

ORACLE

Migration to the Oracle Cloud

In 30 Minutes

Mike Dietrich

Master Product Manager

Database Upgrade and Migrations



Mike Dietrich

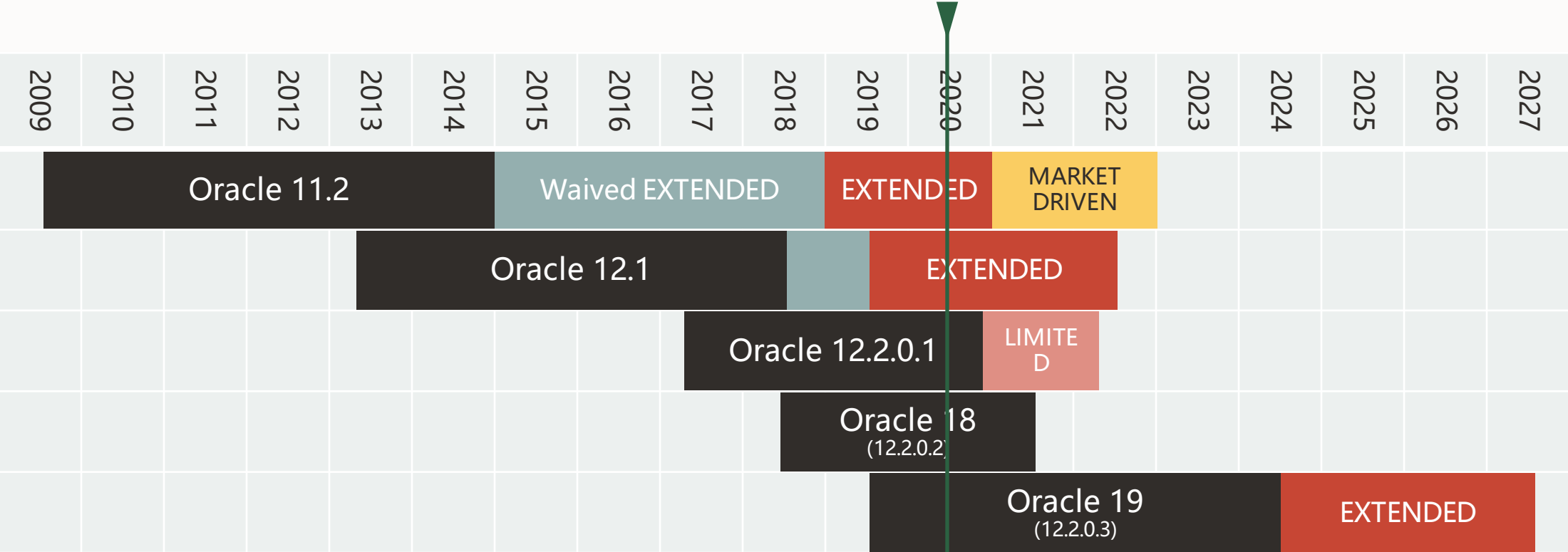
Master Product Manager
Database Upgrade
and Migrations

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Lifetime Support Policy



Premier Support
 Waived Extended Support
 Paid Extended Support
 Market Driven Support
 Limited Error Correction

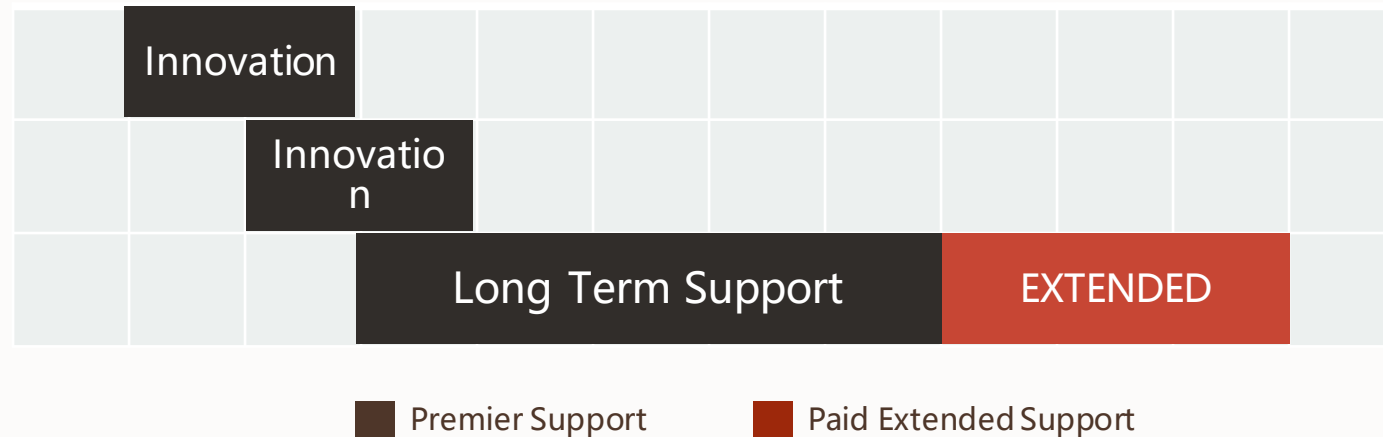
Release Types | Long Term Support vs Innovation Releases

Long Term Support Release

- 5 years of Premier Support followed by 3 years of Extended Support

Innovation Release

- 2 years of Premier Support, but there is no Extended Support



- [MOS Note: 742060.1 - Release Schedule of Current Database Releases](#)

Migration to the Oracle Cloud

In 30 minutes ...

Bare Metal?

ExaCS?

ExaCC?

ADB?

VM?

?

Cloud Migration Methods | Overview

<https://docs.cloud.oracle.com/en-us/iaas/Content/Database/Tasks/migrating.htm>

Migration Methods

Many methods exist to migrate Oracle databases to the Oracle Cloud Infrastructure Database service. Which of these methods apply to a given migration scenario depends on several factors, including the version, character set, and platform endian format of the source and target databases.

