

ORACLE



# Oracle GoldenGate23ai and Stream Analytics

## overview, news and roadmap

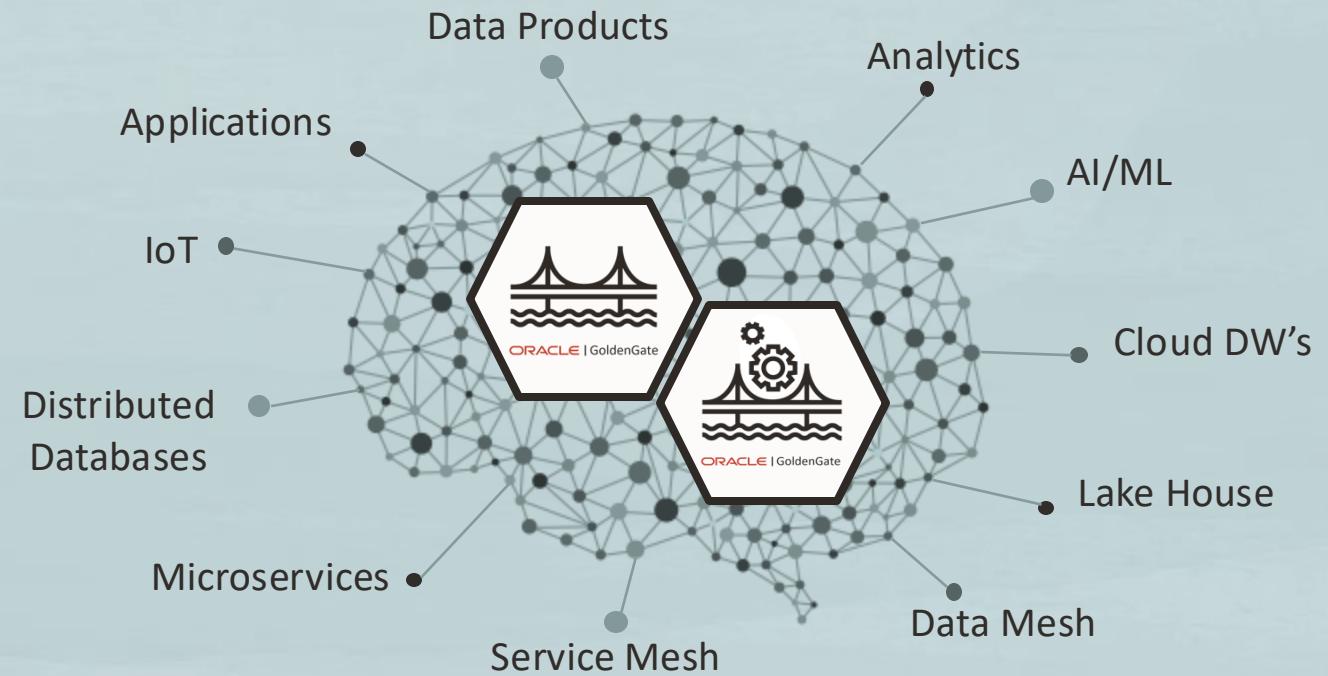
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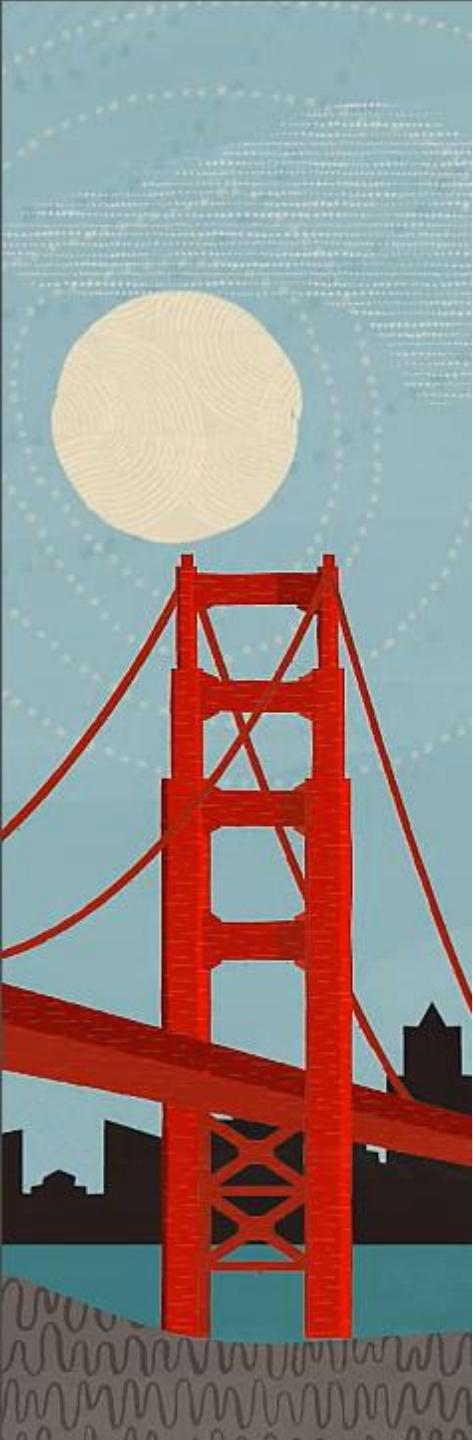
Tomáš Vávra

Oracle GoldenGate Product Manager



# #1 real-time Data Fabric platform



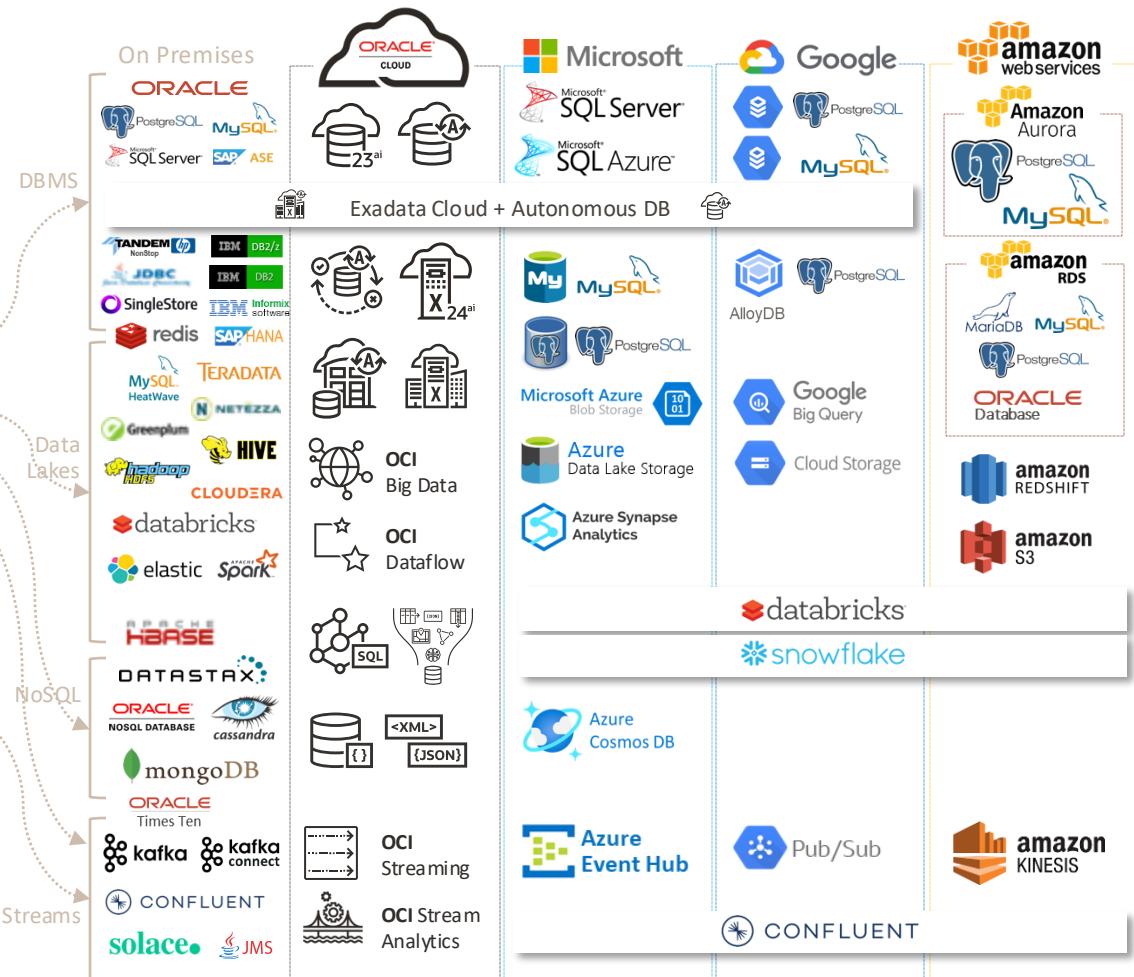
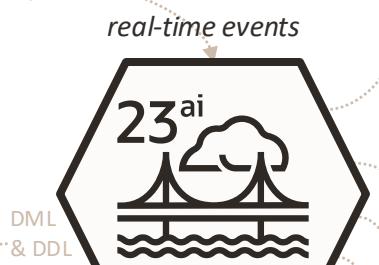


## **1000+ combinations of supported data platforms**

ideal platform for enterprise-wide standard that can handle all major real-time needs

## Operational Systems

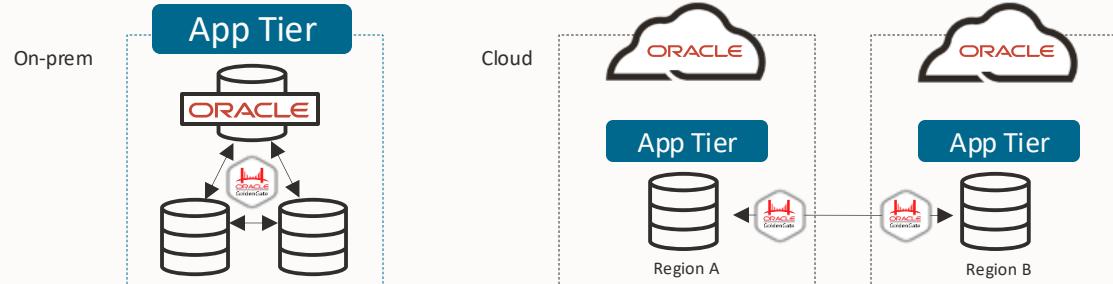
Oracle technologies



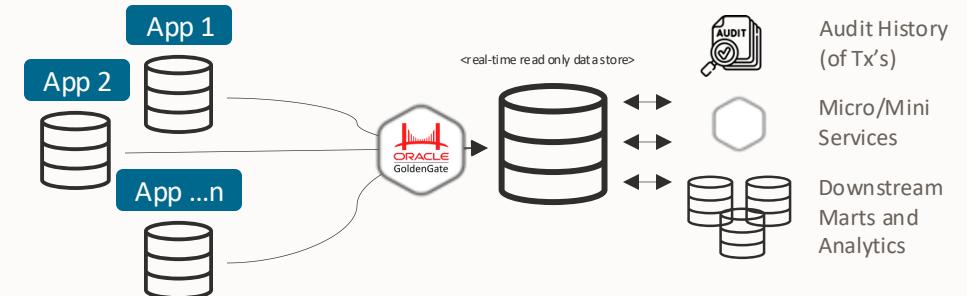
Most recent *GoldenGate Certifications* and *Oracle GoldenGate Statement of Direction*.

# 5 core GoldenGate use cases:

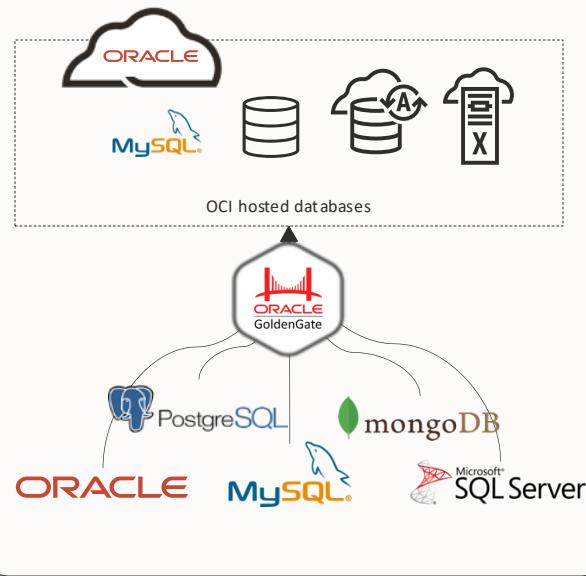
Multi-active, high availability and cross-region



