AWS FOR EVERY APPLICATION

Build and run your applications securely on AWS

AWS offers the most capabilities and continually innovates to help you easily build, run and scale virtually any application

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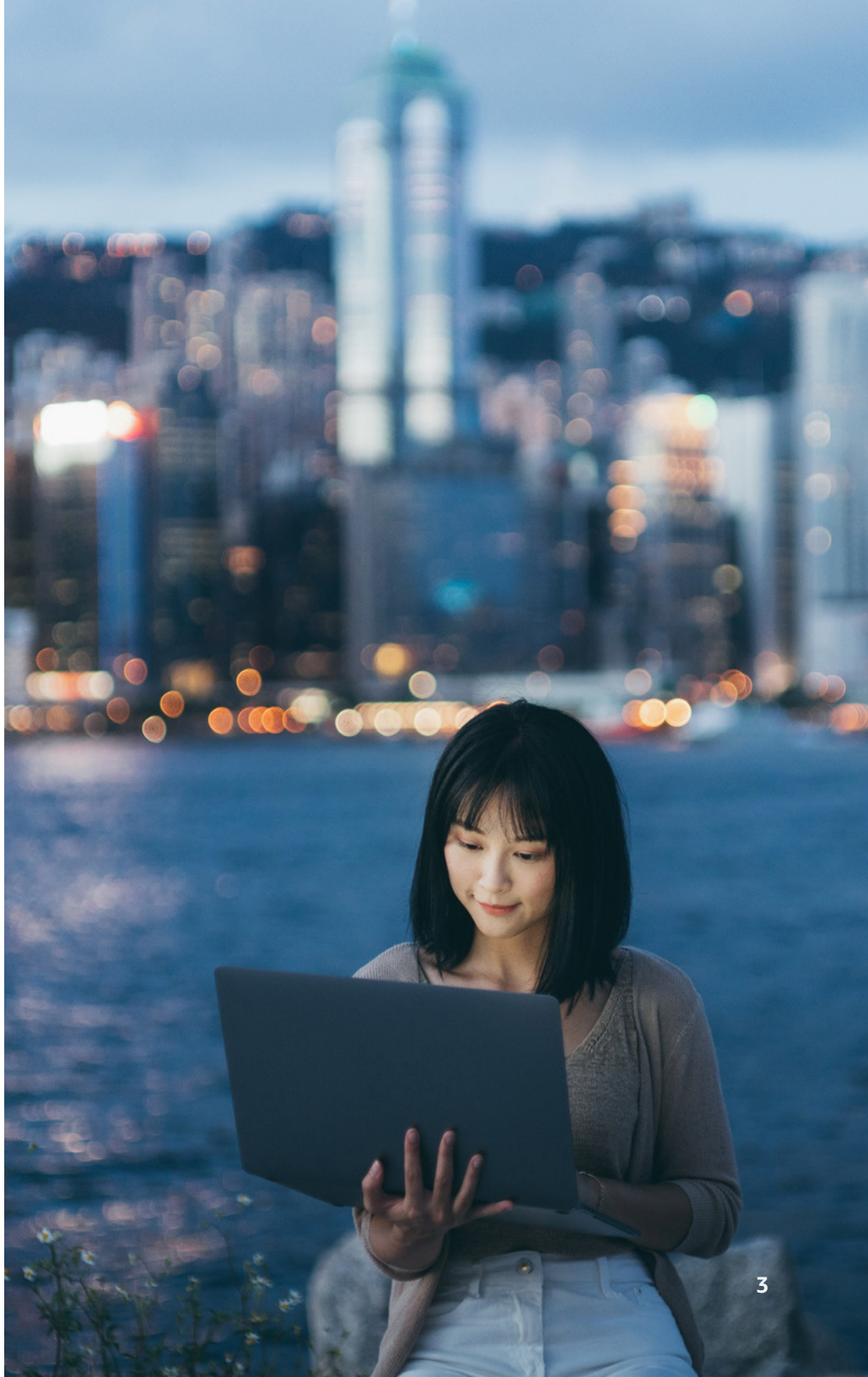
Introduction

In recent years, many companies had a herculean task—to innovate quickly to better serve their customers while staying secure and reliable and keeping costs in check. The cloud provides a platform on which businesses can innovate faster, with 94 percent of US enterprises using the cloud.[1] The types of applications that power businesses and the way these applications are built has evolved significantly in recent years, including:

- Enterprise applications, such as those using SAP, Oracle, IBM, and other enterprise resource planning (ERP) technologies
- High performance computing (HPC) applications running large, complex simulations and deep learning workloads, such as weather forecasting and genomics research
- Modern applications, including serverless, containers-based, and machine learning (ML) applications
- Applications that need low latency to deliver highly responsive experiences, such as real-time multiplayer games or high-frequency trading applications
- Internet of Things (IoT) applications that connect and manage up to billions of devices for industrial, consumer, commercial, and automotive workloads
- Applications that may be running on premises or at the edge due to requirements for low-latency, data residency, or local data processing



[1] "The State Of Cloud In North America, 2022: Modernization And Cloud Native Will Be The New Normal," Forrester, June 2022

According to IDC, an average of 43 percent of applications have already moved to the cloud. The number of applications deployed is growing fast. In two years, over a quarter of companies anticipate having 250 or more applications deployed, which is twice the current number of companies with such large deployments today.[2]

Amazon Web Services (AWS) offers the most comprehensive set of capabilities and continually innovates across infrastructure and services so you can build, run, and scale applications in the cloud, on premises, and at the edge. Millions of customers, including large global enterprises, government organizations, and startups, trust the capabilities, reliability, and security of AWS to run their most important applications, including mission-critical, enterprise, and cloud-native applications, as well as the next generation of applications they need to accelerate digital transformation.

In this eBook, you'll learn why customers choose AWS to build, run and imagine their applications.

Gartner recognized AWS as a Magic Quadrant Leader for Cloud Infrastructure and Platform Services for the 12th straight year.[3]

Forrester rated AWS as the leader in Strategy and Current Offerings categories in the Forrester Wave for Public Cloud Development and Infrastructure Platforms, Q4'22.[4]

[2] "IDC Cloud Pulse 2Q22 Executive Summary: Applications and Workloads," IDC, September 2022
[3] "Magic Quadrant for Cloud Infrastructure and Platform Services," Gartner, October 2022
[4] "The Forrester Wave™: Public Cloud Development And Infrastructure Platforms, Global, Q4 2022," Forrester, December 2022

Top of mind for business leaders and decision makers

Security and reliability

As applications scale to meet global demand, the needs for security and reliability increase. IDC's Cloud Pulse highlights that security is becoming increasingly critical to organizations as the threat landscape changes. This is in part due to the increase in consumption of network-reliant cloud services.[5] More and more companies are looking to their cloud provider to offer built-in security so that they can focus on their applications. Maintaining security and compliance and preventing inadvertent access to sensitive data is top of mind for most business leaders. Furthermore, building, running, and scaling applications without interruptions is crucial for any business. Poor performance, latency, or downtime can severely impact business.

Performance and cost optimization

As businesses grow, applications supporting the business should be able to scale effortlessly. It's also crucial for these applications to have high performance to deliver the best customer experience. In today's environment, business leaders are also pressed to do more with less. They need to deliver on higher performance needs to meet SLAs and drive business growth while managing costs. In fact, according to a global survey, 87 percent of IT decision makers agree their organizations are rethinking IT investments for 2022 and beyond.[6] To increase efficiency, companies need to eliminate any unnecessary heavy lifting and identify the most cost-effective and intelligent way to build and run their applications while remaining flexible to scale capacity up or down.

[5] "IDC Cloud Pulse 2Q22 Executive Summary: Applications and Workloads," IDC, September 2022
[6] "Global Survey: 87% of IT Decision-Makers Are Rethinking 2022 IT Investments Amid Market Shifts," Business Wire, September 2021

Staying competitive and innovative

Cloud computing has unlocked many new opportunities for companies. It offers the flexibility and agility to quickly act on new business opportunities. As business priorities shift, the needs of applications powering the business also change. To stay competitive, companies should have access to the latest technology to improve their applications and deliver new solutions. The IDC Cloud Pulse survey found that the number-one five-year goal across all industries is to innovate and deliver new products and services. The survey also found that 48 percent of IT budgets will be spent on new projects supporting business innovation.[7] Many business leaders are looking for solutions that support the needs of the applications they're running today as well as the ones they'll build in the future.

Consistent experience across development environments

While companies are increasingly deploying their applications in the cloud, they may still need to run some mission-critical applications on premises to ensure faster response times. Some companies also have hybrid and edge use cases where they need to support low-latency applications or process data locally. In such scenarios, inconsistencies across environments can impact productivity or slow innovation. Bringing the same cloud capabilities and management experience everywhere is increasingly becoming a priority for many organizations.

[7] "IDC Cloud Pulse 2Q22 Executive Summary: Applications and Workloads," IDC, September 2022

How AWS helps

AWS solves the modern challenges of building, running, and scaling virtually any type of application by providing a secure and reliable infrastructure and the most capabilities to build and run your applications for today and tomorrow. To meet your unique needs, AWS brings cloud capabilities to applications running anywhere—in the cloud, on premises, or at the edge.

