

#SANLess Clusters in the Real World:

Three Ways Enterprises are Protecting SQL Server in the Cloud



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Gaining Configuration Flexibility with #SANLess Clusters

SQL Server is a business critical application that requires high availability protection, regardless of where it is deployed. In the cloud, you need to protect SQL Server from downtime if the cloud instance or the cloud provider fails. However, traditional solutions, such as shared-storage clusters may not be practical or even possible in the cloud.

Learn how real enterprises are leveraging the flexibility of #SANLess clusters to provide high availability and disaster recovery protection for SQL Server in the cloud without the limitations of shared storage.



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Use Windows Server Failover Clustering in the Cloud

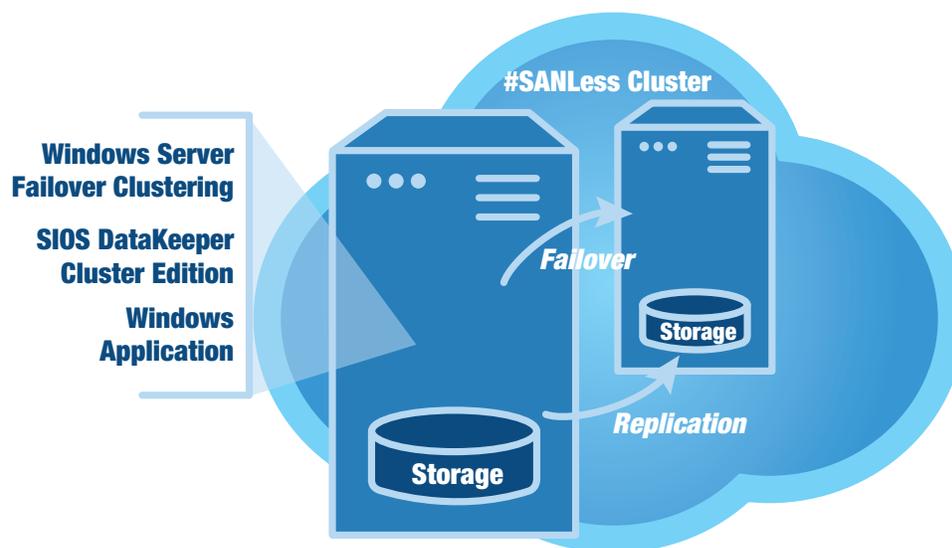


Challenge

Most cloud providers allow you to use multiple separate and redundant data centers or computing resources. However, they do not offer shared storage (i.e., a SAN), which is required to support traditional Microsoft **Windows Server Failover Clustering (WSFC)** across these computing resources.

Solution

You can use **#SANLess** software instead of a SAN to create a high availability cluster using WSFC. You can configure redundant SQL Server application instances in separate cloud computing resources. When a failure occurs, WSFC will coordinate the SQL Server application failover and restart on the second resource in the cloud.



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Use Windows Server Failover Clustering in the Cloud (Cont.)



How does it work?

Simply add **#SANLess** software as an ingredient to your WSFC environment in a cloud deployment to eliminate the need for shared storage. Instead of a SAN, the software keeps storage in all nodes synchronized (identical) using real time, block level replication. Nodes can be located in separate cloud areas for DR protection. The storage appears to WSFC as a traditional SAN.

Benefits

- **High availability** in a cloud. Protect SQL Server from downtime in environments where shared storage is impossible or impractical.

- **Fast deployment.** Configuration wizards enable full deployment of SQL Server cluster quickly and easily.
- **Non-disruptive.** Deploy and manage a WSFC environment in a cloud like a standard cluster. No added complexity or new processes to learn.

Bottom line

A fast, easy way to deploy SQL Server Enterprise Edition in a high availability environment in the cloud while continuing to use Windows Server Failover Clustering.

CASE STUDY

#SANLess Clusters with WSFC Protect “Cloud First” IT Infrastructure in AWS EC2

The challenge

Gulliver International is a Tokyo-based pre-owned car company. Over the next four years, they plan to expand from 420 locations to 1600 locations worldwide. To ensure their IT infrastructure can accommodate this rapid growth, the company needs to migrate to AWS EC2. Providing HA protection for important applications in AWS was critical to the success of the expansion plan. “We would not consider moving our applications to the cloud without an efficient, easy-to-implement high availability solution,” said Manabu Tsukishima, IT Manager, Gulliver

The solution

Gulliver has begun moving all of its internal IT systems to AWS and has instituted a “cloud-first” policy for all new applications. They are using WSFC and **SIOS DataKeeper Cluster Edition** software to build #SANLess, cloud-based clusters to provide high availability protection for important applications. #SANLess clusters enable them to deploy their application in AWS in minutes and to manage their clusters without changes to their WSFC procedures.