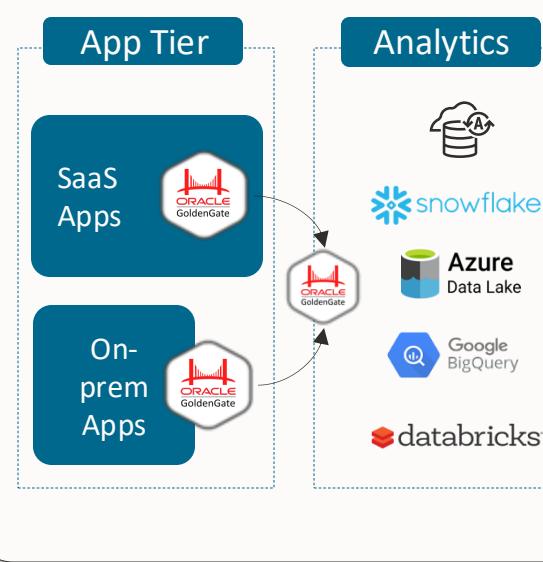
Data offloading / data hub



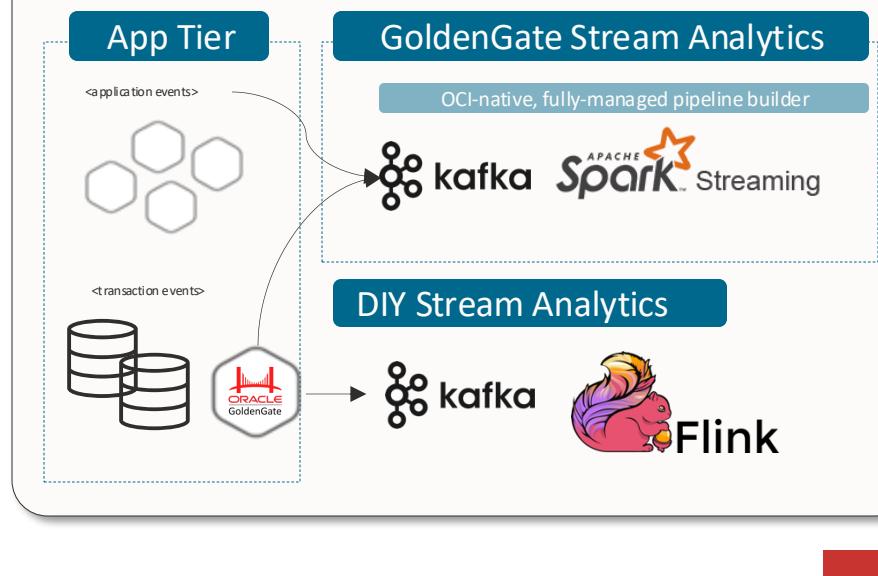
Migrations/upgrades



Analytic data feeds



Stream analytics



# GoldenGate runs anywhere

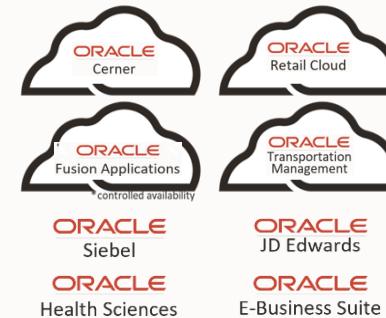
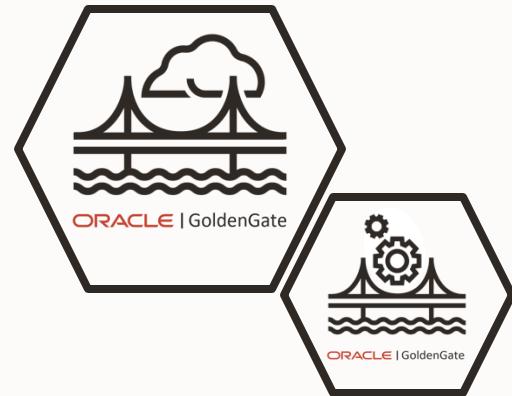
## Hybrid / Multi



Runs on  
Any Cloud

Elastic,  
Cloud Native

## Deep and powerful ecosystem for GoldenGate



Integrate  
From SaaS

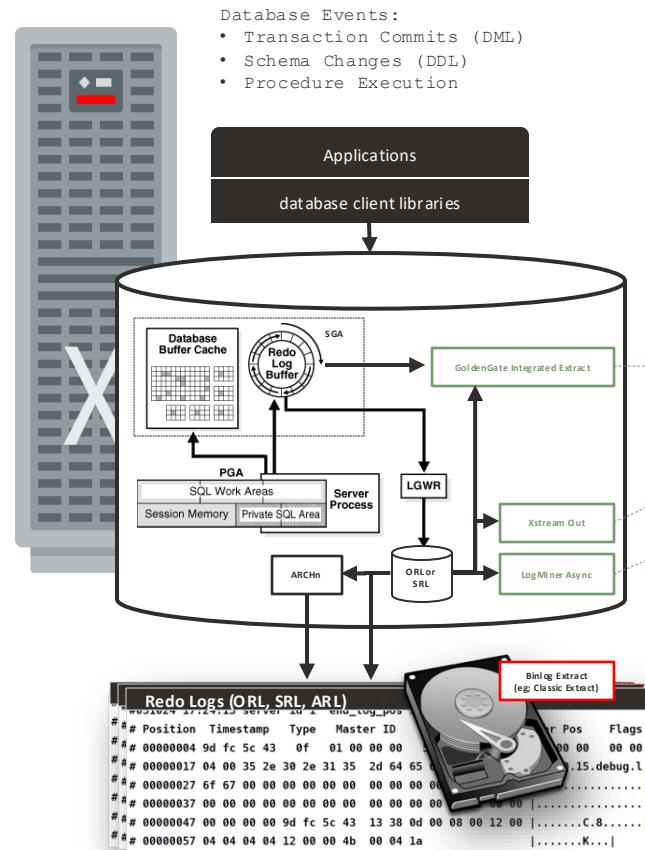


Take GG to  
the Edge!

# ...still the best tech for Oracle Database



**ORACLE**  
GoldenGate



- faster APIs, more data volume, complete datatype coverage
- works with all Oracle DB versions, including Cloud/ADB
- maximum availability, best security, integrated lifecycle

## *most other CDC tools:*

- stuck on outdated LogMiner APIs, slow, single-threaded streams
- no recovery lifecycle or KPIs for RTO/RPO, possible data loss
- ...or worse, insecure binary log parsing that won't work in cloud

API / Data Files	Included w/License	3 <sup>rd</sup> Parties Using
1 GG native	GoldenGate	Apps and ISV partners embed GoldenGate components
2 XStream Out API	GoldenGate	IBM, SAP, Striim, Starquest/Stelo ( <i>XStream/OGG restricted reseller</i> ) Debeezium ( <i>bring your own OGG license</i> )
3 Logminer Async	Oracle DB	Google (Alooma) Datastream, Qlik/Attunity, Informatica, StreamSets, Bryteflow, Equalum, FiveTran, Alooma, Matillion (depends on DMS), SAS, Tibco, Syncsort, Hitach/Pentaho, SnapLogic, Actian, Hevo Data, Debeezium (RedHat supported), AWS DMS
4 DB Triggers	Oracle DB	CData
5 DB Disk Logs	Unsupported/Unlicensed	IBM, Qlik/Attunity, AWS DMS, Fivetran/HVR, Informatica

# Fully Managed, Cloud-Native OCI GoldenGate

## Data Integration Industry Leader

- Powered by GoldenGate, Data Transforms, and Stream Analytics

## Cloud Native

- Fully managed by Oracle: upgrades, patching, etc.
- Auto-scale: true cloud elasticity, low operations cost

## Differentiated Use Cases

- Data movement at any speed
- Comprehensive technology support
- Real-time DW, data lakehouse, mesh, multi-cloud and more

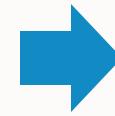
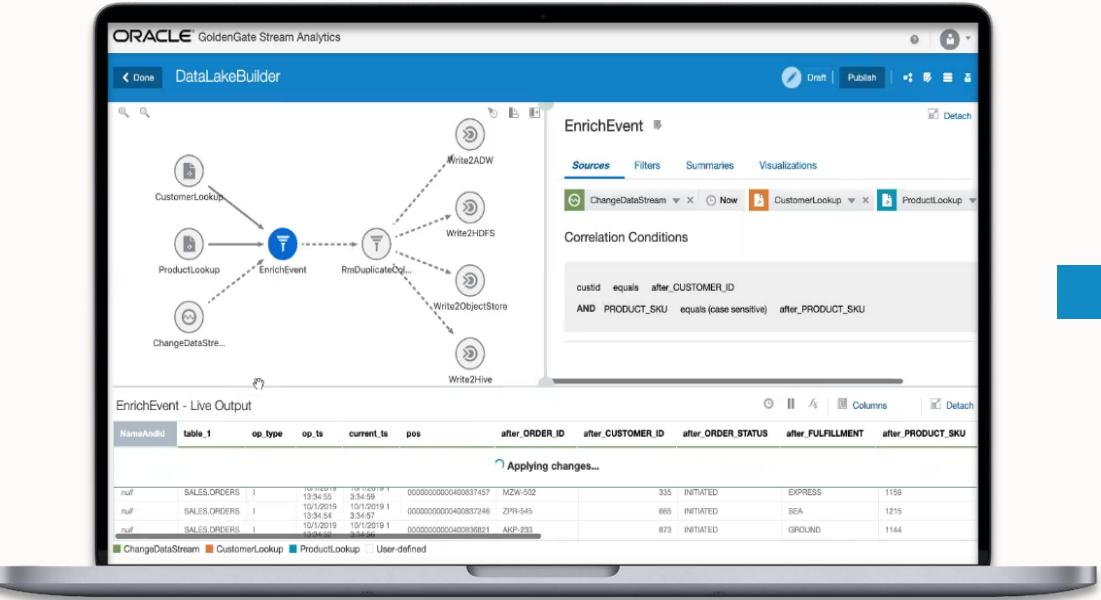
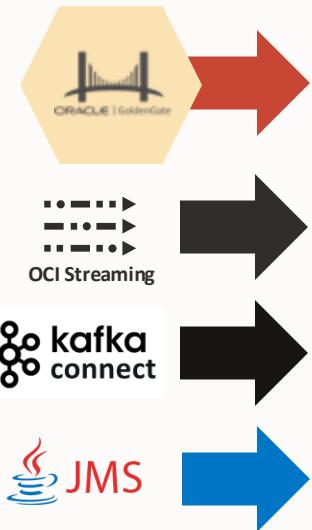
The screenshot shows the Oracle Cloud interface for creating a GoldenGate deployment. On the left, there's a sidebar with 'GoldenGate' navigation (Overview, Deployments, Deployment Backups, Connections) and filtering options (Compartment, Substate, Tag filters). The main area is titled 'Create deployment' and is divided into two steps: 'General information' (selected) and 'GoldenGate details'. Step 1 contains a note: 'After you create the deployment, ensure that you create and assign connections.' Step 2 is currently empty. Below these steps, there are sections for 'Choose a deployment type' (Data replication, Data transforms, Stream analytics), 'Select a technology' (set to Oracle Database), 'Version' (set to ogoracle:21.12.0.0.0\_231115.1435\_874), and 'Supported technologies' which lists supported source and target technologies.

# Extensive Oracle & 3rd Party Connectivity

Fully-managed data fabric solution for a huge variety of data producers and consumers



# GoldenGate Stream Analytics



Ingest Events

100+ supported sources from OCI-GoldenGate, OCI-Streaming, Oracle Integration Cloud and Oracle IoT Cloud

Select Processing Patterns

Rich set of pre-built patterns will dramatically improve developer efficiency and time-to-value

Build Event Pipelines

Easily leverage geo-fencing, machine-learning, and other reference data within the stream

Serve Data Downstream

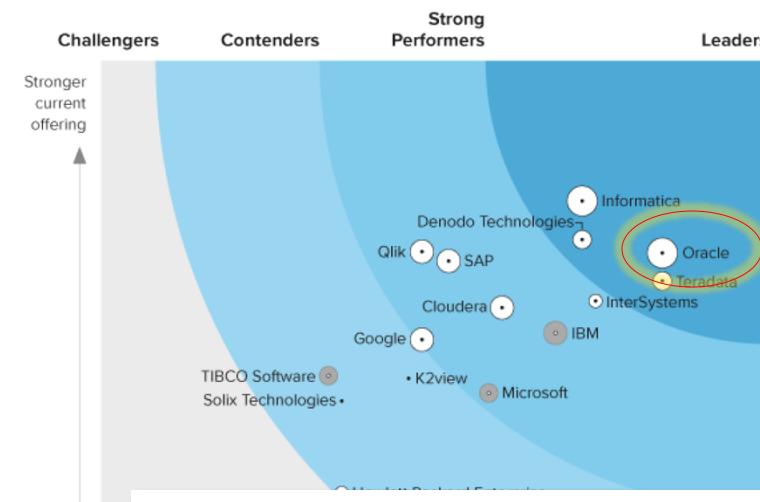
Data can be delivered out to Kafka, databases, or easily staged for external ETL jobs

# Award-winning data integration

## THE FORRESTER WAVE™

Enterprise Data Fabric

Q1 2024



### 2024 Forrester Data Fabric Wave

- #1 for Real-time Data Fabric
- #1 in Transactional Data Fabric
- Leader in Stream Processing
- Leadership in low latency replication
- Commitment to both On-Prem and Cloud

# Gartner

Figure 1: Magic Quadrant for Data Integration Tools



### 2023 Gartner Magic Quadrant

- #1 for Cloud Data Integration
- #1 in Streaming Integration
- Leader in Data Replication/Synch
- Leadership in low latency replication
- Commitment to both On-Prem and Cloud

[Read the full Report here!](#)

# Over the many years, GoldenGate has changed a lot...



## GoldenGate 12.x

- Oracle Database 12.2
- Microservices Architecture
- Parallel Replicat, Auto CDR
- Self-describing Metadata in Trail
- Procedural Replication
- Automated Heartbeat Table
- More Sources & Targets

**12c**

Microservices  
Architecture

## GoldenGate 18.1

- Oracle Database 18c
- Delivery to ADW and ATP
- Identity Column Support
- More Sources & Targets
- In-Row Database Archival support

**18c**

## GoldenGate 19.1

- Oracle Database 19c
- Microservices Security
- Cross Endian Remote Capture for Oracle
- Easier Upgrades
- More Sources & Targets
- Performance Updates

