

02.17.22

AWS Cloud Migration Guide

Taking your data to the AWS cloud



Introduction

We've assembled this guide to help you plan your AWS cloud migration strategy, govern data across hybrid environments, and accelerate your deployment of data and analytics capabilities to the cloud.

If you've asked any of the following questions, then this guide is for you.

- Why are so many companies moving to the cloud?
- What are the benefits of cloud migration?
- What should I consider before starting a cloud migration?
- What are the steps of a successful cloud migration strategy?
- How long will a cloud migration take?
- What are the costs associated with cloud migration?
- Do I need cloud migration consulting services?

Why are so many companies moving to the cloud?

If it feels like everyone you know has or is moving to the cloud, you're right. According to *Hosting Tribunal*, 94% of enterprises already use a cloud service. And the demand is only expected to grow.

Many sectors previously reluctant to adopt cloud computing are making the move, helping organizations respond more quickly to office closures, supply chain disruptions, and shifting customer expectations.



21.7%

Increase in end-user spending on public cloud services from 2021 to end of 2022 ([Gartner](#))



90%

Volume of data and analytics innovation will be dependent on public cloud services by 2022 ([InformationWeek/Gartner](#))



77%

IT decision-makers planning to migrate to a cloud data warehouse or expand a current one ([Datanami](#))



33%

Enterprises that have a documented cloud strategy ([Gartner](#))

What are the benefits of AWS cloud migration?



Optimize operations

- Seamless scalability for dynamic workloads
- Reduced capital expenditure
- Predictable infrastructure costs
- Lower maintenance requirements
- Fast, easy software and hardware upgrades data security



Accelerate innovation

- Rapid development/faster time-to-market
- Ready access to machine learning and advanced analytics capabilities
- Flexible for changing business needs
- Ability to capture and integrate new data fast
- Easier collaboration across distances



What should I consider before starting AWS cloud migration?

While of enormous benefit to companies, cloud migrations are more complex and time-consuming than many think. They require careful, calculated planning, including a clear understanding of what you expect to get out of the investment and how you will measure success.

Before you decide to migrate to the AWS cloud, you should take the following factors into consideration.

Start with business goals and benefits

AWS Cloud migration should start with the business strategy. It's critical to determine which corporate initiatives can most benefit from cloud data and analytics, prioritize those initiatives, and make the appropriate business case to get the green light and get started.

Both business and technical leaders should be involved in decision-making to ensure that the cloud applications or data platform will meet all end users' needs.

Some examples of business strategies that cloud data and analytics can enable are listed on the right.

New product development

Organizing and modifying information assets is key to scaling product innovation concepts. Cloud computing encourages a test-and-learn approach. Resources are also shared between functions and regions to ensure that goals are aligned.

Customer acquisition and retention

Operating on the cloud enables your firm to best accelerate customer experience capabilities testing and execution.

Mergers and acquisitions

Analyzing data from internal and external sources is significantly enhanced in cloud architectures with almost limitless scalability.

Demand forecasting

Accurate demand forecasting models depends upon large volumes of data. The right cloud infrastructure allows you to store access and the data needed.

Focus on key areas

Assessing migration readiness across key business and technical areas, referred to as “perspectives,” helps determine the most effective approach to an enterprise cloud migration effort.

AWS Cloud Adoption Framework (AWS CAF) is organized into six areas of focus (perspectives), which span your entire organization: Business, People, Governance, Platform, Security, and Operations.

AWS CAF provides a mental model to establish areas of focus in determining readiness to migrate and creating a set of migration execution workstreams.

It’s important to create a migration plan which considers and incorporates the necessary requirements across each area.