- [Data Pump Full Transportable](#)
- [Data Pump Transportable Tablespace](#)
- [Remote Cloning a PDB](#)
- [Remote Cloning Non-CDB](#)
- [RMAN Cross-Platform Transportable PDB](#)
- [RMAN Cross-Platform Transportable Tablespace Backup Sets](#)
- [RMAN DUPLICATE from an Active Database](#)
- [RMAN CONVERT Transportable Tablespace with Data Pump](#)
- [SQL Developer and INSERT Statements to Migrate Selected Objects](#)
- [SQL Developer and SQL*Loader to Migrate Selected Objects](#)
- [Unplugging/Plugging a PDB](#)
- [Unplugging/Plugging Non-CDB](#)

Cloud Migration Methods | www.oracle.com/goto/move

<https://www.oracle.com/goto/move>
Database /
Oracle Database Cloud Migration



Database Cloud Migration

Move to the Oracle Cloud

Move your Database to the Oracle Cloud

Simple & Efficient

Oracle automated tools make it seamless to move your on-premises database to the Oracle Cloud with virtually no downtime. Using the same technology and standards on-premises and in the Oracle Cloud, you can facilitate the same products and skills to manage your cloud-based Oracle Databases as you would on any other platform.

Cost Effective

The same flexibility that lets you directly migrate your Oracle Database to the Oracle Cloud is applied to finding the most cost effective solution for the purpose and duration of the migration. Even if the automated tools determine that an Oracle licensable product should be used to optimize your migration, Oracle will provide a cost neutral solution.

Flexible

You can directly migrate your Oracle Database to the Oracle Cloud from various source databases into different target cloud deployments depending on your requirements and business needs. A well-defined set of tools gives you the flexibility to choose the method that best applies to your needs.

Highly Available & Scalable

The tight integration of all migration tools with the Oracle Database lets you maintain control and gain better efficiency when moving your databases to the Oracle Cloud, while the Maximum Availability Architecture (MAA)-approved tools as well as Zero Downtime Migration (ZDM)-based migrations ensure that your migration is handled as smoothly as possible.



Cloud Migration Methods | www.oracle.com/goto/move

Discover

Cloud Migration Use Cases



Migrate existing Databases Seamlessly

Database Consolidation

Test and Development

Adopting Oracle Autonomous Database

Move out of AWS

Large Datasets



Migrate existing Databases Seamlessly

Benefit

- Quickly decommission hardware or data center with a fully automated Oracle Cloud Database migration solution

[View all solutions](#)

[Try the Cloud Migration Advisor](#)

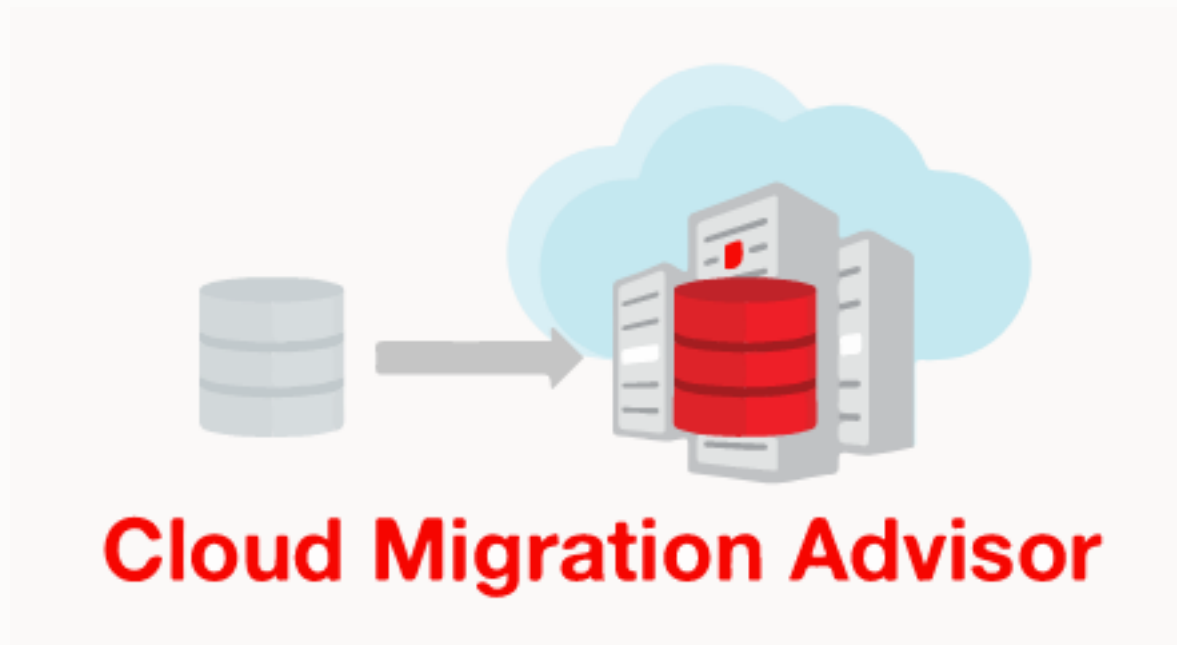
[Try the Oracle Cloud Workload Estimator](#)

FEATURED SOLUTIONS

[Migration Solutions](#)
Oracle ZDM, Oracle MAA
Methods



Cloud Migration Methods | www.oracle.com/goto/move



Cloud Migration Methods | www.oracle.com/goto/move



Select your source

ORACLE
Database 11g

ORACLE
Database 12c







ORACLE
Database 18c

19^c **ORACLE**
Database

aws

Cloud Migration Methods | www.oracle.com/goto/move

Select your target Oracle Database Cloud Service

 <p>ORACLE Database Cloud Service Bare Metal</p>	 <p>ORACLE Database Cloud Service Virtual Machines</p>	 <p>ORACLE Database Cloud Service Exadata Cloud Service</p>	 <p>ORACLE Database Cloud Service Exadata Cloud at Customer</p>	 <p>ORACLE Autonomous Transaction Processing Dedicated Deployments</p>	 <p>ORACLE Autonomous Transaction Processing Serverless</p>	 <p>ORACLE Autonomous Data Warehouse</p>
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Cloud Migration Methods | www.oracle.com/goto/move



Migration Solutions



The Universal Approach



Data Pump

Oracle Data Pump allows customers to move data from one Oracle Database to another on swift and efficient fashion. Data Pump offers four methods for Database Cloud Migration: Transportable Tablespace, Conventional Export/Import and Full Transportable and the [MV2ADB](#) utility.