**19c**

Stream  
Analytics

**21c**

Fully Managed  
Gen2 Cloud

Oracle Cloud  
Marketplace

**23ai**

Distributed AI  
& Data Streams



## GoldenGate 23ai

- Oracle Database 23ai
- Distributed AI vectors and vector consolidation
- Data Streams, AsyncAPI, CloudEvents
- High Availability Clusters
- StatsD, Telegraf Observability
- New GUI / Recipes / ZeroETL
- 3rd party IdP, new encryption
- More Sources & Targets

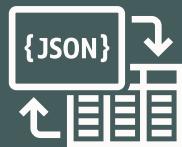
New Database Roles

OCI IAM Integration



DDL Notification on Target Tables

JSON Relational Duality



New Simplified GUI/UX



PDB Extract Capture



Online DDL + EBR

AWR Enhancement

# Oracle GoldenGate

NEW IN  
23ai

*next-generation AI with distributed vector support*



Microservices Architecture Only

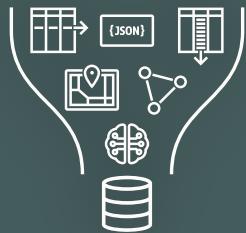
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@Dbfunction Mapping

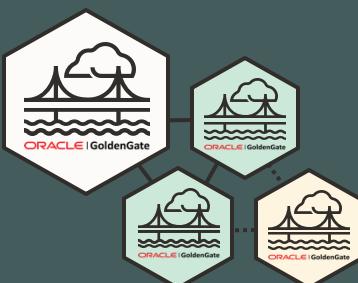
GG Free Recipes

30+ new OS/DB certifications

23ai Database New Features Support



High Availability Clusters



Data Streams Pub-Sub AsyncAPI

Trail Files Management

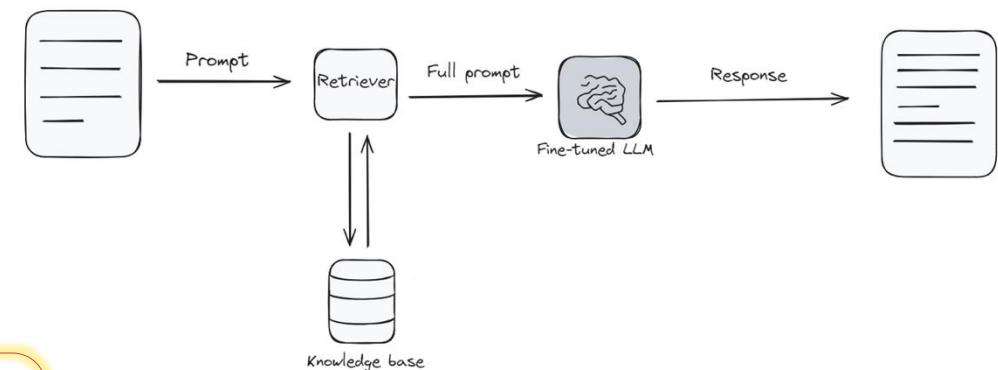
Integrated Diagnostics for IE/IR

## Generative AI with your own business data?



The pragmatic IT work to apply GenAI to business problems has already begun, here is how most orgs are getting started:

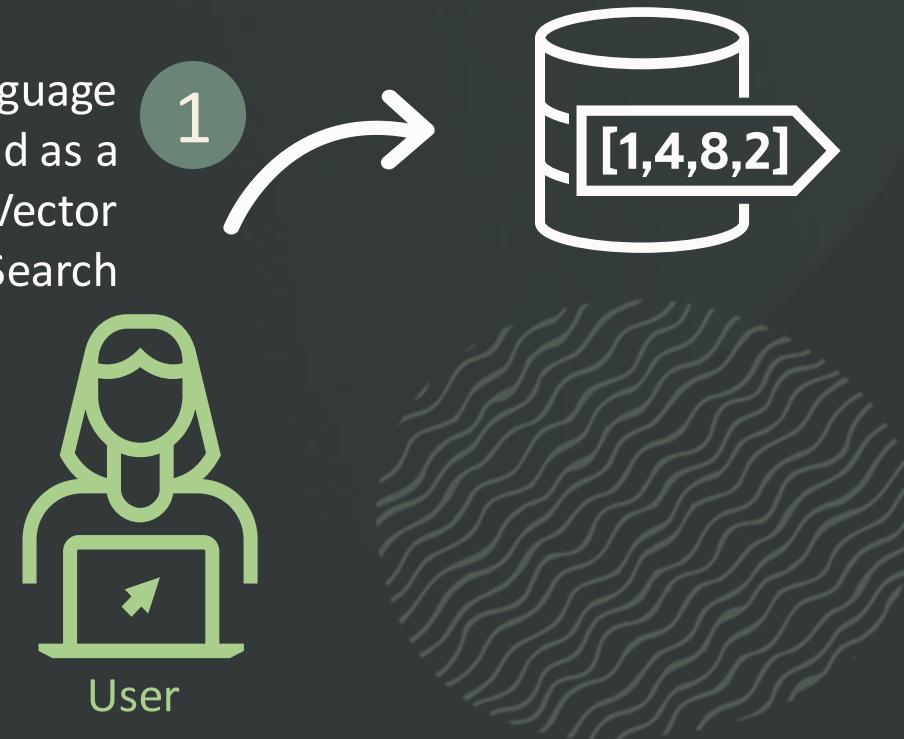
1. **From scratch LLMs** – create your own models from your own data
2. **Fine tuned LLMs** – refining a pre-trained LLM in a private domain
3. **Prompt engineering** – use your own private data to augment prompts (Retrieval Augmented Generation)



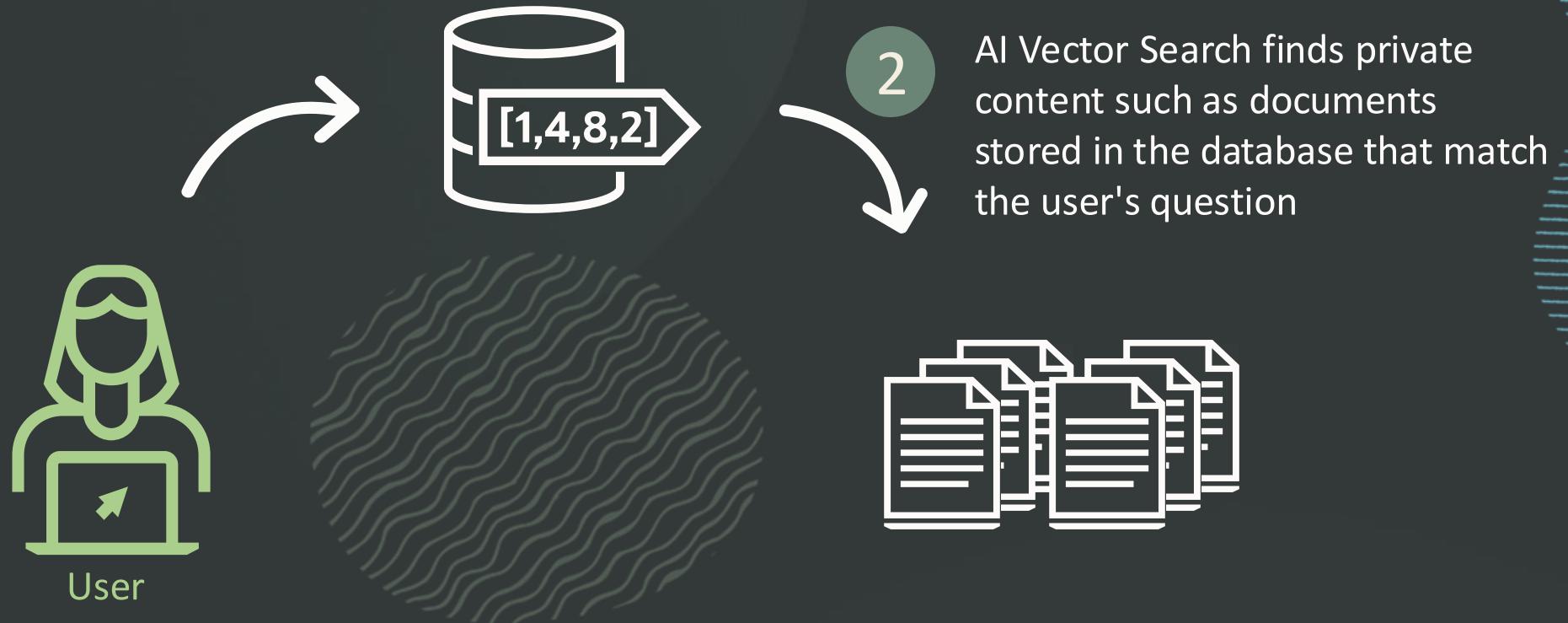
RAG = Retrieval Augmented Generation

# Retrieval Augmented Generation works like this

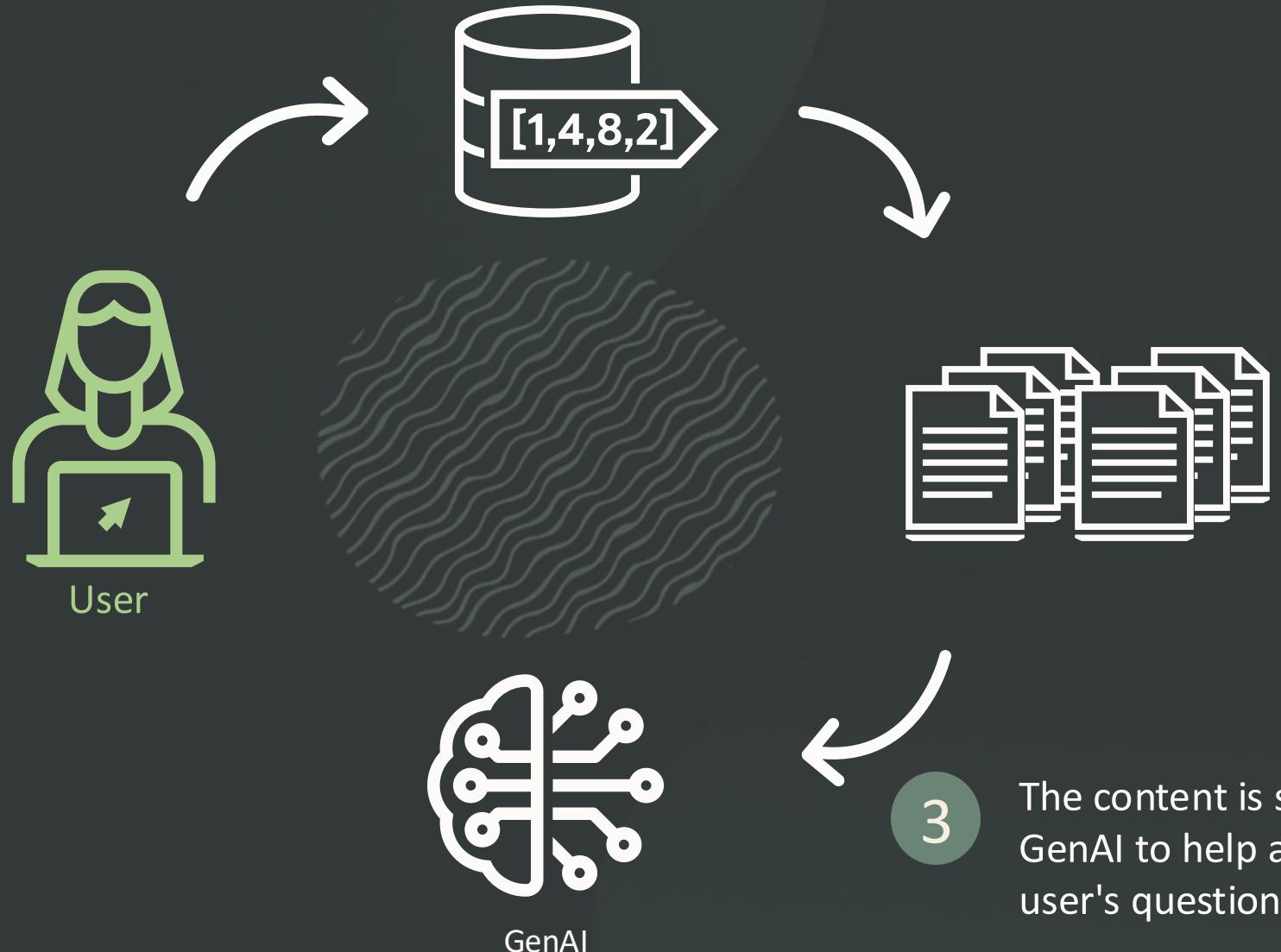
A user's natural language question is encoded as a vector and sent to AI Vector Search



# Retrieval Augmented Generation works like this



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# Retrieval Augmented Generation works like this



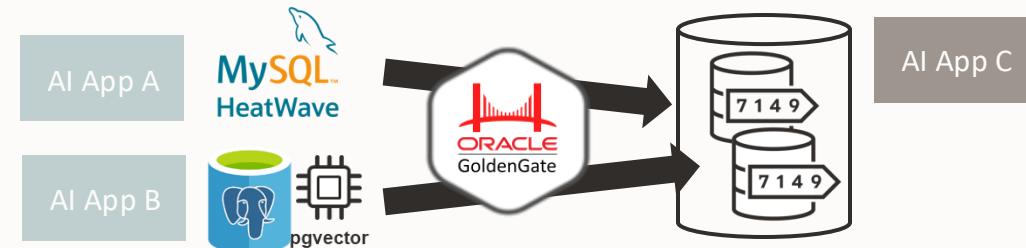
# Distributed AI processing with vector replication



