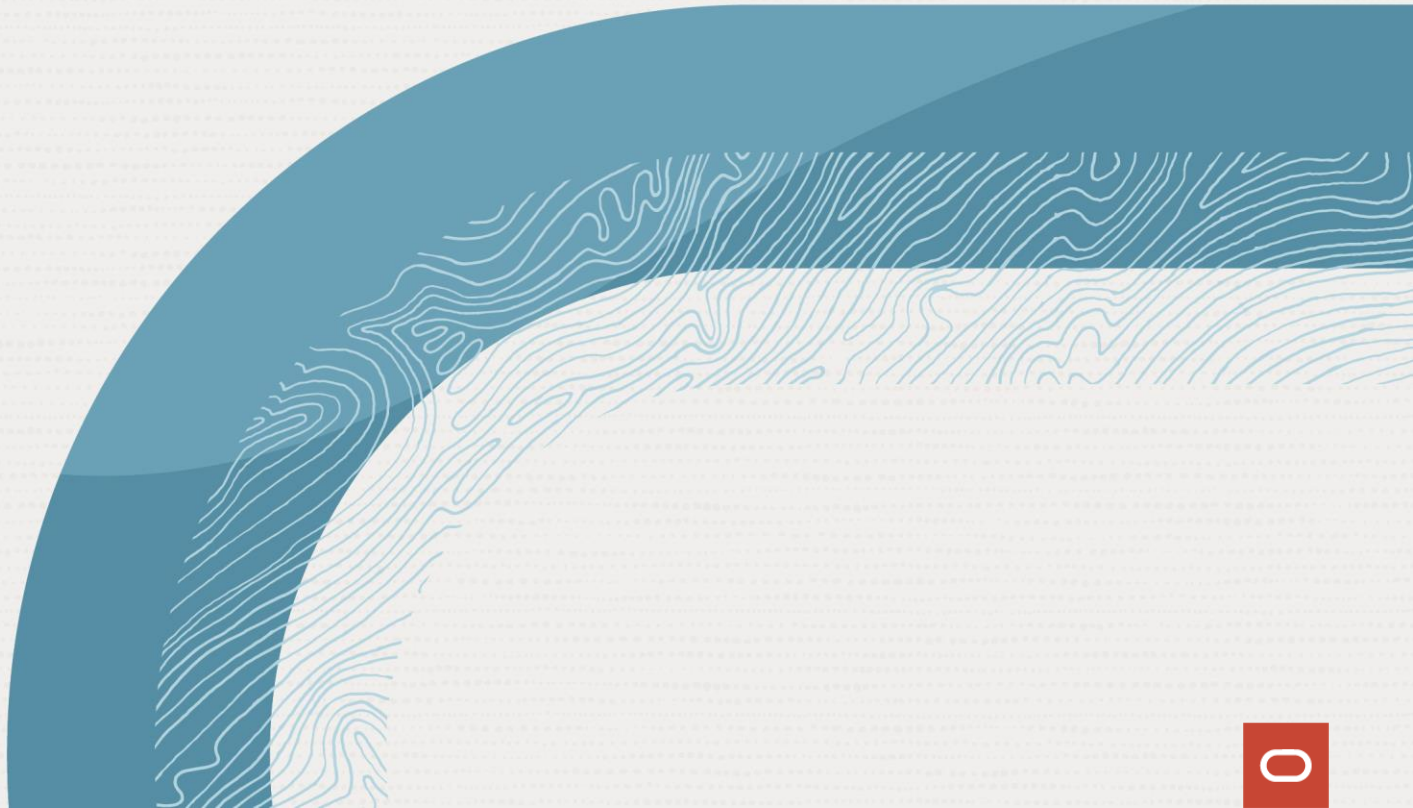
Cloud Database Migrations the Easy Way

Introduction to OCI Database Migration for MySQL Databases

for MySQL Databases



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Resources to learn more

Video demonstration	Click here
MySQL migration documentation	Click here
Oracle migration documentation	Click here
More information on Oracle.com	Click here

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OCI Database Migration migrates to the following OCI targets:

An easy to use fully managed service

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OCI Database Migration

Fully managed, easy-to-use homogeneous Oracle and MySQL database migrations

Database migrations

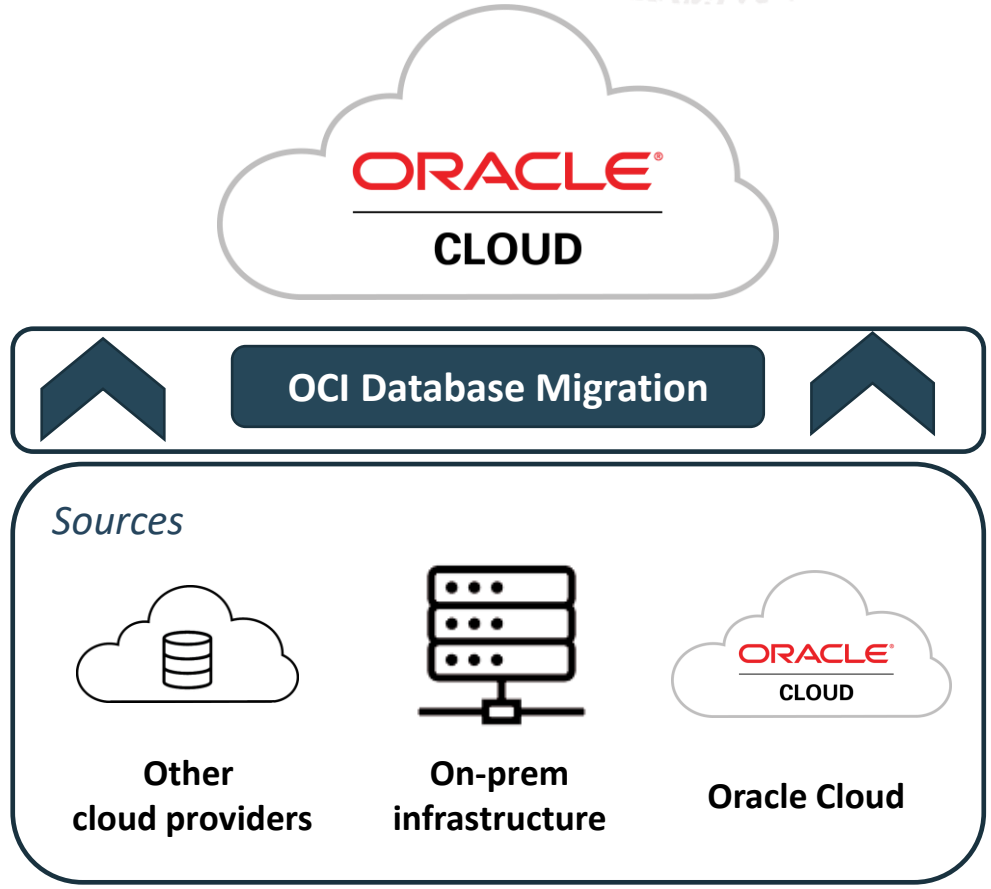
- Reduce cost and improve performance in Oracle Cloud
- Migrate databases, free for 6 months per migration

Core use cases

- Machine-assisted migrations for Oracle and MySQL Databases, Data Marts and Data Warehouses into Oracle Cloud Infrastructure

Differentiated use cases

- Simplifies underlying technologies and resources
- Logical *offline* and *online* migrations
- Schema/metadata migration



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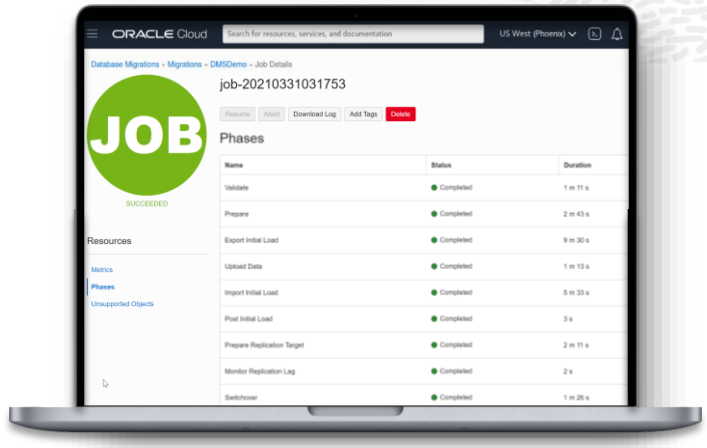
OCI Database Migration based on enterprise-strength tools

