

Contents

| | |
|---|----|
| Modernizing Microsoft workloads on AWS | 4 |
| Modernization pathways | 5 |
| Application modernization | 6 |
| Modernize from .NET Framework to cross-platform .NET (Windows to Linux) | 7 |
| Database modernization | 11 |
| Modernize from SQL Server to Amazon Aurora or AWS purpose-built databases | 12 |
| Infrastructure modernization | 16 |
| Modernize from Windows VMs to Windows containers (Amazon ECS or Amazon EKS) | 17 |
| AWS tools for modernizing Microsoft workloads | 21 |
| Security and compliance with AWS | 22 |
| Modernize your Microsoft workloads with AWS | 24 |

Executive summary

Modernizing Microsoft workloads on AWS helps organizations reduce technical debt, accelerate innovation, and build a more agile, cost-effective IT environment. By modernizing with AWS, businesses lower operational expenses, eliminate restrictive licensing fees, and gain the flexibility to scale with evolving demands.

Cloud migration is just the beginning—ongoing modernization of applications, databases, and infrastructure unlocks even greater long-term value. With 17 years of experience helping customers transform Microsoft workloads, AWS offers the most comprehensive set of services, programs, and expertise to streamline modernization and drive measurable business outcomes. Companies have used AWS to lower costs, strengthen security, increase performance, and eliminate recurring End of Support (EOS) challenges.

By modernizing Microsoft workloads with AWS, organizations can:

- **Accelerate innovation:** Use advanced tools, including generative AI, to develop faster, more agile applications
- **Lower costs:** Reduce IT expenses with flexible, pay-as-you-go model and purpose-built services
- **Gain license freedom:** Move beyond proprietary ecosystems for greater flexibility and control
- **Improve price/performance:** Optimize workloads with high-efficiency cloud infrastructure
- **Enhance security:** Protect critical data with advanced security and compliance tools

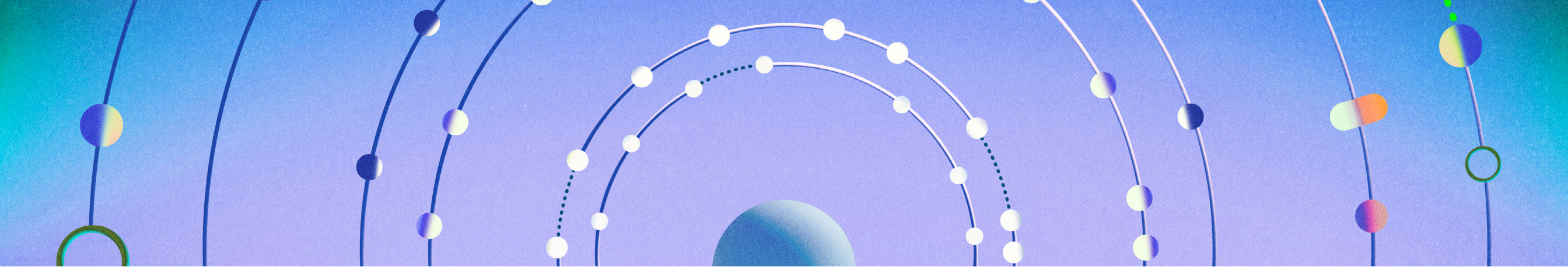
AWS supports three distinct modernization pathways—Application, Database, and Infrastructure—enabling organizations to transition at their own pace while maximizing efficiency and business impact. By modernizing with AWS, companies unlock the agility, resilience, and cost savings needed to stay competitive in a rapidly evolving market.

Modernizing Microsoft workloads on AWS

Modernizing Microsoft workloads on AWS helps organizations reduce technical debt, accelerate innovation, improve performance and scalability, and build a more agile, cost-effective IT environment. With AWS, businesses can lower costs, increase efficiency, and eliminate recurring EOS challenges while improving security and flexibility. AWS provides the broadest portfolio of services and deep expertise to accelerate modernization, allowing organizations to transition at their own pace while maximizing value.

