

# ORACLE DATA GUARD 11g

## KEY BENEFITS AND FEATURES

**ORACLE**  
DATABASE **11g**

### BENEFITS

- Unmatched levels of Data Protection and Availability
- Unique capabilities to utilize standby systems and databases while in standby role to offload processing from the primary database
- Maximum Return on Investment
- Improved Quality of Service

*Oracle Data Guard is an included feature of Oracle Database Enterprise Edition that maintains one or more standby databases as synchronized replicas of a production database, preventing data loss or downtime due to data corruptions, system failures, human errors, or disaster. Native integration with the Oracle Database enables Data Guard to provide unique levels of data protection. Additional capabilities allow for active use of standby systems and databases while in standby role. This makes Data Guard standby databases a mainstream component of any I.T. infrastructure, able to enhance the Quality of Service of production systems and do so in a more cost effective manner with better performance than 3<sup>rd</sup> party alternatives.*

### KEY FEATURES

- Zero Data Loss
- Synchronous & Asynchronous data transport
- Efficient network utilization
- Supports up to nine standby databases for each production database
- Continuous data validation to detect and prevent corruptions
- Automatic resynchronization following network failures
- Automatic failover using either SYNC or ASYNC redo transport
- Automatic reinstatement of failed primary database
- Standby database used for reporting, backups, and test activities
- Easy-to-use GUI for automated standby database creation, and fine-grained monitoring

### Data Guard Overview

Data Guard operates by keeping standby databases synchronized with a primary database. Standby databases can be located at a remote disaster recovery (DR) site thousands of miles away from the primary data center, or they may be located in the same city, campus, or building. If the primary database experiences a planned or unplanned outage, Data Guard can quickly switch any standby database to the

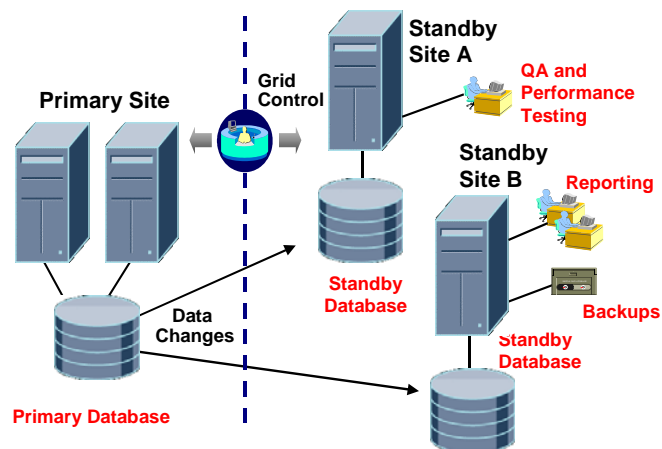


Figure 1 – A Data Guard Configuration With Two Standby Databases

production role, minimizing downtime and preventing data loss. Data Guard is an ideal complement to other Oracle High Availability (HA) solutions, including Oracle Real Application Clusters (RAC), Flashback Technologies, and Oracle Recovery Manager (RMAN), as described by the Oracle Maximum Availability Architecture (MAA).

**ORACLE DATA GUARD 11g  
NEW DATABASE OPTIONS:**

RELATED DATABASE  
OPTIONS

- *Oracle Active Data Guard Option*: enables physical standby databases to enhance primary database Quality of Service and performance by offloading read-only queries and reports. Active Data Guard also supports fast incremental backups on a physical standby database
- *Oracle Advanced Compression Option*: enables Data Guard to compress data transmitted to resynchronize standby databases following network outages. This makes more efficient use of available network bandwidth and can reduce the time required for Data Guard to resynchronize a standby database.



**For More Information:**

- Data Guard Home Page on OTN  
<http://www.oracle.com/technology/deploy/availability/htdocs/DataGuardOverview.html>

**Better Data Protection**

Data Guard transmits a far less volume of data than is required by storage-based remote mirroring solutions to maintain a synchronized standby database. Data Guard uses Oracle algorithms to detect and prevent data corruptions from being applied to the standby database, thus users can be certain of the state of the standby database, eliminating risk at failover time. This is not possible with remote-mirroring solutions, where mirroring must be stopped and the database opened and checked for consistency, before the state of the standby database is known

**Higher Availability**

Data Guard achieves the highest possible degree of isolation between primary and standby databases in order to protect against a wide range of potential failures. When an event impacts the availability of a primary Oracle database, Data Guard can failover in a matter of seconds, either manually or automatically, to an up-to-date standby database and business applications quickly resume servicing end-users.

**More Than Just an HA/DR Solution**

Data Guard 11g Snapshot Standby enables a standby database to be open read-write for test and other purposes. Primary database transactions remain protected, and the standby database is automatically resynchronized after test activities are complete. Data Guard SQL Apply (logical standby) has always enabled standby databases to provide up-to-date query and reporting – offloading the primary host of the overhead of ad-hoc queries and other long-running operations. The Active Data Guard Option for Oracle Database 11g enables read-only access to an up-to-date physical standby database, providing additional benefits of simplicity and very high performance. These abilities to utilize standby databases while in standby role – to offload primary databases of the overhead of queries, reports, and backups – and the added flexibility to easily use standby databases as “live test” systems that are exact replica’s of production – make Data Guard standby databases an integral part of IT operations. And this fact is true even in the case when an organization leads a charmed life and never experiences events requiring failover to a standby database.

**Getting Started**

Create your Data Guard configuration quickly and easily using Oracle Enterprise Manager Grid Control. A GUI-driven wizard will walk you through six simple steps to create and start a Data Guard standby database and provide simple monitoring and control of your entire Data Guard configuration.

**Conclusion**

More Oracle customers are discovering the many benefits of a Data Guard standby database. For further information, refer to Data Guard technical information, and customer implementation case studies, and best practices available on the Oracle Technology Network (OTN).

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