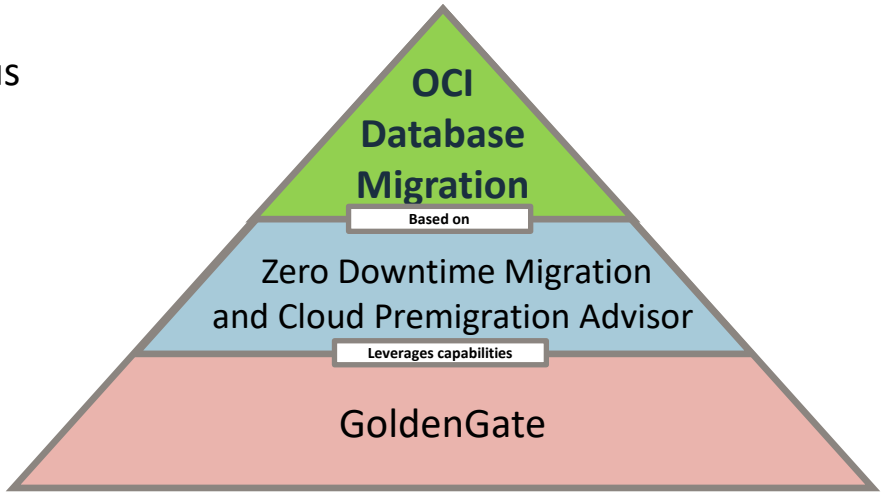
Single Workflow



Simple Online Experience

Oracle Databases

Move to Autonomous



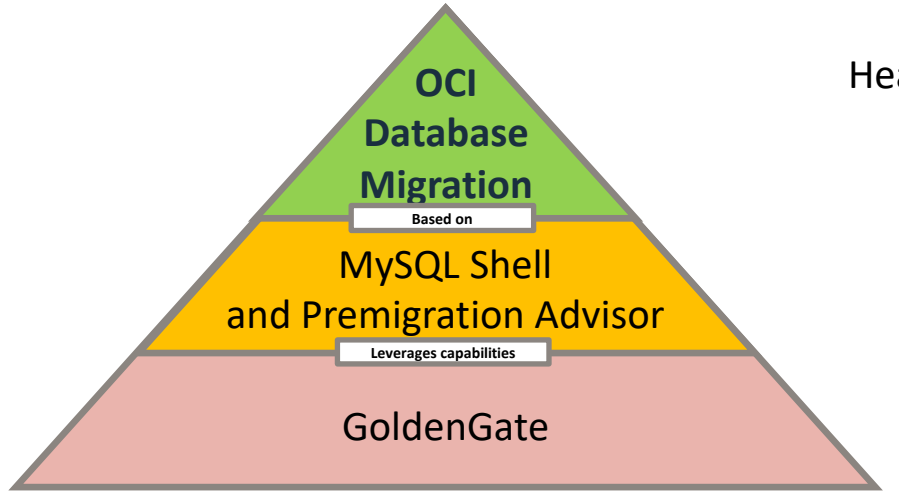
Flexible Fleet-level

UI-led experience

Expert use

MySQL Databases

Move to HeatWave MySQL



Flexible Fleet-level

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Different migration types

Offline Migration	***Online Migration***
• One-time copy of the database • Requires applications to be offline during migration	• Initial copy of database followed by change data capture during migration • Applications can stay online during migration
Physical Migration (Not available in OCI DM)	***Logical Migration***
• Blockwise copy of database files • Requires database vendors and versions to be same on source and target • No filtering or transformation • Oracle DB Tools: RMAN, DataGuard	• Logically interpret database contents and copy to database in target format • Source and target can be different • Oracle DB Tools: Datapump, GoldenGate • MySQL Tools: MySQL Shell, GoldenGate
Direct Connection	***Indirect Connection***
• Source database can be accessed directly from target network • Requires VPN/FastConnect for on-premises	• Source database cannot be accessed directly, behind firewall • Requires migration tool with agent

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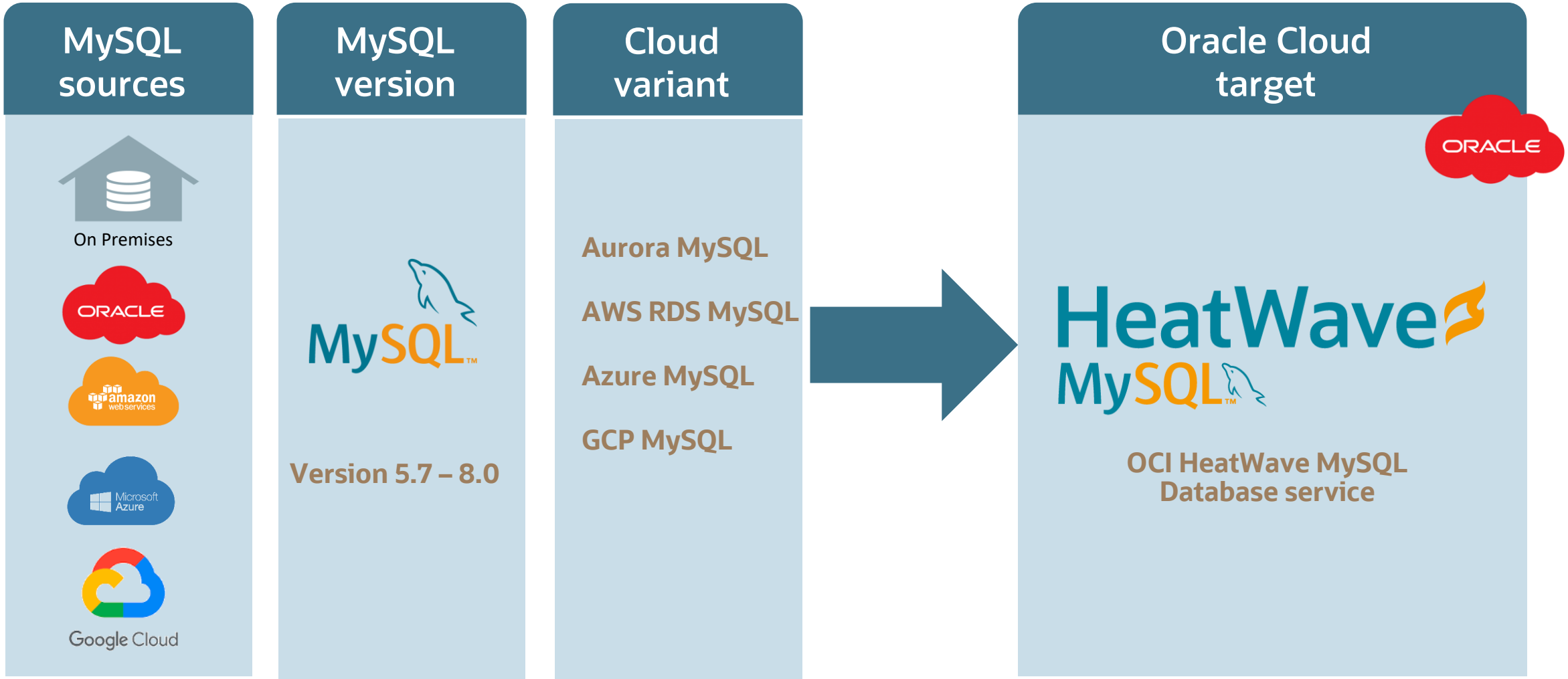
OCI Database Migration – Native OCI Cloud Service

MySQL supported scenarios:



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Migration steps

1

Prerequisites:

- Setup VPN or FastConnect
- Provision Target DB, Object Store, and Vault
- Configure source and target

Optional for online:

- OGG Marketplace

2

Setup

3

Validate

- Use pre migration advisor interactively to discover and respond to issues

4

Start

- Fully automated

Optional controls

- Initial load
- Online replication
- Restarts

5

Complete

- Switch operations to new database

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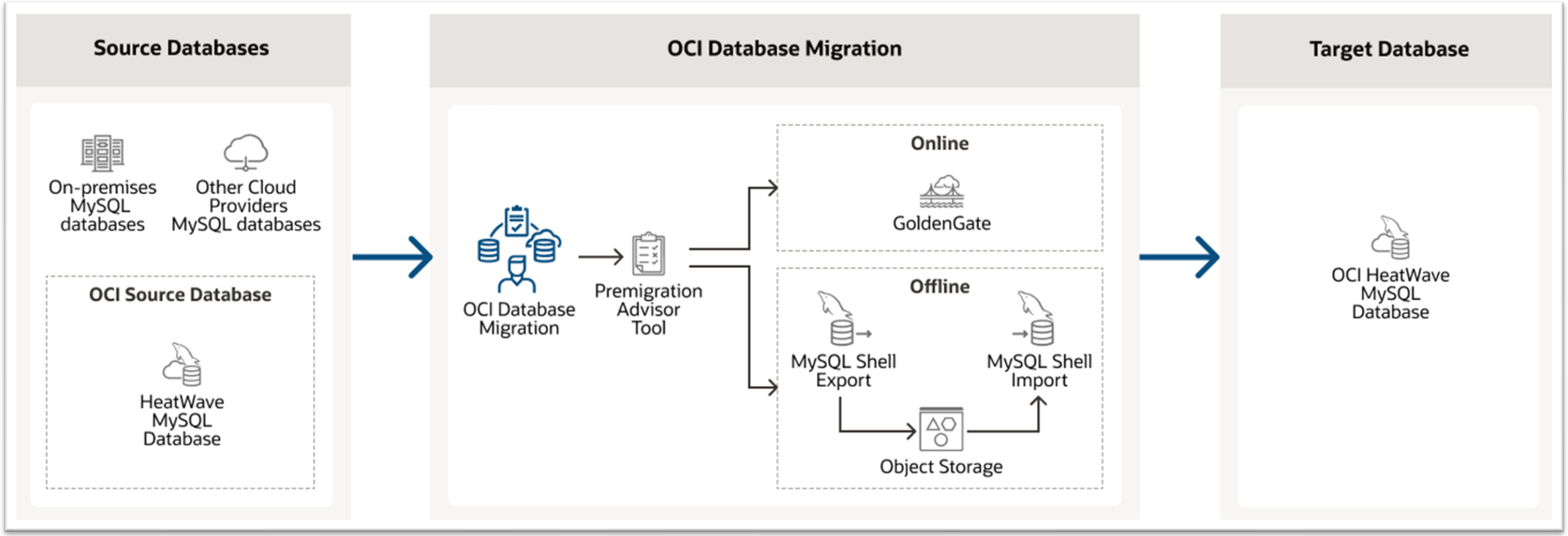
How it works for MySQL migrations



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Pricing: **FREE** for all common MySQL use cases

Included:

- OCI Database Migration service operations and supporting infrastructure
- On-premises software agent for specific use cases
- OCI GoldenGate usage for online migrations
- *Oracle GoldenGate Marketplace for Database Migrations* license

Not included:

- Customer managed OCI resources used for database migration operations
  - Compute used for OCI GoldenGate Marketplace, OCI Object Storage
- FastConnect or other on-premise-to-cloud network connectivity
- Source or target database service costs

Exceptions:

- Migrations that run more than 183 days (6 months) after they have been created
- Migrations running for more than 60 days idle (no data transferred)
- Billing starts after time limits have been exceeded with $0.20 / hour per migration

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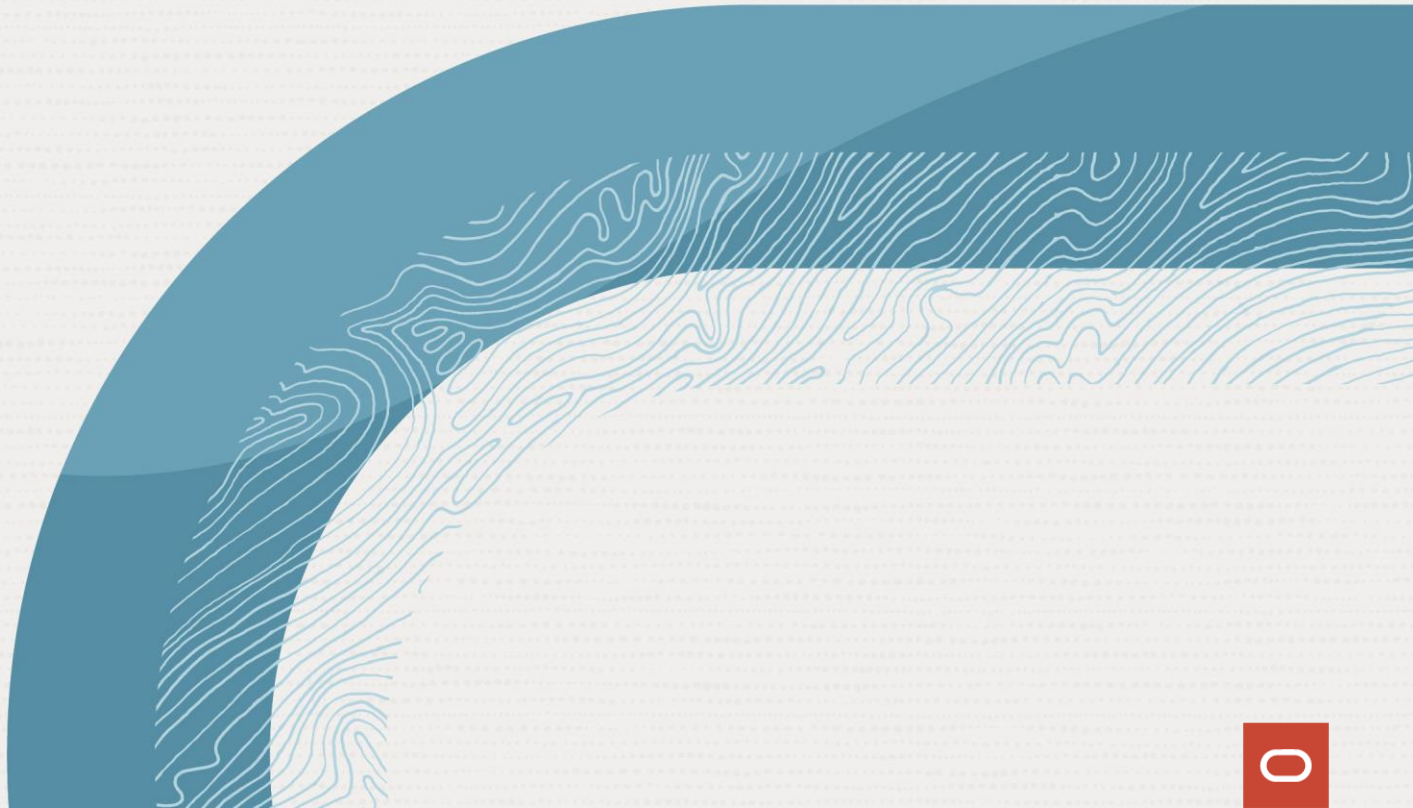
A walkthrough



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Step 1: *Select* Database Migration menu on the OCI Console

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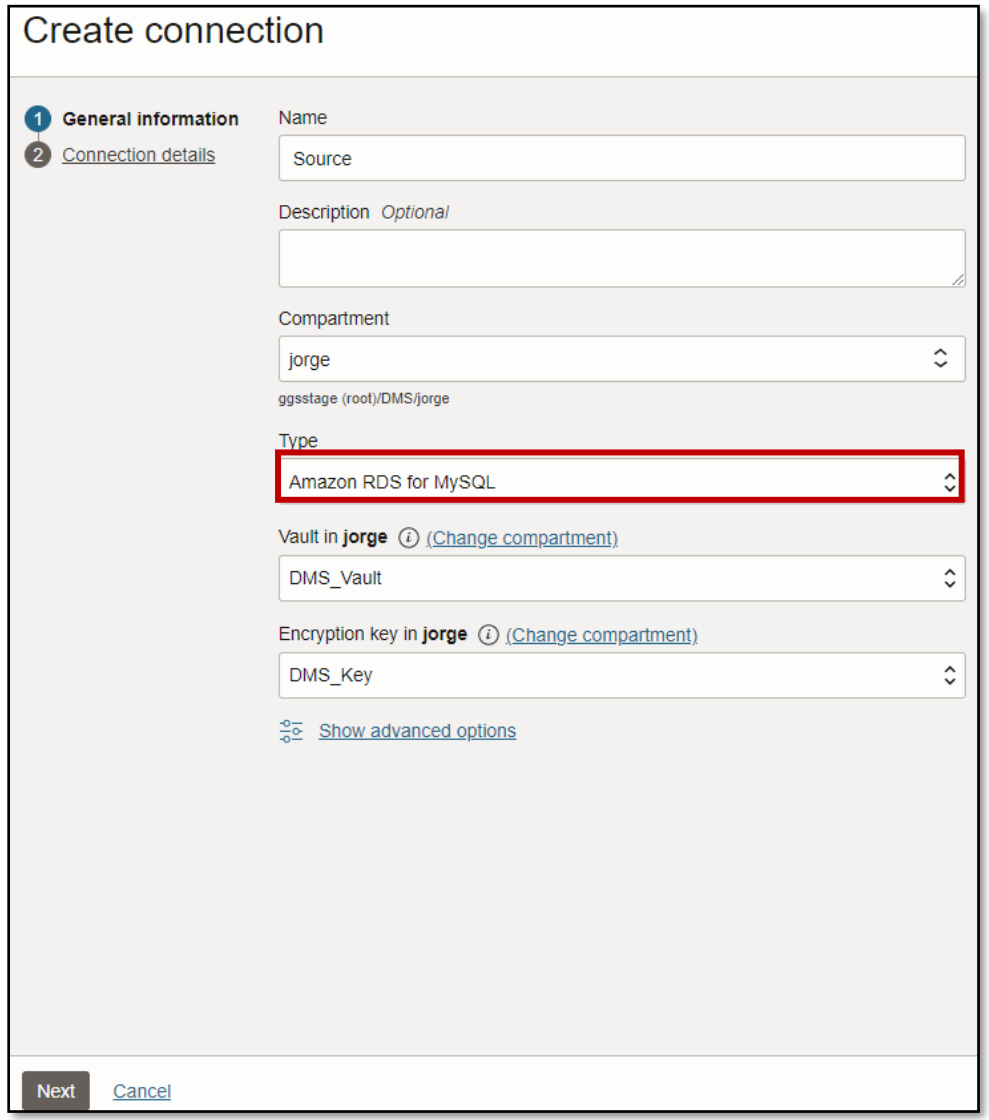
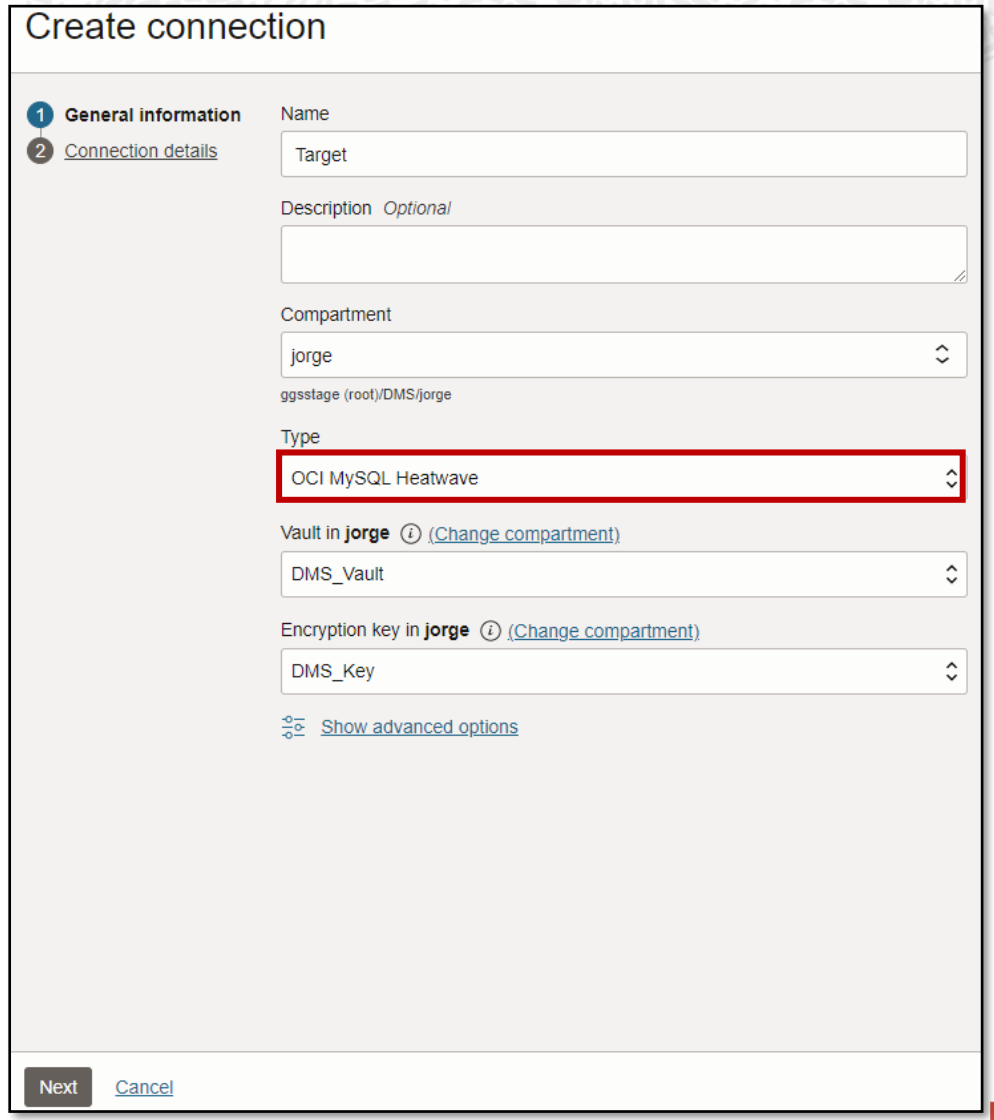
Step 2: Create Connections for source and target

