



# **The Case Study for IsaStor Series Products**

(CONTINUOUS DATA PROTECTION SOLUTIONS)

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## **The Product - IsaStor Series Software Overview**

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**The Snapshot structure developed in house by XLink is the core technology for the *IsaStor series* products.**

Because snapshots are taken at each point-in-time and on the transaction level, real time file replication and open file backup are all become possible. The *IsaStor series* of products claim to be the unmatched solution that brings effective server availability and true data protection to users.

The ClusterReplica SQL 3.1 Software provides a robust, dependable server clustering solution. It is a turnkey software with automatic SQL data replication configuration. Besides real-time data replication ClusterReplica SQL 3.1 is also equipped with automatic Failover and automatic Failback capabilities. This software meets all your critical needs on server high-availability and data protection.

EzOpenBackup Plus! can do more than Open File Backup, it can recover accidentally changed files between backups. The innovative creation of “Data Recovery Bin” keeps all changed files of the source folder before next backup so that lost or damaged files can be replaced by a previous version.

“Data Recovery Bin” eliminates the risk of data loss due to human error, such as accidental file deletions and overwrites, and file corruptions. The significant advancement of “Data Recovery Bin” lies in its ability to recover files not saved by Windows “Recycle Bin”.

The *IsaStor series* products currently consist three categories of solutions:

- A) **Server high availability** – the software will bind two Windows systems together to function as a cluster system and carry out real-time data replication and automatic failover no matter the failure is caused by the malfunction of an application or that the entire system is down.
- B) **Centralized data protection** – the software will turn a file server into a Data Protection Server in that all individual user systems can backup their personal data onto it and reserve the right to review and retrieve their files at the time that is convenient to them. The Data Protection Server will also backup all its data to a remote location to prevent data loss caused by natural disasters.
- C) **Desktop disk-based backup** – the software performs continuous, open-file backup to all Windows application files, and is especially useful to Windows VB, VC users. Its ability to backup to remote locations using FTP protocol makes it especially powerful for file disaster recovery.

## Case Studies

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Three scenarios are created to help potential users of ISA Stor series products to better understand the usage and environment in using the softwares.

- 1) **ABCBank** trying to get data from its five branch offices to a centralized location for data protection and server availability purposes. Each of the branch offices has its own file server set on a SQL server. The branch offices and the central location are all in different network segments. The marketing manager of the company has the needs to extract data daily from the SQL database for marketing analysis usage.
- 2) **XYZInc.**, a car parts distribution company, wants to maintain its web server available 24x7 for its worldwide customers. The web server also keeps a database on the backend to hold products and customers' information. It wants to back up all products and customer information to a remote location to prevent data loss.
- 3) John, a programmer wants to be able to go back to some previous versions of his program files when he is working on a project. He also wants to backup all his working project files go different locations for convenience and file backup reasons.

### **CASE 1. A bank trying to get data from its five branch offices to a centralized location for data protection and server availability purposes.**

**ABCbank** is a commercial bank that has five branch offices spread out in different cities of a state. Each of the branch office uses a SQL server to keep all their customer information. **ABCbank** also has a data center that backs up data from the five branch offices. Upon consideration of protecting data from system failure and natural disasters such as fire or flood that may damage computers and cause data loss, **ABCbank** decides to upgrade its data protection scheme.

Jim is the system administrator in **ABCbank**. He is appointed to be in charge of the data protection upgrade project. Based on his experience, Jim knows the new technology of disk-based clustering system is his best bet. He set out the objectives for the upgrade:

- a) **Real-time data replication** – The backup method from the data server in each branch office to the data center is to be upgraded from once a day to real-time so that data loss is reduced to the minimum should the data server at a branch office fails before the end-of-day backup time.
- b) **Automatic Failover** – The backup servers in the company's data center must be able to take up the job of the SQL data server in a branch office

should the data server fails to function. This setting would allow the branch workers to access customers' information at all times.

- c) **SQL service Active/Active on the clustered machines** – Because the marketing manager needs to extract data daily from the backup servers for her marketing analysis, she should be able to do it on the backup servers in the company's data center so that her job will not interfere with the data servers normal operation in each branch office.
- d) **Clustering through DNS gateway for Failover** – Because each of the five branch offices of **ABCbank** is in its own unique network segmentation which is also different from the network segment of the data center. To failover in this environment, DNS configuration is required.
- e) **Backup all data in the data center to a remote location** – This requirement is set to prevent data loss caused by natural disasters.

