# OCI Golden Gate

## The best in-class Data Replication

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# Safe harbor slide

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# Agenda

1. Data Replication challenges
2. OCI GoldenGate
3. Concepts
4. Summary


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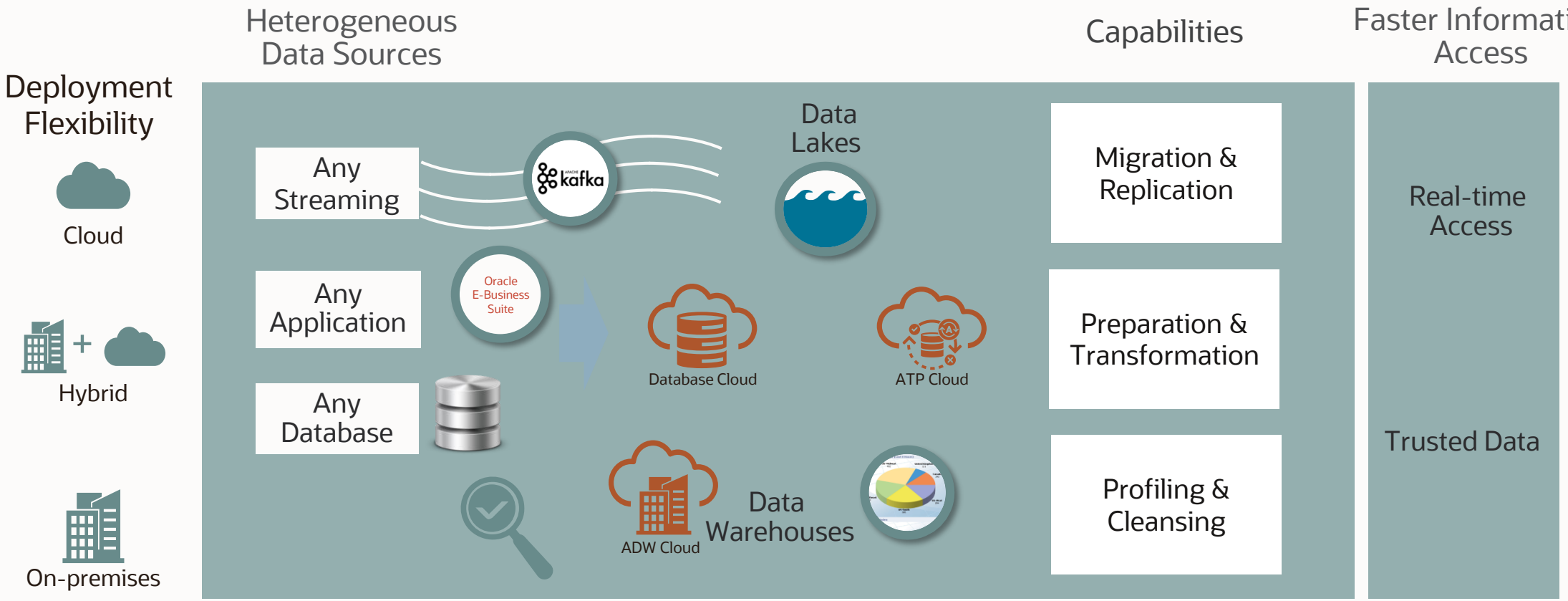
# Data Replication Challenges Nowadays

## Move and transform data for advance analysis





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# Oracle GoldenGate

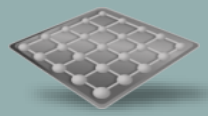
## Real-time data replication

Cloud

Apps

Database

Big Data



- Change Data Capture and Delivery
- Migration, Active-Active Replication
- Heterogeneous Source and Targets
- Real-time
- Centralized Management and Transaction Integrity

