Oracle® Rdb Connectivity Manager

User Guide

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Release 7.3.4.0.0

3

Preface

Purpose of This Manual

The Oracle Rdb Connectivity Manager 7.3 User Guide describes concepts, features and usage of the Oracle Rdb Connectivity Manager interface.

Intended Audience

This document is intended for users responsible for:

- System management
- Database administration
- Application programming

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Document Structure

This document consists of twenty-eight (28) chapters:

Conventions

Oracle Rdb Connectivity Manager is often referred to as ORCM.

Oracle Rdb is often referred to as Rdb.

Hewlett-Packard Company is often referred to as HP.

The following conventions are used in this document:

word	A lowercase word in a format example indicates a syntax element that you supply.
[ ]	Brackets enclose optional clauses from which you can choose one or none.
{ }	Braces enclose clauses from which you must choose one alternative.
...	A horizontal ellipsis means you can repeat the previous item.
. . .	A vertical ellipsis in an example means that information not directly related to the example has been omitted.

Conventions in Code Examples

Code examples illustrate SQL or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT last_name FROM employees WHERE last_name = 'TOLIVER';
```

Versioning information

Features that have been added or changed in the more recent releases of ORCM are highlighted as shown in this example:

Since 7.3.3.0.0

If the change pertains to the entire documentation section this version indicator will be shown immediately after the section title, otherwise the version information should be considered to be pertinent only to the immediately following paragraph.

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Chapter 1
Introduction

Oracle Rdb Connectivity Manager (ORCM) is a graphical user interface (GUI) that provides a server management utility from any platform where Java is available, to manage SQL/Service and JDBC servers running on OpenVMS server systems.

Figure 1 - ORCM user interface

Details about ORCM features and how to use the ORCM user interface can be found in this document.

General information on Java may be found at
http://www.oracle.com/technetwork/java/index.html

General information on JDBC may be found at http://www.oracle.com/technetwork/java/index-142838.html

Documentation for HP's Java for OpenVMS system may be found at
http://h18012.www1.hp.com/java/

General information and documentation for Oracle Rdb may be found at
http://www.oracle.com/technetwork/products/rdb/overview/index.html

Documentation for Oracle SQL/Services and Oracle JDBC for Rdb may be found at
http://www.oracle.com/technetwork/products/rdb/documentation/rdb-doc-rlp-523618.html

Since 7.3.4.0.0

Further information about ORCM optional features may be found in the following guides installed in your ORCM documentation directory during the ORCM installation procedure:

- ORCM RMU Statistics User guide
- ORCM Oracle Trace Player User guide

1.1 Overview of ORCM user interface

The following sections describe the layout and operation of the ORCM user interface:

- Layout
- Main Menu
- Explorer Area
- Main Panel
- Tabbed Panel Navigation
- Message Area
- Working with ORCM Entities
- Optional ORCM Features

1.2 Layout

Figure 2 - *Layout*

The ORCM user interface consists of a main menu bar situated at the top of the display, a panel consisting of an explorer area on the left and the main multi-tabbed panel ,also called the work area, on the right and a tabbed message area on the bottom of the display.

1.3 Main Menu

Figure 3 - Main Menu

The main menu consists of two menu areas. On top is a text-based menu strip, and below an icon-based button menu strip. Use these menus to navigate around ORCM and carry out various operations on SQL/Services and JDBC.

Figure 4 - Network Busy Icon

To the right of the main menu is a network busy icon. When this icon is spinning, a network operation is currently in progress.

See Using Menu Options for information on the operations that may be carried out from these menu options.

1.4 Explorer Area

Figure 5 - Explorer area

The explorer area consists of multiple explorer or object trees.

Click on one of the tabs in this area to select the explorer you are interested in. ORCM has three explorer trees, Server, Databases and Event Triggers. When you start ORCM the Server explorer will be active. See the following sections for more information on the explorers.

1.4.1 Server Explorer

Figure 6 - Server explorer

The server explorer allows you to see and navigate the various entities that ORCM maintains and controls.

There are two main branches of this server explorer tree, the SQL/Services sub-tree containing the SQL/Services servers that ORCM knows about, and the JDBC sub-tree that shows known JDBC servers.

ORCM uses its configuration file to load up the explorer with SQL/Services and JDBC server definitions. If JDBC server poll is enabled, the server tree may also contain JDBC servers that responded to the POLL request, even if they are not described in the configuration file.

Click on a server node in the Servers tree to display information about that server. ORCM will display information about the server in the main panel and a sub-tree of subordinate entities may be displayed under the server node in the server tree.

Depending on the type of server, you may see the following server children in the sub-tree:
- SQL/Services dispatchers
- SQL/Services services
- SQL/Services clients
- JDBC Pooled Servers
- JDBC Clients

Click on a child node in the server sub-tree to display information about that entity. This information will be shown as a new tabbed panel within the main panel.

Right clicking on a Servers tree node will display a popup menu of operations that may be carried out on that selected entity.

Notes:

1/. SQL/Services Servers.
Before you can use ORCM to maintain SQL/Services servers you will need to create control connection definitions for each server you will be controlling. You can either modify the ORCM configuration file, or use one of the ORCM main menu options to add a new SQL/Services control connection definition.

2/. JDBC Servers.
The ORCM configuration file that is created during installation only contains definitions for the default JDBC servers. If you wish to startup and control JDBC servers using ORCM you will have to provide server definitions for each server you wish to control. You can either modify

the ORCM configuration file to add JDBC Server definitions or use one of the ORCM main menu options to create a new server definition.

See Server Explorer: SQL/Services Servers and Server Explorer: JDBC Servers for more information on the Server Explorers.

1.4.2 Database Explorer

Figure 7 - Database explorer

The database explorer displays each database that ORCM knows about. Known database definitions are maintained in the ORCM configuration file and specify connection details that will allow ORCM to connect to the database using JDBC thin connections.

You can either modify the ORCM configuration file to add known database definitions or use an ORCM menu option to create a new known database definition.

Click on a database node in the databases tree to display information about that known database. This information will be shown as a new tabbed panel within the main panel.

Right clicking on a database tree node will display a popup menu of operations that may be carried out on that selected entity.

See Database Explorer: Known Databases for more information about the Database Explorer.

1.4.3 Event Trigger Explorer

Figure 8 - Event Trigger explorer

The event trigger explorer displays each JDBC server event trigger that ORCM knows about.

You can either modify the ORCM configuration file to add event trigger definitions or use an ORCM menu option to create a new event trigger definition.

Click on an Event Trigger node in the EventTriggers tree to display information about that Event Trigger. This information will be shown as a new tabbed panel within the main panel.

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Right clicking on an Event Trigger tree node will display a popup menu of operations that may be carried out on that selected entity.

See Event Triggers Explorer: Event Triggers for more information about the Event Trigger Explorer.

1.4.4 External Tools Explorer

The external tools explorer displays each external tool that ORCM knows about. External tool definitions are maintained in the ORCM configuration file and specify information about how a tool may be invoked and how the results of the tools action should be processed.

Figure 9 - External Tools explorer

You can either modify the ORCM configuration file to add a new external tool or use ORCM menu options to create a new external tool definition.

Click on a tool node in the external tools tree to display information about that external tool. This information will be shown as a new tabbed panel within the main panel.

Right clicking on a tree node will display a popup menu of operations that may be carried out on that selected entity.

1.4.5 Oracle Trace Displays Explorer

Since 7.3.4.0.0

The optional Oracle Trace Displays explorer shows each Oracle Trace display that ORCM knows about. Oracle Trace display definitions are maintained in the ORCM configuration file and describe displays that may be used in the Oracle Trace Player.

You can either modify the ORCM configuration file to add a new display or modify an existing one or use ORCM menu options to create or modify a trace display definition.

Figure 10 - Oracle Trace Displays explorer

Click on a display node in the displays tree to show information about that Oracle Trace Display.

This information will be shown as a new tabbed panel within the main panel.

Right clicking on a tree node will display a popup menu of operations that may be carried out on that selected entity.

1.5 Main Panel

The main panel, called the Work Area, is where the majority of ORCM display and entry panes will be displayed.

When you click on an entity in one of the explorer trees, a panel showing details of the highlighted entity will be displayed in main panel area as a separate tabbed pane. The panel's tab will indicate the name and type of the entity:

Figure 11 -   Tabs

The following ORCM entities may be displayed in the main panel:
- SQL/Services servers
- SQL/Services dispatchers
- SQL/Services services
- SQL/Services clients
- JDBC servers
- Known databases
- Event triggers

In addition, various ORCM and external Tools may display information and input form on the main panel:

- External Tools
- RMU
- Server Scan
- SQL worksheet
- Command line
- Controller command line
- RMU Command line

1.5.1 Tabbed Panel Navigation

Figure 12 -   *Tab Close*

You can navigate through these tabs to select the displayed entity you are interested in. A panel may be closed by clicking ✖ on the entity's tab.

Figure 13 -   *Cancel button*

The panel may also be closed by clicking the `CANCEL` button on the displayed panel.

Figure 14 -   *Tab popup menu*

Right-click on a tab in the main panel to bring up a popup menu. The panel may also be closed by choosing the `Close` menu option on the displayed menu.

It is possible that there may be too many tabs to display on the current screen. If this is the case, the left and right arrow buttons at the end of the tab bar may be used to scroll across to see hidden tabs.

Figure 15 -   *Tab scroll*

1.6 Message Area

Various status and information messages are displayed in the message area.

The message area contains multiple sub-panels that display different types of messages including:

- General messages
- Log Output
- ORCM Events
- Server Events
- Trace
- Exceptions

Figure 16 -   *Message area*

You can view messages of a particular type by selecting the appropriate tab in this message area.

1.6.1 Message Area Popup Menu

Right-click within the message area to bring up a popup menu of options:

Figure 17 -   *Message area popup menu*

The following menu options are available:

- **Copy** - Copy the selected text from the selected message area sub-panel to the global paste buffer.
- **Copy All** - Copy all the text within the selected message area sub-panel to the global paste buffer.
- **Copy to file** - Copy the selected text from the selected message area sub-panel to the designated file. You will be prompted for a recipient filename.
- **Copy All text area to file** - Copy all the text within the selected message area sub-panel to the global designated file. You will be prompted for a recipient filename.
- **Print** - Print the selected text from the selected message area sub-panel. A print dialog will be displayed where you may specify where the information is to be printed.
- **Print All** - Print all the text within the selected message area sub-panel. A print dialog will be displayed where you may specify where the information is to be printed.
- **Clear** - Clear all text from the selected message area sub-panel.
- **Help** - Display help on popup menu options

1.6.2 Server Events Message Panel

In the Server Events message panel you may also drill down to show the details of the event displayed:

Figure 18 -   *Server Event messages*

Click on the **show** link to display the event details:

1.7 Working with ORCM Entities

ORCM allows you to display and maintain various entities relating to your active SQL/Services and JDBC environment.

1.7.1 SQL/Services Entities

You may view and maintain the following SQL/Services entities or objects:

-      SQL/Services Servers
-      SQL/Services Dispatchers
-      SQL/Services Services
-      SQL/Services Clients

To display the SQL/Services entities that a SQL/Services server controls, you will first have to make a control connection to that server.

To connect to a SQL/Services server you may:

- click the Connect button on the SQL/Services server panel, or
- choose the SQL/Services > Connect to SQL/Services Server Control Main Menu option, or
- right-click the server name in the server explorer and select the Connect to SQL/Services Server Control menu option.

If you choose one of the options as shown above, a SQL/Services server control connection dialog will be displayed. Connection details will be prefilled for you if you have selected a pre-existing connection.

If you need to connect to a SQL/Services server that is not already displayed in the server explorer, you will have to create a new control connection definition:

- choose SQL/Services Control Connection Wizard ... from the **File > Wizard** option of the Main Menu or,

- choose SQL/Services Control Connection … from the **File > New** option of the Main Menu or,
- right-click the SQL/Services Servers node of the server explorer to bring up the SQL/Services Servers popup menu and choose the Modify SQL/Services Server Control option.

Once connected, the various dispatchers and services that the server has control over will be displayed. To view details of a SQL/Services entity, click on the entity name displayed in the server explorer.

You may use a main menu option or a popup menu option to create a new dispatcher or services. See Main Menu > File >New option and SQL/Services server popup menu for more details.

You may also select options from the SQL/Services menu to carry out maintenance of the SQL/Services environment.

See also:
   Managing a Server section of the **Oracle SQL/Services Server Configuration Guide.**

1.7.2 JDBC Entities

JDBC servers known to ORCM are displayed in the server explorer under the JDBC Servers sub-tree.

To view details of a JDBC server, click on the server name displayed in the server explorer.
If you wish to create a new JDBC server definition you may:

- add a new server definition directly to the ORCM configuration file (See **the Oracle JDBC for Rdb User Guide** for information on JDBC server configuration properties and the XML-formatted configuration file) , or,
- choose JDBC Server Definition Wizard ... from the **File > Wizards** option of the Main Menu or,
- choose JDBC Server from the **File > New** option of the Main Menu or,
- right-click the JDBC Servers node of the server explorer to bring up the JDBC Servers popup menu and choose the New JDBC Server… option.

You may also select options from the JDBC main menu to carry out maintenance of the JDBC environment.

See also:
  Server Operations section of the **Oracle JDBC for Rdb User Guide.**

1.8 Optional ORCM Features

Since 7.3.4.0.0

Several of the ORCM features are optional and may be enabled or disabled in ORCM Preferences or by using the appropriate options in your ORCM configuration file.

The following is a table of optional ORCM features:

Table 1 - Optional ORCM Features

Feature	Description	Enabled by Default?
RMU Statistics	Display RMU statistics.	YES
Database Differences	Display database schema differences.	YES
Oracle Trace	Display Oracle Trace captured data.	NO

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Chapter 2
The Explorers

Figure 20 -   *Explorers*

The following tree-structured explorers are available within the Explorer Area of ORCM to navigate to and maintain ORCM entities:

- Server Explorer: SQL/Services Servers
- Server Explorer: JDBC Servers
- Database Explorer: Known Databases
- Event Triggers Explorer: Event Triggers
- Oracle Trace Displays Explorer: Oracle Trace Displays

2.1 Server Explorer: SQL/Services Servers

Figure 21 -   *Server Explorer showing SQL/Services Servers*

The server explorer may be used to navigate through the SQL/Services servers known to ORCM.

SQL/Services servers may be defined in the ORCM configuration file. Each SQL/Services server known to ORCM will be displayed in the server explorer under the SQL/Services Servers sub-tree.

2.1.1 Operations

To carry out operations on a predefined server, you must first select that server within the SQL/Services Servers sub-tree by clicking on it. When clicked, a SQL/Services server panel representing that server will be displayed in the Main panel.

If the server has `autoconnect` enabled, or ORCM has already connected to that server, the details of the server will be displayed in the Main panel and the server tree will be updated with the SQL/Services objects or entities that the server is maintaining.

If ORCM has not already connected to the server, a basic definition of the server as found in the ORCM configuration file will be displayed in the Main panel. ORCM cannot display any more details until you have successfully established a control connection to that server.

2.1.2 Connecting to a SQL/Services Server

If the server does not have *autoconnect* enabled, you will have to connect to it by either:

- Pressing the connect button on the server panel

Figure 22 - The connect button

or

- Right clicking the server node in the Servers tree and selecting the Connect option from the popup menu that is displayed.

Once connected, maintenance and other operations may be carried out on that server. These operations may be invoked from either the Main menu, or by using the SQL/Services server popup menu which may be displayed by right-clicking the server name within the server tree, or by actions within the SQL/Services server panel directly.

The current status of SQL/Services entities is indicated by the icons next to the name of the entity on the server tree:

 An exclamation icon against the entity name indicates that the entity is known but its status is currently unknown. This usually indicates that the entity is not currently running.

 Entities that are known to be running are indicated by a green tick icon.

Figure 23 -   Server Explorer showing different SQL/Services Server status icons

2.1.3 SQL/Services server popup menu

The SQL/Services server popup menu may be invoked by right-clicking the server name within the server tree:

Figure 24 -   SQL/Services Server popup menu

Various server operations may be invoked using this popup menu; some operations may not be available due to the current state of the server.

2.1.4 SQL/Services server popup menu options

The following menu options may be found on the SQL/Services server popup menu:
- **Restart SQL/Services Server** - stop and then restart the selected server.
- **Shutdown SQL/Services Server** - stop the selected server.
- **Refresh SQL/Services Server** - request ORCM to get the server current status and configuration from the server.
- Connect to SQL/Services Server Control - display a SQL/Services Server connect panel allowing connection to this server.
- **Disconnect from SQL/Services Server Control** - disconnect from the server and clear the current server details.
- Modify SQL/Services Server Control - display a SQL/Services Server connect panel for this server allowing you to change the connection details.
- **Start SQL/Services RMU server** - request the server to start the RMU dispatcher and associated RMU service.
- **Remove SQL/Services Server** - remove the definition of this server from the ORCM configuration file.
- New SQL/Services Dispatcher … - allow the creation of a new dispatcher on the connected server.
- New SQL/Services Service … - allow the creation of a new service on the connected server.
- **Script Create server** - produce the scripted text to create this server definition for use with the SQL/Services manager command line.
- **Script Create for all dispatcher** - produce the scripted text to create all dispatcher definitions for use with the SQL/Services manager command line.
- **Script Create for all services** - produce the scripted text to create all services definitions for use with the SQL/Services manager command line.

See also:
   Managing a Server section of the ***Oracle SQL/Services Server Configuration Guide.***

2.2 Server Explorer: JDBC Servers

Figure 25 -   Server Explorer showing JDBC Servers

The server explorer may be used to navigate through the JDBC servers known to ORCM. JDBC servers may be defined in the ORCM configuration file, or may be discovered by ORCM when it carries out JDBC server polling. Each JDBC server known to ORCM will be displayed in the server explorer under the JDBC Servers sub-tree.

JDBC Servers are grouped under the computer node or host they are either defined to run on or were discovered on.

In addition, default JDBC server definitions found within the configuration file are displayed at the top of the JDBC server sub-tree.

Note:
The default server definitions specify default characteristics that other servers defined in the same configuration file may inherit. They do not represent active JDBC servers and as such, standard operations such as START and STOP may not be carried out on these server definitions.

The current status of a server is indicated by the icon that is next to the name on the server tree:

This icon indicates that the server is a reference-only server definition. Such server definitions may be inherited by other server definitions but standard server operations such as START and SHUTDOWN cannot be carried out on these entities.

An exclamation icon against the server indicates that the server is known but its status is currently unknown. This usually indicates that the server is not currently running.

Servers that are known to be running are indicated by a green tick icon.

Servers that are neither in the configuration file, nor have responded to the poll request, are designated as unknown using this **no access** icon.

Figure 26 -   Server Explorer showing different JDBC Server status icons

2.2.1 JDBC Pool Servers

JDBC Servers taking part in a server pool will also be displayed in sub-trees under the JDBC Pool server they are participating in:

Figure 27 -   Server Explorer showing JDBC Pool Server

As servers may participate in more than one pool, the same server name may be displayed multiple times within the server explorer, once in each pool that it participates and additionally, it will be shown directly under the node within which it is defined or running.

As pool servers may regulate servers running on remote computer nodes, it is also possible that the same server name may be shown under multiple computer node sub-trees.

2.2.2 Operations

To carry out operations on a predefined or discovered server, you must first select that server within the **JDBC Servers** sub-tree by clicking on it.

When clicked, a JDBC server panel representing that server will be displayed in the Main panel.

Figure 28 -   JDBC Server panel

Once selected, maintenance and other operations may be carried out on that server.

These operations may be invoked from either the Main menu, or by using the JDBC host popup menu which may be displayed by right-clicking a node or host within the **server** tree, or by using the JDBC server popup menu which may be displayed by right-clicking the server name within the server tree, or by actions within the JDBC server panel directly.

2.2.3 JDBC host popup menu

The JDBC host popup menu may be invoked by right-clicking a host name or IP under the JDBC Servers sub-tree of the server tree:

Figure 29 -   JDBC Host popup menu

2.2.4 JDBC host popup menu options

The following menu options may be found on the JDBC host popup menu:

Refresh JDBC Servers - request a refresh of the host servers' data.

New JDBC Server... - create a new server definition, see JDBC Server Information.

Rename... - create an alias for this host to be used in the server tree.

2.2.5 JDBC server popup menu

The JDBC server popup menu may be invoked by right-clicking the server name within the server tree:

Figure 30 -   JDBC Server popup menu

Various server operations may be invoked using this popup menu; some operations may not be available due to the current state of the server.

2.2.6 JDBC server popup menu options

The following menu options may be found on the JDBC server popup menu:

Start JDBC Server - start the selected server.

Shutdown JDBC Server - stop the selected server.

Open JDBC Server - open the server allowing clients to access it.

Close JDBC Server - close the server disabling any further client access to it.

Connect to JDBC Control - display a Thin Controller panel allowing controller operations to be sent to this server.

Show JDBC clients - request a list of clients currently using this server and display as a sub-tree under the server.

Stop clients - stop all clients currently using this server.

Remove JDBC Server - remove the definition of this server from the ORCM configuration file.

See also:
   Server Operations section of the **Oracle JDBC for Rdb User Guide**.

2.3 Database Explorer: Known Databases

Figure 31 -   Database Explorer showing Known Databases

The database explorer may be used to navigate through the databases known to ORCM.

Known Databases may be defined in the ORCM configuration file. Each database known to ORCM will be displayed in the database explorer under the **Databases** tree.

2.3.1 Operations

To carry out operations on a Known Database, you must first select that database within the **Databases** tree by clicking on it. When clicked, a Known Database panel representing that database will be displayed in the Main panel.

Figure 32 -   *Known Database panel*

Once selected, operations may be carried out on that database.
See Known Databases for more information.

2.3.2 Known Database popup menu

The Known Database popup menu may be invoked by right-clicking the database name within the Databases tree:

Figure 33 -   *Known database popup menu*

2.3.3 Known Database popup menu options

The following menu options may be found on the Known Database popup menu:

SQLWorksheet - Invoke the SQL worksheet.

Remove Known Database - remove the definition of this database from the ORCM configuration file.

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2.4 Event Triggers Explorer: Event Triggers

Figure 34 -   *Event Triggers Explorer showing Event Triggers*

The event triggers explorer may be used to navigate through the event triggers known to ORCM.

Event Triggers may be defined in the ORCM configuration file. Each event trigger known to ORCM will be displayed in the event triggers explorer under the **EventTriggers** tree.

2.4.1 Operations

To carry out operations on an event trigger, you must first select that event trigger within the **EventTriggers** tree by clicking on it.

When clicked, an **EventTrigger** panel representing that event will be displayed in the Main panel.

Figure 35 -   Event Trigger panel

Once selected, operations may be carried out on that event trigger.

See Event Triggers for more information.

2.4.2 Event Trigger popup menu

The Event Trigger popup menu may be invoked by right-clicking the event trigger name within the **EventTriggers** tree:

Figure 36 -   Event Trigger popup menu

2.4.3 Event Trigger popup menu options

The following menu options may be found on the event trigger popup menu:

Remove Event Trigger - remove the definition of this event trigger from the ORCM
  configuration file.

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2.5 External Tools Explorer: External Tools

Figure 37 -   External Tools Explorer showing External Tools

The external tools explorer may be used to navigate through the external tools known to ORCM.

External Tools may be defined in the ORCM configuration file. Each external tool known to
ORCM will be displayed in the external tools explorer under the **Tools** tree.

2.5.1 Operations

To carry out operations on an external tool, you must first select that external tool within the
Tools tree by clicking on it.

When clicked, an **External Tool** panel representing that tool will be displayed in the Main panel.

Figure 38 -   External Tool panel

Once selected, operations may be carried out on that external tool.

See External Tools for more information.

2.5.2 External Tool popup menu

The External Tool popup menu may be invoked by right-clicking the tool name within the External Tools tree:

Figure 39 -   External Tool popup menu

See External Tools for more information.

2.5.3 External Tool popup menu options

The following menu options may be found on the external tool popup menu:

Remove Tool - remove the definition of this external tool from the ORCM configuration file.

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2.6 Oracle Trace Displays Explorer: Oracle Trace Displays

Since 7.3.4.0.0

Figure 40 -   Oracle Trace Displays Explorer showing Displays

The Oracle Trace displays explorer may be used to navigate through the Oracle Trace displays known to ORCM.

Trace displays may be defined in the ORCM configuration file. Each display known to ORCM will be displayed in the Oracle Trace displays explorer under the **Displays** tree.

Note:

Oracle Trace displays and the Oracle Trace Player are optional ORCM features that are disabled by default. If this feature is disabled the Displays Explorer will not be present in the Explorer area.

See Optional ORCM Features for more details.

2.6.1 Operations

To carry out operations on a trace display, you must first select that display within the **Displays** tree by clicking on it.

When clicked, an **Oracle Trace Display** panel representing that display will be created in the Main panel.

Figure 41 -   Trace Display panel

Once selected, operations may be carried out on that display.

See your ***Oracle Rdb Connectivity Management Oracle Trace Player User Guide*** for more information.

2.6.2 Displays popup menu

The Displays popup menu may be invoked by right-clicking the display name within the Displays tree:

Figure 42 -   *Displays popup menu*

See your **Oracle Rdb Connectivity Management Oracle Trace Player User Guide** for more information.

2.6.3 Displays popup menu options

The following menu options may be found on the displays popup menu:

Remove Oracle Trace Display - remove the definition of this display from the ORCM configuration file.

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Chapter 3
Using Menu options

ORCM has a number of menus that may be used to choose various options or operations to be carried out.

Main Menu

The ORCM user interface has a main menu bar at the top of the application window that allows access to ORCM management functionality.

Figure 43 -   Main Menu

This chapter describes the features that may be invoked from the main menu:

- File
- SQL/Services
- JDBC
- Tools
- Windows
- Help

Main Menu Button Strip

Immediately below the main menu bar at the top of the application window is the Main Menu Button strip.

Figure 44 -   Main Menu Button Strip

These buttons are context-sensitive and the operation invoked by pressing the button may depend on the currently selected server or ORCM panel on display:

- - Starts the selected JDBC server. See Start JDBC Server.

- - Stops the selected JDBC server. See Stop JDBC Server.

- - Invoke connection management. See [Connection Maintenance](#).

- - Open the selected JDBC server. See [Open JDBC Server](#).

- - Close the selected JDBC server. See [Close JDBC Server](#)

- - Create a new SQL/Services dispatcher on the current SQL/Services server. See [New - SQL/Services Dispatcher](#).

- - Create a new SQL/Services service on the current SQL/Services server. See [New - SQL/Services Dispatcher](#)

- - Stop all clients on all JDBC servers. See [Stop All Clients on all JDBC Servers](#).

- - Stop all JDBC servers. See [Stop All JDBC Servers](#).

Popup Menus

Several popup menus may be invoked by Right-clicking on a field, text area or entity within the explorer area. This chapter also contains information about the following popup menus:

- [Server Explorer - SQL/Services server popup menu](#)
- [Servers Explorer - JDBC server popup menu](#)
- [Database Explorer - Known Database popup menu](#)
- [Event Trigger Explorer - Event Trigger popup menu](#)
- [Remote File popup menu](#)
- [SQL/Services Servers popup menu](#)
- [JDBC Servers popup menu](#)
- [Message Area popup menu](#)
- [Copy/Print popup menu](#)

3.1 File
3.1.1 New

Selecting the *New* option will display a submenu of choices:

Figure 45 -   *Menu Option File \ New*

3.1.1.1 SQL/Services Control Connection ...

Selecting this option will bring up a SQL/Services control connection form allowing you to create a new control connection for an existing SQL/Services server.

Once you have successfully created the connection definition, you may use this connection to connect to the SQL/Services server to carry out exploration and maintenance on the SQL/Services objects controlled by the server.

3.1.1.2 SQL/Services Dispatcher

Selecting this option will bring up a dispatcher creation form. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.1.1.3 SQL/Services Dispatcher based on ...

Selecting this option will bring up a submenu of existing SQL/Services dispatchers that may be used as prototypes for the new dispatcher. Select one of the existing dispatchers from the list and a dispatcher creation form will display already filled with details taken from the selected dispatcher definition.

This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.1.1.4 SQL/Services Service

Selecting this option will bring up a service creation form. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.1.1.5 SQL/Services Service based on ...

Selecting this option will bring up a submenu of existing SQL/Services services that may be used as prototypes for the new service. Select one of the existing services from the list and a service creation form will display already filled with details taken from the selected service definition.

This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.1.1.6 JDBC Server

Selecting this option will bring up a JDBC server creation form.

3.1.1.7 JDBC Server based on ...

Selecting this option will bring up a submenu of existing JDBC servers that may be used as prototypes for the new JDBC server definition. Select one of the existing servers from the list and a server creation form will display already filled with details taken from the selected server definition.

3.1.1.8 JDBC Connection ...

Selecting this option will bring up a JDBC database connection form allowing you to choose the server and the database you wish to connect. Once you have successfully made the database connection the SQL Worksheet will display allowing you to access data and metadata from the connected database.

3.1.1.9 JDBC Control Connection ...

Selecting this option will bring up a JDBC control connection form allowing you to choose the server you wish to connect to as a control user. Once you have successfully made the connection the Thin Control Command Line form will display allowing you to carry out control commands on the server.

3.1.1.10 RMU Statistics Connection ...

Selecting this option will bring up a RMU Statistics connection form allowing you to choose the RMU server you wish to connect to. This connection will be made via the SQL/Services RMU Dispatcher on the node you specify. Once you have successfully made the connection the RMU Statistics panel will display allowing you monitor RMU statistics on the server.

3.1.1.11 Known Database

Selecting this option will bring up a Known Database creation form.

3.1.1.12 Event Trigger

Selecting this option will bring up an Event Trigger creation form.

3.1.2 Wizards

The Wizards option allows you to choose from a set of wizards that will help you define things like connections and server definitions.

Figure 46 -   Menu Option File \ Wizards

3.1.2.1 First Use Wizard ...
This option will bring up the first-use wizard that will normally be shown the very first time you use ORCM. You may use this wizard to access the other connection and definition wizards.

3.1.2.2 SQL/Services Control Connection Wizard ...
This option will bring up a wizard that will help you create a connection to an existing SQL/Services server so that you may interrogate or maintain that server.

3.1.2.3 JDBC Server Definition Wizard ...
This option will bring up a wizard that will help you create a new JDBC server definition that will be added to the ORCM configuration file.

3.1.2.4 RMU Statistics Connection Wizard ...
This option will bring up a wizard that will help you create a new RMU Statistics connection definition that will be added to the ORCM configuration file.

3.1.2.5 Special Dispatcher Wizard …
This option will bring up a wizard that will help you create a special SQL/Services Dispatcher definition that will be added to the SQL/Services Server configuration information.

3.1.3 Maintain Connections

Selecting the option will invoke the Connection dialog that will allow you to create or maintain SQL/Services, JDBC control , Database or RMU Statistics connections.

3.1.4 Exit

Exits the application.

Contents

3.2 SQL/Services

Selecting the SQL/Services option will display a submenu of choices (many of which will not be enabled unless you have already connected to a SQL/Services Server Control connection):

Figure 47 -   *Menu Option SQL/Services*

3.2.1 Shutdown SQL/Services Server

Use to shut down the SQL/Services server you have selected in the server tree. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.2 Start SQL/Services Dispatcher

Use to start a dispatcher you have already selected in the server tree. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.3 Shutdown SQL/Services Dispatcher

Use to shut down a dispatcher you have already selected in the server tree. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.4 Drop Dispatcher

Use to remove the selected dispatcher definition from the SQL/Services server's configuration database. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.5 Start SQL/Services Service

Use to start a service you have already selected in the server tree. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.6 Shutdown SQL/Services Service

Use to shut down a service you have already selected in the server tree. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.7 Drop Service

Use to remove the selected service definition from the SQL/Services server's configuration database. This option will only be enabled if you have currently selected and connected to a SQL/Services server.

3.2.8 [Connect to SQL/Services Server Control](#)

Make a control connection to the selected SQL/Services server. You must connect to a SQL/Services server before you can change its active or configured environment. Once a connection has been made a list of known SQL/Services objects will be displayed in the server tree for that server.

3.2.9 Disconnect From SQL/Services Server Control

Disconnect from the selected connected SQL/Services server. Once disconnected, you will not be able to view or maintain the server's SQL/Services objects unless you connect once more.

See also:
 Managing Server Components section of the **Oracle SQL/Services Server Configuration Guide.**

Contents

3.3 JDBC

Selecting the JDBC option will display a submenu of operations that may be carried out on your JDBC system:

Figure 48 -   Menu Option JDBC

3.3.1 Start JDBC Server

Use to start the selected JDBC server. This option will only be enabled if you have selected a JDBC server that is not a reference-only server and is not currently running.

> If the server should be running on a node that is not the same host that the ORCP application is running on, you must have a JDBC manager server running on that remote node. See Utilizing a Manager Server for details.

3.3.2   Stop JDBC Server

Use to shut down the selected JDBC server. This option will only be enabled if you have selected a JDBC server that is not a reference-only server and is currently running.

3.3.3   Open JDBC Server

Use to open a JDBC server to allow new client connections to be made to it. This option will only be enabled if you have selected a JDBC server that is not a reference-only server and is currently running.

3.3.4   Close JDBC Server

Use to close a JDBC server to prevent any further new client connections being made to it until it is re-opened. This option will only be enabled if you have selected a JDBC server that is not a reference-only server and is currently running.

3.3.5   Remove JDBC Server

Remove the selected server definition from the current configuration file.

3.3.6   Stop All JDBC Servers

Stop all active JDBC servers.

3.3.7   Stop Clients

Stop all clients on the selected JDBC server. This option will only be enabled if you have selected a JDBC server that is not a reference-only server and is currently running.

3.3.8   Stop All Clients on all JDBC Servers

Stop all clients on all the JDBC servers.

3.3.9   Show Active Control Users

Show active Control Users on all the JDBC servers.

3.3.10 Show Clients in Database

Show JDBC clients currently bound to the designated database. You will be prompted for the database to check. Clients currently using JDBC and bound to that database will be displayed. If left blank all JDBC clients currently bound to an Rdb Database will be displayed.

3.3.11 Stop Clients in Database

Stop JDBC clients currently bound to the designated database. You will be prompted for the database to check. Clients currently using JDBC and bound to that database will be displayed. If left blank all JDBC clients currently bound to an Rdb Database will be displayed. You will be given the option to stop them all.

3.3.12 **Connect to JDBC Control**

Connect to the selected JDBC server as a control user. If you have selected a JDBC server that is not a reference-only server and is currently running, a connection will be made to that server and the Controller panel will be displayed.

If the selected server is not running, you will be prompted for control connection information.

3.3.13 Disconnect Control

Disconnect the control connection that is currently connected to the selected server.

See also:
  Server Operations section of the *Oracle JDBC for Rdb User Guide.*

Contents

3.4 RMU

Selecting the RMU option of the ORCM Main Menu will display a submenu of ORCM RMU features that may be used:

Figure 49 -   Menu Option RMU

3.4.1   Close Database

Close an open database.

3.4.2   Open Database

Open a database and map its global section.

3.4.3   Analyze Option

Figure 50 -   Menu Option RMU ANALYZE

Carry out an RMU ANALYZE operation.

3.4.4   Extract Option

Figure 51 -   Menu Option RMU EXTRACT

Carry out an RMU EXTRACT operation.

3.4.5   Show Option

Figure 52 -   *Menu Option RMU SHOW*

Carry out an RMU SHOW operation.

3.4.6 Verify Option

Figure 53 -   *Menu Option RMU VERIFY*

Carry out an RMU VERIFY operation.

3.4.7 RMU Statistics

Select this option to display database statistics as collected by RMU. You must connect to a RMU Server before you can access the statistics for an Rdb database. Once a connection has been made, a window will display allowing you to see and capture live statistics from the database.

See the ***Oracle Rdb Connectivity Manager RMU Statistics User Guide*** for more detail.

3.4.8   RMU Command Line

Bring up a control panel allowing you to execute RMU commands using a running JDBC server.

3.4.9   Find Schema Differences

Bring up a window panel allowing you to determine the differences between the schemas of two databases.

Contents

3.5 Oracle Trace Player

If enabled an Oracle Trace submenu will be present in the ORCM main menu.

Figure 54 -   *Menu Option Oracle Trace*

See Features Information for details on enabling the Oracle Trace player option.

Also refer to the ***Oracle Rdb Oracle Trace Player User Guide*** for more detail.

Contents

3.6 Tools

Selecting the Tools option of the ORCM Main Menu will display a submenu of ORCM tools that may be used:

Figure 55 -   *Menu Option Tools*

3.6.1   Edit ORCM Configuration File

Select this option to bring up an editor window with the contents of the ORCM configuration file.

3.6.2 Edit Additional Configuration File

Select this option to bring up a submenu allowing you to edit additional configuration files associated with ORCM.

3.6.3   Process Password ...

Use to obfuscate passwords. A Password dialog will be displayed allowing you to enter a password to be obfuscated.

3.6.4   Visualizer

Bring up a visual display of the SQL/Services and JDBC servers on your network.

3.6.5   Thin Control

Bring up a JDBC controller panel allowing you to execute controller commands on a running JDBC server.

3.6.6   SQL Command Line

Invoke the SQL worksheet.

3.6.7   Command Line

Bring up a control panel allowing you to execute Command Line commands using a running JDBC server.

3.6.8   Scan for Server

Use to scan for running JDBC servers on your network.

3.6.9   Remote Viewer

Display the contents of remote files.

3.6.10   Enable JDBC Polling

Enable polling for running JDBC servers.

3.6.11   Disable JDBC Polling

Disable polling for running JDBC servers.

3.6.12 Do Single JDBC Poll

Execute a single POLL request to locate running JDBC servers.

3.6.13 **Preferences**

Display the preference panel allowing you to view and make changes to ORCM configuration criteria.

3.6.14 Display todays recorded events

Show the events that were raised and recorded today. See Timeline Display for more details.

3.6.15 Display all recorded events

Show all the events that were raised and recorded since this ORCM session started or since the last time cleared, which-ever came later. See Timeline Display for more details.

3.6.16 Clear all recorded events

Remove all recorded events from the ORCM event cache. See Timeline Display for more details.

3.6.17 Add Tool

Create an external tools. See External Tools for more details.

3.6.18 External Tools Submenus

A dynamic set of submenus display existing external tools that may be invoked. See External Tools for more details.

Contents

3.7 Windows

Selecting the Windows option will display a submenu of options:

Figure 56 -   *Menu Option Windows*

3.7.1 Message Area Option

Selecting **Message Area** will display a submenu of message areas. Selecting one of the displayed area names will highlight that area in the ORCM Message Area.

You may use this to re-open a previously closed message area panel.

3.7.2 Work Area Option

Selecting **Work Area** will display a submenu of work panels. Selecting one of the displayed panel names will focus on that panel in the ORCM main panel (Work Area).

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3.8 Help

Selecting the Help option will display a submenu of Help topics:

Figure 57 -   *Menu Option Help*

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3.9 Server Explorer - SQL/Services Server Popup Menu

The SQL/Services server popup menu may be invoked by right-clicking a SQL/Services server name within the Servers tree of the server explorer:

Figure 58 -   SQL/Services Server popup menu

See [SQL/Services server popup menu](#) for more details.

Contents

3.10 Servers Explorer - JDBC Host Popup Menu

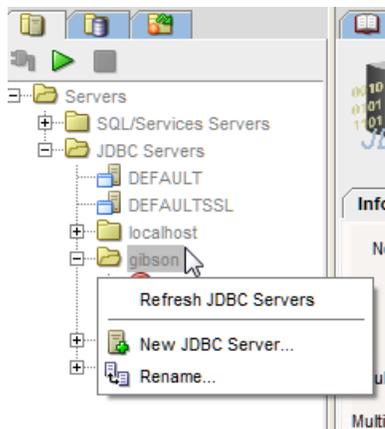The JDBC host popup menu may be invoked by right-clicking a host name or IP under the JDBC Servers sub-tree of the server tree:

See [JDBC host popup menu](#) for more details.

Contents

3.11 Servers Explorer - JDBC Server Popup Menu

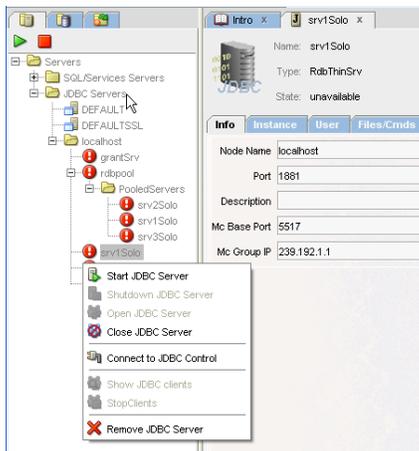The JDBC server popup menu may be invoked by right-clicking a JDBC server name within the Servers tree of the server explorer:

Figure 60 -   *JDBC Server popup menu*

See [JDBC server popup menu](#) for more details.

Contents

3.12 Database Explorer - Known Database Popup Menu

The Known Database popup menu may be invoked by right-clicking a database name within the Databases tree of the database explorer:

See <u>Known Database popup menu</u> for more details.

Contents

3.13 Event Trigger Explorer - Event Trigger Popup Menu

The Event Trigger popup menu may be invoked by right-clicking an event trigger name within the EventTriggers tree of the event trigger explorer:

Figure 62 - *Event Trigger popup menu*

See <u>Event Trigger popup menu</u> for more details.

Contents

3.14 External Tools Explorer – External Tools Popup Menu

The External Tool popup menu may be invoked by right-clicking an external tool name within the Tools tree of the External Tools explorer:

Figure 63 - *External Tool popup menu*

See [External Tool popup menu](#) for more details.

Contents

3.15 Remote File Popup Menu

Right-click on any field containing a file specification of a remote file to bring up the remote file popup menu:

Figure 64 -   Remote File Popup

See [Popup menu - Remote File](#) for more details.

Contents

3.16 SQL/Services Servers Popup Menu

Right-click on the SQL/Services Servers node of the server explorer to bring up the SQL/Services Servers popup menu.

The following sections describe the options under the **SQL/Services Servers Popup** menu:

- Modify SQL/Services Server Control

3.16.1 Modify SQL/Services Server Control

Selecting this option will bring up the <u>control connection dialog</u> allowing you to create or maintain SQL/Services control connection definitions.

Contents

3.17 JDBC Servers Popup Menu

Right-click on the JDBC Servers node of the server explorer to bring up the JDBC Servers popup menu.

The following sections describe the options under the **JDBC Server Popup** menu:

- <u>Refresh JDBC Servers</u>
- <u>New JDBC Server…</u>

3.17.1 Refresh JDBC Servers

Selecting this option will cause ORCM to send a new JDBC poll request to the network to discover JDBC servers and to display these servers in the JDBC Servers sub-tree.

3.17.2 New JDBC Server…

Selecting this option will display a new <u>JDBC server definition</u> dialog.

Contents

3.18 Message Area Popup Menu

Right-click within the message area to bring up a popup menu of options:

Figure 67 -   *Message area Popup*

See Message Area Popup Menu for more details.

Contents

3.19 Copy/Print Popup Menu

Figure 68 -   *Copy print Popup*

Right-click within any of the following panels to bring up the copy/print popup menu:

•   Known Database Dump panel

The copy/print popup menu allows you to copy or print the contents of a text area.
The following copy/print popup menu options are available:

•   Copy All
•   Print All
•   Help

3.19.1 Copy All

Copy the contents of the current text area into the clipboard.

3.19.2 Print All

Print the contents of the current text area. A Print Dialog will be displayed to allow you to choose your print options.

3.19.3 Help

Display this help text.

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Chapter 4
Process Password

Create obfuscated and digested passwords for use in your configuration files.

Figure 69 -   Process Password Panel

Note:
Passwords obfuscated using *digest* or *obfuscate* are not considered by Oracle to be strong encryption; rather they provide a mechanism to obfuscate the value of a password when used in situations where the password may be visible to a casual observer. Oracle recommends that you consider your organization's security policy when storing passwords in your configuration file.

4.1 Process Password Panel

The Process Password panel consists of the following fields and buttons:

- Password
- Obfuscate button (optional)
- Digest button (optional)
- Proceed button
- Digested Password
- Obfuscated Password
- Cancel button

4.2 Password

Enter the password that you wish to process.

Since 7.3.3.0.0

Press the "show" button 👁 to display the password entered. Press the "hide" button 🚫 to hide the password again.

4.3 Obfuscate button (optional)

If visible and selected an Obfuscated Password will be produced.

4.4 Digest button (optional)

If visible and selected a Digested Password will be produced.

4.5 Proceed button

Process the provided password to produce a Digested Password and/or an Obfuscated Password.

> **Note:**
> If neither the **Obfuscate** nor the **Digest** button is visible then both a Digested and an Obfuscated password will be created.

4.6 Digested Password

The password in its digested form that may be used as a Server password within the Server configuration or a control Password within your session configuration file.

> **Note:**
> This value cannot be used as a User password or a Control password within a session section of the configuration file.

4.7 Obfuscated Password

The password in its obfuscated form that may be used as a User, Server or Control password.

4.8 Cancel button

Cancel this operation.

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Chapter 5
Popup menu - Remote File

Figure 70 -   Remote File Popup

5.1 Remote File Popup

Right-click on a field containing a file specification of a remote file to bring up the **remote file popup menu**.

The remote file popup menu allows you to display and/or modify the contents of remote files. In addition you can **Copy** the file specification from the selected field into the clipboard or **Paste** the contents of the clipboard back into the field.

The following remote file popup menu options may be available:

- Copy
- Paste
- Inspect the contents ...
- Edit file contents ...
- Show Server Logged Events...
- Show Dispatcher Logged Events…
- Help

5.1.1 Copy

Copy the contents of the selected field into the clipboard.

5.1.2 Paste

Paste the contents of the clipboard into the selected field.

5.1.3 Inspect the contents...

Display the contents of the remote file. A new popup frame will display with the contents of the remote file.

5.1.4 Edit file contents...

Bring up a simple editor that will allow the contents of the remote file to be modified and optionally saved back to the remote site.

5.1.5 Show Server Logged Events…

If the remote file is a SQL/Services server log file, the **remote file popup menu** will also provide an option to display an event timeline for the events logged in the log file:

Figure 71 -   Remote File Popup for SQL/Services log file

See Timeline Display for more details.

5.1.6 Show Dispatcher Logged Events…

If the remote file is a SQL/Services Dispatcher log file, the **remote file popup menu** will also provide an option to display an event timeline for the events logged in the log file:

Figure 72 -   Remote File Popup for SQL/Services Dispatcher log file

See Timeline Display for more details.

5.1.7 Help

Display help text for this field.

5.2 Remote File Access

Remote file access is carried out by the remote server on your behalf. The contents of the file are copied to your desktop for display and/or modification.

 If the contents are modified and then saved using the editor frame invoked by using the **Edit file contents** menu option, the contents are sent back to the remote server and the file will be updated accordingly.

In-order for remote file access to work, certain conditions must be met which are discussed in the following sections.

5.2.1 SQL/Services

If the remote file specification is displayed as part of the information of a SQL/Services object such as a dispatcher or the server, then the following conditions must be met:

- As a remote user you have authority to inspect or modify the file contents.
- The SQL/Services server used has a **RMU Dispatcher** and associated **RMU Service** currently running.
