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# **AWS Prescriptive Guidance**

## **Accelerating cloud adoption through culture, change, and leadership**



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# Accelerating cloud adoption through culture, change, and leadership

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The people, culture, and change leadership domain is critical to establishing your organization's cloud readiness and implementing a migration at scale. The impact of the cloud will be felt across your entire organization and will significantly affect, and be affected by, your organizational culture. Understanding these cultural implications, your company's receptivity to change, prior change successes and failures, organizational communication patterns to date, organizational structure, and level of executive sponsorship, commitment and alignment, are all important elements of building a successful approach to cloud adoption.

To prepare for an enterprise migration, your organization must have a critical mass of people with production experience in the Amazon Web Services (AWS) Cloud, established operational processes, and a leadership team dedicated to mobilizing the appropriate resources and leading teams through the many organizational and transformational challenges presented over the course of a large-scale migration effort. Based on many years of experience leading and advising enterprises across a wide array of industries, AWS has found that organizational adoption of change and political and cultural impact are the most challenging and underestimated roadblocks to cloud adoption success.

This guide discusses critical elements of change adoption, mechanisms for acceleration, and a framework for ensuring that the people in your organization who are impacted by the transformation effort will be well positioned to adapt when needed. This process, which we call *change adoption and organizational acceleration*, is an extension of the organizational change management (OCM) framework, which can and should be customized to fit the needs of your organization.

# Targeted business outcomes

Unlike some of the more technical domains, the culture, change, and leadership domain tends to be more fluid in terms of prescriptive outcomes. This domain targets three primary outcomes:

- Alignment of critical organizational leaders and commitment of executive sponsorship
- Mobilization of required migration resources
- Envisioning the organization's future state, specifically from the perspective of the teams and individuals impacted by the changes being implemented

To produce these targeted business outcomes, you first need to understand the current state of your organization, its culture, change history, leadership alignment, and organizational readiness to change, and then build the foundation to enable scale and speed down the road.

## Understanding the current state

Every organization has an existing culture. Some of the predominant attitudes and behaviors that comprise the organizational culture are conducive to cloud readiness, some are neutral, and others are in conflict. Understanding the current state of the organization, the level of leadership alignment and executive commitment, the degree of buy-in to the broader cloud adoption strategy, the extent to which resource mobilization has or has not already occurred, and the organizational receptivity to change are all important aspects of determining where to prioritize cultural readiness efforts. Company culture is a powerful force, and the values, attitudes, behaviors, cultural norms, embedded rewards, deterrent mechanisms, and similar factors are likely to precede any cloud adoption strategy. Identifying and drawing awareness to potential areas of friction and using cultural levers for cloud adoption acceleration are key differentiators for companies that are able to create and maintain cloud adoption momentum, and these abilities set them apart from companies that stall.

There are a number of ways to formulate a picture of current state. AWS Professional Services provides a [Migration Readiness Assessment \(MRA\) process](#) (requires login), which gives insight into how prepared an enterprise is to migrate, analyzed across all aspects of the organization that are impacted by cloud adoption. We recommend that you consider the MRA questions and responses that are directly related to the people domain, and also review the overall picture the assessment process provides. How consistent were the responses from the people in attendance? How comfortable were the participants with conflicts or handling disagreements regarding current state? How transparent were the leadership team interactions during the MRA session? Were people focused on presenting a positive impression, or were they comfortable debating, questioning, and pushing back where there was disagreement?

In addition to following the MRA process, complete these activities to determine the current state of your enterprise:

- Collect background information from cross-functional leaders, key stakeholders from infrastructure, security, engineering, R&D, operations, HR, finance, and other teams, and engaged cloud partners.
- Attend relevant cloud transformation and cloud program kick-off meetings.
- Conduct deep-dive organizational readiness assessments, such as the impact assessment and culture assessment, outlined in the [Summary of Activities \(p. 4\)](#) section.
- Actively seek out diverse perspectives and historical knowledge, and understand and document the cultural values of the organization without assuming any awareness of upcoming changes across all impacted teams or leaders.