A. Migrate vectors into Oracle vector database

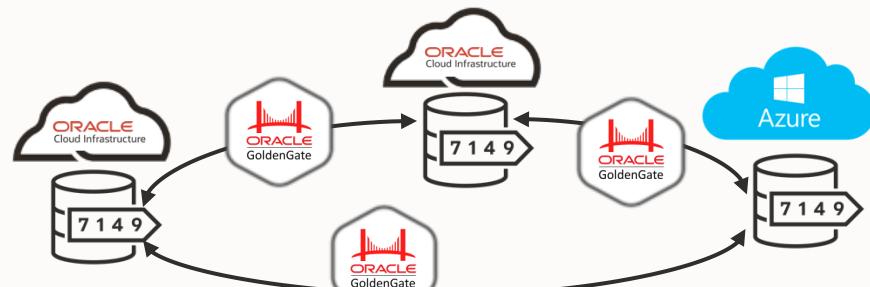


B. Replicate/consolidate vector changes

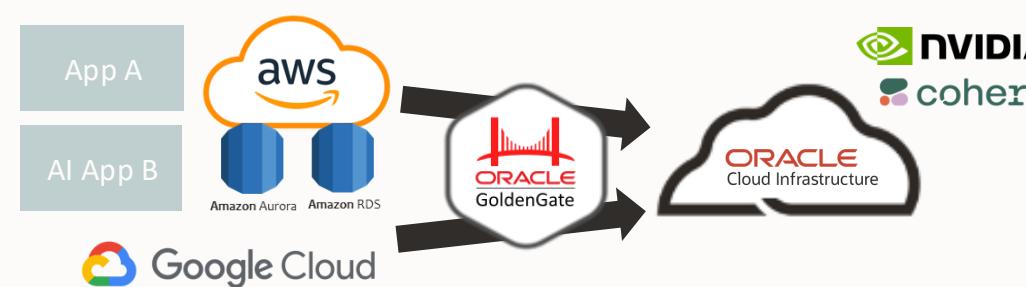


\*Embedding models must be same across vector stores

C. Multi-cloud, multi-active Oracle vector database



D. Stream changes (text/vector) to search engines



\*Embedding models must be same across vector stores

# Actionable AI/ML from streaming pipelines

## Business Operations

### ERP & SaaS Apps



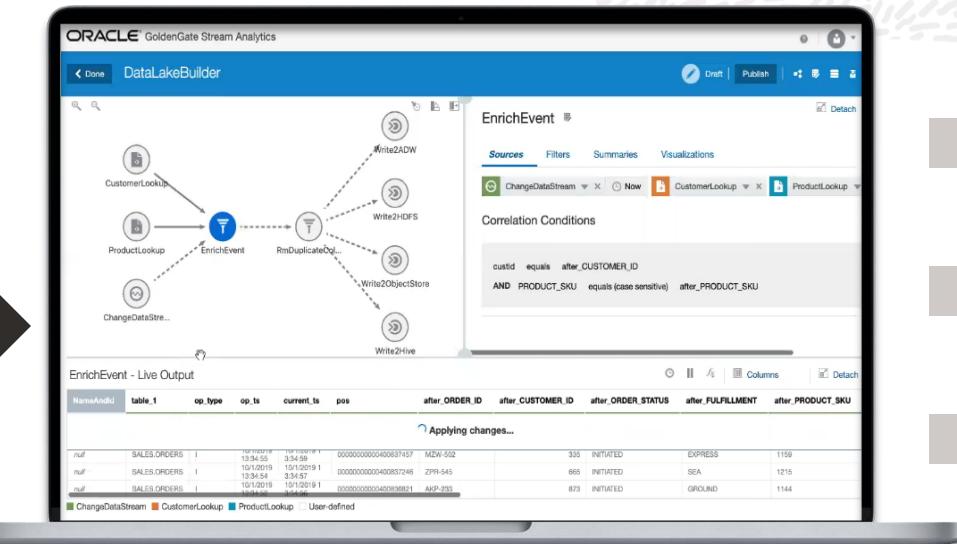
### Event Messaging and NoSQL



### Databases



events



Insights



Alerts



Data Products



Similarity  
Search



Machine  
Learning

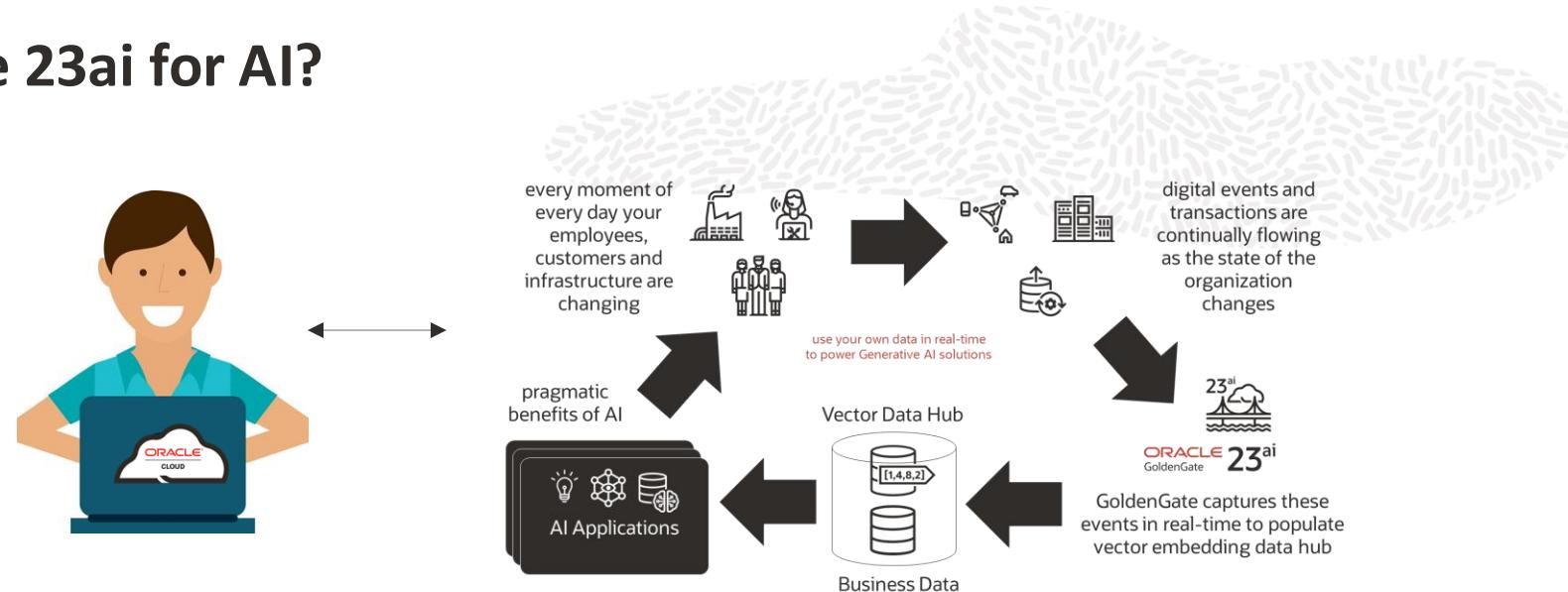


External  
AI/ML

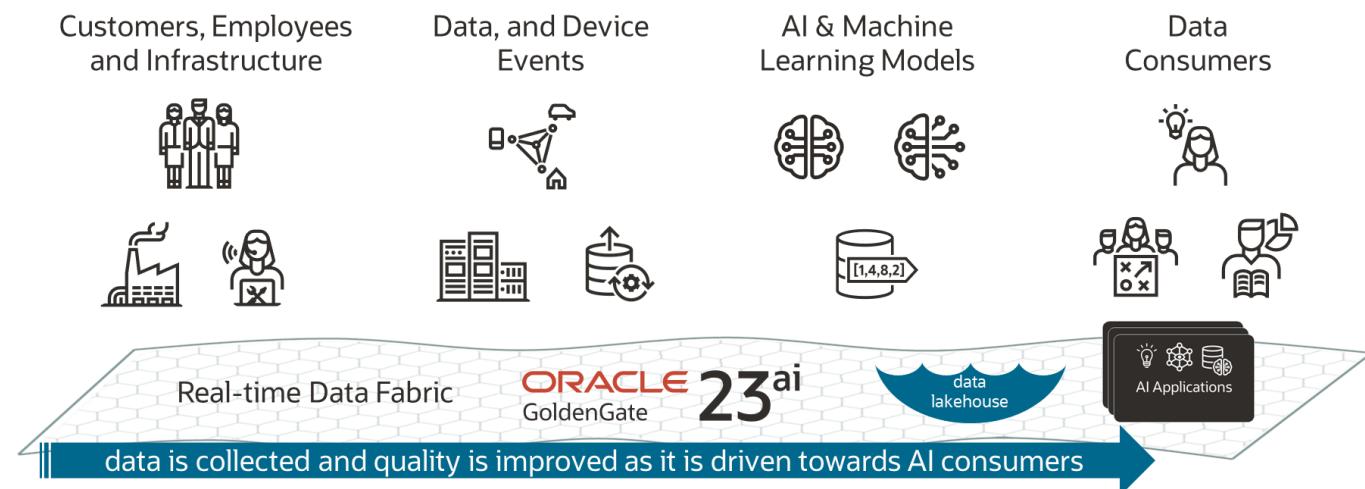
AI/ML  
Service  
Integrations

# Summary, why GoldenGate 23ai for AI?

## 1 Better RAG (Retrieval Augmented Generation)



## 2 Better data for AI model training and fine tuning



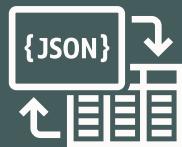
New Database Roles

OCI IAM Integration



DDL Notification on Target Tables

JSON Relational Duality



New Simplified GUI/UX



PDB Extract Capture



Online DDL + EBR

AWR Enhancement

# Oracle GoldenGate

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*next-generation AI with distributed vector support*



Microservices Architecture Only

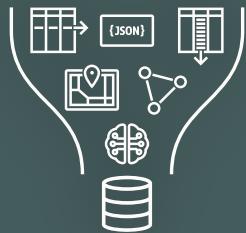
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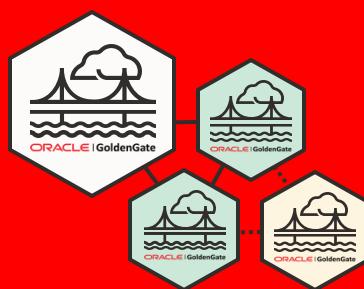
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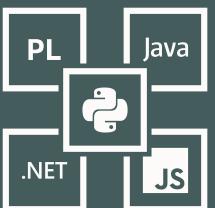
23ai Database New Features Support



High Availability Clusters



Data Streams Pub-Sub AsyncAPI



Trail Files Management

Integrated Diagnostics for IE/IR

# New: GoldenGate 23ai High Availability Clusters

## Goal

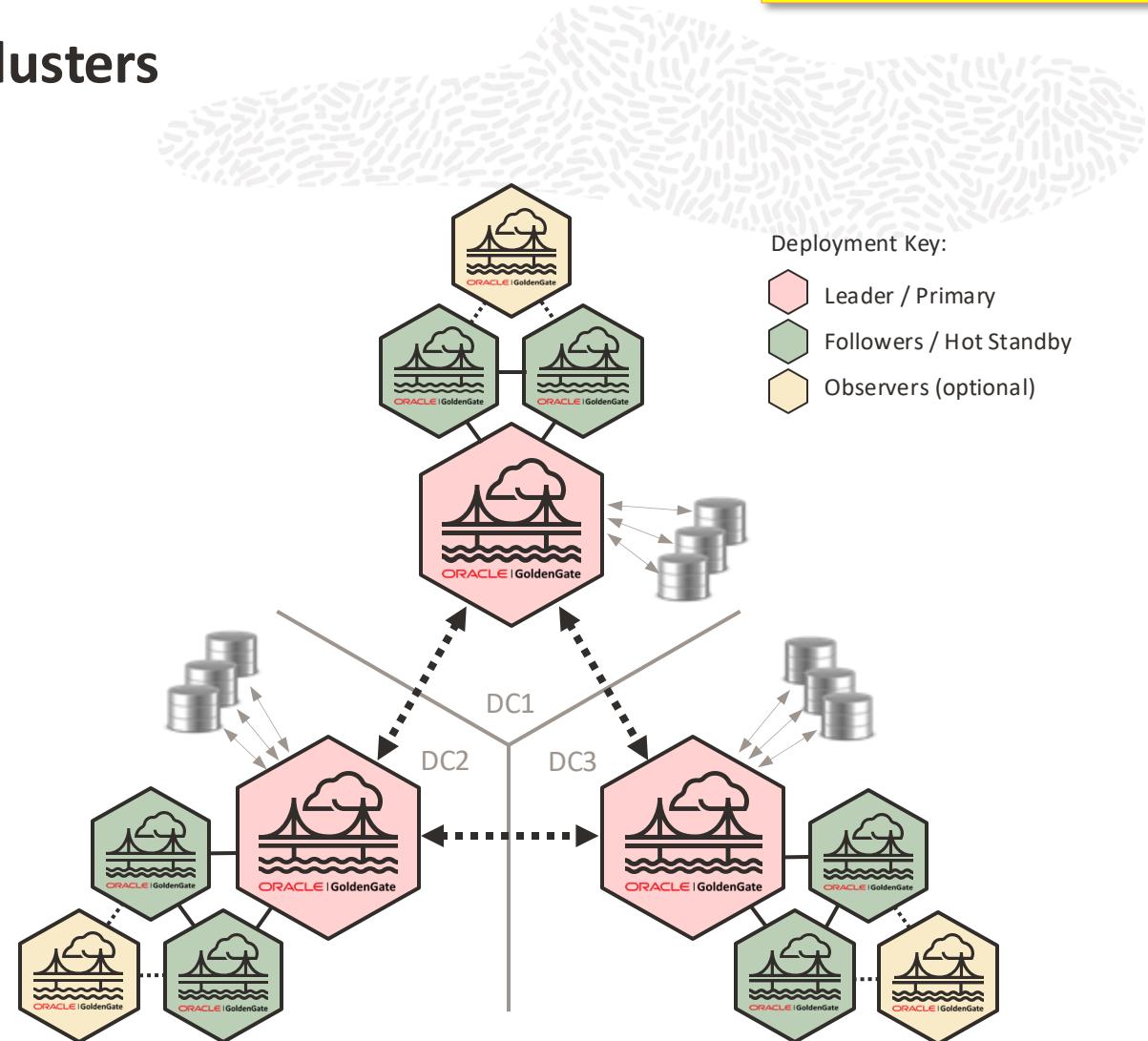
- Simple GoldenGate HA architecture
- Oracle and Non-Oracle DBs
- Multi-cloud, on-prem or OCI GoldenGate