The most secure and reliable cloud for your applications

AWS ensures that companies can build and run their applications with confidence. AWS offers advanced capabilities to protect the most sensitive data with significantly more security, compliance, and governance capabilities than any other cloud provider, including compliance certifications for PCI DSS, HIPAA and HITECH, FedRAMP, GDPR, FIPS 140-2, and NIST 800-171.

Organizations handling sensitive data, such as personally identifiable information (PII), digital assets like cryptocurrency, and other financial information, have stringent privacy and confidentiality requirements. AWS delivers confidential computing with the AWS Nitro System, the foundation of our modern compute infrastructure. The AWS Nitro System provides built-in security at the chip level and continuously monitors, protects, and verifies the instance hardware and firmware. AWS Nitro Enclaves, a feature of Amazon Elastic Compute Cloud (Amazon EC2), enables customers to create isolated compute environments to further protect and securely process highly sensitive data.

AWS Graviton processors, which are custom-built by AWS, include key capabilities so that customers can run their cloud-native applications securely. AWS Graviton3 processors feature always-on memory encryption.

Amazon Simple Storage Service (Amazon S3) supports both server-side encryption and client-side encryption for data uploads. Amazon S3 offers flexible security features to block unauthorized users from accessing customer data and is the only object storage service that allows customers to block public access to all of their objects.

Dropbox

Customer story

Dropbox

Dropbox is a cloud-based file hosting and synchronization service that acquired the electronic signature and storage service HelloSign in 2019. Since then, HelloSign has grown to provide more than 80,000 users with the ability to send, sign, and store documents as of 2021.

Challenge

HelloSign wanted to boost its security posture, including gaining visibility into its web application security and proactively identifying stored PII data. It needed to ensure that its services were highly available and performant while protecting them from distributed denial of service (DDoS) and other security events.

Solution

In just six months, HelloSign upgraded its security beyond industry standards by using a suite of scalable, customized security tools from AWS. As a result, HelloSign saved approximately $1 million per year in triage time for security operations, staffing, and licensing costs, averted 12 DDoS events, and gained visibility into its security posture.

Read more about Dropbox and HelloSign on AWS here ›

Higher performance at lower costs for virtually any application

AWS continually innovates for customers to improve performance and optimize costs. AWS works closely with partners such as Intel, AMD, and NVIDIA, to bring their latest offerings to the cloud and deliver better price performance to customers. With a long and proven history in silicon innovation, AWS innovates to deliver even better price performance by designing processors and chips.

With the AWS Nitro System, Amazon EC2 instances can deliver more than 15 percent higher throughput performance on some workloads as compared to other major cloud providers running the same CPU. AWS Graviton2–based instances deliver up to 40 percent better performance for their price and use up to 60 percent less energy over comparable x86-based instances. AWS Graviton3 processors, the latest in the AWS Graviton processor family, provide up to 25 percent better compute performance compared to AWS Graviton2 processors.

AWS has purpose built AWS Trainium and AWS Inferentia to deliver higher performance at a lower cost for increasingly complex, large-scale generative artificial intelligence (AI) applications. AWS Trainium–based Trn1 instances offer up to a 50 percent cost-to-train savings over comparable GPU-based instances. To deploy AI/ML applications, AWS Inferentia2–based Inf2 instances deliver up to 70 percent better price performance over comparable GPU-based instances. With Amazon SageMaker, developers can easily take advantage of these instances to train and deploy ML models and reduce their development time and cost.

Cost-effective storage options and Amazon S3 Intelligent-Tiering help reduce overall storage costs. AWS Savings Plans help reduce costs for Amazon EC2, AWS Fargate, and AWS Lambda usage. Lastly, AWS Compute Optimizer offers actionable recommendations to optimize costs.

Customer story

Epic Games

Epic Games is the interactive entertainment company behind *Fortnite*, one of the world's most popular video games, with over 400 million players.

Challenge

Epic Games required a reliable cloud provider with highly scalable and globally accessible capabilities to support the delivery of interactive online games and experiences to millions of people worldwide.

Solution

Fortnite runs almost entirely on AWS and has achieved a level of scalability never seen before in the gaming industry. Epic Games leveraged Amazon EC2 instances powered by AWS Graviton processors to automatically scale compute capacity and meet constant fluctuations in player demand, supporting up to 30 times load during peak times while providing significant price performance benefits.