- The SQL/Services control connection used to connect to the SQL/Services server has a **RMU Dispatcher port** specified and that port matches the port the running RMU dispatcher is listening on. See RMU Dispatcher port .

See sections *Managing a Dispatcher* and *Managing a Service* in the *SQL/Services Server Configuration Guide* for more information on RMU dispatchers and RMU services.

5.2.2 JDBC

If the remote file specification is displayed as part of the information of a JDBC object such as a JDBC server, then the following conditions must be met:

- As a remote user you have authority to inspect or modify the file contents.
- The remote server must be enabled to allow access to the command line.

See also:
   The *Access to the Command Line* section in the *Oracle JDBC for Rdb User Guide*.

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Chapter 6
Timeline Display

Figure 73 -   TimeLine Pane

6.1 TimeLine Pane

The TimeLine pane displays events in the form of a stacked event chart that provides a graphical representation of event occurrences for a bounded time period.
The time range of events displayed is selectable using either the Earliest Event Date Calendar or the Latest Event Date Calendar or the Stretch Bar found at the bottom of the Event Chart.

The pane consists of the following sub-panels and components:

- Earliest Event Date Calendar
- Event Chart
- Latest Event Date Calendar
- Stretch Bar

6.1.1 Earliest Event Date Calendar

Calendar setting the earliest date and time of the timeline displayed. Use the month or year scrollers, the day of month buttons or the time scroller at the bottom of the calendar to set the earliest date and time of events to display.

6.1.2 Event chart

Chart at the center of the pane displaying the events found within the time period bounded by the date/time set in the Earliest Event Date Calendar and the Latest Event Date Calendar.
Events are represented by colored blocks, the color indicating the type of event:

- Red – an exception
- Green – a warning
- White – an informational

Events occurring within the same relative time period are stacked vertically.

Hover over an event block to see a synopsis of the event:

Figure 74 -   *Example of Event Synopsis*

Click on an event block to display a separate message panel detailing the event. For example, see SQL/Service Logged Event.

The timescale at the bottom of the chart will vary depending on the timeline range.

6.1.3 Latest Event Date Calendar

Calendar setting the latest date and time of events to be displayed. Use the month or year scrollers, the day of month buttons or the time scroller at the bottom of the calendar to set the latest date and time of events to display.

6.1.4 Stretch Bar

Below the Event Chart is a green bar representing the entire period of the events captured.

Use the slide buttons at each end of the bar to reduce or increase the time range displayed. Sliding these bars will alter the appropriate calendar's date and time accordingly; the left slide button will alter the Earliest Event Date Calendar and the right slide button will alter the Latest Event Date Calendar.

See also:
    The *Event Logging and Notification* section in the *Oracle JDBC for Rdb User Guide*.

6.2 SQL/Service Logged Event

The SQS Logged Event pane displays event details as logged in a SQL/Services log file.

Note:

The format of this pane and the fields it contains will change depending on the event being logged.

The actual fields displayed on this panel depend on the original event information and may contain any of following components:

- Flag
- Event timestamp
- Exception code
- Exception message
- Dispatcher Name
- Service Name
- Executor Name
- PID

- [Logfile](#)
- [Full Message Area](#)

6.2.1 Flag

A flag icon indicating the type of the event:
- Red flag – exception
- Green flag – warning
- White flag – informational

6.2.2 Event timestamp

The time when this event occurred

6.2.3 Exception code

The standard SQL/Services message code associated with the event.

6.2.4 Exception message

The message associated with the exception event.

6.2.5 Dispatcher Name

The SQL/Services dispatcher associated with the event.

6.2.6 Service Name

The SQL/Services service associated with the event.

6.2.7 Executor Name

The SQL/Services executor associated with the event.

6.2.8 PID

The process ID of the process where the event occurred.

6.2.9 Logfile

The log file associated with the SQL/Services object that raised the event.
Right-click on the **Logfile** field to bring up the [Remote File Popup Menu](#) allowing you to access the contents of this file.

6.2.10 Full Message Area

The bottom text area of the pane that displays the original event message as found in the log file.

6.2.11 Options

The SQS Logged Event pane has the following button-based options:

Help

Press **Help** to display help information for this window.

Cancel

Press **Cancel** to cancel the operation and close the window.

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Chapter 7
SQL/Services Server Information

Figure 76 -   SQL/Services Server Information Pane

The SQL/Services Server Information pane allows you to configure a new SQL/Services server or to modify or display information about an existing SQL/Services Server.

The server pane is comprised of a number of sub-panels or tabs containing related server information:

- Main – the main identifying information for this server.
- Info – describes general information about the server.
- Shared Memory – describes information about the shared memory of this server
- File View – allows you to retrieve the contents of remote files.
- Port – information about the port used by this server. There may be zero, one or more of these tabs.

7.1 Server Message Area

At the bottom of the main pane, above the button bar, is the server message area that will display the time when the server information was last refreshed.

Figure 77 -   *Server Message Area*

7.2 Connect and Refresh Button

Depending on the connection state of the server the button bar at the bottom of the server display area may contain either a Connect button if the server is not currently connected or a Refresh button if the server is currently connected.

Figure 78 -   *Server option Buttons with Refresh visible*

7.3 SQL/Services Server Main Pane

The main pane consists of the following fields:
- Name
- URL
- State

7.3.1 Name

An alias for using this SQL/services server. This name need not be unique; however the name may be used to lookup server information within the start-up configuration file. The value of this name is not case-sensitive.

7.3.2 URL

The URL the server may be accessed on. The URL comprises both the IP address of the node the server is running on and the TCP/IP socket that the SQL/Services server is using for management access.

7.3.3 State

Current state of the server:
- **Unknown** – server is not responding to requests
- **Running** – server is running and responding to requests

7.4 Options

The SQL/Services Server pane has the following button-based options:

Help

Press **Help** to display help information for this window.

Edit

Press **Edit** to place the information pane into *edit mode* allowing the entry and/or modification of server characteristics.

Refresh

Press **Refresh** to refresh the server information. This button will be displayed once you have made a control connection to the server.

Connect

Press **Connect** to connect to the server as a control user. This button will be displayed if you have not already connected to, or have disconnected from the server.

Save

Press **Save** to save the information entered for the fields. Once saved, the information about the connection will be displayed in left panel table.

Cancel

Press **Cancel** to cancel the operation and close the window.

See also:

> ***Managing a Server*** section of the **Oracle SQL/Services Server Configuration Guide.**

Contents

7.5 SQL/Services Server – General Information

General information about the SQS/Services server.

Figure 79 -   Info Tab

The info tab consists of the following fields:
- Server Version
- Process Startup Timeout
- Process Shutdown Timeout
- Configuration File

- [Log File](#)
- [Dump File](#)

7.5.1 Server Version

The version of SQL/Services that this server is running under.

7.5.2 Process Startup Timeout

Specifies the length of time (in seconds) to wait before deciding that a dispatcher or executor process is not going to start up before the monitor takes action and terminates the process.

The default value is 0 seconds, which means that no process start up timer value is set.

7.5.3 Process Shutdown Timeout

Specifies the length of time to wait (in seconds) before deciding that a dispatcher or executor process is not going to shut down before the monitor takes action and terminates the process

The default value is 0 seconds, which means that no process shutdown timer value is set; the process shutdown timer value is infinite.

7.5.4 Configuration File

The file specification of the configuration file that contains the characteristics of this server.

7.5.5 Log File

The file specification of the log file this server will log events and messages to. This file specification is relative to the node on which this server is running.

If the SQL/Services server is already connected and the RMU dispatcher and service are running you may use the [Remote File Popup Menu](#) to access the contents of this log file. The [Remote File Popup Menu](#) may also be used to display a timeline of the logged server events for this server.

7.5.6 Dump File

The file specification of the dump file this server will use to dump debug information whenever a problem is found. This file specification is relative to the node on which this server is running.

If the SQL/Services server is already connected and the RMU dispatcher and service are running you may use the [Remote File Popup Menu](#) to access the contents of this log file.

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7.6 SQL/Services Server – Memory Information

Memory information about the SQL/Services server.

Figure 80 -   *Memory Tab*

The Memory tab consists of the following fields:
- Max Shared Memory Size
- Alloc Unit
- Tot Mem Units
- Partly Alloc Units
- Free Mem Units

7.6.1 Max Shared Memory Size

Max Shared memory Size is the size of shared memory that the server uses.

The minimum value for MAX_SHARED_MEMORY_SIZE is 132 KB, which provides two shared memory units. This is sufficient to start the monitor, connect to it from the SQLSRV_MANAGE application, and run one or two executors serving one or two clients.

The maximum value for MAX_SHARED_MEMORY_SIZE is 2,000,000 KB. Lower values should suffice for most applications.

You can alter the MAX_SHARED_ MEMORY_SIZE argument for a server, and it takes effect when you issue a RESTART SERVER command.

7.6.2 Alloc Unit

The size (in bytes) of a memory allocation unit.

7.6.3 Tot Mem Units

Total Memory Units is the number of shared memory units mapped by the server. This number is static for a given run of the server.

7.6.4 Partly Alloc Units

Partly Allocated Memory Units.
A shared memory unit may not be completely used in one piece. It is often subdivided into smaller pieces. Shared memory units that are subdivided and partly used are reported as partly allocated memory.

7.6.5 Free Mem Units

Free Memory is the number of shared memory units that are completely unused by the SQL/Services server.

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7.7 SQL/Services Server – File View

View contents of textual files accessible to the SQL/Services server.

Figure 81 -   FileView Tab

You may use the RMU dispatcher associated with the SQL/Services Server to retrieve textual files for display.

The **FileView** tab consists of the following fields and buttons:

- File
- Get File

7.7.1 File

The full or relative OpenVMS file specification of the file to retrieve. Any relative file specifications or logical name translations will be carried out within the process environment of the RMU dispatcher. Standard OpenVMS file protection and ownership checking will also be carried out using the owner account of the RMU dispatcher.

7.7.2 Get File

Press the **Get File** button to retrieve the file. The file contents will be displayed in a separate window.

7.8 SQL/Services Server – Port Information

Information about ports used by the SQL/Services server.

Figure 82 -   Port Tab

A SQL/Services server may have up to 5 network ports associated with it. Each port will have a separate Port tab in the SQL/Service server information pane.

This panel contains details on single instance of a port that the SQL/Services server monitor should use for communications with Oracle SQL/Services management clients such as the ORCM and the **SQLSRV_MANAGE** utility. For TCP/IP, the default port ID is **2199** and the default **DECnet** object name is **SQLSRV_SERVER**. If no network ports are specified, the monitor of the server uses the default ports.

On a node where there are multiple servers, each connection to a server must use a unique port ID.

The Ports tab consists of the following fields:

- Type
- Port
- Protocol

7.8.1 Type

The transport type that the server can use for communications with Oracle SQL/Services management clients on this port.

The network transport may be one of the following:
- TCP/IP,

- DECnet

If the Server info pane is in *edit mode* then you can pull down the Type list and select the transport type you want the server to support.

7.8.2 Port

The port designation or ID.
Depending on the transport type, the TCP/IP port ID or DECnet object is specified in this field.

The following defaults are used:
- default port ID for TCP/IP is 2199,
- default DECnet object is SQLSRV_SERVER

If the network port is not specified, the server will use the default ports.

7.8.3 Protocol

The protocol used for transportation across this port. The only available option for server ports is NATIVE.

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Chapter 8
SQL/Services Dispatcher Information

Edit/Display SQL/Services dispatcher information.

Figure 83 -   SQL/Services Dispatcher Information Panel

The SQL/Services dispatcher Information pane allows you to configure a new SQL/Services dispatcher or to modify or display information about an existing SQL/Services dispatcher.

The dispatcher pane is comprised of a number of sub-panels containing related dispatcher information:

- **Main** – the main identifying information for this dispatcher.
- **Info** – describes general information about the dispatcher.
- **Port** – describes a port associated with this dispatcher. When displaying or modifying a dispatcher definition, there may be 1 or more port tabs displayed.

Note:

When creating a new dispatcher you must provide at least one port designation by using the *Add Port* button.

8.1 Main Pane

The main pane consists of the following fields:

- [Name](#)
- [State](#)
- [Server](#)

8.1.1 Name

The name of this SQL/Services dispatcher.

8.1.2 State

Current state of the dispatcher:
- **Inactive** – dispatcher is not currently running.
- **Running** – dispatcher is running and responding to requests.

8.1.3 Server

The server this dispatcher is running under.

8.2 Options

The SQL/Services dispatcher pane has the following button-based options:

Help

Press **Help** to display help information for this window.

Edit

Press **Edit** to place the information pane into *edit mode* allowing the entry and/or modification of dispatcher characteristics.

Add Port

Press **AddPort** to add a new port to this dispatcher. This button will be enabled only when the information pane is in *edit mode*.

Remove Port

Press **RemovePort** to remove the current selected port from this dispatcher. This button will be enabled only when the information pane is in *edit mode*.

Refresh

Press **Refresh** to refresh the information for this dispatcher.

Save

Press **Save** to save the information entered for the fields. This is only enabled when the information pane is in *edit mode*.

Cancel

Press **Cancel** to cancel the operation and close the window.

See also:

Managing a Dispatcher section of *the **Oracle SQL/Services Server Configuration Guide***.

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8.3 SQL/Services Dispatcher – General Information

General information about the SQS/Services dispatcher.

Figure 84 -   Info Tab

The info tab consists of the following fields:
- [Auto Start](#)
- [Max Connections](#)
- [Idle User Timeout](#)
- [Max Client Buffer Size](#)
- [Logfile](#)
- [Dumpfile](#)
- [LogPath](#)
- [DumpPath](#)

8.3.1 Auto Start

Determines whether or not the dispatcher object automatically starts up when you issue a Restart command. If the attribute is ENABLED, the dispatcher object automatically starts when you issue a Restart command. The default is ENABLED. This is non-editable field.

8.3.2 Max Connections

Specifies the maximum number of network connections from clients that the dispatcher accepts. The default is 100. There is no upper limit other than the operating system configuration, the network configuration, and shared server memory. This is editable field.

8.3.3 Idle User Timeout

Specifies the amount of time in seconds that a client (user) can remain idle before the dispatcher disconnects the client. The default value is 0 and means that the idle timeout value is infinite. A value specified other than 0 is rounded to the next higher multiple of 90 seconds. This is a dynamic attribute that, when changed, takes effect immediately. This is editable field.

8.3.4 Max Client Buffer Size

Specifies the size of the maximum client buffer size permitted. The maximum allowed client buffer size is 32,000 bytes. If a client application specifies a buffer size larger than the maximum, then the Oracle SQL/Services client API adjusts the buffer size to the maximum size specified for the dispatcher. The default and minimum value allowed for the maximum client buffer size is 5000 bytes.
This is editable field.

8.3.5 Logfile

Defines the complete file specification for the dispatcher log file. This is a read only field.

8.3.6 Dumpfile

Defines the complete file specification for the dispatcher dump file should one be created. This is a read only field.

8.3.7 LogPath

Specifies a directory name for log files. The default directory is SYS$MANAGER.

8.3.8 DumpPath

Specifies a directory name for bug check dump files. The default directory is SYS$MANAGER.

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8.4 SQL/Services Dispatcher – Port Information

Information about ports used by the SQL/Services dispatcher.

Figure 85 -   Port tab

A SQL/Services dispatcher may have one or more network ports associated with it. Each port will have a separate Port tab in the SQL/Service Dispatcher information pane.
This panel contains details on single instance of a port used by the SQL/Services dispatcher.

Each dispatcher defined must be listening on unique network port names or IDs; ORCM lets you create two or more dispatchers listening on the same port, but only the first dispatcher with a unique port name or ID is allowed to start. If you attempt to start a second dispatcher listening on the same port name or ID, it fails to start if it cannot listen on any of the specified network ports.

The Ports tab consists of the following fields:
- Type
- Port
- Protocol

8.4.1 Type

The transport type that the dispatcher can use for communications with Oracle SQL/Services clients and the Oracle ODBC Driver for Rdb clients on this port.

The network transport may be one of the following:
- TCP/IP,
- DECnet, and
- SQL*Net.

If you are creating a new dispatcher or the Dispatcher info pane is in *edit mode* then you can pull down the Type list and select the transport you want the dispatcher to support.

8.4.2 Port

The port designation or ID.

Depending on the transport type, the TCP/IP port ID, DECnet object, or the SQL*Net Listener Name is specified in this field.

The following defaults are used:
- default port ID for TCP/IP is **118**,
- default DECnet object is **81**.

If the network port is not specified, the dispatcher will use the default ports.

8.4.3 Protocol

The protocol used for transportation across this port. A dispatcher network port can only support one message protocol.

If the Dispatcher info Pane is in *edit mode*, select a message protocol that matches the type of client you want a dispatcher network port to support:

- **Native** - Oracle RMU clients (ORCM)
- **OCI** - Oracle clients using the Oracle Call Interface (OCI) and the SQL*Net listener (Oracle Enterprise clients).
- **SQLSRV** - Oracle SQL/Services clients (Oracle ODBC Driver for Rdb, Oracle SQL/Services).

Pull down the selection list and select the message protocol that you want the dispatcher network port to use.

Ensure that you have a dispatcher network port defined with a dispatcher message protocol that supports each service API protocol you want to use. For example, if you define a service that supports the OCI API protocol and another service that supports the SQLSRV API protocol, you must define at least one dispatcher network port that supports the OCI dispatcher message protocol and the SQL*Net transport and another dispatcher network port that supports the SQLSRV dispatcher message protocol and any available transport, respectively.

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Chapter 9
SQL/Services Service Information

Figure 86 -   *SQL/Services service Information Pane*

The service pane is comprised of a number of sub-panels containing related service information:
- **Main** – describes the identifying information for this service
- **Info** – describes general information about the service.
- **Files** – describe startup and log files used by the service.
- **Limit** – describes limits imposed on this service.
- **Grant List** – describes identifiers that have been granted access to the service.

9.1 SQL/Services Service Main Pane

The Main pane contains the following field:
- **Service Name**

9.1.1 Service Name

Identifies the service using this server. The service name must be unique. The service name must be alphanumeric characters (a-z, A-Z, 0-9), underscores (_), or hyphens (-), and the first character must be an alphabetic character.

9.2 Options

The SQL/Services service pane has the following button-based options:

Help
  Press **Help** to display help information for this window.
Edit
  Press **Edit** to place the information pane into *edit mode* allowing the entry and/or modification of service characteristics.
Refresh
  Press **Refresh** to refresh the information for this service.
Save
  Press **Save** to save the information entered for the fields.
Cancel
  Press **Cancel** to cancel the operation and close the window.

See also:
  Managing a Service section of the ***Oracle SQL/Services Server Configuration Guide.***

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9.3 SQL/Services Service – General Information

Figure 87 -   Info tab

The info tab consists of the following fields:

- [Owner](#)
- [Protocol](#)
- [Default Connect Username](#)
- [SQL Version](#)
- [Schema](#)
- [Reuse](#)
- [Application Transaction Usage](#)

9.3.1 Owner

Specify the user name of the owner of the service. Every service has an owner user name.

The service Owner attribute must be specified; otherwise, an error message is returned.

If the service is a database service, then the service owner's user name privileges are used for access checks when an executor attaches to the specified database. See *Setting Up Services and Types of Reuse* in the *Oracle SQL/Services Server Configuration Guide* for more information on database services.

If database access authorization is set to the service owner, then the service owner user name's privileges are used for all database access operations. See *Database Access Authorization* in the *Oracle SQL/Services Server Configuration Guide* for more information on database access authorization.

On OpenVMS, executors are created with the privileges and quotas from the service owner's account. See *Considering Security for Selecting the Service Owner User Name* in the *Oracle SQL/Services Server Configuration Guide* for more information.

9.3.2 Protocol

Lists an application programming interface (API) protocol that each service can support. A service can only support one API protocol. Select an API protocol that matches the type of client you want a service to support:

- OCI - Oracle clients using the Oracle Call Interface (OCI) (Oracle Enterprise clients).
- RMU - Oracle RMU clients (ORCM)
- SQL/Services - Oracle SQL/Services clients (Oracle ODBC Driver for Rdb, Oracle SQL/Services).

Pull down the menu and select the API protocol that you want a service to use.

Ensure that you have a dispatcher network port defined with a dispatcher message protocol that supports each service API protocol you want to use.

For example, if you define a service that supports the OCI API protocol and another service that supports the SQLSRV API protocol, you must define at least one dispatcher network port that supports the OCI dispatcher message protocol and the SQL*Net transport and another dispatcher

network port that supports the SQLSRV dispatcher message protocol and any available transport, respectively.

9.3.3 Default Connect Username

The default connect user name is the user ID under which unknown users are allowed to access this service. See *Oracle SQL/Services Server Security* and *Specify a Default Connect User Name for the SQL/Services Protocol* in the *Oracle SQL/Services Server Configuration Guide* for more information about using this attribute.

9.3.4 SQL Version

Specifies the version of SQL to use for that service. It is expressed as a version number, for example, 7.3.

When no value is specified, ORCM will default the SQL Version to 7.3.

9.3.5 AutoStart

Determines whether or not the service object automatically starts up when you issue a Start command. If the attribute is enabled (checked), the service object automatically starts when you issue a Start command. The default is **Enabled**.

9.3.6 Schema

Provides a way to specify the default schema that you want to use when an executor is attached to a multischema database.

The default schema name is set as follows (for all service types) as shown in the following table:

Table 2 - Default Schema Name Used When an Executor Is Bound to a Multischema Database

Schema Name Specified in Service Definition	Database Access Authorization	Default Schema Name Set by Using
Yes	Service Owner	Name specified in service definition
	Connect User Name	Name specified in service definition
No	Service Owner	Service owner account name
	Connect User Name	Connect user name

9.3.7 Reuse

The reuse scope is either session or transaction.

- **SESSION -** An executor for a session reusable service processes requests for one client session at a time. A session begins when a client connects to the service and the connection is bound to an executor process. A session ends when a client disconnects from the service and the connection is unbound from the executor process.

- **TRANSACTION -** An executor for a transaction reusable service processes requests for one transaction at a time; however, it supports many concurrent client sessions. A transaction begins when a client issues an SQL statement that either implicitly or explicitly starts a transaction. A transaction ends when a client issues a successful SQL COMMIT or ROLLBACK statement. The Transaction switch for the Reuse Scope attribute can be applied only to database services.

9.3.8 Application Transaction Usage

Note:
This attribute applies only to transaction reusable database services.

Some applications make only a single connection to a service to perform their work, while other applications make multiple connections to the same service. Connections created to transaction reusable database services are tied to the same executor for the life of the session.

If a client application makes multiple connections to a service and these are assigned to the same executor, a deadlock occurs if the client application attempts to start a new transaction on one connection before ending an existing transaction on another connection.

The drop-down list provides two options:

- **USAGE_SERIAL** - When selected, Oracle SQL/Services assumes that client applications do not start concurrent transactions on multiple connections.
- **USAGE_CONCURRENT** - When selected, Oracle SQL/Services ensures that multiple connections from the same client application on the same node are never assigned to the same executor process.

The default for this attribute is serial. This is a dynamic attribute that, when changed, takes effect immediately.

Some applications, such as Microsoft Access, make multiple connections to the same service to perform their work and require that you set the Concurrent button. If set to concurrent, Oracle SQL/Services considers the node, user name, and application name of the client when choosing an executor to which to tie the connection and ensures that multiple connections from the same client application are never assigned to the same executor process.

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9.4 SQL/Services Service – File information

Figure 88 -   Files tab

The files tab consists of the following fields:

- Database Authorization
- Attach
- Process Initialization
- SQL Init File
- SQL/Services Service : Dbsrc File

9.4.1 Database Authorization

Determines the user name under which access to the database is made. The default is Connect Username.

The drop-down list contains valid authorizations:

- **SERVICE OWNER -** For a database service, all access to the database is made by using the service owner user name. This option is not supported by OCI Services for Oracle Rdb.
- **CONNECT USERNAME -** Access to the database is made by using the client-specified user name, the DECnet proxy user name, or the user name specified by the Default Connect Username attribute.

9.4.2 Attach

The SQL ATTACH statement. If you do not specify an SQL ATTACH statement, you create a universal service that is not pre-attached to a specific database.

If you specify an SQL ATTACH statement, you create a database service that is pre attached to the specified database.   The Attach statement is a single quoted string and is exactly the same format as the attach-string-literal used in dynamic SQL.

See the *Oracle Rdb SQL Reference Manual* for more information on the ATTACH statement.

9.4.3 Process Initialization

The process initialization file can be either a special process initialization file or the keyword Login which resolves to the OpenVMS default login in the user authorization file (UAF).

The process initialization or login file is used to help define some of the attributes of the executor process for this service. If no attribute is specified, the default is to not run any initialization file.

You may optionally display or modify the contents of this file by right-clicking on this field. See Remote file popup menu .

9.4.4 SQL Init File

Specifies a file containing SQL statements that tailors the SQL environment for a client connection. For example, you can set the SQL dialect and default character set by using an SQL initialization file. The statements in an SQL initialization file are executed every time a client connects to the service.

You may optionally display or modify the contents of this file by right-clicking on this field. See Remote file popup menu .

9.4.5 Dbsrc File

Currently not used.

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9.5 SQL/Services Service – Limits Information

Figure 89 -   *Limit tab*

The limit tab consists of the following fields:

- [Idle User Timeout](#)
- [Idle Executor Timeout](#)
- [Min Executors](#)
- [Max Executors](#)
- [Clients Per Executor](#)
- [Active Clients](#)
- [Running Executors](#)

9.5.1 Idle User Timeout

Specifies the amount of time in seconds that a client (user) can remain idle before the server disconnects the client. The default value is 0 and means that the idle timeout value is infinite.

A specified value other than 0 is rounded to the next higher multiple of 90 seconds.

9.5.2 Idle Executor Timeout

Specifies the amount of time in seconds that an executor process for a session reusable service can remain inactive (not bound to a client connection) before being deleted. The default timeout value is 1800 seconds (30 minutes).

9.5.3 Min Executors

Sets the minimum value to which the number of executor processes is allowed to decrease. This is also the number of executor processes started at startup using a Start Service or Restart command. The default minimum number of executors for a session reusable service is 0. A service with min executors set to 0 never shows the 'Starting' state when the service starts up. The state either displays as 'Running' or 'Failed'.

To use transaction reusable executors, the value for the minimum number of executors must equal the value for the maximum number of executors. The default value is 1 for a transaction reusable service.

If you use the default minimum number of executors of 0, the default maximum number of executors must be 1 or greater. If the minimum number of executors defined is greater than 0, the default maximum number of executors must be equal to or greater than the defined minimum value. For example, if the defined minimum number of executors is 5, the default maximum number of executors must be 5 or greater.

9.5.4 Max Executors

Sets the maximum value to which the number of executor processes is allowed to increase. The default maximum number of executors is 1.

To use transaction reusable executors, the value for the minimum number of executors must equal the value for the maximum number of executors. The default value is 1 for a transaction reusable service.

9.5.5 Clients Per Executor

Specifies the number of clients allowed per executor. The number of clients allowed is dependent upon whether the service is session reusable or transaction reusable. The default number of clients per executor for session reusability is 1 and cannot be greater than 1. The default number of clients per executor for transaction reusability is 1 but can be greater than 1.

9.5.6 Active Clients

Specifies the number of clients currently active on this service. This is a read-only field and not displayed during create operations.

9.5.7 Running Executors

Specifies the number of executors currently active on this service. This is a read-only field and not displayed during create operations.

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9.6 SQL/Services Service – Grant List Information

Figure 90 -   Grant List tab

When a service other than an OCI service is created, only a privileged user with SYSPRV privilege is authorized to use the service. You must grant privileges to any other users.

If an unauthorized user attempts to connect to a system management service of a server, then the connection is rejected and an error message is returned to the system management application.

9.6.1 Grant List Tab Operations

The grant list tab may be displayed in two modes, **display** and **edit**.

By default when service details are being displayed as a SQL/Services Service information tab in the main ORCM window the grant list tab is in *display mode* as shown in above.

When the **Edit** button is pressed in SQL/Services Service information tab, the pane will be set to *edit mode* as shown in below.

When the grant tab is displayed within the Create SQL/Services Service dialog, the grant list tab will be in *edit mode*.

In *display mode*, information about the current grant attributes is displayed. This is a read-only mode.

In *edit mode* two regions will be displayed, the granted list and the denied list. In this mode identifiers may be added to or removed from the granted list.

Figure 91 -   *Edit mode*

9.6.2 Granted List

The granted list is a list of identifiers that are granted access to the service.
When the panel is in *edit mode*, new identifiers may be added to the list using the **Add** button
( ).
Existing granted identifiers may be removed from the list by denying access.

Any identifier in the granted list will be added to the service configuration information when you press the **Save** button.

9.6.3 Deny

To deny a previously granted identifier:

- Drag the identifier from the Granted list to the Denied list or
- Double-click on the identifier within the Granted list or
- Select the identifier within the Granted list by clicking on it and pressing the **Deny** button
  ( )

9.6.4 Denied List

The denied list is a temporary list of identifiers that were removed from the granted list during the edit session. When you save the changes using the **Save** button, the denied list will be cleared. Its function is to maintain a list of previously granted identifiers that have been denied during the edit session that may be restored to granted status.

9.6.5 Restore Grant

An identifier that has been moved to the Denied list may be re-instated to the Granted list. To re-instate a denied identifier:

- Drag the identifier from the Denied list to the Granted list or
- Double-click on the identifier within the Denied list or
- Select the identifier within the Denied list by clicking on it and pressing the **Grant** button
  ( )

9.6.6 Save

When you save the changes using the **Save** button, changes made to server details will be saved to SQL/Services server's configuration database.

When the **Save** button is pressed, the Denied list will be cleared.

9.6.7 Cancel

When the **Cancel** button is pressed any unsaved changes will be undone and the Denied list will be cleared.

9.6.8 Refresh

When the **Refresh** button is pressed any unsaved changes will be undone and the server will be requested to send current service characteristics to ORCM. In addition the Denied list will be cleared.

Note:
The Refresh button is only available when the grant tab is displayed as part of a SQL/Services service information pane and not during SQL/Services service creation.

9.6.9 New Grant

To create a new grant press the **Add** ( ) button. You will be prompted for identifier information.

Figure 92 -   Grant user dialog

A grant user dialog will be display allowing you to enter grant information.
The grant user dialog consists of:
- a drop-down box allowing you to choose from a selection of grant types, and
- a name/identifier entry field which may be enabled depending on the type of grant chosen. This entry field allows you to enter a specific username or Identifier. This field may de disabled depending on the grant type selected.

The drop-down type list provides the following grant choices:

USER:
Specify a connect user name to grant access to use this service by entering the username in the name/identifier entry field.

Connect user names that are granted access to use this service are added to the **Granted List**. Once you accept this change by clicking the OK button in the grant user dialog, and then clicking the **Save** button, the change takes effect upon the user's next attempt to use this service. For example, a user, once granted access, can use this service.

IDENTIFIER:
Specify an identifier name to grant users who hold these identifiers access to use this service by entering an identifier in the name/identifier entry field.

Identifiers that are granted access to use this service are added to the **Granted List**. Once you accept this change by clicking the OK button in the grant user dialog, and then clicking the **Save** button, the change takes effect upon the user's next attempt to use this service. For example, an identifier, once granted, allows users who hold that identifier access to use this service.

PUBLIC:
Use this type to specify that access will be granted to everyone. The name/identifier entry field will be disabled as no further information is required.

PUBLIC will be added to the **Granted List**. Once you accept this change by clicking the OK button in the grant user dialog, and then clicking the **Save** button, the change takes effect upon the next attempt to use this service.

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DEF_CON_USERNAME:

Use this type to specify that access will be granted to the user designated in the [Default Connect Username](#) field of the [SQL/Services Service Info tab](#) for this service.   The name/identifier entry field will be disabled as no further information is required.

DEF_CON_USERNAME will be added to the **Granted List**. Once you accept this change by clicking the OK button in the grant user dialog, and then clicking the **Save** button, the change takes effect upon the next attempt to use this service.

PRIVILEGED_USER:

Use this type to specify that access will be granted to users that have SYSPRV privilege.   The name/identifier entry field will be disabled as no further information is required.

PRIVILEGED_USER will be added to the **Granted List**. Once you accept this change by clicking the OK button in the grant user dialog, and then clicking the **Save** button, the change takes effect upon the next attempt to use this service.

Note:

By default, when a service is created, access is granted only to privileged users that have SYSPRV privilege.

9.6.10 Options

This information pane has the following button-based options:

Help
Press **Help** to display help information for this window.
Save
Press **Save** to save the information entered for the fields. Once saved, the information about the connection will be displayed in left panel table.
Clear
Press **Clear** to clear the information entered for the fields.
Cancel
Press **Cancel** to cancel the operation and close the window.

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Chapter 10
SQL/Services User

Figure 93 -   Client pane

The client pane is comprised of the main pane and one sub-panel containing related service information:
- Main – describes the identifying information for this client
- Info – describes general information about the client.

This pane is for displaying data only and is non-editable.

10.1 Main Pane

The main pane consists of the following fields:

- Name
- State

10.1.1 Name

Specifies the account name that the user (client) is using to gain access to the system.

10.1.2 State

Specifies the state of the client. The client state can be one of seven possible states:
- **Running Unbound** - the client is running but is not bound to an executor.
- **Running Bound** - the client is running and is bound to an executor.
- **Running Binding** - the client is running and in the process of binding to an executor.
- **Canceling** - the client connect is in the process of being disconnected.
- **Canceling Binding** - the client is in the process of informing the executor that the bound connect is going away (this operation precedes the Canceling operation.
- **Write Ready Canceling** - the executor wrote an error message to the client and is waiting for the write operation to complete before continuing the cancel operation.
- **Canceled** - the cancel process is complete and the client connect is ready to be deleted.

10.2 Info Tab

The info tab consists of the following fields:

- Service Name
- Node Name
- Application Name
- Dump File
- Sysout File
- Syserr File
- Executor Name
- Pid

10.2.1 Service Name

Specifies the name of the service that the client is using on this server.

10.2.2 Node Name

Specifies the name (address) of the node from which the user (client) is gaining access to the system.

10.2.3 Application Name

Specifies the name of the client application.

10.2.4 Dump File

Defines the complete file specification for the executor dump file should one be created.
You may optionally display or modify the contents of this file by right-clicking on this field. See Remote file popup menu .

10.2.5 Sysout File

Defines the complete file specification for the executor log file.

You may optionally display or modify the contents of this file by right-clicking on this field. See [Remote file popup menu](#) .

10.2.6 Syserr File

Unsupported field on Oracle Rdb.

10.2.7 Executor Name

Specifies the name of the executor in use for this service.

10.2.8 Pid

Specifies the executor process ID.

10.3 Options

The SQL/Services client panel has the following button-based options:

Help
  Press **Help** to display help information for this window.
Refresh
  Press **Refresh** to refresh the client information.
Cancel
  Press **Cancel** to cancel the operation and close the window.

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Chapter 11
JDBC Server Information

Edit/Display JDBC server information.

Figure 94 -   JDBC Server Information Pane

The JDBC Server Information pane allows you to configure a new JDBC server or to modify or display information about an existing JDBC Server.

The server pane is comprised of a number of sub-panels containing related server information:

- Main – the main identifying information for the server.
- Info – describes general information about the server.
- Instance – describes information about the running instance of this server
- User – describes user information for the server.
- Files/CmdProcs – Describe startup files and commands used by the server.
- Limits – describes limits placed on the server
- Flags – describes flags set for the server.
- Grant – describes access information for the server.
- Timers – describes timestamp information – This is a Read-Only panel
- Counts – describes statistics for this server – This is a Read-Only panel.
- EnableEvents – describes enabled Events information.

- **MP** – describes access information for a Multi-process server. This is only displayed if the server is one of the Multi-Process types.
- **Pool** – describes pool information for Pool server. This is only displayed if the server is one of the Pool server types.
- **SSL** – describes SSL security access information for the server. This is only displayed if the server is one of the SSL server types.

The pane is displayed in two forms; the first as shown above when an existing server is being displayed, or in the Create JDBC Server format.

Contents

11.1 JDBC Server Main Pane

The main pane consists of the following fields:

- Name
- Type
- State

11.1.1 Name

An alias for using the JDBC server. This name need not be unique, however the name may be used to lookup server information within the start-up configuration file. The value of this name is not case-sensitive.

11.1.2 Type

The type of this server:
- **RdbThinSrv** - standard thin server
- **RdbThinSrvSSL** - thin server using SSL for communication
- **RdbThinSrvMP** - multi-process server
- **RdbThinSrvMPSSL** - multi-process server using SSL
- **RdbThinSrvPool** - pool server
- **RdbThinSrvPoolSSL** - pool server using SSL
- **RdbThinManSrv** - manager server
- **RdbThinManSrvSSL** - manager server using SSL

11.1.3 State

Current state of the server:
- Idle – server is running with no current connections

- Unavailable – server is not currently running or not responding to poll requests on your session's GroupIP

11.2 Options

The JDBC Server Information pane has the following button-based options:

Help

  Press **Help** to display help information for this window.

Edit

  Press **Edit** to places the information pane into *edit mode* allowing the entry and/or modification of server characteristics.

Refresh

  Press **Refresh** to refresh the information for this server.

Save

  Press **Save** to save the information entered for the fields. Once saved, the information about the connection will be displayed in left panel table.

Cancel

  Press **Cancel** to cancel the operation and close the window.

Contents

11.3 JDBC Server – Info Panel

General information about the JDBC server.

Figure 95 -   Info Panel

The info panel consists of the following fields:

11.3.1 Node

Node or host on which this server should, or is currently, running.

11.3.2 Port

Port on which the server is listening. It is important to ensure that the use of the PORT_ID is unique within any one node as within a node only one JDBC server at a time may listen on a specific TCP/IP port. The port must also be a valid TCP/IP port specification and should be select from the range 1024 - 65536. *Ports* 0 to 1023 are "well known" or *reserved* ports and should not be used.

Your organization may have other restrictions on what port numbers may be used.

11.3.3 Description

Comment describing this specific server.

11.3.4 MC Base Port

The base port used by the server to listen for multicast messages. Multicasting is a style of efficiently broadcasting data over a network connection to many connected servers. Any server listening in to the multicast IP address will receive the data packets that are broadcast, such as poll requests made by ORCM and the Oracle JDBC for Rdb Controller. By default, Oracle JDBC for Rdb servers use the multicast base port of 5517.

If this value is zero (0) the server will not respond to any multicast requests. This means that ORCM and the Controller will not be able to discover the server using multicast Polls.

11.3.5 MC Group IP

The IP group the server is listening on for multicast messages. Oracle JDBC for Rdb servers use the Administrative Scoping range of addresses that allow easy limiting of multicast transmission to well defined boundaries within your network., Administrative Scoping is the restriction of multicast transport based on the address range of the multicast group. It is defined by RFC 2365 "Administratively Scoped IP Multicast." and is restricted to the address range:

239.0.0.0 to 239.255.255.255

The IP address for server multicast polling should be chosen from within the following range:

239.192.0.0 to 239.192.255.255

This range is known as the IPv4 Organization Local Scope and has a subnet mask of 255.252.0.0. It is intended for use by an entire organization setting multicast scopes privately for its own internal or organizational use and allows up to 262,144 group addresses.

By default, Oracle JDBC for Rdb servers use the multicast IP 239.192.1.1. If this value is empty or invalid the server will not respond to any multicast requests. This means that ORCM and the Controller will not be able to discover the server using multicast Polls.

11.3.6 Sub-panes

In addition, the info panel may display one or more sub-panels containing information about the currently attached clients, and if the server is multi-process, information about the executor processes that are running:

- Clients Sub-panel
- Executors Sub-panel

See also:
Server Configuration section in the *Oracle JDBC for Rdb User Guide*.

Contents

11.4 Clients Sub-panel

ID	User	Database	IP
0000000F	Control	<CONTROL CONNECTION>	192.168.1.100:2091

Figure 96 -   *Clients Sub-Pane*

The Clients sub-pane is a read-only pane that displays a table of information about clients currently using the server:

- [ID](#)
- [User](#)
- [Database](#)
- [IP](#)

This table may be sorted by any column by clicking on the column header. Clicking again will reverse the order of the sorted rows; clicking a third time will remove this column from the sorting key.

Holding the `CTRL` key while clicking the column header will add that column to the sorting key. This allows you to specify a sorting key that is a combination of multiple column values.

Double-clicking on a row within the client table will display more information about that client.

11.4.1 ID

The unique identifier given to this client by the server.

11.4.2 User

The user name used by this client when attaching to the server.

11.4.3 Database

The database this client is attached to. If the client is a control user the text **<CONTROL CONNECTION>** will be displayed.

11.4.4 IP

The IP and port number from which the client has connected.

11.5 Executors sub-panel

If the server is one of the multi-process types, information about executors is displayed in the read-only Executors sub-panel.

The Executors sub-panel contains a table consisting of the following columns:

- ID
- Pid
- State
- Pages
- SharedMem
- CPU
- WS

This table may be sorted by any column by clicking on the column header. Clicking again will reverse the order of the sorted columns; clicking a third time will remove this column from the sorting key.

Holding the CTRL key while clicking the column header will add that column to the sorting key. This allows you to specify a sorting key that is a combination of multiple column values.

11.5.1 ID

The unique identifier given to this executor by the server.

11.5.2 Pid

The process id of the executor.

11.5.3 State

The current state of the executor.

11.5.4 Pages

The number of pages of standard memory currently used by the executor process.

11.5.5 SharedMem

The number of bytes of global shared memory currently allocated to this executor process.

11.5.6 CPU

The amount of CPU time in milliseconds used by this executor.

11.5.7 WS

The working set (in pages) currently used by this executor.

Contents

11.6 JDBC Server – Instance Information

Information about the JDBC server instance.

Figure 98 -   Instance Information

The JDBC Server Instance panel displays information about the instance of the JDBC server. Instance information such as the Process id and the process name may help you locate the running server process in the system information of the node it is running on.

This process information may be used in conjunction with Open VMS diagnostic tools to provide more process level information about the running server.

The Instance Information tab consists of the following fields:

- Num Clients
- Node IP

- [Node OS](#)
- [PID](#)
- [Proc Name](#)
- [Version](#)
- [Instance](#)
- [Shr Version](#)
- [Shr Instance](#)
- [Control Url](#)

11.6.1 Num Clients

The number of clients current connected to this server. This is a read-only field.

11.6.2 Node *IP*

The IP of the node the server is running on. This is a read-only field.

11.6.3 Node *OS*

The operating system on which the server is running. If the server is not currently running or is not responding to polls this will be blank.　　This is a read-only field.

11.6.4 PID

The process ID of the running server on the node with the IP shown in NodeIP.　If the server is not currently running or is not responding to polls this will be zero (0).　　This is a read-only field.

11.6.5 Proc Name

The process name the server is running under.　If the server is not currently running or is not responding to polls this will be blank.　　This is a read-only field.

11.6.6 Version

The version of the running server. This is a read-only field.

11.6.7 Instance

The instance number of the specified version. This is a read-only field.

11.6.8 Shr Version

The version of the JDBC shared images/libraries used by the server. This is a read-only field.

11.6.9 Shr Instance

The instance number of the specified Shr Version. This is a read-only field.

11.6.10 Control Url

The URL used by the process that started this server. This is a proprietary URL specific to Oracle JDBC for Rdb and used for internal operations. This is a read-only field.

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11.7 JDBC Server Information – User Information

Information related the JDBC server users.

Figure 99 -   User Information

The JDBC Server User information panel displays information related to use of the JDBC server by normal and control users in the following fields:

- Persona
- Max Clients
- Default User
- Control User
- Default Pass
- Control Pass
- Server Pass

11.7.1 Persona

The default Persona to be used when this server is executing.

This value is held as the `persona` configuration setting within the server section of the XML-based server configuration file.

11.7.2 *Max* Clients

The maximum number of clients that may be connected to this server at any one time. The default value of -1 indicates that there is no limit placed on the number of clients.

This value is held as the `maxClients` configuration setting within the server section of the [XML-based server configuration file](#).

11.7.3 Default *User*

The default username to use on database connections for clients that have not specified a username.

This value is held as the `user` configuration setting within the server section of the [XML-based server configuration file](#).

11.7.4 Control *User*

The username to be used when establishing a control user.

11.7.5 Default *Pass*

The default password to be used when connecting to a database as the default user. This should be either a plain-text or obfuscated password using the obfuscate Thin Controller function.

This value is held as the `password` configuration setting within the server section of the [XML-based server configuration file](#).

See [Password fields](#) for more information.

11.7.6 Control *Pass*