## Building the foundation for the future

The people workstream for the AWS Prescriptive Guidance migration strategy is not intended to be a collection of activities that are performed as a stand-alone workstream. Instead, this work should be integrated into *how* the cloud migration or cloud program is implemented and delivered overall. Forming a tight partnership top down, bottom up, and across workstreams, as well as with any external consultants or partners is required. Because success is dependent on how well employees adopt the changes being rolled out, it's beneficial to understand the current operational mode, the leadership approach, and how change is driven today, in order to define a path toward the future state. No two starting points are ever exactly the same. Earning trust is essential, and in order to do that, leaders must understand how the organization got to where it is today.

It's useful to identify risks and opportunities as part of the discovery and assessment process. Risks and opportunities related to people will manifest in a number of ways, including misaligned leadership, lack of true executive sponsorship, organizational politics, a command-and-control culture, risk aversion, and strong resistance to change. Additionally, this work is difficult to complete unless you have access to the decision-makers in the organization.

To build the foundation to scale, you must define what success looks like organizationally, demonstrate results that can be refined, emulated, and scaled quickly, and use the correct applications, tools, and processes. Beginning with a team or set of teams in the organization that are primed and ready to take on a new way of operating, and learning from that team's early experiences, can be an excellent springboard for creating positive organizational pressure to scale quickly and productively.

# Summary of activities

As we discussed earlier in this guide, the primary business objectives to set the foundation for this domain are the alignment of critical organizational leaders and commitment of executive sponsorship, the mobilization of migration resources, and envisioning the organization's future state. A number of key activities can facilitate, support, and even accelerate the achievement of these business outcomes by preparing and enabling the people in the organization who will be impacted by the business transformation.

Enterprises almost always have a multitude of competing priorities, even within their cloud strategy. Additionally, there is often an expectation that a single executive sponsor can produce the intended business outcomes. In reality, the impact of cloud adoption on an organization is far-reaching and requires cross-functional leadership and alignment as well as clear prioritization.

In the Migration Readiness Assessment (MRA) phase of adoption, you lay the foundation; get the right leaders in place; pull together a capable team that can deliver a body of work (like migrating an application to AWS, or standing up a new environment); envision what the future will look like culturally, organizationally, and for internal and external customers; and start to learn and demonstrate, through action, what success looks like. This cross-functional set of leaders, who may later become part of a Cloud Center of Excellence (CCoE) team, should strive to achieve alignment across the organization and define value-add within their own teams, drive organizational urgency and prioritization of cloud adoption, and envision the future state of the organization. Some questions that you will answer at this stage are:

- How will our culture change or stay the same?
- How will we operate differently than we do today?
- Who will our internal customers be, and how will we engage them to drive better outcomes for external customers?
- How will our teams look compared to today? Will they operate in a “you build it, you run it; you run it, you build it” model? If so, what skills and capabilities will that require for each team to be self-sufficient? What attitudes and behaviors will that require?
- How will leaders help managers and teams adopt this new way of operating and delivering results to customers?
- How will our teams adopt a product-based operating model, if that's different from how the organization has historically operated?

This stage is the opportunity to learn and grow through experience before taking the migration project to the next level.

Nothing is more effective and builds momentum faster than the opportunity to learn by doing. We recommend providing that opportunity through a number of different avenues, which we will outline in greater detail in the next section. Begin by pulling together a group of cross-functional leaders, making decisions about what the future will look like for the people in the organization, mobilizing an initial implementation team and an initial body of work to gain the necessary insight and learnings, and demonstrating results that can be emulated and scaled. These are the first steps to setting the foundation for future state culture, change, and leadership.

