



**Review of ABC Co's Existing High Availability
and Disaster Recovery Infrastructure**

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Introduction

The objectives of this document are to:

- Review the current iSeries Disaster Recovery and High Availability Options available to ABC Co.
- Investigate the current Business Risks that ABC Co will be exposed to in the event of a disaster or serious outage on the Production iSeries.

The HA and DR Market – Key Drivers

- System downtime is fast becoming a serious business issue. With Server Consolidation many organisations are now supporting a large User Base across multiple countries and time zones with a single point of failure. This is the case with ABC Co who support up to 400 users across five Countries on a single iSeries. System downtime on this machine could impact ABC Co's business considerably. On average businesses lose \$108,000 of revenue for every hour their IT Infrastructure is unavailable (source: Gartner Group) and for large Retail & Warehousing organisations this can climb to \$636,000 per hour.
- 'Orphan Data' is also becoming an issue for many organisations. This is data that is updated between the latest backup and the disaster. Often it can not be re-created after a disaster and is effectively 'lost' to the business. This can include data received over the internet or from branch offices and transactions which can not be manually re-produced.
- Data availability required for regulatory and industry compliancy is also a major issue with the advent of Sarbanes Oxley, HIPPA & other regulatory codes being more comprehensively enforced.
- The introduction of iSeries Remote Journaling has also opened up new technology options such as real-time software replication to businesses of all sizes. Remote Journaling can allow data to be mirrored to the very second across large distances, between cities, across states and countries. Data replication solutions such as *noMAX are able to use OS/400 Remote Journaling to maintain replica databases which can then be used in the event of system outages to ensure recovery, availability and zero data loss.

ABC Co - Current iSeries Environment

- ABC Co is a world leader in manufacturing. The UK headquarters are located in London and they house the regional IBM iSeries server. Branch offices are located in New Zealand, China, Hong Kong and Japan with approximately 400 users accessing the iSeries. ABC Co's current utilises an iSeries 825 model with a database of 1.2 Terabytes. The application software is BPCS V6.1.02. BPCS V4.5CD and V4.1CD are also run on this platform to provide double-byte character support to offices across Asia. ABC Co has a second Datacentre located in the United States and the organisation is keen to investigate options for High Availability & Disaster Recovery between the two Datacentres.

ABC Co - Current Business Risk

- ABC Co currently uses 'cold site' service as their Disaster Recovery Solution. In the event of a disaster or serious hardware failure at the London location, the iSeries 825 environment will need to be rebuilt at the backup Datacentre which is located approximately 15km's away. The most recent tape backups will be used to rebuild the environment. The rebuild of the ABC Co environment is estimated to take between 2-3 days which will include the set-up of the IBM iSeries for ABC Co and the restore of the ABC Co Databases, User data (data profiles & User ID's), System Settings and Applications & Network Set-up. The tasks to restore the ABC Co Databases are estimated to take up to 24 hours at a minimum.
- During this 2-3 day outage the 400 users across the UK, Australia, New Zealand, Japan and Hong Kong will have no access to the ABC Co Databases which will seriously impact ABC Co's ability to conduct business in these regions.
- In addition to the above, ABC Co will have a serious exposure to 'Orphan Data.' These are the updates & transactions that occurred on the ABC Co Databases after the tape backup was run but before the disaster occurred. ABC Co can only recover back to the time of the last tape backup so these transactions and updates would be lost. Up to 24 hours worth of data would be unable to be re-created. This, clearly, would also have a very serious impact on ABC Co's business.
- ABC Co does not currently have a dedicated backup server. This represents a significant risk as it will not be possible to recover the primary data loss. If the potential disaster affected multiple businesses in the London area then the Backup & Recovery Centre would not be capable of providing a Disaster Recovery service to ABC Co. With a second machine and the appropriate HA &DR solution in place ABC Co would have a Recovery Time Objective of less than one hour and a Recovery Point Objective (Data loss) of zero.

HA/DR solution for evaluation

- Life IT recommend that ABC Co evaluates Maximum Availability's *noMAX garrison for use in their Environment. The *noMAX Garrison solution offers real-time, fast, secure and reliable iSeries data, object and IFS replication. It is also easy to implement and uncomplicated to run & monitor. *noMAX makes use of the latest features of the iSeries Operating System and is built around OS/400 Remote Journaling which is currently used on a subset of files in the ABC Co BPCS database.
- Two-way Replication of critical files between the two ABC Co Datacentres in real-time from the Sydney iSeries 825 machine to the US based iSeries 825 is recommended. This will allow ABC Co to continue normal business operations in the event of a disaster at either the Australian or US location and also eliminate the risk of data loss from Orphan Data. It would also reduce the 2-3 day outage in a disaster down to 2-3 hours.
- The use of *noMAX garrison could remove the current daily need for a 20 minute outage checkpoint per master library and also remove the need to use Save While Active and replace this with a clean real-time local save.

Recommendations

It is recommended that the following actions be addressed:

- Agree to address the issue of implementing a HA/DR software replication solution to protect the organisation's critical business information.
- Evaluate *noMAX garrison in the ABC Co Environment in a free 30 day trial phase between the UK & US environments.