Source Databases	<ul style="list-style-type: none"> - (CDB/PDB) Databases 12c, 18c, 19c - Non-CDB Databases 11g, 12c, 18c, 19c - Oracle Databases on AWS EC2
Targets	<p>11g, 12c, 18c, 19c Databases on:</p> <ul style="list-style-type: none"> - Oracle Database Cloud Services Bare Metal - Oracle Database Cloud Services VMs - Exadata Cloud Service - Exadata Cloud at Customer <p>Autonomous Data Warehouse</p> <p>Autonomous Transaction Processing</p>

[Learn more about DataPump](#)



Cloud Migration Methods | www.oracle.com/goto/move



A row of seven rounded rectangular cards, each representing a different Oracle Cloud Migration Method. Each card features an icon at the top, the Oracle logo, and the name of the service and its deployment model.

- ORACLE Database Cloud Service Bare Metal**: Icon of a server rack.
- ORACLE Database Cloud Service Virtual Machines**: Icon of a server rack.
- ORACLE Database Cloud Service Exadata Cloud Service**: Icon of a server rack with an equals sign and an X.
- ORACLE Database Cloud Service Exadata Cloud at Customer**: Icon of a house with a server rack inside.
- ORACLE Autonomous Transaction Processing Dedicated Deployments**: Icon of a cloud with a server rack and a play button.
- ORACLE Autonomous Transaction Processing Serverless**: Icon of a cloud with a server rack and a play button.
- ORACLE Autonomous Data Warehouse**: Icon of a cloud with a server rack and a play button.

Migration Solutions



A row of four rounded rectangular cards representing different migration solutions. Each card has an icon and a label.

- ZDM**: Icon showing a server rack, a play button, and a database cylinder.
- MAA**: Icon of the Oracle Migration Assistant logo.
- SQL Developer**: Icon of a database cylinder with a play button.
- Other Methods**: Text only.

Zero Downtime Migration - ZDM

Oracle Database Cloud Migration Solutions

Zero Downtime Migration

MV2ADB

MV2OCI

Maximum Availability Architecture

SQL Developer



Zero Downtime Migration

Oracle Zero Downtime Migration

Zero Downtime Migration - ZDM, enables easy and efficient migration of your on-premises databases to the Oracle Cloud. ZDM leverages Oracle MAA technologies such as Oracle Active Data Guard and Oracle Golden Gate to minimize or eliminate downtime.

Source Databases	<ul style="list-style-type: none">- (CDB/PDB) Databases 12c, 18c, 19c- Non-CDB Databases 11g, 12c, 18c, 19c
Targets	<p>11g, 12c, 18c, 19c Databases on:</p> <ul style="list-style-type: none">- Oracle Database Cloud Services BM/VMs- Exadata Cloud Service- Exadata Cloud at Customer

[Learn more about Zero Downtime Migration](#)

”

The concept is actually very simple; ZDM migrates your database by building a standby database in OCI and does the switch-over for you.

Prerequisites And Features | Location



Location

Release

Platform

Architecture

Overview

- Source database can be located
 - On-premises
 - Oracle Cloud Infrastructure Classic (OCI-C)
 - Oracle Cloud Infrastructure (OCI)

Prerequisites And Features | **Release**



Location

Release

Platform

Architecture

Overview

- Supported database releases:
 - 11.2.0.4
 - 12.1.0.2
 - 12.2.0.1
 - 18
 - 19
 - And **anything newer**
- Target database release **must** be the same

Pro Tip:

It is possible to migrate to a higher patch level but you must invoke `datapatch` manually



Prerequisites And Features | Platform



Location

Release

Platform

Architecture

Overview

- Supported source platform
 - Linux
- Supported target platforms
 - Virtual Machine DB System
 - Bare Metal DB System
 - Exadata DB System
 - Exadata Cloud at Customer
- ZDM platform
 - Oracle Linux 7 or newer

Pro Tip:

It is recommended to use a dedicated host to run the ZDM software



Prerequisites And Features | Architecture

Location

Release

Platform

Architecture

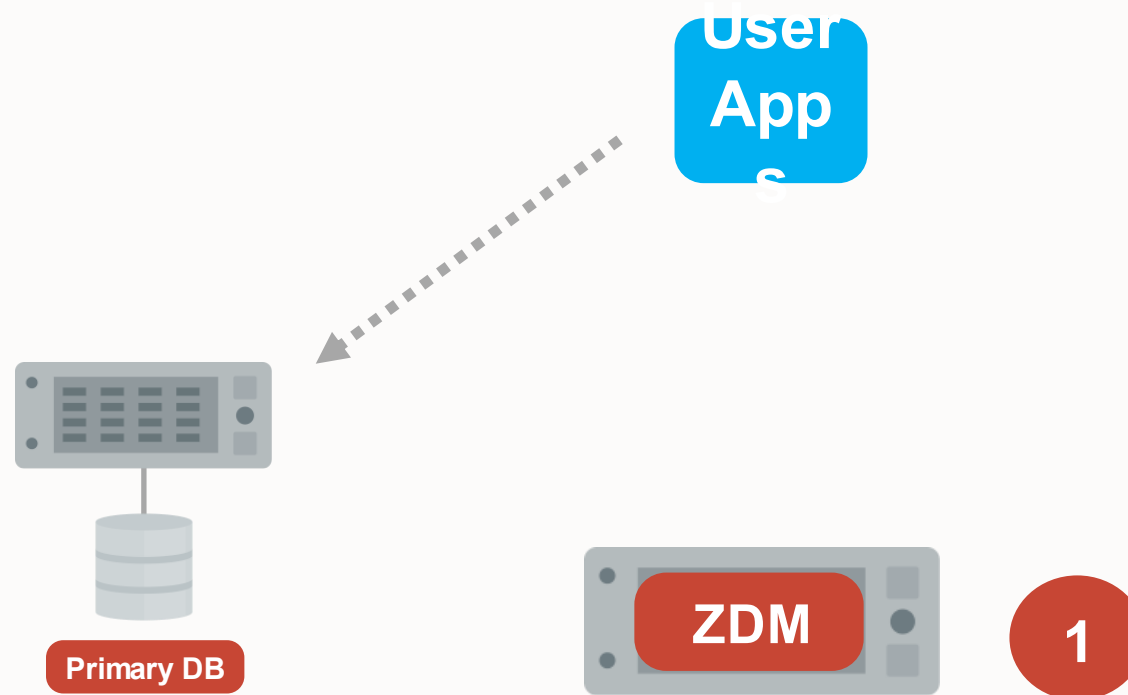
Overview

- Any architecture supported (non-CDB and CDB)
 - Migrated “as-is”
 - No PDB conversion
 - All PDBs included