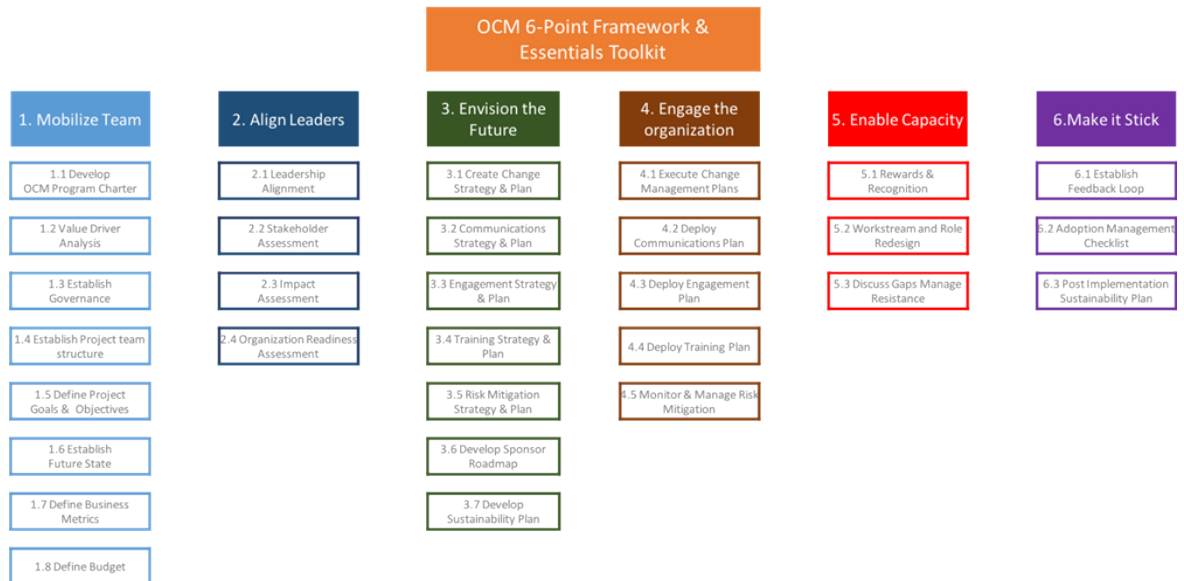
The next section provides guidance on *how* you get there, by leveraging a framework of activities that can be customized to your organization's specific needs and that can accelerate your employees' adoption of a new way of operating in a cloud environment. After all, it's not possible to realize the value and promise of the cloud unless the people in your organization embrace the future state and their role in it.

# Guidelines and steps

To set the foundation:

- Design the team(s) responsible for mobilizing critical cloud resources (cross-functional leaders who are able to make day-to-day decisions quickly and efficiently).
- Define how the organization builds and implements their cloud strategy by designing teams for the future state of operations.
- Establish a dedicated team with single-threaded ownership and strong, visible, engaged executive sponsorship (this is not an IT project).
- Set functional areas to be managed throughout the migration journey.
- Start to establish a cloud governance model, set of standards, best practices, and guiding principles or tenets.

The AWS OCM 6-Point Framework and Essentials Toolkit provides a comprehensive kit of enablement tools to support your cloud adoption journey. Each box in the following illustration includes a set of relevant templates, guidelines, and supporting artifacts to enable your people acceleration efforts. When and how you use the material depends on a number of factors that are specific to your organization and your teams. The process is not likely to be linear in nature. In fact, because teams will be affected differently and at varying points in time, it's important to customize and personalize the experience.



