aws partner network

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eBook

Architecting for the future

The benefits of running Microsoft workloads on AWS

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Introduction

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

For a long time, technical decision makers have avoided moving mission-critical workloads, such as Microsoft applications, out of their on-premises data centers. Calling the cloud unfit for these applications due to a number of largely unfounded fears, many enterprises 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. 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.

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. 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.

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

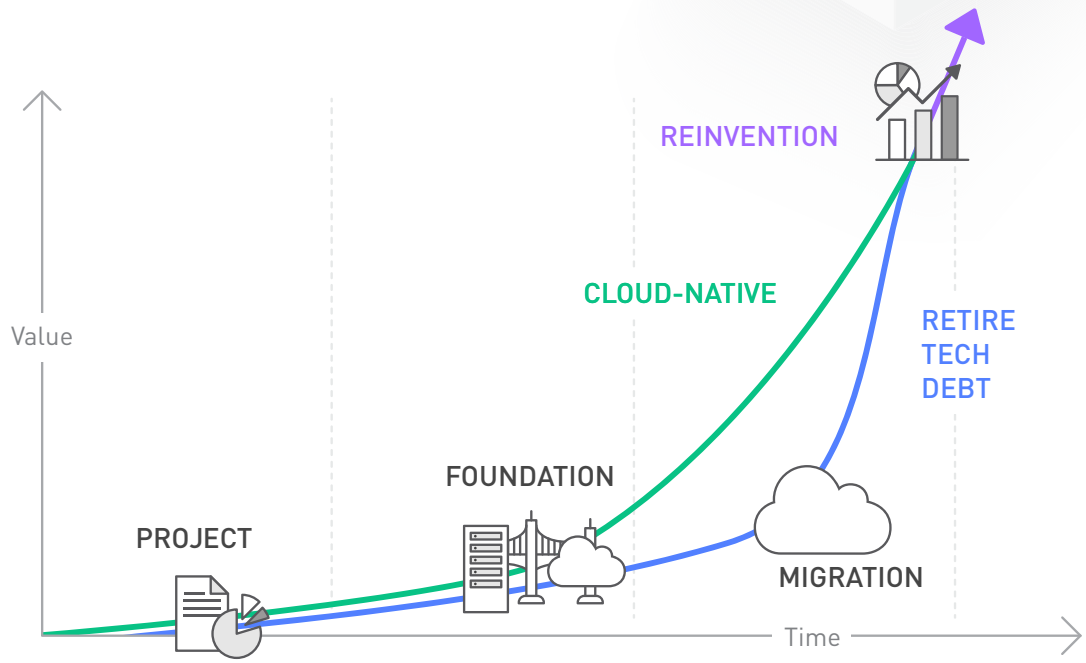
The path to digital transformation is unique for every business. A customer's journey to the cloud typically involves four stages:

Stage 1 — Project/New apps

Stage 2 — Foundation

Stage 3 — Migration and validation

Stage 4 — Reinvention



Stage 1

Project/New apps

In the project phase, you are running projects to get familiar and experience benefits from the cloud.

Stage 2

Foundation

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.

Stage 3

Migration and validation

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.

Stage 4

Reinvention

Now that your operations are in the cloud, you can focus on reinvention 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 Microsoft workloads, which are often among the oldest and most deeply integrated workloads with their existing processes.

AWS is optimized for hybrid cloud deployments, making it easy for you to integrate your existing systems and AWS-based resources in one seamless architecture. In addition to being able to bring your existing management tools, you can use AWS Directory Service to turn your Microsoft Active Directory into a managed service. Leading third-party software products are available from AWS Marketplace, allowing you to continue using the tools you are familiar with on AWS.

*You can learn more about the AWS Cloud Adoption Framework by downloading Stephen Orban's eBook: Migrating to AWS: Best Practices and Strategies.

Architecting for the future

Why migrate your Windows workloads to AWS?

Why AWS for Windows?

As technical decision makers look for ways to move their Microsoft 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.

- Move to a cloud with a proven history of success with Windows workloads
- Leverage breadth and depth of services to transform your business model
- Increase agility
- Reduce costs
- Achieve high availability and uptime
- Tap into an extensive partner network

Move to a cloud with a proven history of success with Windows workloads

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

Customers have successfully deployed every Microsoft application available on AWS, including (but not limited to) Microsoft Office, Microsoft Windows Server, Microsoft Active Directory, Microsoft SQL Server, 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 Microsoft workloads on AWS as part of a hybrid architecture.

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

Increase agility

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.

Achieve high availability and uptime

As of April 2018, the AWS global infrastructure spans 54 Availability Zones in 18 geographic Regions. Each Region includes multiple, physically separated and isolated Availability Zones which are connected with low latency, high throughput, and highly redundant networking. This enables you to make your applications highly available and fault-tolerant. For example, to keep mission-critical Microsoft SQL Server databases highly available, you can combine multi-region deployment with SQL Server mirroring. This enables you to automatically failover to a different Availability Zone to eliminate I/O freezes, and minimize latency spikes during system backups or other I/O intensive activities, such as the filing of monthly or quarterly reports that place a heavy workload on the database.

Leverage breadth and depth of services to transform your business model

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 Microsoft workloads, AWS enables you to architect for the future.

New capabilities delivered per year:

AWS offerings 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.

Reduce costs

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.

AWS is committed to helping organizations minimize the cost of their IT operations and has reduced the cost of our services dozens of times.