Provide reusable connection information and credentials for databases



Create a connection to your MySQL **source** database

Create a connection to your HeatWave MySQL **target** database



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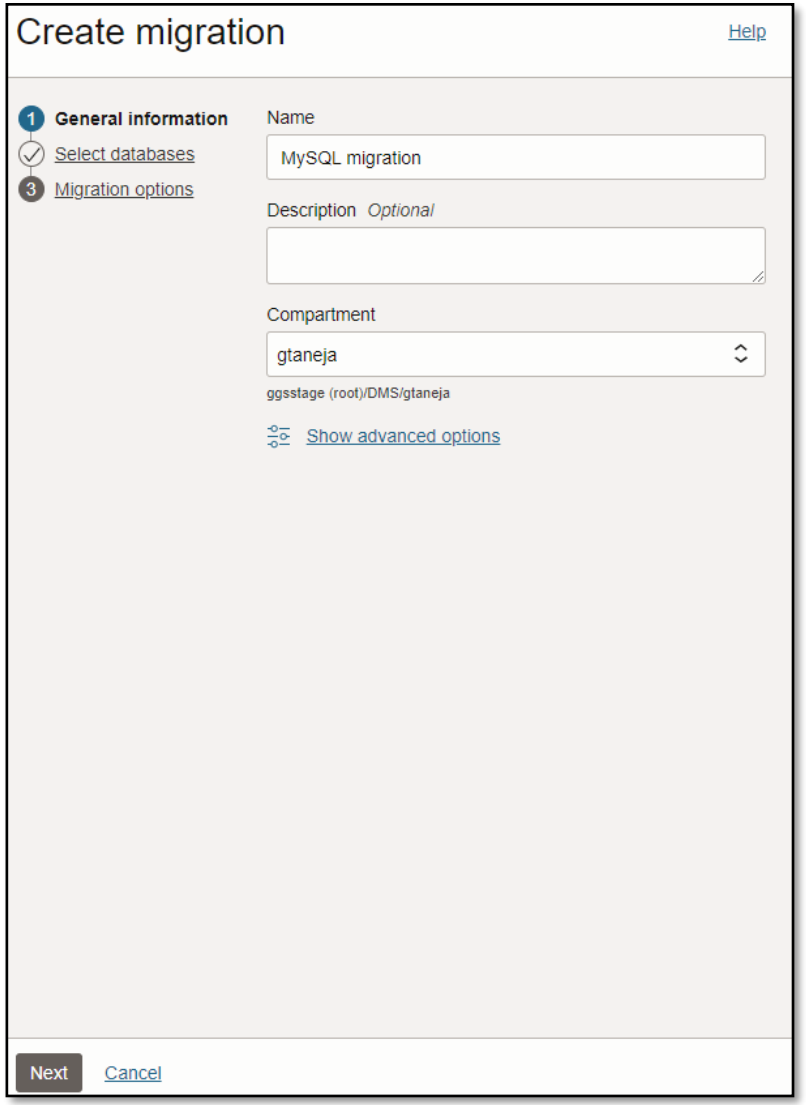
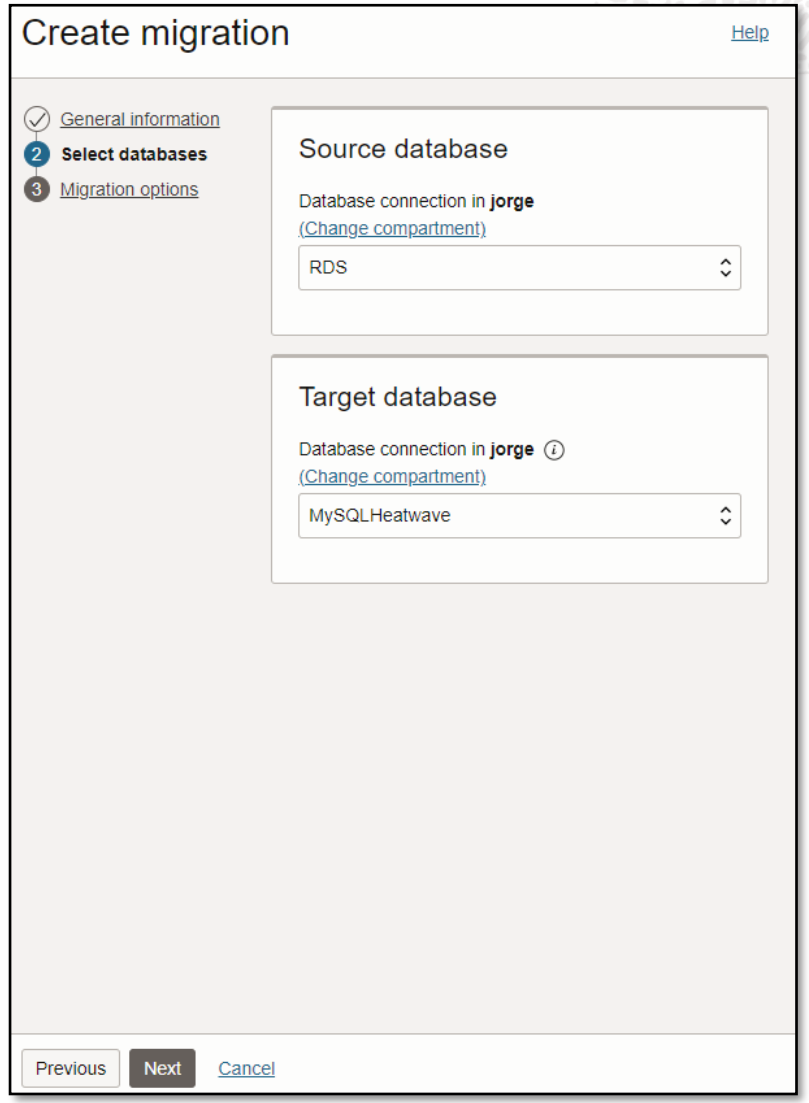
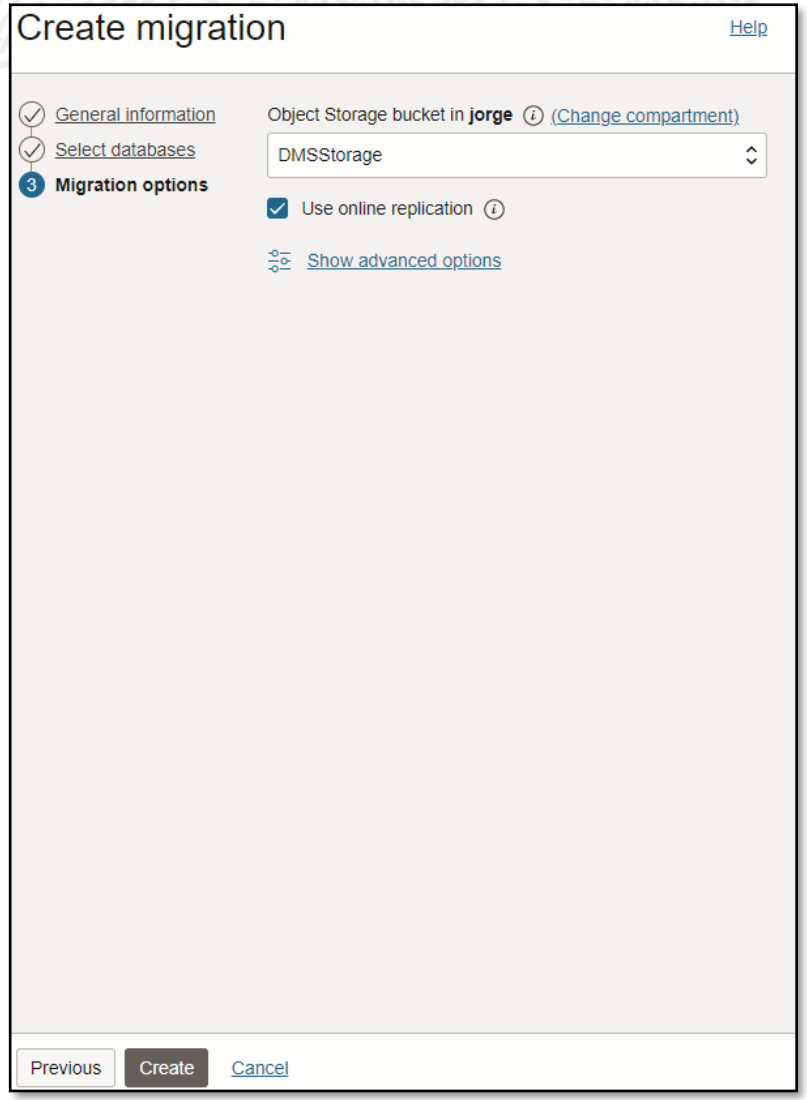
Step 3: Create Migration