Business benefits of modernization

- **Accelerate innovation:** Use advanced capabilities, including generative AI, machine learning, and analytics, to develop more agile applications and gain deeper business insights
- **Lower costs:** Reduce operational expenses by moving away from expensive licensing models and adopting the AWS pay-as-you-go pricing model
- **License freedom:** Gain flexibility by breaking free from restrictive proprietary ecosystems, allowing greater control over IT resources
- **Improve price and performance:** Use purpose-built services to optimize workload efficiency, achieving better outcomes at a lower cost
- **Enhance security:** Build on a secure cloud foundation with built-in security tools, advanced threat detection, and robust compliance programs
- **Upskill teams:** Develop cloud expertise with AWS training, certifications, and hands-on support from AWS experts, helping IT teams stay ahead



Modernization pathways

AWS offers three key pathways to help organizations modernize based on their specific business needs.

Application modernization

Modernize existing .NET Framework applications to cross-platform .NET, reducing costs and improving scalability. Use [AWS Transform for .NET](#) to accelerate .NET application porting from Windows to Linux up to four times faster.

Database modernization

Modernize from Microsoft SQL Server to [Amazon Aurora](#) or [AWS purpose-built databases](#), boosting performance, reducing maintenance cost, and eliminating downtime.

Infrastructure modernization

Move from traditional Windows virtual machines (VM) to Windows containers to run on [Amazon Elastic Container Service \(ECS\)](#) or [Amazon Elastic Kubernetes Service \(EKS\)](#) for improved scalability, portability, and efficiency.

By modernizing Microsoft workloads on AWS, organizations unlock agility, innovation, and long-term cost efficiency. Businesses can seamlessly transition to a cloud-based environment with comprehensive tools and expertise from AWS, optimizing their IT infrastructure for future success.

01

Application modernization

Modernize from .NET Framework to cross-platform .NET (Windows to Linux)

Modernize existing .NET Framework applications to unlock performance, cost savings, and innovation

Organizations running .NET Framework applications face increasing challenges, including escalating licensing costs, operational inefficiencies, and technical limitations tied to existing platforms. By modernizing .NET Framework applications to the latest cross-platform version of .NET, businesses can overcome these barriers and unlock significant value.

Customers such as [Thomson Reuters](#) and [The Hartford](#) have successfully refactored their applications to run on modern .NET, enabling deployment on Linux and eliminating reliance on Windows Server licenses. This transition not only delivers cost savings of up to 40 percent, but also enhances performance, accelerates innovation, and provides access to the open-source .NET community. Furthermore, modernizing to cross-platform .NET enables organizations to run on [AWS Graviton](#) processors, helping them achieve up to 40 percent better price performance.

Modernizing applications to cloud architectures with cross-platform .NET improves flexibility, scalability, and cost efficiency, enabling organizations to reduce technical debt and future-proof their workloads.

Why it matters

Outdated applications can hinder agility and scalability while driving up costs. Performance bottlenecks, operational inefficiencies, and vendor lock-in prevent organizations from innovating at the pace required in today's competitive landscape.

Modernizing applications to cross-platform .NET resolves these challenges by enabling:

- Greater flexibility with deployment on Linux, Windows, macOS, or containerized environments
- Cost reduction through the elimination of Windows Server licenses
- Enhanced scalability and improved application performance

Key strategies

Use AWS Transform for .NET: Transform your .NET Framework applications to [Linux-ready cross-platform .NET](#) up to four times faster—helping you meet critical business timelines and stay ahead of the competition.

Utilize AWS Graviton processors: Optimize performance and achieve cost savings of up to 40 percent with modernized applications running on AWS Graviton-powered instances.

Adopt cloud-based architectures: Refactor monolithic applications into microservices and deploy them using AWS container services like Amazon ECS or Amazon EKS for improved scalability and maintainability.

Technical highlight

Modernizing to cross-platform .NET on AWS enables high-performance, cloud-based applications with seamless integration for containers, serverless, and cost-effective infrastructure.

Technical considerations

Dependency management

Evaluate outdated third-party libraries or APIs. Replace or upgrade dependencies to maximize compatibility with cross-platform .NET.

Platform-specific code

Identify and refactor Windows-specific calls (such as registry access) to platform-agnostic alternatives for cross-platform compatibility.

Database integration

Optimize database connections and consider transitioning to AWS-managed databases such as [Amazon Relational Database Service \(RDS\) for SQL Server](#) or Amazon Aurora for scalability and reduced management overhead.