Prerequisites And Features | Download and Configuration

- Location
- Release
- Platform
- Architecture

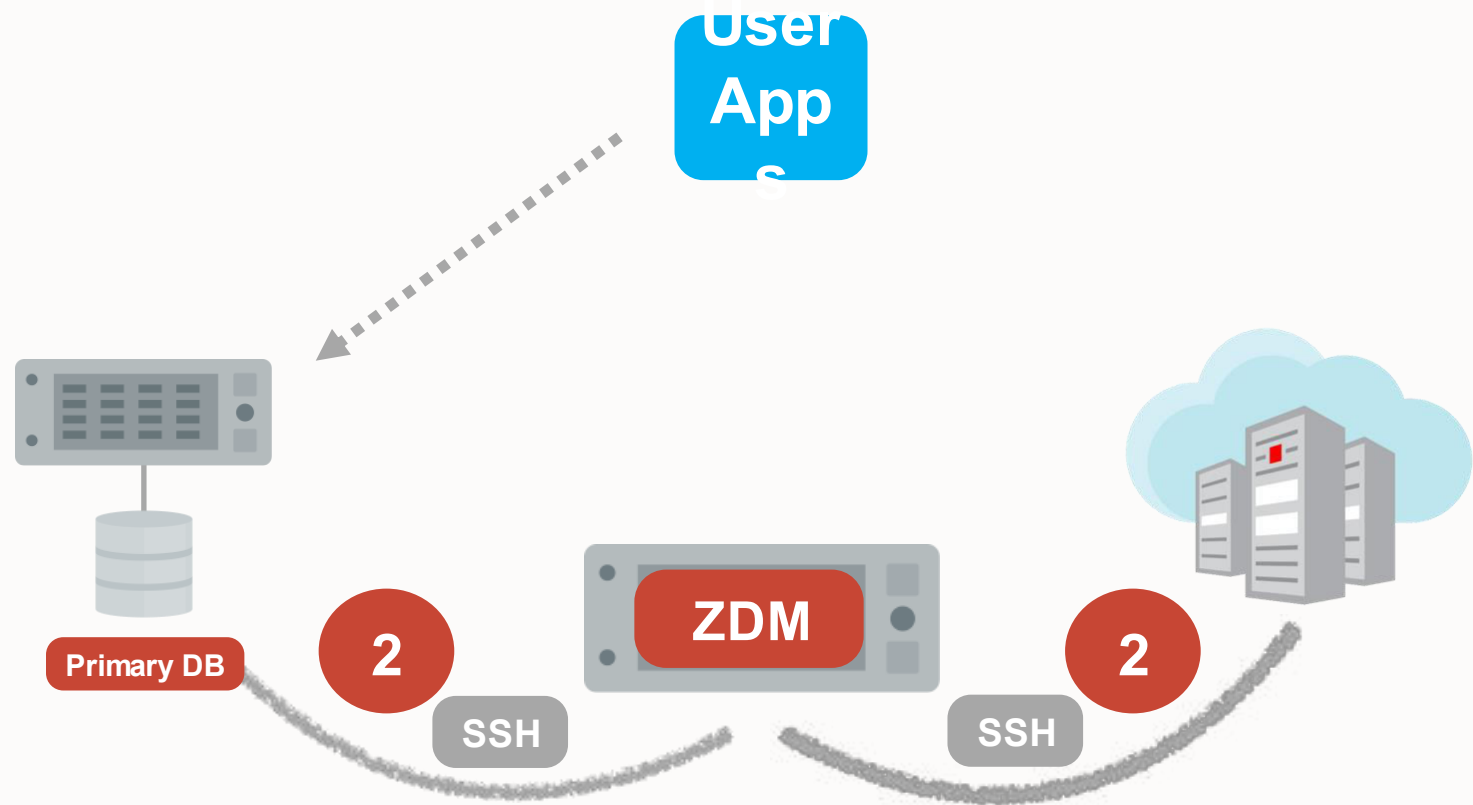
Overview



Prerequisites And Features | Start Database Migration

- Location
- Release
- Platform
- Architecture

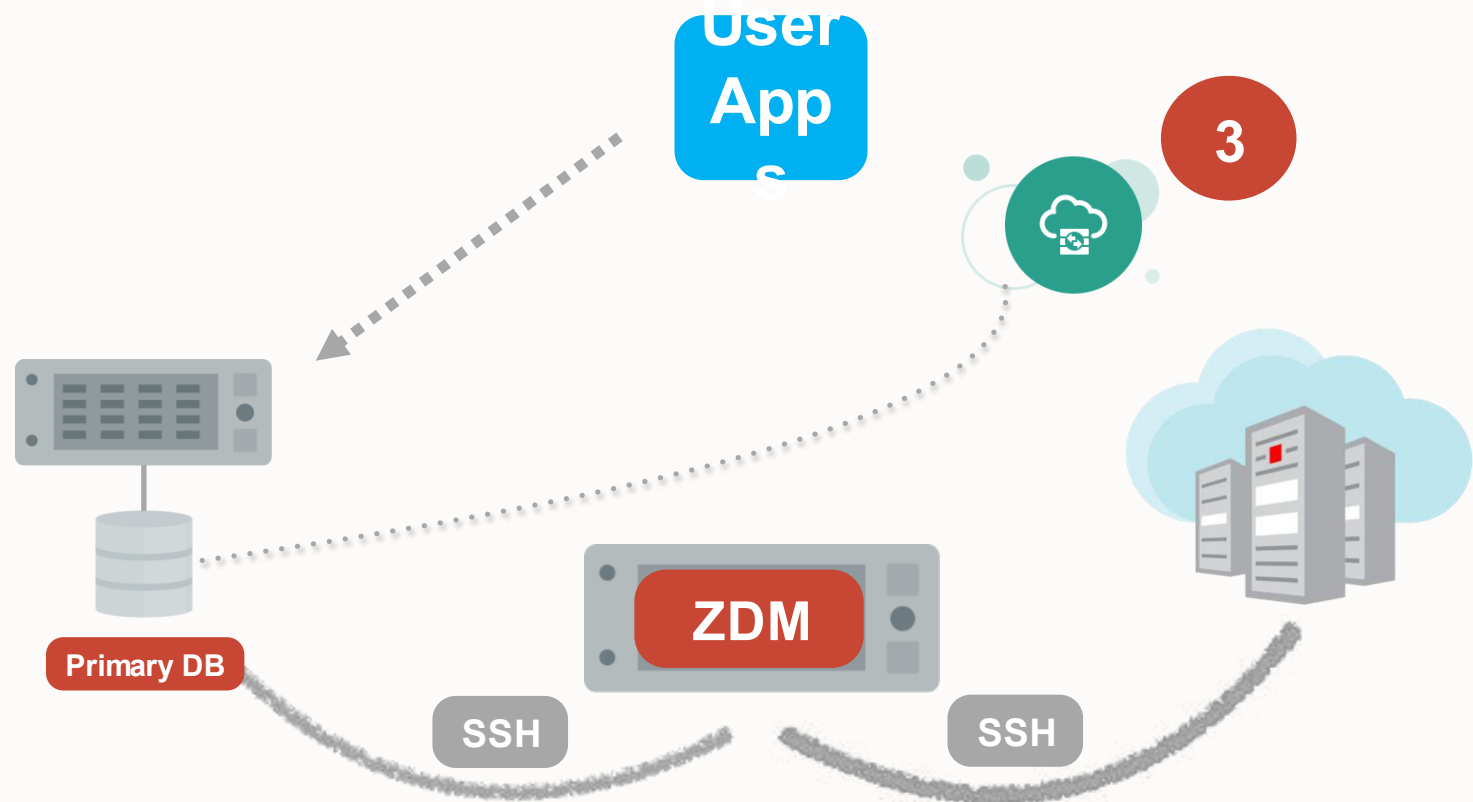
Overview



Prerequisites And Features | ZDM connects to object storage

- Location
- Release
- Platform
- Architecture

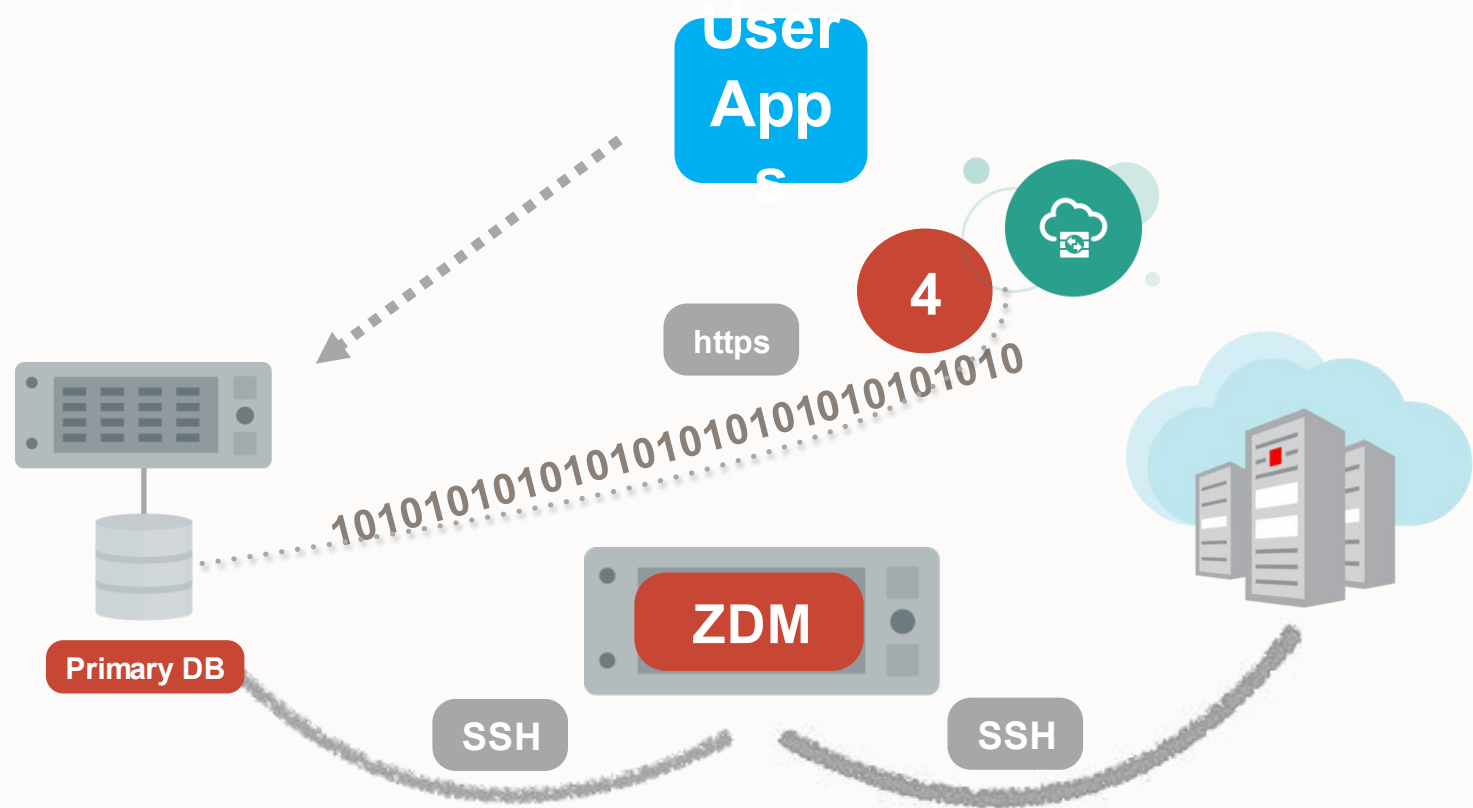
