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Architecting for the future

The benefits of running Windows workloads on AWS

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Introduction

For a long time, technical decision makers have avoided moving mission-critical workloads, such as Windows applications, out of their on-premises data centers. Due to largely unfound fears, many enterprises have considered the cloud unfit for these applications and have limited their use of cloud services to activities such as dev/test and disaster recovery (DR).

However, as more and more enterprises successfully run enterprise applications on the cloud—reducing costs, increasing agility, and spending less time on non-strategic IT initiatives in the process—organizations are realizing that running their own mission-critical applications on the cloud isn't merely feasible—it's necessary. AWS offers over 200 security, compliance, and governance services and key features which is about 40 more than the next largest cloud provider. If you want to maintain and strengthen competitive advantage and deliver superior value for your customers, the constraints of legacy technology are a significant hindrance.

In this section, we will evaluate some of the primary benefits driving organizations to the cloud.

Why and how organizations are moving mission-critical workloads to the cloud

Retiring technical debt and reducing costs

Technical debt refers to additional work that is created when organizations choose technical solutions that are easy to implement but are less efficient in the long run. Most enterprise data centers and IT processes are littered with technical debt that organizations have struggled to eliminate for years. Migrating to the cloud presents an opportunity to eliminate antiquated processes and tools and the technical debt that they carry, increasing operational efficiency. In addition to technical debt, the ability to dynamically scale their IT infrastructure up and down as needs fluctuate helps organizations reduce their IT expenditure. By migrating to the cloud, IT can focus on more valuable and immediate tasks without having to manually perform tedious and time-consumer tasks. The expenses spent on maintenance of in-house servers is also reduced. And, by doing away with racking and stacking servers, storage, and networking equipment, IT pros can spend their time focusing on strategic initiatives that deliver value for the organization and its customers. In addition to technical debt, the ability to dynamically scale their IT infrastructure up and down as needs fluctuate helps organizations reduce their IT expenditure. And, by doing away with racking and stacking servers, storage, and networking equipment, IT pros can spend their time focusing on strategic initiatives that deliver value for the organization and its customers.

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Accelerating digital transformation

By integrating technology into more aspects of their business, organizations can drive new insights and capabilities that allow them to optimize operations and make smarter decisions in real time, something commonly referred to as digital transformation. However, an organization undertaking a digital transformation needs to find ways to minimize risk and accelerate the implementation of new technologies. Cloud services allow an organization to adopt emerging technologies such as machine learning, IoT, and real-time analytics with significantly less capital expenditure and time than attempting to build these solutions from scratch on-premises.

The migration journey

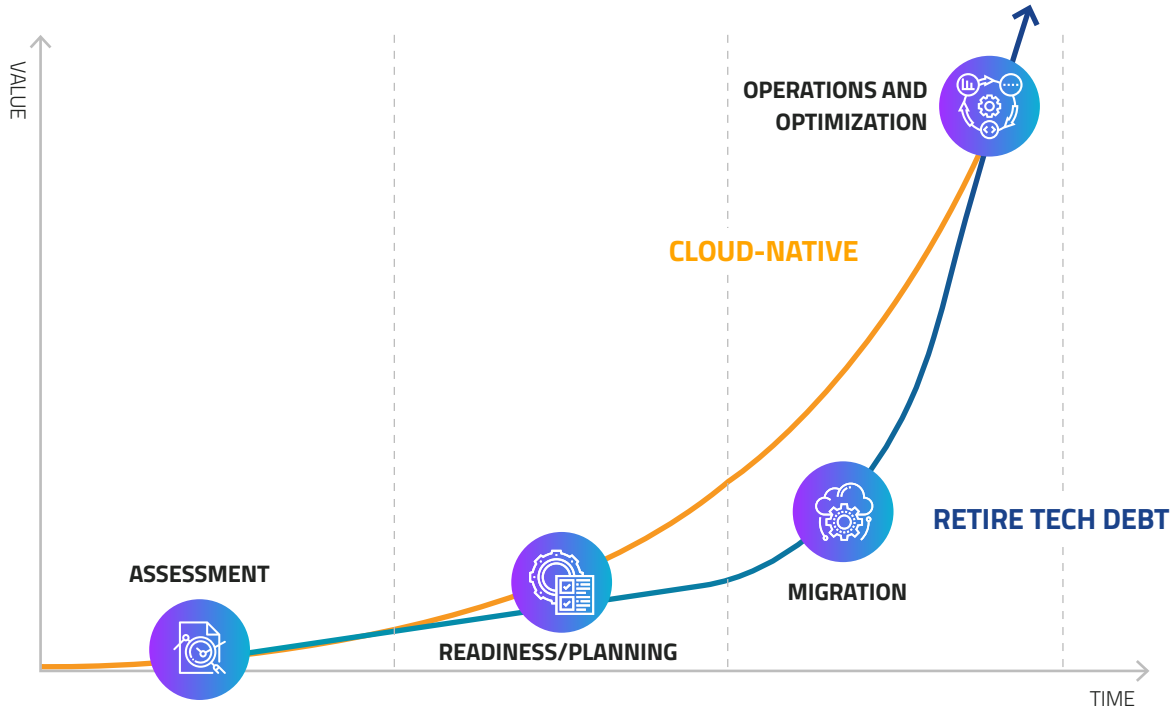
The path to digital transformation is unique for every business. A customer's journey to the cloud typically involves four stages:

1 STAGE **Assessment**

2 STAGE **Readiness/Planning**

3 STAGE **Migration**

4 STAGE **Operations and Optimization**



The migration journey (cont.)

Assessment

In the project phase, you are running projects to get familiar and experience benefits from the cloud. This allows practice and test strategies and procedures in order to understand the benefits offered by utilizing AWS services before you implement them.

Readiness/Planning

After experiencing the benefits of cloud, you then build the foundation to scale your cloud adoption. This includes creating a landing zone (a pre-configured, secure, multi-account environment), Cloud Center of Excellence (CCoE), operations model, and an evaluation of security and compliance readiness.

Migration

In this stage, you migrate existing applications including mission-critical applications or entire data centers to the cloud as you scale your adoption across a growing portion of your IT portfolio.

Operations and Optimization

Now that your operations are in the cloud, you can focus on operations and optimization by taking advantage of the flexibility and new capabilities. This allows you to transform your business by speeding time to market and placing more attention on innovation. Still, in this stage, the need to continue to derive value from existing investments in technology is paramount.

To minimize disruption, your organization needs to develop internal processes and expertise required to successfully operate on the cloud before moving over the entire portfolio of critical applications. This makes a hybrid strategy a logical approach, especially for Windows workloads, which are often among the oldest and most deeply integrated workloads with their existing processes.

Why migrate your Windows workloads to AWS?

Why AWS for Windows?

As technical decision makers look for ways to move their Windows applications to the cloud, they are faced with several providers to choose from.
In this section, we will talk about some of the reasons that organizations choose AWS for their Windows workloads

More migration experience

Increase security

Greater reliability and faster performance

Lower costs

Leverage efficient AWS services for Windows workloads

WHY AWS FOR WINDOWS?

More migration experience

Amazon Web Services has been providing cloud services since 2008. AWS was also the first cloud environment to host a Windows application, with hundreds of thousands of customers across a wide variety of industries running their Windows workloads on AWS.

AWS has unmatched experience over the last 10 years, helping thousands of organizations, including global enterprises such as Sysco, Hess, Sony DADC, Ancestry and Expedia migrate their Windows workloads to the cloud. AWS has translated this experience in their Migration Acceleration Program (MAP), a proven methodology of best practices that is recognized by IDC** as the most extensive library of cases covering thousands of successful migrations. Customers follow this methodology and apply a combination of unique tools and deep expertise from their partners, professional services and support teams to help assess, right size, and move their Windows and SQL Server workloads to AWS.

Customers have successfully deployed every Windows application available on AWS, including (but not limited to) Windows Server, Windows SQL Server, Microsoft Active Directory, Microsoft Office, Microsoft Exchange Server, Microsoft SharePoint Server, Microsoft Skype for Business, Microsoft Dynamics, and Microsoft Remote Desktop Services, and more. Many customers with large volumes of Windows workloads, including Next-Gen Healthcare and Jobvite, are all-in with AWS. Some of the largest enterprises in the world, including Dole, Hess, Expedia, Suncorp, and Pitney Bowes run their Windows workloads on AWS as part of a hybrid architecture.

