

Oracle GoldenGate Veridata 23c

Validate database synchronization and mirroring with high-speed, low-impact source and target comparisons with automated repair.



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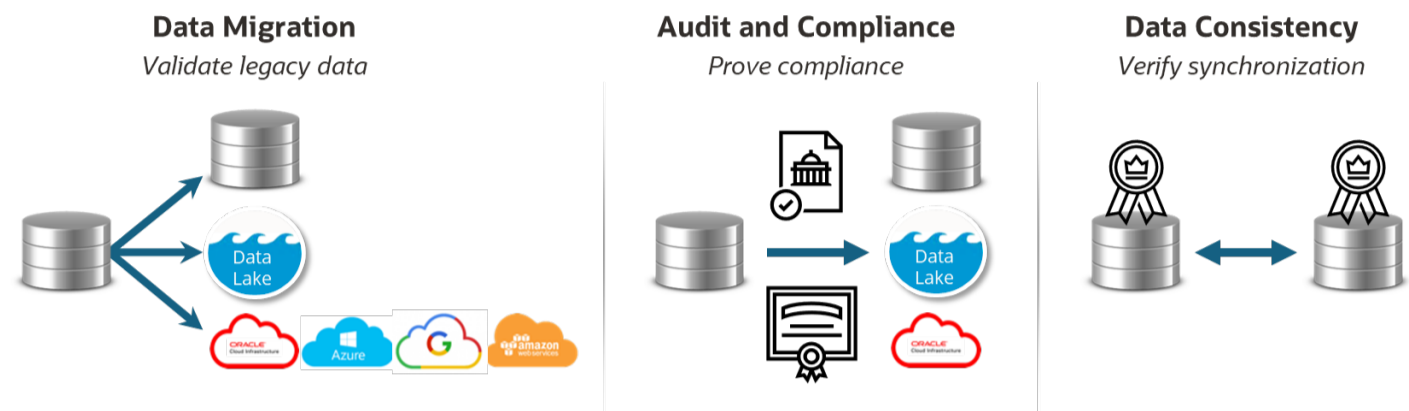
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Oracle GoldenGate Veridata 23c

Trusting your data is fundamental to making decisions, running your applications, and proving regulatory compliance. And yet, it gets harder to do as we continuously copy, move, share, and migrate data across technologies and locations. Oracle GoldenGate Veridata is a unique high-speed, minimal-impact, solution that proves trust by comparing data across homogeneous and heterogeneous databases and data store technologies and makes repairs when necessary.

Oracle GoldenGate Veridata runs independently of Oracle GoldenGate. However, when deployed together, Veridata adds trust to GoldenGate's data replication used for high availability, disaster recovery, data migrations, data integrations, and streaming ingest.

Mission Critical Use Cases



Data Migration

Migrating data between database versions or from one data store technology to another requires more than a record count check. It requires a deeper evaluation into matching schemas, proper character set conversions, and ensuring that the data matches its target data types. Veridata is designed to rapidly detect inconsistencies between sources and targets and then repair them.

Audit and Compliance

Operational and analytical data is not intrinsically trustworthy. This is especially true when data is moved or copied without clear records of provenance and transformational lineage. In some industries, managing movement and access to sensitive data requires oversight. In non-regulated industries, auditing data movement is just smart. Veridata is a powerful operational tool that proves trust with minimal impact on the production systems it runs against.

High Availability Assurance

High Availability is a mission critical IT requirement that can be enabled by capturing changed data in real-time and copying it to a standby server – always ready to recover in an emergency. To achieve zero data loss, it is essential that the changed data stay in sync with the active databases. Nevertheless, these complex environments are vulnerable to operational and configuration errors. Veridata provides continuous runtime monitoring and assurance that they are in sync.

Key Benefits

- Real-time heterogeneous comparison and repair
- Patented comparison architecture
- Designed for high volume, hyperscale applications
- Minimal impact on production systems
- Minimal resources required for runtime data validation
- Complete API access for DevOps

Patented Architecture for Optimized Comparisons

Oracle GoldenGate Veridata is a high-volume database synchronization and repair technology that operates against production databases that capture in-flight transactions and ensures target database synchronization and out-of-sync repairs. Veridata's compare and repair capabilities enable ongoing high-speed comparisons with minimal impact on source and target databases and network infrastructure.