## Preconditions

Before you begin, make sure that you have completed or identified the following:

- Completed an [AWS Migration Readiness Assessment \(MRA\)](#) (requires login), and documented and analyzed results and observations.
- Identified a team or individual to lead the charge from a people adoption perspective (people lead). This person must be in a position of leadership, able to achieve trusted advisor status on the

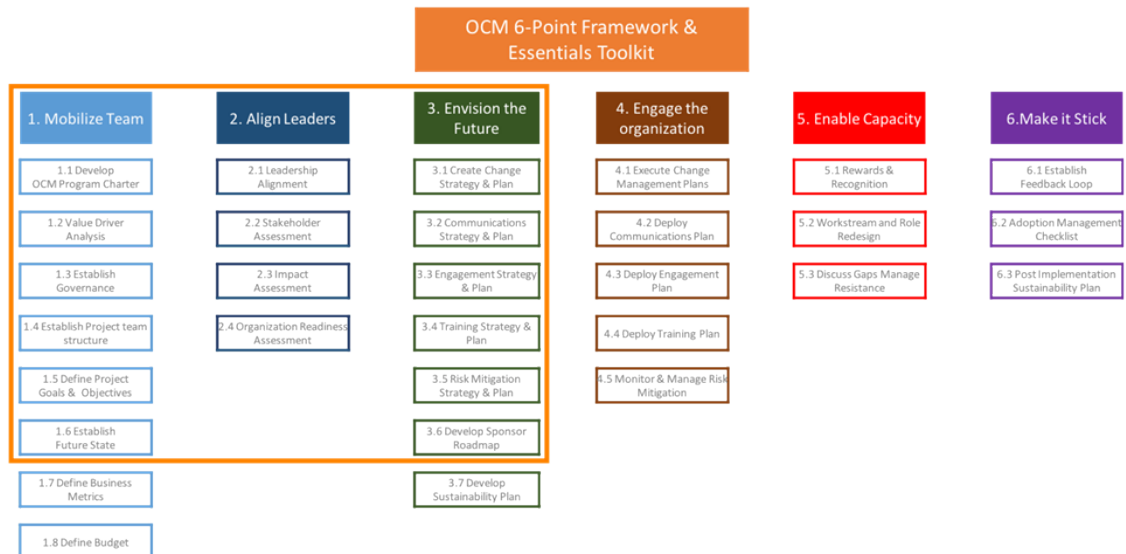


leadership team, and have broad influence within and across critical implementation teams. This is often someone with an OCM background, or it can be a team of people who have experience leading and implementing organization-wide transformations, operational leadership, an enterprise training background, and the ability to quickly gain trust and earn credibility across a wide array of functional areas. This person or team will be the glue to bring people together.

- Collected the following documentation on people discovery and made it available to the people lead:
  - Secure executive sponsorship commitment
  - Impact assessment background materials
  - Culture assessment background materials
  - Stakeholder analysis background materials

## Tasks

To set the foundation, you will primarily focus on the first three points of the framework (highlighted in the following diagram) to drive how people in the organization accept and adopt a new way of leading, working, and adding value. The other points will become increasingly important as you move into migrating at scale and driving long-term adoption.



## Key focus areas for setting the stage

- Develop integration guiding principles and define key cultural elements to be highlighted throughout the migration and modernization effort.
- Analyze cultural compatibilities and differences across organizations and geographies, and between the current state and the targeted future state.
- Consider culture integration initiatives that could create greater unity and alignment to long-term vision. (Are there teams or locations that are vulnerable to being left behind, or the reverse?)
- Identify and engage a cross-functional group of leaders who together can drive change, define the future-state operating model, and lead the organization from multiple vantage points.
- Define a set of guiding principles to anchor the organization to, and set the foundation for, cloud governance down the road.
- Use the AWS OCM 6-Point Framework and Essentials Toolkit to apply tools and processes to the people side of change:

- Identify the change leader(s) who will own driving people adoption.
- Conduct impact assessment: internal, cross functional, and external.
- Identify key risks, interdependencies, and barriers to integration.
- Develop a change strategy to address risks, leverage strengths, and support the integration.
- Develop a training and engagement plan, and set the stage for capacity enablement.
- Develop a communication plan.

## Key adoption acceleration deliverables

You can find templates and guidelines for each of the following deliverables in the AWS OCM 6-Point Framework and Essentials Toolkit. You should customize actual deliverables and brand them for your specific needs.