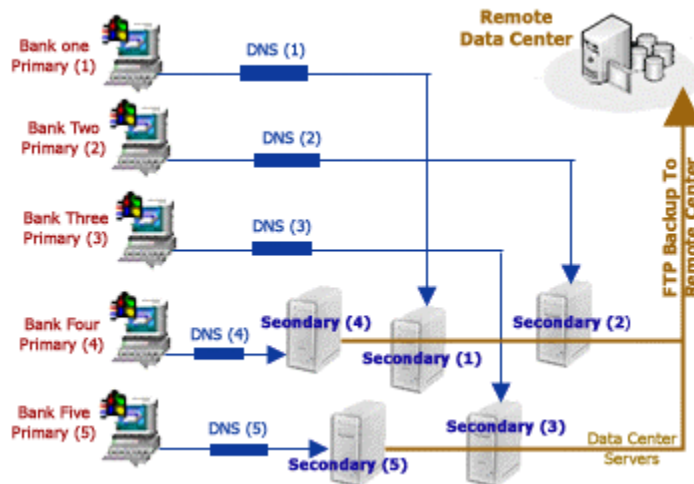
With some online research, Jim found XLink's ClusterReplica SQL 3.1 to be the perfect solution for following reasons:

- 1) ClusterReplica SQL runs on Windows 2000/2003 systems – all SQL servers in the branch offices of **ABCbank** are Windows 2000 servers running SQL server service, and the backup servers in the data center are Windows 2003 servers.
- 2) ClusterReplica SQL 3.1 binds two Windows system together to work as a cluster server – That is all **ABCbank** needs: each SQL data server in a branch office will be paired up with one in the data center to form a clustering for data replication and Failover applications. The simple pairing leads to easy management and trouble shooting.
- 3) ClusterReplica SQL 3.1 supports SQL service Active/Active mode – This feature fits the requirement for the marketing manager.
- 4) ClusterReplica SQL 3.1 supports DNS connection for Failover – Jim needs this feature to setup the clustering between the data servers in a branch office and the backup server in the data center.
- 5) ClusterReplica SQL 3.1 supports FTP method for remote backup – This capability saves **ABCbank** money and time in buying a separate software and set it up in each of the backup servers in the data center for remote backup.

Jim has five MS SQL servers in his data center. Each is connected to the data server in a branch office through a DNS gateway. To run ClusterReplica SQL 3.1 in this environment, Jim works out following steps:

- 1) Label each pair of a bank's data server and the servers in his data center.  
So he has Bank one ⇔ server (1)  
Bank two ⇔ server (2)  
Bank three ⇔ server (3)  
Bank four ⇔ server (4)  
Bank five ⇔ server (5)
- 2) He then labels the five licenses for ClusterReplica SQL 3.1 (1) through (5)
- 3) He then go around each of branch offices following the orders he had set and installed ClusterReplica SQL 3.1 on their SQL data servers. He configured the cluster servers at every branch office as the **Primary station**. From the Primary stations, Jim also set the SQL server to be enabled on the Secondary station.
- 4) He then install ClusterReplica SQL 3.1 on each of the SQL servers in the data center in **ABCbank** following the same order, and configure them as the **Secondary stations** so that they function as the backup servers.
- 5) The last configuration Jim did was to setup the FTP backup from the backup servers in the data center. He set the files on the backup servers as the backup source and the remote data center as the backup destination, and set it to backup once a day at 12:00 midnight.

Following picture give a general idea of the clustering setup of **ABCbank**.



**CASE 2. XYZInc., a car parts distribution company, wants to maintain its web server available 24x7 for its worldwide customers.**

**XYZInc.** is a car parts distribution company. It sells car parts through its web site to customers worldwide. For this reason, it has the need to keep the web server up 24x7. The web server is set on a Windows 2003 server utilizing Windows IIS web server utilities.

The web site contains 10,000+ html files of part descriptions with pictures and explanations on installation procedure. New web pages are constantly added to the web server by way of Windows share utility when an employee finishes the page design from his own computer.

The owner of **XYZInc.** decides to backup the web site files because it will be a costly if he has to rebuild the web site with all the display pages. He has heard of the new technology of clustering and disk-based backups. So he hired Jennifer to work on the project with the requirement of using the current technology for his purposes.