- Fully managed, native cloud service
- Real-time data access and minimal impact to production systems
- Flexible data integration and real-time operational reporting
- Improved availability during migration and upgrades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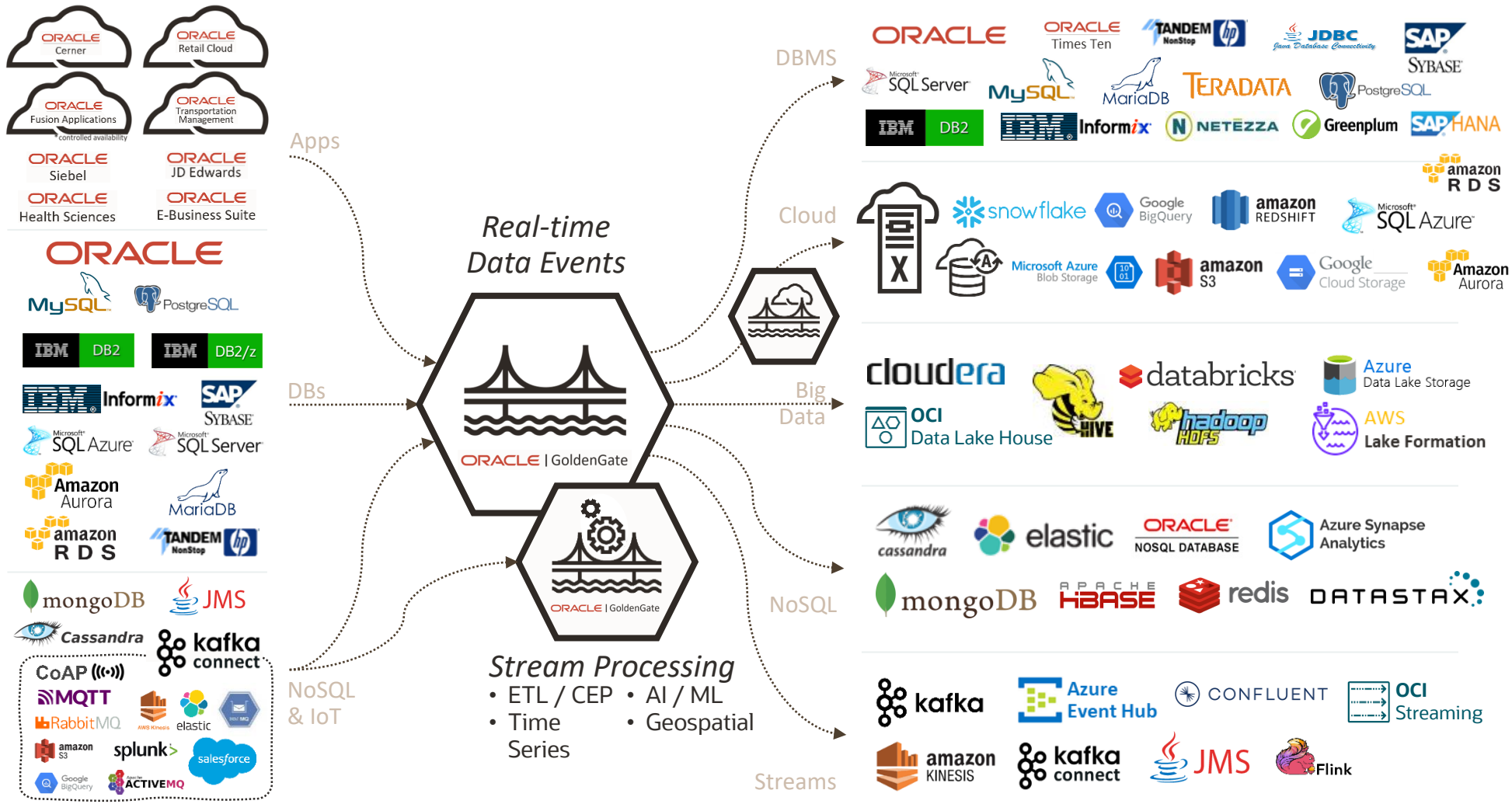
# 1000+ combinations of supported data platforms



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# Oracle Cloud Infrastructure GoldenGate

Market-leading real-time data solution is also available as a fully managed service

