



AWS FOR MIGRATION

Business transformation through digital modernization

Migrating critical applications, infrastructure, operations,
and management to the AWS Cloud

Becoming a modern business

Today's businesses must adapt to rapidly changing market conditions, manage and derive insights from massive volumes of data, and meet the rising demands of today's always-on customers. In short, they must modernize—rethinking processes and leveraging technology to seize opportunities earlier, achieve maximum value from their investments, and innovate faster than ever before.

The impacts of the COVID-19 pandemic further drive these changes. Businesses across all industries must now move even faster to embrace new work styles and drive down costs. **Recent research suggests that more than 90 percent of enterprises are accelerating cloud adoption plans because of COVID-19.**¹

Many organizations are instituting digital transformation initiatives in response to these growing pressures. By embracing new ways of building applications and services, these organizations can connect previously siloed data, streamline processes, and accelerate innovation in ways that delight their customers.

Digital transformation promises substantial rewards, with leading companies achieving critical business advantages such as higher productivity, faster time to market, and a stronger bottom line.

Reaching these rewards can prove challenging, however. Digital transformation represents a massive undertaking involving far-reaching changes to technology, processes, and culture. Breaking the process down into distinct phases can help prevent organizations from losing their way.

Understanding the two stages of digital modernization

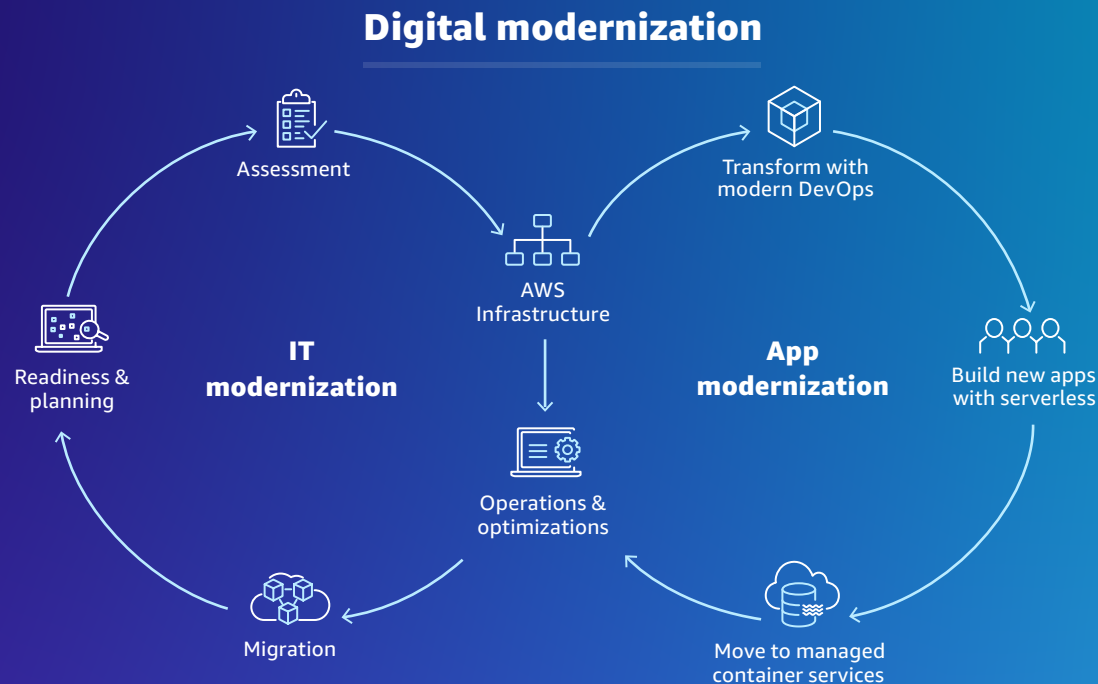
No two modernization projects are the same. In helping thousands of organizations successfully reach their business outcomes, AWS identified two distinct modernization stages.

Many of our customers have found it beneficial to break the larger digital transformation effort into these two stages: IT modernization and application modernization.

1 IT modernization involves transforming legacy systems, processes, workloads, and infrastructure as you migrate to the cloud. This stage will be the primary focus of this eBook.