Select migration method and other settings to move a database to the cloud







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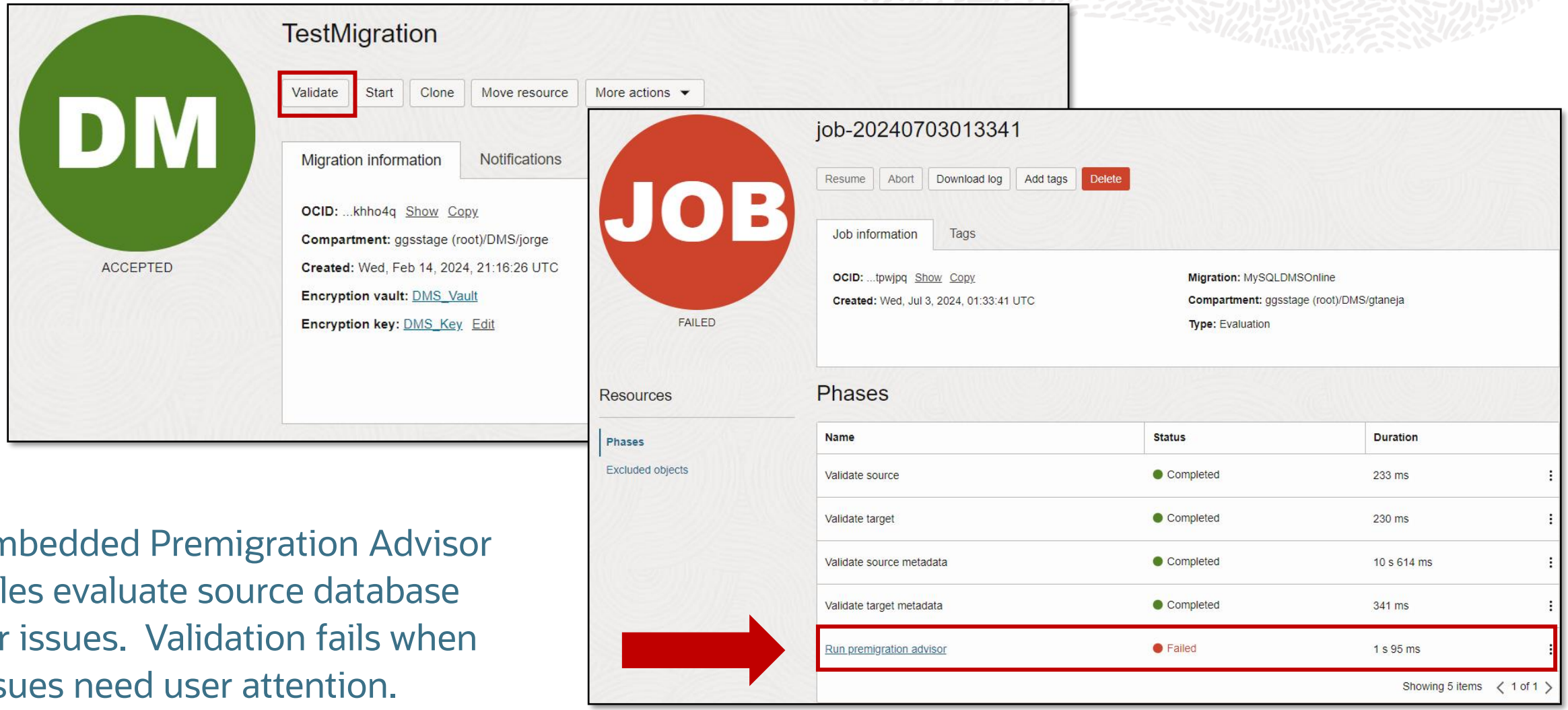
Step 4a: Validate Migration

Confirm all prerequisites and permissions. Premigration Advisor identifies incompatible objects.



Embedded Premigration Advisor rules evaluate source database for issues. Validation fails when issues need user attention.

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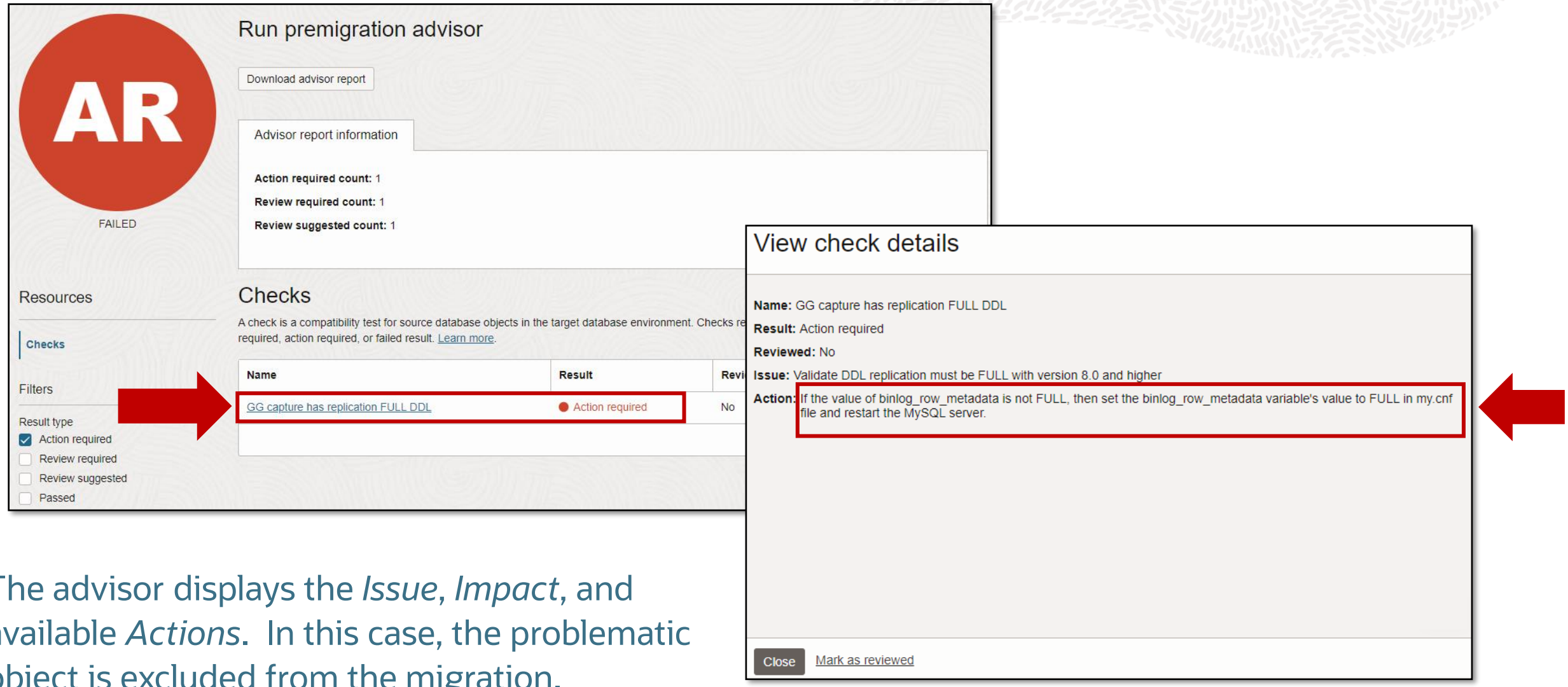
Step 4b: Validate Migration

Resolve premigration advisor findings



The advisor displays the *Issue*, *Impact*, and available *Actions*. In this case, the problematic object is excluded from the migration.