AWS has an active Premier Support agreement with Microsoft, meaning that customers who host their Windows workloads on AWS receive support from both AWS and Microsoft. AWS is a member of the Microsoft Partner Network, authorized to resell (in lieu of licensed) Microsoft software via the Service Provider License Agreement (SPLA), a License Mobility partner, and a Microsoft Gold Certified Hosting Partner.

WHY AWS FOR WINDOWS?

Increase security

Along with the 210 security services, AWS also supports 89 security standards and compliance certifications including PCI-DSS, HIPAA/HITECH, FedRAMP, GDPR, FIPS 140-2, and NIST 800-171, which is meaningfully more than any other cloud provider. For encryption, all AWS services that store customer data offer the ability to encrypt that data and we offer encryption across 116 different AWS services which is 5X more than the next largest cloud provider.

With AWS, you can provision resources and make them globally available on-demand, eliminating lengthy procurement and deployment cycles. When new business opportunities necessitate IT infrastructure in a geographic region where you don't currently operate, there's no need to build new facilities. The AWS global infrastructure enables you support these initiatives with pay-as-you-go IT resources almost instantly. AWS can also help you improve developer productivity, as it's optimized for DevOps approaches such as continuous integration and continuous delivery (CI/CD), microservices, infrastructure as code, logging and monitoring, platform-as-a-service, and version control.

Create Reliability and Faster Performance

AWS global infrastructure for running workloads that require high availability is the most extensive, reliable, and secure with 69 Availability Zones across 22 Regions. The AWS Region/Availability Zones model has been recognized by industry analysts as the recommended approach for running enterprise applications that require high availability and AWS provides >2x more regions with multiple availability zones than the next largest cloud provider (21 vs. 8). This is one of the reasons why the next largest cloud provider had 7x more downtime hours than AWS in 2018.*

* Testing from DB Best found that SQL Server on AWS consistently shows a 2x-3x better performance using HammerDB, a TPC-C-like benchmark tool compared to the next largest cloud provider. ZK Research also points out that AWS has at least a 2X price/performance advantage overthe next largest cloud provider when comparing the price of a workload, including storage, compute and networking.

WHY AWS FOR WINDOWS?

Leverage efficient AWS services for Windows workloads

AWS offers a far broader selection of services along with much deeper functionality within most of these services than any other cloud provider. We have the widest selection of cloud services, including 48 services where comparable options are simply not available on the next largest cloud provider. Some of these include deeper functionality for Windows such as the AWS Deep Learning AMI for Windows Server and the first and only fully managed native-Windows file system available in the cloud with FSx for Windows File Server.

Customers have more choices than ever before. Across nearly every industry, companies are challenging the status quo and forcing enterprises to rethink the fundamental processes that they have relied on for decades. In the face of this new competition, the modern enterprise needs the flexibility to transform their business models much more quickly than they have in the past. By helping remove barriers such as risk, upfront cost, and complexity of integrating new technologies with your Windows workloads, AWS enables you to architect for the future through AWS offers that span compute, storage, databases, analytics, networking, mobile, developer tools, management tools, the Internet of Things (IoT), artificial intelligence (AI), security, enterprise applications, and more. We're committed to delivering more capabilities than any other cloud provider, and this is reflected in our pace of innovation. Most features and services are built directly based on customer feedback. By migrating to AWS, you are making a strategic investment in your organization's ability to evolve as business demands require it.

Lower Costs

AWS helps customers lower their overall costs of running Windows in the cloud with the most comprehensive customers of Amazon EC2 Spot Instances and unique pricing models like Spot which can help customers save up to 90% on their Windows compute costs. Customer can also save money by moving their Microsoft Licenses to dedicated hosts on AWS like Xero did with their SQL Server migration. Dedicated hosts are also a great option for Windows or SQL Server instances that don't have software assurance. You can't bring those licenses to the next largest provider.