Amazon Elastic Compute Cloud (Amazon EC2) Reserved Instances enable you to pay for Amazon EC2 capacity in advance and save up to 70% off the on-demand price. You can bring your existing Microsoft licenses to AWS (we will go into this in further detail later in the eBook), helping you continue to derive value from software investments. AWS Trusted Advisor is another means by which you can reduce costs. It provides real-time guidance to help you provision your resources following AWS best practices. If AWS Trusted Advisor identifies a way to support your applications more cheaply, it will notify you and tell you which changes to make.

Osam International Limited Company

We are a bold team of Architects and DevOps engineers with hunger for challenges and thirst for coffee.
We have been solving digital problems together in various business domains since 2010 and delivering professional services and satisfaction to our clients.
With a team of architects & developers certified by AWS & GCP, OSAM has the expertise and resources to assist companies in all aspects of cloud services, including cloud strategy, planning, design, architecture, build, test, deployment, security, operations, support, and optimization.

Architecting for the future

Running Windows workloads on AWS

Running Windows workloads on AWS

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

Microsoft Windows Server

Using Amazon EC2 with Microsoft Windows Server is just like using Amazon EC2 with any other operating system. Amazon EC2 running Microsoft Windows Server provides seamless integration with existing AWS services like Amazon Elastic Block Store (Amazon EBS), Amazon CloudWatch, Elastic Load Balancing, and Elastic IPs. Windows instances are available in multiple Availability Zones in all Regions. AWS supports Microsoft Windows Server 2003 R2, 2008, 2008 R2, 2012 and 2012 R2, and 2016—meaning you can migrate legacy Microsoft Windows Server instances to AWS now, then upgrade to a newer version later. Amazon EC2 Dedicated Hosts allow you to do this without buying new licenses.

Microsoft SQL Server

AWS is ideal for supporting line of business applications (such as internally-developed applications, Microsoft Dynamics, SAP applications, etc.) and the Microsoft SQL Server databases that they rely on. You have the flexibility to run Microsoft 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 Microsoft SQL Server database, you can host it on Amazon EC2. Or, you can use Amazon Relational Database Service (Amazon RDS) to turn your Microsoft 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 Microsoft 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 Microsoft SQL Server database to AWS using a command line interface such as Windows PowerShell.

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 on-premises 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.

If you want to apply a DevOps approach to your .NET development efforts, AWS is optimized for CI/CD, microservices, infrastructure as code, logging and monitoring, platform-as-a-service, version control, and other DevOps practices. Your existing Microsoft Developer Network (MSDN) subscription can be used with Amazon EC2 Dedicated Hosts to help keep costs low.

Architecting for the future

Licensing Microsoft workloads on AWS

Licensing Microsoft workloads on AWS

Buy licenses from AWS

Using license-included instances allows you access to fully compliant Microsoft software licenses bundled with Amazon EC2 or Amazon RDS instances and pay for them as you go with no upfront costs or long-term investments. For Amazon EC2, you can choose from Amazon Machine Images (AMls) with just Microsoft Windows Server, or with Microsoft Windows Server and Microsoft SOL Server pre-installed. Amazon RDS for Microsoft SQL Server offers databases without the time consuming administrative tasks.

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. Using AWS Marketplace, you can also launch Microsoft SharePoint Server, Microsoft Exchange Server, Microsoft Dynamics, Microsoft Visual Studio, and other Microsoft server products from APN partners with pay-as-you-go pricing.

Bring your own licenses

If you have already purchased Microsoft licenses, you can bring your own licenses (BYOL) to AWS. The BYOL approach allows you to capitalize on both your existing license investments and all the benefits of running Microsoft workloads on AWS. There are two ways to bring your licenses to AWS: by running your Windows workloads on Amazon EC2 Dedicated Hosts, or by using Microsoft License Mobility through Software Assurance. It is important to note that if you choose to bring your own licenses to AWS, you are responsible for ensuring you follow the stipulations of your licensing agreement with Microsoft. If you have questions about your licensing or rights to Microsoft software, please consult your legal team, Microsoft (including the Microsoft product terms), or your Microsoft reseller.

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. You can use AWS VM Import to bring virtual machine images from your on-premises environment to AWS, including both Microsoft software licenses and virtual machine configurations. Customers who wish to use Software Assurance can purchase Amazon EC2 instances with licensed Microsoft Windows Server pre-installed and bring existing licenses for products like Microsoft SQL Server, Microsoft SharePoint, and more.

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 Microsoft 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.

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> After joining WRMP, our system reached a stable state and reduced the downtime by 90%. Compared to the previous on-premises environment, we now rarely receive complaints from customers about system issues

Ha Thanh Son
CTO of 30shine.com, https://30shine.com/

Architecting for the future

Resources

Additional resources:

- Learn more about Windows on AWS
- Microsoft Licensing on AWS
- Windows on AWS Case Studies
- AWS Migration Resources
- Try AWS for Free
- View popular 10-minute tutorials

About AWS

For over 12 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers over 125 fully featured services for compute, storage, databases, networking, analytics, machine learning and artificial intelligence (AI), Internet of Things(IoT), mobile, security, hybrid, virtual and augmented reality (VR and AR), media, and application development, deployment, and management from 54 Availability Zones (AZs) within 18 geographic Regions and one Local Region around the world, spanning the U.S., Australia, Brazil, Canada, China, France, Germany, India, Ireland, Japan, Korea, Singapore, and the UK. AWS services are trusted by millions of active customers around the world—including the fastest-growing startups, largest enterprises, and leading government agencies—to power their infrastructure, make them more agile, and lower costs. To learn more about AWS, visit http://aws.amazon.com.