## Industry Leader for Real-Time Data Events

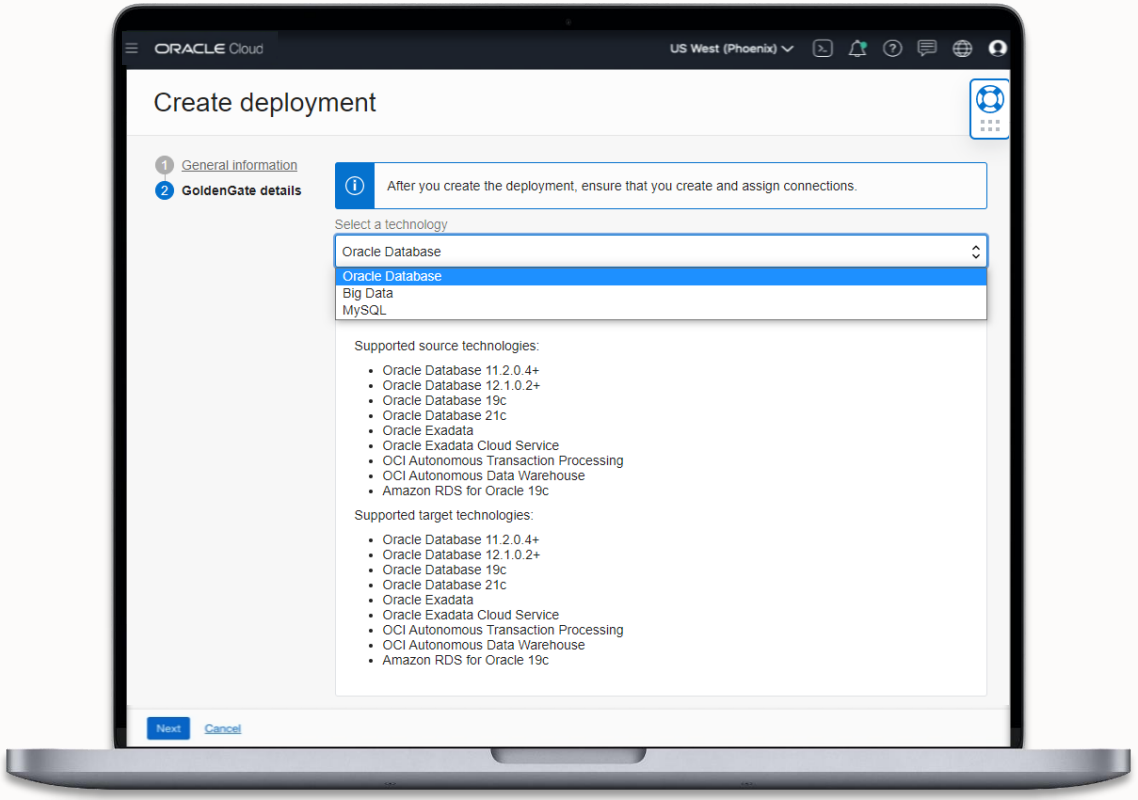
- Powered by the latest GoldenGate 21c microservices architecture

## Cloud Native

- Fully managed by Oracle: upgrades, patching, etc.
- Auto-scale: true cloud elasticity, low operations cost
- Connect to the most popular Oracle, MySQL, MariaDB, and Big Data technologies

## Differentiated Use Cases

- Active-active, real-time data warehouse, data lake, data lakehouse, data mesh and more…
- Capture or deliver data with Autonomous DBs
- Sources and targets may be running in Oracle Cloud, on-premises, and 3rd party Cloud

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# GoldenGate Enhancements

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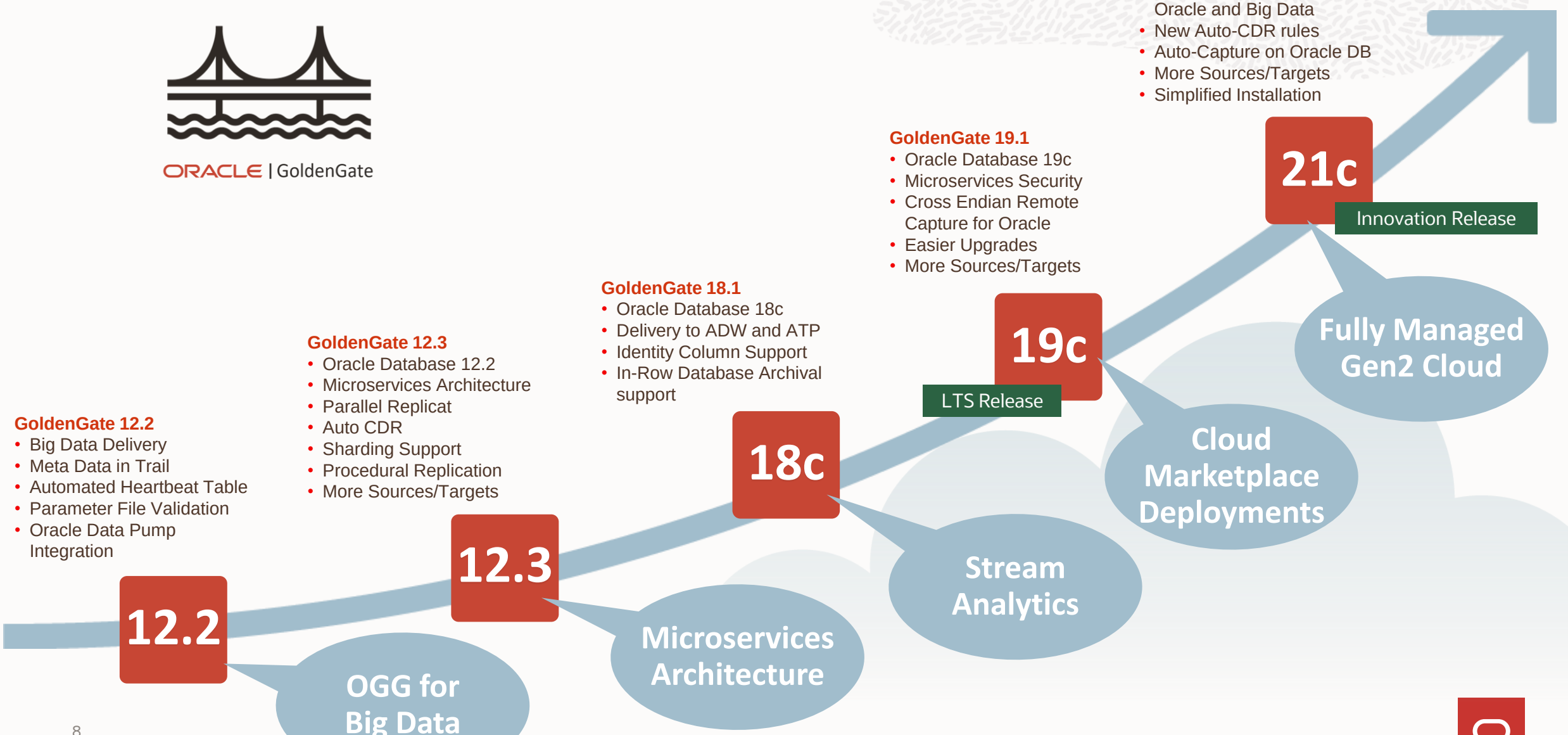
**GoldenGate 12.2**
- Big Data Delivery
- Meta Data in Trail
- Automated Heartbeat Table
- Parameter File Validation
- Oracle Data Pump Integration