The breadth of services and pricing options offer the flexibility to effectively manage your costs, while maintaining the optimal performance capacity your business requires. Many enterprises have several on-premises data centers and co-location facilities, often managed by several providers. Migrating applications to AWS makes it possible to consolidate this data center footprint down to fewer facilities, simplifying IT management and billing. This also enables you to realize the performance benefits of modern hardware without refresh costs—something that simply isn't possible on-premises. And you can easily right-size your services, helping eliminate the inefficiencies that you may be facing if you overprovision your virtual machines (VMs) on-premises.

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Running Windows workloads on AWS

Windows Server | SQL Server | SharePoint | Exchange | Skype | .NET

Windows Server

Using Amazon EC2 with Windows Server is just like using Amazon EC2 with any other operating system. Amazon EC2 running Windows Server provides seamless integration with existing AWS services like Amazon Elastic Block Store (Amazon EBS), Amazon CloudWatch, Elastic Load Balancing, Auto Scaling and Elastic IPs. Windows instances are available in multiple Availability Zones in all Regions. AWS supports Windows Server 2003 R2, 2008, 2008 R2, 2012 and 2012 R2, 2016, and 2019—meaning you can migrate legacy Windows Server instances to AWS now, then upgrade to a newer version later.

Windows SQL Server

AWS is ideal for supporting line of business applications (such as internally-developed applications, Microsoft Dynamics, SAP applications, etc.) and Windows SQL Server databases that they rely on. You have the flexibility to run Windows SQL Server for as much or as little time as you need, and you only pay for what you use.

If you want to maintain granular control over the configuration and management of your Windows SQL Server database, you can host it on Amazon EC2. Or, you can use Amazon Relational Database Service (Amazon RDS) to turn your Windows SQL Server deployment into a managed service— AWS will handle administrative tasks such as hardware provisioning, patching, backups, and more.

AWS also allows you to use your existing Windows SQL Server-based applications without having to refactor code, which is a common requirement of many other cloud platforms. VM Import/Export allows you to migrate an existing Windows SQL Server database to AWS using a command line interface such as Windows PowerShell.

SQL Server 2008/2008 R2 End of Support
Support ended for SQL Server 2008/2008 R2 on July 9, 2019 and ends for Windows server 2008 in January 2020.. Bring your SQL Server 2008 workloads to the cloud and easily upgrade with AWS Systems Manager.

Running Windows workloads on AWS (cont.)

Corporate applications

You can also rapidly deploy and scale Microsoft SharePoint, Microsoft Exchange, Microsoft Skype for Business (formerly Lync,) and other Windows-based corporate applications used for productivity and collaboration on AWS. Unlike many other cloud platforms, AWS is fully compatible with third-party updates and add-ons. You will never get locked into a contract—take your data and licenses whenever you wish.

One common use case for corporate applications on AWS is upgrading to a modern version. Many organizations are using legacy versions of these applications on-premises, and want the performance, security, and functionality of modern versions. Upgrading to modern versions onpremises would require massive investments in new hardware—in place upgrades are typically not an option. With AWS, you can use the latest versions without this large capital investment.