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HA & DR in the AWS Cloud with Cost Saving SQL Standard Edition

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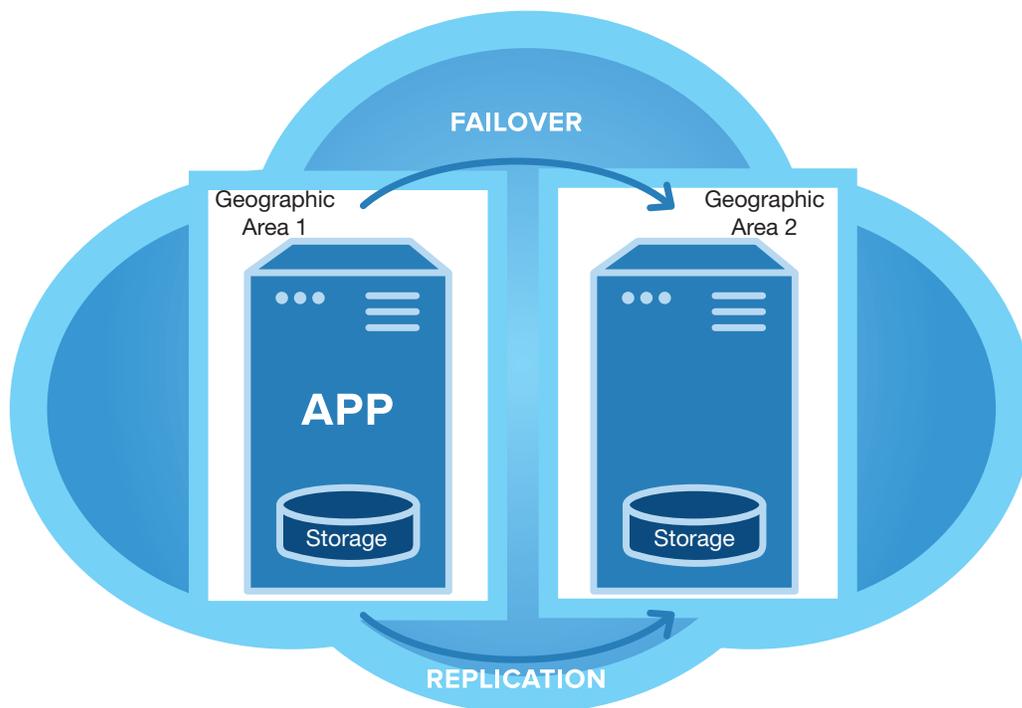
Challenge

To provide high availability and disaster protection for SQL Server in the cloud, you may want to configure a failover cluster with redundant application instances in different geographically separate areas. In an AWS cloud, you can configure each Availability Zone on different IP networks (subnets). However, to support failover across subnets in a traditional cluster environment, you are

required to purchase **SQL Server Enterprise Edition**. However, SQL Server Enterprise Edition can be cost prohibitive for simple two node deployments in this configuration.

Solution

In these cases, **#SANLess** software can be used to provide high availability failover across subnets in an AWS cloud with cost-efficient SQL Server Standard Edition.



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HA & DR in the AWS Cloud with Cost Saving SQL Standard Edition (Cont.)



How does it work?

You can build a cluster using **#SANLess** software instead of WSFC to enable failover of SQL Server Standard Edition across cloud areas, such as AWS Availability Zones or Azure Fault Domains in different subnets.

Benefits

- **Cost-savings.** #SANLess clusters provide high availability protection for SQL Server Standard Edition in two-node clusters across subnets. No need to purchase costly SQL Enterprise Edition.
- **Protection** for the entire application environment. #SANLess clustering software monitors the entire application environment, including application, databases, and network and manages failover to standby server.
- **Flexibility.** High availability and disaster protection for SQL in any combination of physical, virtual and both public and private clouds.

Bottom Line

The best choice for companies that want HA and DR protection and affordability of SQL Server Standard Edition.

CASE STUDY

HA and DR protection without the Cost of SQL Enterprise Edition

The challenge

An online casino and gaming company provides its services through a wide variety of applications running on SQL Server in an AWS EC2 cloud. The company needed to provide HA and DR protection for SQL Server in the cloud without slowing application performance or adding unnecessary cost and complexity.