2 Application modernization leverages cloud-native systems and services to drive a new iterative, intelligent, and agile way of harnessing data and developing applications.

Read on to discover how IT modernization works, why it's important, and how your organization can realize the associated benefits on your path toward digital transformation.



Accelerate IT modernization with cloud migration

The cloud provides the ideal environment for IT modernization. Because cloud vendors build elastic compute, networking, and storage infrastructures with a global footprint, your IT team can spend less time on customer needs and more time pursuing differentiating work.

The cloud makes it possible to convert IT investments from fixed to variable, helping you improve cost-efficiency through pay-per-use models. The right cloud partner can provide you with high availability, fast and efficient storage, and strong security—protecting your reputation and your assets. And the cloud can give you peace of mind for the future. You can scale up or down as your needs change, and your provider will take care of any updates and patches, removing the operational burden from your team.

But before you can take advantage of the cloud, you'll need to migrate your workloads and applications.



Is it time to migrate?

Here are four questions you should ask as you decide whether to migrate to the cloud:

- 1** Is keeping your apps and data on-premises preventing your business from delivering a better customer experience, developing new products and services faster, and ultimately increasing your competitive position and company value?
- 2** Are you spending time finding and training skilled professionals to manage, maintain, and provision hardware and software, manage licenses, create and maintain security postures, and ensure compliance for things that could be relocated or replaced in the cloud with fully managed offerings?
- 3** Is your current infrastructure delivering the performance and scale needed to keep teams working efficiently? Is your critical business data accessible and delivering the insights your business needs to compete? Are your legacy systems integrated with modern systems to deliver optimal customer experiences?
- 4** Does your team have the necessary skills and experience to complete a migration without assistance? Should you engage with a third-party vendor to provide backup and training and help drive your migration? Will working with an experienced provider accelerate the achievement of your migration and modernization goals?

Once you've made some decisions about when and what to migrate, you can start crafting the strategy that will guide you through the actual process of migration. But first, it's important to have a general understanding of that process, how it works, and how it integrates with your broader modernization efforts.

Forging the migration/modernization connection

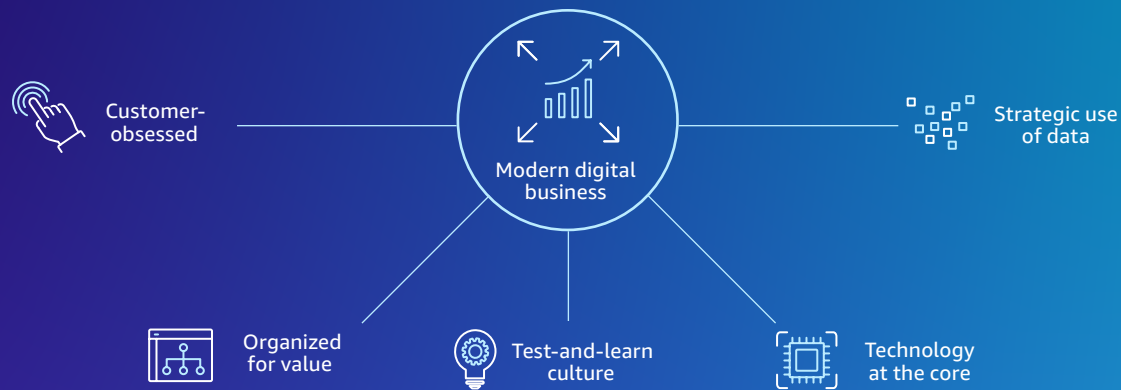
Understanding the migration process is key to taking full advantage of the cloud. One way to think about the move to the cloud is to look to the natural world and other species' migration patterns. Whales, for example, migrate to new environments to gain access to better food and conditions that allow the pod to prosper and grow. Knowing they must move is only one piece of the puzzle; whales must also partake in the process, caring for each other and ensuring all members of the pod have what they need as they adjust to any unforeseen circumstances along the way.

Transforming your business in the cloud is a similar process. First, you choose a provider and migrate your applications, infrastructure, and data. But, just as the whales must adapt to changes as they migrate, it's what you do throughout and after a migration that will enable you to arrive at the ideal destination.

Up to now, we've been speaking about migration as the first phase or starting point of IT modernization. And that's true in the sense that the cloud is the ideal environment for modernization, and migration is how you get there. But it's not always a linear, migrate-then-modernize process.