Containerization

Assess application architecture for containerization. Decompose monolithic applications into microservices for optimal scalability and maintainability before containerization.

Monitoring and logging

Use AWS tools like [Amazon CloudWatch](#) to monitor applications, respond to performance changes, optimize resource use, and provide insights into operational health. Use [AWS X-Ray](#) to analyze and debug production and distributed applications.

Security enhancements

Follow security best practices, including the use of [AWS Identity and Access Management \(IAM\)](#) for granular access control and encrypting sensitive data with [AWS Key Management Service \(KMS\)](#).

Cost optimization insight

Migrating applications to cross-platform .NET on Linux-based infrastructure reduces costs by eliminating reliance on Windows licenses. AWS Transform for .NET streamlines transformation tasks and slashes operational costs by up to 40 percent.

Case study: Thomson Reuters

Thomson Reuters turbocharged .NET modernization with AWS Transform

About the customer

As a global tech and AI leader powering the legal, tax, and compliance industries, Thomson Reuters is always looking for smarter, faster ways to build. That means staying ahead of the curve—and teaming up with partners like AWS to push what's possible.

The challenge

Thomson Reuters needed a scalable solution to modernize legacy .NET Framework applications that were costly to maintain, slow to update, and holding back innovation—something other cloud tools couldn't deliver.

The AWS solution

The company implemented [AWS Transform](#), an agentic AI-powered tool designed for large-scale .NET modernization that enables parallel processing through both web interface and IDE integration.

Results

- **Modernized 4x faster:** 1.5M lines of code/month
- **30 percent cost savings moving to Linux**
- **50 percent reduction in technical debt**
- **Transformation time: 2 weeks vs. months**

[Learn more →](#)



02

Database modernization

Modernize from SQL Server to Amazon Aurora or AWS purpose-built databases

Unlock scalability, reliability, and cost savings with modernized database solutions

Organizations relying on SQL Server often face escalating licensing costs and restrictive terms that hinder innovation. Modernizing to [Amazon Aurora](#) or [AWS purpose-built databases](#) eliminates these challenges while providing transformative benefits. Amazon Aurora provides unparalleled high performance and availability at global scale for PostgreSQL, MySQL, and DSQL.

Aurora has five times the throughput of MySQL and three times of PostgreSQL with full PostgreSQL and MySQL compatibility. Aurora also offers DSQL, the fastest distributed SQL database that is PostgreSQL-compatible. Aurora is designed for up to 99.999 percent multi-Region availability. With Aurora DSQL, Aurora provides virtually unlimited scale in and across Regions with no infrastructure management. Aurora offers broad compliance standards and enterprise security capabilities, and support for globally distributed applications.

By modernizing to Amazon Aurora or AWS purpose-built databases, customers can innovate faster with their data, achieve greater scalability, and reduce operational complexity.



Why it matters

Outdated database systems often struggle to meet the demands of modern workloads and advanced analytics. As businesses scale and data-intensive applications grow, outdated systems become bottlenecks, limiting agility and driving up costs.

AWS databases provide organizations with:

- **Improved performance:** Optimized for high-demand applications
- **Lower costs:** Eliminate expensive SQL Server licensing fees
- **Flexibility:** Utilize cloud features like machine learning, real-time analytics, and auto-scaling

Key strategies

Use [AWS Database Migration Service \(AWS DMS\)](#): Perform live migrations with minimal downtime and disruption. AWS DMS also supports heterogeneous migrations (such as SQL Server to Aurora), simplifying transitions.

Use **generative AI-powered schema conversion**: AWS DMS now integrates generative AI to automate complex schema conversions, accelerating the migration process.

Modernize to Amazon Aurora: Migrate to a fully managed relational database that offers up to five times the performance of standard SQL databases at a fraction of the cost. With support for MySQL and PostgreSQL compatibility, Amazon Aurora simplifies migrations and application integration while providing advanced features like multi-AZ deployments and auto-scaling.

Adopt AWS purpose-built databases: AWS offers a comprehensive portfolio of [purpose-built database](#) services designed to support a wide range of workloads. Instead of a one-size-fits-all approach, AWS provides databases optimized for specific use cases, including relational, key-value, document, in-memory, graph, time series, and ledger databases.