**GoldenGate 12.3**
- Oracle Database 12.2
- Microservices Architecture
- Parallel Replicat
- Auto CDR
- Sharding Support
- Procedural Replication
- More Sources/Targets

**GoldenGate 18.1**
- Oracle Database 18c
- Delivery to ADW and ATP
- Identity Column Support
- In-Row Database Archival support

**GoldenGate 19.1**
- Oracle Database 19c
- Microservices Security
- Cross Endian Remote Capture for Oracle
- Easier Upgrades
- More Sources/Targets

**GoldenGate 21.3 & 21.6**
- Oracle Database 21c
- Microservices for non-Oracle and Big Data
- New Auto-CDR rules
- Auto-Capture on Oracle DB
- More Sources/Targets
- Simplified Installation



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# Fully managed, reduced operational overhead

| | GoldenGate | GG OCI Marketplace | OCI GoldenGate |
|---|---|---|---|
| **Solution Management** | | | |
| Create and Manage GoldenGate Deployments | <-------- customer responsibility --------> | | |
| Create and Manage Connections | Customer Managed | Customer Managed | Auto Assigned |
| Dependency JAR Files | Customer Managed | Customer Managed | Pre-Installed |
| Replicat Configuration | Customer Managed | Customer Managed | Simplified |
| **Platform Services** | | | |
| Oracle Cloud Automations | *Not Available* | *Not Available* | Oracle Managed |
| Automatic Scaling (up to 3x) | | | |
| OCI Monitoring / Service Telemetry | | | |
| Metering and Billing per second | | | |
| Full REST API for Control Plane and Data Plane | Customer Managed | Customer Managed | |
| Disaster Recovery, Backup and Restore | | | |
| Upgrades and Patching | | | |
| Private Endpoints and Secure Vault | | | |
| Wallet Integration w/Autonomous DB | | | |
| Operating System Administration | | | |
| **Infrastructure Management** | | | |
| Virtualization & Terraform Stack Automation | Customer Provided | Oracle Provided | Oracle Provided |
| Install / Rapid Provisioning | | | |
| Server Administration | | | |
| Storage and Durability Guarantees | | | |
| Core Networking | | | |


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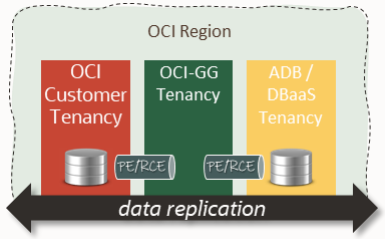
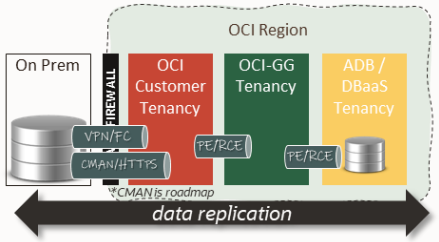
# OCI GoldenGate supported use cases