- Change management risk document
- Identification of high-level change impacts (by role and by major process)
- Mapping of key stakeholders
- Communication messaging strategy and platform
- Initial communication plan and messaging matrix
- Change management work plan (initial)
- Organizational acceleration charter
- People adoption/acceleration team structure (documented and onboarded)
- Definition of organizational acceleration goals and objectives
- Future state staffing model (target organization structure)
- Change risk scorecard (risk management)
- Leadership alignment document
- Stakeholder report cadence (stakeholder assessment)
- Change area impact analysis, stakeholder-based assessment, and change impact findings and mitigation recommendations
- Organizational readiness assessment report
- Change strategy
- Communication strategy, which includes communication guiding principles, vehicle and media analysis, message identification, stakeholder prioritization matrix, communication matrix, and outlined communication activities
- Engagement strategy
- Training strategy (which should include experience-based acceleration training)
- Risk mitigation strategy
- Change acceleration sponsorship roadmap

## Next steps

To properly set the stage for transformation, organizations require a diverse set of views, experiences, and leadership styles. No one leader or team can achieve what a cross-functional group of influencers and change agents can do together. This guide covered best practices for dealing with organizational changes, including:

- Start small, but keep the end in mind.
- Strive to define a future state model that the cloud affords, but also honor the cultural values that are core to your business.
- Be intentional about how you drive change and bring people along on the journey, and do so through strong executive sponsorship, cross-functional leadership, defining what success looks like early in the journey, and learning through hands-on experience and delivering results.
- Pilot what success looks like by establishing an initial cross-functional team, identifying a candidate workload or set of workloads to run on AWS, tracking clearly defined metrics, creating opportunities for continuous learning, and celebrating early wins.

By following these guidelines, you can set a foundation that can be emulated and scaled to other parts of the organization.

# Resources

For more information about handling change adoption and organizational acceleration, see the following resources:

- [Migrating to Amazon Web Services](#) (AWS website)
- [Migration Readiness Assessment \(MRA\)](#) (requires login)
- [How to Manage Organizational Change and Cultural Impact During a Cloud Transformation](#) (AWS Online Tech Talk video)
- [Job Roles in the Cloud](#) (online course from AWS Training and Certification)
- [Leading Change: Why Transformation Efforts Fail](#) (article by John P. Kotter in the *Harvard Business Review*)
- [Change Management Needs to Change](#) (article by Ron Ashkenas in the *Harvard Business Review*)
- [A Leader's Framework for Decision Making](#) (article by David J. Snowden and Mary E. Boone in the *Harvard Business Review*)
- [Staffing Your Enterprise's Cloud Center of Excellence](#) (article by Stephen Orban on *medium.com*)
- [Your Enterprise's Flywheel to the Cloud](#) (article by Stephen Orban on *medium.com*)

## FAQ

This section provides answers to commonly raised questions about change adoption and organizational acceleration in cloud migration projects.

### What is OCM, and why does this guide refer to people acceleration?

Organizational change management (OCM) is the application of a programmatic methodology of tools and processes that minimize the organizational impacts brought on by a change initiative and increase business adoption of the new ways of working, as companies transition from current to future states. The value of OCM to any type of change initiative is that it accelerates business adoption, minimizes the performance dip during transition, and shortens the project completion time. Given the speed of change required to implement a cloud migration, we prefer to refer to the process as *people acceleration*.

### Why is a framework needed to help organizations accelerate change adoption and organizational acceleration?

For most organizations, cloud adoption represents a significant business transformation that requires the buy-in and mobilization of a company's most valuable resources: their people. Companies struggle with how to effectively drive the cultural and organizational changes necessary to operate successfully in a cloud environment. The OCM framework addresses these changes at the organizational, program, and individual level. The primary objective of this framework is to support AWS customers in a way that mitigates their concerns and accelerates their cloud adoption efforts.