Overview



Prerequisites And Features | ZDM backups database to object storage

- Location
- Release
- Platform
- Architecture

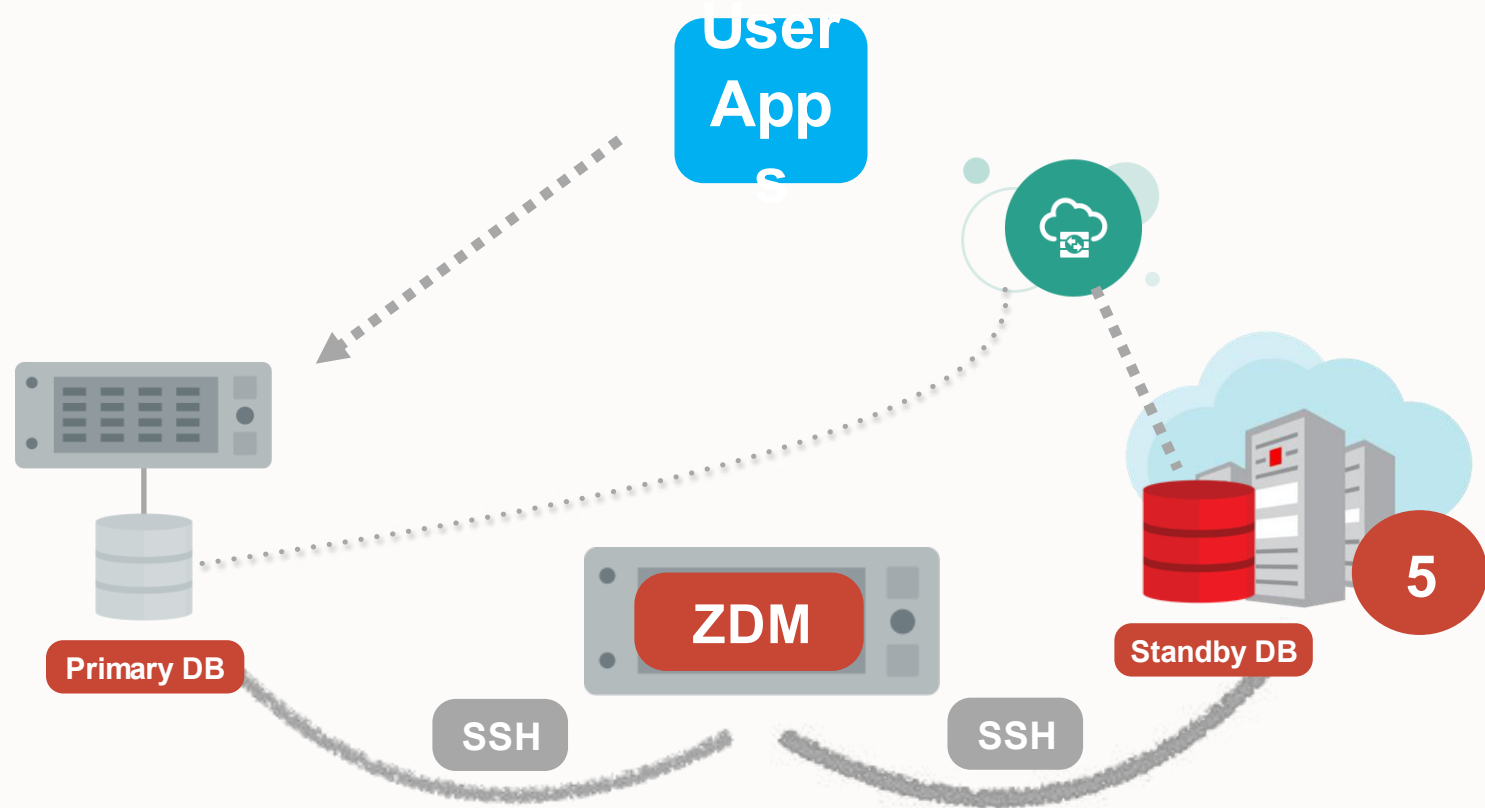
Overview



Prerequisites And Features | ZDM instantiates standby database

- Location
- Release
- Platform
- Architecture

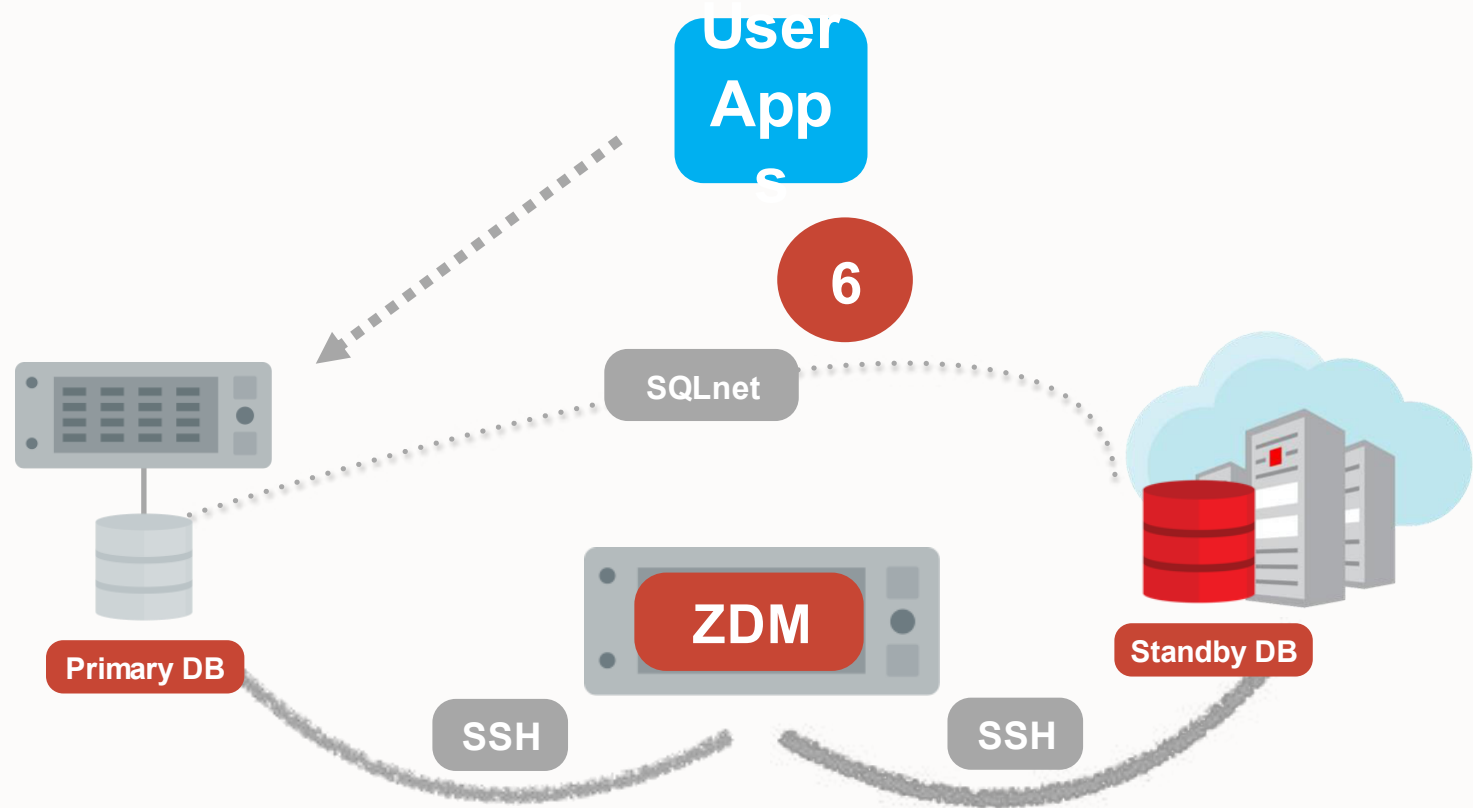
Overview



Prerequisites And Features | Synchronization Primary - Standby

- Location
- Release
- Platform
- Architecture

