10 ways to optimize costs and innovate with AWS

Increase application performance at lower costs

Today's decision makers and business leaders are pressed to accomplish more with fewer resources. Amazon Web Services (AWS) can help you optimize infrastructure costs and accelerate innovations to future-proof your business.

Explore 10 ways AWS enables you to maximize savings and achieve transformational business value as you build, run, and scale your applications on AWS.

20%

Organizations that moved from on-premises to AWS achieved an average infrastructure cost savings of 20%[1]

Migrating on-premises infrastructure to AWS achieves quantifiable business value in the areas of resiliency, agility, cost savings, and staff productivity, according to The Hackett Group's Cloud Services Study.[2] Applications that migrated to AWS at least 12 months ago achieve the following post-migration changes in performance and value:

43%
faster launch time for new application features or functionality[3]

29%
increase in staff focus on innovation[4]

66%
increase in administrator productivity[5]

45%
decrease in security-related incidents[6]

#1 Migrate your applications to AWS

Migrate any workload to AWS. Leveraging our years of experience to gain business benefits at every step of the way. Save on third-party licensing costs and run your resources more efficiently with the **AWS Optimization and Licensing Assessment** (AWS OLA). Achieve industry-leading performance, enhanced productivity, and faster innovation—at lower costs—with infrastructure powered by the latest-generation processors and AWS-designed silicon optimized for the cloud.

129x
Since its inception, AWS has reduced prices 129 times

#2 Choose the instance type that matches your application needs and budget

AWS offers more than 600 instances, across any other cloud provider. Grouped into **six categories of instance types**, each instance includes one or more sizes and provides a choice of processor, storage, networking, and operating system. This allows you to scale your resources and choose configurations that match your specific needs—improving performance and optimizing your spend.

6 categories of AWS instance types

- **General purpose** ›
- **Compute optimized** ›
- **Memory optimized** ›
- **Accelerated computing** ›
- **Storage optimized** ›
- **High performance computing (HPC) optimized** ›

#3 Optimize costs for Windows applications

AWS supports everything you expect to build and run on Windows, including Active Directory, .NET, SQL Server, Windows desktop as a service (DaaS), and supported versions of Windows Server. With AWS as the foundation for your Windows environment, there's no limit to the range of business benefits you can achieve.

56%
reduction in 5-year cost of operations[7]

37%
lower infrastructure costs[7]

98%
less unplanned downtime[8]

442%
ROI over 5 years[9]

#4 Move your workloads to AWS Graviton

AWS Graviton processors are designed by AWS to deliver the best price performance for a broad set of applications running on **Amazon Elastic Compute Cloud** (Amazon EC2). They can help you increase performance, reduce costs, reduce latency, and achieve better scalability. Migrate in less than four hours with the **AWS Graviton Fast Start** program or accelerate adoption with the help of **AWS Graviton Partners**.

Achieve up to
40%
BETTER PERFORMANCE
at lower costs[10]

Use up to
60%
LESS ENERGY
for the same performance[11]

#5 Reduce costs with AWS machine learning accelerators and managed services

AWS machine learning (ML) accelerators and managed services help you to cost-effectively leverage the benefits of ML. With **Amazon SageMaker**, a fully managed ML service, you can simplify ML development and use purpose-built ML accelerators, such as **AWS Trainium** and **AWS Inferentia**, to optimize training and deployment of ML models. This combination allows you to speed up your ML workloads, lower your costs, and bring your solutions to customers faster.

AWS Inferentia ›
Designed for ML inference applications; delivers up to 70% lower cost per inference[12]

AWS Trainium ›
Purpose-built for deep learning (DL) training; delivers up to 50% cost-to-train savings[13]

Amazon SageMaker ›
Fully managed service that offers high-performance and low-cost ML at scale

#6 Optimize costs and accelerate innovation with serverless computing

Serverless computing with AWS Lambda and AWS Fargate optimizes costs by eliminating infrastructure management tasks and enabling you to build and iterate quickly—releasing features in hours instead of days. AWS serverless also allows you to scale automatically, automate security and compliance, reduce total cost of ownership (TCO) by requiring fewer resources, and minimize unplanned downtime.