The control password for this server. Any control user connection attempt must provide this password before the server will allow the control connection to progress. This should be either a plain-text or obfuscated password using the *obfuscate* or *digest* Thin Controller functions.

This value is held as the `controlpass` configuration setting within the server section of the [XML-based server configuration file](#).

See [Password fields](#) for more information.

11.7.7 Server *Pass*

The server password for this server. This is an additional password that clients need to provide before they may use the server for database connections. If left blank clients do not have to supply an additional server password during connection.
This value is held as the `srv.password` configuration setting within the server section of the [XML-based server configuration file](#).

See [Password fields](#) for more information.

In addition see [Further server access protection](#) for more details on server passwords.

11.8 Password fields

Oracle recommends not to store password in your configuration file, however if you choose to store them then an obfuscated from should be used. You may use the `digest` or the `obfuscate` functions within the Thin Controller application to generate an obfuscated password that is suitable to use in the configuration file.

Alternatively, you may use the Set Password feature of the popup menu displayed when you right-click on a password field:

Figure 100 -   *Set Password*   *Figure 101 -*   *Process Password*

See [Password Obfuscation in Server Configuration Files](#) for more details.

Note:

The Default Password should not be obfuscated using the `digest` function as this password does need to be converted to plain text for use with the Rdb Server.

11.8.1 Hiding and Showing password text

Since 7.3.3.0.0

ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition ***show*** button 👁 . Press the ***show*** button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

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When the password text is in the display state the show button will be replaced with the *hide* button ⊘ . Press the *hide* button to hide the password again.

See also:
   Server Configuration section in the *Oracle JDBC for Rdb User Guide*.

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11.9 JDBC Server – Files/Cmds Information

Information about files and commands for the JDBC server.

Figure 102 -   Files/Cmds Panel

This panel contains details on the various startup command files and OpenVMS DCL commands used by JDBC. It also details which configuration file was used to set the server attributes as well as where the server log file will be written.

The Files/Cmds panel consists of the following fields:

- Log File Pattern
- Current Log File
- Cfg File

11.9.1 Log File Pattern

The pattern for the file specification of the server log file. This may be a standard file specification or may contain special pattern character sequences that may be used to generate the log file specification. See the ***Logging and Tracing*** section of your ***Oracle JDBC for Rdb User Guide*** for more details.

This value is held as the `logfile` configuration setting within the server section of the configuration file.

11.9.2 Current Log File

The file specification of the current server log file. This is a read-only field.

11.9.3 Cfg File

The file specification for the server's configuration file.
This value is held as the `configfile` configuration setting within the server section of the XML-based server configuration file.

11.9.4 Startup File

The file specification for the startup command procedure to use to start this server up. This is used only when the server is started by this GUI, the Controller command line or a POOL server.

During the driver kit installation the command procedure `RDBJDBC_STARTSRV.COM` is placed in the `RDB$JDBC_HOME` directory. This file will be used by default for server start up using the controller and pool servers.

You can choose to change this default command procedure to customize for your system settings, or you can create a new customized procedure and change the configuration file so that servers use this new file. However Oracle recommends that you use the **[On Start Cmd](#)** in this panel or the `srv.onStartCmd` server attribute in the configuration file instead. See [srv.onStartCmd](#) for more information on using the `srv.onStartCmd` attribute.

This value is held as the `srv.startup` configuration setting within the server section of the XML-based server configuration file.

11.9.5 Cli Startup File

The file specification for the startup command procedure to use when the server executes a CLI command in behalf of the client. If not specified the default CLI startup command procedure will be executed. The default CLI startup file is `RDB$JDBC_COM:RDBJDBC_EXECCLI.COM`

This value is held as the `srv.cliStartup` configuration setting within the server section of the XML-based server configuration file.

11.9.6 On Start Cmd

An OpenVMS DCL command to be executed prior to the invocation of the server. It must be a valid OpenVMS DCL command and must be valid within the context of the server process created by the GUI, controller or pool server.

If multiple DCL commands are required then they should be placed within a DCL command procedure, which in turn should be made available to the environment under which the controller or pool server runs. Oracle recommends that these command procedures be placed within the `RDB$JDBC_COM` directory and the file protection set to allow the GUI, controller or pool server execute access.

There is no default value for this field.

This value is held as the `srv.onStartCmd` configuration setting within the server section of the XML-based server configuration file.

11.9.7 On Cli Start Cmd

A DCL command to be executed prior to the execution of a CLI command. It must be a valid OpenVMS DCL command and must be valid within the context of the server process created by the GUI, controller or pool server.

If multiple DCL commands are required then they should be placed within a DCL command procedure, which in turn should be made available to the environment under which the controller or pool server runs. Oracle recommends that these command procedures be placed within the `RDB$JDBC_COM` directory and the file protection set to allow the GUI, controller or pool server execute access.

This value is held as the `srv.onCliStartCmd` configuration setting within the server section of the XML-based server configuration file.

Caution when using Startup command procedures:

Do not use the `SET VERIFY` command within these command procedures. As the method `Runtime.exec()` may be used by the servers to create processes, the use of the `SET VERIFY` command within the command procedure may hang the server. This is a documented limitation of using `Runtime.exec()` on Open VMS Java. The logical name `JAVA$EXEC_TRACE` is available to help debug `Runtime.exec()` calls on OpenVMS. Refer to the OpenVMS Java documentation for more details.

> **Note:**
>
> The **On Start Cmd** , **On Exec Start Cmd** and the **On Cli Start Cmd** should point to a valid DCL command that will be executed on the start of the server, executor or execution of a CLI command. If you wish to invoke a DCL command procedure you must also include the DCL invocation symbol @ at the start of the command.

See also:
   Server Configuration and **Logging and Tracing sections** in the **Oracle JDBC for Rdb User Guide**.

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11.10 JDBC Server – Limits Information

Limits information about the JDBC server.

Figure 103 -   Limits Tab

The limit tab consists of the following fields:

- Fetch Size
- Bind Timeout

11.10.1 Fetch Size

The default record Fetch Size for connections made to this server.

This value is held as the `fetchsize` configuration setting within the server section of the XML-based server configuration file.

11.10.2 Bind Timeout

The time, in milliseconds, the server will wait for a database connection to complete. If the database fails to connect within this time an exception will be raised. A value of zero (0) means unlimited timeout.

This value is held as the `srv.bindTimeout` configuration setting within the server section of the XML-based server configuration file.

11.10.3 Idle Timeout

The maximum time, in milliseconds, the server will wait for a new client connection request. If no new connection is made within the timeout period the server will be closed down due to inactivity. A value of zero (0) means unlimited idle time allowed.

This value is held as the `srv.idleTimeout` configuration setting within the server section of the XML-based server configuration file.

11.10.4 Client Idle Timeout

The time, in milliseconds, that a client connection may be idle. If no operation is carried out using the connection within the time specified, the connection will be forcibly disconnected. A value of zero (0) means unlimited idle time allowed, i.e. the connection will not timeout.

This value is held as the `cli.idleTimeout` configuration setting within the server section of the XML-based server configuration file.

11.10.5 Lock Wait

The maximum number of seconds to wait on getting a record lock. This switch, used in conjunction with [Max Tries](#) and [Try Wait](#), specifies how often and how long to try to get a lock on a locked object before issuing a locked object Exception. A default value of minus one (-1) means wait indefinitely.

This value is held as the `lockwait` configuration setting within the server section of the XML-based server configuration file.

11.10.6 Try Wait

The time, in milliseconds, to wait between lock tries This value, used in conjunction with Max Tries and Lock Wait, specifies how often and how long to try to get a lock on a locked object before issuing a locked object Exception. A value of zero (0) or a negative value, indicates not to wait between lock tries

This value is held as the `trywait` configuration setting within the server section of the XML-based server configuration file.

11.10.7 Max Tries

The maximum number of times to try to get a record lock. This value used in conjunction with Try Wait and Lock Wait, specifies how long to keep trying to get a lock on a locked object before issuing a locked object Exception. The default value is 10;

This value is held as the `maxtries` configuration setting within the server section of the XML-based server configuration file.

See also:
Server Configuration section in the *Oracle JDBC for Rdb User Guide*.

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11.11 JDBC Server – Flags Information

Information about various trace and other flags set for the JDBC server.

Figure 104 -   Flags Panel

The flags panel consists of the following fields:

- Trace Level
- Log Level
- Trace Local
- Show Poll
- Relay
- Auto Start
- Auto Restart
- Allow Anonymous User
- Allow Bypass
- Allow Show DBs
- Allow Access to CL
- Restrict Access
- Restrict DB Access
- Restrict User Access
- Restrict IP Access
- Use Logical IPs
- Connect Check

11.11.1 Trace Level

The current TraceLevel set for the server. Enter the numeric value of the trace level required. Alternatively, right-click to bring up a pop-up menu that will allow you to set the Trace Level flags individually.

Figure 105 -   *Trace Level pop-up menu*   *Figure 106 -*   *Trace Level flags*

See the ***Trace*** section of your ***Oracle JDBC for Rdb User Guide*** for more details.

11.11.2 Log Level

The current Log Level set for the server. Enter the numeric value of the log level required. Alternatively, right-click to bring up a pop-up menu that will allow you to set the Log Level flags individually.

Figure 107 -   *Log Level pop-up menu*   *Figure 108 -*   *Log Level flags*

See the ***Logging and Tracing*** section of your ***Oracle JDBC for Rdb User Guide*** for more details.

11.11.3 Trace Local

If true then any JDBC tracelevel flags set by user applications will be ignored by the server.

11.11.4 Show Poll

If true then responses to POLL requests will be logged by the server.

11.11.5 Relay

If true then this server may act as a Relay server. (This functionality is not currently available).

11.11.6 Auto Start

If true, indicates to any pool server that may include this server in its pool of servers to automatically start up this pooled server.

See the *Pool Server Operation* section of your *Oracle JDBC for Rdb User Guide* for more details.

11.11.7 Auto Restart

If true, indicates to any pool server that may include this server in its pool of servers to check for unexpected server terminations and automatically restart this pooled server.

See the *Pool Server Operation* section of the *Oracle JDBC for Rdb User Guide* for more details.

11.11.8 Allow Anonymous User

If true, tells the server to allow anonymous connections, that is, connections where the user and password are not specified.

Depending on how the Oracle Rdb database has been set up, Oracle Rdb may allow connection to the database without a username being explicitly specified, in which case the characteristics of the authorization account of the server invoker will be used by Oracle Rdb to determine database access.

This switch may be used in conjunction with the Default Password and the Default User fields to specify the default username/password to use on connections. By default, anonymous connections are disabled and the client must specify a valid username and password combination to access the Rdb database.

11.11.9 Allow Bypass

If true, specifies that if the privilege is available, bypass will be an allowable privilege for the server process. Rdb checks for this privilege to determine the access rights to databases and database objects. If enabled, all validated users connected to databases via this server instance will be considered to have bypass privilege.

The default is false where the bypass privilege is disabled for the server by default. Validated users who already possess the bypass privilege will still have bypass available.

See the **BYPASS Privileges** section of your **Oracle JDBC for Rdb User Guide** for more details.

11.11.10 Allow Show DBs

If true, indicates that the server will respond to user requests for a list of databases that are known to the server. The list of known named databases is specified in the Database section of the configuration file.

See the **Named Databases** section of your **Oracle JDBC for Rdb User Guide** for more details.

11.11.11 Allow Access to CL

If true, indicates that users may be allowed access to Command Line operations on the system that the server is executing on.

See the **Access to the Command Line** section of your **Oracle JDBC for Rdb User Guide** for more details.

11.11.12 Restrict Access

Used in conjunction with the `allowDatabase` and `allowUser` options to restrict access to designated databases and users.

See the **Restricting Database Access** section of your **Oracle JDBC for Rdb User Guide** for more details.

11.11.13 Restrict *DB Access*

Used in conjunction with the Allowed Database list, if true then the server will enable database restrictions on client connections. This is a Read-only Field.

11.11.14 Restrict User Access

Used in conjunction with the Allowed Users list, if true then the server will enable user restrictions on client connections. This is a Read-only Field.

11.11.15 Restrict IP Access

Used in conjunction with the Allowed IPs list, if true then the server will enable IP restrictions on client connections. This is a Read-only Field.

11.11.16 Use Logical IPs

This is only valid for POOL servers. If true then the server should not translate named IP values to IP addresses prior to redirecting connection request.

11.11.17 Connect Check

If true then the server should be placed on the ORCM known servers list to carry out viability checks during polling scans.

See also:
Server Configuration and *Trace* sections in the *Oracle JDBC for Rdb User Guide*.

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11.12 JDBC Server - Access Information

Access information about the JDBC server.

Figure 109 -   Access Tab

The Access tab shows the identity of users and IPs that are allowed access to this server as well as any databases restrictions that the server may have. In addition certain users may be granted **privileged** status allowing access to server functionality not normally given to non-control users.

By restricting access to a server the system or database administrator controls how the server may be used.

There are six main types of Access controls:

- Users - grant certain user or user groups access to the server.
- Denied Users - specify restrictions on the usernames of the clients that will be denied access to this server.
- Priv Users - specify specific users that may carry out 'privileged' operations on this server.
- Databases - specify restrictions on the database connections that will be allowed when using this server.
- Allowed IPs - specify restrictions on the IP of the clients that will be allowed access to this server.
- Denied IPs - specify restrictions on the IP of the clients that will be denied access to this server.

11.12.1 Access Tab Operations

The access tab may be displayed in two modes, *display* and *edit*.

By default when server details are being displayed as a JDBC Server information tab in the main ORCM window the access tab is in *display mode* as shown in <u>Figure - Access Tab</u> above.

When the **Edit** button is pressed in JDBC Server information tab, the pane will be set to *edit mode* as shown in <u>Figure - Edit Mode</u> below.

When the access tab is displayed within the Create JDBC Server dialog, the access tab will be in *edit mode*.

In *display mode*, information about the current access attributes is displayed. This is a read-only mode.

In *edit mode* two regions will be displayed. The first region will be either a granted list or a denied list, and the second region is the removed list. In this mode, identifiers may be added to or removed from the granted list.

Figure 110 -   edit mode

11.12.2 Granted List

Figure 111 -   Granted list

The granted list is a list of identifiers that are granted access to the server. This list will be displayed when you select one of the following tabs:
- Users
- Priv Users
- Databases

- Allowed IPs

When the panel is in *edit mode*, new identifiers may be added to the list using the **Add** button
( ). Existing granted identifiers may be removed from the list by removing access. Any
identifier in the granted list will be added to the server configuration information when you press
the **Save** button.

11.12.3 Remove Granted

To remove a previously granted identifier:
1. Drag the identifier from the Granted list to the Removed list or
2. Double-click on the identifier within the Granted list or
3. Select the identifier within the Granted list by clicking on it and pressing the **Remove**
   button ( )

Note:
   If the access identifier is inherited from the DEFAULT or DEFAULTSSL
   server definitions, as indicated by a ® prefix, you will not be able to
   remove it. Inherited access identifiers can only be removed from the
   server definition they were inherited from.

11.12.4 Denied List

Figure 112 -   Denied list

The denied list is a list of identifiers that have been denied access to the server. This list will be
displayed when you select one of the following tabs:
- Denied Users
- Denied IPs

When the panel is in *edit mode*, new identifiers may be added to the denied list using the **Add**

button ( ). Existing denied identifiers may be removed from the list by [removing denial](). Any identifier in the denied list will be added to the server configuration information when you press the **Save** button.

11.12.5 Remove Denied

To remove a previously denied identifier:
1. Drag the identifier from the Denied list to the Removed list or
2. Double-click on the identifier within the Denied list or
3. Select the identifier within the Denied list by clicking on it and pressing the **Remove** button ( )

Note:
If the access identifier is inherited from the DEFAULT or DEFAULTSSL server definitions, as indicated by a ® prefix,   you will not be able to remove it. Inherited access identifiers can only be removed from the server definition they were inherited from.

11.12.6 Removed List

Figure 113 -   Removed list

The removed list is a temporary list of identifiers that were removed from the granted or denied list during the edit session.

When you save the changes using the **Save** button, the removed list will be cleared. Its function is to maintain a list of previously granted or denied identifiers that have been removed during the edit session that may be restored to granted or denied status.

11.12.7 Restore Grant

An identifier that has been moved to the Removed list may be re-instated to the Granted list. To re-instate a removed identifier:
1. Drag the identifier from the Removed list to the Granted list or
2. Double-click on the identifier within the Removed list or
3. Select the identifier within the Removed list by clicking on it and pressing the **Reinstate** button ( )

11.12.8 Restore Denied

An identifier that has been moved to the Removed list may be re-instated to the Denied list. To re-instate a removed identifier:
1. Drag the identifier from the Removed list to the Denied list or
2. Double-click on the identifier within the Removed list or
3. Select the identifier within the Removed list by clicking on it and pressing the **Reinstate** button ( )

11.12.9 Save

When you save the changes using the **Save** button, changes made to server details will be saved to the configuration file.

In addition identifiers found in the various Granted lists will be added to the server specification within the configuration file:
- **Granted Users** identifiers will be stored as `<allow user … >`
- **Denied Users** identifiers will be stored as `<deny user … >`
- **Granted Priv Users** identifiers will be stored as `<allowPrivUser … >`
- **Granted Database** identifiers will be stored as `<allowDatabase … >`
- **Granted IP** identifiers will be stored as `<allow IP … >`
- **Denied IP** identifiers will be stored as `<deny IP … >`

When the **Save** button is pressed, the Removed list will be cleared.

11.12.10 Cancel

When the **Cancel** button is pressed any unsaved changes will be undone and the Removed list will be cleared.

11.12.11 Refresh

When the **Refresh** button is pressed any unsaved changes will be undone and the server will be requested to send current server characteristics to ORCM. In addition the Removed list will be cleared.

Note:

The **Refresh** button is only available when the access tab is displayed as part of a JDBC Server information pane and not during JDBC Server creation.

11.12.12 New Grant/Deny

To create a new identifier press the **Add** ( ) button. You will be prompted for identifier information. Details of adding a new identifier may be found in:

- Grant User
- Deny User
- Grant Priv User
- Grant Database
- Grant IP
- Deny IP

11.12.12.1 Grant User

Figure 114 - grant user

When the **Add** ( ) button is pressed when the **Users** grant list is displayed, a new user identifier may be added to the grant list.
A drop-down list provides grant choices, select USER to enter in a valid username or select PUBLIC to grant access to all users.

11.12.12.2 Deny User

Figure 115 -   deny User

When the **Add** ( ) button is pressed when the **Users** denied list is displayed, a new username may be added to the denied list.

A drop-down list provides denial choices, select USER to enter in a valid username or select PUBLIC to deny access to all users.

11.12.12.3 Grant Priv User

Figure 116 -   grant privileged user

When the **Add** ( ) button is pressed when the **Priv Users** grant list is displayed, a new user identifier may be added to the privileged users list.

A drop-down list provides grant choices, select the USER to enter in a valid username or select PUBLIC to grant privileged access to all users.

11.12.12.4 Grant Database

Figure 117 -   grant database

When the **Add** ( ) button is pressed when the **Databases** grant list is displayed, a new database identifier may be added to the grant list.

A drop-down list provides grant choices:
- Select the DB to enter in a valid database specification.
- Select ANY to allow access to all databases, i.e. no database restrictions will be made.
- Select ALL KNOWN to allow access to all databases that are known to the server. A database is known to the server if it exists in the list of databases found in the Databases section of the server's XML-based configuration file.
- A list of known databases that were found in the Database section of the ORCM configuration file.

11.12.12.5 Grant IP

Figure 118 -   grant IP

When the **Add** ( ) button is pressed when the **IPs** grant list is displayed, a new IP identifier may be added to the grant list.

A drop-down list provides grant choices:
- Select **IP** to enter in a valid host IP specification, or a Java regular expression.
  The declared IP must be a valid IPv4 *dot-decimal* formatted IP string, or a Java regular expression based on the same standard IPv4 *dot-decimal* notation.
- Select ***.*.*.*** to allow access to all IPs, i.e. no IP restrictions will be made.
- A list of IP masks that may be used based on the IP of the host on which the ORCM application is running.

11.12.12.6 Deny IP

Figure 119 -   deny IP

When the **Add** ( ) button is pressed when the **IPs** denied list is displayed, a new IP identifier may be added to the denied list.

A drop-down list provides deny choices:
- Select **IP** to enter in a valid host IP specification, or a Java regular expression.
     The declared IP must be a valid IPv4 *dot-decimal* formatted IP string, or a Java regular expression based on the same standard IPv4 *dot-decimal* notation.
- Select ***.*.*.*** to deny access to all IPs, i.e. full IP restrictions will be made.
- A list of IP masks that may be used based on the IP of the host on which the ORCM application is running.

See also:
> *Restricting Server, Database and Operational Access* section in the *Oracle JDBC for Rdb User Guide*.

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11.13 JDBC Server – Timer Information

Timestamps for the JDBC server.

Figure 120 -   Timers Panel

The timer panel shows some timestamp information about the server such as the time the server was last started.

The timer panel consists of the following fields:

- Started
- Last Reset
- Last Connect
- Last Disconnect

11.13.1 Started

Timestamp of the last time the server was started. This is a Read-Only field.

11.13.2 Last Reset

Timestamp of the last time the server was reset. This is a Read-Only field.

11.13.3 Last Connect

Timestamp of the last time a user connection was made to the server. This is a Read-Only field.

11.13.4 Last Disconnect

Timestamp of the last time a user disconnected from the server. This is a Read-Only field.

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11.14 JDBC Server – Counts Information

Usage counts information for the JDBC server.

Figure 121 -   Counts Panel

The counts panel display information about certain statistics associated with the server operation.

Note:
      The details of this panel may change in future versions.

The counts panel consists of the following fields:

- [Connects](#)
- [Disconnects](#)
- [Prepares](#)
- [Exceptions](#)
- [Immediates](#)
- [Explicit Trans](#)
- [Explicit Commits](#)
- [Explicit Rollbacks](#)
- [Fetches](#)
- [Inserts](#)
- [Deletes](#)
- [Updates](#)
- [Net Bytes Sent](#)
- [Net Bytes Read](#)

11.14.1 Connects

The number of connections made since the last time server was started. This is a Read-Only field.

11.14.2 Disconnects

The number of disconnections made since the last time server was started. This is a Read-Only field.

11.14.3 Prepares

The number of statement prepares made since the last time server was started. This is a Read-Only field.

11.14.4 Exceptions

The number of exceptions raised since the last time server was started. This is a Read-Only field.

11.14.5 Immediates

The number of Immediate Statements executed since the last time server was started. This is a Read-Only field.

11.14.6 Explicit *Trans*

The number of transactions started explicitly by users since the last time server was started. This is a Read-Only field.

11.14.7 Explicit *Commits*

The number of Commit operations issued explicitly by users since the last time server was started. This is a Read-Only field.

11.14.8 Explicit *Rollbacks*

The number of Rollback operations issued explicitly by users since the last time server was started. This is a Read-Only field.

11.14.9 Fetches

The number of record fetches made since the last time server was started. This is a Read-Only field.

11.14.10 Inserts

The number of record inserts done since the last time server was started. This is a Read-Only field.

11.14.11 Deletes

The number of record deletes done since the last time server was started. This is a Read-Only field.

11.14.12 Updates

The number of record deletes done since the last time server was started. This is a Read-Only field.

11.14.13 Net Bytes *Sent*

The number of network bytes sent back to client applications since the last time server was started. This is a Read-Only field.

11.14.14 Net Bytes *Read*

The number of network bytes read from client applications since the last time server was started. This is a Read-Only field.

Note:

The counts panel is NOT automatically updated. To see the current values of these counters you must use the Refresh button.

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11.15 JDBC Server - Enabled Events Information

Enabled Events information for the JDBC server.

Figure 122 -   Enable Events Tab

The enabled events tab shows the events that have been enabled for logging on this server.

11.15.1 Enabled Events Tab Operations

The enabled events tab may be displayed in two modes, **display** and **edit**.

By default when server details are being displayed as a JDBC Server information tab in the main ORCM window the enabled events tab is in display mode as shown in the figure Enable events Tab above.

When the **Edit** button is pressed in JDBC Server information tab, the pane will be set to edit mode as shown in the figure Enabled events Edit Mode below.

When the enabled events tab is displayed within the Create JDBC Server dialog, the enabled events tab will be in edit mode.

In display mode, information about the current enabled events is displayed. This is a read-only mode.

In edit mode two regions will be displayed, the event list and the remove list. In this mode identifiers may be added to or removed from the enabled events list.

Figure 123 -   Enabled events Edit Mode

11.15.2 Enabled Events List

The enabled events list is a list of event names that are enabled on the server.

When the panel is in edit mode, new events may be added to the list using the **Add** button ( ). Existing enabled events may be removed from the list by Remove. Any event in the event list will be added to the server configuration information when you press the **Save** button.

11.15.3 Remove

To disable a previously enabled event:
1. Drag the identifier from the Event list to the Remove list or
2. Double-click on the identifier within the Event list or
3. Select the identifier within the Event list by clicking on it and pressing the **Remove** button ( )

Note:

> If the event is inherited from the DEFAULT or DEFAULTSSL server definitions, as indicated by a ® prefix, you will not be able to remove it. Inherited events can only be removed from the server definition they were inherited from.

11.15.4 Remove List

The remove list is a list of events that are not currently enabled for this server.

11.15.5 Enable Event

An identifier that exists in the Remove list may be enabled by:

1. Dragging the identifier from the Remove list to the Event list or
2. Double-clicking on the identifier within the Remove list or
3. Select the identifier within the Remove list by clicking on it and pressing the **Enable** button () or
4. Using the **Add** () button. See [Add Enabled Event](#).

11.15.6 Options

The following button-base options are available:

Help
  Press **Help** to display help information for this window.
Save
  Press **Save** to save the changes made to server details wand write them into the configuration file.
Cancel
   Press **Cancel** to undo any changes made.
Refresh
  Press **Refresh** to undo any unsaved changes and request the server to send current server characteristics to ORCM.

Note:
> The Refresh button is only available when the enabled events tab is displayed as part of a JDBC Server information pane and not during JDBC Server creation.

11.15.7 Add Enabled Event

To enable an existing event press the **Add** ( ) button. You may then select an existing event to enable it.

Figure 124 -   Enable event

When the **Add** ( ) button is pressed, a drop-down list will present event choices. Select one of the events from the list and press OK.

See also:
> *Event Logging and Notification* section in the *Oracle JDBC for Rdb User Guide*.

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11.16 JDBC Server – MP Information

Information about the JDBC Multi-Process server.
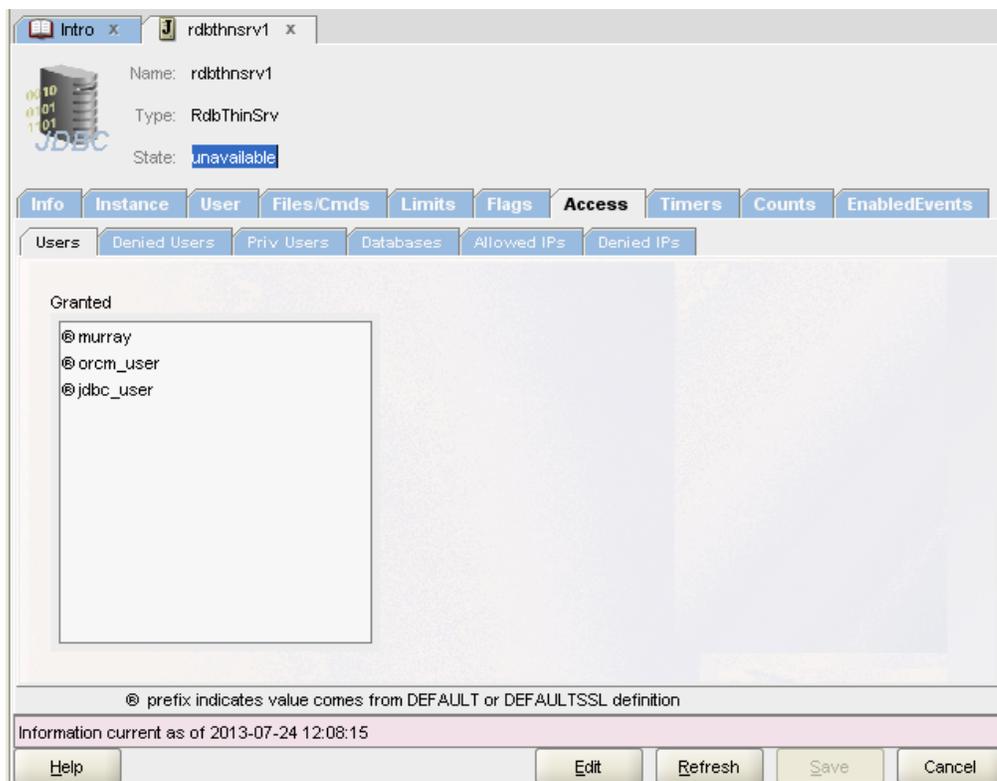

Figure 125 - MP Tab

Note:

This pane is applicable to Multi-Process servers only.

A Multi-Process server is a server-side component that processes requests from the Oracle JDBC for Rdb thin driver using small memory footprint sub-processes to carry out the requested operations on the Oracle Rdb database.

Additional configuration data is required for Multi-Process servers.

The MP tab consists of the following fields:

- Exec Prefix
- Exec Startup File
- On Exec Start Cmd
- Maximum Free Execs
- Prestarted Execs
- Free Exec Timeout
- Handshake Wait
- Handshake Tries
- Exec Balancing
- MultiProcess Active Environment

Do not use the `SET VERIFY` command within these command procedures. As the method `Runtime.exec()` may be used by the servers to create processes, the use of the `SET VERIFY` command within the command procedure may hang the server. This is a documented limitation of using `Runtime.exec()` on Open VMS Java. The logical name `JAVA$EXEC_TRACE` is available to help debug `Runtime.exec()` calls on OpenVMS. Refer to the OpenVMS Java documentation for more details.

Note:
The **On Exec Start Cmd** should point to a valid DCL command that will be executed on the start of the server, executor or execution of a CLI command. If you wish to invoke a DCL command procedure you must also include the DCL invocation symbol @ at the start of the command.

11.16.1 Exec Prefix

Specifies the prefix to use for executor names. If not specified a standard prefix based on the server name will be used.

Each executor started up on a single system requires a unique process name on that system. By default a name will be created for the executor based on the name of the server that started it and a hexadecimal value that represents the instance of the executor process with relation to the server.

11.16.2 Exec Startup File

The file specification for the startup command procedure to use when the Multi-Process server creates a new executor process. If not specified the default Exec startup command procedure will be executed. The default CLI startup file is :

RDB$JDBC_HOME:RDBJDBC_STARTEXEC.COM.

You can choose to change this default command procedure to customize for your system settings, or you can create a new customized procedure and change the configuration file so that servers use this new file. However Oracle recommends that you use the **On Exec Start Cmd** in this panel or the `srv.onExecStartCmd` server attribute in the configuration file instead. See srv.onExecStartCmd for more information on using the `srv.onExecStartCmd` attribute.

This value is held as the `srv.execStartup` configuration setting within the server section of the XML-based server configuration file.

11.16.3 On Exec Start Cmd

A DCL command to be executed by the executor process during its start. It must be a valid OpenVMS DCL command and must be valid within the context of the server process created by the GUI, controller or pool server.

If multiple DCL commands are required then they should be placed within a DCL command procedure, which in turn should be made available to the environment under which the controller or pool server runs. Oracle recommends that these command procedures be placed within the `RDB$JDBC_COM` directory and the file protection set to allow the GUI, controller or pool server execute access.

This value is held as the `srv.onExecStartCmd` configuration setting within the server section of the XML-based server configuration file.

11.16.4 Maximum Free Execs

Specifies the maximum number of free (unused) executor processes that may be maintained while the server is running. The default is 0 which means that executor process will not be kept after they have been freed.

This value is held as the `maxFreeExecutors` configuration setting within the server section of the XML-based server configuration file.

11.16.5 Prestarted Execs

Specifies the number of executor process to start up when the Multi-process server starts. The default is 0 which means that no executor processes will be pre-started.

This value is held as the `prestartedExecutors` configuration setting within the server section of the XML-based server configuration file.

11.16.6 Free Exec Timeout

The time, in milliseconds, that an unused executor process can remain idle in the free executor queue before being terminated. A value of zero (0) means unlimited timeout. This feature is only applicable to Multi-process servers.

This value is held as the `srv.execTimeout` configuration setting within the server section of the XML-based server configuration file.

11.16.7 Handshake Wait

The time in milliseconds to wait between server/executor handshake synchronization tries. The default value is 10.

This value is held as the `srv.mpTryWait` configuration setting within the server section of the XML-based server configuration file.

11.16.8 Handshake Tries

The number of times the server should try to synchronize handshake with executor before giving up. The default value is 500;

This value is held as the `srv.mpMaxTries` configuration setting within the server section of the XML-based server configuration file.

11.16.9 Exec Balancing

Specifies the executor balancing to use. Executor balancing specifies the order in which the MP server should select the next candidate from the free executor list.

The default is FIFO(0).

If the pane is in **edit** mode, a drop-down list will be displayed with the valid values that may be used with this field.

Figure 126 -   Exec Balancing

See the section ***Executor Balancing*** within the ***Oracle JDBC for Rdb User Guide*** for more details.

This value is held as the `srv.execBalancing` configuration setting within the server section of the configuration file.

11.16.10 MultiProcess Active Environment

At the bottom of the pane is a set of read-only fields that provide some statistics about the active server's multi-process environment.

This information is only available for active servers that can be connected to by your ORCM session as a control user. If the server is not active, or the control password used to connect to it was incorrect, these fields will be left blank.

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11.16.10.1 Memory Chunks

Specifies the number of chunks of global shared memory the server has in its memory queue. MP Servers will try to consolidate memory chucks to allow better utilization of global memory.

The greater the number of chunks, the more fragmented the global memory is and the more likely that a single request of a large amount of memory may not be able to be serviced. If the number of chunks increase above about 20 it might be advisable to stop and restart the server.

11.16.10.2 Largest Chunk

The size in bytes of the largest contiguous chunk of global shared memory available to the server.

11.16.10.3 Free Memory

The total size in bytes of the all free global shared memory currently available to the server.

11.16.10.4 Max Memory

The size in bytes of the maximum amount of global shared memory made available to the server at server start up. This amount is determined by the server configuration attribute *sharedmem*.

11.16.10.5 Busy Execs

Specifies the number of executor processes currently busy with connected clients.

11.16.10.6 Free Execs

Specifies the number of executor processes currently free and available to be allocated to new client connections.

See also:
   Server Configuration section in the *Oracle JDBC for Rdb User Guide*.

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11.17 JDBC Server – Pool Information

Pool information for a JDBC Pool server.

Figure 127 -   Pool Panel

The pool panel shows the JDBC servers that make up the pool of servers this Pool server will manage.

The pool panel is comprised of the following fields and areas:

- [Keep Alive Time](#)
- [Balancing](#)
- [Pool](#)

11.17.1 Keep Alive Time

The Keep Alive Time is the amount of time in seconds that the pool server will wait before checking that each of its running pooled servers is still viable.

This value is held as the `srv.keepAliveTimer` configuration setting within the server section of the XML-based server configuration file.

11.17.2 Balancing

The balancing attribute specifies how the server should balance the allocation of pooled servers when a client requests a new connection.

If the pane is in ***edit mode***, this field will be a drop-down list of balancing mode choices:

This value is held as the `srv.balance` configuration setting within the server section of the configuration file.

11.17.3 Pool Panel Operations

The pool panel may be displayed in two modes, *display* and *edit*.   By default when server details are being displayed the pool panel is in *display mode* as shown in Figure 36 - Pool Panel above.

In *display mode*, the Pool list containing information about the server pool is displayed. This is a read-only mode.

When the **Edit** button is pressed, the panel will be set to *edit mode* and two regions will be displayed, the Pool list and the Remove list. In *edit mode*, servers may be added to or removed from the Pool list.

11.17.4 Pool List

The Pool list is a list of servers that this Pool server will manage. A server that is managed by a Pool server is called a pooled server.

When the panel is in *edit mode*, new servers may be added to the Pool list using the **Add** button ( ). In *edit mode*, existing pooled servers may also be removed from the Pool list.

Any server in the Pool list will be added to the server configuration information when you press the **Save** button.

11.17.4.1 Remove Server

To remove a pooled server from the pool:

- Drag the identifier from the Pool list to the Remove list or
- Double-click on the identifier within the Pool list or
- Select the identifier within the Pool list by clicking on it and pressing the **Remove** button ( )

11.17.5 Remove List

The Remove list is a list of identifiers built from the available server names found in the ORCM configuration file. Servers in the Remove list will not take part in the Pool.

To add a server to the pool, see the following section, *Add to Pool*.

11.17.6 Add to Pool

An identifier within the Remove list may be added to the Pool list. To add a server:
- Drag the identifier from the Remove list to the Pool list or
- Double-click on the identifier within the Remove list or
- Select the identifier within the Remove list by clicking on it and pressing the **Restore** button ( )

11.17.7 Save

When you save the changes using the **Save** button, changes made to server details will be saved to the configuration file.

In addition servers found in the Pool lists will be added as `<pooledServer …>` entries to the server specification within the configuration file.

11.17.8 Cancel

When the **Cancel** button is pressed any unsaved changes will be undone.

11.17.9 Refresh

When the **Refresh** button is pressed any unsaved changes will be undone and the server will be requested to send current server characteristics to ORCM.

11.17.10 Add Server

To add a new pooled server press the **Add** ( ) button. You will be prompted for the server name.

Figure 130 -   Add server

A drop-down list provides server choices, select one of the available servers from the list.

See also:
Server Configuration section in the *Oracle JDBC for Rdb User Guide*.

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11.18 JDBC Server – SSL Information

SSL information about the JDBC server.

Figure 131 -   SSL Tab

> **Note:**
> This panel is applicable to SSL servers only.

A SSL server is a server-side component that processes requests from the Oracle JDBC for Rdb thin driver using SSL socket connections form improved security.

Additional configuration data is required for SSL servers.

The SSL tab consists of the following fields:

- ssl.context
- ssl.keyManagerFactory
- ssl.keyStoreType
- ssl.keyStore
- ssl.keyStorePassword
- ssl.trustStore
- ssl.trustStorePassword

11.18.1 ssl.context

Indicates the SSL context to use, for example `"TLS"`.
This value is held as the `ssl.context` configuration setting within the server section of the XML-based server configuration file.

11.18.2 ssl.keyManagerFactory

Indicates the key manager factory to use, for example `"SunX509"`.
This value is held as the `ssl.keyManagerFactor` configuration setting within the server section of the XML-based server configuration file.

11.18.3 ssl.keyStoreType

Indicates the type of the key store, for example `"jks"`.
This value is held as the `ssl.keyStoreType` configuration setting within the server section of the XML-based server configuration file.

11.18.4 ssl.keyStore

Indicates the filename of the keystore.
This value is held as the `ssl.keyStore` configuration setting within the server section of the XML-based server configuration file.

11.18.5 ssl.keyStorePassword

Indicates the password for the keystore.
This value is held as the `ssl.keyStorePassword` configuration setting within the server section of the XML-based server configuration file.

Since 7.3.3.0.0
Press the *show* button to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide* button . Press the *hide* button to hide the password again.

11.18.6 ssl.trustStore

Indicates the filename of the trust store.
This value is held as the `ssl.trustStore` configuration setting within the server section of the XML-based server configuration file.

11.18.7 ssl.trustStorePassword

Indicates the password of the trust store.
This value is held as the `ssl.trustStorePassword` configuration setting within the server section of the XML-based server configuration file.

Since 7.3.3.0.0
Press the *show* button to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide* button . Press the *hide* button to hide the password again.

See also:
Server Configuration, Starting a Manager Server, *Starting Servers*, and *Add Remote Manager Server* sections in the *Oracle JDBC for Rdb User Guide*.

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11.19 Create New JDBC Server

Create new JDBC server.

Figure 132 -   Create New JDBC Server dialog

The Create New JDBC Server dialog allows you to configure a new JDBC server.

The server dialog is comprised of a main pane and a number of tabs containing server information:

- Main – the main identifying information for the server.
- Info – describes general information about the server.
- User – describes user information for the server.
- Files/CmdProcs – Describe startup files and commands used by the server.
- Limits – describes limits placed on the server
- Flags – describes flags set for the server.
- Access – describes access information for the server.
- EnabledEvents – describes enabled events information for this server.
- MP – describes access information for a Multi-process server. This is only displayed if the server is one of the Multi-Process types.
- Pool – describes pool information for Pool server. This is only displayed if the server is one of the Pool server types.
- SSL – describes SSL security access information for the server. This is only displayed if the server is one of the SSL server types.

11.20 Main Pane

The main pane consists of the following fields:

- [Name](#)
- [Type Name](#)

11.20.1 Name

An alias for using the JDBC server. This name need not be unique, however the name may be used to lookup server information within the start-up configuration file. The value of this name is not case-sensitive.

11.20.2 Type Name

The type of this server:

- `RdbThinSrv` - standard thin server
- `RdbThinSrvSSL` - thin server using SSL for communication
- `RdbThinSrvMP` - multi-process server
- `RdbThinSrvMPSSL` - multi-process server using SSL
- `RdbThinSrvPool` - pool server
- `RdbThinSrvPoolSSL` - pool server using SSL
- `RdbThinManSrv` - manager server
- `RdbThinManSrvSSL` - manager server using SSL

11.21 Options

The Create New JDBC Server pane has the following button-based options:

Help
Press **Help** to display help information for this window.
Save
Press **Save** to save the information entered for the fields. Once saved, the information about the server will be saved to the configuration file.
Cancel
Press **Cancel** to cancel the operation and close the window.

See also:
[JDBC Server Information](#)

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Chapter 12
Connection Maintenance

In order to connect to SQL/Services, JDBC or RMU servers as a control operator, you must provide ORCM with connection information.

The following types of connections supported by ORCM:

- Database – allowing the connection to an Rdb Database using JDBC,
- SQL/Services Control – allowing the control connection to a running SQL/Services server, and
- JDBC Control – allowing the connection to a running JDBC server to carry out server control operations.
- RMU Statistics - allowing the connection to a running RMU Server and Rdb database using the SQL/Services RMU Dispatcher to monitor database statistics.

All connection types utilize a common Connection Panel that allows you to provide connection information such connection URL and username authorization to use.

The following sections provide information on the:

- Connection Panel – general common connection information,
- Database connections
- SQL/Services Control connections
- JDBC Control connections
- RMU Statistics connections

12.1 Connection Panel

The Connection Maintenance pane allows you to enter information such as the host and port and appropriate username/password that can be used to connected to existing SQL/Services or JDBC servers.

Figure 133 -   *Connection maintenance panel*

The Connection Maintenance panel is comprised of the following components:

Figure 134 -   *Connection maintenance pane components*

• Existing Connection Table - a table of connections already defined in the ORCM configuration file.
• Connection Identification Area - how the connection is uniquely identified and provides common data such as username/password.
• Specific Connection Type Information Area - data fields that will depend on the connection type selected.
• Buttons Area - contains action buttons.

12.2 Creating New Connections

A new connection can be created by entering a unique name for the connection and selecting the connection type.

The connection type is selected by selecting one of the following sub-panels:

• Database
• SQL/Services Control
• JDBC Control

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- [RMU Statistics](#)

A panel is selected by clicking its tab which will display field information pertinent to connection type selected.

You can pre-fill fields by selecting an existing connection from the Existing Connections table on the left of dialog. Information from that connection will be filled in the fields to the right of the table. Change the `Connection Name` field to create a new connection similar to the selected connection.

Once the information has been entered press the **Save** button to save a copy of this connection to the ORCM configuration file.

12.3 Modifying Existing Connection

Select an existing connection from the Existing Connections table on the left of dialog.

Information from that connection will be filled in the fields to the right of the table. Make your changes and press the **Save** button. If you change the connection name a new connection will be created, otherwise the existing connection will be modified.

12.4 Deleting an Existing Connection

To delete an existing connection right click the connection you wish to remove in the Existing Connections table. A popup menu will be displayed allowing you the option to delete the selected connection.

12.5 Options

The Connections Maintenance panel has the following button-based options:

Save
Press **Save** to save the entered data to the ORCM configuration file.
Cancel
Press **Cancel** to leave this dialog without saving the entered data.
Test
Press the **Test** button to test that the connection can be made successfully to the underlying server or database. If it cannot a message will be displayed indicating the problem.
Connect
Press the **Connect** button to make a connection to the server or database.
Clear
Press the **Clear** button to remove existing data from the fields in the Connection Identification and Specific Connection Type Information areas.

12.6 Database Connection

See [Connection Maintenance](#) for general information about using connection dialogs.

Figure 135 -   Database Connect Panel

Before you can access data and make database changes you must first connect to the database.
ORCM uses JDBC connections to attach to Rdb databases.

On the Database Connection dialog, enter values for the fields that display in order to connect to
a particular database using JDBC.

The dialog is split into two main areas, a scrollable table of existing connection definitions and
connection details area where the connection attributes are displayed or entered.

Selecting an existing connection within the connections table will display the connection
attributes for that connection in the detail fields.
A connection can then be made to that database by pressing **Connect**.

To create a connection to a database that is not already configured, enter the appropriate details in
the detail fields. Use **Test** to check that the details are correct.

Pressing **Connect** on a new connection will automatically save this connection information to the
configuration file once the connection has been successfully established.

To save a new connection to the configuration file without carrying out an actual connection
press **Save**.

To change attributes of an existing connection select the connection in the connection table and
modify the fields appropriately. Press either **Connect** or **Save** to replace the configured
connection information. Press **Cancel** to cancel any changes made.

The Database Connection dialog has following fields:
- Connection Name
- Username
- Password
- Save Password

12.6.1 Connection Name

Specify the identifier that uniquely identifies the connection to a database using a particular JDBC server on a particular node. This is useful when connecting to more than one database at a time.

12.6.2 Username

Specify the user name of an account that is authorized to access the database.

12.6.3 Password

Specify the password of an account used in conjunction with the user name that is authorized to access the database.

12.6.3.1 Hide and Show

Since 7.3.3.0.0

ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition *show* button 👁 . Press the *show* button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

When the password text is in the display state the show button will be replaced with the *hide* button 🚫 .

12.6.4 Save Password

Check this if the password should be saved to the configuration file.

12.6.5 Hostname

Specify the name of the local or remote node on which a JDBC server is running and has access to the required database.

12.6.6 Port

Specify the network port that the JDBC server will be listening on. For JDBC, the default port ID is 1701. On a node where there are multiple servers, each connection to a server must use a unique port ID.

12.6.7 Database

The OpenVMS file specification of a database that may be accessed by the JDBC server listening on the node/port specified. Enter a valid database specification or select from the drop-down list.

Click the **Retrieve Databases** button to load the database drop-down list with databases known to the server listening on the **Hostname** and **Port** specified.

Optionally append "`@PASSWORD2=<password>`" to the database specification if the database you wish to connect to requires a second password. For example:

```
MY_DEV:[MY_DIR]MF_PERSONNEL@PASSWORD2=##09E39372AA
```

Oracle recommends that you obfuscate the password text. You may use the Process Passwords option in the ORCM Tools menu to produce an obfuscated password.

Note:
You should use *obfuscate* option in the obfuscation tools rather than the *digest.*

Passwords obfuscated using *digest* or *obfuscate* are not considered by Oracle to be strong encryption; rather they provide a mechanism to obfuscate the value of a password when used in situations where the password may be visible to a casual observer. Oracle recommends that you consider your organization's security policy when storing passwords in your configuration file.

Alternatively you may append an obfuscated password string to the existing **Database** text by right clicking on the **Database** field and choosing the **Set Password**… option from the popup menu.

Figure 136 - Setting password using Popup menu option

Password text you enter will be obfuscated and appended to the end of the existing text in the **Database** field.

See your **Oracle Rdb** documentation for more information on Authorization and secondary passwords.

12.6.8 Database Connection Options

In addition to the standard Connection button-based options, the Database Connection dialog has the following button-based option:

Retrieve Databases

Displays a drop-down list of databases that are known to the specified JDBC server. When used the server is contacted to provide a list of databases that it knows about. This list is derived from the Database section of the XML-based configuration file that was used when the server was started.

Contents

12.7 SQL/Services Control Connection

See Connection Maintenance for general information about using connection dialogs.

Figure 137 -   SQL/Services Connect Panel

To manage a SQL/Services server you must first connect to it. This is called an online management connection. On the Connection attributes window, enter values for the fields that display in order to connect to a particular server.

The Panel is split into two main areas, a scrollable table of existing connection definitions and connection details area where the connection attributes are displayed or entered.

Selecting an existing connection within the connections table will display the connection attributes for that connection in the detail fields.

A connection can then be made to that server by pressing **Connect**.

To create a connection to a server that is not already configured, enter the appropriate details in the detail fields. Use **Test** to check that the details are correct.
Pressing **Connect** on a new connection will automatically save this connection information to the configuration file once the connection has been successfully established.

To save a new connection to the configuration file without carrying out an actual connection press **Save**.

To change attributes of an existing connection select the connection in the connection table and modify the fields appropriately. Press either **Connect** or **Save** to replace the configured connection information. Press **Cancel** to cancel any changes made.

The SQL/Services Connect panel consists of the following fields:
- Connection Name
- Username
- Password
- Hostname
- Port
- RMU Dispatcher Port
- Check Options

12.7.1 Connection Name

Specify the identifier that uniquely identifies the connection to a server on a particular node. This is useful when connecting to more than one server at a time.

12.7.2 Username

Specify the user name of an account that is authorized to manage the server.

To make modifications to a SQL/Services server using ORCM, you must use an account that has been granted use of the SQLSRV_MANAGE system management service for that server; however, you are not required to use an account that has been granted elevated privileges. See the *Oracle SQL/Services Server Configuration Guide* for more details on required privileges.

12.7.3 Password

Specify the password of an account used in conjunction with the user name that is authorized to manage the server.

12.7.3.1 Hide and Show

Since 7.3.3.0.0

ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition *show* button . Press the *show* button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

When the password text is in the display state the show button will be replaced with the *hide* button ⊘ .

12.7.4 Hostname

Specify the name of the local or remote node to which you want to establish a management connection to a server.

12.7.5 Port

Specify the network port that the server's monitor should use for communications with Oracle SQL/Services management clients such as the SQLSRV_MANAGE utility and ORCM. For TCP/IP, the default port ID is 2199. On a node where there are multiple servers, each connection to a server must use a unique port ID.

12.7.6 RMU Dispatcher Port

Specify the network TCP/IP port that the associated SQL/Services RMU Dispatcher is using for communication. SQL/Services default RMU dispatcher is named RMU_DISP and has an associated service called RMU_SERVICE.
The default RMU Dispatcher TCP/IP port ID is 1571.

Note:

Currently, SQL/Services always communicate with the RMU Dispatcher using TCP/IP port ID 1571. This port ID should not be altered.
 SQL/Services may have several RMU Dispatchers configured, which may or may not be currently running, but only one RMU Dispatcher may be running at any one time.

You should ensure that the RMU Dispatcher and associated RMU Service are running before carrying out operations such as viewing SQL/Services log files using the ORCM interface.

12.7.7 Check Options

The SQL/Services Connect panel has the following checkbox-based options:

Save Password
Check this if the password should be saved to the ORCM configuration file.
Autoconnect
Check this if the server should be automatically connected to the next time ORCM is invoked.

12.7.8 SQL/Services Connect Options

The SQL/Services Connect dialog uses the standard Connection button-based options.

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12.8 JDBC Control Connection

See Connection Maintenance for general information about using connection dialogs.

Figure 138 -   JDBC Control Connection

To manage a JDBC server you must first connect to it. This is called an online management connection. On the connection dialog, enter values for the fields that display in order to connect to a particular server.

The connection dialog is split into two main areas, a scrollable table of existing connection definitions and connection details area where the connection attributes are displayed or entered.

Selecting an existing connection within the connections table will display the connection attributes for that connection in the detail fields.

A connection can then be made to that server by pressing **Connect**.

To create a connection to a server that is not already configured, enter the appropriate details in the detail fields. Use **Test** to check that the details are correct.

Pressing **Connect** on a new connection will automatically save this connection information to the configuration file once the connection has been successfully established.

To save a new connection to the configuration file without carrying out an actual connection press **Save**.

To change attributes of an existing connection select the connection in the connection table and modify the fields appropriately. Press either **Connect** or **Save** to replace the configured connection information. Press **Cancel** to cancel any changes made.

The JDBC Control Connection dialog has the following fields:
- Connection Name
- Username
- Password
- Save Password
- Hostname
- Port

12.8.1 Connection Name

Specify the identifier that uniquely identifies the connection to a server on a particular node. This is useful when connecting to more than one server at a time.

12.8.2 Username

Specify the user name of an account that is authorized to manage the server.

12.8.3 Password

Specify the password of an account used in conjunction with the user name that is authorized to manage the server.

12.8.3.1 Hide and Show

Since 7.3.3.0.0

ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition *show* button 👁 . Press the *show* button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

When the password text is in the display state the show button will be replaced with the *hide* button 🚫 .

12.8.4 Save Password

Check this if the password should be saved to the ORCM configuration file.

12.8.5 Hostname

Specify the name of the local or remote node to which you want to establish a management connection to a server.

12.8.6 Port

Specify the network port that the server uses for communications with JDBC thin clients. For JDBC the default port ID is 1701. On a node where there are multiple servers, each connection to a server must use a unique port ID.

12.8.7 JDBC Control Connection Options

The JDBC Control Connection dialog uses the standard Connection button-based options.

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12.9 RMU Statistics Connection

Connect to a running RMU Server and Rdb database using the SQL/Services RMU Dispatcher to monitor database statistics.

See Connection Maintenance for general information about using connection dialogs.

Figure 139 -   RMU Statistics Connection

To use ORCM to monitor Rdb database statistics you must first connect to a running RMU server. ORCM uses SQL/Services RMU Dispatcher to make this connection for you.

On the connection dialog, enter values for the fields that display in order to use a particular RMU server to connect to a specified Rdb database to collect statistics.

The connection dialog is split into two main areas, a scrollable table of existing connection definitions and connection details area where the connection attributes are displayed or entered.

Selecting an existing connection within the connections table will display the connection attributes for that connection in the detail fields.

A connection can then be made to that server by pressing **Connect**.

To create a connection to a RMU Server and database that is not already configured, enter the appropriate details in the detail fields.

ORCM communicates with the RMU server using the SQL/Services RMU Dispatcher and service. The default port used by the RMU Dispatcher is 1571 and should not need to be changed.

The default service used will be "RMU_SERVICE". If the remote system runs multiple RMU services, or the default RMU service is not named "RMU_SERVICE" then you must provide the name of the appropriate service when you specify the database specification.

To specify an alternate service name append the following to the database file specification that you provide:

```
@service=<RMU service name>
```

Use **Test** to check that the details are correct.

Pressing **Connect** on a new connection will automatically save this connection information to the configuration file once the connection has been successfully established.

To save a new connection to the configuration file without carrying out an actual connection press **Save**.

To change attributes of an existing connection select the connection in the connection table and modify the fields appropriately. Press either **Connect** or **Save** to replace the configured connection information. Press **Cancel** to cancel any changes made.

The RMU Statistics Connection dialog has the following fields:

- Connection Name
- Username
- Password
- Save Password

- [Hostname](#)
- [Port](#)
- [Database](#)

12.9.1 Connection Name

Specify the identifier that uniquely identifies the connection to a server and database on a particular node.

12.9.2 Username

Specify the user name of an account that is authorized to access the database.

12.9.3 Password

Specify the password of an account used in conjunction with the user name that is authorized to access the database.

12.9.3.1 Hide and Show

Since 7.3.3.0.0

ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition ***show*** button 👁 . Press the ***show*** button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

When the password text is in the display state the show button will be replaced with the ***hide*** button ⊘ .

12.9.4 Save Password

Check this if the password should be saved to the configuration file.

12.9.5 Hostname

Specify the name of the local or remote node to which you want to establish a connection to.

12.9.6 Port

Specify the network port for communications with the RMU Dispatcher, the default port ID is 1571.

12.9.7 Database

Specify the file specification of the database to monitor. Optionally append "`@service=<RMU service Name>`" if the service you require to use is not the standard RMU Service named "RMU_SERVICE".

For example:
`MY_DEV:[MY_DIR]MF_PERSONNEL@SERVICE=RMU73_SERVICE`

12.9.8 RMU Statistics Connection Options

The RMU Statistics Connection dialog uses the standard Connection button-based options.

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Chapter 13
Utilizing a Manager Server

Before you can use ORCM to start a JDBC server that is on a remote node, that is, a node that is not the same host that the instance of ORCM application is running on, you must have a JDBC manager server running on that remote node.

The manager server can also be used to automatically start servers on its local host and to periodically check to ensure each server is operational. If the manager server finds a failed server it can attempt to restart that server.

Although any JDBC server running on your network may be stopped by ORCM as long as the ORCM has the appropriate server control password for that server in its configuration file, and has network access to that node, the invocation or start of a JDBC server using ORCM is limited to the local node on which the ORCM application is running.

This is because an OpenVMS process has to be started for the server to run within, which is more difficult when the node on which the process is to be started is remote to the invoking application.

Oracle JDBC for Rdb does not use features such as Java RMI to invoke remote events as this may introduce greater security risks on your network. Thus, without any additional components, the controller can only start server processes locally.

In order to provide a controlled mechanism to start remote server processes, Oracle JDBC for Rdb introduced the manager server.

Although the manager server itself needs to be started on the remote node, which is a necessary bootstrapping step, once it is started it can service requests from remote ORCM application to start up new JDBC server instances.

The manager server will only respond to management requests made from application that have connected as control users, that is, the application must know the manager server's control password to connect successfully to it.

A manager server must be started on each remote node you wish to use ORCM to start other JDBC servers on.

To utilize a manager server for remote server start up, the following steps are required:

1. Start an instance of a manager server on the remote node you wish to later start JDBC servers on.
2. Add a manager server entry to the ORCM configuration file.
3. Use ORCM to start the remote JDBC server.

See also:

Starting a Manager Server, *Starting Servers*, and *Add Remote Manager Server* sections in the *Oracle JDBC for Rdb User Guide*.

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Chapter 14
Known Databases

Figure 140 -   Known Database Pane

The Known Database panel contains information about Known Database definition stored in the ORCM configuration file.

A Known Database definition allows you to describe how to connect to a specific database using JDBC. This definition may also be used by JDBC servers to describe a database that may be accessed by that server, and may provide a means to obfuscate the identity of the real database being connected to by the client.

In addition, if the database and the JDBC server associated are available, the Known Database pane allows you to retrieve database information.

The pane is comprised of a number of sub-panels containing related Known Database information:

Main - the main identifying information for this Known Database.
Info - describes general information about the Known Database.

14.1 Main Panel

The Main panel contains the database name, the database file specification and an info tab.

The Main panel consists of the following fields:
- Name
- Filespec

14.1.1 Name

The name of this Known Database.
Specify a unique database name.

14.1.2 Filespec

The file specification for this Known Database.
Specify a valid OpenVMS file specification. Relative file specification and logical names can be used. To access this database using the preferred server, any relative paths or logical names used must be valid within the process environment of the running server.
Relative paths should be relative to the default directory used by the running server.

14.2 Options

The Known Database panel has the following button-based options:
Help
Press **Help** to display help information for this window.
Dump
Press **Dump** to dump database information. ORCM uses RMU/Dump to dump out the database.
This button will function only when access is available to the database using the preferred server.
Info
Press **Info** to display metadata information about the user defined objects in the database. This button will function only when access is available to the database using the preferred server.
See Known Database - Database Info.
System
Press **System** to display metadata information about the system defined objects in the database.
This button will function only when access is available to the database using the preferred server.
Edit
Press **Edit** to place the information pane into *edit mode* allowing the entry and/or modification of known database definition.
Save
Press **Save** to save the information entered for the fields.
Cancel
Press **Cancel** to cancel the operation and close the window.

Note:

To remove a saved Known Database, right-click on the database name in the Known Databases explorer and select the "Remove Known Database" option from the popup menu.

Alternatively, you may remove an existing Known Database by editing the ORCM configuration file to remove the Database entry under the Databases section.

14.3 Known Database - General Information

General information about the Known Database.

Figure 141 -   Known Database Info tab

The info tab consists of the following fields:

- Preferred Server
- Preferred Driver
- Preferred URL Prefix
- Default Username
- Default Password
- Description
- ReadOnly

14.3.1 Preferred Server

Specifies the host and port URL of the server that may be used to connect to this database.

14.3.2 Preferred Driver

The class name of the JDBC driver to use.

14.3.3 Preferred URL Prefix

The prefix to use on the URL for a connection to the preferred server.

14.3.4 Default Username

Default username to use when connecting to this database.

This must be a valid OpenVMS username of an account that has been granted access to the database. The username must have the appropriate privileges and access control authority to extract information from the database system relations.

14.3.5 Default Password

Default password to use when connecting to this database.

Right-click on this field to bring up a popup menu allowing you to Cut/Paste and create obfuscated passwords. Use this option to enter a password, without having the password text being echoed during entry.

You may choose to enter the password in plain text directly into the password field, however when the database information is stored to the configuration file, this password will be automatically obfuscated.

14.3.5.1 Hide and Show

Since 7.3.3.0.0
ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition *show* button . Press the *show* button to display the password entered.

If the password is in obfuscated form, (using either the `digest` or the `obfuscate` functions) the value will be still obfuscated when displayed.

When the password text is in the display state the show button will be replaced with the *hide* button .

14.3.6 RMU Port

The TCP/IP port number to use when accessing this database using the RMU Server via SQL/Services. This TCP/IP port is the port that the RMU Dispatcher is listening on. The default RMU Dispatcher TCP/IP port ID is 1571.

Note:

Currently, SQL/Services always communicates with the RMU Dispatcher using TCP/IP port ID 1571. This port ID should not be altered.

SQL/Services may have several RMU Dispatchers configured, which may or may not be currently running, but only one RMU Dispatcher may be running at any one time.

You should ensure that the RMU Dispatcher and associated RMU Service are running before carrying out operations such as RMU operations using the ORCM interface.

14.3.7 RMU Service

The name of the SQL/Services service to use when accessing this database using SQL/Services. On most installed systems the name of this service will be "RMU_SERVICE".

14.3.8 Description

Description of this database.

14.3.9 ReadOnly

Check this box if you wish to make a read-only connection.

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14.4 New Known Database

Figure 142 -   New Known Database Pane

The New Known Database panel allows you to configure a new Known Database definition to be stored in the ORCM configuration file.

A Known Database definition allows you to describe how to connect to a specific database using JDBC. This definition may also be used by JDBC servers to describe a database that may be accessed by that server, and may provide a means to obfuscate the identity of the real database being connected to by the client.

The panel is comprised of a number of sub-panels containing related Known Database information. Information about these sub-panels may be seen above in the sections Main Panel and Known Database - General Information.

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14.5 Remove Known Database

To remove a saved Known Database, right-click on the database name in the Known Databases explorer and select the "Remove Known Database" option from the popup menu.

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Figure 143 -   *Remove Known Database menu option*

Alternatively, you may remove an existing Known Database by editing the ORCM configuration file to remove the Database entry under the Databases section

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14.6 Known Database - Database Info

When you press the **Info** button on the database panel, if the database does not have a Default Username and Default Password associated with it, or if the provided username/password fails authorization checks, you will be prompted for a valid username and password that may be used to connect to the database to extract metadata information from it:

Figure 144 -   *Password dialog*

You must enter a valid username and password that Rdb will accept for a database connection. The username must have the appropriate privileges and access control authority to extract information from the database system relations.

Since 7.3.3.0.0

Press the **show** button to display the password entered.
When the password text is in the display state the show button will be replaced with the **hide** button.

Press **Cancel** if you no longer wish to proceed.

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When ORCM successfully connects to the database, it will attempt to retrieve information about the user defined tables and views it finds in the database. As this may require a number of SQL queries being processed including some BLOB retrievals, this operation may take some minutes to complete. While ORCM is working on the retrieval of the metadata a busy message will be displayed showing the progress of the operation.

Once complete, a list of tables and views will be displayed in the database explorer area and a tab panel for each table and view will be created.

Figure 145 -   Results of the metadata retrieval

You may select a table or view by either clicking on the name in the database explorer or by selecting the appropriate tab in the main display area.

14.7 Tabbed subpanel Navigation

Figure 146 -   Tabbed subpanel navigation

Use the tabs in the main display area to view the table or view you are interested in.

Depending on the number of tables or views, it is possible that there may be too many tabs to display on the current screen. If this is the case, the left and right arrow buttons at the end of the tab bar may be used to scroll across to see hidden tabs.

14.8 Table/View Information sub-panels

Figure 147 -   Table subpanel

The table/view panel consists of the following fields:
- Remarks

In addition a set of one or more subpanels will be displayed:
- Columns
- Indices
- Triggers
- Table Constraints
- Referencing Table Constraints
- Referencing Other Constraints
- View Source

14.8.1 Remarks

Any comments held in the database for this table/view.

14.8.2 Columns

A table displaying the columns defined for the table/view:

Figure 148 -   Columns subpanel

14.8.3 Indices

A set of one or more sub-panels will be displayed describing each index found for that table:

Figure 149 -   Indices subpanel

Each sub-panel will display:

Attributes - A set of attributes for this index, such as type, for example , HASHED or SORTED RANKED, and if this is a unique index.

Columns - A table showing the columns that make up this index.

14.8.4 Triggers

A set of one or more sub-panels will be displayed describing each trigger found for that table:

Figure 150 -   Triggers subpanel

Each sub-panel will display:

Source - The source the trigger was generated from.

14.8.5 Table Constraints

A set of one or more sub-panels will be displayed describing each table constraint:

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Figure 151 -   Table Constraints subpanel

Each sub-panel will display:

Constraint Type - The type of constraint.
Evaluate - The constraint evaluation time.
Source - The source the constraint was generated from.

14.8.6 Referencing Table Constraints

A set of one or more sub-panels will be displayed describing each table constraint that references this table:

Figure 152 -   Referencing Table Constraints subpanel

Each sub-panel will display:
Constraint Type - The type of constraint.
Evaluate - The constraint evaluation time.
Source - The source the constraint was generated from.

14.8.7 Referencing Other Constraints

A set of one or more sub-panels will be displayed describing each constraint that is not a table constraint that references this table:

Figure 153 -   *Referencing Other Constraints subpanel*

Each sub-panel will display:

Constraint Type - The type of constraint.
Evaluate - The constraint evaluation time.
Source - The source the constraint was generated from.

14.8.8 View Source

The source used to generate the view:

Figure 154 -   *View Source subpanel*

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14.9 Known database - Database System Info

Displays some system level metadata information from the database.

When you press the System Info button on the database panel, if the database does not have a Default Username and Default Password associated with it, or if the provided username/passwords fails authorization checks, you will be prompted for an appropriate username and password that may be used to connect to the database to extract metadata information from it:

You must enter a valid username and password that Rdb will accept for a database connection. The username must have the appropriate privileges and access control authority to extract information from the database system relations.

Since 7.3.3.0.0

Press the ***show*** button 👁 to display the password entered.
When the password text is in the display state the show button will be replaced with the ***hide*** button 🚫.

Press **Cancel** if you no longer wish to proceed.

If you have never applied the *INFO_TABLES.SQL* script to the database (a script file copied to your system when Rdb was installed), some of the information tables that ORCM requires to use to get system data from the database may not exist. If this is the case, some of the database system information will not be available for display. If ORCM finds that the information tables are missing the following message will be displayed:

When ORCM successfully connects to the database, it will attempt to retrieve information about the system level tables and views it finds in the database. As this may require a number of SQL queries being processed including some BLOB retrievals, this operation may take some minutes to complete.

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While ORCM is working on the retrieval of the metadata a busy message will be displayed showing the progress of the operation.

Once complete, a list of tables and views will be displayed in the database explorer area and a tab panel for each table and view will be created.

Figure 157 -   Results of the metadata retrieval

You may select a table or view by either clicking on the name in the database explorer or by selecting the appropriate tab in the main display area.

14.10 Tabbed subpanel Navigation

Figure 158 -   Tabbed subpanel navigation

Use the tabs in the main display area to view the system table or view you are interested in.

Depending on the number of system tables or views, it is possible that there may be too many tabs to display on the current screen. If this is the case, the left and right arrow buttons at the end of the tab bar may be used to scroll across to see hidden tabs.

14.11 Table/View Information sub-panels

Figure 159 -   Table subpanel

The table/view panel consists of the following fields:
- Remarks

In addition a set of one or more subpanels will be displayed:
- Columns
- Indices

14.11.1 Remarks

Any comments held in the database for this system table/view.

14.11.2 Columns

A table displaying the columns defined for the system table/view:

Figure 160 -   Columns subpanel

14.11.3 Indices

A set of one or more sub-panels will be displayed describing each index found for that system table:

Figure 161 -   Indices subpanel

Each sub-panel will display:

Attributes - A set of attributes for this index, such as type, for example, HASHED or SORTED RANKED, and if this is a unique index.

Columns - A table showing the columns that make up this index.

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Chapter 15
Event Triggers

Figure 162 - Event Trigger Pane

The Event Trigger pane allows you to display Event Trigger definition to be stored in the **Events** section of the ORCM configuration file.

Event Trigger definitions allow you to describe what events may be watched for by JDBC Servers. This definition may be used by JDBC servers to determine when to notify that a particular event has occurred. The event trigger will raise an Event that will be notified to any event listeners currently watching for JDBC events.

15.1 Event Trigger Pane

The pane consists of the following fields:

- Name
- Type
- Watch
- Test For
- Pattern
- Threshold

- [Deviation](#)
- [Message](#)
- [Suppressed](#)

15.1.1 Name

The name of this event trigger.
Specify a unique event trigger name.

15.1.2 Type

The type of this event trigger.
Specify the type or category of event. You may enter a valid type value or select from the drop-down list associated with this field. Events fall into the following categories or types:
- **DENIAL** - triggered when an operation is denied by the server.
- **EXCEPTION** - triggered when an exception is raised by the server or the underlying database system.
- **THRESHOLD** - triggered when some threshold has been reached or about to be reached.
- **EVENT** - general purpose event notification.

15.1.3 Watch

The operation or condition to watch for.
Specify the operation to monitor. You may enter a valid watch value or select from the drop-down list associated with this field:
- **USER** - will be triggered when the server raises a denied user exception when the user attempting to use the server is not found in the server's `allowedUser` list.
- **DB** - will be triggered when the server raises a denied database exception when the user attempts to connect to a database that is not found in the server's `allowedDB` list.
- **IP** - will be triggered when the server raises a denied IP exception when the user attempts to connect to a database from an IP that is not found in the server's allowed IP list.
- **AUTH** - will be triggered if the username/password provided is refused by the underlying database system.
- **SQL** - will be triggered if an attempt to use a SQL statement that is either not in the `restrictSQL` list of the server or is found to match the `deny SQL` attribute of the server configuration.

If no `WATCH` attribute is provided then the event will be triggered on the occurrence of any of the denial events listed above.

15.1.4 Test For

What this event trigger should test for.

You may enter a valid watch value or select from the drop-down list associated with this field:

Table 3 - Test For Values

testFor	Alternatives	Trigger when watch is
EQL	=, ==, EQUAL	Equal to threshold.
NEQ	!=, <>, NOT EQUAL	Not Equal to threshold.
LSS	<, LESS	Less than threshold.
GTR	>, GREATER	Greater than threshold.
LEQ	<=, LESS OR EQUAL	Less than or equal to threshold.
GEQ	>=, GREATER OR EQUAL	Greater than or equal to threshold.
WITHIN		Within the deviation of threshold.
NOT WITHIN		Not within the deviation of threshold.

15.1.5 Pattern

The pattern that should be matched. The pattern value should be in the form of a Java regular expression.

Currently, patterns are only used in conjunction with Events that have the type **Exception**.

The pattern is used to filter the exceptions to only those that match the given regular expression pattern.

15.1.6 Threshold

The threshold of this event trigger.
This attribute is used in conjunction with Events that have the type **Threshold**.
The `value` can be an integer value or may be the literal **Min** or may start with the text literal **Max**.

If a text literal with the value **Min** or starting with **Max** is used then the threshold value is predetermined by the server attribute that is appropriate. Check the ***Threshold Event Threshold Attribute*** section of the ***Oracle JDBC for Rdb User Guide*** for more information on the use of the threshold value.

15.1.7 Deviation

Specify the deviation criteria allowed. This attribute is only valid for *threshold* events.

15.1.8 Message

The message to use with this event trigger.
Specify a customized message to display in the event log when this event occurs. This attribute is valid for all event types

15.1.9 Suppressed

A checkbox indicating if this event should be suppressed.
If true, this event will not be triggered even if it occurs.

Events may be defined in the configuration file, but may be suppressed at any particular time by setting the suppressed attribute to true.

15.2 Options

The event trigger pane has the following button-based options:

Help
  Press **Help** to display help information for this window.
Edit
  Press **Edit** to place the information pane into *edit mode* allowing the entry and/or modification of event trigger characteristics.
Save
  Press **Save** to save the information entered for the fields.
Cancel
  Press **Cancel** to cancel the operation and close the window; changes will not be saved.

Note:

To remove a saved event trigger, right-click on the event trigger name in the Event Triggers explorer and select the **Remove Event Trigger** option from the popup menu.

Alternatively, you may remove an existing event trigger by editing the ORCM configuration file to remove the Event entry within the Events section.

See also:
  Event Logging and Notification and *Server Configuration* sections of the *Oracle JDBC for Rdb User Guide.*

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15.3 New Event Trigger

Figure 163 -   New Event Trigger Pane

The New Event Trigger pane allows you to configure a new Event Trigger definition to be stored in the **Events** section of the ORCM configuration file.

Event Trigger definitions allow you to describe what events may be watched for by JDBC Servers. This definition may be used by JDBC servers to determine when to notify that a particular event has occurred. The event trigger will raise an Event that will be notified to any event listeners currently watching for JDBC events.

On this pane enter values for the attributes of a new event trigger. You must enter a unique name for this event trigger.

The pane consists of the same fields show above, under the section Event Trigger Pane.

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15.4 Remove Event Trigger

To remove a saved event trigger, right-click on the event trigger name in the Event Triggers explorer and select the **Remove Event Trigger** option from the popup menu.

Figure 164 -   Remove Event Trigger menu option

Alternatively, you may remove an existing event trigger by editing the ORCM configuration file to remove the **Event** entry within the **Events** section.

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Chapter 16
External Tools

16.1 External Tools Overview

ORCM allows you to invoke external tools from the ORCM user interface. External tools are applications, command procedures or commands that may be used to carry out operations associated with JDBC, SQL/Services, your Rdb database or your operating system.

Although ORCM does provide some internal tools to carry out certain operations, and some example external tools to show how external tools may be created and invoked, it is up to you to provide the tools you require and to enable them to be invoked from the ORCM interface.

Note:

Examples of some external tools may be seen in the `orcm_demo_tools.xml` configuration file found under the <u>ORCM examples directory</u> .

The following sections will show you how to declare external tools for use within ORCM, how to handle any information passed back from the external tool and as how to invoke the tool once defined.

16.2 Declaring an External tool

An external tool is declared using the **Add External Tool** menu option within the ORCM Tool menu, or alternatively, using the **File/New** ORCM Menu option:

Figure 165 - Add External Tool   *Figure 166 -*   *File/New External Tool*

Once invoked the <u>External Tool panel</u> will be displayed.

16.3 Invoking External tools

External tools, once declared, may be invoked from the ORCM **Tools** menu. External tools can be found at the bottom of the ORCM Tools menu tree. The structure of the menu tree for the external tools is under your control and will vary. The following is an example of what the External tools section of the **Tools** menu may look like:

Figure 167 -   *Invoking External tools*

Select the menu option associated with the declared external tool to invoke it. Depending on the tool other windows may be displayed to show the results of the tool invocation:

Figure 168 -   *Example command panel*

If the tool output was declared as a "Recorded Event" the results of the tool invocation may be displayed using the recorded events display options within the ORCM Tools menu tree:

Figure 169 -   Recorded Events display menu options

The Display recorded events options will display the designated events in a Timeline display. See Timeline Display for more details.

16.4 Tool Event Triggers

When you define an external tool you can also define and associate an Event Trigger with the tool execution. A tool Event Trigger is used to integrate the response from the external tool into the standard ORCM event handling subsystem, allowing functions such as timeline and logging capability.

A tool **Event Trigger** is defined using the normal Event Trigger creation methods either by invoking the **Event trigger** menu option under **File/New** on the ORCM main menu:

Figure 170 -   New Event Trigger menu options

Or by selecting **New Event Trigger**… option in the Event Triggers explorer pop-up menu:

Figure 171 -   *New Event Trigger in the Event Trigger explorer*

A tool Event Trigger is declared by entering the appropriate information into the standard Event Trigger panel and setting the trigger type to EVENT:

Figure 172 -   *Event Trigger Panel*

16.5 Quick Plots

Since 7.3.3.0.0

External tools that display numeric data may allow the display of dynamic Quick Plots of that data.

A dynamic Quick Plot is a small graphical display of the data values as they change over time.

Quick Plots are enabled or disabled for each individual tool by using the **Quick Plot** check box for that tool.

If Quick Plot is enabled for the tool, the user may invoke a plot of the data by highlighting the numeric data to plot within the tool output display and using right-click to display a menu.

Figure 173 -   Event Trigger Panel

Figure 174 -   Quick Plot

If the highlighted value is determined by ORCM to be valid numeric data the **Plot** menu option will be enabled. By selecting this option a separate dynamic plot window will display showing the change of this data over time.

As the plot is dynamic, this feature is only really useful if the tool has continuous output.

16.6 External Tool Panel

The External Tool Panel shows information about an external tool declared within the ORCM environment.

Figure 175 -   External Tool Panel

The panel contains the following fields:

- Name
- Facility

Details of these fields may be found in the following sections.

The rest of the external tool information is contained in the following subpanels:
    Info – main tool characteristics
    Info2 – flags and other tool information

An external tool may also have parameters that can be prompted for and passed to the underlying command or command procedure when executed. See Parameters.

16.6.1 Name

The unique name for this tool. This field must not be blank.

16.6.2 Facility

The facility associated with this tool. Three standard facilities are pre-declared by ORCM, "DCL", "RMU" and "EXT:". Within the ORCM tools menu, external tools will be grouped within their associated **Facility**, each facility having its own sub-menu within the ORCM tools menu:

Figure 176 -   Example of facility submenus

You may choose to designate other facilities for your own use. In the example above the facility "OTHER" has been used for at least one declared external tool.

A special facility group having the prefix of "EXT:" is also recognized by ORCM. This facility provides a mechanism for you to execute your own external tool plugins. See External Tool Plugins for more information.

16.6.3 Options

The buttons area contains the dialog action buttons:

Help
  Press **Help** to invoke help for external tools.
Test

Press **Test** to test that the tool can be invoked successfully. If it cannot be invoked successfully, a message will be displayed indicating the problem.

AddParam

Press **AddParam** to create a new parameter.

RemParam

Press **RemParam** to remove the currently displayed parameter from the tool definition.

Save

Press **Save** to save the entered data to the ORCM configuration file.

Cancel

Press **Cancel** to leave this dialog without saving the entered data.

16.7 Info Subpanel

The Info subpanel contains information associated with this external tool.

Figure 177 -   External Tool Info subpanel

The panel contains the following fields:

- Default username
- Default password
- Connection name
- Server
- Description
- Command Text

16.7.1 Default username

The default username to use if one is required by the underlying subsystems invoked by the tool.

16.7.2 Default password

The default password to use if one is required.

Right-click on this field to bring up a menu allowing you to enter the password in its obfuscated form. Oracle recommends for security to use obfuscated passwords. If selected, the password will be stored in the configuration file in its obfuscated form.

Since 7.3.3.0.0

Press the *show* button 👁 to display the password entered. When the password text is in the display state the show button will be replaced with the *hide* button 🚫 .

16.7.3 Connection name

The name of the existing connection to use to carry out remote access.
This is the name of a known connection found in the ORCM configuration file. The connection information for this named connection will be used to connect to the remote JDBC server or SQL/Services server.

If both the Server and the Connection name attributes are blank, ORCM will prompt for a server to connect to when the tool is executed.

16.7.4 Server

The server to use to carry out remote access.
This should be the unique name of a known JDBC server or SQL/Services server.

A unique known JDBC server name is comprised of two parts, the node on which the server is running and the name of the server, for example, "`devel.myorg.com:srv1`". This name will be used to lookup known JDBC servers to obtain the connection information required.

A unique known SQL/Services server name is the name of the stored [SQL/Services control connection](#) defined to access that server.

A special value of "**local**" may be used to designate that the tool is to run in the local machine environment, i.e. the machine that the ORCM GUI is currently running on.

Since 7.3.3.0.0.

Alternatively, the special value of "**hook**" may be used to designate that the tool will be running an external application that will handle its own output. No ORCM output panel will be displayed when the tool is invoked.

If both the *Server* and the *Connection name* attributes are blank, ORCM will prompt for a server to connect to when the tool is executed.

16.7.5 Description

A description of the tool's function and other details.

16.7.6 Command Text

The command to invoke when the tool is executed. If the command is blank, ORCM will prompt for the command text when the tool is executed.

Note:

Oracle recommends to always include explicit command text for execution by your tool to reduce the chance of improper command execution due to user input error or by malicious intent.

If your tool does not require command text you should still provide some text here to prevent ORCM from prompting for the command text.

This may be a multi-line command. If lines ends with the OpenVMS DCL continuation character ("-") the command text will be sent as multi-line text, i.e. a new-line will be inserted after each line of the buffer when transmitted to the remote server.

If DCL continuation characters are not used the text will be reformatted to remove new-line characters prior to transmission to the remote server.

Prior to sending the command, ORCM will also replace any symbolic references in the command with matched values if found. Symbolic references in the text have the format:
$\{<name>\}$

For Example:
- ${USERNAME} –will be replaced with the value found in the **Default username** field.
- ${PASSWORD} –will be replaced with the value found in the **Default password** field.

See Command Preprocessing for information.

Note:

As the symbolic replacements are done prior to sending the command text, and as ORCM has no control over the use of the command by the potential consumer, any password values contained in the command text will be transmitted in plain-text format.

16.8 Info2 Subpanel

The Info2 subpanel contains flags and other information associated with this external tool.

The panel contains the following fields:

- Disabled checkbox
- Continuous checkbox
- Load Parameters checkbox
- Show Command checkbox
- Remote Edit checkbox
- Mark Preamble checkbox
- Docked checkbox
- Modal checkbox
- Hook checkbox
- Quick Plot checkbox
- Event trigger
- Tool group
- Bind Timeout
- Idle Timeout
- Repeat Delay
- Execute Label
- Repeat Marker

16.8.1 Disabled

If checked the tool will be disabled. A disabled tool will still display in the tools menu but the option will be disabled.

16.8.2 Continuous

If checked the output of the tool will be streamed. See Continuous Output for more details.

16.8.3 Load Parameters

If checked the tool may prompt for additional parameter information when invoked. See Parameters for more details.

16.8.4 Show Command

If checked the first line of the command text will be displayed on the tool execution panel when the tool is invoked.

16.8.5 Remote Edit

If checked the tool will allow remote file edit when invoked. If not checked remote files may be displayed but not edited.

16.8.6 Mark Preamble

If checked ORCM will mark the point in the tool output that designates the end of "preamble" in the output text.

When a tool is executed all output from the tool execution is captured by ORCM, including any process startup diagnostic output displayed prior to the actual tool execution. This "preamble" information is generally not required to be displayed in the tool results.

ORCM determines the end of any preamble output by locating the last occurrence of the ORCM preamble marker (the string "<<>>") in the output. If this string does not occur, then no preamble is recognized and the entire tool execution output will be returned as the tool results.

You may choose to write your tool to send this preamble marker at any point of the execution to preclude any preamble output you do not wish to have in the tool results.

Alternative you can ask ORCM to automatically add the preamble marker to the tool output just prior to the actual tool execution, by checking the Mark Preamble check box.

16.8.7 Docked

If checked the tool will dock the tool execution panel in the ORCM main display area. If not checked a separate window will be used to display the tool execution panel when it is executed.

16.8.8 Modal

Since 7.3.3.0.0
If checked the tool is considered modal. This means that the tool will execute synchronously waiting for the expected output. If unchecked the tool will execute asynchronously.

16.8.9 Hook

If checked the tool is considered to be a hook only. This means that the tool will not expect output from the tool execution. If the tool has no parameters no execution panel will be displayed.

This is useful if the tool will invoke a third-party application that displays its own output frame.

16.8.10 Quick Plot

If checked the tool will allow Quick Plots on numeric content. See Quick Plots for more details.

16.8.11 Event Trigger

A drop-down list of Event triggers. Select the event trigger to invoke when tool output is received.

16.8.12 Tool group

The group to place tool within. This will change where the tool is displayed within the External Tools submenu. The group will be used as a submenu name within the facility submenu you have chosen.

For example, below we have two tools both declared within the "DCL" **Facility**, the tool named "Show Cluster Users" has a blank **Group**, whereas the tool "TEST RECORD EVENTS" is declared with the **Tool group** named "dbTools":

Figure 179 -   Example of using Tool Group

16.8.13 Bind Timeout

The amount of time (in seconds) the tool will wait on binding to a resource used by the tool. The use of this value depends on the individual tool. Tools may choose to ignore this value. The default value of zero (0) indicates that the tool may wait indefinitely.

16.8.14 Idle Timeout

The amount of time (in seconds) an executed tool may remain idle and connected to the remote server before the connection will be automatically disconnected. The default value of zero (0) indicates that the tool may remain connected indefinitely.

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16.8.15 Repeat Delay

The amount of time (in seconds) to wait before repeating the execution of the tool. The default value of zero (0) indicates that the tool should only be executed once per invocation.

If this attribute has a non-zero value the ORCM will continually re-execute the tool after the prescribed delay time. This will continue until the tool execution panel **Cancel** or **Exit** button is pressed or if the tool is displaying in a separate window, when this window is closed.

16.8.16 Execute Label

Since 7.3.3.0.0

The label to use on the standard **Execute** button for this tools execution panel.

16.8.17 Repeat Marker

Since 7.3.3.0.0

A sequence of textual characters used to mark the repeat of output from the tool execution. This is used to allow continuous tool output to overlay existing output in the tool output area, instead of appending to this area.

16.9 Parameters

An external tool may also have parameters that can be prompted for and passed to the underlying command or command procedure when executed.

Note:

The tool attribute *loadParameters* must be set to "true" in order for ORCM to prompt for parameter values on tool execution.

16.9.1 Parameter Subpanel

Each parameter declared for a tool is displayed as a separate tab pane on the external tool panel.

Figure 180 -   Parameter Subpanel

The Parameter subpanel is comprised of the following fields:
- Name
- Index
- Description
- Format
- Choices
- Value

16.9.2 Name

The unique name for this parameter. This field must not be blank. This name will be used to create a global symbol containing the value that should be used during symbol substitution as described in the ***Command*** field above. The value passed for this symbol will be determined by the combination of **format**, **choices** and **value** fields as described below.

16.9.3 Index

The index of this parameter. If used in conjunction with a DCL command or command procedure this index specifies the argument position of the parameter within the DCL input line. The index is 1 based. For example, the index 1 refers to the first argument position. In a DCL command procedure this would be associated with the symbol 'P1'. The value must be greater than 0 and must not match the index value of any other parameter for this tool.

16.9.4 Description

The description of this parameter. This value may optionally comprise of two string values separated by the characters ":-". During parameter prompting, the left-hand value will be used as a field name or prompt. The right-hand value will be used as a tool tip for that field seen when the cursor hovers over the field. If the ":-" separator is not present the parameter name will be used for the field prompt and the description will be used for the field tool tip.

16.9.5 Format

A format specifier. The following format specifiers are recognized:

Table 4 - Format Specifiers

Format	Description	Prompt validation
`varchar(x)` or `char(x)`	Indicates a text value	Any textual data may be entered
`integer` or `number`	Indicates a numeric value	Only numeric data can be entered
`date` or `date vms`	Indicated a date value	Only valid dates may be entered. A date may be selected from a calendar popup
`boolean`	Indicates a Boolean value	A check box will be used when input for the parameter is prompted for. Check the check box to indicate '**true'**, otherwise it will be considered '**false'**
`noshowpassword`	Indicates a password value	Since 7.3.3.0.0 When prompted for a value, the field will not echo the value entered. If the value is an *Obfuscated* password, the password value will be converted to plain text prior to be sent to the command for execution. User will not be able to SHOW password text on input.
`password`	Indicates a password value	When prompted for a value, the field will not echo the value entered. If the value is an *Obfuscated* password, the password value will be converted to plain text prior to be sent to the command for execution. Since 7.3.3.0.0

		User will be able to SHOW/HIDE password text on input. ORCM will hide all password text irrespective of whether it is in plain text or obfuscated form, however *Password* fields on ORCM panels provide an addition **show** button . Press the **show** button to display the password entered. When the password text is in the display state the show button will be replaced with the **hide** button .
/xxxxx	Indicates a DCL switch	See the section ***DCL Switches*** below for information on using this format specifier.
dispatcher.`<attr>`	Indicates an attribute of the currently selected SQL/Services dispatcher	Used in conjunction with **SQS DISPATCHERS** choice format. See Known Objects for more details.
service.`<attr>`	Indicates an attribute of the currently selected SQL/Services service	Used in conjunction with **SQS SERVICES** choice format. See Known Objects for more details.

If the **format** specifier is blank a text value is assumed.

16.9.6 Choices

Valid choices for data entered in this parameter. The following choice formats are available:

Table 5 - Choice Values

Format	Description	Prompt validation
true|none *or* none|true	Indicates a truth value	A check box will be used for prompting the value. If the box is checked the parameter value will be set to the string value "**true**". If not selected the parameter value will be **null**.

		The choice order determines the initial setting of the parameter. The first choice will be used by default.
true|false *or* false|true	Indicates a truth value	A check box will be used for prompting the value. If the box is checked the parameter value will be set to the string value "**true**". If no selected the parameter value will be set to the string value "**false**". The choice order determines the initial setting of the parameter. The first choice will be used by default.
val1 | val2 …	Indicates multiple choices that may be selected	When prompted for a value, a pull down menu will display listing the valid choices that may be selected. If you wish to make the parameter optional, start the ***choices*** text with the separator character "|". A blank option will be added to the choice display and if selected the value returned by the parameter will be **null**.
database *or* databases *or* known database *or* known databases	Indicates a known database	When prompted for a value, a pull down menu will display listing the valid known databases that may be selected from. The full database file specification of the known database selected will be passed to the command for execution.
SQS Server *or* SQS Servers	Indicates a known SQL/Services Server	When prompted for a value, a pull down menu will display listing the valid known SQL/Services servers that may be selected from. See <u>Known Objects</u>.
Service *or* Services *or* SQS Service *or* SQS Services	Indicates a known SQL/Services Service	When prompted for a value, a pull down menu will display listing the valid known SQL/Services services that may be selected from. See <u>Known Objects</u>.

Dispatcher *or* Dispatchers *or* SQS Dispatcher *or* SQS Dispatchers	Indicates a known SQL/Services Dispatcher	When prompted for a value, a pull down menu will display listing the valid known SQL/Services dispatchers that may be selected from. See Known Objects.
JDBC Server *or* JDBC Servers	Indicates a known and active JDBC Server	When prompted for a value, a pull down menu will display listing the valid known and active JDBC server that may be selected from. See Known Objects.
Server *or* Servers	Indicates either a known SQL/Services server or active JDBC server	When prompted for a value, a pull down menu will display listing the valid known SQL/Services servers and the active JDBC servers that may be selected from. See Known Objects.

16.9.7 Value

The value of the parameter. The value is used to provide an argument or switch value to the underlying executing command.

16.10 DCL Switches

The **format** specifier for a parameter may take the form of a DCL switch which may have an optional value appended or may be negated. The general form of this specifier is:

```
/switch[=]
```

The **format** is used in conjunction with the **choices** and **value** fields to create an appropriate DCL switch value that will be passed to the executed command.

If the format is terminated with an equals character **"="** the switch will be created using the combination of the **forma**t and the **value**. The following table describes how the combinations of **format**, **choices** and **value** may be used to create a switch:

Table 6 - Switch Format Combinations

Format	Choices	Description
/switch	true|false	The parameter is considered to be a Boolean. If the choice checkbox selected (i.e. *true*) the value seen by the command will be "**/switch**", otherwise the the negated form will be used i.e. "**/noswitch**". This is useful when the switch may be found

		on the command line in either its true or negated form. For example:
		
		   $dir**/head**
		
		   $dir**/nohead**

/switch	true|none	The parameter is considered to be a Boolean. If the choice checkbox is selected (i.e. ***true***) the value seen by the command will be "**/switch**", otherwise the switch will not be used. This is useful when the switch may be found on the command line in only its true form. For example:
		
		Both the following are valid:
		
		$ rmu/analyze**/index**
		
		$ rmu/analyze
		
		whereas
		
		  $ rmu/analyze**/noindex**
		
		is not valid syntax

/switch=		The value will be appended to the switch prior to sending to the command for execution:
		
		  format = "/date=" and **Value** = "mod"
		
		will send
		
		   "/date=mod"

/switch=	true|false	The parameter is considered to be a Boolean. The truth value will be appended to the switch prior to sending to the command for execution:
		
		  Format = "/create=" and
		  choice checkbox checked
		
		will send
		
		  "/create=true"
		
		  Format = "/create=" and
		  choice checkbox NOT checked

		will send
		"/create=false"

16.11 Known Objects

The parameter **choice** field allows the use of special lists called Known Objects. These include KNOWN DATABASES, SQS SERVERS, SQS DISPATCHERS, SQS SERVICES, JDBC SERVERS, SERVERS and FILES.

These **choice** options may be used to provide a drop-down list of available objects of the type specified, for example the JDBC SERVERS choice option will create a drop-down list of known active JDBC servers that may be chosen.

The parameter **format** field may contain reference to certain attributes of these Known Objects. Used in conjunction with a **choice** Known Object, these attribute references may be used to extract out specific attributes of the currently selected object from the **choice** list.

For example, consider the parameter name "LOG" where

> **choice** = "Dispatchers" and   **format** = "dispatcher.logfile"

info	Param ini	Param owner	**Param log**
Name	log		
Index	-1		
Description	Dispatcher :- Dispatcher name		
Format	dispatcher.logfile		
Choices	DISPATCHERS		
Value	CLYPPR_SQS : SQLSRV_DISP		

Figure 181 -   Parameter Format attributes

When executed, this will allow the user to select from list of dispatchers and to then extract the log file specification from the currently selected dispatcher and place it in global symbol available as symbolic reference:

```
${log}
```

If you wish to retrieve the value of the parameter prior to formatting (for example, in the scenario above, you may wish to also retrieve the full name of the SQL/Services dispatcher selected) you can use the special ".raw" attribute modifier in the symbolic reference:

```
${log.raw}
```

The following attributes may be selected:

Table 7 - Global Symbol Attributes

Format	Choices	Description
sqsserver.config	SQSSERVERS	SQL/Services server Configuration file specification.
sqsserver.logfile	SQSSERVERS	SQL/Services server Log file specification.
dispatcher.logfile	DISPATCHERS	Dispatcher Log file specification.
dispatcher.dumpfile	DISPATCHERS	Dispatcher Dump file specification.
service.owner	SERVICES	Service owner username.
service.sqlversion	SERVICES	SQL version.
service.user	SERVICES	Default username.
service.database	SERVICES	Database specification.
service.sqlinit	SERVICES	SQL initialization file.
service.runningexecutors	SERVICES	Number of executors current running.

16.12 DCL External Tools

A DCL External tool is one that has the facility specified as "DCL". To ensure the correct handling of DCL commands on the OpenVMS platform ORCM will carry out special preconditioning of commands for tools marked as belonging to the DCL facility. See DCL Command Window for more information on the command preconditioning provided.

16.13 SQL External Tools

A SQL External tool is one that has the facility specified as "SQL". These tools may be used to execute commands on an OpenVMS server by invoking the Oracle Rdb Interactive SQL interface and executing the command lines provided. See SQL Command Window for more information on the command preconditioning provided.

16.14 Automatic Parameter Generation

ORCM has the ability to build external tool parameter from the contents of a command procedure or SQL script that is to be executed. If the tool command starts with an ampersand "@" followed by a valid OpenVMS file specification, ORCM can retrieve the contents of the script or command procedure file and build parameters from the initial comments found in the file.

The following comment prefixes are accepted:

DCL   "$!"
SQL   "--"

ORCM will scan the start of the file for comment lines, and will continue scanning until the first line found that does not start with the comment prefix. It will search for specific words in these comment lines and if found will expect that the rest of that line contains information related to that keyword.

By default, parameter information is parsed as a comma-separated list, which implies that you cannot use the comma character inside any of the parameter components.

Alternatively you may change the parameter information separator to a string value of your own choosing instead of the default comma character ",". See Alternate Separator for more information.

Keywords are expected to be the first non-whitespace characters after the comment prefix.

Keywords end with a colon character ":" and are not case sensitive.

Table 8 - Script Keywords

Keyword	Line Format	Description
DESCRIPTION:	<tool description>	The line must start with comment characters. The remaining characters after the key word and subsequent comment lines will be used as the description of the tool. The parsing of the description will complete when either the next line does not start with a comment prefix or the keyword **Parameters:** is found.

PARAMETERS:	P<param num>,<param descr>,<format> [,<choices>[,<def value>]]	Indicates that the text following describes individual parameters. Each parameter must be on a separate line and the line, must start with comment characters. The first parameter may be on the same line as the **Parameters:** keyword. The pattern "P<param num>" indicates the start of a new parameter. The first line found without a comment prefix will terminate the parameter search. The **choices** and **def value** parameter attributes are optional.

The following table describes the parameter attributes:

Table 9 - Parameter Attributes

Attribute	Description
<param num>	The parameter number. This must be a value between 1 and 9 inclusive. This will set the **Name** attribute of the parameter, e.g. "P1".
<param descr>	The parameter description. This will set the **Description** attribute for the parameter.
<format>	The parameter format. This will set the **Format** attribute for the parameter.
<choices>	An optional choice list. This will set the **Choices** attribute for the parameter.
<def value>	An optional default value for the parameter. This will set the **Value** attribute for the parameter.

Parameter attributes may be split over many lines, however when extracting the attribute ORCM will trim leading and trailing white-space.

ORCM determines the start of a new parameter when it finds the pattern "P<param num>" as the first non-whitespace word on the comment line. Thus if your parameter attributes such as description contains this pattern, your text should be formatted to ensure the pattern does not fall at the start of a new comment line.

The relative position of the parameter in the comment block will determine the **Index** given to the parameter.

16.14.1 Alternate Separator

Since 7.3.3.0.0

By default the comma character "," is used to separate the different parameter attributes, however you may choose to use a different parameter information separator search string by placing the following text at the start of the comment block holding the module description:

```
ORCM:split=<split-string>
```

ORCM will use the <split-string> provided to parse the comment lines to retrieve the parameter attributes.

For example, the following uses the string ";;" as a parameter attribute separator:

```
$! ORCM:split=;;
$! Description: Test some parameter handling.
$!              This is a test of a multiline description.
$! Parameters: P1;; database logical, this is another part
$!                 this is a second line ;;
$!                 varchar(255)
$!            P2;; stall node;;              char(6)
```

16.14.2 Example (DCL)

```
$! Description: test the use of parameter within a DCL command proc
$! Parameters: P1, table 1 :- the first table, varchar(32), employees
$!             P2, table 2 :- the second table, varchar(32)
$!             P3, date :- since date, date vms
$!             P4, version :- Rdb version, char(3), [7.2|7.3]
$!             P5, database :- the database, char(255),[known database]
```

Will produce the following parameters:

```
            <parameter
               name = "P1"
               index = "1"
               description = "table 1 :- the first table "
               format = "varchar(32)"
```

```
                value="employees"
        />
        <parameter
            name = "P2"
            index = "2"
            description = "table 2 :- the second table "
            format = "varchar(32)"
        />
        <parameter
            name = "P3"
            index = "3"
            description = "date :- since date "
            format = "date vms"
        />
        <parameter
            name = "P4"
            index = "4"
            description = "Rdb version"
            format = "char(3)"
            choices = "[7.2|7.3]"
            value = "7.2"
        />
        <parameter
            name = "P5"
            index = "5"
            description = "Rdb version"
            format = "char(3)"
            choices = "[7.2|7.3]"
            value = "7.2"
        />
```

16.15 Command Preprocessing

Symbolic references and parameter values will be applied to the command text prior to transmission.

Prior to sending the command, ORCM will replace any symbolic references in the command with matched values if found. Symbolic references in the text have the format:

${<name>}

16.15.1 Standard Symbolic References

The following standard symbolic references available to all commands:

Table 10 - Symbolic References

Symbolic Reference Name	Replacement text

User	Value found in the tools **Default username** field.
password	Value found in the tools **Default password** field.
tool.name	Value found in the tools **Name** field.
tool.facility	Value found in the tools **Facility** field.
tool.description	Value found in the tools **Description** field.
tool.server	Value found in the tools **Server** field.
tool.connection	Value found in the tools **Connection** field.
tool.user	Value found in the tools **Default username** field.
tool.password	Value found in the tools **Default password** field.
tool.event	Value found in the tools **Event Trigger** field.
tool.idletimout	Value found in the tools **Idle Timeout** field.
tool.group	Value found in the tools **Tool Group** field.
tool.command	Value found in the tools **Command** field.
orcm.configfile	File specification of the ORCM configuration file.
orcm.version	Current version of ORCM.

16.15.2 Java System Properties

In addition the value of any Java system property (i.e. standard property names that may be looked up using the Java system method `System.getProperty()`) can be accessed as a symbolic reference.   Simply place the Java system property name inside the reference markers, for example:

${java.library.path}

See your Java documentation for more details on **System Properties.**

16.15.3 Parameter Values

Parameter values will also be made available as symbolic references. (See Parameters.) Each parameter will have a symbolic reference created for it using its unique parameter name.

16.16 Execution of External tool commands

Note:

As symbolic replacements are done prior to sending the command text, and as ORCM has no control over the use of the command by the potential consumer, any password values contained in the command text will be transmitted in plain-text format.

Symbolic references and parameters will be applied to the command text prior to transmission. (See Command Preprocessing.)

Multi-line text command must be correctly formatted for use by the recipient target.
If the tool is a DCL tool, the multi-line command text must comply with DCL syntax, each line must start with the standard DCL command introducer "$" or the prior line must end with the standard DCL continuation marker "-".

If the tool is a SQL tool the command text must be valid Oracle Rdb Interactive SQL text. Each SQL statement must end with the correct SQL terminator, for example ";".

When an external tool is invoked and there are parameters, a tool panel will display allowing the user to enter in the appropriate values of the parameters to be passed along with the command text to be executed. See DCL Command Window and SQLCmdPanel for more details on command line preconditioning.

When requested, the Command text is sent to the remote site to be executed.

If the Command text is multi-line or ORCM determines that the command cannot be sent directly to the command line interface in its raw form, ORCM will wrap the command text in a DCL command procedure especially created to execute the command.

This command procedure will be created by the server on the remote note in the default JDBC command procedure directory RDB$JDBC_COM:.

The name of the command procedure will be generated using the following pattern:

```
rdb$jdbc_com:CLICMD%u.com
```

where the marker "%u" will be replaced by a unique hexadecimal number.

This temporary command procedure will be automatically deleted by the server when the tool has been executed.

> **Note:**
>
> The JDBC server process that will be executing the command on behalf of the external tool user must have the authorization to create and delete files in the RDB$JDBC_COM directory.

16.16.1 Connection Information

ORCM uses the information in the Connection Name and Server Name fields to determine where to send the command.

ORCM uses the following steps to determine the remote server:

1. If the **Connection name** is not blank, the connection information is retrieved and the server information declared for that connection is used.
2. If the **Connection name** is blank, the server named in the **Server name** field will be used.

If both the **Connection name** and the **Server name** are blank ORCM will prompt for a server. If the **Server name** is the value "local", the tool will be run on your local machine.

If the tool executes a remote command, ORCM requires authorization to execute the command in the CL on the remote server. To execute a CL command via a JDBC server, a control connection must be made to the JDBC server; therefore the server needs to know the control username and password to use.

ORCM uses the following steps to determine the username/password to pass to the remote server:

1. If the **Connection name** is not blank, the connection information is retrieved and the authorization information declared for that connection is used.
2. If the **Connection name** is blank, the values retrieved from the Default username and Default password fields will be used.

16.17 Continuous Output

In most cases the output provided by a tool will be a single instance of a text message, called a "one-shot" message. For example issuing a DCL "SHOW PROCESS" will return a single multi-line text message containing the process information.

Other commands may provide continuous output back to ORCM, for example the DCL "SHOW PROCESS/CONTINUOUS" command.

By default ORCM expects the output from an external tool to be "one-shot". The tool command will be invoked and ORCM will trap the output of the command and return it to the external tool handler when the command terminates.

If the **Continuous Output** checkbox is selected, ORCM will set up a listener to continually capture output from the remote command execution and return the output as a stream back to the tool handler, thus ORCM can monitor the results of command such as the DCL "SHOW PROCESS/CONTINUOUS". The stream will be automatically closed when the tool command terminates.

Note:
  If **Continuous Output** is selected and the command is not terminated remotely, the command will continue executing until the panel is closed.

16.18 External tool definitions

Once created, ORCM stores external tool definitions in XML-based configurations files. You may choose to store tool definitions directly in the main ORCM configuration file, which is the default behavior, however as tool definitions may become fairly complex ORACLE recommends that you use a separate configuration file for your tools. See ORCM Configuration Files for more details.

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16.19 New External tool

Figure 182 -   New Tool Pane

The New Tool pane allows you to configure a new External Tool definition to be stored in the **Tools** section of the ORCM configuration file.

On this pane enter values for the attributes of a new external tool.

The pane consists of the same fields as described under the section External Tool Panel.

See also:
External Tool Panel

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16.20 Remove External Tool

To remove a saved external tool, right-click on the tool name in the **External Tools** explorer and select the **Remove Tool** option from the popup menu.

Figure 183 - *Remove Tool menu option*

Alternatively, you may remove an existing tool definition by editing the ORCM configuration file to remove the **Tool** entry within the **Tools** section.

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16.21 External Tool Plugins

The External Tool feature of ORCM allows you to add extensions or "plugins" to ORCM that may contain Java class-based external tools you wish to invoke from ORCM.

ORCM identifies that a tool is a plugin External Tool by looking at the tool facility. Plugin External Tools have the following facility:

EXT:<tool class>

Where <tool class> is the full classname path of the tool as found in the plugin's JAR file.

Figure 184 -   Example of a Plugin External Tool

For example, a tool with the facility "`EXT:my.tools.NetTools`" is provided in the External Tools sample configuration file, `orcm_demo_tools.xml` found in the ORCM examples directory.

Example (configuration tool definition):

```
    <tool name="Simple Net tool"
          description="Simple network info displayed for local host"
          facility="EXT:my.tools.NetTool"
          server="LOCAL">
      <command>
<![CDATA[No command needed, this line simply prevents ORCM prompting for command]]>
      </command>
```

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```
        </tool>
```

An ORCM External Tool plugin is a Java class implementing the [ORCMPlugin](#) interface. This interface can be referenced from the ORCM gui executable JAR file, ORCM.JAR.

Each plugin should provide the following 3 methods:

1. `prepareCommand` – used to prepare the command text prior to execution
2. `prepareParameter` – used to prepare the value of each tool parameter
3. `execute` – carry out the execution of the command

These methods are discussed in sections below and described in the [ORCMPlugin](#) interface description below.

16.21.1 Plugin Loading, Preparation and Execution

When a plugin tool is selected for execution from the ORCM menu, the tool panel will be displayed in the same manner as other ORCM external tools. When the tool is executed the following actions then occur:

*   The plugin tool's class is located and loaded into the Java VM
*   The tool's command and parameters are pre-processed by the plugin tool class to validate and enhance
*   The tool class may then optionally carry out the tool's action

16.21.1.1 Plugin Loading

When a plugin external tool is executed, ORCM will search the [ORCM extensions directory](#) to locate the JAR containing the specific tool class and if found will load this class into the Java VM that the ORCM GUI is executing under.

16.21.1.2 Command and Parameter Pre-processing

When the plugin class has been loaded ORCM will first pre-process the tool's command text by passing it to the plugin's `prepareCommand()` method .

This method has a `java.util.Properties` object passed to it which provides the context for the tools execution, i.e. a list of symbolic reference values that may be used by your tool.

See [ExternalToolPanel](#) for more information on symbolic references.

Each tool parameter is then pre-processed against the same Properties object using the plugin's `prepareParameter()` method.

The result from the plugin's command and parameter pre-processing are then passed back to ORCM for further processing, it is at this stage standard symbolic reference replacement in the command line is carried out.

During both command and parameter pre-processing the plugin may choose to modify the Properties object as required. The updated Properties are used during the ORCM command line preprocessing. See Command Preprocessing for more information.

16.21.1.3 Execution

Once ORCM has carried out all command pre-processing, the command text and the Properties object are passed to the `execute()` method of the plugin.

The plugin may choose to carry-out the execution at this stage, and return a non-null byte array back to ORCM containing the results of the execution.

If the tool returns a null object, ORCM will then attempt to execute the command as a DCL command against the given server or connection specified for the tool.

Plugin developers may use this fallback command processing to build tools that simply precondition the DCL command text prior to ORCM executing it.

16.21.2 Plugin Tools and JARS

The tool's name may be used by the plugin tool class to invoke different actions depending on the name. Thus you may define multiple External Tools each using the same plugin tool class but you must give each tool a unique name.

The name of the tool can be found in the "**tool.name**" property of the Properties object passed to the plugin methods.

You may choose to build multiple tools each with their own tool class, and each within their own plugin JAR file.

Or you may choose to have more than one tool in your tool class, selectable by name, and/or you may choose to keep all your tool classes in the same plugin JAR.

16.21.3 Creating a Plugin JAR

The plugin class implementing the ORCM Plugin interface should reside in a JAR file along with any other classes or class references that may be required for your plugin to execute.

This JAR file should be placed in the ORCM extensions directory on the same system you invoke the ORCM GUI application from.

During ORCM installation, some example plugin classes are provided for reference in the

.

16.21.3.1 External Tool definition and plugins

External tool plugins use the same External tool panels and definitions as other ORCM external tools. The following points should be noted:

- Plugins must use the "**EXT:**" facility prefix
- Class names are case sensitive so the name of the tool class used in the tool facility values must match exactly the path name of the class in your plugin JAR file.
- Your plugin may change the command text and Properties passed to it during the prepare phases. Return a NULL object when the tools `execute()` method is called to let ORCM take the modified command and Properties to execute it as a DCL command.
- If your tool does not need server information or is executed locally, use the special server value "LOCAL" in the *external tools server* attribute to tell ORCM to not prompt for a server. If the server attribute is left blank, ORCM will prompt for a server when the tool is invoked.
- If your tool does not need any command text to operate, you should still place some text in the command attribute; otherwise ORCM will prompt for the command line when the tool is invoked. The text in the command attribute is ignored by ORCM unless your tool return a NULL object on the call to its `execute()` method.

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Chapter 17
Database Schema Differences

Figure 185 -   DB Schema Differences panel

The Database Schema Differences panel allows you to retrieve and compare the schemas of two databases.

This panel allows you to specify two databases to compare. These databases, labeled the **Original** and the **Revised** are chosen using dropdown lists that contain the ORCM Known databases.

Figure 186 -   Known database dropdown list

When the two databases have been selected and the **Find Schema Differences** button is pressed, ORCM will attempt to connect, as a control user, to each database using the JDBC server specified as the *Preferred Server* for that database. Once connected ORCM will then issue a RMU EXTRACT on the database to obtain the database schema information.

The Schema information will then be displayed in the schema object list below the named database.

If ORCM fails to access either of the databases an exception message will be displayed:

Figure 187 -   Exception message display

The remote database extraction operation can only be carried out by a JDBC Control or Privileged user. ORCM determines the username and the password to use for the control connection:

1. from the JDBC server information associated with the **Preferred Server** attribute of the Known database; or if the password is blank
2. from the ORCM session control user /password.

Note that ORCM does NOT use the Username/Password pair provided in the Known database entity as this authorization information is for normal database access when using a JDBC client connection and not for control operations such as database extraction.

The JDBC server will execute the database extraction by passing a request to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup.

Note:
> The designated server must have command line (CL) access enabled, indicated by the server option `allowAccessToCL` for that server being set to *true* within the configuration file that the server used during start up. See the **CL Access** section of the *Oracle JDBC for Rdb User Guide* for more information.

The command to retrieve the data information will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

The Find Schema Differences panel contains the following components:

- Original and Revised selection fields
- Find Schema Differences button
- Schema object lists
- Save schemas checkbox
- Merge Operator buttons
- Change Script buffer

17.1 Original and Revised

Figure 188 -   *Original and Revised drop-down lists*

These are drop-down lists of the databases that are known to the current session. Use these drop-down lists to select the databases you wish to compare.

You may select any of the known databases to compare. Known databases are those that have been added to the ORCM configuration file.

Note:

The known database definition includes the database file specification and the remote host where the database may be accessed from. The definition also includes reference to the preferred server to use. This information is used by ORCM to connect via a running JDBC server to carry out the operation of database extraction on the remote host.

17.2 Find Schema Differences Button

Figure 189 -   *Find Differences button*

When two databases have been selected press this button to retrieve the schema information and carry out the comparison.

Results will be displayed in the Schema objects lists.

17.3 Schema objects lists

A list of schema objects is displayed under each of the databases chosen. These lists show schema objects that have been found and are aligned so that similarities and differences may be seen.

The **Original** schema objects list on the left shows schema objects found within the database selected as **Original**. The similar with the **Revised** schema objects list on the right shows schema objects found within the database selected as **Revised**.
Any differences are highlighted as shown:

Figure 190 -   Highlighted difference

17.4 Save schemas checkbox

If you intend to carry out multiple database comparisons during the current ORCM session and access the same database multiple times to compare it against others, mark the **Save schemas** checkbox. When selected, ORCM will locally cache each database schema it extracts in order to reduce the network and system expense and time required to extract the database schema.

If the database schema definition for a database may change during your session then you should clear the **Save schemas** checkbox prior to pressing the **Find Schema Differences** button to ensure that the database schema is not cached.

17.5 Merge Operators

Above the pair of database schema objects lists is a menu bar containing merge operation buttons:

Figure 191 -   Merge operators

The merge operators are:

- **Undo** selected merge
- **Find next** difference
- **Find previous** difference
- **Find first** difference
- **Find last** difference
- **Apply current** difference to **Original** from **Revised**

- **Apply all** differences to **Original** from **Revised**

When a positional merge operator is chosen (i.e. **Find next**, **Find previous**, **Find first** or **Find last**) both lists will be scrolled to locate the requested difference. Each list will automatically have the difference selected. This is called the "current" or "selected" difference.