## Scope

- Raft consensus model
- Eliminates shared file systems (DBFS, ACFS) and need for XAG Clusterware
- Logical, async with auto-conflict resolution

## Supported patterns

- fail-over, active-active, multi-active
- Compute HA – single data center
- Multi-Domain HA – single region
- Multi-Region HA – planet scale



New Database Roles

OCI IAM Integration



DDL Notification on Target Tables

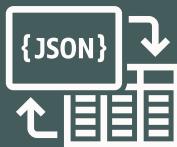


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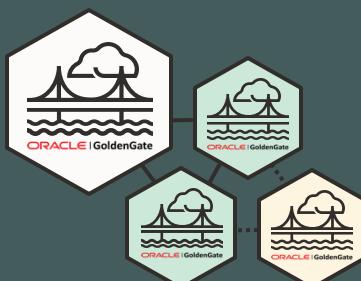
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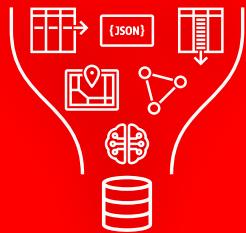


Trail Files Management

StatsD Telegraf Integration



23ai Database New Features Support



Integrated Diagnostics for IE/IR

# Broad support for new Database 23ai features



## Oracle Database Features

- Oracle Vectors support
- JSON Relational Duality (extract/capture)
- GoldenGate support for Oracle Blockchain and Immutable Tables
- Oracle Boolean Datatype
- Active-active replication support for Blockchain/Immutable Tables using ACDR
- Lock-free Reservation Columns
- Add support for tables with 4K columns for Oracle Database 23ai (row size < 4MB)
- GoldenGate replication support for JSON diff
- Support for Oracle SQL Domains
- Support coexistence of GoldenGate with Transient Logical Rolling Upgrades
- Online DDL support for Edition Based Redefinition (EBR)

## Observability and Diagnosability

- AWR Enhancements
- Integrated Diagnostics - Integrate UTLRAPDV into Microservices

## Security and Governance

- GoldenGate support for longer DB passwords
- Native Capture and Apply User Roles in Oracle DB
- GoldenGate Per PDB Extract

## Performance – Resilience

- Integrate with DDL notification on target tables
- Automatic Reconnects w/zero data loss
- Fast failure detection for distribution and target-initiated paths
- Automatic CDR Enhancements
- Use Named Pipes instead of network sockets for internal communication on Windows

# GoldenGate 23ai for Oracle Enhancements

## Supplemental Logging in Oracle 23ai

Supplemental log groups in Oracle 23ai now support different table structures in the same transaction. This means that you can now do things like alter table commands without requiring an exclusive lock on a table.



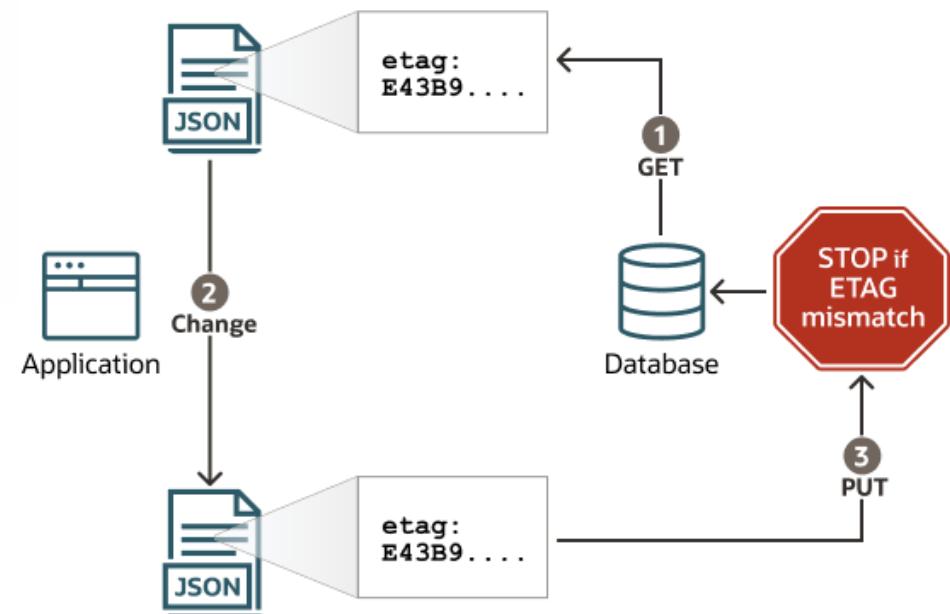
## Oracle Multitenant Enhancements

Integrated Extract can now run at the Pluggable Database (PDB) level without requiring access to the root container. Works with Oracle 19c, 21c, and 23ai.

Called “Per PDB Extract”

## JSON Relational Duality View

Oracle GoldenGate can now capture from and deliver data to relational tables or JSON objects within the Oracle 23ai database when JSON duality functionality is used.



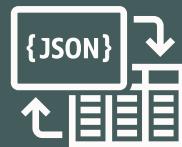
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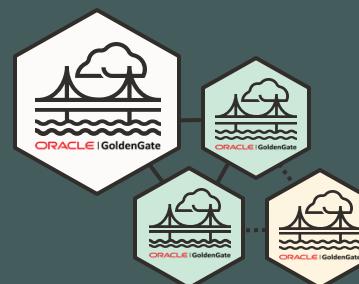
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@Dbfunction Mapping

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High Availability Clusters



Trail Files Management

StatsD Telegraf Integration



23ai Database New Features Support



Integrated Diagnostics for IE/IR

# GoldenGate 23ai for Non-Oracle databases

## Capabilities

### New Operating System Certifications

- RHEL 9 and OEL 9, all Linux platforms

### OGG for Non-Oracle Enhancements

- Microservices Architecture for DB2 LUW, DB2 iSeries, Sybase, TimesTen, and Teradata
- Parallel Replicat support for bi-directional replication
- Ignore unsupported data types

### GoldenGate for MySQL

- Capture from Group Replication Cluster
- Partial JSON support
- Tracking schema changes
- Improved support for lower case, mixed case, and upper-case table names

### GoldenGate for SQL Server

- CDC Capture job and Always On Synchronization Status Monitoring
- Improved database connectivity (no need for DSN)
- Precise Instantiation using SQL Server snapshots
- Package Microsoft's ODBC Driver 18

### GoldenGate for PostgreSQL

- Capture from Partitioned Tables
- Precise instantiation using PostgreSQL snapshots
- Support for ENUM (user defined data types) and ARRAYS

### GoldenGate for DB2 Z / LUW / iSeries

- Support for GRAPHIC, VARGRAPHIC, DBCLOB, and DISTINCT Data types
- Improved installation experience for DB2 iSeries
- Integration with WLM on DB2 Z
- Allow multiple EXCLUDEUSERS

### GoldenGate for NSK

- Added support for delayed apply, and close file option to EVENTACTIONS.
- Added support for SQLEXEC in SQL/MP to return a value

## 30+ New Platform Certifications

### GoldenGate for MySQL

- Google Cloud SQL for MySQL 8.0
- MariaDB 10.6, 10.7, 10.8, 10.9
- MariaDB 10.11
- SingleStoreDB 7.8, 8.0 - Delivery only
- SingleStoreDB Cloud 7.9 - Delivery only
- Windows 2016, 2019, and 2022 support - local Capture only

### GoldenGate for SQL Server

- Google Cloud SQL for SQL Server 2017, 2019
- Google Cloud SQL for SQL Server 2022
- Microsoft SQL Server 2022
- Windows 2022 support - local Capture only

### GoldenGate for PostgreSQL

- PostgreSQL 16
- Google Cloud for PostgreSQL version 10 and above
- Google Cloud AlloyDB for PostgreSQL version 15 and above
- OCI PostgreSQL - Delivery (Capture already supported with 21c)

### Others

- Teradata Vantage 2.4
- Teradata VantageCloud Lake editions
- Certified 17.10 and 17.20 TTU drivers
- OCI TimesTen - Delivery only
- iSeries 7.5



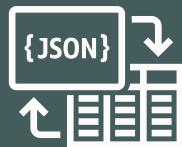
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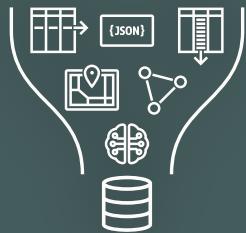
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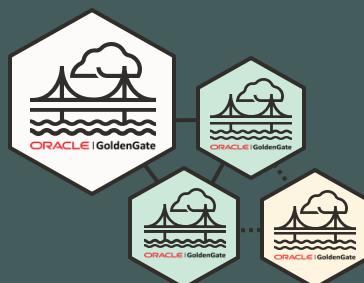
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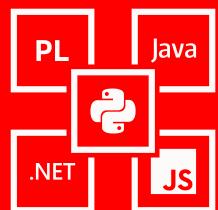
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Trail Files Management



Data Streams  
Pub-Sub  
AsyncAPI

Integrated Diagnostics for IE/IR

# GoldenGate 23ai for Distributed Apps and Analytics

## Capabilities

### General Features

- Databricks Delivery
  - Databricks API/Driver
  - Delta Format data
- Google Pub/Sub Delivery
- Redis Delivery
- MongoDB Capture
- Autonomous JSON Delivery
- Apache Cassandra/ Cassandra DSE Capture
- Google BigQuery Stage and Merge Delivery
- Target Table Instantiation
- Snowflake Streaming Handler
- GGDAA Docker Availability
- Support Avro formatting based on an external schema
- MongoDB Bi-Directional Replication
- XAG Support for GG4DAA
- Support Boolean Type
- Data Transformation

### GoldenGate Data Streams

- Publish-subscribe REST endpoint delivery
- JSON and CloudEvents formats

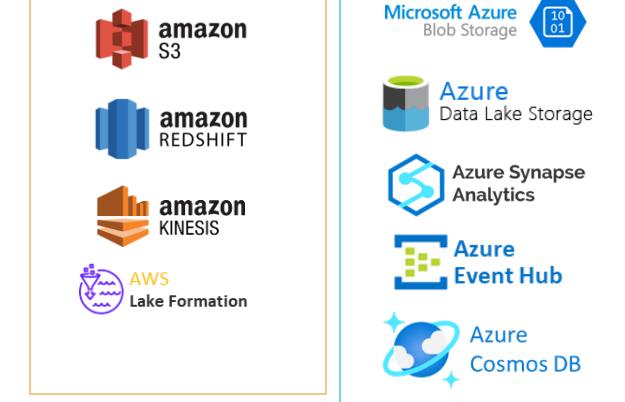
### MicroTx Enterprise Edition – First release 23.4

#### Transaction Patterns Supported

- Long Running Actions (LRA)
- Try-Confirm/Cancel (TCC)
- MicroTx XA
- Unique Resource Manager Proxy Approach

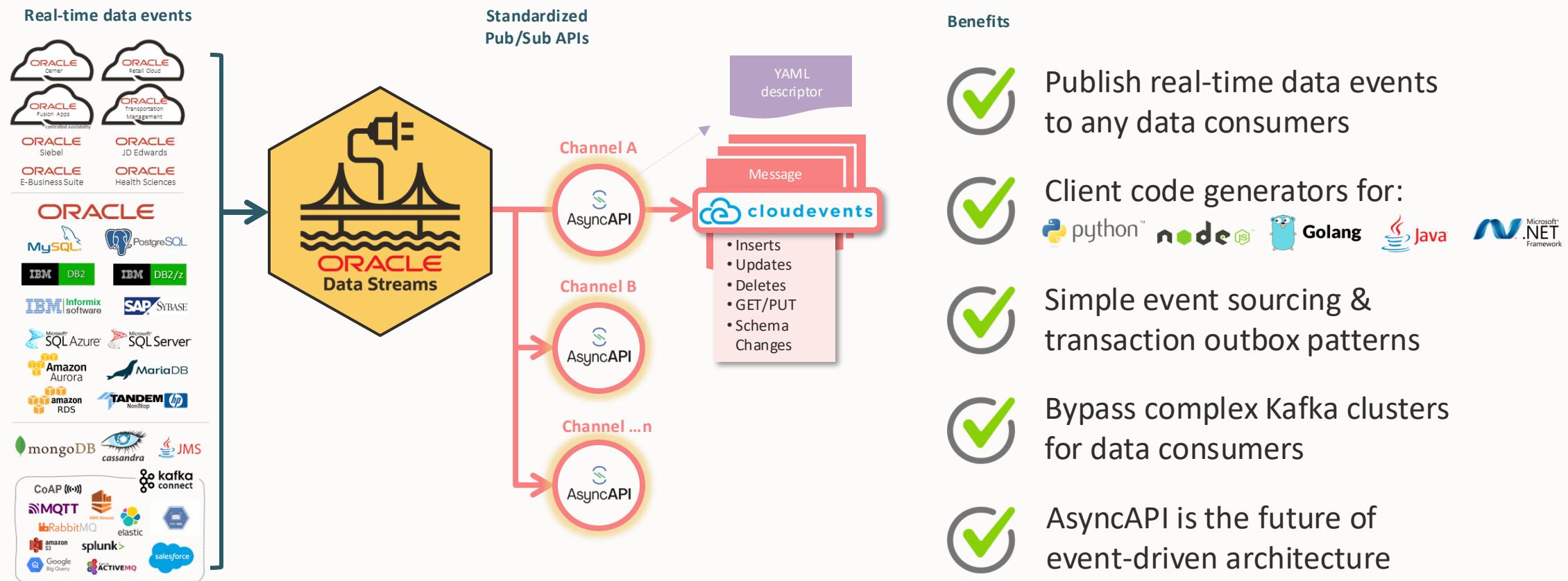
#### Simplified Application Development

- Interceptors to Simplify Application Development
- Simplified Application Development
- MicroTx Libraries for Spring Boot
- XA Transaction Interoperability
- WebLogic Applications as XA Participant
- APEX (ORDS) Application as XA Participant
- ORDS Applications as XA Participants
- Databases/Resource Managers for XA