Technical highlight

Amazon Aurora supports MySQL and PostgreSQL compatibility, enabling seamless migration and application integration while delivering advanced performance features like multi-AZ deployment and auto-scaling. This modernization eliminates the need for expensive SQL Server licensing fees.

Technical considerations

Workload analysis

Determine workload requirements (Online Transaction Processing [OLTP] and Online Analytical Processing [OLAP]) to choose the right AWS database service. For example, use Amazon Aurora for transactional applications or [Amazon Redshift](#) for analytics.

Data migration strategy

Decide between one-time migrations or ongoing replication. Data migration strategy supports both options, supporting flexibility.

Schema optimization

Use [AWS Schema Conversion Tool \(SCT\)](#), a service that helps automate database schema conversions, to analyze existing schemas and identify necessary changes for AWS database compatibility.

Query tuning

Optimize queries for the target database to prevent post-migration performance degradation.

High availability

Configure multi-AZ deployments or read replicas to enhance failover capabilities and improve read performance.

Security and compliance

Encrypt databases using AWS KMS and enforce IAM-based access control. Use [AWS Secrets Manager](#) to more securely manage credentials.

Integration testing

Conduct end-to-end testing to validate seamless application functionality post-migration.

Cost optimization insight

Migrating to Amazon Aurora helps reduce licensing costs by eliminating the need for expensive SQL Server licenses, offering a fully managed, MySQL- and PostgreSQL-compatible service. AWS Aurora pay-as-you-go pricing allows you to pay only for the storage and compute resources you consume, providing flexibility and cost efficiency.

Case study: BMC Software

Transforming database systems to reduce costs and boost productivity

About the customer

BMC Software provides IT solutions that help businesses optimize operations, manage resources, and drive innovation.

The challenge

BMC relied on SQL Server, which led to high infrastructure costs, scalability limitations, and operational inefficiencies. Frequent downtime and maintenance demands hindered innovation.

The AWS solution

BMC modernized from SQL Server to Amazon Aurora using AWS DMS, achieving a seamless, zero-downtime transition. The fully managed database platform improved scalability, reduced overhead, and eliminated licensing costs.

Results

- **42 percent cost reduction:** Lowered infrastructure expenses with Amazon Aurora
- **60-70 percent productivity boost:** Freed database teams to focus on innovation
- **Zero downtime:** Supporting business continuity and improved customer experience

[Learn more →](#)



03

Infrastructure modernization

Modernize from Windows VMs to Windows containers (Amazon ECS or Amazon EKS)

Adopt Windows containers to modernize your infrastructure for improved efficiency, scalability, and agility

Transitioning from Windows VMs to containerized environments is a natural progression in optimizing compute infrastructure. Containers are lightweight, efficient, and utilize resources better, making them an ideal solution for Windows workloads. By containerizing on AWS, organizations can reduce compute, storage, and licensing costs while achieving higher scalability and operational flexibility.

This is a common approach for commercial off-the-shelf applications, where refactoring is not an option due to a lack of bandwidth and skill sets, or the source code is not available. In these cases, moving to Windows containers is a great option to start modernizing Windows Server workloads.

Customers can run Windows containers on Amazon ECS or Amazon EKS, which enable seamless container deployment and management.

By modernizing infrastructure with AWS, organizations gain benefits such as:

- **Higher resource efficiency:** Achieve greater density and utilization of resources
- **Lower total cost of ownership (TCO):** Reduce costs related to infrastructure, licensing, and management
- **Enhanced scalability:** Dynamically adjust resources to meet workload demands
- **Consistent environments:** Enable repeatable deployments, essential for DevOps and CI/CD pipelines



Why it matters

Existing VM-based infrastructure can lead to:

- **Underutilized resources:** Resulting in higher costs and inefficiencies
- **Limited scalability:** Making it difficult to meet fluctuating demands
- **High management overhead:** Consuming IT resources that could be spent on innovation

Containerization overcomes these challenges, delivering optimized resource allocation, faster deployment cycles, and simplified operations.

Key strategies

Containerize existing applications: Use AWS App2Container to easily migrate outdated Windows applications to containerized environments. This tool simplifies the process, minimizing refactoring effort while accelerating migration timelines.