Alternatively you may scroll the lists using the scroll bar and select a highlighted difference by clicking in the entry for it in either the **Original** or the **Revised** schema objects list.
When selected, the schema object will be highlighted with a darker color and with the text color inverted:

Figure 192 -   Example of selected entry

17.5.1 Applying Differences

Once a difference has been selected it may be applied. Press the **Apply current** difference button to bring the **Original** schema object up-to-date with the **Revised** state. This could be either an addition of an extra schema object, or the modification or removal of an existing object.

If you wish to apply all the differences that were found use the **Apply all** differences button.

If you want to apply the majority of the differences found, use the **Apply all** button and then select and **Undo** each change you wish to remove.

When a difference is applied to the **Original** list, the list will be updated on screen to reflect the change:

Figure 193 -   *Difference applied*

At the same time appropriate SQL Syntax will be generated and appended to the **Change Script buffer**:

Figure 194 -   *Suggested SQL syntax in the Change Script buffer*

17.5.2 Undoing an applied difference

If you wish to undo a difference you have previously applied, reselect the object in either of the schema object lists and press the **Undo** button.

Only the selected difference that is highlighted will be undone; you must undo each applied change one-by-one.

The appropriate SQL Syntax will also be added to the **Change Script** buffer.

17.6 Change Script Buffer

When you choose to update the **Original** schema from the **Revised** copy, as well as moving the change across to the **Original** schema object list, the suggest SQL syntax to carry out the equivalence of the operation will be written to the **Change Script** buffer found in the lower half of the window.

Figure 195 -   Change Script buffer

New SQL text is appended to the end of the **Change Script** buffer in the order in which you apply the differences.

If you apply and undo the same difference many times, multiple copies of the appropriate SQL text will be appended.

The **Edit** menu **Reformat** option may be used to attempt to clean-up the buffer and reformat the text by removing redundant statements and ordering them appropriately.

The **Change Script** buffer has the following menu-based options:

17.6.1.1 File menu options

Figure 196 -   File Menu

File / New ...
    Create a new file. The buffer will be cleared ready for new text to be added.

File / Open …

Open an existing file. The contents of the text file will be placed in the buffer. Any changes applied to the schemas will be appended to this text.

File / Save

Save the entire contents of the buffer. If a filename has not already been selected you will be prompted for one.

File / Save As …

Save the entire contents of the buffer to the designated file.

17.6.1.2 Edit menu options

Figure 197 -   Edit menu

Edit / Cut

Cut the selected text from the buffer.

Edit / Copy

Copy the selected text to the global paste buffer.

Edit / Paste

Paste the contents of the global paste buffer to the buffer.

Edit / Copy All

Copy the entire contents of the buffer to the global paste buffer.

Edit / Clear All

Clear the entire contents of the buffer.

Find

Search for specified text.

Find next

Search for the next occurrence of the specified text.

Find previous

Search for the previous occurrence of the specified text.

Reformat

Attempt to reformat the text to produce acceptable SQL syntax.

Note:

During reformat any textual changes you have made manually to the **Change Script** buffer will be removed.

The reformat only considers changes applied using the **Apply differences** and **Undo** buttons and not edited changes.

Oracle suggests that you apply the required changes using the **Apply** merge buttons first then use the **Reformat option**. You may then make manually edited changes to the buffer.

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Chapter 18
Wizards

To help you carry out some of the standard maintenance tasks within ORCM, you may choose use an appropriate Wizard.

The following wizards are available within ORCM:
- First Use Wizard
- SQL/Services Control Connection Wizard
- JDBC Server Definition Wizard
- RMU Statistics Connection Wizard
- Special Dispatcher Wizard

18.1 First Use Wizard

Figure 198 -   First Use Wizard Pane

The First Use Wizard is displayed when you start ORCM for the first time and have no SQL/Services or JDBC servers configured in your ORCM configuration file.

The First Use Wizard takes you through the steps required to provide information to help setup you initial ORCM configuration.

To navigate the wizard either, select a step in the navigation tree that is to the left of the pane, or click the **Next** and **Back** buttons to go forward and back one step in the procedure.

18.1.1 Navigation Tree

To the left of the pane, is a navigation tree of the steps you will have to carry out in order to create a new JDBC Server definition.

Figure 199 -   Navigation tree

Click on a node in the tree to select the step you wish to carry out.

18.1.2 Information Requested

The wizard will prompt for the following information:

Select Different Configuration File
A checkbox where you may indicate if you wish to use a different configuration file. If selected, you will be presented with a configuration dialog that will allow you to select an existing configuration file to use.

SQL/Service connection information
A Wizard will take you through the steps required to define a new SQL/Services server control connection.

JDBC Server connection information
A Wizard will take you through the steps required to define a new JDBC server control connection.

18.1.3 Options

The First Use Wizard has the following button-based options:

Help
  Press **Help** to display help information for this window.
Next
  Press **Next** to proceed to the next step in the wizard.
Back
  Press **Back** to return to the previous step in the wizard.
Finish
   Press **Finish** to save the information entered for the fields. Once saved, the information saved to
   the ORCM configuration file.
Cancel
  Press **Cancel** to cancels the operation and close the wizard.

Contents

18.2 SQL/Services Control Connection Wizard

SQL/Services control connection wizard.

Figure 200 -   SQL/Services Control Connection Wizard Pane

The SQL/Services Control Connection Wizard allows you to configure a new SQL/Services
server connection. Before ORCM can access SQL/Services services to down load server
information you will need to provide information on how to make a connection to the server.

The SQL/Services Control Connection Wizard helps you through the steps required to provide connection information to a server.

To navigate the wizard either select a step in the navigation tree that is to the left of the pane or click the **Next** and **Back** buttons to go forward and back one step in the procedure.

18.2.1 Navigation Tree

To the left of the pane, is a navigation tree of the steps you will have to carry out in order to create a new SQL/Services server connection definition.

Figure 201 -   Navigation tree

Click on a node in the tree to select the step you wish to carry out.

18.2.2 Information Requested

The wizard will prompt for the following information:

- Name
- Host
- Port
- Username
- Password
- RMU Port
- Save Password
- Autoconnect

18.2.2.1 Name

An alias for using this SQL/Services server. This name need not be unique, however the name may be used to lookup server information within the start-up configuration file. The value of this name is not case-sensitive.

18.2.2.2 Host

The IP address of the node the server is running on.

18.2.2.3 Port

The port number of the TCP/IP socket that the SQL/Services server is using for management access.

18.2.2.4 Username

The username to use when ORCM connects to the server. This must be a valid OpenVMS username of an account that has been granted use of the SQLSRV_MANAGE system management service for that server; however, you are not required to use an account that has been granted elevated privileges. See the ***Oracle SQL/Services Server Configuration Guide*** for more details on required privileges.

18.2.2.5 Password

The password associated with the username provided.

Since 7.3.3.0.0

Press the ***show*** button to display the password entered.
When the password text is in the display state the show button will be replaced with the ***hide*** button .

18.2.2.6 RMU Port

The TCP/IP port that the RMU Dispatcher is listening on.
The default RMU Dispatcher TCP/IP port ID is 1571.

Note:

Currently, SQL/Services always communicates with the RMU Dispatcher using TCP/IP port ID 1571. This port ID should not be altered.
SQL/Services may have several RMU Dispatchers configured, which may or may not be currently running, but only one RMU Dispatcher may be running at any one time.

You should ensure that the RMU Dispatcher and associated RMU Service are running before carrying out operations such as viewing SQL/Services log files using the ORCM interface.

18.2.2.7 Save Password

A checkbox where you may indicate if the password should be saved to the configuration file.

18.2.2.8 Autoconnect

A checkbox where you may indicate if ORCM should automatically connect to this server when the application starts up.

18.2.3 Options

The SQL/Services Connection Wizard has the following button-based options:

Help

Press **Help** to display help information for this window.

Next

Press **Next** to proceed to the next step in the wizard.

Back

Press **Back** to return to the previous step in the wizard.

Test

Press **Test** to test the connection information you have provided.

Finish

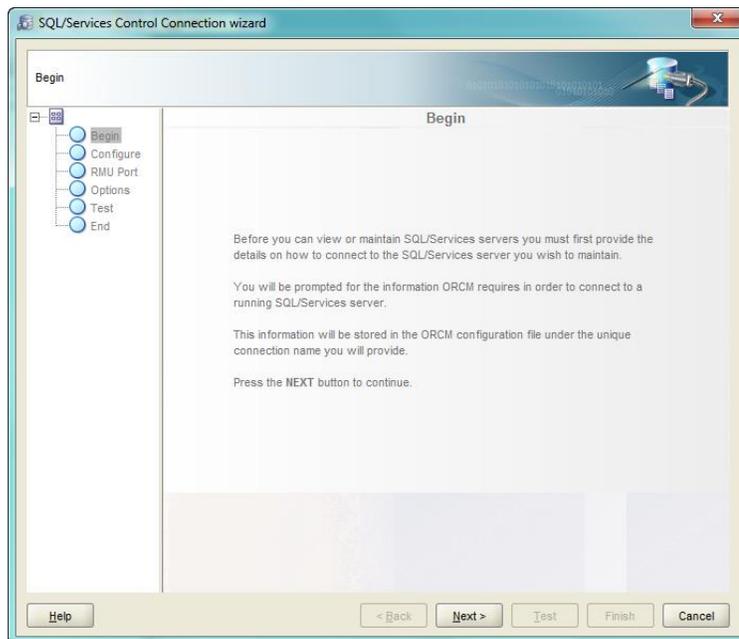Press **Finish** to save the information entered for the fields. Once saved, the information about the connection will be displayed in main ORCM window and saved to the ORCM configuration file.

Cancel

Press **Cancel** to cancel the operation and close the wizard.

Contents

18.3 JDBC Server Definition Wizard

JDBC Server Definition wizard.

Figure 202 -   JDBC Server Definition Wizard Pane

The JDBC Server Definition Wizard allows you to configure a new JDBC Server definition. Before ORCM can connect to JDBC servers that are listening on different multicast

groups to that of the default ORCM group you will need to provide information on how to make a connection to the server.

The JDBC Server Definition Wizard takes you through the steps required to provide information for a server.

To navigate the wizard either, select a step in the navigation tree that is to the left of the pane, or click the **Next** and **Back** buttons to go forward and back one step in the procedure.

18.3.1 Navigation Tree

To the left of the pane, is a navigation tree of the steps you will have to carry out in order to create a new JDBC Server definition.

Figure 203 -   Navigation tree

Click on a node in the tree to select the step you wish to carry out.

18.3.2 Information Requested

The wizard will prompt for the following information:
  • Name
  • Host
  • Port
  • Control Username
  • Control Password
  • Multicast Group
  • Multicast Port
  • Save Password

18.3.2.1 Name

An alias for using this JDBC server. This name need not be unique, however the name may be used to lookup server information within the start-up configuration file. The value of this name is not case-sensitive.

18.3.2.2 Host

The IP address of the node the server is running on.

18.3.2.3 Port

The port number of the TCP/IP socket that the server is using for management access.

18.3.2.4 Control Username

The username to use when ORCM connects to the server as control user.

18.3.2.5 Control Password

The password associated with the username provided.

Since 7.3.3.0.0

Press the *show* button to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide*
button .

18.3.2.6 Multicast Group

The multicast group IP on which the server will be listening.

18.3.2.7 Multicast Port

The TCP/IP port on which the server will be listening.

18.3.2.8 Save Password

A checkbox where you may indicate if the password should be saved to the configuration file.

18.3.3 Options

The JDBC Server Definition Wizard has the following button-based options:

Help
  Press **Help** to display help information for this window.
Next
  Press **Next** to proceed to the next step in the wizard.
Back
  Press **Back** to return to the previous step in the wizard.
Finish
  Press **Finish** to save the information entered for the fields. Once saved, the information about
  the server will be displayed in main ORCM window and saved to the ORCM configuration file.
Cancel
  Press **Cancel** to cancel the operation and close the wizard.

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18.4 RMU Statistics Connection Wizard

Figure 204 -   RMU Statistics Connection Wizard Pane

The RMU Statistics Connection wizard takes you through the steps required to provide information to help setup a connection to a database to monitor database statistics.
To navigate the wizard either, select a step in the navigation tree that is to the left of the pane, or click the **Next** and **Back** buttons to go forward and back one step in the procedure.

18.4.1 Navigation Tree

To the left of the pane, is a navigation tree of the steps you will have to carry out in order to create a new RMU Statistics Connection definition.

Figure 205 -   RMU Statistics Connection Wizard Navigation tree

Click on a node in the tree to select the step you wish to carry out.

18.4.2 Information Requested

The wizard will prompt for the following information:
- Name
- Host

- [Port](#)
- [Service](#)
- [Database](#)
- [Username](#)
- [Password](#)
- [Save Password](#)

18.4.2.1 Name

An alias for using this connection. This name need not be unique, however the name may be used to lookup connection information within the start-up configuration file. The value of this name is not case-sensitive.

18.4.2.2 Host

The IP address of the node the RMU server is running on (i.e. where the RMU Dispatcher is running).

18.4.2.3 Port

The port number of the TCP/IP socket that the SQL/Services RMU dispatcher is using for management access. This is by default 1571.

18.4.2.4 Service

The RMU Service name to use. Normally this would be "RMU_SERVICE", however your system administrator may have chosen a different name for the RMU service that can access your databases, if so you should provide this information.

18.4.2.5 Database

The file specification of the database. This must be a valid Rdb database file specification on the Host.

18.4.2.6 Username

The username to use when ORCM connects to the database.

18.4.2.7 Password

The password associated with the username provided.

Since 7.3.3.0.0

Press the *show* button 👁 to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide* button 🚫 .

Note:

Currently, SQL/Services always communicates with the RMU Dispatcher using TCP/IP port ID 1571. This port ID should not be altered.

SQL/Services may have several RMU Dispatchers configured, which may or may not be currently running, but only one RMU Dispatcher may be running at any one time.

You should ensure that the RMU Dispatcher and associated RMU Service are running on the remote node before attempting a RMU Statistic Connection.

18.4.2.8 Save Password

A checkbox where you may indicate if the password should be saved to the configuration file.

18.4.3 Options

The RMU Statistics Connection Wizard has the following button-based options:

Help
  Press **Help** to display help information for this window.
Back
  Press **Back** to return to the previous step in the wizard.
Next
  Press **Next** to proceed to the next step in the wizard.
Test
  Press **Test** to test the connection.
Finish
  Press **Finish** to saves the information entered for the fields. Once saved, the information saved to the ORCM configuration file.
Cancel
  Press **Cancel** to cancel the operation and close the wizard.
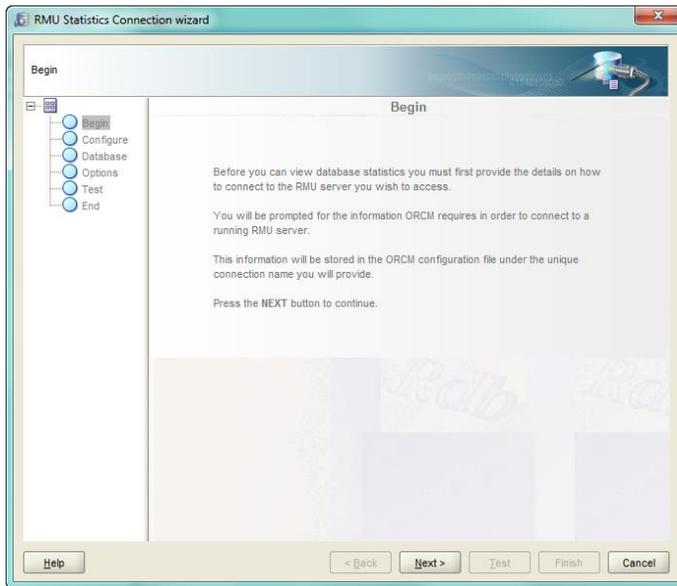
[Contents](#)

18.5 Special Dispatcher Wizard

Figure 206 -   Special Dispatcher Wizard Pane

The Special Dispatcher Wizard is used to create special SQL/Services dispatchers such as JDBC dispatchers.

The Special Dispatcher takes you through the steps required to provide information to help setup a special SQL/Services dispatcher.

To navigate the wizard either, select a step in the navigation tree that is to the left of the pane, or click the **Next** and **Back** buttons to go forward and back one step in the procedure.

18.5.1 Navigation Tree

To the left of the pane, is a navigation tree of the steps you will have to carry out in order to create a new SQL/Services Dispatcher.
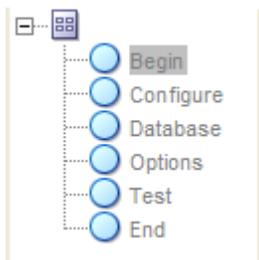
Figure 207 -　　　　　Special Dispatcher Wizard Navigation tree

Click on a node in the tree to select the step you wish to carry out.

18.5.2 Information Requested

The wizard will prompt for the following information:

- Connections Button
- SQL/Service connection name
- Dispatcher Name
- Dispatcher Port
- Dispatcher Type
- Control Username
- Control Password
- Multicast Group
- Multicast Port
- DCL Access
- Priv Users List
- ONStart commands
- ONCLIStart commands

18.5.2.1 Connections Button

If selected, you will be presented with the ORCM Connections dialog that will allow you to select an existing SQL/Services Control connection to use, or if you wish, to create new SQL/Services Control connection. Select a connection or create a new one and then press the **Select** button to select that connection. The connection name will be placed in the Control connection name field of this wizard.

18.5.2.2 SQL/Service connection name

If you did not select a connection from the ORCM Connections dialog enter the name of an existing SQL/Services control connection here.

18.5.2.3 Dispatcher Name

You must provide a name for the new dispatcher to use. This name must be unique on the SQL/Services server you have chosen.

18.5.2.4 Dispatcher Port

Specify a TCP/IP port for the dispatcher. If the dispatcher is a JDBC type dispatcher this will be the port that the underlying JDBC server will use.

18.5.2.5 Dispatcher Type

Specify the type of dispatcher you wish to create. A dropdown list will be displayed allowing you to choose from a list of valid dispatcher types.

18.5.2.6 Control Username

The username to use when ORCM connects to the underlying JDBC server as a control user.

18.5.2.7 Control Password

The password associated with the username provided.

18.5.2.8 Multicast Group

The multicast group IP on which the server will be listening.

18.5.2.9 Multicast Port

The multicast port on which the server will be listening.

18.5.2.10 DCL Access

A checkbox designating if privileged uses may access DCL using this JDBC server.

18.5.2.11 Priv Users List

One or more usernames of users allowed DCL access privilege.

18.5.2.12 ONStart commands

Any special setup required on JDBC server startup.

18.5.2.13 ONCLIStart commands

Any special setup required when the server carries out CLI commands on the host.

18.5.3 Options

The Special Dispatcher Wizard has the following button-based options:

Help
  Press **Help** to display help information for this window.
Next
  Press **Next** to proceed to the next step in the wizard.
Back
  Press **Back** to return to the previous step in the wizard.
SendCfg
  Press **SendCfg** to send the displayed configuration text to the remote host as a command procedure to be used during JDBC server startup.
Finish

Press **Finish** to attempt to create the new dispatcher on the SQL/Services server specified by the SQL/Services control connection name.

Cancel

Press **Cancel** to cancel the operation and close the window.

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Chapter 19
Remote View

Figure 208 -   Remote View panel

The Remote View panel allows you to connect to a JDBC server and retrieve the contents of remote files.

ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

The JDBC server will execute the retrieval by passing a request to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup.

Note:
  The designated server must have command line (CL) access enabled, indicated by the server option `allowAccessToCL` for that server being set to *true* within the configuration file that the server used during start up. See the **CL Access** section of the **Oracle JDBC for Rdb User Guide** for more information.

The command to retrieve the file contents will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

The Remote View panel contains the following:
- Server field
- File Specification
- Refresh server list button
- Results Display area

19.1 Server

This is a drop-down list of the JDBC servers that are known to be currently available. Use this drop-down list to select the appropriate JDBC server.

19.2 File Specification

Enter the file specification of the file you wish to display here. You may enter a new specification or select from file specifications previously entered within this same connection session by using the drop-down list.

The file specification may use absolute or relative directories and may use OpenVMS logical names.

The file retrieval request will be executed in the context of the process within which the attached server was started. Relative directory specifications and logical name translation will be based on the server's process environment.

The command will be sent to the server when you:
- Press **return** when the cursor is in the Command field or
- Press the **Retrieve** button at the bottom of the panel

19.3 Refresh server list button

Press this button to refresh the list of available servers shown in the Server drop-down list.

19.4 Results Display area

The contents of the file will be displayed here.

Figure 209 -   *Results display area*

The results display area has the following menu-based options:
- [File menu options](#)
- [Edit menu options](#)

19.4.1.1 File menu options

Figure 210 -   *File Menu*

File / Save As ...

Save the entire contents of the display area to the designated file.

19.4.1.2 Edit menu options

Figure 211 -   *Edit menu*

Edit / Copy

Copy the selected text to the global paste buffer.

Edit / Copy All

Copy the entire contents of the display area to the global paste buffer.

Find

267

Search for specified text.
Find next
Search for the next occurrence of the specified text.
Find previous
Search for the previous occurrence of the specified text.

19.5 Options

Retrieve
Press **Retrieve** to retrieve the contents of the file you have entered.
Cancel
Press **Cancel** to end the Remote View session.

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Chapter 20
SQL worksheet

Figure 212 -   SQL Worksheet

The SQL Worksheet allows you to connect to make a JDBC thin connection to any Rdb database you have access to on your network that is currently being served by a JDBC server. Once connected you may execute SQL statements on that database, the results of the execution being displayed in the results area.

When first invoked, you will be prompted for connection details for ORCM to use.

Figure 213 -   Connection Details

You may select a connection definition from the connection table on the left of the panel or enter a new connection by filling in the fields on the right of the panel.

See Database Connections for more details on database connections.

Once the details have been entered press Connect to connect to the database using the JDBC thin driver.

The SQL Worksheet contains the following:
- Results Display area
- SQL statement area

20.1 Results Display area

The results of your command will be displayed here.

Figure 214 -   Results display area

20.2 SQL Statement area

The SQL statement area is where you can enter single-line or multi-line SQL statements.

To execute the statement you have entered, press the **Execute** button.

The SQL statement area has the following menu-based options:
- File menu options
- Edit menu options

20.2.1.1 File menu options

Figure 215 -   File Menu

New ...
  Create a new file on your local host.
Open ...
  Open an existing file on your local host.
Save
  Save the entire contents of the SQL Statement area to the current file.
Save As ...
  Save the entire contents of the SQL Statement area to the designated new file.
Exit
  Exit the SQL Worksheet.

20.2.1.2 Edit menu options

Figure 216 -   Edit menu

Undo
  Undo the last edit change.
Redo
  Redo the last edit change.
Cut
   Copy the selected text area to the global paste buffer and remove from the SQL Statement area.
Copy
  Copy the selected text area to the global paste buffer.
Paste
  Paste the contents of the global paste buffer into the SQL Statement area.
Select all
  Select all the text in the SQL Statement area.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous
  Search for the previous occurrence of the specified text.

20.3 Options

Execute
  Press **Execute** to execute the SQL statement you have entered.

Contents

Chapter 21
Command line

Figure 217 -   Command Line

The Command line panel allows you to connect to a JDBC server and issue CLI commands to it.

On Open VMS systems, CLI commands are DCL commands that will be issued by the recipient server using a sub-process created specifically for CLI access.

ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

The JDBC server will execute the CLI command by passing it to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup.

The command will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

Note:
The designated server must have command line (CL) access enabled, indicated by the server option `allowAccessToCL` for that server being set to *true* within the configuration file that the server used during start up. See the *CL Access* section of the *Oracle JDBC for Rdb User Guide* for more information.

The Command line panel contains the following:
- Server field
- Command field
- Refresh server list button
- Results Display area

21.1 Server

This is a drop-down list of the JDBC servers that are known to be currently available. Use this drop-down list to select the appropriate JDBC server.

21.2 Command

Enter your CLI command here. You may enter a new command or select from commands previously executed within this same connection session by using the drop-down list.

The command will be sent to the server when you:
- Press **return** when the cursor is in the Command field or
- Press the **Execute** button at the bottom of the panel

21.3 Refresh server list button

Press this button to refresh the list of available servers shown in the Server drop-down list.

21.4 Results Display area

The results of your command will be displayed here.

Figure 218 -   Results display area

The results display area has the following menu-based options:
- File menu options
- Edit menu options

21.4.1.1 File menu options

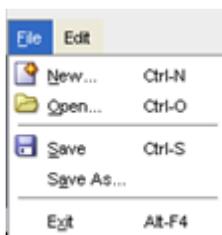*Figure 219 -   File Menu*

File / Save As…
  Save the entire contents of the display area to the designated file.

21.4.1.2 Edit menu options

Figure 220 -   Edit menu

Edit / Copy
  Copy the selected text to the global paste buffer.
Edit / Copy All
  Copy the entire contents of the display area to the global paste buffer.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous
  Search for the previous occurrence of the specified text.

21.5 Options

Execute
  Press the **Execute** button to execute the command you have entered.
Cancel
  Press the **Cancel** button to end the Command line session.

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Chapter 22
Controller command line

Figure 221 -   *Controller Command Line*

The Controller command line panel allows you to connect to a JDBC server and issue controller commands to it.

These commands are identical to the command line commands you may use when using the JDBC Controller application.

ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

Controller command line panel contains the following:
- Server field
- Command field
- Refresh server list button
- Results Display area

22.1 Server
A drop-down list of the JDBC servers that are known to be currently available. Use this drop-down list to select the appropriate JDBC server.

22.2 Command

Enter your controller command here. You may enter a new command or select from Controller commands previously executed within this same connection session by using the drop-down list.

The command will be sent to the server when you:
- Press **return** when the cursor is in the Command field or
- Press the **Execute** button at the bottom of the panel.

22.3 Refresh server list button

Press this button to refresh the list of available servers shown in the Server drop-down list.

22.4 Results Display area

The results of your command will be displayed here.

Figure 222 -   Results display area

The results display area has the following menu-based options:
- File menu options
- Edit menu options

22.4.1.1 File menu options

Figure 223 -   File Menu

File / Save As ...
Save the entire contents of the display area to the designated file.

22.4.1.2 Edit menu options

Figure 224 -   *Edit menu*

Edit / Copy
  Copy the selected text to the global paste buffer.
Edit / Copy All
  Copy the entire contents of the display area to the global paste buffer.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous
  Search for the previous occurrence of the specified text.

22.5 Options

Execute
  Press the **Execute** button to execute the command you have entered.
Cancel
  Press the **Cancel** button to end the controller session.

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Chapter 23
RMU Command line

Figure 225 -   RMU Command Line

The RMU Command line panel allows you to connect to a JDBC server and issue RMU commands to it.

On Open VMS systems, RMU commands will be executed by the recipient server using a sub-process created specifically for RMU access.

ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

The JDBC server will execute the RMU command by passing it to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup. The command procedure will in turn invoke RMU on the host server node and carry out the operation requested.

Note:

The designated server must have command line (CL) access enabled, indicated by the server option `allowAccessToCL` for that server being set to *true* within the configuration file that the server used during start up.

See the *CL Access* section of the *Oracle JDBC for Rdb User Guide* for more information.

RMU will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

The RMU command line panel contains the following:
- Server field
- Command field
- Refresh server list button
- Results Display area

23.1 Server
This is a drop-down list of the JDBC servers that are known to be currently available. Use this drop-down list to select the appropriate JDBC server.

23.2 Command
Enter your RMU command here. You may enter a new command or select from commands previously executed within this same connection session by using the drop-down list.

The command will be sent to the server when you:
- Press **return** when the cursor is in the Command field or
- Press the **Execute** button at the bottom of the pane

23.3 Refresh server list button
Press this button to refresh the list of available servers shown in the Server drop-down list.

23.4 Results Display area
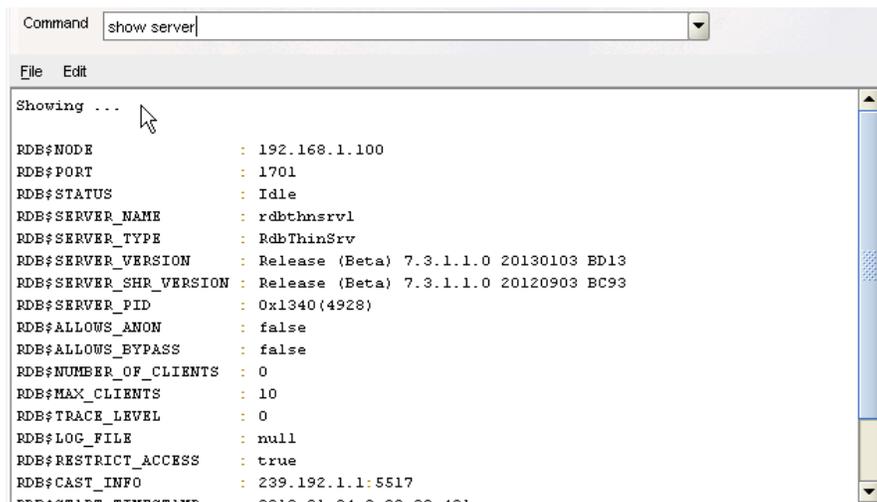The results of your command will be displayed here.

Figure 226 -   Results display area

The results display area has the following menu-based options:
- [File menu options](#)
- [Edit menu options](#)

23.4.1.1 File menu options

Figure 227 -   File Menu

File / Save As ...

Save the entire contents of the display area to the designated file.

23.4.1.2 Edit menu options

Figure 228 -   Edit menu

Edit / Copy

Copy the selected text to the global paste buffer.

Edit / Copy All

Copy the entire contents of the display area to the global paste buffer.

Find

Search for specified text.

Find next

Search for the next occurrence of the specified text.

Find previous
  Search for the previous occurrence of the specified text.

23.5 Options

Execute
  Press the **Execute** button to execute the command you have entered.
Cancel
  Press the **Cancel** button to end the RMU session.
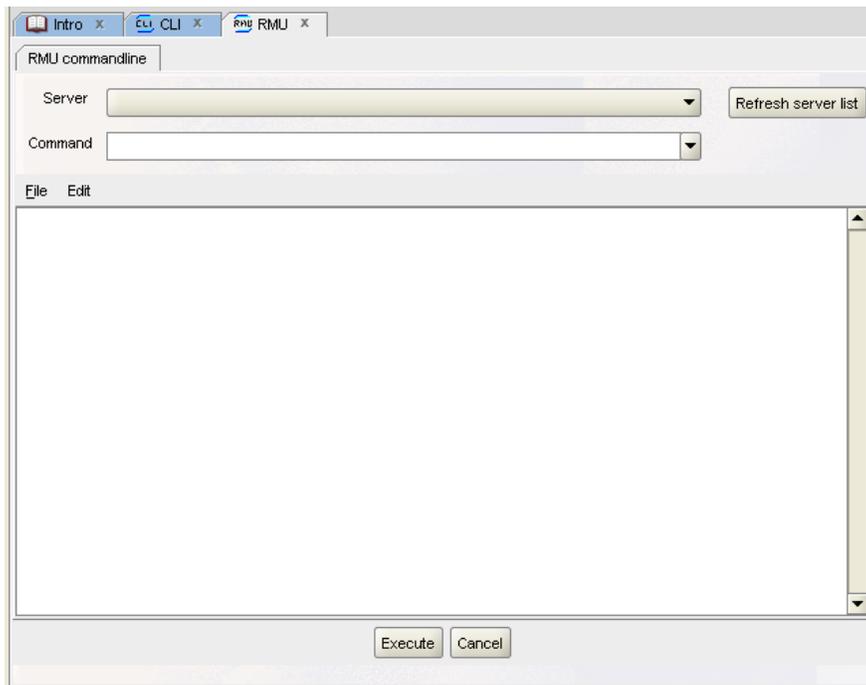

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Chapter 24
DCL Command Window

Figure 229 -   Example DCL Command

The DCL Command window allows you to connect to a JDBC server and issue DCL External tool commands. The remote JDBC server will execute the command using a sub-process created specifically for CLI access.

If the DCL Tool has default username and password defined it will use that to obtain control authorization from the server.

If the tool does not already define a username and password to use, ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

The JDBC server will execute the CLI command by passing it to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup.

The command will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

Note:
The designated server must have command line (CL) access enabled, indicated by the server option *allowAccessToCL* for that server being set to *true* within the configuration file that the server used during start up. See the CL Access section of the *Oracle JDBC for Rdb User Guide* for more information.

The Command line panel contains the following:
- Server field
- Cmd field
- Optional Parameter area
- Save Locally field
- Results Display area

24.1 Server

This is the JDBC server that the tool command will use to execute on. This is a read-only field.

24.2 Cmd

The tool's DCL command is echoed here. This is a read-only field.

The DCL command will be sent to the server:
- Automatically when the command panel is invoked if a valid server URL was present and the tool has no parameters
- When you press the **Execute** button at the bottom of the panel

24.3 Optional Parameter area

If the associated DCL External tool has parameters, this area will contain one or more fields prompting for parameter values to use. These parameter values will be passed to the DCL command when it is executed.

If no parameters are specified for this tool this area will not be displayed and the tool will be automatically executed when the panel is invoked.

24.4 Save Locally

If selected, any values you have entered in the parameters may be saved to your local configuration file when the panel is closed and will be used as defaults when the same DCL External tool is next invoked.

If selected, and you use **CANCEL** button, or the *close window* button and parameter values are present you will be prompted to confirm the saving of these values.

If selected, and you use the **EXIT** button the parameter values will be automatically saved.

24.5 Results Display area

The results of your command will be displayed here.

Figure 230 -   Results display area

The results display area has the following menu-based options:

24.5.1.1 File menu options

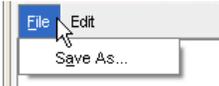*Figure 231 -   File Menu*

File / Save As…
  Save the entire contents of the display area to the designated file.
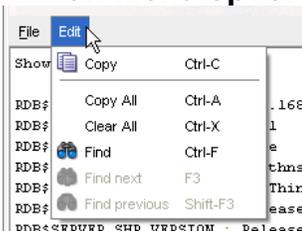
24.5.1.2 Edit menu options

Figure 232 -   Edit menu

Edit / Copy
  Copy the selected text to the global paste buffer.
Edit / Copy All
  Copy the entire contents of the display area to the global paste buffer.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous

Search for the previous occurrence of the specified text.

24.6 Options

Execute

Press the **Execute** button to execute the command you have entered.