# GoldenGate Data Streams with AsyncAPI

New pub/sub API for producers to publish a stream of exactly-once transaction events as JSON formatted CloudEvents on AsyncAPI Channels



# GoldenGate Data Streams and Solace Event Mesh

## Real-time Data Producers

ORACLE Cerner    ORACLE Fusion Cloud    ORACLE Hospitality

ORACLE Retail    ORACLE Micros    ORACLE Transportation

ORACLE JD Edwards    ORACLE Siebel    ORACLE E-Business Suite

ORACLE Database    ORACLE Exadata



## 3rd party databases

IBM DB2    AWS    Azure    MySQL

IBM DB2/z    PostgreSQL    Microsoft SQL Server

SAP ASE    TANDEM NonStop    Amazon Aurora

## 3rd party vector sources

PostgreSQL    AlloyDB    Amazon RDS    Amazon Aurora



## 3rd party messaging, NoSQL

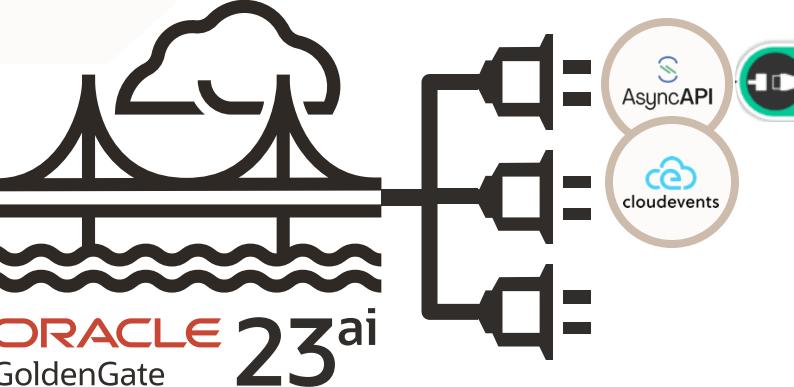
mongoDB    JMS    CoAP (MQTT)    kafka connect

DATASTAX

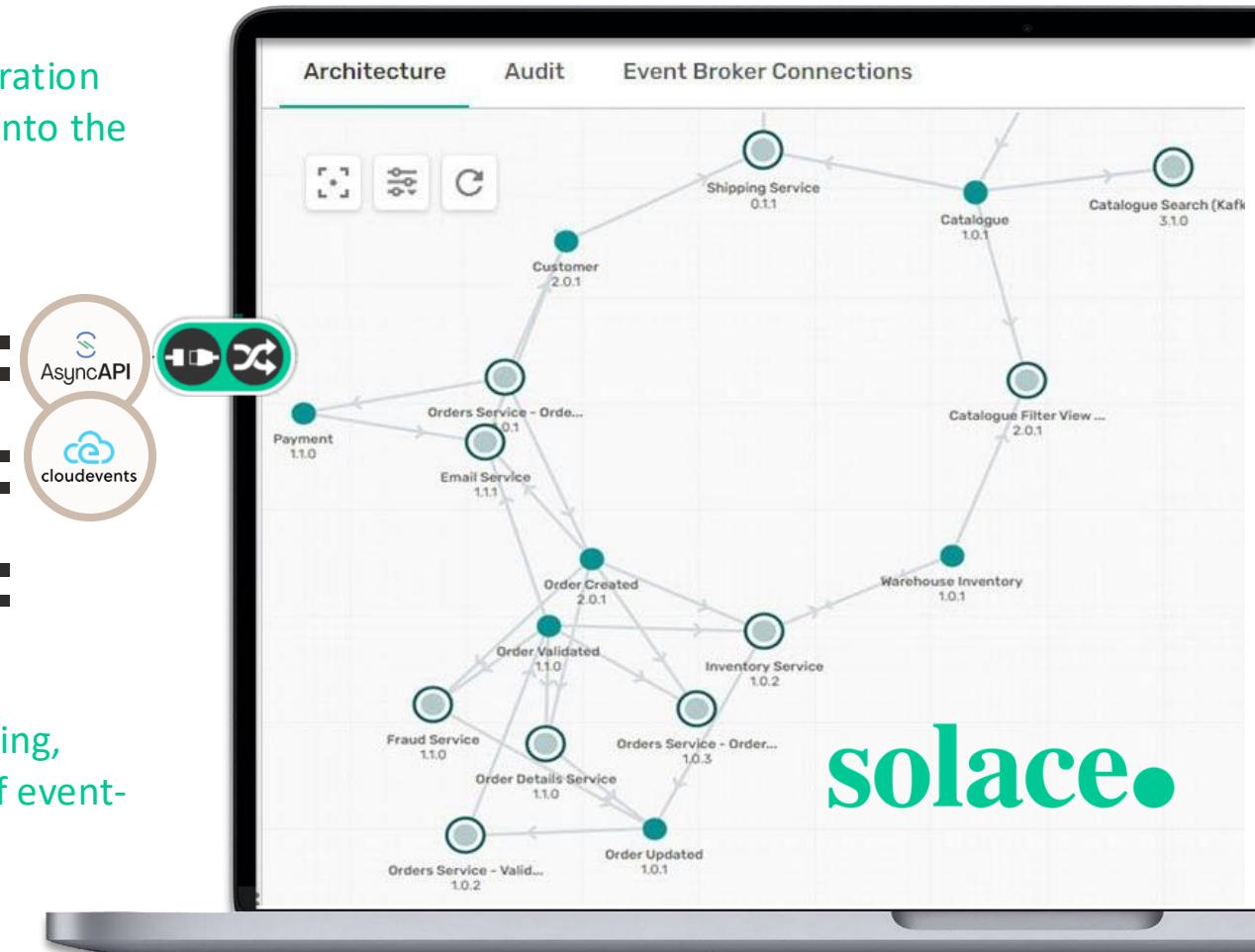
cassandra



Announcing a new micro-integration  
from GoldenGate Data Streams into the  
Solace Event Mesh



Connect and integrate anything,  
anywhere, through the power of event-  
driven architecture.



solace.

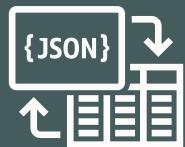
New Database Roles

OCI IAM Integration



DDL Notification on Target Tables

JSON Relational Duality



New Simplified GUI/UX



PDB Extract Capture



Online DDL + EBR

AWR Enhancement

# Oracle GoldenGate

NEW IN  
23ai

*next-generation AI with distributed vector support*



Microservices Architecture Only

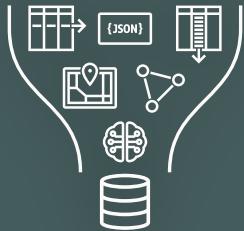
Non-Oracle & Big Data Technology

@Dbfunction Mapping

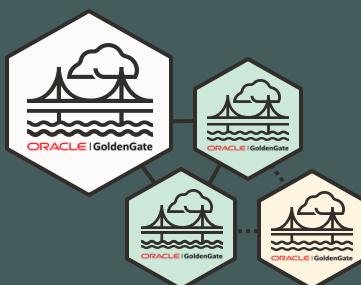
GG Free Recipes

30+ new OS/DB certifications

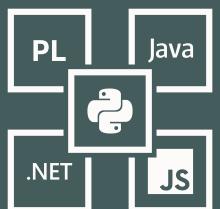
23ai Database New Features Support



High Availability Clusters



Data Streams Pub-Sub AsyncAPI



Trail Files Management

Integrated Diagnostics for IE/IR

# GoldenGate 23ai microservices user interface

## Integrated UX for common deployments of GG

- Service Manager
- Admin Microservice
- Distribution Microservice
- Receiver Microservice
- Performance Metrics

## New built-in components

- Certificates config
- Identity/SSO integration
- Trail management
- Integrated diagnostics
- Etc.

The screenshot shows the Oracle GoldenGate Services 23.4.0.24.05 for Oracle (WEST) user interface. The top navigation bar includes links for Administration Service, Distribution Service, Performance Metrics Service, and Receiver Service. The left sidebar, under the 'oggadmin' security context, lists various administrative tasks: Home, User Administration, DB Connections, Extracts, Replicats, Trails, Tasks, Encryption, Path Connections, Managed Process Profiles, Parameter Files, Diagnosis Log, and Debug Log. The main content area features two summary sections: 'Extracts' and 'Replicats', each with a grid showing the count of different states (Running, Failed, Stopped, Other). Below these are sections for 'Critical Events' and 'Performance Metrics'. The 'Critical Events' table lists six entries, all of which are severity ▲ (warning) and message 'Oracle GoldenGate Capture for Oracle, EEAST.prm: Extract has not received any data from capture for more than 2 minutes.' The 'Performance Metrics' section is partially visible at the bottom.

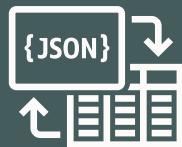
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AWR Enhancement

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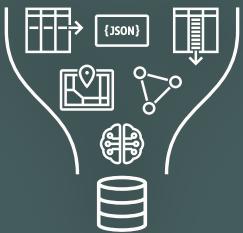
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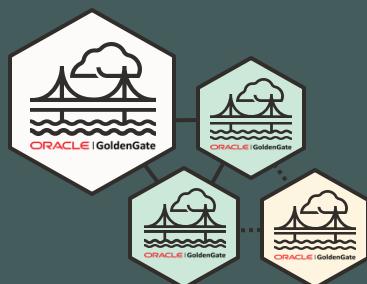
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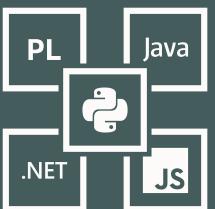
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Trail Files Management

Integrated Diagnostics for IE/IR

StatsD Telegraf Integration

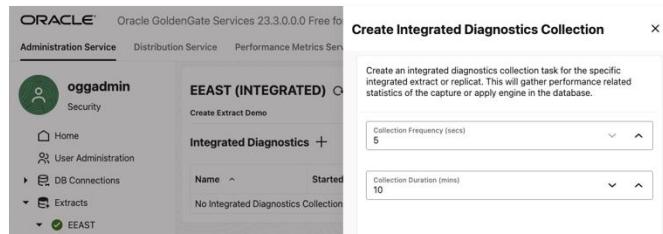


# GoldenGate 23ai diagnostics improvements



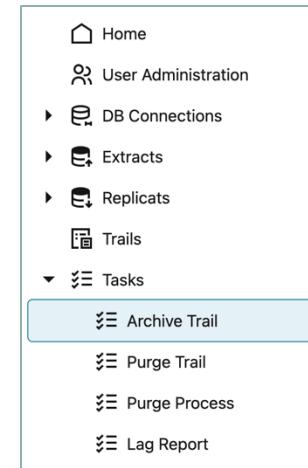
## Integrated Diagnostics

UTLRPADV support for integrated extract, replicat (IE) and integrated replicat (IR) directly from microservice GUI



## Trail File Management

GoldenGate users can now view and manage trail files directly from within the microservices GUIs, including new tasks such as Archive, Purge and Report on details contained within the trails.



