Is AWS Really the Right Answer for Microsoft SQL Servers?

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Introduction

Every business is different, and there are scenarios where it makes sense to opt for another cloud provider.

In most cases, however, AWS is simply the optimal platform for Microsoft SQL Servers.

"[The AWS] partner ecosystem and general product strategy are seen as market leading…"

Computerworld UK

COMPETITIVE OFFERINGS CAN'T COMPETE ON:

- Infrastructure and platform maturity
- Availability/reliability
- Push-button scalability, up or down
- Cost efficiency
- Flexible platform configuration
- Range of functionality, tools, and services
- Broad and deep ecosystem of managed service providers

From the Beginning, AWS Factored in Better Availability.

AWS was the first to offer cloud services, and it's still the market leader by a mile.

A fundamental difference between AWS and other providers is AWS' approach in using **multiple Availability Zones within regions**. That means you have more than one isolated and physically separated datacenter per region for low latency, high throughput, and highly redundant networking.

AWS Availability Zones support Microsoft SQL Mirroring with a low-latency inter-connect that allows your **primary and standby databases to synchronize**. Performance typically runs at less than five milliseconds, which is imperative for synchronous replication and **nearly 100% availability**.

> "[AWS] maintained its dominant position with revenues that exceeded the next four closest competitors combined..."
>
> *Synergy Research Group*

WATCH

Learn more about how AWS leads the way in lower latency through custom networking hardware and fiber connectivity among datacenters.
Availability Overview with AWS VP & Distinguished Engineer James Hamilton

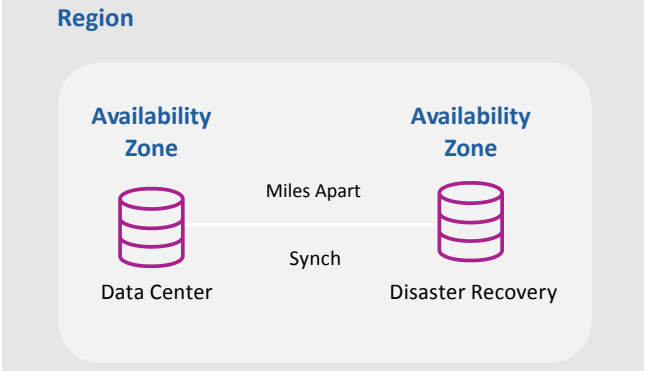
With AWS RDS' multi-AZ option, during planned database maintenance or unplanned service disruption, your database automatically fails over to the up-to-date standby. There's no need for manual intervention. Your primary and standby instances use the same endpoint, and the physical network address transitions to the mirror as part of the failover process.