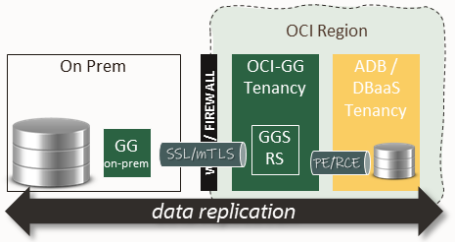
### 1: OCI DB to OCI DB



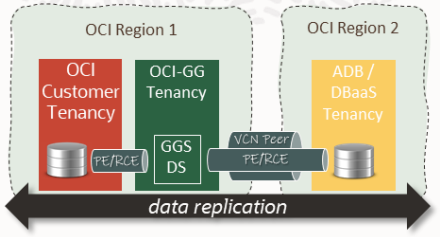

### 2a: On-prem to OCI (SQL*net)



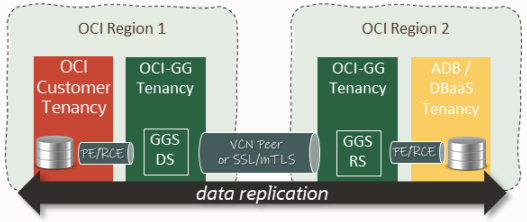

### 2b: On-prem to OCI (Dist→Rec)



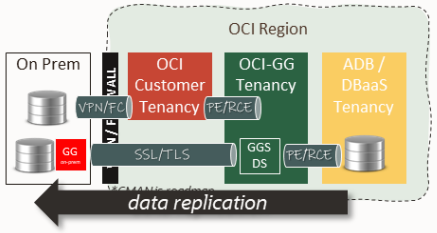

### 3a: Cross-Region (SQL*Net)



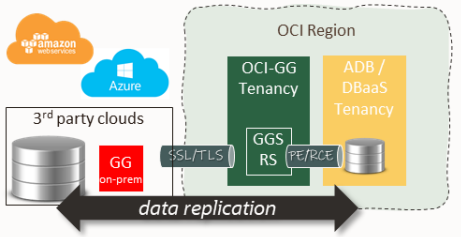

### 3b: Cross-Region (Dist→Rec)



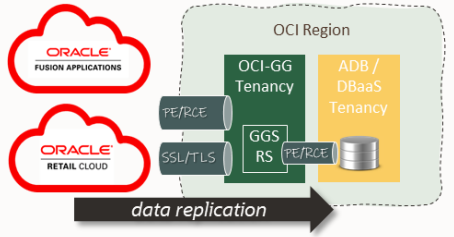

### 4: Autonomous to On-Prem



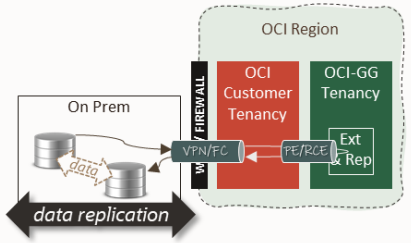

### 5: Non-Oracle Cloud to OCI



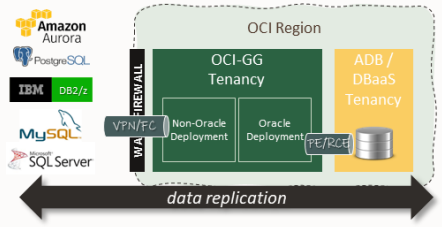

### 6: SaaS to OCI



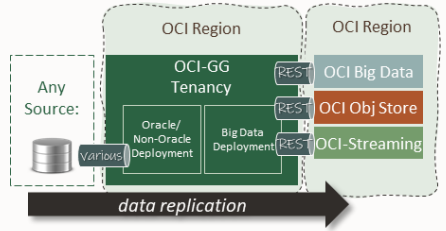

### 7: On-prem to On-prem



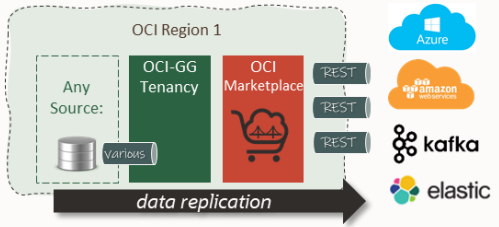

### 8: Non-Oracle DBs to OCI




### 9: Any to OCI Non-Relational




### 10: Stream Analytics to Other Clouds





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# OCI GoldenGate
## Concepts

# Deployment

A container for your OCI GoldenGate resources, such as the OCI GoldenGate Deployment Console

**When you create an OCI GoldenGate deployment, you must select how many OCPUs the deployment will use.**

Enabling Auto Scale ensures additional OCPUs are available when they're needed. You're only billed when the additional OCPU cycles are consumed