Users can easily sub-select tables or data fields on the source and target databases to configure and monitor the comparison and repair process. For out-of-sync data or schemas, users have flexibility to manage exceptions.

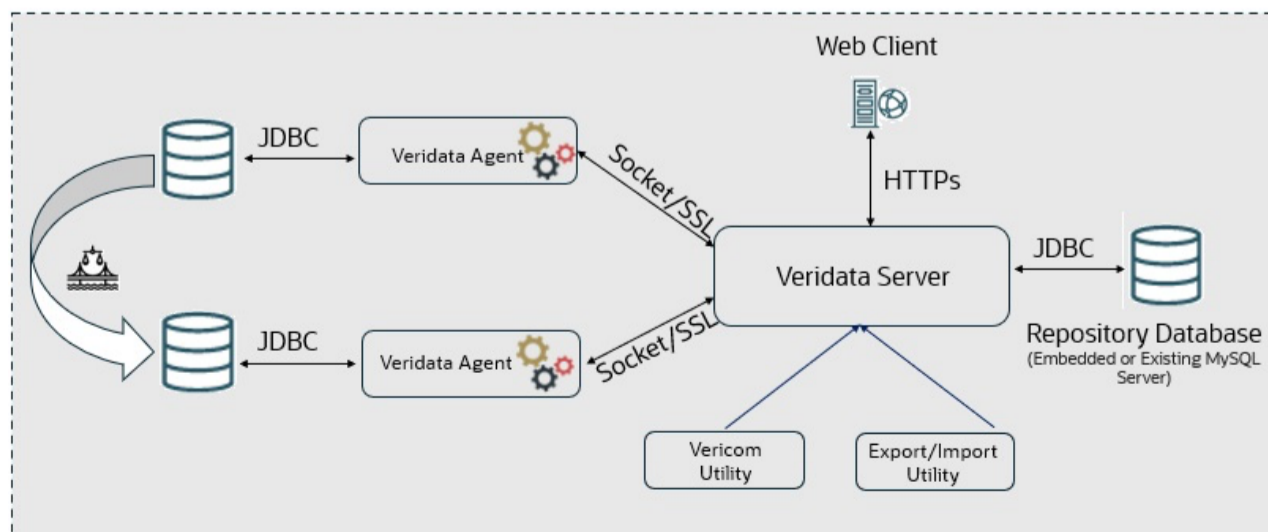


Figure 1: Veridata enables the rapid detection of inconsistent data between databases. It runs independently of Oracle GoldenGate.

High Performance Comparison Architecture

Veridata is a real-time engine designed to run alongside high-volume production transaction processing. The architecture combines four strategies to optimize performance and throughput: minimal impact on source and target databases, multi-threaded and parallel comparison processing, minimizing ongoing transaction rate capture, and allowing users to sub-select table capture.

User-selected data capture

Unlike an all-or-nothing approach, Veridata allows users to select which database table partitions or more granularly table rows and columns to compare.

Identifying records to compare

Veridata jobs are marked as either *compare all records* in a database or in the case of ongoing production databases, select *only changed records* – also known as Delta Comparisons.

Minimal impact on sources and targets

Minimal data is captured on source and target servers and then all comparison processing is performed in a separate Veridata Server. This architecture enables Veridata to run concurrently with minimal impact on production resources.

Automated parallelization

In the Veridata Server, all comparison processing is multi-threaded, cached, and executes within a scalable microservices architecture. The result is fast results on comparing extremely large and active tables.

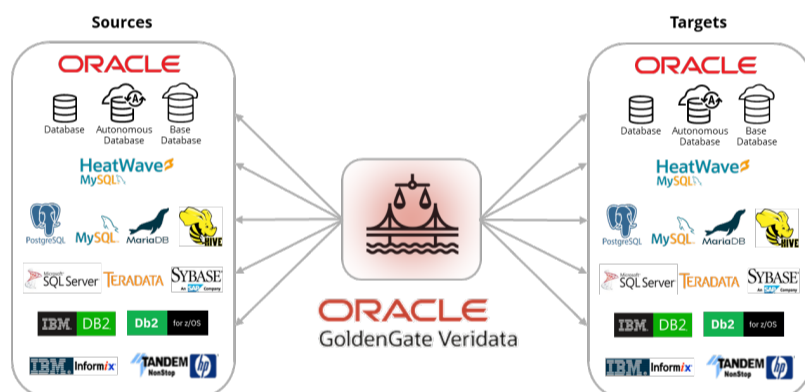
Comparison optimization

The Veridata Server runs the patented comparison algorithms with a sophisticated in-memory hashing technique separate from database processing and additional network activity. The architecture supports use cases where data changes occur faster than comparisons. Veridata queues these requests and processes them as fast as resources are available – comparisons are never lost.