# AWS Prescriptive Guidance glossary

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[AI and ML terms \(p. 11\)](#) | [Migration terms \(p. 12\)](#) | [Modernization terms \(p. 16\)](#)

## AI and ML terms

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The following are commonly used terms in artificial intelligence (AI) and machine learning (ML)-related strategies, guides, and patterns provided by AWS Prescriptive Guidance. To suggest entries, please use the **Provide feedback** link at the end of the glossary.

binary classification	A process that predicts a binary outcome (one of two possible classes). For example, your ML model might need to predict problems such as "Is this email spam or not spam?" or "Is this product a book or a car?"
classification	A categorization process that helps generate predictions. ML models for classification problems predict a discrete value. Discrete values are always distinct from one another. For example, a model might need to evaluate whether or not there is a car in an image.
data preprocessing	To transform raw data into a format that is easily parsed by your ML model. Preprocessing data can mean removing certain columns or rows and addressing missing, inconsistent, or duplicate values.
deep ensemble	To combine multiple deep learning models for prediction. You can use deep ensembles to obtain a more accurate prediction or for estimating uncertainty in predictions.
deep learning	An ML subfield that uses multiple layers of artificial neural networks to identify mapping between input data and target variables of interest.
exploratory data analysis (EDA)	The process of analyzing a dataset to understand its main characteristics. You collect or aggregate data and then perform initial investigations to find patterns, detect anomalies, and check assumptions. EDA is performed by calculating summary statistics and creating data visualizations.
features	The input data that you use to make a prediction. For example, in a manufacturing context, features could be images that are periodically captured from the manufacturing line.
feature importance	How significant a feature is for a model's predictions. This is usually expressed as a numerical score that can be calculated through various techniques, such as Shapley Additive Explanations (SHAP) and integrated gradients. For more information, see <a href="#">Machine learning model interpretability with AWS</a> .

feature transformation	To optimize data for the ML process, including enriching data with additional sources, scaling values, or extracting multiple sets of information from a single data field. This enables the ML model to benefit from the data. For example, if you break down the "2021-05-27 00:15:37" date into "2021", "May", "Thu", and "15", you can help the learning algorithm learn nuanced patterns associated with different data components.
interpretability	A characteristic of a machine learning model that describes the degree to which a human can understand how the model's predictions depend on its inputs. For more information, see <a href="#">Machine learning model interpretability with AWS</a> .
multiclass classification	A process that helps generate predictions for multiple classes (predicting one of more than two outcomes). For example, an ML model might ask "Is this product a book, car, or phone?" or "Which product category is most interesting to this customer?"
regression	An ML technique that predicts a numeric value. For example, to solve the problem of "What price will this house sell for?" an ML model could use a linear regression model to predict a house's sale price based on known facts about the house (for example, the square footage).
training	To provide data for your ML model to learn from. The training data must contain the correct answer. The learning algorithm finds patterns in the training data that map the input data attributes to the target (the answer that you want to predict). It outputs an ML model that captures these patterns. You can then use the ML model to make predictions on new data for which you don't know the target.
target variable	The value that you are trying to predict in supervised ML. This is also referred to as an <i>outcome variable</i> . For example, in a manufacturing setting the target variable could be a product defect.
tuning	To change aspects of your training process to improve the ML model's accuracy. For example, you can train the ML model by generating a labeling set, adding labels, and then repeating these steps several times under different settings to optimize the model.
uncertainty	A concept that refers to imprecise, incomplete, or unknown information that can undermine the reliability of predictive ML models. There are two types of uncertainty: <i>Epistemic uncertainty</i> is caused by limited, incomplete data, whereas <i>aleatoric uncertainty</i> is caused by the noise and randomness inherent in the data. For more information, see the <a href="#">Quantifying uncertainty in deep learning systems</a> guide.

## Migration terms

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The following are commonly used terms in migration-related strategies, guides, and patterns provided by AWS Prescriptive Guidance. To suggest entries, please use the **Provide feedback** link at the end of the glossary.

