Point Provides a framework and building blocks to enable deployment of scalable service discrimination in the internet. The differentiated services are realized by mapping the code point contained in a field in the IP packet header to a particular forwarding treatment or per-hop behavior (PHB). Differentiated services or DiffServ is a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying and managing network traffic and providing quality of service (QoS) on modern IP networks.

F

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.

G

GLA	Gateway Location Application A DSR Application that provides a Diameter interface to subscriber data stored in the DSR's Policy Session Binding Repository (pSBR). Subscriber data concerning binding and session information is populated in the pSBR-B by the Policy Diameter Routing Agent (Policy DRA). GLA provides methods for a Diameter node to query binding information stored in the pSBR-B. The query can be by either IMSI or MSISDN. GLA processes Diameter Requests and generates Diameter Answers.
GTA	Global Title Address

H

HA	High Availability High Availability refers to a system or component that operates on a continuous basis by utilizing redundant connectivity, thereby circumventing unplanned outages.

I

IDIH	Integrated Diameter Intelligence Hub

I

IP	Internet Protocol - IP specifies the format of packets, also called datagrams, and the addressing scheme. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.

K

KPI	Key Performance Indicator

L

LDAP	Lightweight Directory Access Protocol A protocol for providing and receiving directory information in a TCP/IP network.

M

MAP	Mobile Application Part An application part in SS7 signaling for mobile communications systems.
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.

M

MD-IWF	MAP-Diameter Interworking SS7 Application, which translates MAP messages into Diameter messages
MEAL	Measurements, Events, Alarms, and Logs
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 components. All Message Processors replicate from their Signaling OAM's database and generate faults to a Fault Management System.

N

NAS	Network Access Server A single point of access or gateway to a remote resource. NAS systems are usually associated with AAA servers.
NOAM	Network Operations, Administration, and Maintenance
NOAMP	Network Operations, Administration, Maintenance, and Provisioning

O

O

OCS	Online Charging System A system allowing a Communications Service Provider to charge customers in real time based on service usage.

P

PCRF	Policy and Charging Rules Function The ability to dynamically control access, services, network capacity, and charges in a network. Maintains rules regarding a subscriber's use of network resources. Responds to CCR and AAR messages. Periodically sends RAR messages. All policy sessions for a given subscriber, originating anywhere in the network, must be processed by the same PCRF. In the Policy Management system, PCRF is located in the MPE device. Software node designated in real-time to determine policy rules in a multimedia network.
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.
PCRF Sub-Pool	A logical sub-division of a PCRF Pool selected by Origin-Host. PCRF Sub-Pools can be used to selectively route policy traffic to a set of PCRFs for the purpose of proving in new PCRF capabilities. More

P

	than one PCRF Sub-Pool Selection Rule may point to the same PCRF Sub-Pool.
PRT	Peer Route Table or Peer Routing Table

R

RADIUS	Remote Authentication Dial-In User Service A client/server protocol and associated software that enables remote access servers to communicate with a central server to authorize their access to the requested service. The MPE device functions with RADIUS servers to authenticate messages received from remote gateways. See also Diameter.
Range Based Address Resolution	See RBAR.
RBAR	Range Based Address Resolution A DSR enhanced routing application which allows you 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.
Session Binding Repository	See SBR.

S

SFTP	SSH File Transfer Protocol (sometimes also called Secure File Transfer Protocol) A client-server protocol that allows a user on one computer to transfer files to and from another computer over a TCP/IP network over any reliable data stream. It is typically used over typically used with version two of the SSH protocol.
SNMP	Simple Network Management Protocol. An industry-wide standard protocol used for network management. The SNMP agent maintains data variables that represent aspects of the network. These variables are called managed objects and are stored in a management information base (MIB). The SNMP protocol arranges managed objects into groups.
SOAM	System Operations, Administration, and Maintenance
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

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.

TSA

Target Set Address

An externally routable IP address that the IPFE presents to application clients. The IPFE distributes traffic sent to a target set address across a set of application servers.

U

UDR

User-Data-Request

A user-identity and service indication sent by a Diameter client to a Diameter server in order to request user data.

V

VM

Virtual Machine

Virtualized computation environment that behaves very much like a physical computer/server.

A VM has all its ingredients (processor, memory/storage, interfaces/ports) of a physical computer/server and is generated by a Hypervisor, which partitions the underlying physical resources and allocates them to VMs. Virtual

V

Machines are capable of hosting a VNF Component (VNFC).