Oracle® Retail Data Store
Implementation Guide

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Oracle Retail Data Store Implementation Guide, Release 22.0.000

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Contents

Preface

This guide describes the administration tasks for Oracle Retail Data Store.

Audience

This guide is intended for administrators, and describes the administration tasks for Oracle Retail Data Store.

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- Exact error message received
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Oracle Retail Cloud Services and Business Agility

Oracle Retail Merchandising Cloud Services is hosted in the Oracle Cloud with the security features inherent to Oracle technology and a robust data center classification, providing significant uptime. The Oracle Cloud team is responsible for installing, monitoring, patching, and upgrading retail software.

Included in the service is continuous technical support, access to software feature enhancements, hardware upgrades, and disaster recovery. The Cloud Service model helps to free customer IT resources from the need to perform these tasks, giving retailers greater business agility to respond to changing technologies and to perform more value-added tasks focused on business processes and innovation.

Oracle Retail Software Cloud Service is acquired exclusively through a subscription service (SaaS) model. This shifts funding from a capital investment in software to an operational expense. Subscription-based pricing for retail applications offers flexibility and cost effectiveness.

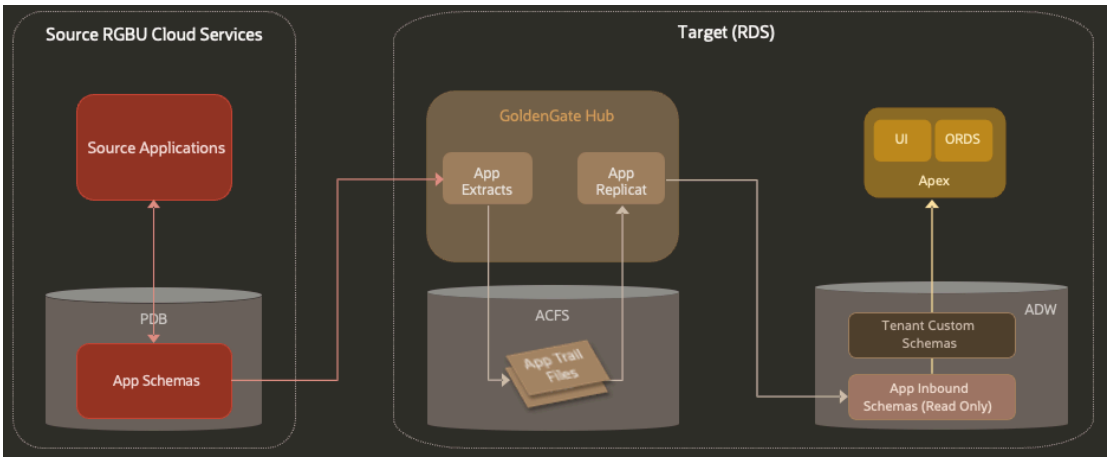
1 Implementation Overview

Oracle Retail Data Store (RDS) is a set of infrastructure and tools that allows you to build extensions on top of Retail application data without affecting the original Retail applications. These extensions can consist of database objects, web services, and user interfaces. This Implementation Guide describes the solution and provides information about how you can use RDS.

The core of RDS is a data replication implementation that uses Oracle GoldenGate to replicate application data from Retail applications to a centralized Autonomous Data Warehouse (ADW) database. The data is kept in sync with the source application database in near-real-time.

This data is made available through Oracle REST Data Services (ORDS) and Application Express (APEX) workspaces. When a retailer subscribes to RDS, they are given the URLs and credentials to access these workspaces.

Figure 1-1 Data Replication to RDS via GoldenGate



- **PDB** - Pluggable Data Base. The source applications in the RGBU that will be replicating to RDS store their data in pluggable database instances.
- **ACFS** - ASM (Automatic Storage Management) Cluster File System. A file system used internally by GoldenGate to store the trail files that hold data replication information.
- **ORDS** - Oracle Rest Data Services. An Oracle tool that allows customers to create web services connected directly to data in an Oracle database. RDS customers will use this to create web services to access their custom data.
- **APEX** - Application Express. An Oracle tool that allows customers to create UI-based applications connected directly to data in an Oracle database. RDS customers will use this to create appliations that operate on their custom data.

