

Case Study: Kemira GrowHow UK Ltd

Replacing Outsourced Disaster Recovery Services With Oracle Data Guard

“Small businesses are always trying to maintain service levels while keeping control of people and resources. Data Guard took us one step further. It enabled us to significantly enhance service while reducing cost.”

*Bill Hulley, U.K. Information Systems Manager,
Kemira GrowHow UK Limited*

OVERVIEW

Kemira GrowHow

- Provider of fertilizer products and custom fertilizing solutions
- 2005 net sales of EUR 1,229 million
- 2,700 employees world wide
- Market leader in Finland, Denmark, & the Baltic region – strong market position in UK, Benelux countries, France and Germany
- The GrowHow plant in Chester, UK employs 450 staff
- www.kemira-growhow.com/uk

Oracle Technologies

- Oracle E-Business Suite Oracle
- Oracle Database Enterprise Edition
- Data Guard

Kemira GrowHow is a leading European provider of fertilizer products for use in agriculture with a particular focus to customized fertilizing solutions. Kemira GrowHow UK Ltd uses [Oracle Data Guard](#) [1] to provide an in-house Disaster Recovery (DR) capability to replace a previous DR outsourcing agreement with a 3rd party vendor. GrowHow realized immediate savings of \$37,000/year U.S. on the outsourcing contract, together with significant long term cost avoidance due to higher availability and data protection inherent in the Data Guard solution.

GrowHow has also taken advantage of Data Guard capabilities to enable quick recovery from logical corruptions and user error, reducing the likelihood of performing time-consuming point-in-time recovery from a previous day's backups.

Using Data Guard, GrowHow's:

- Recovery Point Objective (RPO), or the maximum risk of data loss, decreased from 24 hours to a matter of minutes.
- Recovery Time Objective (RTO), or the maximum amount of time that critical applications could be unavailable during a disaster, decreased from 24 hours to less than 2 hours. Within this service level, database failover can be executed in minutes.

GrowHow achieved this without any additional license or support costs – Data Guard is an included feature of the Enterprise Edition of the Oracle Database.

PREVIOUS DR OUTSOURCING ARRANGEMENT

Before Data Guard, GrowHow had two production databases located in different computer rooms. A single server deployed in the first computer room supported Oracle Financial Applications and its associated database. A single server deployed in the second computer room supported Oracle Inventory, Sales Order Processing, Accounts Receivable and the associated database. The computer rooms were located in separate buildings ½ mile apart. No provision was made to failover applications or databases from one server to the next; each system was independent of the other. Full backups of each database were taken nightly.

Under the previous outsourcing arrangement, a serious outage of either server would trigger **notification of the 3rd party vendor** who would be responsible to deliver **replacement equipment** on site **within 4 hours**. The vendor would also provide staff to **recreate and restore** the production environment from a **previous backup**. The vendor's service level agreement called for this process to be completed **within 24 hours**. GrowHow would **revert to manual processes** in order to sustain business operations during this period. This resulted in the business impact lasting for some time after applications were again available due to the effort required to recover from **lost data and to resynchronize systems** with manual activity transacted during the extended outage.

As a further contingency in the event a problem was encountered with tape backups or if the 3rd party was not able to meet service levels, GrowHow had plans in place to run the business without systems for **up to 36 hours** – a scenario that could never really be tested.

DISASTER RECOVERY USING DATA GUARD

The adoption of Oracle Data Guard together with the consolidation of GrowHow's data into a single Oracle database fundamentally changed the level of data protection and high availability that GrowHow could achieve. All applications

Data Guard Configuration

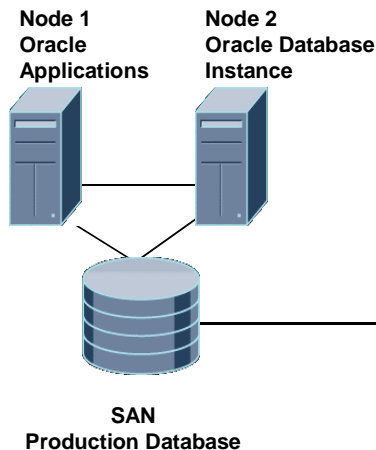
- Data Guard Redo Apply (physical standby)
- Maximum Performance protection mode

System & Network Configuration

- HP-UX with HP ServiceGuard
- Production Cluster 2 x HP 9000
- Standby server is used for development & test while in standby role
- Backups are taken from standby database to offload the production database
- Network (4) 1 Gb trunks