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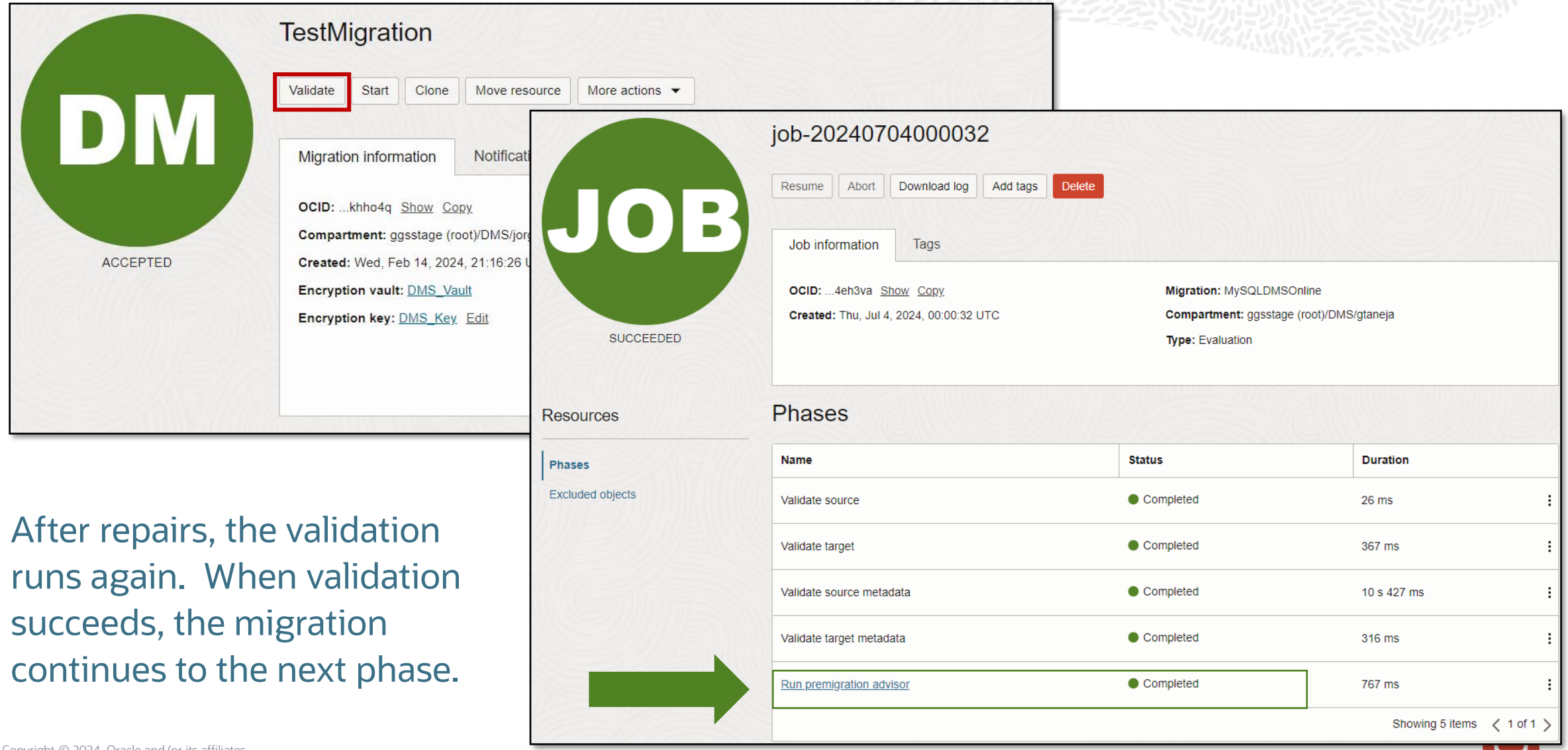
Step 4c: Validate Migration

Validation success!



After repairs, the validation runs again. When validation succeeds, the migration continues to the next phase.

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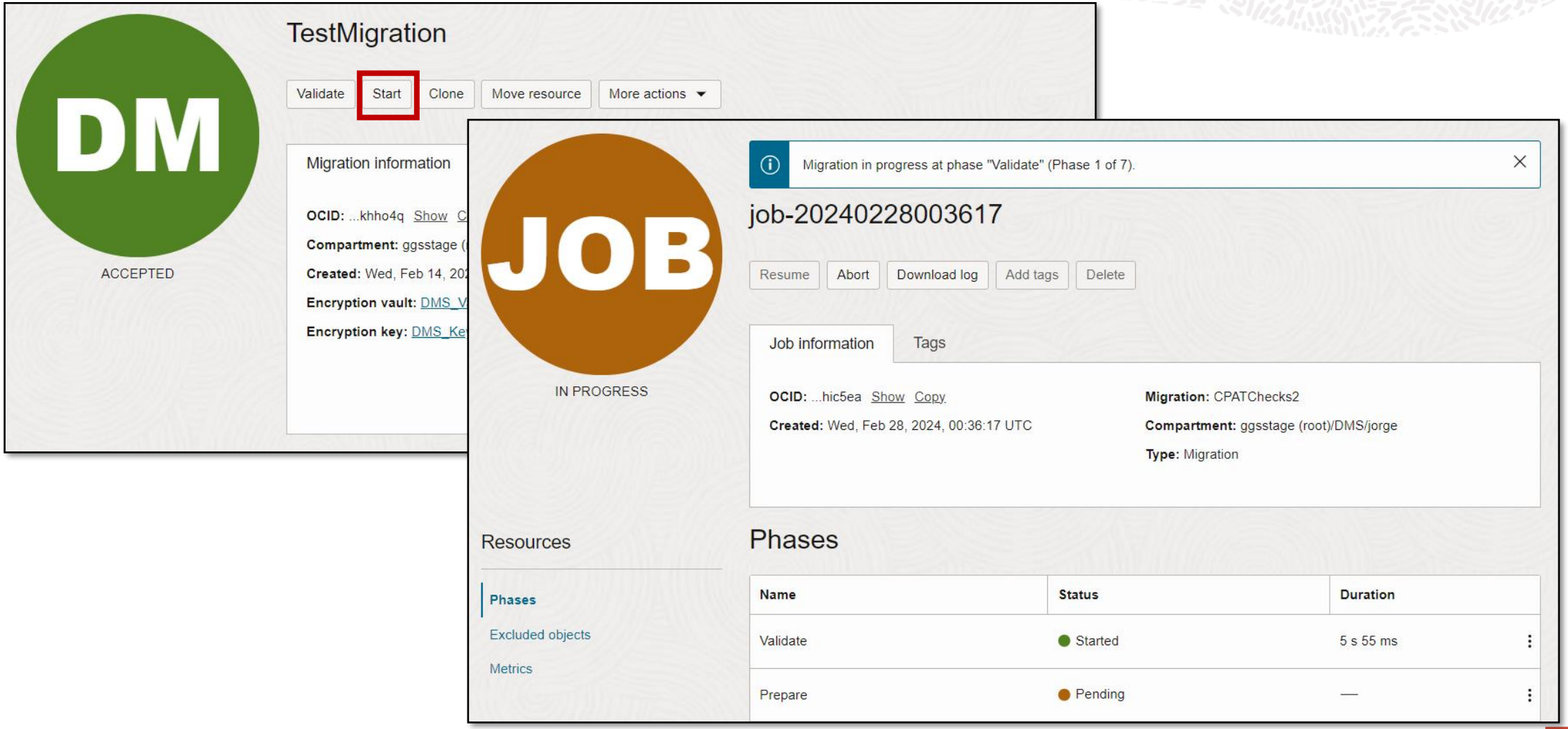
Step 5: Start Migration

Initiate the migration job to migrate the database to the cloud



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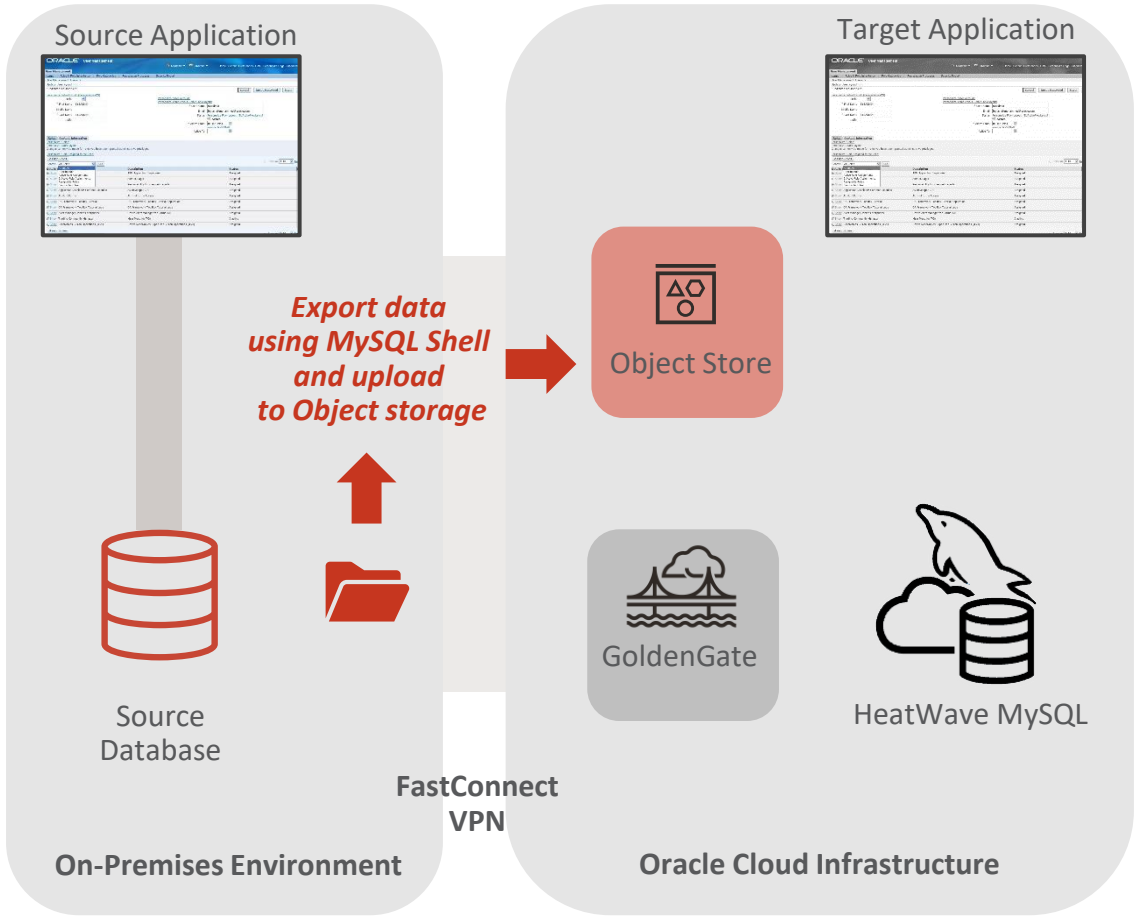
Start Migration – Export Initial Load and Upload Data

Current DB state is exported to files and uploaded to OSS using MySQL Shell



Phases

Name	Status	Duration
Initialize replication infrastructure	Completed	12 m 58 s 550 ms
Validate	Completed	3 s 76 ms
Export initial load and upload data	Started 33%	5 s 332 ms
Import initial load	Pending	—
Prepare	Pending	—
Monitor replication lag	Pending	—
Switchover	Pending	—
Cleanup	Pending	—