7 Rs	<p>Seven common migration strategies for moving applications to the cloud. These strategies build upon the 5 Rs that Gartner identified in 2011 and consist of the following:</p> <ul style="list-style-type: none"><li>• Refactor/re-architect – Move an application and modify its architecture by taking full advantage of cloud-native features to improve agility, performance, and scalability. This typically involves porting the operating system and database. Example: Migrate your on-premises Oracle database to the Amazon Aurora PostgreSQL-Compatible Edition.</li></ul>
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- Replatform (lift and reshape) – Move an application to the cloud, and introduce some level of optimization to take advantage of cloud capabilities. Example: Migrate your on-premises Oracle database to Amazon Relational Database Service (Amazon RDS) for Oracle in the AWS Cloud.
- Repurchase (drop and shop) – Switch to a different product, typically by moving from a traditional license to a SaaS model. Example: Migrate your customer relationship management (CRM) system to Salesforce.com.
- Rehost (lift and shift) – Move an application to the cloud without making any changes to take advantage of cloud capabilities. Example: Migrate your on-premises Oracle database to Oracle on an EC2 instance in the AWS Cloud.
- Relocate (hypervisor-level lift and shift) – Move infrastructure to the cloud without purchasing new hardware, rewriting applications, or modifying your existing operations. This migration scenario is specific to VMware Cloud on AWS, which supports virtual machine (VM) compatibility and workload portability between your on-premises environment and AWS. You can use the VMware Cloud Foundation technologies from your on-premises data centers when you migrate your infrastructure to VMware Cloud on AWS. Example: Relocate the hypervisor hosting your Oracle database to VMware Cloud on AWS.
- Retain (revisit) – Keep applications in your source environment. These might include applications that require major refactoring, and you want to postpone that work until a later time, and legacy applications that you want to retain, because there's no business justification for migrating them.
- Retire – Decommission or remove applications that are no longer needed in your source environment.

application portfolio

A collection of detailed information about each application used by an organization, including the cost to build and maintain the application, and its business value. This information is key to [the portfolio discovery and analysis process](#) and helps identify and prioritize the applications to be migrated, modernized, and optimized.

artificial intelligence operations (AIOps)

The process of using machine learning techniques to solve operational problems, reduce operational incidents and human intervention, and increase service quality. For more information about how AIOps is used in the AWS migration strategy, see the [operations integration guide](#).

AWS Cloud Adoption Framework (AWS CAF)

A framework of guidelines and best practices from AWS to help organizations develop an efficient and effective plan to move successfully to the cloud. AWS CAF organizes guidance into six focus areas called perspectives: business, people, governance, platform, security, and operations. The business, people, and governance perspectives focus on business skills and processes; the platform, security, and operations perspectives focus on technical skills and processes. For example, the people perspective targets stakeholders who handle human resources (HR), staffing functions, and people management. For this perspective, AWS CAF provides guidance for people development, training, and communications to help ready the organization for successful cloud adoption. For more information, see the [AWS CAF website](#) and the [AWS CAF whitepaper](#).

AWS landing zone

A landing zone is a well-architected, multi-account AWS environment that is scalable and secure. This is a starting point from which your organizations can quickly launch and deploy workloads and applications with confidence in their security and infrastructure environment. For more information about landing zones, see [Setting up a secure and scalable multi-account AWS environment](#).