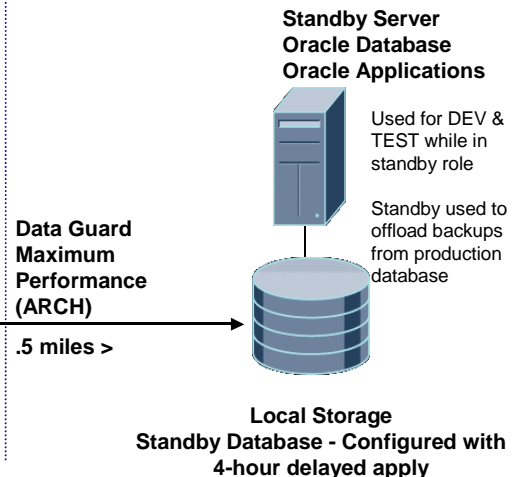
Building A - Production

All Oracle Apps
Production Database



Building B – DR

Standby Database
Used for Dev & Test while in Standby Role



Data Guard
Maximum
Performance
(ARCH)

.5 miles >

Figure 1 – Data Guard Disaster Recovery Environment

now run on a single production database on a 2-node cluster in Building A. Oracle E-Business Suite applications run on node 1, the Oracle Database instance runs on node 2. Data Guard synchronizes a standby database in the remote computer room with the production database (Figure 1.) using integrated Oracle processes that validate data before applying it to the standby database. The Data Guard process of synchronizing the standby database provides GrowHow with a number of significant advantages when compared to traditional storage or host-based [remote-mirroring solutions](#) [2].

“Oracle Data Guard gives us complete control over the service levels we can deliver to the business, and in every dimension – cost, availability, data protection and manageability.”

***Bill Hulley
Information Systems
Manager
Kemira GrowHow UK
Limited***

If either node in the production cluster fails, HP ServiceGuard will restart the failed service on the surviving node. If the production cluster or database fails entirely, a Data Guard failover is executed to transition the standby database to the production role. No restore or recovery operations are required.

Data Guard offers three different protection modes that provide users the flexibility of utilizing either synchronous (zero data loss) or asynchronous data transport. GrowHow has configured Data Guard using Maximum Performance mode. This is an asynchronous protection mode that reduces GrowHow’s data loss exposure from the 24 hours allowed under its previous outsourcing contract, **to just minutes** of data using Data Guard. Since Data Guard is continuously applying data to the standby database, GrowHow can also complete a database failover in minutes, making it possible to have applications back up and running **within 2 hours of losing the production cluster.**

For an additional level of data protection, GrowHow has configured Data Guard for a **4-hour delayed apply** at the standby database. This means that while data from the production database is shipped immediately to the standby server so that it is protected, the updates are staged at the standby and **not applied until 4 hours later.** This allows the GrowHow administrator a **4-hour window** to discover user errors or logical corruptions that may impact the production database. Rather than perform a time consuming point in time recovery from the previous nights backup, the administrator can stop the Data Guard apply process at the standby database, open the standby database read only, retrieve the original data and **use it to repair the production database.** In the future when GrowHow upgrades to Oracle Database 10g, Flashback database can be utilized as an alternative to delayed apply to achieve continuous data protection without delaying the apply of data to the standby database. The ability to evolve from one Oracle release to the next and seamlessly integrate the use of new Oracle features is a further example of the benefit to be realized from Oracle’s significant investment in high availability and disaster recovery technologies.

DATA GUARD ADVANTAGES

By choosing to use Data Guard and implementing its own DR environment in-house, GrowHow:

- Saved **\$37,000/year U.S.** by terminating its DR outsourcing agreement
- Increased availability and data protection – insulating business operations from the impact of serious system failures
 - Reduced the risk of data loss from **up to 24 hours to just minutes**
 - Reduced potential downtime from **24 hours to less than 2 hours.**
- Eliminated dependency **on tape backup for disaster recovery**
- Reduced business risk by taking control of operations
 - GrowHow equipment and staff are already on-site. GrowHow is no longer dependent **upon a 3rd party** vendor’s ability to meet its service levels. This is especially important during events that may

impact multiple companies within the vendor's service area – creating competition for the vendor's staff and resources that can make it impossible for the vendor to respond in the timeframe promised.

- Minimized staff impact. Most aspects of managing a Data Guard configuration are self-managing, including automatic resynchronization of production and standby databases following a network or standby failure.

CONCLUSION

Businesses that depend on **mission critical applications** can no longer accept the risk of downtime or data loss inherent in traditional outsourcing of disaster recovery services. Adding to their dissatisfaction is the high cost of outsourcing compared to the service levels that can be achieved. For GrowHow the answer was simple – Oracle Data Guard – higher availability, better data protection, and less risk, all at less cost than their previous outsourcing arrangement.

ADDITIONAL REFERENCES

1. Oracle Data Guard Overview
<http://www.oracle.com/technology/deploy/availability/htdocs/DataGuardOverview.html>
2. Oracle Data Guard and Remote-Mirroring Solutions
<http://www.oracle.com/technology/deploy/availability/htdocs/DataGuardRemoteMirroring.html>



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