AWS CAF perspectives

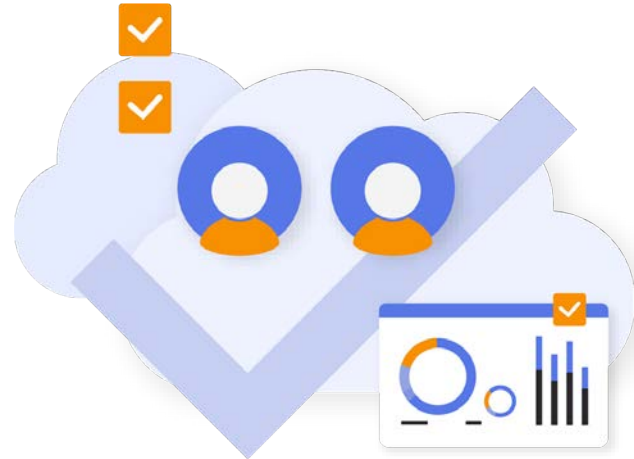
Perspective	Description & Common Roles Involved
Business	Business support capabilities to optimize business value with cloud adoption. Common Roles: business managers, finance managers, budget owners, strategy stakeholders
People	People development, training, communications, and change management. Common Roles: human resources, staffing, people managers
Governance	Managing and measuring resulting business outcomes. Common Roles: CIO, program managers, project managers, enterprise architects, business analysts, portfolio managers
Platform	Develop, maintain, and optimize cloud platform solutions and services. Common Roles: CTO, IT managers, solution architects
Security	Designs and allows that the workloads deployed or developed in the cloud align to the organization’s security control, resiliency, and compliance requirements. Common Roles: CISO, IT security managers, IT security analysts, head of audit and compliance
Operations	Allows system health and reliability through the move to the cloud, and delivers an agile cloud computing operation. Common Roles: IT operations managers, IT support managers

Identify what must be migrated to achieve your objectives

You will also need to consider which data should and should not be migrated, what analytic capabilities will be needed, how you'll manage and protect sensitive data, and who will have access to it.

Do you plan to start with an application migration?
Do you want to go serverless? Or is a more complex database migration needed?

Use discovery tools like [AWS Application Discovery Service](#) to automatically discover the inventory of infrastructure and applications, OS versions, performance baselines and optimization opportunities.



Determine your cloud migration approach

Once you know what you need to move, you can determine the cloud migration approach that meets your objectives.

Some common approaches are highlighted on the right.

Lift and shift or rehost

With this approach, you simply “lift” or copy your applications, workloads, or databases from on-premises applications or servers to the cloud with no changes.

Re-platform

With this approach, you go beyond lift and shift to make some optimizations that allow you to take advantage of cloud benefits, but most of the infrastructure doesn’t change.

Refactor

This method, also known as re-architecting, involves modifying applications to optimize them for the cloud. While this option may require more time and resources to implement, it generally results in long-term cost savings, as the resources are aligned with your requirements most effectively.

Repurchase

Starting from scratch with an entirely new, cloud-native application.

Retire

Eliminating applications that are no longer useful for your business needs.



What are the steps of a successful AWS cloud migration strategy?

Your strategy may differ slightly depending upon the factors above – whether you are moving application data vs. database or if you are rehosting vs. replatforming. However, there are a few principles that you can always use.

The clearer your strategy is, the more quickly and effectively you'll achieve business results. This is the proven methodology that has worked well with Wavicle's clients.

Identify project scope

When Wavicle works with our clients to scope their application cloud migrations, we identify all applications in the environment, evaluate their performance to determine if any updates will need to be made, and decide if the updates will be made pre- or post-migration.

This will include an assessment of which applications and data will perform better on hybrid vs. public vs. private clouds. This evaluation will help us decide which type of migration is most appropriate for their various applications and databases.