Auto scaling enables OCI GoldenGate to scale up to three times the number of OCPUs you specify for OCPU Count, up to 24 OCPUs


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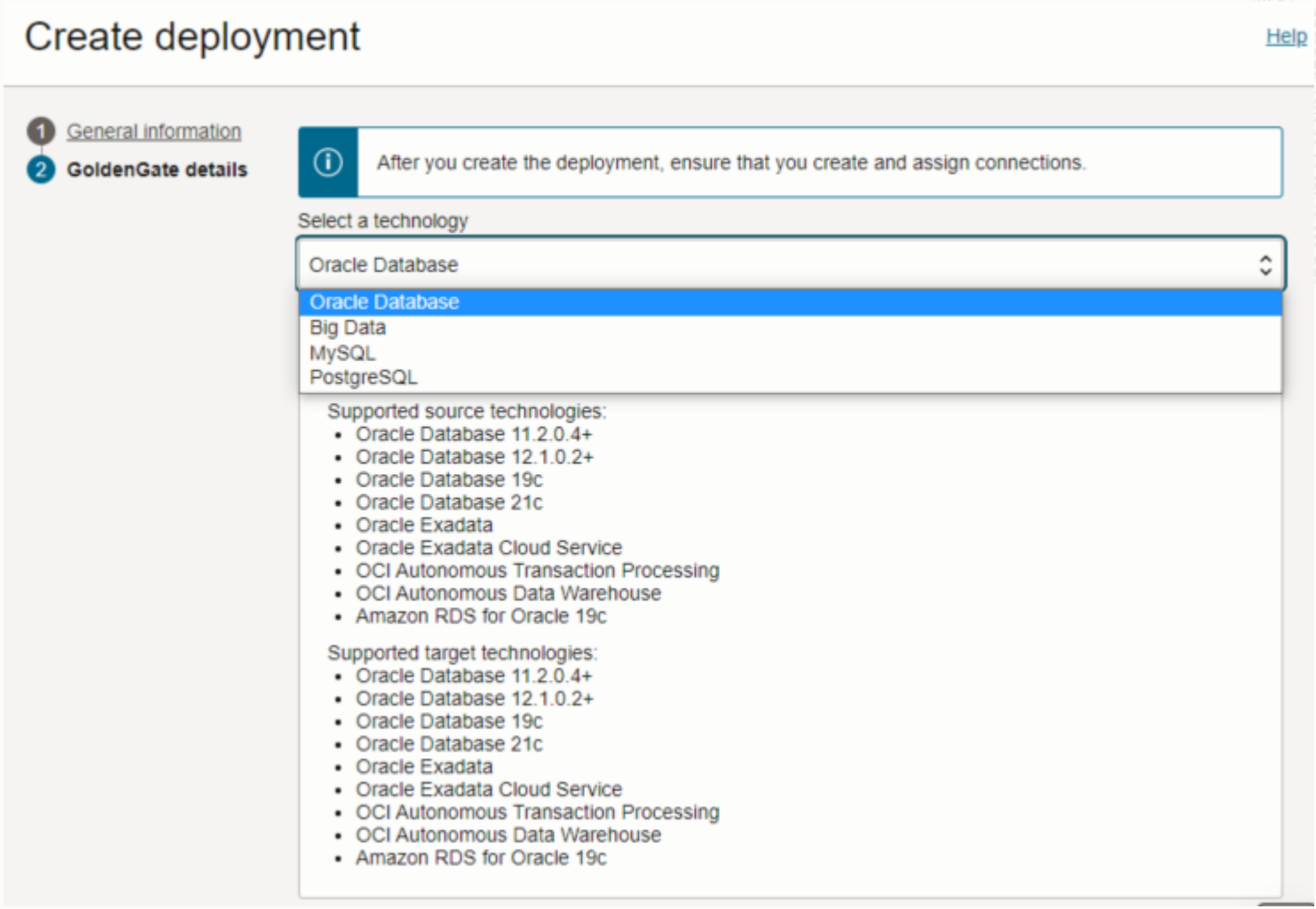
# OCI GoldenGate

## Concepts

# Database Registration

Captures source and target credential information and enables networking between the OCI GoldenGate service tenancy virtual cloud network (VCN) and your tenancy VCN using a private endpoint.