Cancel

Press the **Cancel** button to end the DCL Command session. . If parameter values are present and *save locally* is selected, you will be prompted to confirm the saving of these values to the configuration file.

Exit

Press the **Exit** button to end the DCL Command session. If parameter values are present and *save locally* is selected, these values will be saved to the configuration file.

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Chapter 25
SQL Command Window

Figure 233 -   Example SQL Command

The SQL Command window allows you to connect to a JDBC server and issue SQL external tool commands.

The SQL text provided in the **Command** field will be passed by the JDBC server to an Oracle Rdb Interactive SQL session that will be started specifically for this external tool.

Note:
The SQL Command window executes SQL commands using the standard Oracle Rdb interactive SQL command line interface, rather than executing them as JDBC SQL statements (which will use dynamic SQL). This allows you to carry out operations as you would when connected to interactive SQL on OpenVMS in a terminal session.

Please see your *Oracle Rdb SQL reference manual* for information on the differences between interactive and dynamic SQL, especially with regards to SQL syntax that may be vary between the two interfaces.

The command may be a simple SQL statement, or reference to a SQL script file (*.sql). If a script file is referenced it must be available for access by the JDBC server on the remote site. Please ensure that appropriate symbolic and logical names have been assigned prior to executing the command. If a script file is used, ensure that it is readable by the JDBC server.

See the **CL Access** section of the *Oracle JDBC for Rdb User Guide* for more information on how to use command procedures to ensure that your environment has been properly setup.

The remote JDBC server will execute the command using a sub-process created specifically for CLI access.

If the SQL external tool has default username and password defined it will use that to obtain control authorization from the server.

If the tool does not already define a username and password to use, ORCM will use the session control user/password to attempt to connect to the specified server as a control user.

The JDBC server will execute the CLI command by passing it to the command procedure pointed to by the server option `srv.cliStartup`, found in the configuration file that the server used during startup.

The command will be executed in the context of the process within which the attached server was started. OpenVMS protection and authorization checking will be based on the OpenVMS user account that started the attached server.

Note:
   The designated server must have command line (CL) access enabled, indicated by the server option ***allowAccessToCL*** for that server being set to ***true*** within the configuration file that the server used during startup. See the CL Access section of the *Oracle JDBC for Rdb User Guide* for more information.

The SQL Command panel contains the following:

- Server field
- Cmd field
- Optional Parameter area
- Save Locally field
- Results Display area

25.1 Server
This is the JDBC server that the tool command will use to execute on. This is a read-only field.

25.2 Cmd

The tool's SQL command is echoed here. This is a read-only field.

The SQL command will be sent to the server:

- Automatically when the command panel is invoked if a valid server URL was present and the tool has no parameters
- When you press the **Execute** button at the bottom of the panel

25.3 Optional Parameter area

If the associated SQL external tool has parameters, this area will contain one or more fields prompting for parameter values to use. These parameter values will be used to conditioning the contents of the SQL command line or script before sending it to the server for execution. (See section Command Preconditioning below for more details.)

If no parameters are specified for this tool this area will not be displayed and the tool will be automatically executed when the panel is invoked.

25.4 Save Locally

If the associated SQL external tool has parameters this field will be displayed. If checked, any values you have entered in the parameters may be saved to your local configuration file when the panel is closed and will be used as defaults when the same SQL external tool is next invoked.

If checked, and you use **CANCEL** button, or the *close window* button and parameter values are present you will be prompted to confirm the saving of these values.

If checked, and you use the **EXIT** button the parameter values will be automatically saved.

25.5 Results Display area

The results of your command will be displayed here.

Figure 234 -   Results display area

The results display area has the following menu-based options:

25.5.1.1 File menu options

File / Save As…
  Save the entire contents of the display area to the designated file.

25.5.1.2 Edit menu options

Edit / Copy
  Copy the selected text to the global paste buffer.
Edit / Copy All
  Copy the entire contents of the display area to the global paste buffer.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous
  Search for the previous occurrence of the specified text.

25.6 Command Preconditioning

If there are parameters present, the values provided by the user for these parameters will be used to produce the final SQL text that will be delivered to the remote interactive SQL session. Global symbol and parameter value substitution is carried out on the SQL text that will be executed.

If the command line is a reference to a SQL script file for example:

```
@my_dir:my_test_script.sql
```

And parameters are present in the tool, extra network steps are carried out when you press the **execute** button:

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- The script file contents are retrieved from the remote site.
- Global symbols and parameter values are used to substitute any symbolic markers found in the source text.
- The altered SQL script text is sent down to the server for execution. The changes made to the script text are not saved, and the original script file will remain unaltered.

For example, if the content of the SQL script to be executed contained:

```
-- Description: test the use of parameter with the SQL Cmd tools
-- Parameters: p1, database :- the database to connect to , char(255)
--             P2, table :- the table,      char(32)
--
att 'file ${p1}';
show table ${p2};
```

And the tool that invoked the SQL command panel contained the following parameters:

```
   <parameter name = "P1"
            index = "1"
            description = "database :- the database to connect to "
            format = "char(255)"
         />
         <parameter
            name = "P2"
            index = "2"
            description = "table :- the table"
            format = "char(32)"
         />
```

And the following values were entered into the parameters when prompted:

Database :   mydir:mydb.rdb
Table   :   jobs

The following text will be sent down to interactive SQL via the JDBC server:

```
-- Description: test the use of parameter with the SQL Cmd tools
-- Parameters: p1, database :- the database to connect to , char(255)
--             P2, table :- the table,      char(32)
--
att 'file mydir:mydb.rdb';
show table jobs;
```

ORCM also has the ability to build parameter entry panels automatically from the content of the command procedure or script that is to be executed.

25.7 Options

Execute

Press the **Execute** button to execute the command you have entered.

Cancel

Press the **Cancel** button to end the SQL Command session. . If parameter values are present and *save locally* is selected, you will be prompted to confirm the saving of these values to the configuration file.

Exit

Press the **Exit** button to end the SQL Command session. If parameter values are present and *save locally* is selected, these values will be saved to the configuration file.

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Chapter 26
Server Scan

Figure 237 -   Server Scan

The Server scan panel allows you to scan for JDBC servers on a particular host.

After providing the node you wish to scan and the range of ports, ORCM will scan the range to determine if any JDBC servers respond to connection requests within that port range.

The server scan may be used to check on the presence of JDBC servers that are not responding to POLL requests on the multicast groups you have tried.

The Server scan panel contains the following:
- Node field
- StartingPort field
- EndingPort field
- Results Display area

26.1 Node
The node to scan, this may be a node name or IP.

26.2 StartingPort
The port number to start scanning from.

26.3 EndingPort

The port number to scan to.

The scan will commence when you press the **Execute** button at the bottom of the panel

26.4 Results Display area

The results of your scan will be displayed here.

File Edit

Executing Scan //localhost:1701/ 1701 1705 ...
Scanning port 1701
Server on port 1701 responded
Scanning port 1702
Scanning port 1703
Scanning port 1704
Server on port 1704 responded
Scanning port 1705
URL : jdbc:rdbThin://localhost:1701/RdbThinSrv version : 73111:20130104 pid : 2344
URL : jdbc:rdbThin://localhost:1704/RdbThinSrv version : 73111:20130104 pid : 4464
Done

Figure 238 -   Results display area

The results display area has the following menu-based options:

- [File menu options](#)
- [Edit menu options](#)

26.4.1.1 File menu options

Figure 239 -   File menu

File / Save As ...

Save the entire contents of the display area to the designated file.

26.4.1.2 Edit menu options

Figure 240 -   *Edit menu*

Edit / Copy
  Copy the selected text to the global paste buffer.
Edit / Copy All
  Copy the entire contents of the display area to the global paste buffer.
Find
  Search for specified text.
Find next
  Search for the next occurrence of the specified text.
Find previous
  Search for the previous occurrence of the specified text.

26.5 Options

Execute
  Press the **Execute** button to scan the node and port range you have entered.
Cancel
  Press this **Cancel** button to end the Server Scan session.

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Chapter 27
Preference Panel

Edit/Display ORCM configuration information.

Figure 241 -   ORCM Preference Pane

The ORCM Preference panel allows you to modify or display configuration information about ORCM.

The Preference panel is comprised of a Preference Tree, containing broad groups of preference topics, and number of sub-panels containing related configuration information.

- Environment – general environment information.
- Features – describes which optional ORCM features are currently enabled.
- Configuration - information such as the configuration file ORCM is loaded from.
- Network - describes network information pertinent to ORCM.
- Control - describes the default session control username and password
- TraceLevel - describes ORCM tracing.
- Event Trace Level - Describe ORCM Event tracing.
- SSL - describes SSL security access information for the ORCM session.
- Oracle Trace - describes the ORCM Oracle Trace options.

27.1 Preferences Tree

Figure 242 -   Preferences Tree

To the left of the panel is the Preferences tree. Click on a node in this tree to display a panel of related configuration information.

27.2 Options

The ORCM Preference panel has the following button-based options:

OK

Press **OK** to accept the changes made and update the ORCM session and if needed, the ORCM configuration file.

Cancel

Press **Cancel** to cancel the operation and close the window.

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27.3 Environment Information

Information about the general ORCM environment.

Figure 243 -   Environment Panel

This panel consists of the following:

- Disable Watermark check box
- Disable Suggestions checkbox
- Select Color – editable field button
- Select Color – read-only field button
- Clear Saved Settings button

27.3.1 Disable Watermark

Check this box to disable the Rdb watermark seen on the ORCM panels.

27.3.2 Disable Suggestions

Check this box to disable ORCM suggestions. Some operations such as database schema differences may display suggested actions if an exception has been found during processing. Disabling suggestions will prevent suggestion text from being displayed.

27.3.3 Select Color Editable Field Button

Press the **editable field** button to bring up a color chooser panel from which you may choose the background color of editable fields on the various panels displayed within ORCM.

27.3.4 Select Color Read-only Field Button

Press the **read-only field** button to bring up a color chooser panel from which you may choose the background color of read-only fields on the various panels displayed within ORCM.

27.3.5 Clear Saved Settings Button

Press the **Clear Saved Settings** button to clear any configuration information saved to your system by ORCM. This information is comprised of configuration attributes that are not stored in the ORCM configuration file, for example, the name of last configuration file used is saved by ORCM so that it can be used the next time you invoke ORCM.

You will be prompted to confirm the removal of the current ORCM saved settings.

Figure 244 -   *Clear setting confirmation*

If you press **Yes** the settings will be removed.

Configuration settings found in the configuration file are not affected.

27.4 Features Information

Since 7.3.4.0.0

Information about the optional ORCM features.

Figure 245 -   *Features Panel*

This panel consists of the following:

- [Enable Oracle Trace checkbox](#)
- [Enable RMU Stats checkbox](#)
- [Enable DB Diffs checkbox](#)

27.4.1 Enable Oracle Trace

Check this box to enable the ORCM Oracle Trace feature. This feature is DISABLED by default.

27.4.2 Enable RMU Stats

Check this box to enable the ORCM RMU Statistics feature. This feature is ENABLED by default.

27.4.1 Enable DB Diffs

Check this box to enable the ORCM Database Schema Differences feature. This feature is ENABLED by default.

27.5 Configuration Information

Information about the general ORCM environment.

Figure 246 -   Environment Panel

This panel consists of the following:

- [Configuration file field](#)
- [Browse button](#)
- [AutoSave IP checkbox](#)
- [Autoformat Cfg checkbox](#)
- [Versioned Backups check box](#)
- [Maximum kept versions field](#)
- [Visualizer Session field](#)

27.5.1 Configuration File

Enter the file name of the configuration file to use for this ORCM session. Alternatively use the Browse button to search for and select a suitable configuration file.

27.5.2 Browse Button

Press the **Browse** button to browse your local system for possible ORCM configuration files.

27.5.3 AutoSave IP checkbox

Check this box to request ORCM to save any IPs it finds when doing network lookups on host names to the configuration file.

Only check this box if IP values of known hosts are basically fixed or constant.
Depending on how your network is setup, it may take a while for the network to return an IP address when it is requested to lookup a hostname. Once ORCM has an IP for a host name it is saved in internal tables for later reuse during the ORCM session.

To save time ORCM can be configured to save IPs it has found to the ORCM configuration file, thus maintaining the IP information across ORCM sessions.

Note:
If your network is dynamic and IP values change frequently, Oracle recommends to not check the AutoSave IP checkbox, as the IP information may become stale and prevent ORCM from making JDBC server connections. An example of a changing IP environment is a client machine that may use VPN for remote connectivity. The IPs for hosts may change depending on the VPN status.

27.5.4 Autoformat cfg checkbox

Check this box to request ORCM to reformat the configuration file when changes have been made to it. Reformatting of the configuration file text includes re-ordering attributes into alphabetic order, placing each attribute on its own line and reducing any excess white space etc.

27.5.5 Versioned Backups checkbox

Check this box to request ORCM to use versioned backup files when saving the configuration file during editing sessions. If clear, ORCM will only save a single backup version of the configuration file.

The backup files will be stored in the same directory the configuration file was loaded from. Each time you change the configuration file a copy of the configuration details prior to the changes will be saved.

If *versioned backups* is enabled, multiple version of the backup configuration file will be saved, if this feature is not selected, only one version will be saved, and overwritten each time a backup of the file is made.

If backup versions is enabled, files with the following filename pattern will be saved to the configuration file directory:
   <cfg file name>~<number>

For example:
```
orcmcfg.xml~8
```

If versioned backup is not enabled the backup file pattern is:
   <cfg file name>~
For example:
```
orcmcfg.xml~
```

27.5.6 Maximum kept versions field

This field specifies the maximum number of configuration file version backups ORCM should maintain. If non-zero, ORCM will ensure that only the last specified number of copies of the configuration file backups are kept.

27.5.7 Visualizer Session field

This field specifies the name of the session to use when displaying the ORCM visualizer. Attributes such as the background image, the images to use for JDBC and SQS servers, the poll timeout etc. may be specified within the ORCM configuration file within a named Visualizer session. You may have multiple named Visualizer Sessions in the configuration file.

27.6 Network Information

Information about the ORCM network configuration.

Figure 247 - Network Panel

This panel consists of the following fields:
- Polling
- Relay Polling
- Broadcast IP
- Broadcast Reply Port
- Poll Timeout
- Cast Timeout

27.6.1 Polling

Check the **Polling** checkbox if you wish ORCM to multicast poll for JDBC server on your network.

27.6.2 Relay Polling

Check the **Relay Polling** checkbox if you wish ORCM to relay any poll request to known relay servers.

27.6.3 BroadcastIP

The IP/Port value to use for multicast polling. This IP consists of both the Group IP and the base port for multicasting. There may be multiple values in this field. To insert another IP press the **AddIP** button to open up a space in the list to add the new IP.

To remove an existing IP, select the IP from the list and press the **RemoveIP** button.

27.6.4 Broadcast Reply Port

The Port ORCM is using to listen for replies from multicast poll requests. This is a read-only field.

27.6.5 Poll Timeout

The amount of time in seconds ORCM should wait before deciding that all poll replies have been received. If your network traffic is very busy and replies are taking longer than normal, you should consider increasing this value.

27.6.6 Cast Timeout

The amount of time, in seconds, ORCM should wait before deciding that the server that has been sent a cast request is not responding. If your network traffic is very busy and replies are taking longer than normal, you should consider increasing this value.

27.6.7 SQS Control Timeout

The amount of idle time, in seconds, that ORCM will allow on a SQS Control connection. If ORCM has not issued any commands to the SQS Server for this duration of time, and the SQS connection is open, it will be closed by ORCM. Subsequent operations on that same server will open a fresh SQS control connection.

If your network TCP/IP timeouts are small, it is possible that the TCP socket may be closed during an active ORCM session. If this happens while a SQS control connection is active ORCM will raise an exception on the next SQS operation made to this connection. To prevent this exception being raised you should set the SQS Control Timeout to less than your default network TCP/IP idle timeout.

27.6.8 Bind Timeout

The amount of time, in seconds, that ORCM will wait for the initial connection to a server. If zero (0), the default, ORCM will wait indefinitely.

If the server to be connected has a definition within the ORCM configuration file and has a non-zero Bind Timeout configuration attribute set, then this server-specific value will be used instead.

Used mainly in conjunction with External Tools where the remote server may not be previously known to ORCM.

27.6.9 Net Timeout

The amount of time, in seconds, that ORCM will wait for a response from a server after the initial bind has been made. If zero (0), the default, ORCM will wait indefinitely.

If the server to be connected has a definition within the ORCM configuration file and has a non-zero Net Timeout configuration attribute set, then this server-specific value will be used instead.

Used mainly in conjunction with External Tools where the remote server may not be previously known to ORCM.

27.6.10 Log Server Port

The port ORCM will listen on to receive Java Logger message from participating JDBC servers.

27.6.11 Event Server Port

The port ORCM will listen on to receive Rdb Event notifications from participating JDBC servers.

27.7 Control Information

Information about the ORCM control configuration.

Figure 248 -   Control Panel

This panel consists of the following fields:
- Username
- Password

27.7.1 Username

Enter the control username that ORCM should use when attempting to create control connections to JDBC servers.

27.7.2 Password

Enter the control user's password.

Since 7.3.3.0.0

Press the *show* button ![show] to display the password entered.

When the password text is in the display state the show button will be replaced with the *hide* button ![hide] .

27.8 Trace Level Information

Information about the trace flags set for ORCM.

Figure 249 -   *Trace Level flags Panel*

The flags panel consists of a series of check boxes, each box representing the state of a particular trace level flag.

Click on a box to set or clear that flag.

Click on the *All* box to set or clear all flags.

By default trace flags are not transmitted down to the lower operational layers of ORCM. If you wish the flags to be transmitted to lower layers such as JDBC or RMU you should set the appropriate *Add to* box at the bottom of the panel.

27.8.1 Add to JDBC

Click on this box if you wish ORCM to send trace level flags to JDBC connections.

27.8.2 Add to SQL/Services

Click on this box if you wish ORCM to send trace level flags to SQL/Services connections.

27.8.3 Add to SQS/RMU

Click on this box if you wish ORCM to send trace level flags to SQL/Services RMU Dispatcher connections.

27.8.4 Add to RMU Statistics

Click on this box if you wish ORCM to send trace level flags to RMU Statistics connections.

See the *Oracle JDBC for Rdb User Guide* for information on how trace flags are used.

27.9 Event Trace level Information

Information about the ORCM event trace level configuration.

Figure 250 -   Event Trace Level Panel
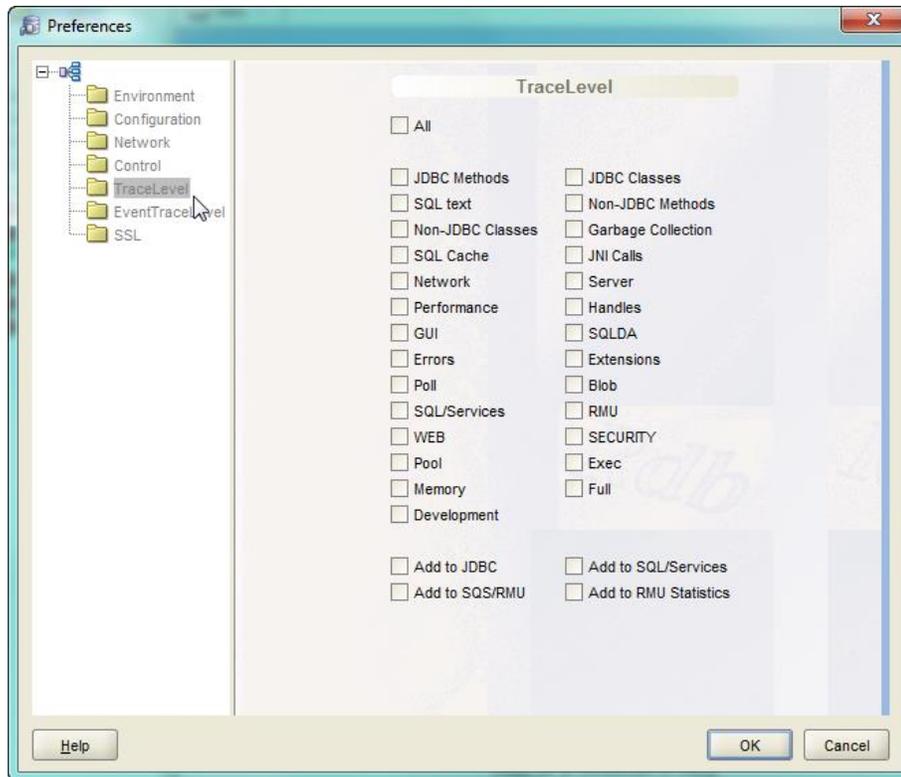
The flags panel consists of a series of check boxes, each box representing the state of a particular trace level flag.

Click on a box to set or clear that flag.

Click on the *All* box to set or clear all flags.

Enabling an event trace flag will allow events for that entity type to be displayed in the ORCM Events message display area on the ORCM Main panel.

```
FRAME RdbGuiEvent : 2013-02-04 17:00:20.078 JDBC SERVER POLL COMPLETE
SELECT oracle.rdb.jdbc.common.ServerInfoContext@1b284a4
FRAME RdbGuiEvent : 2013-02-04 17:00:28.531 SELECT oracle.rdb.jdbc.common.
FRAME RdbGuiEvent : 2013-02-04 17:00:28.531 SELECT oracle.rdb.jdbc.common.
FRAME RdbGuiEvent : 2013-02-04 17:00:30.078 JDBC SERVER POLL COMPLETE
FRAME RdbGuiEvent : 2013-02-04 17:00:30.078 JDBC SERVER REFRESH ACTIV.
```

| Messages | Log Output | ORCM Events | Server Events | Trace |

JDBC Server Polling is enabled

Figure 251 -   ORCM Event Trace Level Panel

27.10 SSL Information

Information about the ORCM SSL configuration.

Figure 252 -   SSL Panel

The SSL Panel contains the SSL information that the ORCM session will use if it has to connect to a SSL enabled JDBC server.

The SSL panel consists of the following fields:
- context
- keyManagerFactory
- keyStoreType
- keyStore
- keyStorePassword
- trustStore

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- [trustStorePassword](#)

27.10.1 context

Indicates the SSL context to use, for example `"TLS"`.

This value is held as the `ssl.context` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

27.10.2 keyManagerFactory

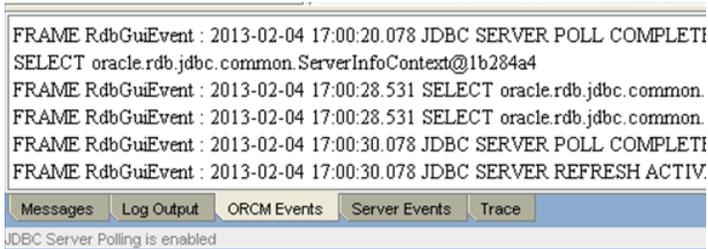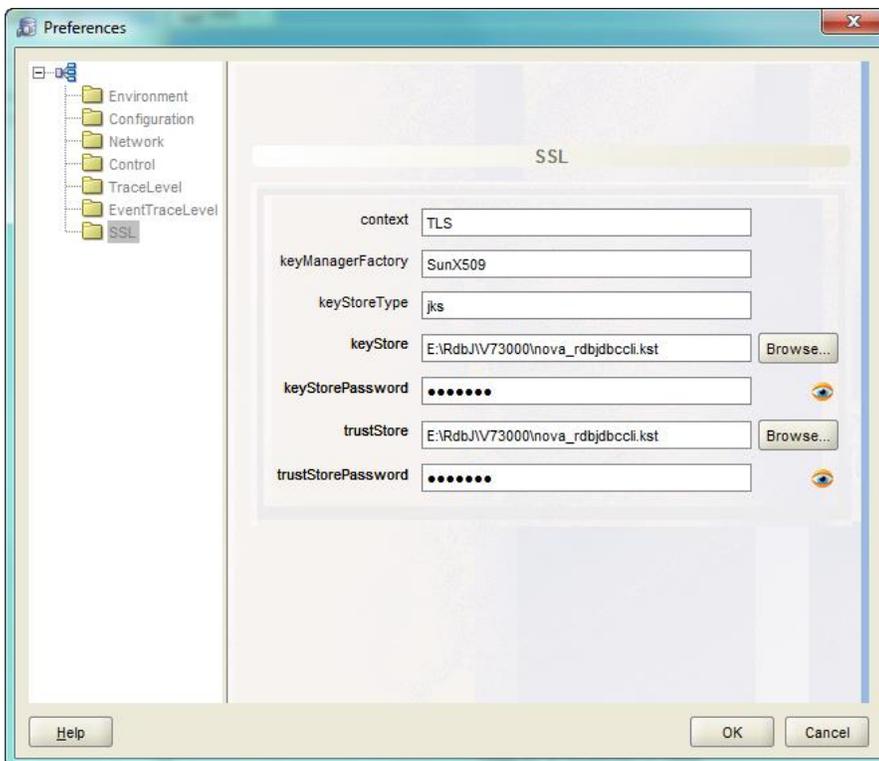Indicates the key manager factory to use, for example `"SunX509"`.

This value is held as the `ssl.keyManagerFactory` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

27.10.3 keyStoreType

Indicates the type of the key store, for example `"jks"`.

This value is held as the `ssl.keyStoreType` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

27.10.4 keyStore

Indicates the filename of the keystore. You may use the associated **Browse** button to locate and select a keystore file on your system.

This value is held as the `ssl.keyStore` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

27.10.5 keyStorePassword

Indicates the password for the keystore.

This value is held as the `ssl.keyStorePassword` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

Since 7.3.3.0.0

Press the *show* button 👁 to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide* button 🚫 .

27.10.6 trustStore

Indicates the filename of the trust store. You may use the associated **Browse** button to locate and select a truststore file on your system.

This value is held as the `ssl.trustStore` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

27.10.7 trustStorePassword

Indicates the password of the trust store.

This value is held as the `ssl.trustStorePassword` configuration setting within the **DEFAULT** session section of the XML-based server configuration file.

Since 7.3.3.0.0
Press the *show* button ● to display the password entered.
When the password text is in the display state the show button will be replaced with the *hide* button ⊘ .

27.11 Oracle Trace Information

Since 7.3.4.0.0

Information about the Oracle Trace configuration.

Figure 253 -   *Oracle Trace Panel*

This panel consists of the following fields:
- Oracle Trace Cache
- Suppress Repeat Group

27.11.1 Oracle Trace Cache

Specifies where to store the locally cached Oracle Trace data that has been retrieved from the remote Oracle Trace formatted database. Use the **Browse…** button to browse your local directories to select an appropriate destination.

27.11.2 Suppress Repeat Group

Check the **Suppress Repeat Group** checkbox if you wish ORCM to suppress repeated leading group values in displays. If unchecked all group values will be displayed. Used mainly in the **Facility Resource** traces to suppress redundant display of information.

For example, if the checkbox is unchecked:

Figure 254 -   With Suppress Repeat Group unchecked

Alternatively if the check box is checked:

Figure 255 -   With Suppress Repeat Group checked

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Chapter 28
Other Information

28.1 ORCM Configuration Files

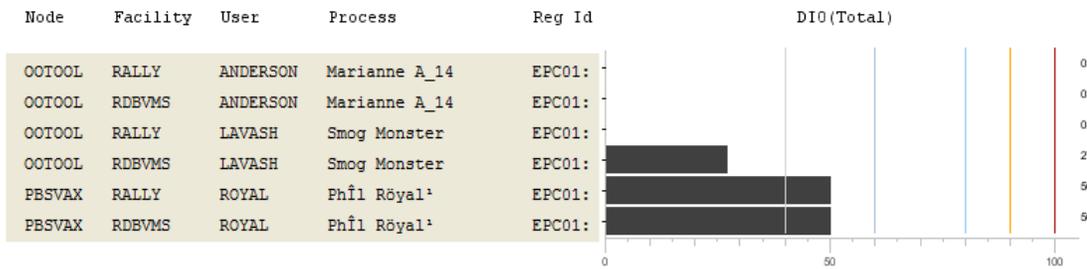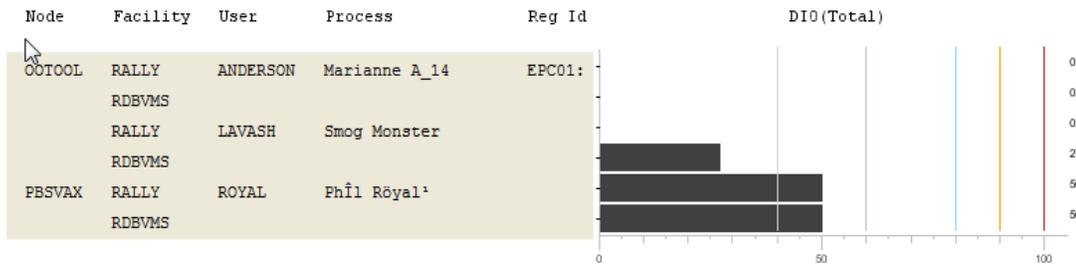ORCM stores its configuration data in one or more XML-based configuration files.

The ORCM main configuration file is the one used when invoking the ORCM GUI and is specified by using the `-CFG` command line parameter.

The main configuration file that ORCM will use may also be set within the Preferences menu option. See Configuration Information for more details.

You may choose to place some configuration data in separate configuration files for ease of maintenance, for example it is common to keep external tool definitions in a separate configuration file.

You can then tell ORCM to load these secondary configuration files at GUI startup by adding the appropriate LOAD FILE directive to the main configuration file.

The sample configuration file `orcmcfg.xml` provided with the ORCM installation and placed in the ORCM installation directory shows an example of loading the sample tools configuration file found in the ORCM examples subdirectory as a secondary configuration file:

```
<?xml version = '1.0'?>
<!-- Configuration file for Oracle Rdb Connectivity Manager -->
<!--  NOTE:  all values (including numbers) must be quoted  -->
<!--        server names and database names are not case sensitive -->
<config>

<!-- to enable the external tools demonstration please uncomment
     the following "load" statement. For load file we can give a
     relative filespec, this will be relative to the main config file spec
     or if not found will be searched for relative to the directory that ORCM
     JAR was loaded from -->

<!--  <load file="examples\orcm_demo_tools.xml"/> -->

 <connections>
.
.
.
```

You can see the contents of your main configuration file by using the Edit ORCM Configuration File option of the TOOLS menu.

If you have additional file loaded from the main configuration file you may access these by using the Edit Additional Configuration File option of the TOOLS menu.

Whenever ORCM makes a change to an ORCM configuration, ORCM will overwrite the existing ORCM file with the updated information. You may choose to keep old versions of the configuration file incase you may wish to undo some changes you have made to you configuration. See Versioned Backups for more details. You may also choose to only keep a certain number of these versioned backups, see Maximum kept versions field.

See the *XML-Based Configuration File* section of your *Oracle JDBC for Rdb User Guide* for some general information about XML-based configuration attributes.

28.2 ORCM Examples Directory

The ORCM examples directory is where ORCM installs examples that you may use to aid in becoming familiar with some of the ORCM features.

During installation, the **examples** subdirectory is created relative to the directory where the ORCM application is installed.

So, for example on Windows, if you installed ORCM using the standard ORCM MSI file provided by Oracle, on 32 bit system ORCM will be installed to :

```
C:\Program Files (x86)\Oracle\ORCM
```

On that system ORCM will add examples to

```
C:\Program Files (x86)\Oracle\ORCM\examples
```

In this directory you will find the sources, classes and jar files for the two example Plugin jars:

- orcmnettool.jar
- orcmplugin.jar

In addition this directory contains the sample TOOL configuration file:

```
orcm_demo_tools.xml
```

28.3 ORCM Extension Directory

The ORCM extensions directory is where you must place your External Tool plugin JARs for ORCM to load. ORCM uses the following search list to locate a plugin loadable JAR:

- The directory that the ORCM application JAR file was invoked from,
- (On platforms other than OpenVMS) the "ext" subdirectory relative to the directory that the ORCM application JAR file was invoked from
- (On OpenVMS only) the directory pointed to by the logical `rdb$jdbc_com:`

So for example on Windows if you installed ORCM using the standard ORCM MSI file provided by Oracle, on 32 bit system ORCM will be installed to :

```
C:\Program Files (x86)\Oracle\ORCM
```

On that system ORCM will search for the plugin class in all jars in

```
C:\Program Files (x86)\Oracle\ORCM
```
And then in
```
C:\Program Files (x86)\Oracle\ORCM\ext
```

28.4 ORCMPlugin Interface

Interface ORCMPlugin

`public interface` oracle.rdb.gui.**ORCMPlugin**

Method Summary

Modifier and Type	Method and Description
byte[]	**execute**(java.lang.String command, java.lang.String os, java.util.Properties properties) Execute the command text
java.lang.String	**prepareCommand**(java.lang.String command, java.lang.String os, java.util.Properties properties) Prepare the command text for execution by the external tool

java.lang.String	**prepareParameter**(java.lang.String name, int idx, java.lang.String val, java.lang.String os, java.util.Properties properties, java.lang.String format) Prepare the parameter text for sending to the external tool

Method Detail

execute

byte[] execute(java.lang.String command,
    java.lang.String os,
    java.util.Properties properties)
    throws java.lang.Exception

Execute the command text

Parameters:

    command – the command text to execute

    os – the textual name of the Operating System the command will execute on this value should be the same format returned by the Java method System.getProperty("os.name")

    properties – a list of properties that may be used by the external tool

Returns:

    a byte array containing the results of the tool's execution

Throws:

    java.lang.Exception

prepareCommand

java.lang.String prepareCommand(java.lang.String command,
        java.lang.String os,
        java.util.Properties properties)
        throws java.lang.Exception

Prepare the command text for execution by the external tool

Parameters:

    command – the command text to prepare

    os – the textual name of the Operating System the command will execute on this value should be the same format returned by the Java method System.getProperty("os.name")

    properties – a list of properties that may be used by the external tool

the command text to pass to the tool for execution

java.lang.Exception

---

prepareParameter

java.lang.String prepareParameter(java.lang.String name,

         int idx,

         java.lang.String val,

         java.lang.String os,

         java.util.Properties properties,

         java.lang.String format)

         throws java.lang.Exception

Prepare the parameter text for sending to the external tool

Parameters:

name – the name of the parameter

idx – the index number allocated to this parameter

val – the current value of this parameter

os – the textual name of the Operating System the command will execute on this value should be the same format returned by the Java method System.getProperty("os.name")

properties – a list of properties that may be used by the external tool

format – the format specifier for this parameter

Returns:

the text value to pass to the tool on execution for this parameter

Throws:

java.lang.Exception