

PHOENIX FOR ORACLE FAR SYNC

100% Zero Transaction Loss DR Solution for Oracle® Data Guard Far Sync

The Challenge

Protecting Oracle Mission-Critical Applications and Databases in Any Disaster

Enterprise resource planning (ERP), customer relationship management (CRM), and other critical applications drive enterprise business today. When a disaster strikes a data center, the IT department's goal is to get these mission-critical applications up and running as quickly as possible and with zero transaction loss.

Application consistency is an important factor in recovery time. If data loss occurs, inconsistencies between databases can occur, causing applications to go out of sync. The manual work required to restore consistency may significantly affect recovery time and application availability, resulting in a substantial financial and business impact.

To prevent data loss, maintain application consistency, and ensure quick recovery, some organizations implement synchronous replication between two nearby data centers. In cases where they cannot implement synchronous replication, they use asynchronous replication alone—and take their chances on data loss. Other organizations implement three-data-center topologies, which use synchronous replication between nearby data centers and asynchronous replication to a distant data center.

Both synchronous and asynchronous technologies have shortcomings. Synchronous replication involves high costs; it affects Oracle performance; and the disaster recovery (DR) site needs to be close to the primary one, thus increasing the risk of losing both sites in regional disasters. In addition, it is highly challenging to use synchronous replication together with advanced storage technologies such as Exadata and flash-based systems because doing so slows their overall performance.

Asynchronous solutions have their own disadvantages, with the main one being loss of the inherent lag between the production site and the DR site, which significantly increases downtime compared to zero data loss scenarios. When using flash-based storage, this inherent lag grows even larger, due to the fast speed of writes.

Although Oracle's Far Sync synchronous replication solution provides a less costly alternative to a three-data-center topology, it still has the other disadvantages of traditional synchronous replication solutions. Organizations need to invest in a nearby facility from which to run the Far Sync instance; the communication lines between the production and nearby site are costly; and latency still impacts performance. More important, the solution is not immune to regional or rolling disasters. In fact, without Axxana's Phoenix, no DR solution is.

Axxana's Phoenix for Oracle Far Sync is a self-contained, physically indestructible solution that houses, protects, and supports Oracle's Far Sync instance from within the primary (production) data center. Given that it easily and cost-effectively resolves the challenges associated with standalone versions of Far Sync, there is simply no good reason to use the Far Sync software on any other platform—or for that matter, to use three data centers. IT leaders owe it to their company and their customers to take advantage of the risk reduction, cost savings, and other opportunities that Phoenix for Oracle Far Sync offers.

The Solution

Zero Transaction Loss Guaranteed – Without the High Cost

Phoenix for Oracle Far Sync is purpose-built for Oracle® Active Data Guard 12c to ensure zero data loss at any distance and in any disaster scenario, including regional disasters. It eliminates the need for a three-data-center topology by, in essence, providing a mini, self-contained data center inside the disaster-proof Axxana Phoenix Black Box. The Black Box resides at the production site (primary data center), so communication lines are a matter of feet instead of miles and network latency is negligible. In addition, the Far Sync module runs on top of Data Guard software that is installed inside the Black Box. This means organizations do not need to create interfaces between Phoenix and Far Sync, and the operation of the Far Sync instance is the same as on any other Data Guard server.

Phoenix for Oracle Far Sync ensures zero data loss during any disaster by storing and protecting yet-to-be-replicated data (the data lag), as well as the Far Sync instance, inside the Black Box, which has its own independent power, compute, storage, and communication systems. The Phoenix system can host multiple Far Sync instances, providing zero data loss protection for multiple production databases.

If there is a production database outage, failover to the remote standby database initiates automatically. The Phoenix system even re-establishes a Data Guard session with the standby instance at the remote site automatically over a fast and secure independent cellular communication line when no other communication line is available. Active Data Guard completes the data transfer of all remaining redo records from the Far Sync instance inside the Black Box and applies them to the standby database. The standby database then completes all transactions committed to the original primary database prior to the disaster, resulting in zero data loss recovery. At this point, the standby database can be configured as the new primary database, to complete the failover process.

Phoenix for Oracle Far Sync guarantees application consistency by providing the ability to synchronize all the applications and databases that are used in the Oracle environment to one consistent point in time. In a case of failure at the production site, all applications and databases are recovered together, to the exact same time stamp, with full consistency across all applications and databases.