Read more about Epic Games on AWS here ›

Bringing the cloud capabilities to applications running anywhere

Many applications need to live on premises due to requirements for low latency, data residency, or local data processing. Some companies also want to modernize their applications on premises before moving them to the cloud. AWS brings the cloud with a consistent experience wherever you need it—in the cloud, on premises, and at the edge. With AWS, companies can innovate faster by using the same infrastructure, services, and tools to build and run applications anywhere.

AWS has the most extensive **global infrastructure** across 31 global regions, 99 Availability Zones, 32 Local Zones, 29 Wavelength Zones, and over 410 Points of Presence (PoPs) to deliver highly responsive, reliable, and fault-tolerant experiences for any application.

AWS Outposts, a family of fully managed solutions, deliver AWS infrastructure and services to virtually any on premises or edge location for a truly consistent hybrid experience.

Amazon Elastic Container Service (Amazon ECS) Anywhere and Amazon Elastic Kubernetes Service (Amazon EKS) Anywhere enable you to run containers in different locations, including on infrastructure you manage, using the same APIs and management tools that you use in the cloud.

Amazon CloudFront, a content delivery network (CDN), can be used to cache content globally at the edge to improve performance at scale. With CloudFront, businesses can stream live and on-demand multimedia content and websites with low latency and high transfer speeds to end users.

MORNINGSTAR®

Customer story

Morningstar

Morningstar is a leading global provider of independent investment research and products and services for financial advisors, asset managers, retirement plan providers and sponsors, and individual and institutional investors.

Challenge

Morningstar was looking to achieve more infrastructure agility so its developers could create better quality products and deliver value to customers faster.

Solution

AWS Outposts fully managed racks reduced the overhead management time, allowing the developers to gain the same performance on premises, benefiting Morningstar's clients with faster turnarounds. The ability to seamlessly migrate their applications to an AWS Region accelerated their cloud adoption.

Learn more about Morningstar on AWS here ›

The most capabilities for your applications—today and tomorrow

AWS innovates on behalf of its customers to offer a choice of services that best meets their applications' needs. AWS offers more than 200 fully featured services, including serverless and ML capabilities. These services enable customers to build a wide range of applications, including mission-critical applications, HPC, ML workloads, data lakes and analytics, and mobile apps. AWS offers more than 600 compute instances with a selection of processor, memory, networking, and storage configurations. Instances also provide a choice of operating systems.

AWS offers layers of abstractions for compute so that companies have the choice to pick the level of control or convenience they want. In fact, thousands of customers are opting for serverless and container-based solutions and benefiting from faster deployments, higher productivity, fewer security incidents, and lower costs.

AWS serverless services include AWS Lambda, an event-driven compute service natively integrated with more than 200 AWS services and software-as-a-service (SaaS) applications.

Amazon ECS, a fully managed container orchestration service, makes it easy to deploy, manage, and scale containerized applications. Amazon EKS reduces operational costs with efficient compute resource provisioning and automatic Kubernetes application scaling.

AWS offers the broadest choices of storage services and deepest functionalities, so customers can store, protect, and analyze any amount of data for virtually any application in the cloud, on premises, and at the edge.

Lastly, AWS is building the future of computing with IoT, 5G, HPC, robotics, and quantum technologies to unlock new capabilities and deliver them in ways that are secure, reliable, and seamlessly integrated with AWS.

aws

Customer story

Coca-Cola

The Coca-Cola Company is a total beverage company selling products in more than 200 countries and territories.

Challenge

Coca-Cola wanted to quickly meet new customer demands during the pandemic with an innovative contactless mobile drink pouring application: Freestyle.

Solution

Using the broad capabilities of AWS, the Freestyle team created a serverless web app while working remotely and deployed the frictionless, near real-time solution within four months of the initial idea and is now serving 30,000 machines. The mobile pour app prototype was launched in one week during the COVID-19 pandemic.

Read more about Coca-Cola on AWS here ›

Future-proof your business for success in a changing world

Now that you know more about the unique capabilities AWS offers to support your applications, let's take a look at the specific benefits customers have achieved working with AWS. Across thousands of successful migrations, we've helped our customers achieve the following:[8]

- 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 their applications. For more than 10 years, we've driven successful migrations for organizations across nearly every industry of all shapes and sizes. Learn how AWS can help you with your digital transformation by offering the most secure, reliable, and capable cloud infrastructure for virtually every application.

Get started today

Learn more about AWS for Every Application ›

Read customer success stories ›

Explore AWS migration solutions ›

[8] "UNDERSTANDING THE VALUE OF MIGRATING FROM ON-PREMISES TO AWS FOR APPLICATION SECURITY AND PERFORMANCE," Nucleus Research, Inc., 2020