Showing 8 items 1 of 1

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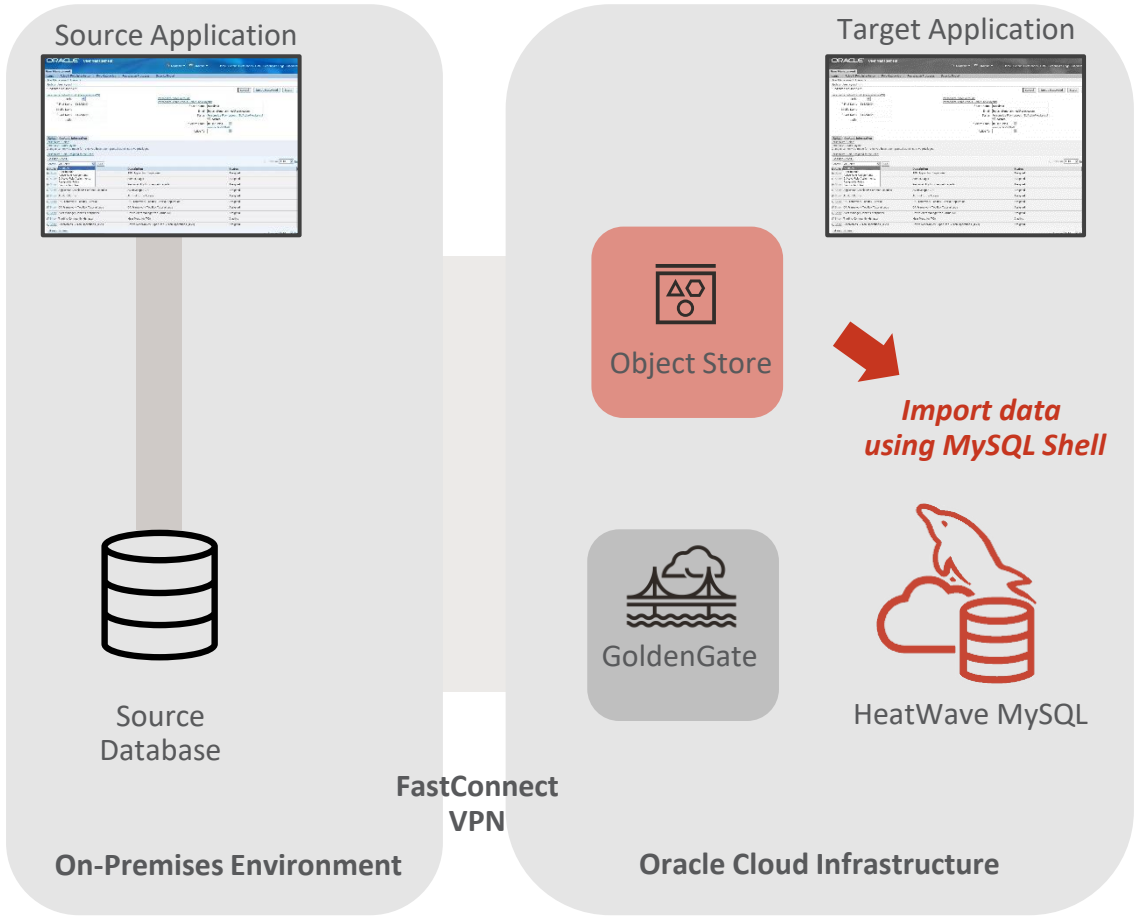
Start Migration – Import Initial Load

Exported dump files are imported to HeatWave MySQL



Phases

Name	Status	Duration
Initialize replication infrastructure	Completed	12 m 58 s 550 ms
Validate	Completed	3 s 76 ms
Export initial load and upload data	Completed	5 s 332 ms
Import initial load	Started 42%	—
Prepare	Pending	—
Monitor replication lag	Pending	—
Switchover	Pending	—
Cleanup	Pending	—

Showing 8 items 1 of 1

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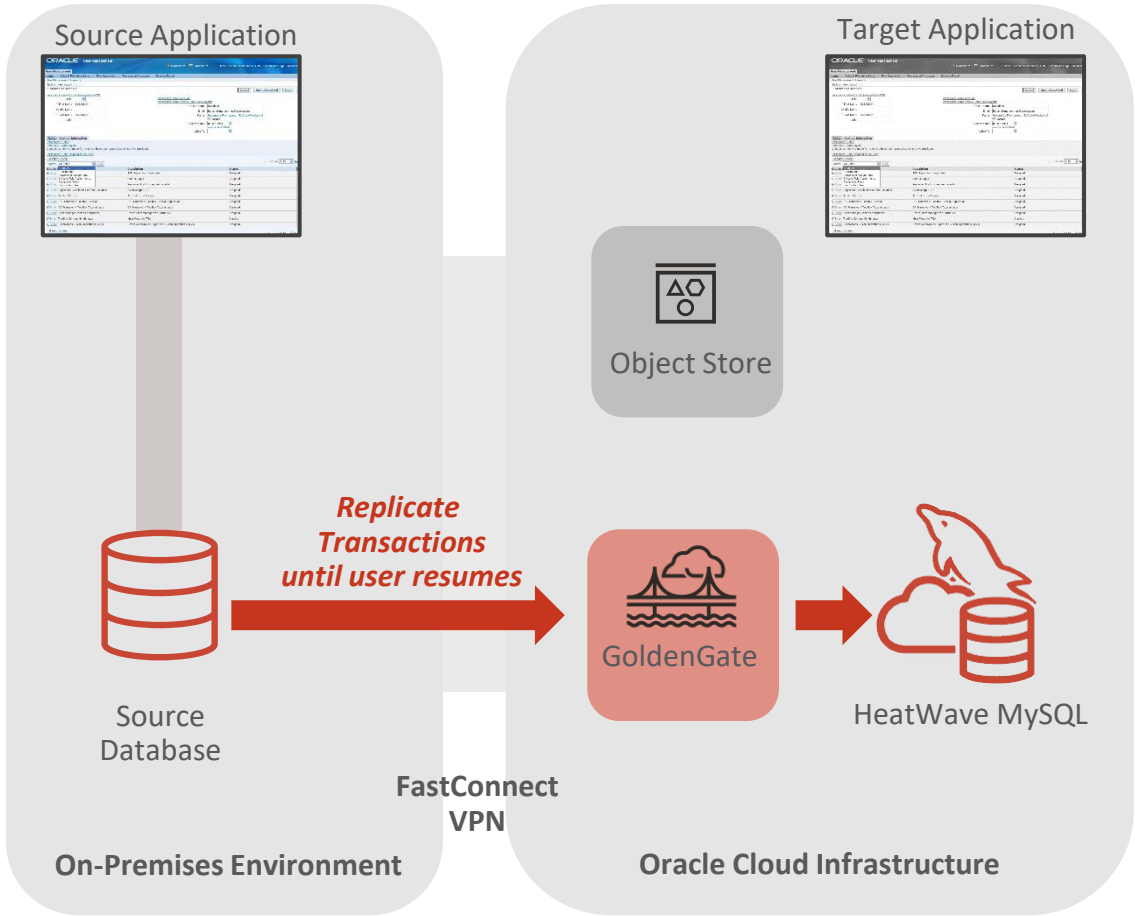
Start Migration – Replication

DB transactions are replicated using GoldenGate until user resumes the next phase



Phases

Name	Status	Duration
Initialize replication infrastructure	Completed	12 m 58 s 550 ms
Validate	Completed	3 s 76 ms
Export initial load and upload data	Completed	5 s 332 ms
Import initial load	Completed	10 s 606 ms
Prepare	Completed	594 ms
Monitor replication lag	Completed	860 ms
Switchover	Pending	—
Cleanup	Pending	—

Showing 8 items 1 of 1

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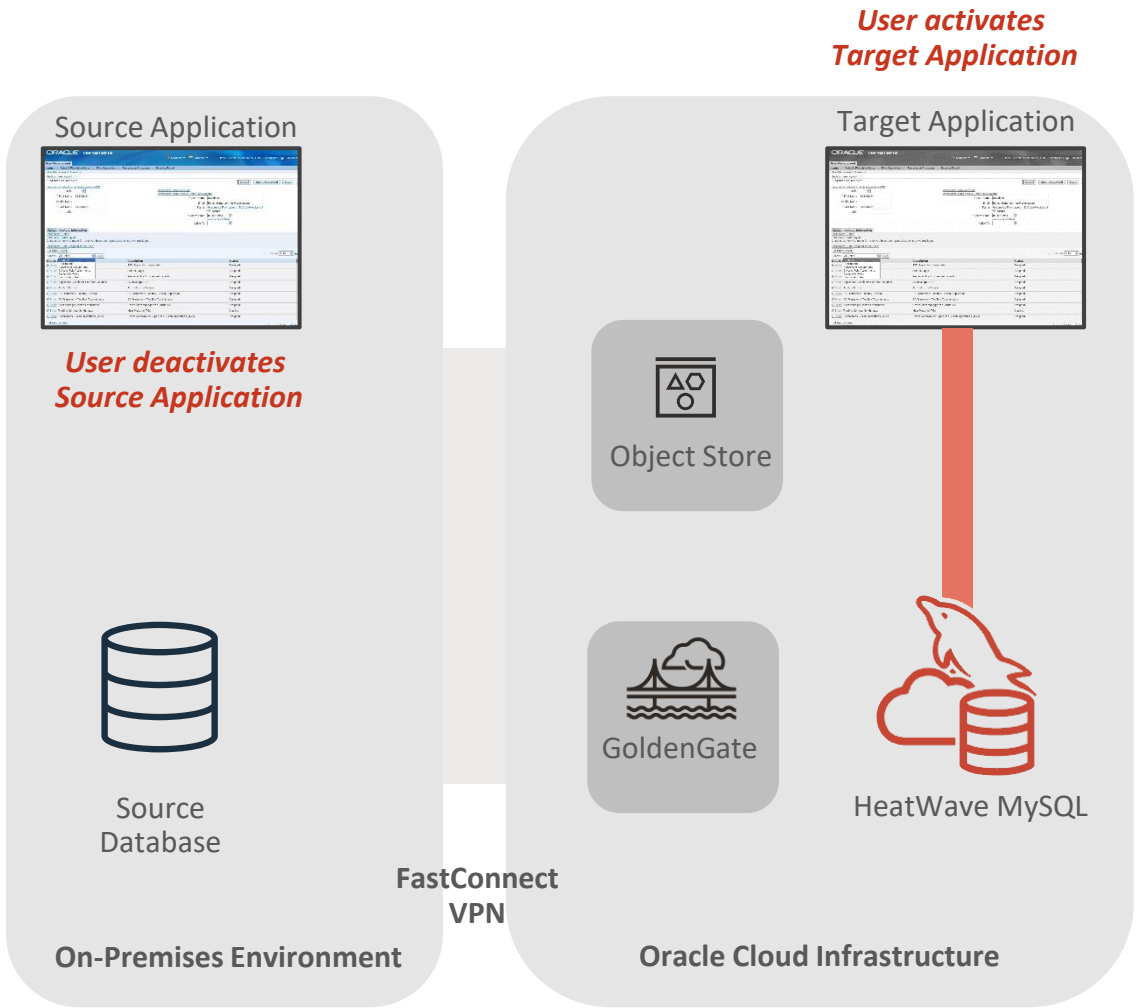
Start Migration – Switchover