Migration and modernization are more like two sides of the same coin. The order in which they happen will be unique to your needs and to the characteristics of the workload or app. Migration and modernization will also overlap and intersect, and the right strategy will have you migrating while you modernize and modernizing while you migrate.

Characteristics of a modern enterprise





Planning your modernization strategy

The right strategy can help you migrate and modernize faster, smarter, and with minimal downtime. Use the following three steps to guide you as you consider and create your migration plan:

- 1** Make sure you **build a foundation in Cloud Operations** that will help your team transition to managing, monitoring, and continually optimizing your new cloud resources.
- 2** Consider the tools and services you'll need to efficiently migrate your servers, applications, and data to the cloud.
- 3** Prioritize which workloads will derive the most benefit from cloud infrastructure and cloud-native services.

Once you've devised a solid plan, you'll be poised to choose your migration and modernization partner.

Migrating and modernizing with AWS

When migrating applications and data to the cloud, organizations often start with mission-critical workloads that consume the most resources on-premises and in data centers. Over 1 million active customers have chosen AWS to help them do just that—quickly, strategically, and cost-effectively.

At AWS, we have more than a decade of direct customer experience with thousands of the world's largest enterprises migrating Windows, SAP, VMware, and Oracle workloads. This experience has helped us design and hone our tools, guidance, services, and programs to simplify workload renovation for our customers.

AWS customers can choose from industry-leading free resources, AWS Professional Services, and more than 170 certified AWS Migration Competency Partners to guide your migration and modernization journey.

Our approach to migrating and modernizing enterprise workloads is driving real and measurable outcomes for our customers across cost savings, staff productivity, operational resilience, and business agility.

We've been migrating Windows and SAP workloads for more than 10 years, and we're the first and only VMware public cloud partner to jointly engineer a fully managed solution. We've migrated over 350,000 databases. And we've honed mainframe migration strategies and a partner ecosystem that is being leveraged by some of the world's largest enterprises. Find out why so many organizations choose AWS to help them digitally transform and meet their migration and modernization objectives.



2x

Higher performance for an SQL Server workload than the next largest cloud provider²



5,000+

Active customers running SAP on AWS



43%

Reduction in IT infrastructure costs with VMware Cloud on AWS



350k+

Databases migrated to AWS



70%+

Reduction in IT infrastructure costs with AWS



² When directly testing an r5b.8xlarge instance, according to a [2021 Principled Technologies report](#)

Considering AWS Cloud Operations

AWS has the experience and services to not only assist you with your transition to the cloud—but also to manage your solution. **AWS Cloud Operations** comprise a set of fully managed AWS services, AWS Partner services, and AWS Professional Services, as well as prescriptive guidance and best practices. AWS Cloud Operations can help you build, manage, and govern your application portfolio, overcoming any resource management and compliance challenges to reap the rewards of digital transformation.



Why move to AWS Cloud Operations?

As with any change, you likely want to understand more about the “why” before you take your first steps. Here are some of the reasons AWS Cloud Operations can help your organization thrive in an ever-changing digital world:

End-to-end management of application portfolios

Manage and govern your applications on premises and in the cloud throughout all the stages of delivery. The result? Improved consistency and safety for your deployments, as well as shortened time to resolution for app issues.

Support of modern and traditional development processes

Accelerate application development velocity—no matter what your organization looks like. We'll support you in successfully leveraging the tenets of modern app design, including microservices, containers, and serverless architectures. We have the tools to help you adopt DevOps and build an operations platform to centrally enable your developers. And as you journey toward a fully modernized development process, we can also help you achieve more with your traditional app development.

Cloud and hybrid support

Monitor, manage, and operate app portfolios in the cloud and on-premises. Enjoy a unified view of AWS resources, apps, and services in one control panel. Manage Amazon Elastic Compute Cloud (Amazon EC2) containerized and serverless apps across Windows, Linux, and Mac—securely and at scale.

Improve governance and compliance

Empower your IT operators, cloud architects, and software developers to incorporate your organization's compliance rules and policies into dev processes. You'll reap the rewards of consistency and safety in your deployments, accelerate innovation for your products and services, and elevate your security with infrastructure built for the highest standards of privacy and data protection.

