

ORACLE GOLDENGATE

KEY FEATURES AND BENEFITS

FEATURES

- High-performance data replication
- Heterogeneous sources and targets
- Conflict detection and resolution
- Real-time and deferred apply
- Event marker infrastructure
- Flexible topology support
- Data encryption
- ETL and JMS integration
- Routing and compression
- Automated memory management
- Initial load capability

BENEFITS

- Enhance decision-making with real-time data
- Access mission-critical applications without disruption
- Increase IT flexibility with heterogeneous infrastructure support
- Enable high-performance data replication with minimal impact on production systems
- Ensure transactional integrity across heterogeneous source and target systems

To succeed in today's competitive environment, you need real-time information. This requires a platform that can unite information from disparate systems across your enterprise without compromising availability and performance. Oracle GoldenGate is a high-performance software application for real-time transactional change data capture, transformation, and delivery, offering log-based bidirectional data replication. The application enables you to ensure that your critical systems are operational 24/7, and the associated data is distributed across the enterprise to optimize decision-making.

Real-Time Access to Real-Time Information

Business-critical systems must offer the highest availability, ensure fast and easy access to the right data, and quickly adapt to changing business and IT demands. With transaction volume increasing at an exponential rate as more and more business processes are conducted online, many organizations need a better solution to collect and deliver immediate access to the tremendous amount of enterprise data.

Oracle GoldenGate provides real-time capture, transformation, routing, and delivery of database transactions across heterogeneous systems. The software facilitates high-performance, low-impact data movement with subsecond latency to a wide variety of databases and platforms while maintaining transaction integrity. Oracle GoldenGate leverages a component-based architecture to help companies address the continuous availability and real-time integration demands of enterprise systems.

Maintain Continuous Availability to Critical Systems

Oracle GoldenGate helps organizations eliminate the downtime caused by both unplanned and planned outages, and improve system performance and scalability.

The software can be configured to support the following scenarios:

- **Disaster recovery and data protection.** Create and maintain an immediate failover with up-to-the-minute data to minimize recovery time for mission-critical systems—deploy with Oracle Database or in non-Oracle environments.
- **Zero-downtime operations.** Enable uninterrupted business operations during system upgrade, migration, and maintenance activities.
- **Data distribution.** Synchronize data for distributed applications in real time for improved availability and scalability.
- **Query offloading.** Ensure high performance for production systems while still supporting necessary read-only activities by replicating data between heterogeneous sources and targets.

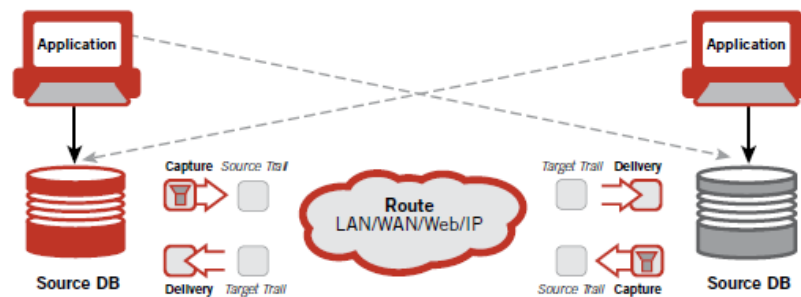
Enable Real-Time Data Integration Across the Enterprise

Oracle GoldenGate captures and delivers real-time change data to data warehouses, operational data stores, reporting systems, and other online transaction processing (OLTP) databases with minimal performance impact. This access to real-time information enables improved business insight.

- **Real-time data warehousing.** Provide continuous, real-time capture and delivery of the most-recent change data between OLTP systems and the data warehouse. Oracle GoldenGate integrates easily with Oracle Data Integrator Enterprise Edition and other extract, transform, and load (ETL) solutions.
- **Operational reporting.** Offload reporting activity from production databases to lower-cost secondary systems with current data for real-time reporting.
- **Operational data integration.** Integrate operational data between OLTP systems in real time. Enable service-oriented architectures, including Oracle SOA Suite, to operate with real-time data by publishing changed data via Java Message Service (JMS) using Oracle GoldenGate Application Adapters.

Robust Modular Architecture

The Oracle GoldenGate software architecture is comprised of three primary components: Capture, Trail Files, and Delivery. This modular approach allows each component to perform its tasks independently of the others, accelerating data replication and ensuring data integrity.



Oracle GoldenGate leverages a component-based architecture to optimize real-time information access and availability.