- **ADW** - Autonomous Data Warehouse. An Oracle Autonomous Database offering that is tailored toward data warehousing use cases. RDS stores its replicated data and the customer's custom data here.

Separation of Replicated and Custom Data

The replicated application data is held in read-only schemas (one per source application schema). The ORDS and APEX workspaces have access to a read-write schema which can view the read-only schema's database objects. In the read-write schema, you are free to create any database objects you need to create, and you have read privileges to the replicated application data. When new database objects are created in the read-only schema (for example when a patch is applied to the source application), a scheduled database job in the RDS database grants the appropriate read permissions for those objects to the read-write schema. This job runs hourly.

Example

For Merchandising Foundation Cloud Service, an ORDS workspace is available that grants access to the MFCS_RDS_CUSTOM schema. This schema is initially empty, but allows creation of database objects, APEX applications, etc. This schema also has read permissions to database objects in the MFCS_RDS schema, which is where the actual replicated data resides. A customer can use the ORDS workspace to create REST data services that can read the tables with replicated data, or can read and write any custom tables that have been created. A customer can also build APEX applications on top of the custom tables; the read-only replicated tables can be read by the APEX application, but cannot be modified.

Each Retail application controls what data it replicates to the RDS database. Refer to each application's product documentation for details about the data that is made available in RDS.

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Typical Implementation Events

In any implementation including RDS, there are many steps along the way before a system is running.

- Provisioning
  - Provisioning includes the installation of the RDS Cloud Service including initial infrastructure required. This includes an ADW instance with schemas available for replication and extension, ORDS workspaces, and integration into Oracle Retail Home for display of usage metrics.
- Data Seeding via Data Pump
  - The next step is creating an initial data load into RDS from the source application using Oracle Data Pump tools. This step is done by Oracle when the retailer indicates they are ready to move forward.
  - A prerequisite to this step is that the source application must have data ready to be replicated; this may be an involved process depending on the application in question. Refer to documentation for the source application.
  - The result of this step is that a baseline set of data has been replicated from the source application to the RDS read-only schema.
- GoldenGate Hub Configuration
  - A GoldenGate Hub instance is configured to replicate data from the source application's database to the RDS read-only schema.
  - This is done by Oracle when the retailer indicates they are ready to move forward.
  - The result of this is that the GoldenGate Hub is running and performing active replication from the source applications' database.
- Extension
  - In this step, the retailer uses the tools that are part of RDS to build the custom extensions they need.

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Getting Started

Once RDS is provisioned, the following APEX workspaces are available to use:

Table 3-1 APEX Workspaces

Workspace Name	Source Cloud Service
MFCS	Merchandising Foundation Cloud Service
CECS	Customer Engagement Cloud Service

> **Note:**
>
> These workspaces are available even if you have not subscribed to the associated cloud services, but they contain no database objects or replicated data.

You can access these workspaces by navigating to the workspace login page for your environment. The URL for this will be delivered to you after provisioning is complete, and follows the pattern:

https://<base URL>/<environment ID>/ords/

For example:

https://ocacs.ocs.oc-test.com/nryfhvvl5ka2su3imnq6/ords/

You are then able to log in to one of the workspaces listed above using the credentials that have been supplied to you.

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Extension

This section lists some common extension patterns that can be implemented in RDS.

- Import/export data using the Autonomous Database DBMS_CLOUD package
- Import/export data using the APEX SQL Worksheet
- Write a query that joins custom data and replicated data
- Create a custom ORDS REST endpoint
- Integrate an APEX application with a custom ORDS REST endpoint
- Integrate an APEX application with a REST endpoint from a retail application