Deploy on AWS Container Services: Choose the right container orchestration service for your workloads:

- **Amazon ECS:** Simplified container management for Windows applications
- **Amazon EKS:** Kubernetes compatibility for workloads requiring open-source orchestration

Automate provisioning: Use [AWS CloudFormation](#) or [Terraform](#) to automate infrastructure provisioning, ensuring consistent deployments across environments and speeding up development cycles.

Technical highlight

Containerized workloads benefit from granular resource management and auto-scaling capabilities on Amazon ECS and EKS.

Technical considerations

Application readiness

Review application dependencies and update outdated components for container compatibility.

Container orchestration

Select the appropriate orchestration service: Amazon ECS for simplicity or Amazon EKS for Kubernetes-based workloads.

Storage solutions

Implement storage solutions tailored to workload requirements, such as [Amazon Elastic File System \(EFS\)](#) for shared file storage or [Amazon Simple Storage Service \(Amazon S3\)](#) for object storage.

Networking

Configure [AWS App Mesh](#) for service-to-service communication and traffic monitoring across distributed applications.

Monitoring and logging

Use [Amazon CloudWatch Logs](#) and AWS X-Ray to monitor container performance and troubleshoot issues in real time.

Security

Enforce fine-grained control using IAM roles and security groups. Protect applications with [AWS Shield](#) and [AWS WAF](#) to help guard against Distributed Denial-of-Service (DDoS) and web attacks.

Cost optimization insight

Containerized workloads on AWS offer cost savings by reducing license costs and improving resource utilization.

Case study: PayByPhone

Modernizing infrastructure to improve performance and scalability

About the customer

PayByPhone is a mobile payment service that enables millions to pay for parking conveniently worldwide.

The challenge

Outdated Windows VM-based infrastructure led to performance bottlenecks and high operational overhead. A modern, scalable solution was needed to optimize resources and improve response times.

The AWS solution

PayByPhone containerized its Windows applications and deployed them on Amazon ECS, streamlining resource management, enhancing scalability, and reducing reliance on VM-based deployments.

Results

- **50 percent faster response times:** Improved parking quote speed for a better customer experience
- **Enhanced scalability:** Dynamically adjusted resources to meet demand
- **Lower operational overhead:** Simplified infrastructure management with containerization

[Learn more →](#)



AWS tools for modernizing Microsoft workloads

Streamline migrations and accelerate modernization

Modernizing Microsoft workloads requires the right tools, resources, and expertise to provide a smooth and efficient transition to the cloud. AWS provides a powerful suite of tools and programs specifically designed to simplify and accelerate the modernization of Microsoft workloads, helping organizations achieve their goals faster while minimizing risk and disruption.

Here are some key AWS tools and programs that support Microsoft modernization:

- [AWS Transform for .NET](#): Accelerate and simplify the migration of existing .NET Framework applications to modern, cross-platform .NET with AWS Transform. This agentic AI service automates complex code refactoring, reduces development time, and minimizes errors, providing a seamless transition to modern architectures. By eliminating the manual effort traditionally required for migration, organizations can focus on innovation while benefiting from improved application performance, scalability, and compatibility with cloud-based technologies.
- [AWS Migration Acceleration Program \(MAP\)](#): The AWS MAP is a comprehensive and proven cloud migration program based upon AWS experience migrating thousands of enterprise customers to the cloud. MAP also uses a proven three-phased framework (Assess, Mobilize, and Migrate and Modernize) to help you achieve your goals.
- [Experience-Based Acceleration \(EBA\)](#): Experience hands-on, agile, and immersive engagements designed to speed up your organization's digital transformation and cloud value realization.
- [AWS DMS](#): Simplify database migrations with AWS DMS. With AI-powered schema conversion and support for heterogeneous migrations, this tool minimizes complexity and downtime while supporting a seamless modernization to AWS purpose-built databases.

Key takeaway

AWS also provides hands-on workshops, tools, and expert guidance to help IT leaders design tailored modernization strategies and achieve their goals faster.

Security and compliance with AWS

Helping organizations modernize with robust security, compliance, and licensing flexibility

Modernizing Microsoft workloads with AWS helps organizations build more secure and compliant environments while reducing costs and enabling innovation. AWS offers a comprehensive suite of security tools, compliance frameworks, and expert resources to help customers meet their unique organizational and industry requirements.