## AWR Enhancements

significantly simplify troubleshooting replication performance issues because it will be easier to determine whether the problem is a workload issue, a misconfiguration issue (e.g., slow replication SQL due to a lack of indexes), or where the performance bottleneck may be (e.g., on the database side or in GoldenGate processes outside the database)

## StatsD Telemetry

customers will optionally be able to consolidate metrics from the GoldenGate microservices tier into any collection framework that supports StatsD formatted telemetry – for example, time-series databases such as InfluxDB or directly into Oracle databases. This will facilitate the collection of durable system events for trend analysis and determining predictive indicators



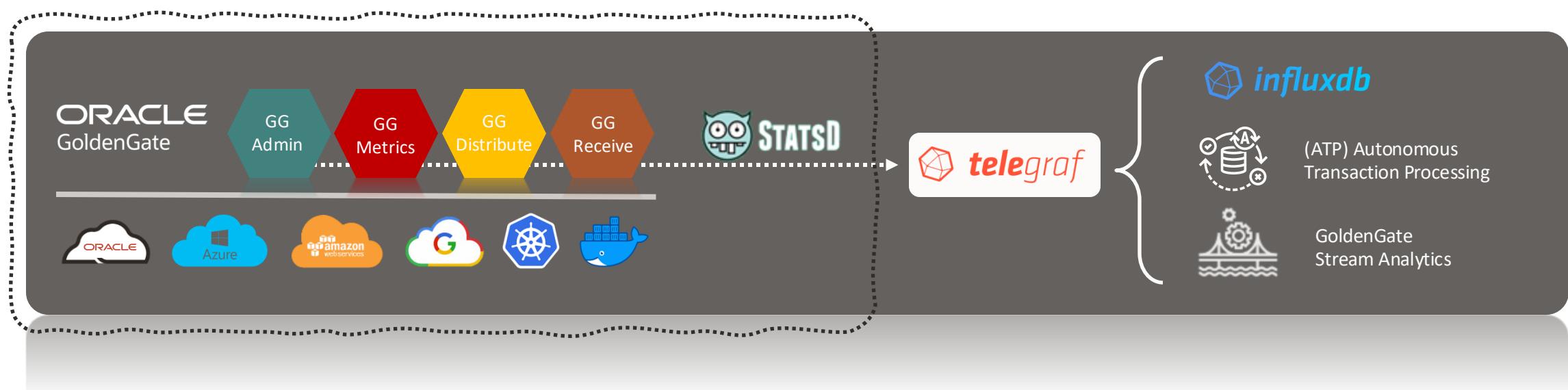
# GoldenGate 23ai observability with StatsD and Telegraf

GoldenGate now, optionally pushes telemetry from GG microservices in StatsD format

- Improved performance, no impact on REST APIs, best for low-latency

Any StatsD daemon, eg; Telegraf, can automatically collect and aggregate metrics

- Store GG metrics on time series database / Oracle DB for historical analysis
- Send metrics to stream processor (eg: Kafka & GG Stream Analytics) for real-time alerts



# New Oracle Veridata 23c

## New User Experience

- browser-based
- more intuitive
- updated functionality
- simpler to setup

## New Runtime

- lightweight  
(removes dependency  
on WebLogic servers)
- microservices
- agent-based
- cloud-ready

The screenshot shows the Oracle GoldenGate Veridata interface running on a laptop. The left sidebar has a dark theme with white icons and text, listing Home, Monitor Jobs (selected), Run Job, Connections, Groups and Compare Pairs, Jobs, Profiles, User Management, and Utilities. The main content area has a light background. At the top, it says "ORACLE GoldenGate Veridata". Below that is a header with "Monitor Jobs", "Completed Jobs > Beta-Job", "Job Summary", "Out-of-Sync Summary", and "Report". The "Job Summary" section shows details for "Beta-Job": Start Time (Wed, 14 Aug 2024 09:07:01 GMT), End Time (Wed, 14 Aug 2024 09:07:53 GMT), Run Duration (00:00:52), Comparison Status (OutOfSync), and Repair Status (-). A "Compare Pairs Run Summary" section includes a donut chart showing 95% In Sync, 5% Out-of-Sync, and a small Failed segment. To the right, a table titled "Compare Pairs Total: 20" lists the status of 20 pairs: 1 Out-of-Sync, 0 Failed, 0 Cancelled, and 19 In Sync. Below this is a table with columns: Compare Pair Name, Comparison Status, Repair Status, Group Name, Start Time, Run Duration, and Out-of-Sync Rows. It lists three rows: TEST=TEST (InSync, Beta-Group, 09:07:18 GMT, 00:00:03, 0), SAMPLE=SAMPLE (InSync, Beta-Group, 09:07:17 GMT, 00:00:03, 0), and SALES\_P8=SALES\_P8 (InSync, Beta-Group, 09:07:14 GMT, 00:00:04, 0).

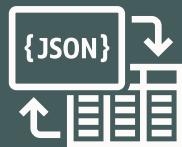
New Database Roles

OCI IAM Integration



DDL Notification on Target Tables

JSON Relational Duality



New Simplified GUI/



# Oracle GoldenGate

NEW IN  
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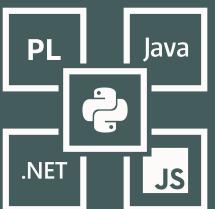
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Online DDL + EBR

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Data Streams Pub-Sub AsyncAPI



Non-Oracle & Big Data Technology

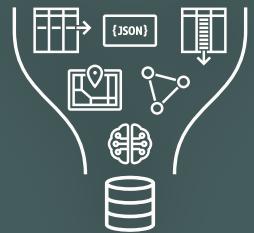
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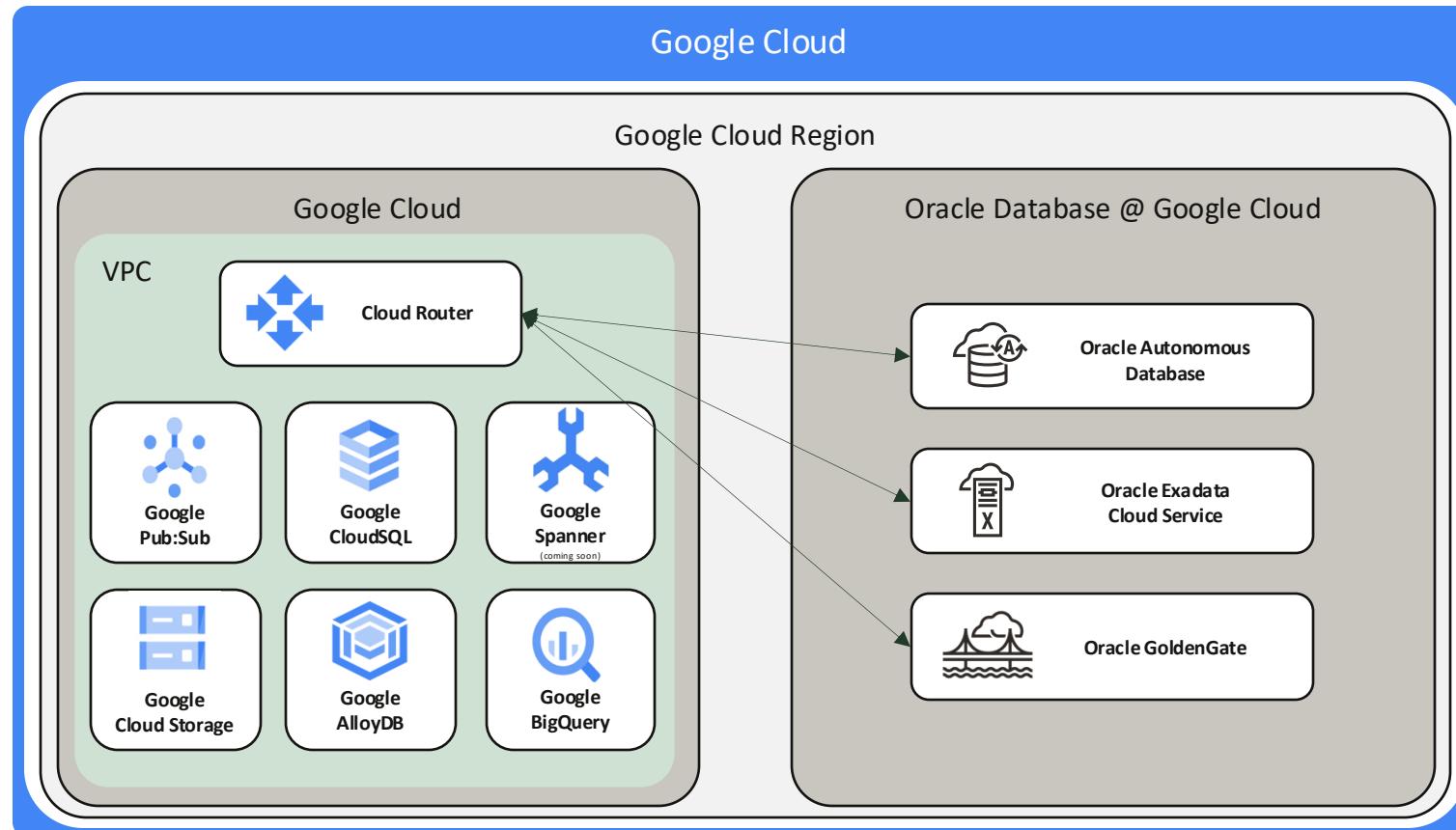
Trail Files Management

Integrated Diagnostics for IE/IR



# Upcoming multicloud GoldenGate@GCP

Best-of-breed managed service for real-time data integration with Google Cloud Platform

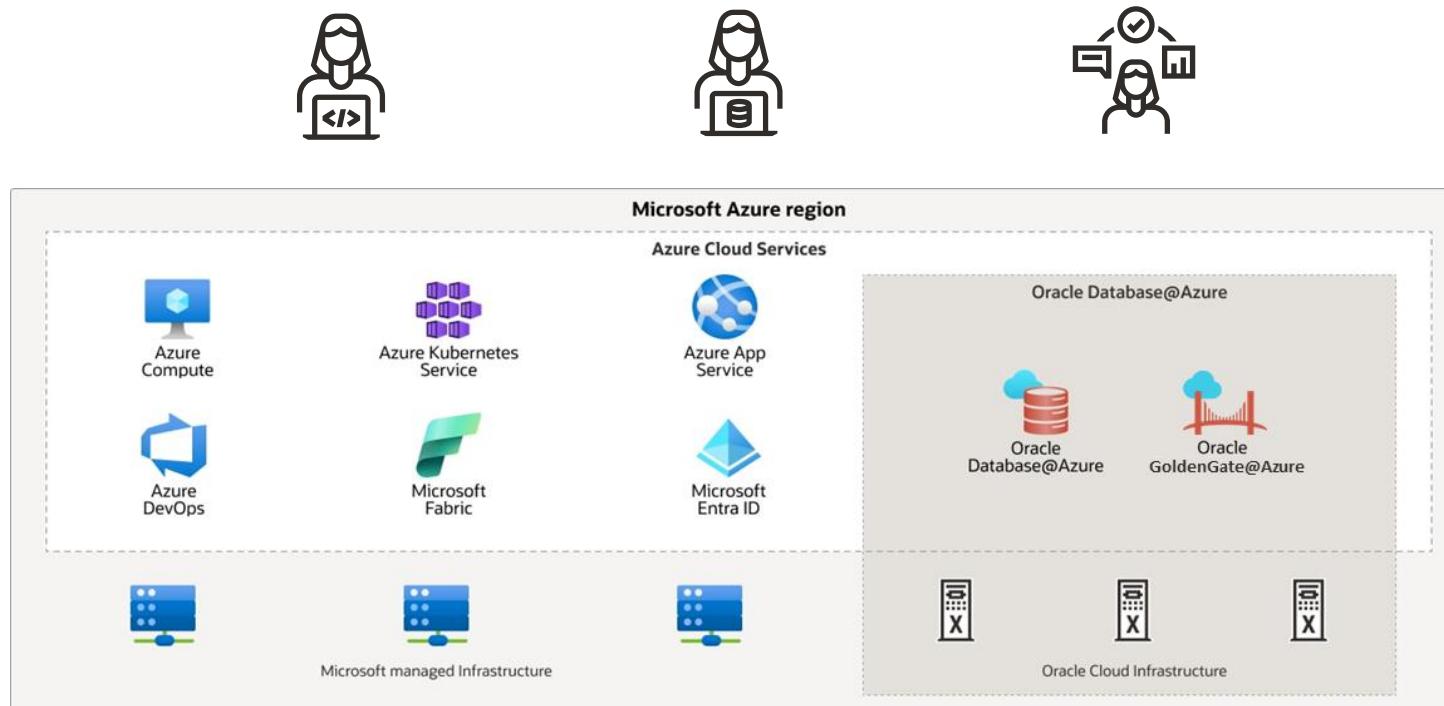


- Direct integration from Google cloud console
- Available with Google Cloud consumption credits
- Simple pre-built networking for easy connections to:
  - Oracle Databases
  - GCP BigQuery
  - GCP AlloyDB
  - GCP Pub/Sub
  - GCP CloudSQL
  - GCP Cloud Storage
- More connections coming soon:
  - Google Spanner
  - BigQuery (capture)



# Upcoming multicloud GoldenGate@Azure

Best-of-breed managed service for real-time data integration with Microsoft Azure



- Included as part of Oracle Database@Azure multicloud
- Direct integration from Azure cloud console
- Simple pre-built networking for easy connections to:
  - Oracle Databases
  - Microsoft Fabric
  - Azure Event Hub
  - Azure native databases
  - Snowflake, Databricks etc.