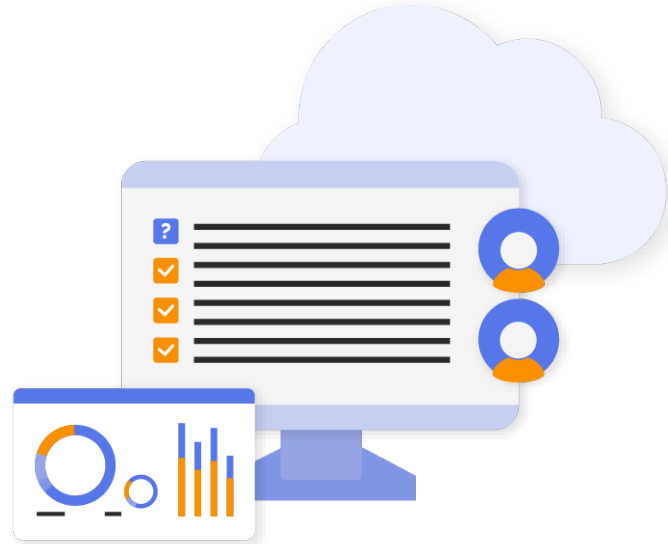


Plan and coordinate teams and resources

Whether you use an internal resource or seek outside cloud migration consulting services, you'll want a clear guideline and owner who will manage all of the steps of the project from start to finish.

This includes mapping out resources needed, including an Architecture team responsible for licensing, providing the solution architecture, infrastructure set-up and cost management, and continued architecture oversight.

We assign a value team to create, convert and deploy jobs. Then, we work with product owners to validate data.

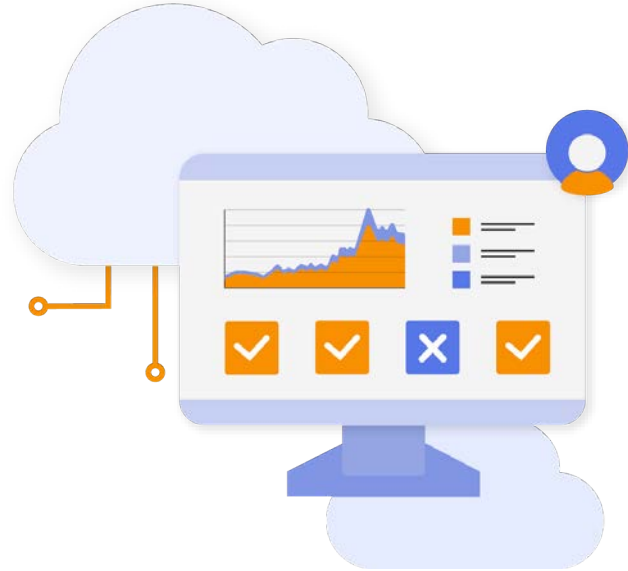


Prioritize migration projects

Cloud migration may involve hundreds of applications or databases. There are two schools of thought on how to migrate them.

One says to start with applications that introduce the least amount of risk – or disruption – to your business. This may include applications that are not mission-critical, do not have complex integrations, or are seasonal.

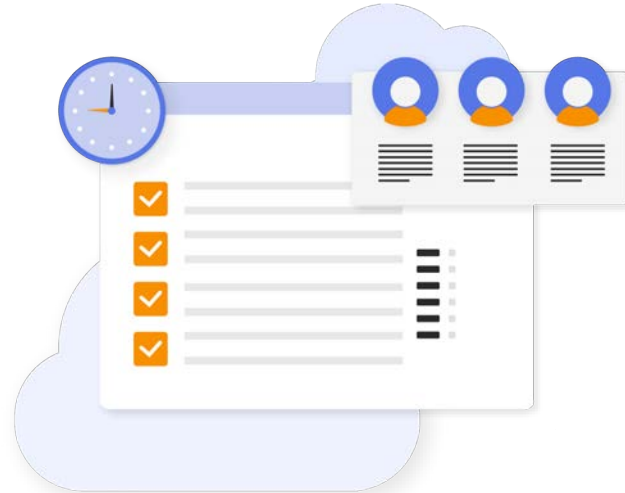
Others recommend focusing on migrations that add value to your business, whether driven by opportunities, performance issues, or lifecycles of hardware or software. This can help prioritize more complex migrations. You learn what works, identify failures, and improve for the next attempt.