Wait until last transaction is replicated to switch over applications



Phases

Name	Status	Duration
Initialize replication infrastructure	Completed	12 m 58 s 550 ms
Validate	Completed	3 s 76 ms
Export initial load and upload data	Completed	5 s 332 ms
Import initial load	Completed	10 s 606 ms
Prepare	Completed	594 ms
Monitor replication lag	Completed	860 ms
Switchover	Completed	2 s 528 ms
Cleanup	Pending	—

Showing 8 items 1 of 1

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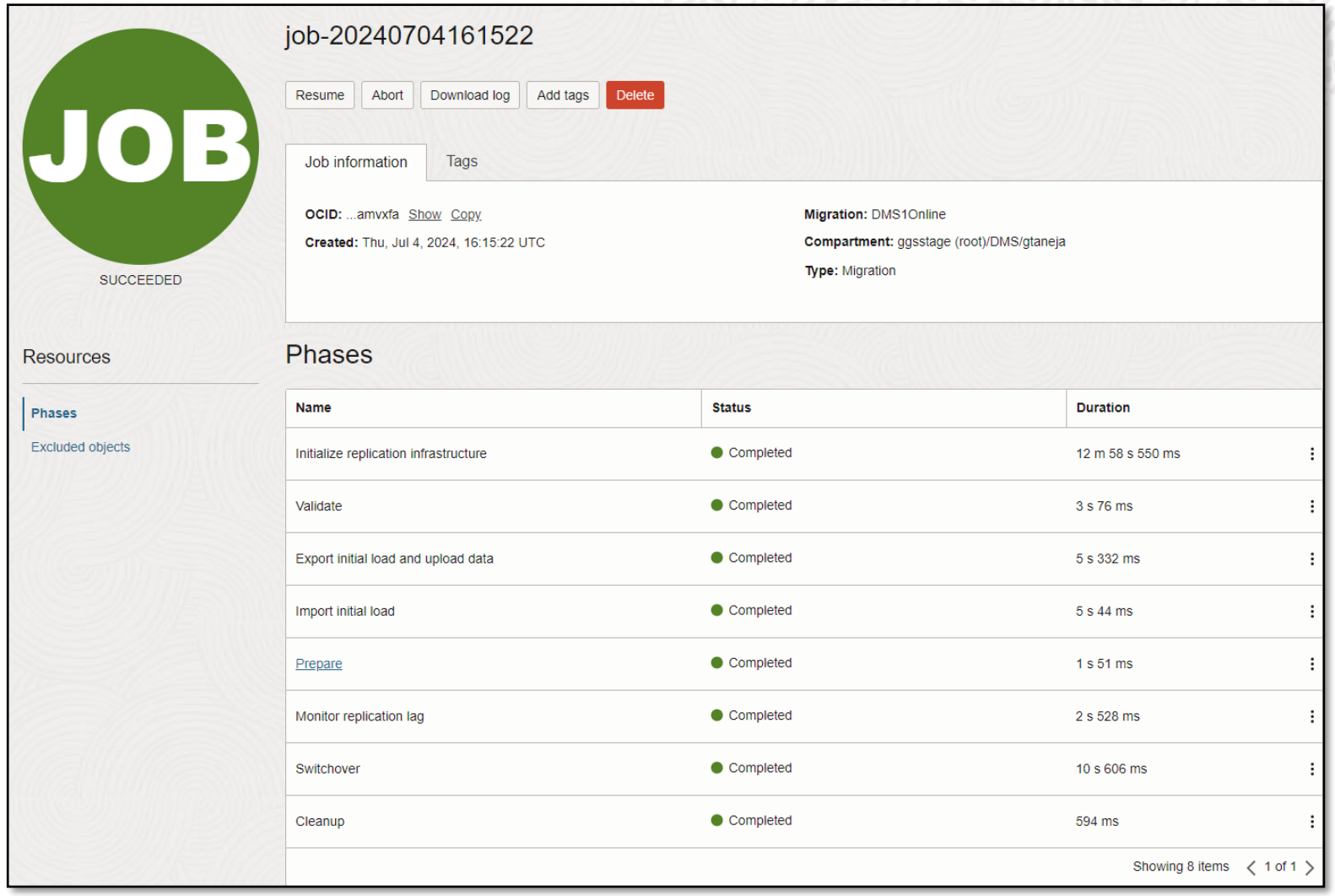
Migration Succeeded!



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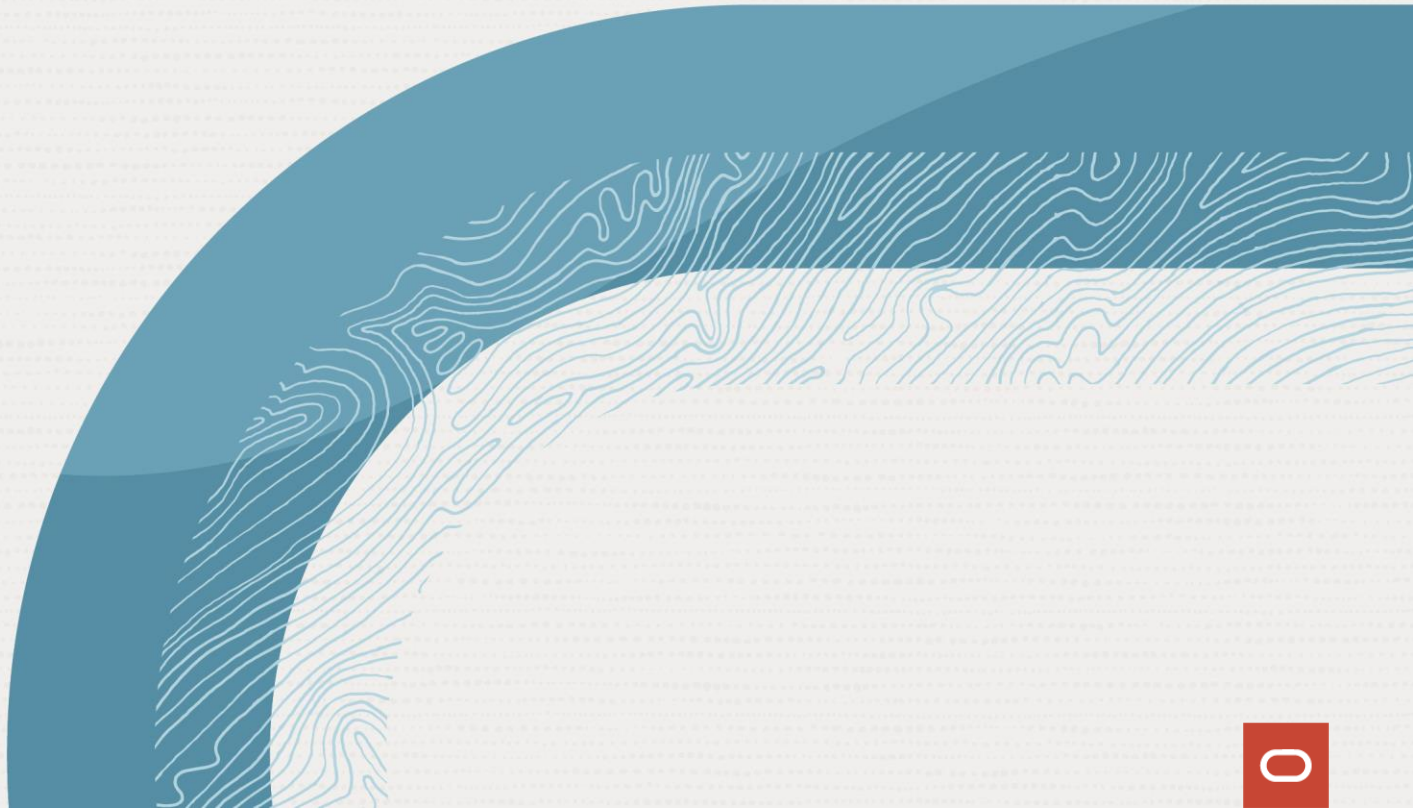
Thank You!



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