# New integration with Microsoft Fabric OneLake

## Real-time Sources

### Oracle technologies



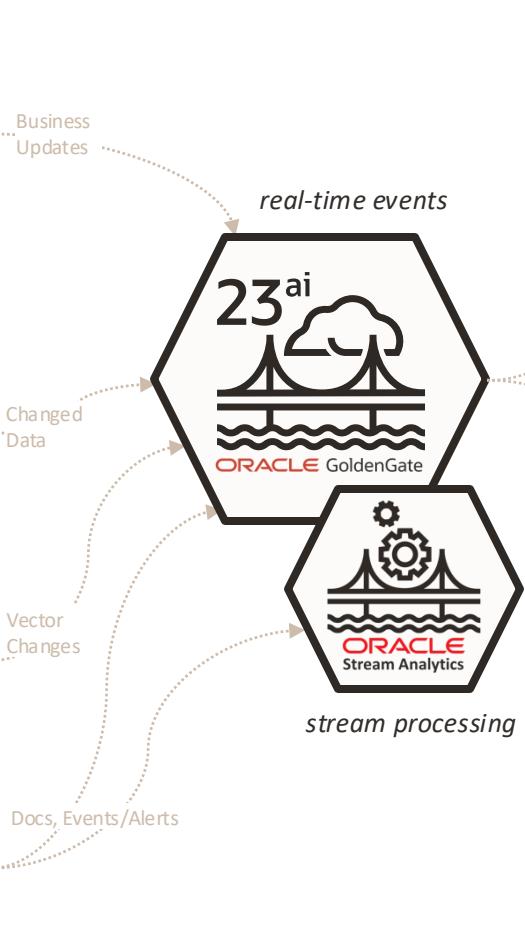
### 3rd party databases



### 3rd party vector sources



### 3rd party messaging, NoSQL



## Existing Azure Integrations



## New Microsoft Fabric Integration

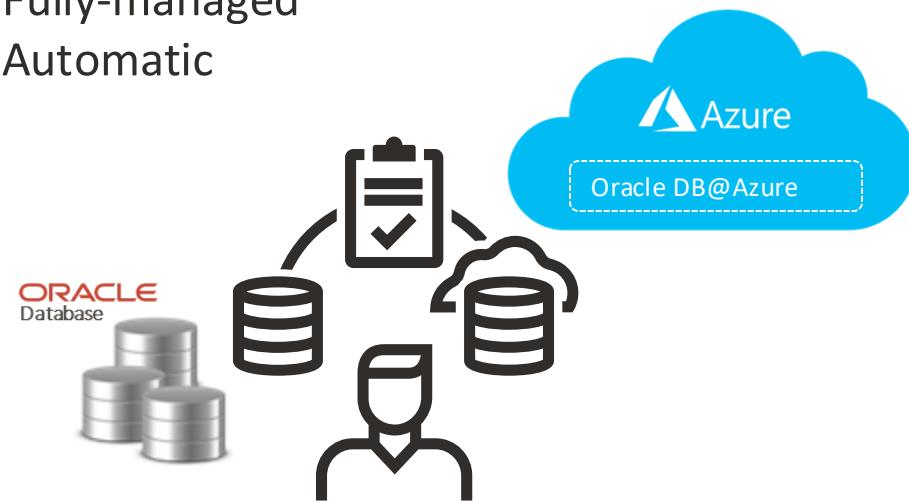
Bronze | Silver | Gold

OneLake Storage  
OneLake

# New certifications with Microsoft Azure

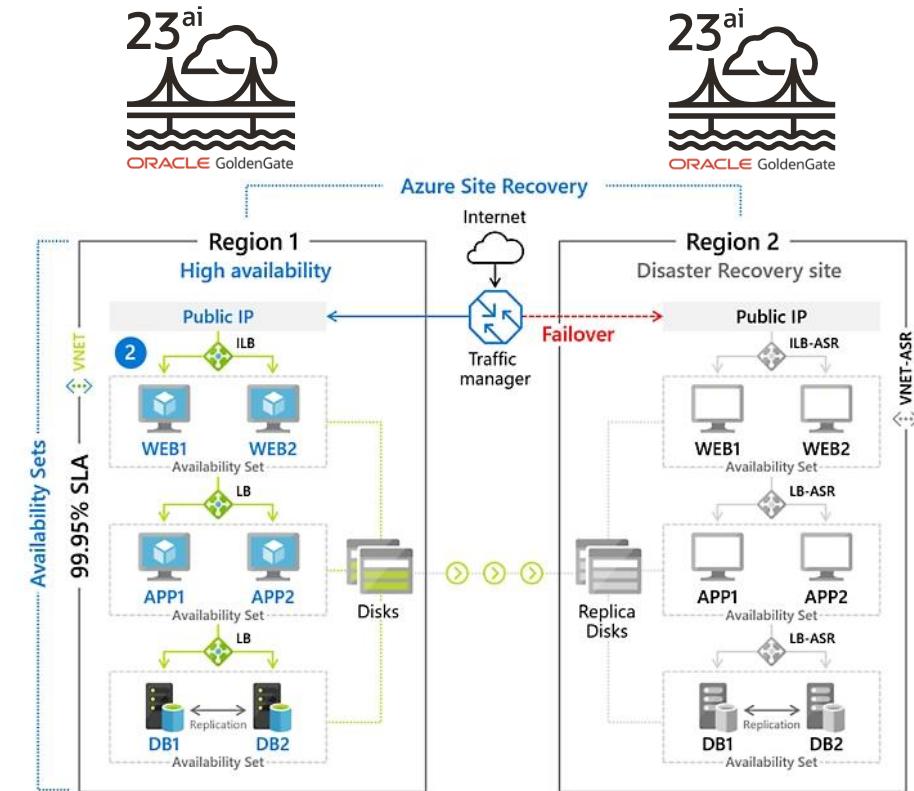
## OCI DB Migration for Oracle DB@Azure

- Online migrations
- Fully-managed
- Automatic



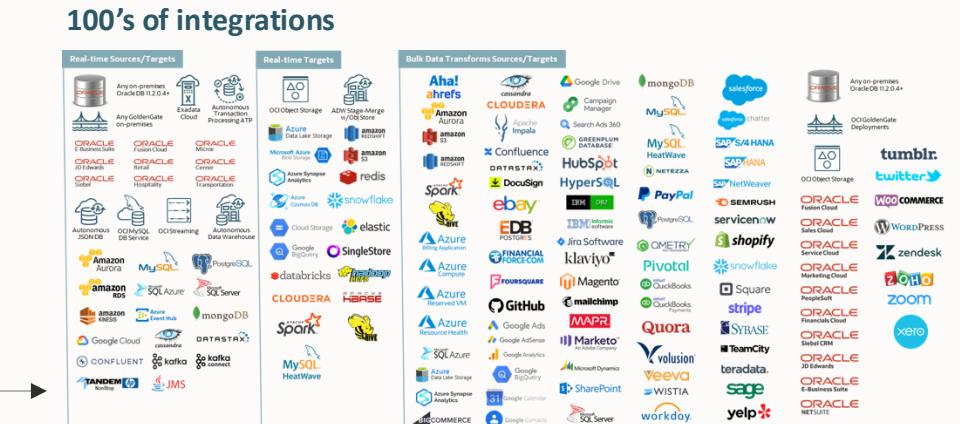
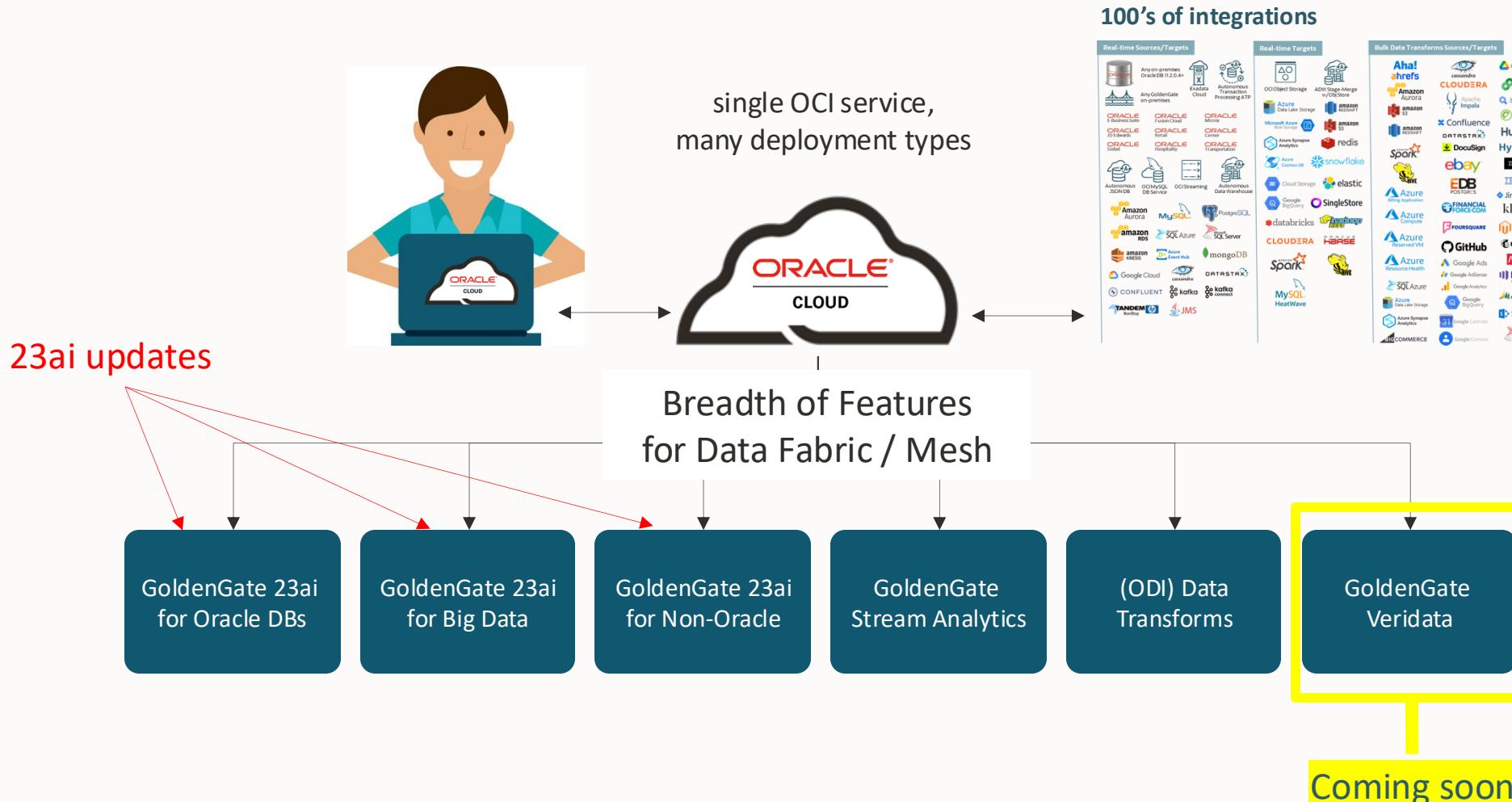
## OCI Database Migration

## GoldenGate with Azure Site Recovery



# OCI GoldenGate uptake for 23ai

**Fully managed platform, one service – integrated deployments**





**1,000's of customers**  
**84% of Fortune 100**  
**#1 in real-time Data Fabric**

# GoldenGate 23ai Innovations and New Features

## Innovate with GoldenGate

### **Generative AI, ML & Vectors**

use GG to stream real-time data into GPTs for fewer hallucinations and more accurate RAG results

### **Multi-cloud Transaction Fabric**

reliably move trusted data among different data centers without duplicate or missing data

### **Mesh Architecture**

support your Event Mesh and Data Mesh solutions with real-time transactions and microservices

### **ZeroETL Solutions**

radically simplify data movement architecture to eliminate costly and complex ETL tooling

## New in GoldenGate 23ai

### **Vector Replication**

Support Oracle and non-Oracle vector stores for distributed AI apps

### **Data Streams with AsyncAPI**

JSON data feeds to any client, also supports CloudEvents standard

### **Simpler User Experience**

updated GUIs for creating pipelines and operational diagnostics

### **High Availability Clusters**

Simplified HA architecture w/out need for ACFS, DBFS or RAC/Grid

### **Observability & Governance**

StatsD, Telegraf compatibility, new UX & microservices for Veridata

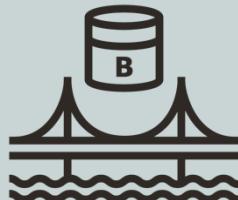
[Read GoldenGate 23ai Blog here!](#)

# Oracle GoldenGate Platform



**GoldenGate**

**GoldenGate  
for Oracle  
Application**



**GG for BigData  
Targets**

**GG for Distributed  
Apps and Analytics**



**GoldenGate  
Stream  
Analytics**



**GoldenGate  
Plug-in  
for Enterprise  
Manager**



**OCI GoldenGate**

**Cloud Marketplace**



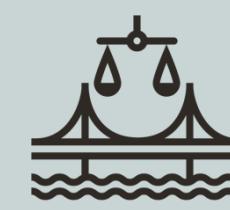
**GoldenGate for  
Mainframe**



**GoldenGate for  
Non-Oracle**



**Application  
Adapters**



**GoldenGate  
Veridata**



# Overview of Hands-on-labs for GoldenGate



## #43 GoldenGate Workshops

- Advanced (23)
- Intermediate (6)
- Beginner (14)

Clear Search & Filters

Sort By  
Most Popular

Number of Workshops: 43

▼ Level

Advanced (23)  
 Beginner (14)  
 Intermediate (6)

▼ Workshop Type

Sprints (21)  
 Paid Credits (20)  
 Run on LiveLabs (18)  
 Run on Gov Cloud  
 ADB for Free

▼ Workshop Series

## Workshops and Sprints

**Replicate data using Oracle Cloud Infrastructure GoldenGate**

Explore data replication in the cloud using Oracle Cloud Infrastructure GoldenGate.

⌚ 2 hrs      50056 Views

**Goldengate 19c Microservices**

Explore how Oracle GoldenGate 19c Microservices can be used to setup a replication environment (..)

⌚ 4 hrs      37884 Views

**Get Started with Oracle GoldenGate Veridata**

This Workshop will help you in getting started with Oracle GoldenGate Veridata and work on some of (..)

⌚ 4 hrs      18057 Views

**Stream Changed Data from On-premises to Autonomous Database with OCI GoldenGate**

Learn to send data from your on-premises or Marketplace Oracle GoldenGate to Oracle Cloud (..)

⌚ 2 hrs      15934 Views

**Oracle GoldenGate Stream Analytics**

Explore Oracle Stream Analytics with Lab Exercises.

⌚ 3 hrs      15396 Views

**Oracle GoldenGate Microservices for Big Data**

Create Realtime Changed Data to Big Data Targets using Oracle GoldenGate (MA) for Big Data

⌚ 4 hrs      8359 Views

<https://apexapps.oracle.com/pls/apex/r/dbpm/livelabs/home>

# What Next?

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

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

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

Gartner Magic Quadrant 2023  
<https://blogs.oracle.com/dataintegration/post/oracle-named-a-leader-in-2023-gartner-magic-quadrant-for-data-integration-tools-for-15-consecutive-years>



ORACLE

O

Our mission is to help people see  
data in new ways, discover insights,  
unlock endless possibilities.