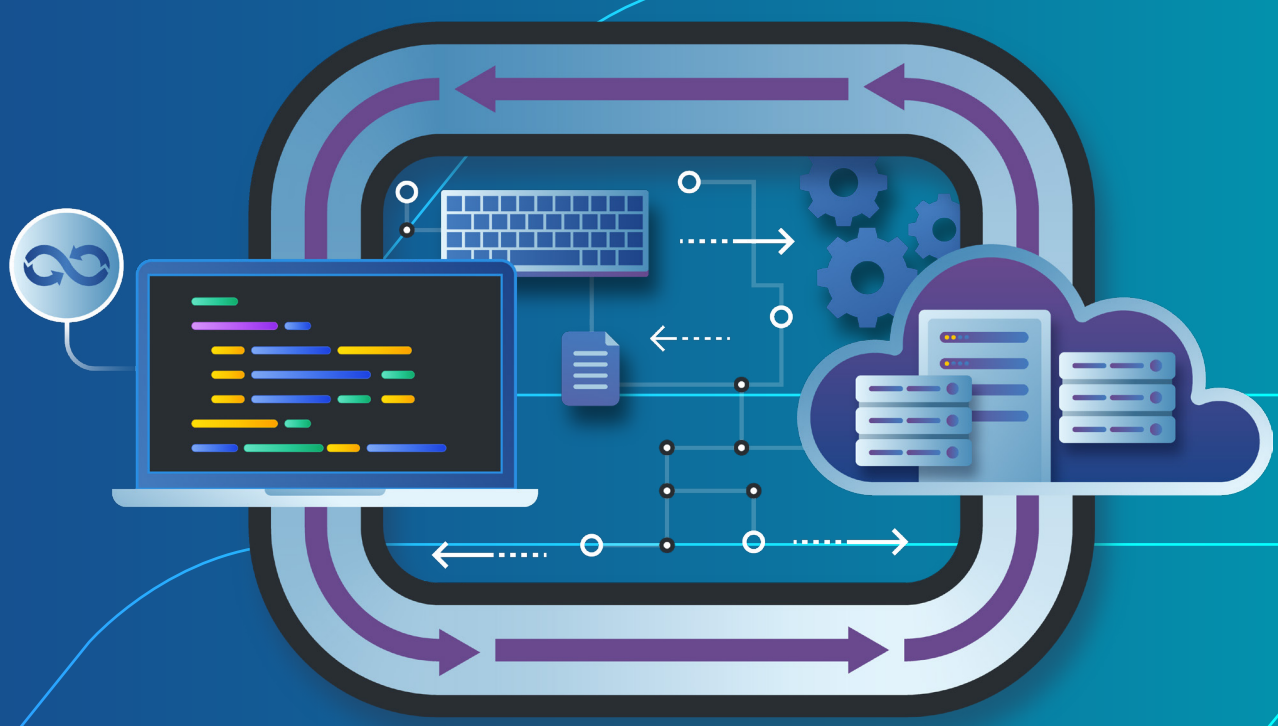
To help improve Microsoft SharePoint performance, you can leverage Binary Large Object, or BLOB offloading using Amazon Simple Storage Service (Amazon S3). AWS CloudFormation is a resource templating service that can be used to automate the creation of entire Microsoft SharePoint server farms.

.NET Dev/Test

Building .NET applications on AWS allows you to leverage cloud agility and automation to complete and deploy projects faster, with lower risk. All the same tools you use on-premises are available, including a broad range of APIs, toolkits for Microsoft Visual Studio and PowerShell, and a .NET Developer Center. Additional third-party applications are available on the AWS Marketplace as Amazon Machine Images (AMIs) or Software as a Service (SaaS) offerings.

Your existing Microsoft Developer Network (MSDN) subscription can be used with Amazon EC2 Dedicated Hosts to help keep costs low.

Licensing Windows workloads on AWS



Licensing Window workloads on AWS

Buy licenses from AWS

Whether using Amazon EC2 or Amazon RDS, when you use AWS license included instances, AWS manages Microsoft licensing compliance, and your licensing spend is rolled directly into your AWS bill. Current and many legacy versions of Microsoft software are available, and Windows Server Client Access Licenses are not required.

Bring your own licenses

The bring you own license (BYOL) approach allows you to capitalize on both your existing license investments and all the benefits of running Windows workloads on AWS.

Using License Mobility through Software Assurance

If you have purchased Software Assurance with your Microsoft software, you may be able to take advantage of your existing Microsoft license investments and move to AWS without paying additional Microsoft licensing fees. The License Mobility benefit is available to Microsoft customers with eligible server applications covered by active Microsoft Software Assurance.

Dedicated Options for licenses not eligible for License Mobility

Amazon EC2 Dedicated Hosts give you access to hardware that's fully dedicated for your use. This allows you to use your own licensed Microsoft software, including Windows Server, on dedicated infrastructure, even without Software Assurance. Amazon EC2 Dedicated Hosts may also enable you to use an active MSDN subscription on AWS for development and testing.

Resources

Additional Resources

Learn more about Windows on AWS

Microsoft Licensing on AWS

AWS and Windows Migration FAQs

To learn more about AWS, visit http://aws.amazon.com

To learn more about Eplexity, visit https://eplexity.com/foundational/aws-windows-migrations/

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