A database registration contains the connectivity information to source or target end points





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# OCI GoldenGate

## Concepts

# Deployment Backup

Deployment Backups can help you troubleshoot issues, clone deployments, and restore deployments

**A backup of a deployment's current state, retained for 60 days. It can be used to restore a deployment or create a new deployment with the state of the original deployment at the time the backup was taken.**

Deployment Backups are created daily

You can also create manual backups at any time, and save them to your Oracle Object Storage tenancy


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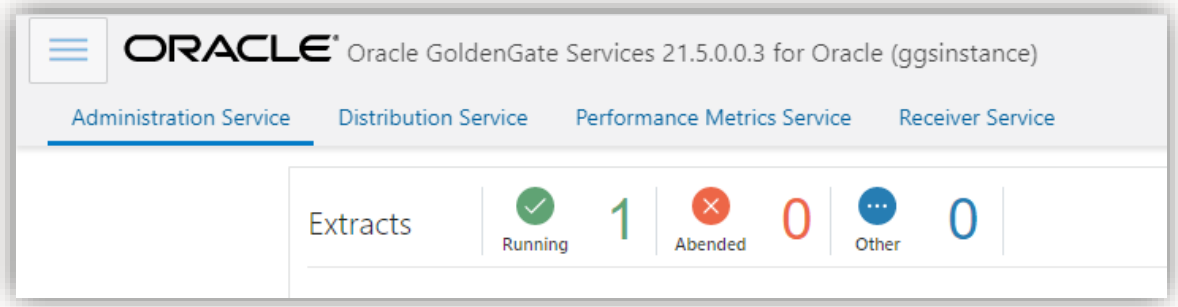
# OCI GoldenGate
## Concepts

# Extract




A process that runs against the source database and extracts, or captures data.

**Before you create an Extract, you must have supplemental logging enabled**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# OCI GoldenGate
## Concepts

# Trail

A series of files on the source, intermediary, and/or target system where Oracle GoldenGate stores the captured changes to support the continuous extraction and replication of database changes.

# Managing Trail Files

OCI GoldenGate Trail files quickly add up over time.
Without purge tasks in place to manage these trail files, daily backups will take exponentially longer to complete and use compute resources that could otherwise be used elsewhere.


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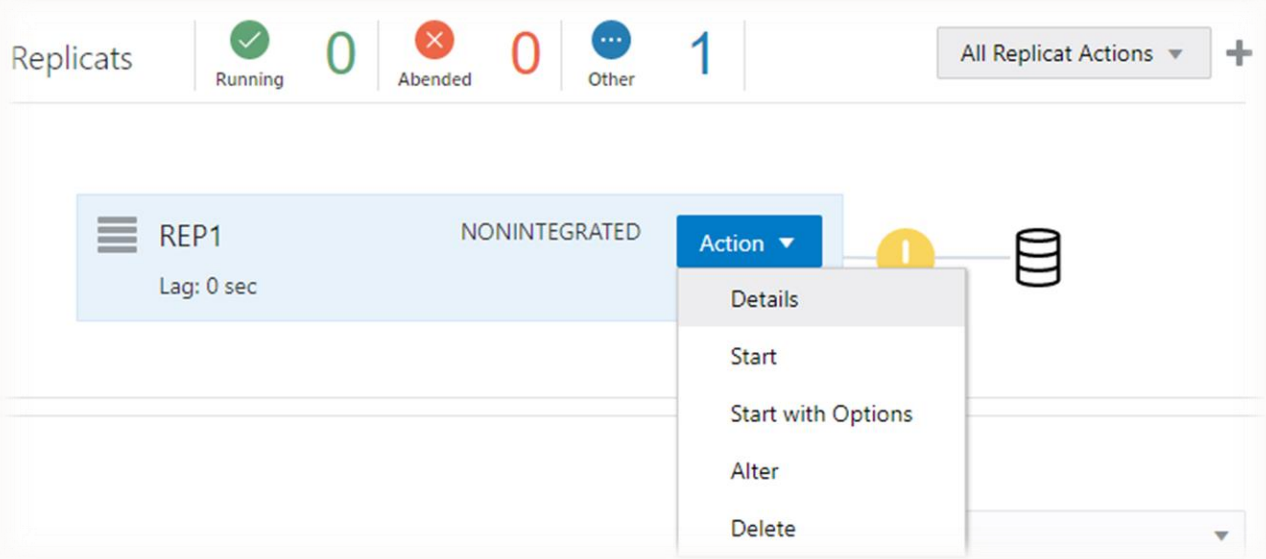
# OCI GoldenGate
## Concepts

# Replicat

A process that delivers data to a target database.
It reads the trail file on the target database, reconstructs the DML or DDL operations, and applies them to the target database.