Jennifer took up the project and did some online search. She knows for server 24x7 availability, she needs server clustering software. Since XYZInc. Runs its web site on a Windows 2003 server, Jennifer recommended her boss to use XLink's ClusterReplica Standard edition. Her reasons are:

- a) ClusterReplica Standard edition binds two Windows 2003 servers into a cluster server with automatic Failover capability. This feature satisfies **XYZInc.**'s 24x7 server available requirement.
- b) ClusterReplica Standard edition can also failover Windows shared folders. This feature brings convenience to the **XYZInc.** employees when they need to add new web pages to the web server.
- c) She can run XLink's EzOpenBackup Plus! 3.0 for the remote backup because it allows the FTP data transport method for remote backup, and it is compatible with ClusterReplica Standard edition.
- d) It is the most cost-effective solution for **XYZInc.**

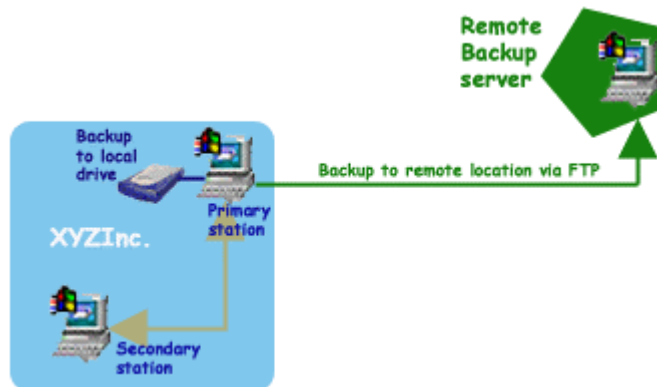
With her boss's approval, Jennifer carried out the plan as following:

- 1) She purchased a license for ClusterReplica Standard edition and a license for EzOpenBackup Plus! from XLink
- 2) She also bought a new MS SQL server system and configured it exactly as the one that is in operation

- 3) She installed ClusterReplica Standard edition first on the existing operational web server system and set it as the Primary station.
- 4) She then installed ClusterReplica Standard edition on the new computer and set it as the Secondary station.
- 5) From the Primary station, Jennifer added the folder which contains all **XYZInc.**'s web pages into the data replication configuration for real-time data replication, and run an initial file sync to copy all web page files on the operational server to the backup server.
- 6) She then, also from the Primary station, added the folders the web server shared out for new web pages to be added in the 'shared folder failover' configuration for **XYZInc.** people to add new web pages to the server.
- 7) Last, Jennifer installed XLink's EzOpenBackup Plus! 3.0 on the Secondary station of the cluster server to backup the web pages files to a local backup server as well as a backup server in a remote location in another state.
- 8) To complete her job, Jennifer setup the backup schedule to be once a week at 6:00am each Monday and ran the initial backup to copy all file of the web pages on the web server to both local and remote backup servers.

From now on, both local and remote backup through FTP backup would take place automatically at 6:00am on each Monday.

Following picture summarizes the general configuration of Jennifer's plan.



**CASE 3.** John, a programmer wants to be able to go back to some previous versions of his program files when he is working on a project.

John is a senior programmer at **Soft101**, a software development company. John lives 40 miles from his office. Sometimes, he works at home to save time on commuting. **Soft101** provides John a laptop computer for him to use for his programming projects.

For convenience and backup purposes, John wants to keep a copy of all his current programming project files on the company's backup server. At the same time, keeps one copy on the removable USB drive so that he can update files on the desktop computer in his office while working on the laptop.

Upon examining some of the backup products, John decided XLink's EzOpenBackup Plus! best fits his needs because:

- a) EzOpenBackup Plus! 3.0 supports backup to two different destinations – this feature allows him to copy all current project files on the laptop to both backup server and the USB removable drive at the same time.
- b) The file update from the USB drive is really easy using EzOpenBackup Plus! 3.0's file sync utility
- c) And most of all, the real-time, open-file backup feature is especially helpful to John because as a programmer, he constantly making changes to the files he created during the day. Very often, he needs to go back to a previous version for different tries. EzOpenBackup Plus! has the **Data Recovery Bin** to save all versions of John's changed files. So he can go back to a previous version of any modified point at any time he wishes.

John really likes the functions provided by EzOpenBackup Plus!. So he purchased the software and installed it on his laptop computer. Following picture presents the system setup for John.