Capture

Oracle GoldenGate's Capture module resides on the source database and looks for new transactional activity. The Capture module reads the result of insert, update, and delete operations by directly accessing the database transaction (redo) logs, and then immediately captures new and changed data for distribution.

The Capture module only moves committed transactions—filtering out intermediate activities and rolled-back operations—which not only reduces infrastructure load but also eliminates potential data inconsistencies. Further optimization is achieved through transaction grouping and optional compression features.

Trail Files

Oracle GoldenGate's Trail Files contain the database operations for the changed data in a transportable, platform-independent data format. Trail Files are a critical component within Oracle GoldenGate's optimized queuing mechanism. They reside on the source and/or target server but exist outside of the database to ensure heterogeneity, improved reliability, and minimal data loss. This architecture minimizes impact to the source system because no additional tables or queries to the database are required to support the data capture process. The Capture module reads once, and then immediately moves the captured data to the external Trail File for delivery to the target(s).

In the event of an outage at the source and/or target, the Trail Files contain the most-recent changed data up to the point of the outage, and the data is applied once the systems are back online again.

Delivery

Oracle GoldenGate's Delivery module takes the changed data from the latest Trail File and applies it to the target database using native SQL for the appropriate relational database management system. Delivery can be made to any open database connectivity-compliant database. The Delivery module applies each transaction in the same order as it was committed and within the same transactional context as at the source, enabling consistency and referential integrity at the target. To enhance IT flexibility, captured data can also be delivered to a Java Message Service destination or as a flat file using Oracle GoldenGate Application Adapters.

Key Features and Benefits

Oracle GoldenGate provides the following features and benefits that enable you to rapidly move transactional data between enterprise systems:

Real-time data. Immediately capture, transform, and deliver transactional data to other systems with subsecond latency. Improve organizational decision-making through enterprise-wide visibility into accurate, up-to-date information.

Heterogeneous support. Utilize heterogeneous databases and platforms to increase IT department flexibility. Extract data from existing IT investments and lower your total cost of ownership while unifying data from all enterprise systems.

Reliability. Deliver all committed records to the target, even in the event of network outages. Move data without requiring system interruption or outage windows.

High performance with low impact. Move thousands of transactions per second with negligible impact on source and target systems. Access critical information in real time without bogging down production systems.

Transaction integrity. Maintain transaction commit boundaries and atomicity, consistency, isolation, and durability (ACID) properties as transactions are moved between source and target systems. Ensure data consistency and referential integrity across multiple masters, back-up systems, and reporting databases.

RELATED PRODUCTS

Oracle GoldenGate offers low-impact capture, routing, transformation, and delivery of change data across heterogeneous systems in real time. The software helps organizations achieve continuous availability and real-time integration for their mission-critical data.

RELATED PRODUCTS

The following products enable organizations to more completely optimize their solutions for access to real-time information:

- Oracle GoldenGate Veridata
- Management Pack for Oracle GoldenGate
- Oracle GoldenGate Application Adapters
- Oracle Data Integrator Enterprise Edition
- Oracle Active Data Guard
- Oracle SOA Suite

Key Features and Benefits (continued)

Integration. Easily integrate with ETL products, including Oracle Data Integrator Enterprise Edition, Use Oracle GoldenGate Application Adapters, to integrate with Java Message Service–based messaging solutions such as Oracle WebLogic.

Flexible topology support. Manage data in one-source-to-one-target, one-to-many, many-to-one, many-to-many, cascading, and bidirectional configurations.

Conflict detection and resolution. Detect and resolve conflicts in multimaster configurations where two systems can modify separate instances of the same table.

Event marker infrastructure. Trigger immediate actions based on specific database operations captured and stored in Trail Files.

Routing and compression. Utilize TCP/IP to send data and eliminate geographical distance constraints between source and target systems. Apply additional compression to the data as it is routed.

Data encryption. Securely transmit data for domestic and international applications with variable key length encryption.

Deferred apply. Apply data immediately or at a deferred time chosen by the user, without losing transaction integrity.

Automated memory management. Automatically adjust transaction memory based on the size and number of transactions being capturing.

Conclusion

Oracle GoldenGate helps organizations harness the value of their IT investments and improve business operations by providing continuous access to business-critical information in real time. With support for a wide array of continuous availability, disaster tolerance, and data integration scenarios, the software provides a modular foundation that easily scales to address the high-volume data management challenges faced by organizations today.

Contact Us

For more information about Oracle GoldenGate, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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