The solution

The company created a two-node **#SANLess** failover cluster in their AWS EC2 environment using SIOS software. By putting the cluster nodes in different EC2 Availability Zones, this configuration provides both high availability failover protection and disaster protection without the need to purchase costly SQL Server Enterprise Edition. The solution was fast and easy to deploy, allowing them to begin protecting their business' most important applications in a few hours.



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Extend Clusters to the Cloud for DR

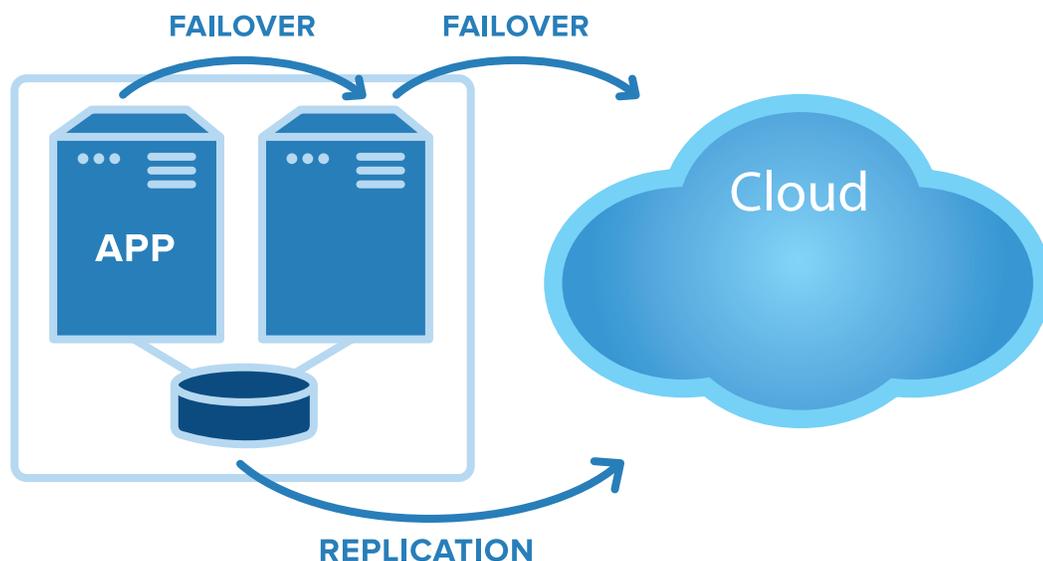


For many years, **Windows Server Failover Clustering (WSFC)** has been used to provide HA and DR protection for SQL applications in traditional on-site environments. Until recently, managing site failures has been very complex and expensive, requiring large investments in specialized hardware and software as well as the availability of a second data center site.

The cloud offers an attractive and cost-effective second site in which to locate a cluster member and to handle a failover when the local site fails. However, because

clusters require a shared SAN between all cluster members across local and cloud resources, this has not been a practical alternative for traditional clusters.

In these cases, **#SANLess** software can be used to create clusters that provide high availability across local and cloud resources.



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Extend Clusters to the Cloud for DR (Cont.)



How does it work?

Extend an on-premises SAN-based or **#SANLess** cluster for SQL Server Standard Edition to the cloud for disaster recovery protection without the cost of a remote recovery site or SQL Server Enterprise Edition licenses.

Benefits

- **Disaster recovery protection.** Failover from on-premises SQL Server environment to a node in the cloud for easy, efficient DR protection
- **Protect entire application environment.** SIOS software monitors entire application

environment, including application, databases, and network.

- **Flexibility.** Add DR protection to an existing physical, virtual, or cloud environment without disruption. Mix SAN and **#SANLess** environments to suit your needs.
- **Cost-effective.** DR without the cost of a disaster recovery site.

Bottom line

Easy, cost-efficient HA and DR solution for companies that are continuing to manage their SQL environments on physical, private cloud, or on-premises VM environment.

CASE STUDY

Failover to the Cloud for Easy DR

The challenge

Canada's leading direct sales company sells its products through a network of 18,000 consultants. They rely on two websites for their critical business operations – a public website that provides product, company, and consultant enrollment information and an internal website that enables consultants to place orders. When they decided to move both websites to their on-premises data center, they needed an efficient, cost-effective way to provide high availability and disaster protection.

The solution

The company uses two instances of SQL Server Standard Edition – one for each website. Using SIOS #SANLess clustering software they created a two-node cluster in an active-passive failover configuration that enables each SQL instance to failover independently. One cluster node is in their data center and the second node is in the AWS cloud. SIOS software provides HA and DR protection without the need to build out a remote DR location or to buy costly SQL Server Enterprise Edition application licenses.



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About protecting your SQL Server in a cloud deployment?

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