Test the new environment

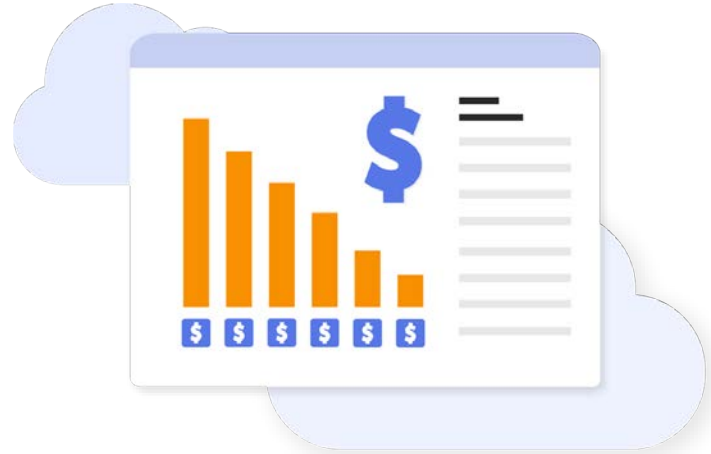
Testing is a critical step in your cloud migration. You want to ensure your data and applications are performing properly in the new environment. This means testing for functionality, performance, and security.

You must check that apps function the way you expect them to and that they integrate correctly with other apps. You'll also want to do load testing, check scalability, and verify authorizations and authentications.



Automate where possible

Wavicle offers a variety of accelerator tools that automate steps along the migration process to reduce time, costs, and potential errors.



Proven migration process

Wavicle follows a three-phase migration process as recommended by AWS based on experience and best practices.

Assess

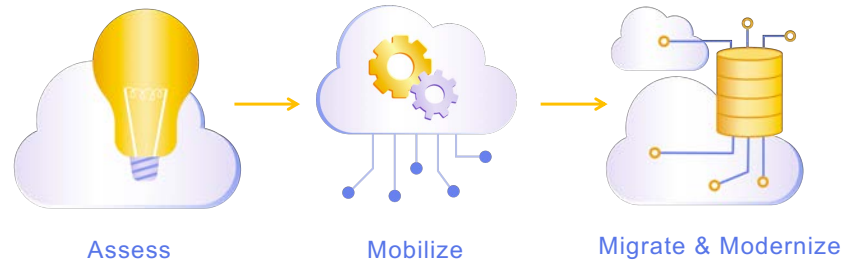
At the start of the migration journey, Wavicle will help you assess your organization's current readiness for operating in the cloud. Most importantly, identify the desired business outcomes and develop the business case for migration.

Mobilize

As part of the mobilize phase, Wavicle will help create a migration plan and refine your business case. Wavicle will help to address gaps in your organization's readiness that were uncovered in the assess phase, with a focus on building your baseline environment (the "landing zone") and driving operational readiness.

Migrate and modernize

During the migrate and modernize phase, Wavicle will partner with data and application teams to design, migrate, and validate respective workloads to AWS.





How long will a cloud migration take?

The move to the cloud involves much more than flipping a switch. In addition to creating a migration strategy, defining processes, and assessing the needs for new storage solutions, you may be moving data to a cloud data warehouse or data lake, or a new data integration platform.

You should consider options for reducing the time, effort, and cost that go into these development and data quality efforts. Wavicle's cloud migration experts have developed a series of accelerators and frameworks and also use AWS Migration services to shorten cloud migration projects by weeks or even months.

Use Wavicle's tools and accelerators to reduce time, effort, and cost

Database Converter

Speeds up migration to cloud data warehouses such as Amazon Redshift and Snowflake and data lakes by ensuring database table structures are accurately converted from one database solution to another, reducing the effort by 20–25%.

Data Capturer

Verifies the quality of data in the cloud. By querying tables across legacy and cloud environments, it compares contents and identifies errors so they can be quickly addressed trust restored.

Data Integration Code Converter

Saves months of development time by automating the replication of ETL business logic and jobs from on-premises solutions and recreating them in a cloud-based data integration solution.

AWS Migration Services

Accelerate your migration and modernization journey to the cloud. AWS offers a wide range of migration solutions to help migrate workloads from on-premises environments, hosting facilities, or other public clouds.

Wavicle's cloud migration experts can help assess and mobilize your migration, assist in creating migration plans and help migrate and modernize your applications.



AWS Migration Services

AWS Cloud Adoption Framework

AWS Cloud Adoption Framework (AWS CAF) leverages AWS experience and best practices to help you digitally transform and accelerate your business outcomes. AWS CAF identifies specific organizational capabilities that underpin successful cloud transformations. These capabilities provide best practice guidance that helps you improve your cloud readiness.