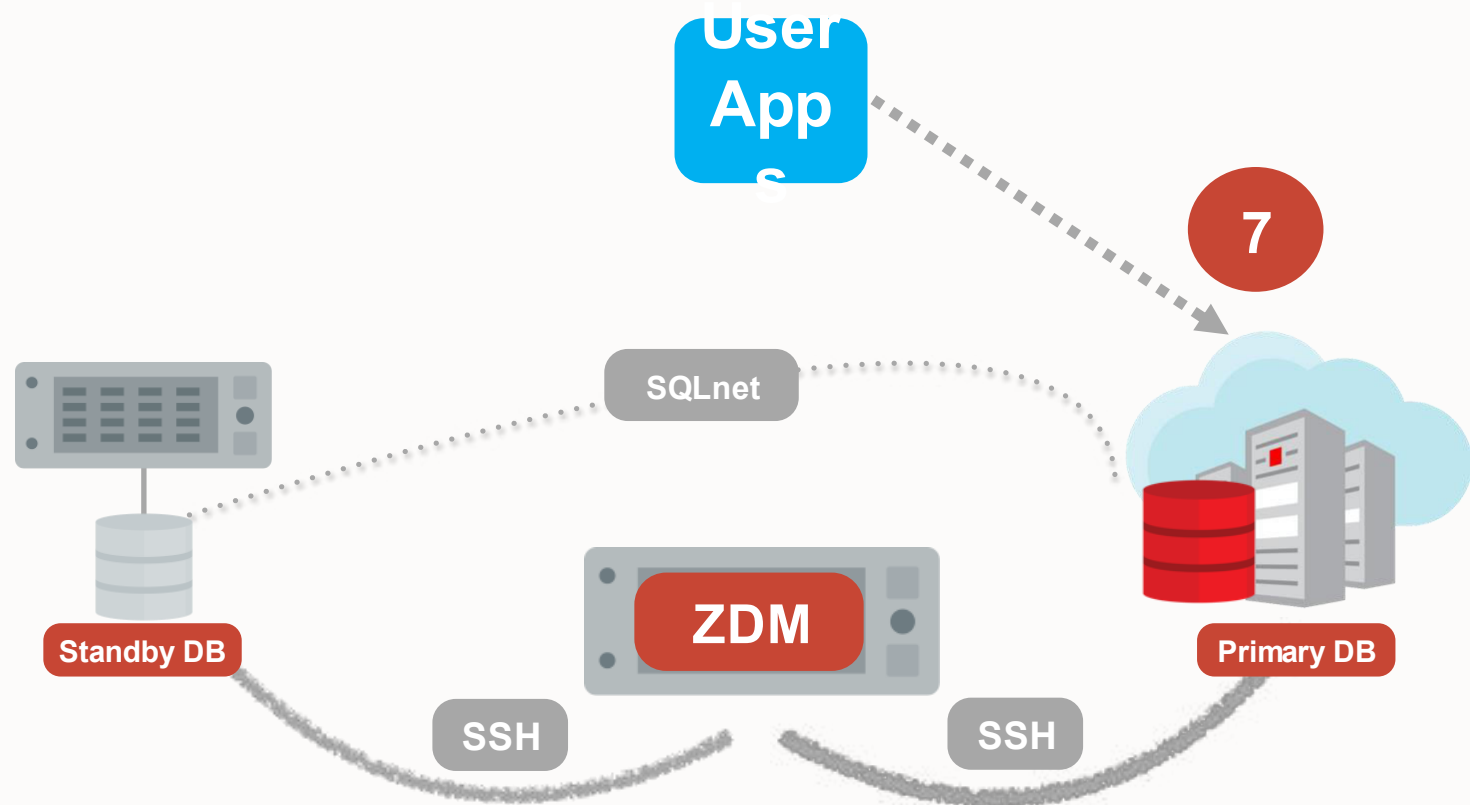
Overview



Prerequisites And Features | Switchover and Role Exchange

- Location
- Release
- Platform
- Architecture

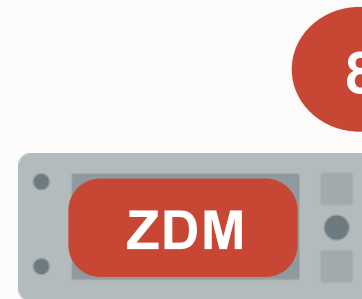
Overview



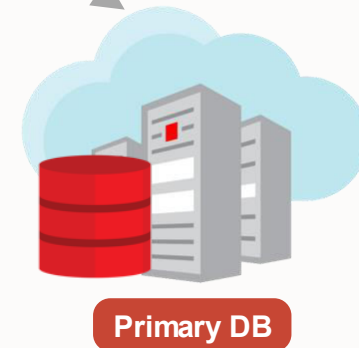
Prerequisites And Features | Finalize the migration

- Location
- Release
- Platform
- Architecture

Overview



8



User App

The diagram shows a blue rounded square icon with the text 'User App' and a small 'S' below it.