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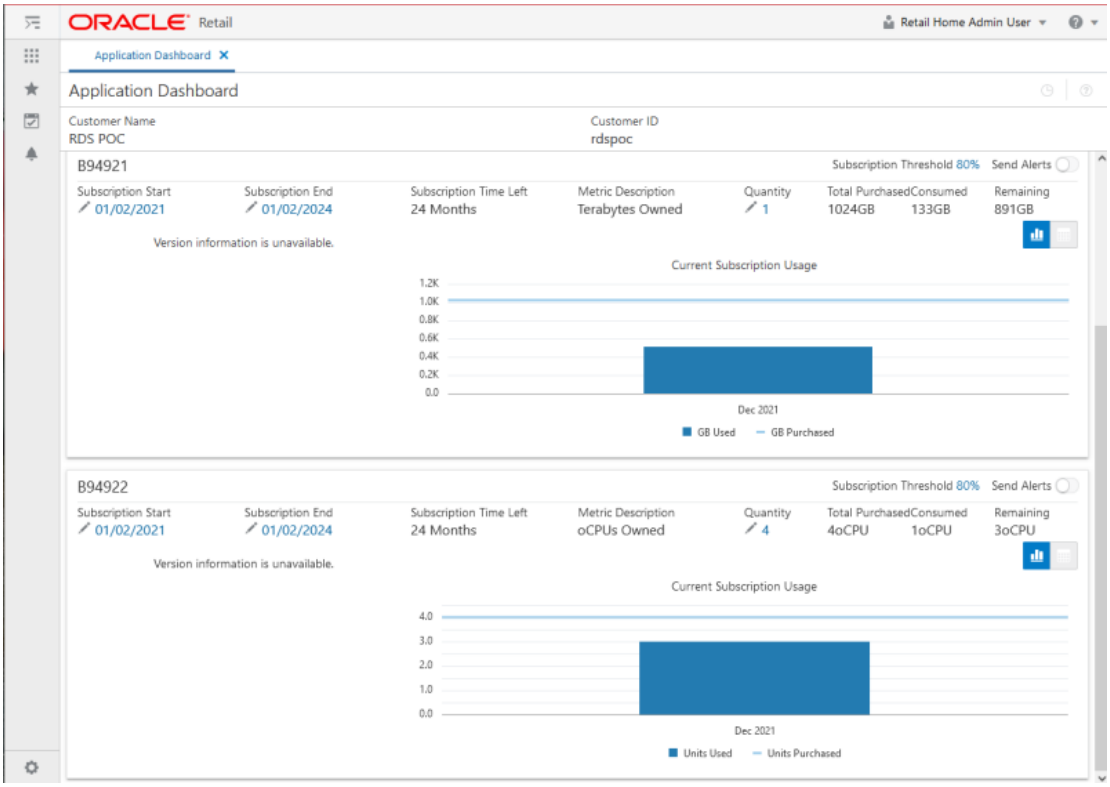
Storage and CPU Usage

For each RDS instance, the database disk storage and CPU usage is tracked. Usage can be seen by logging in to Oracle Retail Home and viewing the Application Dashboard. On the list are two entries: one for RDS CPU Usage, and one for RDS Disk Usage. The entries show current usage and also display the currently subscribed amounts for CPU and storage, so a customer can see if they are nearing their subscription limits. The usage is tracked on a weekly basis, so updates to these charts happen about four times a month. This UI can only be viewed by Retail Home administrator users. Refer to the Retail Home product documentation for more information.

Figure 5-1 Retail Home Application Dashboard



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Version Updates

Software updates are critical to keeping an environment secure and functioning well. Critical patch updates are installed on a quarterly basis, for example to the database, APEX/ORDS, and other tools being used in RDS. These updates may require downtime. If this is the case, the planned downtime is communicated in advance according to Oracle Retail standards.

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Notes

This section provides additional resources when implementing RSD.

APEX

For more information around building performant APEX applications, refer to the Managing Application Performance section of the *APEX App Builder User's Guide*.

For full details on developing APEX applications, refer to the APEX documentation.

Visual Builder Studio

For full details on developing Visual Builder applications, refer to the Visual Builder Studio documentation.

APEX and Autonomous Databases

Because RDS is built using Oracle Autonomous Data Warehouse (ADW), there are limitations with functionality provided by Oracle Application Express. These limitations are documented at https://docs.oracle.com/en/cloud/paas/autonomous-database/adbsa/apex-restrictions.html