Key Features

Heterogeneous source and target databases

Veridata supports for homogeneous and heterogeneous comparisons. Here are the supported technologies: Oracle, Oracle Base Database, Oracle Autonomous Database (ADW, ATP), Microsoft SQL Server, MySQL, MariaDB, IBM Db2 LUW, IBM Db2 for i, IBM DB2 zOS, Sybase ASE, PostgreSQL, Teradata, HP's Enscribe, SQL/MP systems. For Big Data, Hive heterogeneous data comparison without the repair feature.



Generate Repair SQL

Veridata automatically generates the repair SQL statements (DML) for out-of-sync schema data mismatches. When exceptions are discovered, users can repair data with a single click or review the repair SQL statements before applying them.

REST APIs

Veridata supports REST APIs for a variety of administrative and Devops functions, including starting and stopping jobs, monitoring and managing job status, applying generated repair SQL, User management, and other administrative tasks.

Multiple administrative modes

Veridata can be administered in three ways: graphical interactive user experience, command line interface (Vericom), or through REST APIs.

Export and Import utility

The Export function exports Veridata configuration data. It is used to backup or clone configurations for development or testing and in Veridata migrations.

The Import function uses the *export file* to configure database connections, comparison groups including compare pairs, comparison jobs, and profiles. The import utility also accepts an Oracle GoldenGate Replicat parameter file (.prm) to create the Compare Pairs, Groups and Jobs.

Built-in repository database

Veridata includes an embedded MySQL repository database to store its configurations and metadata. Customers have the option to use this embedded MySQL database or any existing MySQL database.

User management

User Management is integrated into the main console. Users can be placed into User Groups to simplify individual user administration. Groups are authorized to control menu functions, REST APIs, and administrative controls.

Key Features

- Oracle and non-Oracle database comparisons
- Optimized for use with GoldenGate, though GoldenGate not required
- Real-time heterogeneous data comparison and repair
- Comparisons while data source and target are operational
- Separate comparison server minimizes impact on production resources
- Comparisons architected for real-time high volume transaction rates
- Flexible reporting for varying roles and access levels
- Intuitive graphical user experience
- Unattended execution
- Three administration modes – GUI, CLI, and REST APIs
- Built-in MySQL repository database

Modern user experience

The user experience makes it simple to learn, setup, use, and administer.