Delivering business agility and control

Building a modern business means protecting the privacy of your customers, securing your data and digital assets, and maintaining regulatory compliance. Unfortunately, these concerns can sometimes run counter to your other business objectives. Without the proper strategies, processes, and technology in place, security and privacy controls can slow down performance, reduce agility, and increase costs.

We understand that you need the right tools to enable your development teams while ensuring you have the controls and guardrails to do your job successfully. That's why we offer the **AWS Cloud Operations Model**—to eliminate the need for you to choose between faster innovation and firm control over cost, compliance, and security.

“...we’ve gone from zero to 100% real-time visibility, a night-and-day contrast with our prior security posture.”

Rafael Garrido, Former Director of Information Security, GE Appliances



The AWS Cloud Operations Model:

- Manages highly dynamic cloud resources at a massive scale
- Offers the most complete set of cloud-native capabilities for Cloud Operations
- Is trusted by more than 1 million customers (more than any other cloud provider)
- **Comprises a broad partner ecosystem**
- Offers a single control plane for management and governance
- Assesses cost savings and analyzes resource utilization

When you monitor the health of your infrastructure with AWS, you'll get a single comprehensive view of your environments, as well as cost transparency, control, and financial management.



Realizing the benefits of IT modernization with AWS

When you modernize your IT, you gain better business agility and control over your applications, data, and infrastructure. You'll reduce costs in a number of ways. And you'll gain easier access to critical data—allowing you to uncover business insights faster and take advantage of more opportunities for growth.

Discover multiple avenues for cost savings

IT modernization drives down infrastructure costs, with the average organization saving 31 percent by migrating and modernizing with AWS.³

Further savings can be realized by reducing or eliminating costs associated with licensing, software patches, maintenance, and capacity and infrastructure upgrades. Modernization frees your IT staff from operational burdens, allowing them to focus on higher-value tasks—like discovering new efficiencies and ways to reduce spend. And, as discussed in the previous section, IT modernization lowers costs through improved security and compliance.

Be sure to consider all of the avenues of cost reduction as you develop your IT modernization plan.

Differentiating yourself with data

Digital transformation truly begins when you go beyond what you do with your apps and differentiate yourself with data insights. The employee, customer, and transactional data you've gathered over years or decades can help you stand out, serving as the foundation for innovation and competitive differentiation at your organization.

AWS has the experience, programs, partners, and services not only to migrate applications and databases to the cloud but also to help you leverage your business data to drive new and differentiated experiences for employees and customers. To achieve this, we provide the broadest set of analytics, artificial intelligence (AI), machine learning (ML), and scalable database options.

Driving modernization through migration

Moving data to AWS opens opportunities to rethink how you build and deliver software. Your move to AWS should include planning for transitioning people skills to AWS Cloud Operations and DevOps. Re-platforming and refactoring applications is your opportunity to drive change and efficiencies in your business.

As you get comfortable with cloud operating models, you can begin to re-platform and refactor applications to experiment with efficiencies, leverage more open-source technologies, and shift operating models away from waterfall to DevOps. These tasks and others comprise the second stage of digital transformation: application modernization.

With AWS, innovation is built in!

We are innovating faster than any other cloud provider today. Each of our more than 200 cloud-native services is available when you're ready to modernize your development, operations, and applications—and, ultimately, your business.

Future-proofing your business for success in a changing world

Now that you know more about IT modernization and the results it can deliver, let's take a look at the specific benefits of working with AWS. Across thousands of successful migrations, we've helped our customers achieve the following⁴:

- 31 percent average infrastructure cost savings
- 43 percent fewer security incidents per year
- 62 percent IT staff productivity boost
- Three times more features delivered per year

Customers from a variety of industries are using AWS to migrate and modernize. For more than 10 years, we've driven successful migrations for organizations across nearly every industry and of all shapes and sizes. Trust AWS to help you transform your business into a customer-centric, digitally savvy enterprise that thrives in today's market—and stands ready to conquer tomorrow's.

"There is no compression algorithm for experience."

Andy Jassy, CEO, Amazon



⁴ Elman, D., "Guidebook: Understanding the Value of Migrating from On-premises to AWS for Application Security and Performance," Nucleus Research, June 2020

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