Robust security, built for the cloud

AWS provides advanced security features that help customers protect their data, workloads, and applications:

- **Encryption everywhere:** AWS supports encryption across all services. AWS KMS is a scalable, cloud key management system certified at FIPS 140-3. This means even the most privileged AWS administrators cannot retrieve plaintext keys. AWS KMS also offers an optional quantum computer-resistant encryption algorithm using the NIST-approved Kyber algorithm.
- **Comprehensive compliance:** AWS supports 143 security standards and compliance certifications, including PCI-DSS, HIPAA/HITECH, FedRAMP, GDPR, FIPS 140-3, and NIST 800-171, helping satisfy compliance requirements for virtually every regulatory agency around the globe.
- **Efficient governance:** With [AWS Control Tower](#), organizations can quickly set up more secure, governed cloud environments based on security and compliance best practices. This tool enables faster migrations (up to 46 percent faster) and boosts development team productivity by 21 percent.

The AWS advantage for compliance

AWS delivers a wide range of compliance tools and frameworks to help organizations respond to evolving regulatory requirements:

- Pre-built compliance frameworks for industries such as finance, healthcare, and government, as well as emerging technologies like generative AI
- Support for customer audits with easy-to-use compliance documentation
- Partnerships with global governments and regulatory bodies to support mission-critical workloads

AWS enables organizations to modernize their Microsoft workloads more securely and cost-effectively while breaking free from restrictive licensing models. With industry-leading security tools, flexible licensing options, and an unparalleled compliance ecosystem, AWS provides IT leaders with the confidence to innovate faster and scale smarter.

Security is top priority at AWS.

[Learn more on how the unique culture of security at AWS makes a difference.](#)

Technical highlight

AWS also provides integrations with Microsoft Active Directory through the [AWS Directory Service](#), helping to support seamless identity and access management for modernized workloads.

Case study: Sony Music Entertainment Japan

Unifying cloud security at scale with AWS Security Hub

About the customer

Sony Music Entertainment Japan (SMEJ) is a major music production, distribution, and artist management company serving both domestic and international markets across a broad entertainment portfolio.

The challenge

SMEJ needed to unify fragmented security processes across more than 300 AWS accounts to improve visibility, reduce risk, and support corporate cloud governance policies.

The AWS solution

SMEJ developed SMEJ Guardrail, a centralized security and compliance framework built on AWS Security Hub. This solution automates best practice checks, aggregates findings across accounts, and enables organization-wide visibility into security posture. SMEJ also implemented Amazon GuardDuty for continuous threat monitoring, AWS CloudTrail for auditing, and AWS CloudFormation to codify and scale controls. The framework was built in just three months and eliminates the need for third-party tools or licensing costs.

Results

- **Security coverage:** Standardized controls across 300+ AWS accounts and safeguarded 1,300+ websites
- **Incident reduction:** Reduced security incidents through centralized monitoring and automated remediation
- **Cost efficiency:** Lowered security spend by using fully managed AWS-based services with no third-party licensing fees

[Learn more →](#)



Modernize your Microsoft workloads with AWS

Empower your organization with open-source, cloud-based technologies

Modernizing Microsoft workloads with AWS provides IT leaders with the tools and flexibility needed to break free from restrictive licensing models and embrace open-source, cloud-based technologies. Modernize today to unlock better performance, lower costs, and the agility to scale innovation.

AWS simplifies the modernization journey by offering:

- **License freedom:** Transition from proprietary Microsoft products to open-source, cloud-based technologies that eliminate costly licensing terms and enable greater flexibility.
- **Enhanced performance:** AWS purpose-built solutions for applications, databases, and infrastructure deliver improved efficiency, scalability, and reliability.

- **Built-in security and compliance:** Inherit comprehensive compliance controls with AWS, helping organizations meet even the most stringent industry and regulatory requirements around the globe.
- **Strong partner community:** AWS works with a global network of partners specializing in Microsoft workload modernization. Explore [AWS Microsoft Workloads Competency Partners](#) to find the right expertise for your needs.

By modernizing with AWS, your organization can reduce costs, enhance performance, and unlock new possibilities with cloud-based, open-source technologies.

[Learn more about how AWS can transform your Microsoft workloads.](#)

Key takeaway

[The AWS Partner Network](#) enhances modernization with tailored solutions for Microsoft workloads.