Moreover, Phoenix for Oracle Far Sync saves the organization money, reduces operational complexity, and provides a tremendous ROI by eliminating the need for a third nearby site (connected via a costly synchronous line) to host the Far Sync instance. The organization can continue to use its existing pair of primary and remote data centers, with a much lower-cost asynchronous replication line between them, and not fret about losing any transactions.

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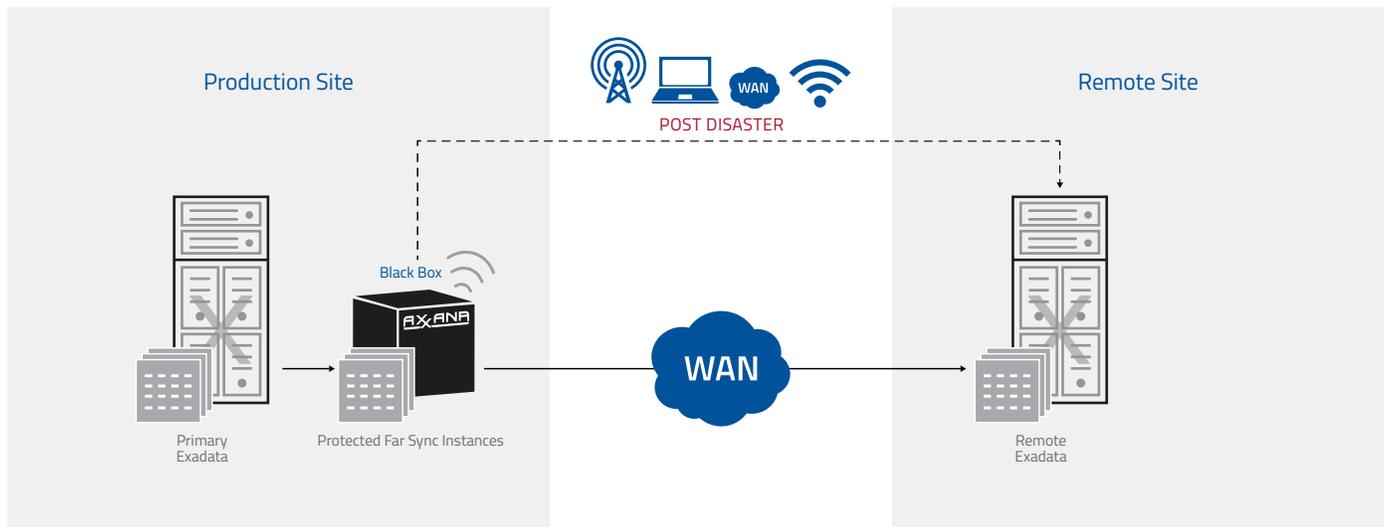
Full Protection for Oracle Applications

- Continuous application availability
- SAP, Oracle E-Business Suite, CRM, and more
- Zero transaction loss / RPO=0
- Application consistency

Redundant Communication Systems

Once a disaster has occurred, the Black Box has several methods of sending the transaction data to the remote site:

- Over an existing WAN (if the disaster is local and the WAN still operates)
- Downloading the transaction data over Wi-Fi to a laptop and transferring it over a secured alternative WAN connection
- Transferring the encrypted and authenticated transaction data via a VPN over a 4G network using multiple LTE modems



Exadata and Flash-Based Storage

Exadata and flash-based storage technologies make transaction protection for disaster recovery even more challenging. On the one hand, these technologies significantly boost the performance of mission-critical applications. On the other hand, using synchronous replication with Exadata and flash-based storage can slow down overall performance because the communication lines are not fast enough to support such high-speed write operations.

For this reason, organizations often resort to asynchronous replication (Max Performance). However, this results in the inherent lag growing even larger, due to the extremely fast speed of writes. Phoenix for Oracle Far Sync eliminates these challenges and ensures RPO=0—without compromising on performance or requiring upgrades to your network infrastructure.

The Phoenix for Oracle Far Sync Components

Black Box:

Protected storage unit with DR capabilities. Installed at the production site, the Black Box is designed to withstand a wide variety of extreme conditions that may occur during a disaster.



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