AWS Migration Hub

AWS Cloud Adoption Framework (AWS CAF) leverages AWS experience and best practices to help you digitally transform and accelerate your business outcomes. AWS CAF identifies specific organizational capabilities that underpin successful cloud transformations. These capabilities provide best practice guidance that helps you improve your cloud readiness.

AWS Application Discovery Services

AWS Application Discovery Service helps enterprise customers plan migration projects by gathering information about their on-premises data centers. AWS Application Discovery Service collects and presents configuration, usage, and behavior data from your servers to help you better understand your workloads and migrate effectively.

AWS Application Migration Service

AWS Application Migration Service (AWS MGN) allows you to quickly realize the benefits of migrating applications to the cloud without changes and with minimal downtime. AWS Application Migration Service minimizes time-intensive, error-prone manual processes by automatically converting your source servers from physical, virtual, or cloud infrastructure to run natively on AWS.

AWS Database Migration Service

AWS Database Migration Service helps you migrate databases to AWS quickly and securely. With AWS Database Migration Service, you can continuously replicate your data with high availability and consolidate databases into a petabyte-scale data warehouse by streaming data to Amazon Redshift and Amazon S3.



What costs are associated with cloud migration?

Cloud computing has helped many firms reduce capital expenditures and provide more control over operational costs. Still, it's important to know all the costs at play to not overestimate the savings.

Costs associated with cloud migration

Cloud infrastructure

Includes servers and storage. AWS offers an online calculator to help estimate costs. [Learn more.](#)

Tools and licenses

Fees for applications such as cloud data warehouse, data lake, ETL platform, and analytics tools.

Networking

Cloud provider fees associated with moving data to the cloud environment.

Security

Cost of identity access management and other systems to secure your data.

Skills

Internal skills needed to plan, deploy, and manage your cloud environment.

Professional services

Any external help needed to develop your cloud strategy, execute the migration, deploy software and applications, manage data integrity, establish governance procedures, etc.



Do I need cloud migration consulting services?

Like all large-scale projects, cloud migrations are often better left out to experts who have experience migrating applications and databases for multiple customers.

On the next slide, we will detail a few of the key reasons you should consider hiring a cloud migration consultant.

Benefits of working with a cloud migration consultant

Established frameworks

Consultants who routinely perform cloud migrations can use the successful frameworks that have allowed them to accurately and efficiently migrate cloud projects for past clients – from choosing the right leader to running tests to meet your established baselines to going live – they'll have you covered.

Accelerated timeframes

Some cloud migration consultants offer proprietary accelerators that can drastically reduce the time and costs of your cloud migration by automating steps throughout the process.

Improved security

According to Gartner, most successful security attacks are actually due to human error, not cloud security issues. They recommend automating as much of your cloud migration processes as possible to reduce the potential for errors and security issues. As noted above, a consultant has the frameworks and tools to help you automate many steps along the way.



How can Wavicle help me with my cloud migration?

Wavicle Data Solutions specializes in the rapid delivery of data and analytics solutions. With our cloud migration services, we help clients leverage cloud-native technologies to capture, analyze, and share growing volumes of data for advanced analytics, machine learning, and artificial intelligence.

By combining our deep technical expertise and strong industry knowledge with our proprietary accelerators, we provide enterprises with fast access to data so they can reduce risk, manage costs, increase sales, and become more efficient.

We deliver fast, trusted data to drive your critical business processes by working with leading cloud technology partners, such as AWS, Talend, Snowflake, and Databricks.



Luna Rajbhandari

Vice President,
Data Management & Platforms

Cars.com

“Wavicle Data Solutions has been one of our most trusted partners in our cloud migration journey. They provided us with a wide variety of data engineering and AWS platform expertise, while offering significant flexibility in being able to quickly scale up our teams as the project ramped up. I highly recommend Wavicle for any company looking to embark on a cloud journey.”

Contact us



Wavicle Data Solutions

564 W Randolph St #600

Chicago, IL 60661

<https://wavicledata.com>
info@wavicledata.com