Resources | Further Information



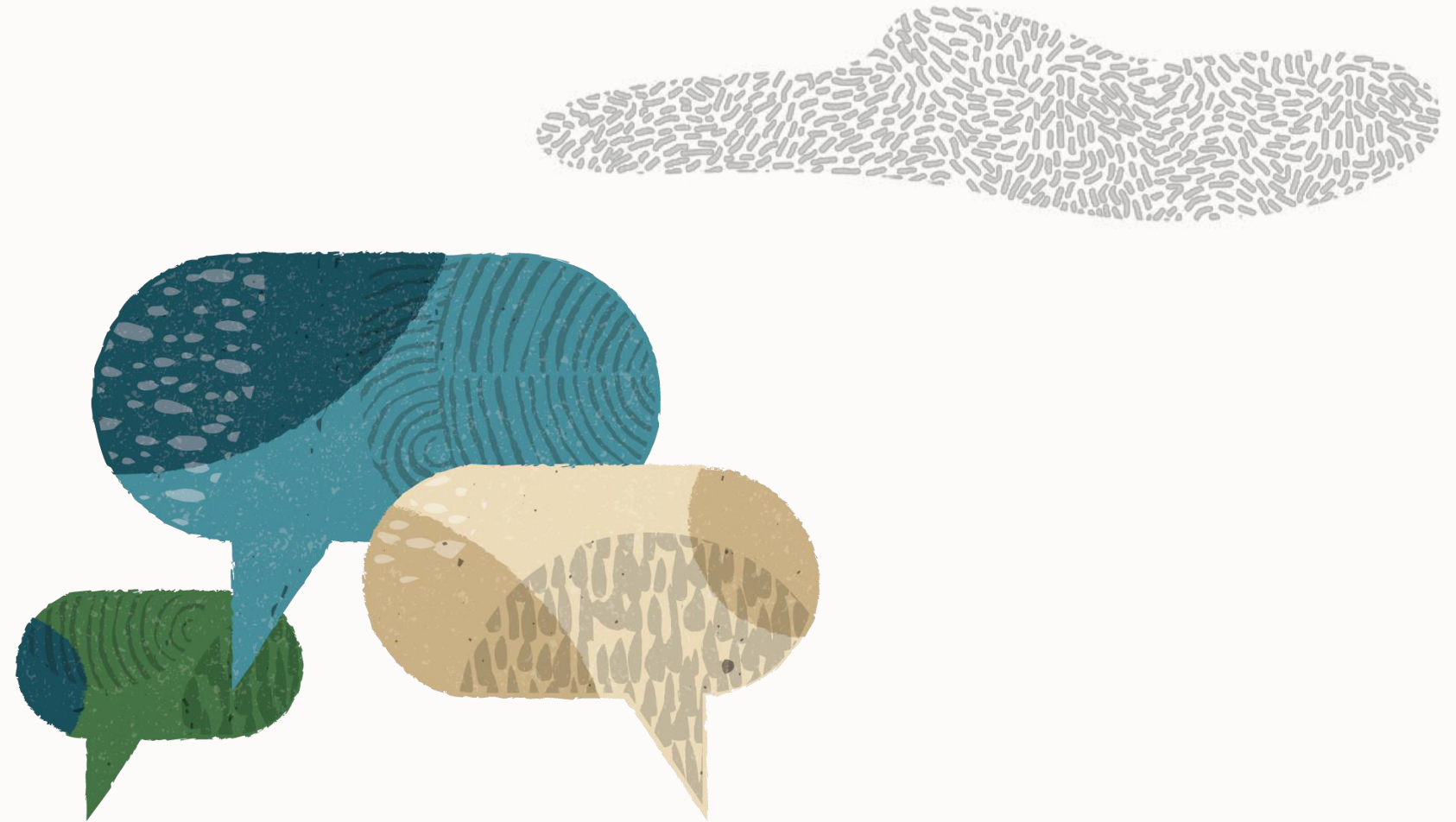
- [Oracle Zero Downtime Migration Product Page](#)
- [Oracle Zero Downtime Migration Documentation](#)
- [Oracle Zero Downtime Migration Whitepaper](#)
- [MAA Practices for Cloud Migration Using ZDM \(Doc ID 2562063.1\)](#)
- [Hybrid Data Guard to Oracle Cloud Infrastructure](#)



Many Roads lead to the Oracle Cloud

Choose the best method
for your case

Questions



Thank you