Before you create a Replicat, ensure that you first create a checkpoint table





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# Summary

Turn your data into a competitive advantage

High performance, real-time data movement and transformation

Non-invasive, low-impact data movement

Database migration tools

Process data faster

Access data without disruption

Simplify migration to the cloud

# What Next?

Read the Latest News
http://blogs.oracle.com/dataintegration

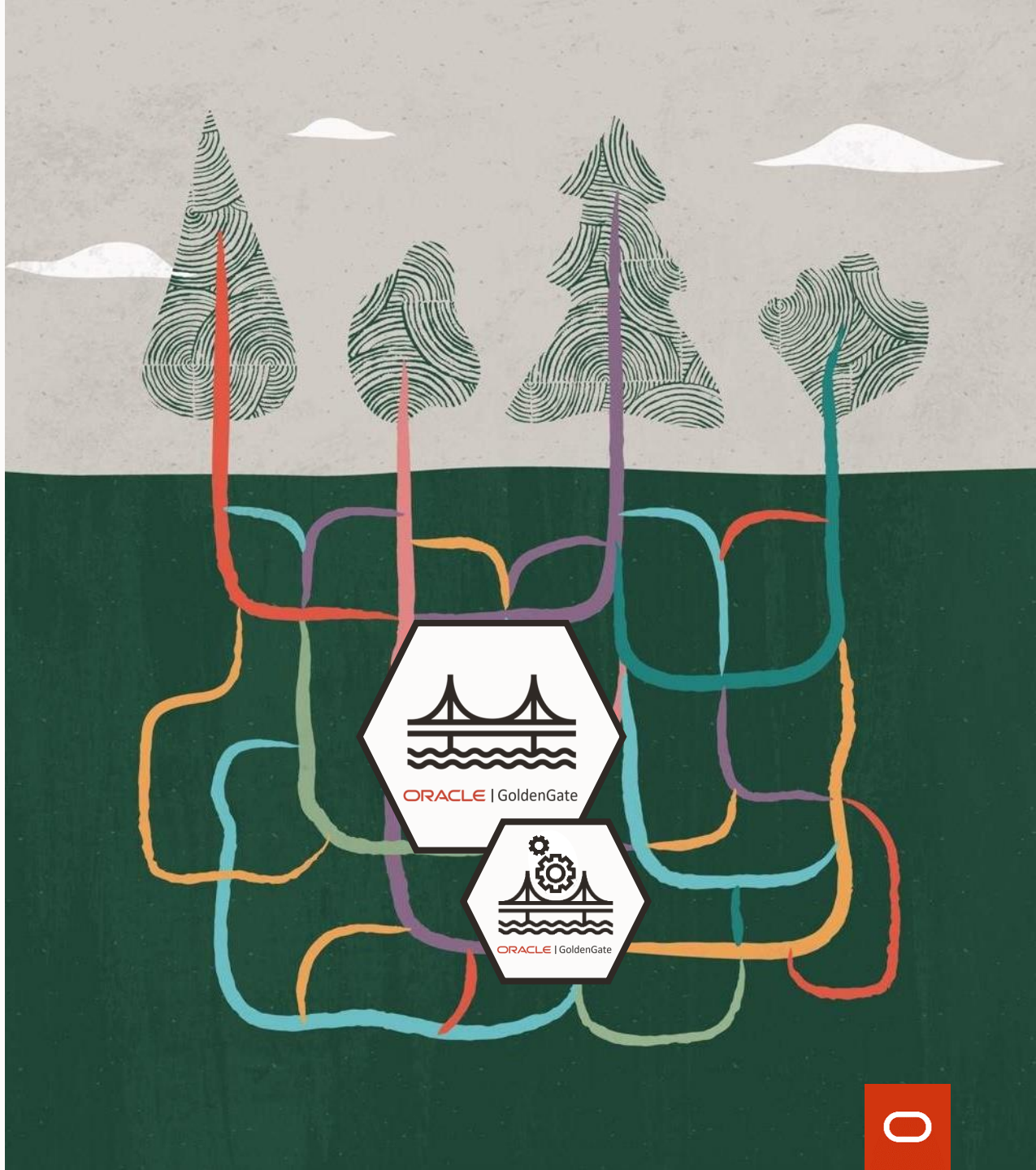
YouTube Channel for GoldenGate
https://www.youtube.com/c/oraclegoldengate

Try OCI GoldenGate yourself!
https://www.oracle.com/cloud/free/

2hr Hands-on Guided Lab:
https://apexapps.oracle.com/pls/apex/dbpm/r/livelabs/view-workshop?wid=797

GoldenGate Data Mesh tech paper
https://www.oracle.com/a/ocom/docs/techbrief-enterprisedatameshandgoldengate.pdf

#1 in Data Fabric strategy
https://blogs.oracle.com/dataintegration/oracle_forresterwave_datafabric_2020





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