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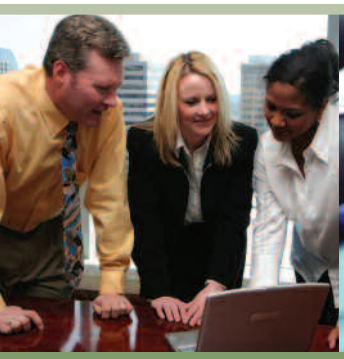
CASE STUDY:

Microsoft Windows 2003 SQL Server Cluster Eliminates Downtime and Improves Customer Service at a Michigan Transportation Company

BWP TRANSPORT, INC.

BWP Transport, Inc., is a North American shipping company located in St. Clair, Michigan. Uptime is crucial for the dry bulk transportation company. Their dispatch operates 24/7/365 monitoring all of their transportation means including rail and trucking services via satellite communication. With federal regulations mandating the trucking industry, it is critical that BWP be able to manage its fleet via a suite of integrated trucking dispatch and operations software with little to no downtime.

Logicorps, a Michigan information technology services company, implemented and manages the server cluster for BWP Transport. Server clustering is a proactive approach to disaster recovery and critical infrastructure maintenance. The primary reasons organizations make use of clustering are to provide application availability and data integrity and to reduce costs associated with downtime. These costs may be incurred because of the reduced end user productivity or lost business opportunities.



CASE STUDY:

INDUSTRY
Transportation

ENVIRONMENT
HP ProLiant DL380 G4 Packaged Cluster

SOFTWARE DEPLOYED
Microsoft Windows 2003 Enterprise Edition
Microsoft Windows SQL 2000 Enterprise Edition

ORGANIZATION
BWP Transport, Inc., is a family owned trucking company located in St. Clair, Michigan. Specializing in the transportation, storage, and delivery of dry bulk materials – specifically plastics – the BWP Transport fleet provides transportation services to all 48 states as well as Canada and Mexico.

SITUATION
The time-sensitive nature of the shipping industry requires that all IT applications be accessible around the clock to ensure on-time deliveries, effective transportation management, efficient communication, and compliance with safety regulations. This Michigan transportation and trucking company was looking for a proactive solution that would ensure uptime for their mission critical trucking dispatch and operations software.

SOLUTION
Logicorps researched and implemented a Windows Server 2003 SQL Server Cluster. Clustering can best be described as a technology that allows one physical server to take over the tasks and responsibilities of another physical server that has failed. Regardless of how the system may fail (power outages, drive failures, viruses, etc), clustering ensures that users running mission critical applications will have little or no downtime when such a failure occurs.

TIMELINE
First Quarter 2007

RESULTS
Logicorps, a Michigan based IT services firm, integrated and now maintains this high availability server cluster for BWP Transport. Now with application redundancy, BWP Transport has 100% application availability, data integrity, and has reduced costs associated with downtime.

CASE STUDY:

Microsoft Windows 2003 SQL Server Cluster Eliminates Downtime and Improves Customer Service at a Michigan Transportation Company Continued

Common causes of downtime include:

- Planned outages due to maintenance procedures
- Unexpected hardware and software failures
- Infrastructure failures and natural disasters

Because the "nodes" or multiple servers in the cluster network, work together and represent themselves as a single virtual server to a network, if one node fails or is disabled, its responsibilities are automatically taken over by another server in the cluster. The end user notices little, if any differences, before, during, and after the failover.

ACTIVE/PASSIVE FAIL REDUNDANCY

Logicorps assessed that the best form of server cluster for BWP Transport is the Active/Passive SQL Fail Redundancy cluster. An active/passive SQL server cluster refers to a SQL server cluster where only one instance of SQL server is running on one of the physical servers in the cluster, and the other physical server does nothing other than waiting to take over should the primary node fail.

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"The Active/Passive Fail Redundancy server cluster was the best solution for BWP," said Logicorps Network Administrator, Thomas Spencer. "BWP Transport requires highly available transportation management software. Active/Passive Fail Redundancy allows for better performance and instant recovery should an equipment failure occur."

STORAGE ARRAY COMPLETES CLUSTER

Clustering is just one part of the entire strategy designed for BWP Transport. Logicorps also implemented an HP shared disk storage array which houses a mirror copy of all data on the server. Should a failure occur, the "backup" or secondary server will access the data from the storage array. Besides both servers being connected to a shared disk array, both nodes of the cluster are also connected to each other via a private network. This network is used to monitor the "heartbeat" of the primary node. If the primary server was to fail in any way, the secondary node will automatically take over resulting in zero downtime.

MEETING AVAILABILITY GOALS

Regardless of what may cause a system failure, businesses suffer when work stops because a critical service is offline. The server cluster developed for BWP Transport by the Logicorps network team provides 100% application availability and has reduced costs related to downtime.

Businesses can and must plan for unpredictable events. The IT support services relationship between Logicorps and BWP Transport has proved to be a successful, proactive approach to disaster recovery planning. Logicorps continues to support and maintain the server cluster and there have been no experienced outages since the system was implemented in early 2007.