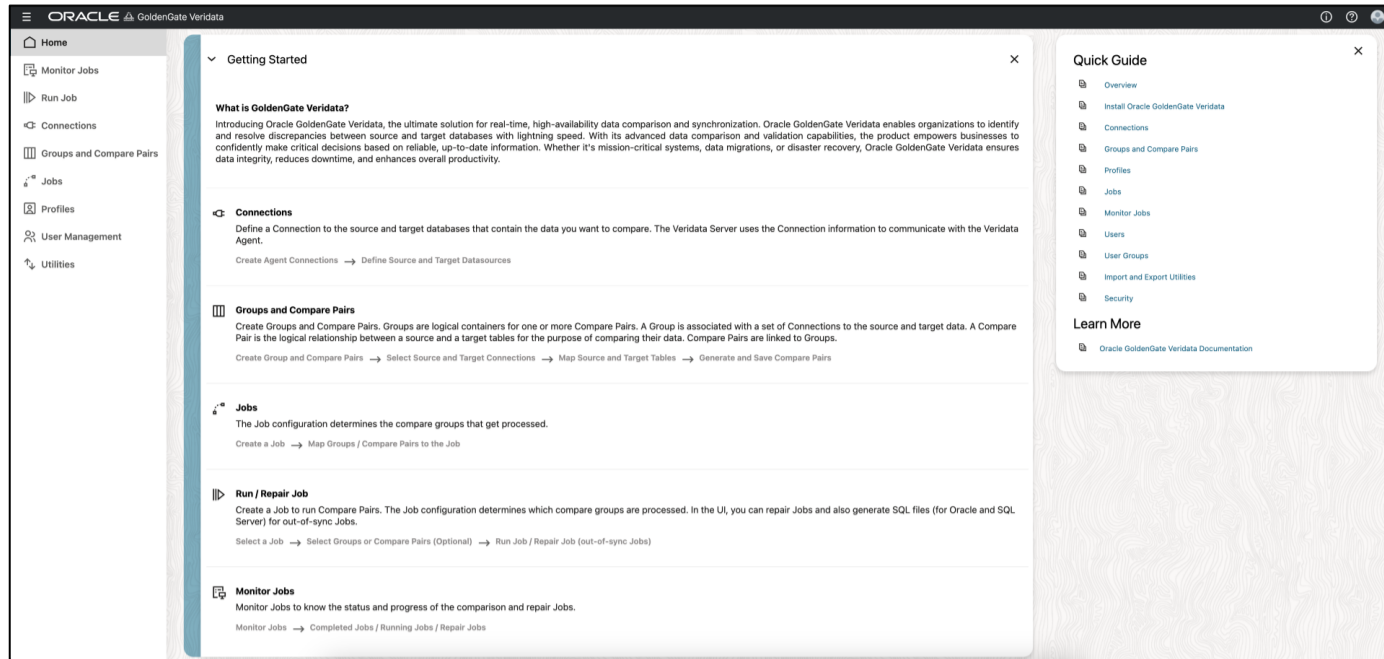


Figure 2: Veridata Getting Started page with access to all functions, product tour, operational guides, and training.

New 23c Features

- Lightweight embedded server (removed WebLogic servers)
- Intuitive graphical user experience
- Flexible reporting for varying roles and access levels
- Unattended execution
- Three administration modes – GUI, CLI, and REST APIs
- Built-in MySQL repository database
- Enhanced user management
- Enhanced utilities