57%
AWS serverless services reduce TCO by up to 57%[14]

#7 Select the compute purchase model that best fits your budget

AWS offers you a choice of flexible, cost-effective purchase models to meet your infrastructure needs while keeping you within your budget.

On-Demand Instances ›
Pay for compute capacity by the hour or second with no long-term commitments or upfront payments.

Amazon EC2 Spot Instances ›
Take advantage of unused Amazon EC2 capacity to achieve up to 90% lower costs.[15]

Savings Plans ›
Reduce your bill by up to 72%[16] with a 1- or 3-year hourly spend commitment—and add to the over $15B AWS customers have saved since Savings Plans launched.

Amazon CloudFront Security Savings Bundle ›
Save up to 30% on your Amazon CloudFront bill in exchange for a 1-year monthly spend commitment.

$15B
of savings for AWS customers since Savings Plans launched

#8 Optimize costs with a choice of storage services

Get the right mix of price and performance for your workloads while paying only for the storage that you use. AWS Storage services, such as **Amazon Elastic Block Store** (Amazon EBS), **Amazon Simple Storage Service** (Amazon S3), **Amazon Elastic File System** (Amazon EFS), and the **Amazon FSx file system family**, can help you minimize TCO—while eliminating on-premises capital equipment investment, management complexity, and infrastructure maintenance.

Amazon EBS Snapshots ›
Lowers snapshot storage costs by
UP TO 75%

Amazon S3 Intelligent-Tiering ›
Has reduced our customers' storage costs by more than
$1B
compared to Amazon S3 Standard[17]

Amazon EFS ›
Reduces storage costs by
UP TO 92%

Amazon FSx ›
Lowers storage costs up to
60%

#9 Optimize your compute resources with intelligent AWS tools

AWS Compute Optimizer and **AWS Auto Scaling** allow you to provision resources with precision. They can help you lower costs by responding to changes in real time and are free to use. Plus, **Amazon S3 Intelligent-Tiering** automates storage cost savings by moving data when access patterns change.

AWS Compute Optimizer ›
Recommends the optimal AWS resources for your workloads and has provided more than
10B
recommendations since launch

AWS Auto Scaling ›
Monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest costs.

#10 Optimize costs and productivity with hybrid cloud and edge services

Bring AWS infrastructure and services where you need them to help your digital transformation projects get up and running faster—and enable higher productivity virtually anywhere.

Featured services:

- **AWS edge networking services** ›
- **AWS Local Zones** ›
- **AWS Outposts** ›
- **AWS Snow Family** ›
- **VMware Cloud on AWS** ›
- **AWS Wavelength** ›

Next steps

Start improving your application performance today and reach your highest savings potential with AWS.

1. **Explore AWS migration solutions** ›
2. **Learn more about AWS for Every Application** ›
3. **Start maximizing your savings with AWS Cost Optimization** ›

[1] The Economic Value of Migrating to Amazon Web Services. The Hewlett Group, February 2021.
[2] The Hackett Group Cloud Services Study: Migrating Applications to AWS. The Hackett Group, 2019.
[3] The Economic Value of Migrating Running Oracle Workloads to the AWS Cloud. IDC white paper sponsored by AWS, June 2019.
[4] Measuring the Economic Impact of AWS. IDC, 2018.
[5] Server Unleashed. IDC, October 2017.
[6] Measuring the Economic Impact of AWS. IDC, 2018.
[7] Forrester Total Cost of Ownership, "Estimating ROI and Economic Value" Timeline, 2012
[8] Measuring the Economic Impact of AWS. IDC, 2018.
[9] Forrester TEI for Amazon RDS
[10] Amazon EC2 M6g instances
[11] Amazon EC2 C6g instances
[12] Amazon EC2 Inf1 instances
[13] Amazon EC2 Trn1 instances
[14] Serverless Total Cost of Ownership Calculator
[15] Amazon EC2 Spot Instances
[16] Savings Plans
[17] Amazon S3 Intelligent-Tiering