AWS = IAAS MATURITY + SERVER AVAILABILITY + STANDBY RELIABILITY

On Premise

Other Platform Providers

Amazon Web Services



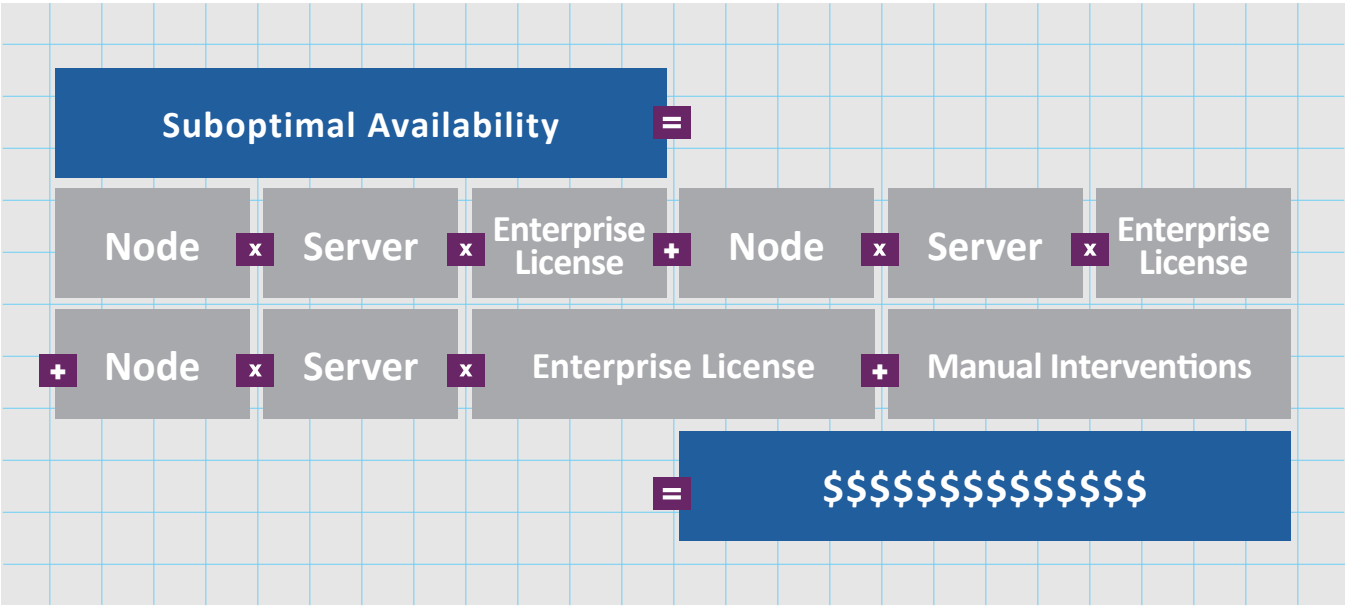
Cost-Efficiencies at the Bottom Line

We often see more than one scenario to enjoy cost savings on licensing. Plans for 12 more Availability Zones and four more regions have been announced. Having multiple datacenters **within Availability Zones *and* across regions** allows you to increase redundancy and fault tolerance. It reduces the risk that region pairs will be too far apart for your primary database and your standby recovery database to synchronize, causing **manual intervention, increased costs for IT resources**, and **longer down times**.

The workaround to not having low latency interconnected availability zones is often adding nodes and back-up nodes with more and more servers and more and more enterprise licenses at a higher cost. This is a nuance some businesses don't learn until it's too late.

The typical method to shore up availability with other cloud providers is the same for on-premises solutions. **This typical method is not a good one**:

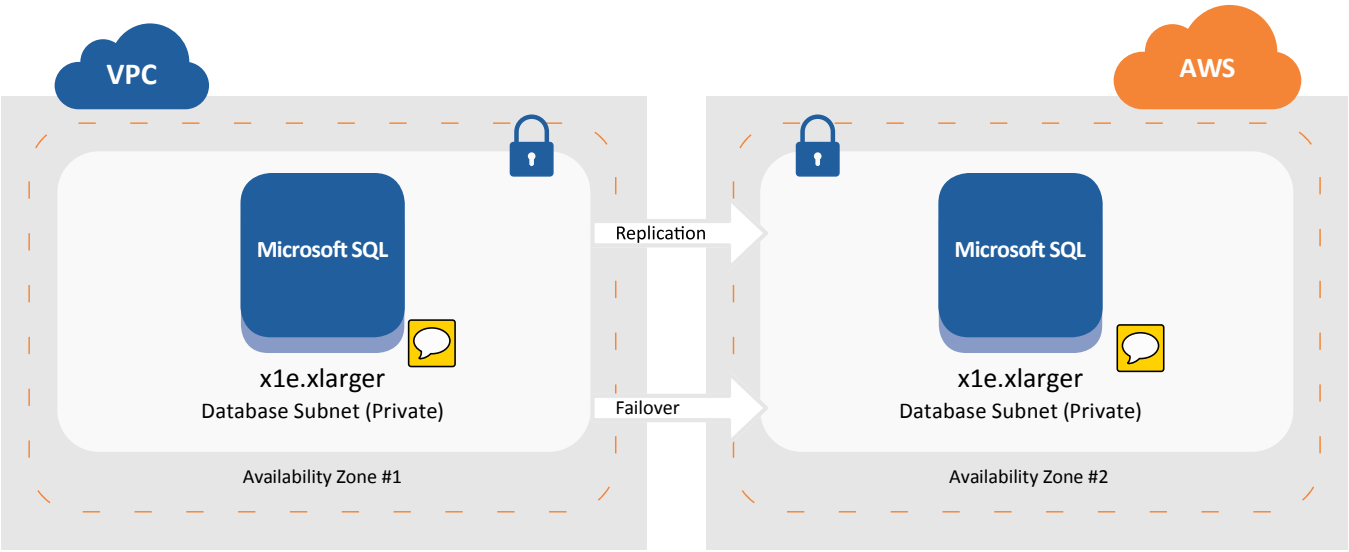
- Deploy three nodes total
- Host two datacenter nodes in a single region (or physical location), configured with AlwaysOn Availability Group, synchronous commits, and automatic failover
- Host a third disaster recovery node in another region (or physical location), which doesn't support automatic failover



TECH TALK: A DEEPER DIVE ON HOW AWS CAN SAVE YOU $10,000 PER NODE IN MICROSOFT LICENSING ALONE

Based on work with our clients to build efficient cloud infrastructure, we often see more than one scenario to enjoy cost savings on licensing. For example, there is a common assumption that Microsoft's AlwaysOn replication technology, which requires costly Microsoft SQL enterprise licensing, is the only way to create highly available SQL environments. But that's just not so. At a high level, here's how you could achieve high availability on AWS at lower Microsoft licensing costs:

- Using a third-party replication solution, such as the SIOS DataKeeper Cluster Edition.
- Performance is supported by the AWS x1 family of instances, which are optimized for large scale, enterprise class, and in-memory applications.
    - The x1e.xlarge option, specifically, has 4 vCPU and 122 GB memory, providing a powerful platform with dedicated SSD disk performance and 10Gbps network configuration.
- Because Microsoft Standard 2017 SQL licensing is calculated as the lesser of four sockets or 24 cores and less than 128 GB memory, x1e.xlarge instances can be used with the SQL standard licensing model.



Practically Infinite Options for the Future

When you do move your SQL server to the cloud, it's often just a first step. **Big data and unstructured data** are becoming increasingly important in understanding customer needs and driving business decisions. AWS has all the capabilities to handle unstructured data built-in. Its DynamoDB is the best environment for HANA, handling up to four terabytes of data in a single instance. AWS offers the **full range of functionality, tools, and services** you need to solve your problems today and plan **for what's next** in driving innovation.

2 Ways to SQL on AWS

Amazon Relational Database Service (Amazon RDS) and Amazon Elastic Compute (Amazon EC2) both offer all the core benefits of AWS cloud computing: easy scalability, high availability, reliable recovery, and significant cost efficiencies compared to on-premises solutions. Choosing the right option is a balance between how much automation you want and how much customization and control you need.

1. **RDS: More Automation**

   Amazon RDS gets your current SQL Server to the cloud, with your applications and tools intact, and manages routine database administration tasks for you. The set-up is simple. You can deploy a Microsoft SQL Server in just a few minutes and use it almost immediately. While it's not typically recommended you do this as your full enterprise cloud migration solution, you may want to try it to get a better feel for how RDS works and what it offers.

   - Supports SQL Server 2008 R2, 2012, 2014 and 2016, including Express, Web, Standard, and Enterprise
   - Pre-configured parameters
   - Storage up to 16TB
   - Automated daily backups
   - Point-in-time transaction recovery
   - Automatic software patches during the timeframes you determine
   - Operational metrics included— compute, memory and storage utilization; input/output; and instance connections
   - Choice of more than 40 event notifications by email or text

2. **EC2: More Control & Customization**

   Unlike a database service, EC2 is a virtual server with a database running on it. With EC2, you trade off the automation of administrative tasks you would get with RDS for complete control. EC2 gives you the same level of control and customization as you would have on premise.

   - Access to the underlying operating system, which you don't have with RDS
   - Support for more SQL Server features and options than RDS
   - Option to bring your own licenses or buy at a discount
   - Service level agreement of 99.99% availability in all AWS regions

How Managed Service Providers Enter the Equation

Selecting and applying the best AWS components in your environment is complex and requires not only in-depth knowledge of AWS offerings, but also a high level of Microsoft competency. The time you would need to spend on maintaining the health of your infrastructure, scripting, and modifying deployments, responding to alerts, and managing capacity is time you're not spending on building applications and achieving your respective strategic goals.

On top of their already gargantuan portfolio of **110 core cloud services**, AWS announced the release of **17 new services**, along with **44 additional service features**, upgrades and products. (Source)

A Service Provider, Not a Server Provider – Ensono Gets You There

At Ensono, we understand that every enterprise is different. As a managed service provider, we take a **consultative approach** that focuses on your core business problems and what we can do to help solve them.

Our clients benefit from our wide knowledge of technical, architectural, and process interdependencies based on our deep experience in knitting together:

- Datacenters
- Different types of cloud environments
- Multiple infrastructure types
- A wide range of business- and mission-critical workloads

Ensono is one of only a handful of AWS Partners with the **Microsoft Workloads Competency**, in addition to a **20-year history of managing critical Microsoft workloads**. We are an AWS-audited managed service provider with the combined Microsoft and AWS skills to deliver migration and operational support for business critical workloads that run on a Microsoft-based operating system, have a SQL Server backend, or are application-based, including .net.

Our dedicated AWS center of excellence interacts with all other disciplines both internally and externally with AWS. Our team includes more than **100 AWS-Certified engineers** possessing more than 100 additional AWS certifications for seamless support across the entire IT stack.

aws partner network

Advanced
Consulting Partner

- Microsoft Workloads Competency
- Public Sector Partner
- MSP Partner
- Channel Partner

aws competency

Let's Connect

Ensono delivers complete hybrid IT services and governance from cloud to mainframe. Let us help you operate for today and optimize for tomorrow.
To learn more, visit www.ensono.com