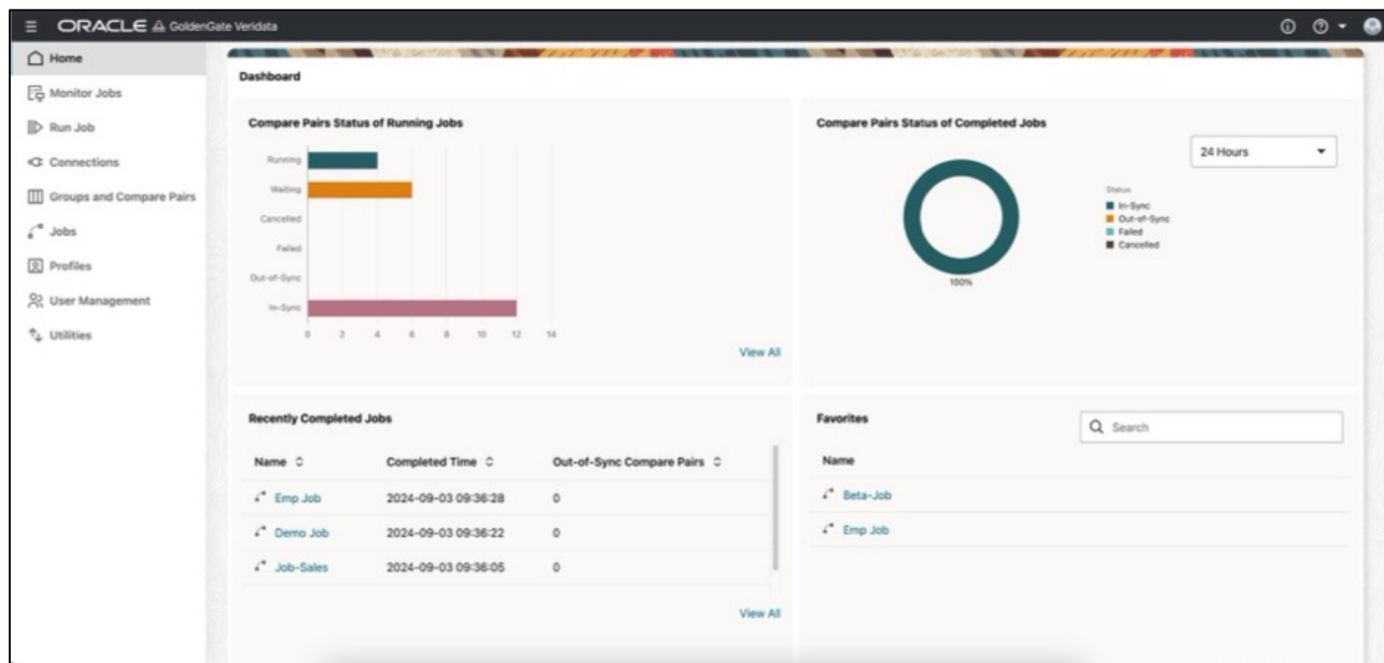


Figure 3: Veridata Dashboard showing visibility into current and completed job status.

Real-time job monitoring and repair

Operational and management job monitoring is continuous and available to users through dashboards and to developers through REST APIs. Email alerts can be configured so that Veridata sends email notifications with details of the jobs whenever a Job completes or fails.

Key reporting includes job status, compare pair status and out-of-sync status, enabling IT to take immediate corrective action.

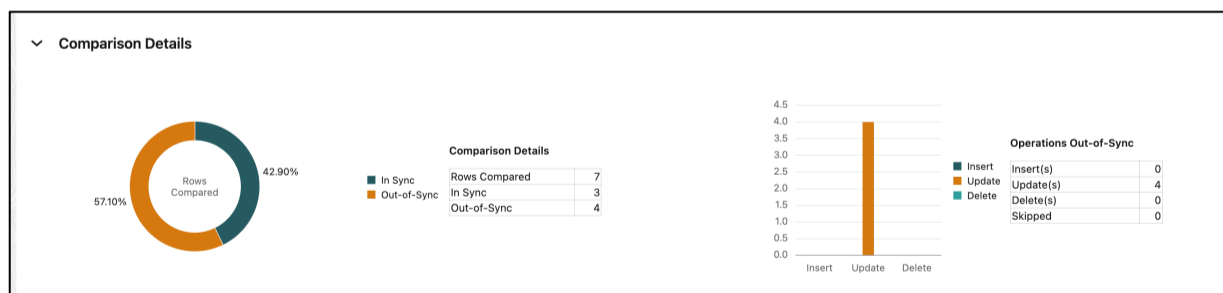


Figure 4: Veridata Job Monitoring - highlighting summary and visibility into "Out-of-sync" status.

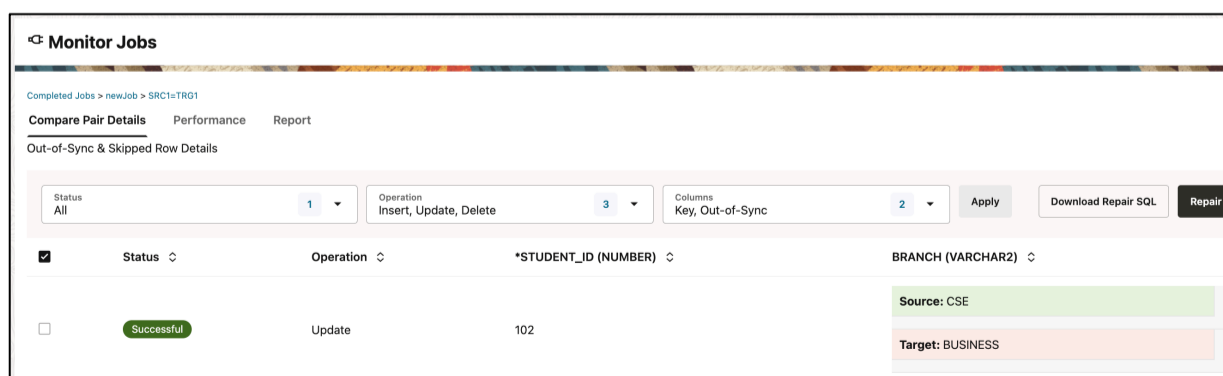


Figure 5: Veridata Job Monitoring – highlighting ease of accessing Repair SQL and execution function.

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