AWS Workload Qualification Framework (AWS WQF)

A tool that evaluates database migration workloads, recommends migration strategies, and provides work estimates. AWS WQF is included with AWS Schema



	<p>Conversion Tool (AWS SCT). It analyzes database schemas and code objects, application code, dependencies, and performance characteristics, and provides assessment reports.</p>
business continuity planning (BCP)	<p>A plan that addresses the potential impact of a disruptive event, such as a large-scale migration, on operations and enables a business to resume operations quickly.</p>
Cloud Center of Excellence (CCoE)	<p>A multi-disciplinary team that drives cloud adoption efforts across an organization, including developing cloud best practices, mobilizing resources, establishing migration timelines, and leading the organization through large-scale transformations. For more information, see the <a href="#">CCoE posts</a> on the AWS Cloud Enterprise Strategy Blog.</p>
cloud stages of adoption	<p>The four phases that organizations typically go through when they migrate to the AWS Cloud:</p> <ul style="list-style-type: none"><li>• Project – Running a few cloud-related projects for proof of concept and learning purposes</li><li>• Foundation – Making foundational investments to scale your cloud adoption (e.g., creating a landing zone, defining a CCoE, establishing an operations model)</li><li>• Migration – Migrating individual applications</li><li>• Re-invention – Optimizing products and services, and innovating in the cloud</li></ul> <p>These stages were defined by Stephen Orban in the blog post <a href="#">The Journey Toward Cloud-First &amp; the Stages of Adoption</a> on the AWS Cloud Enterprise Strategy blog. For information about how they relate to the AWS migration strategy, see the <a href="#">migration readiness guide</a>.</p>
configuration management database (CMDB)	<p>A database that contains information about a company's hardware and software products, configurations, and inter-dependencies. You typically use data from a CMDB in the portfolio discovery and analysis stage of migration.</p>
epic	<p>In agile methodologies, functional categories that help organize and prioritize your work. Epics provide a high-level description of requirements and implementation tasks. For example, AWS CAF security epics include identity and access management, detective controls, infrastructure security, data protection, and incident response. For more information about epics in the AWS migration strategy, see the <a href="#">program implementation guide</a>.</p>
heterogeneous database migration	<p>Migrating your source database to a target database that uses a different database engine (for example, Oracle to Amazon Aurora). Heterogeneous migration is typically part of a re-architecting effort, and converting the schema can be a complex task. <a href="#">AWS provides AWS SCT</a> that helps with schema conversions.</p>
homogeneous database migration	<p>Migrating your source database to a target database that shares the same database engine (for example, Microsoft SQL Server to Amazon RDS for SQL Server). Homogeneous migration is typically part of a rehosting or replatforming effort. You can use native database utilities to migrate the schema.</p>
idle application	<p>An application that has an average CPU and memory usage between 5 and 20 percent over a period of 90 days. In a migration project, it is common to retire these applications or retain them on premises.</p>
IT information library (ITIL)	<p>A set of best practices for delivering IT services and aligning these services with business requirements. ITIL provides the foundation for ITSM.</p>

IT service management (ITSM)	Activities associated with designing, implementing, managing, and supporting IT services for an organization. For information about integrating cloud operations with ITSM tools, see the <a href="#">operations integration guide</a> .
large migration	A migration of 300 or more servers.
Migration Acceleration Program (MAP)	An AWS program that provides consulting support, training, and services to help organizations build a strong operational foundation for moving to the cloud, and to help offset the initial cost of migrations. MAP includes a migration methodology for executing legacy migrations in a methodical way and a set of tools to automate and accelerate common migration scenarios.
Migration Portfolio Assessment (MPA)	An online tool that provides information for validating the business case for migrating to the AWS Cloud. MPA provides detailed portfolio assessment (server right-sizing, pricing, TCO comparisons, migration cost analysis) as well as migration planning (application data analysis and data collection, application grouping, migration prioritization, and wave planning). The <a href="#">MPA tool</a> (requires login) is available free of charge to all AWS consultants and APN Partner consultants.
Migration Readiness Assessment (MRA)	The process of gaining insights about an organization's cloud readiness status, identifying strengths and weaknesses, and building an action plan to close identified gaps, using the AWS CAF. For more information, see the <a href="#">migration readiness guide</a> . MRA is the first phase of the <a href="#">AWS migration strategy</a> .
migration at scale	The process of moving the majority of the application portfolio to the cloud in waves, with more applications moved at a faster rate in each wave. This phase uses the best practices and lessons learned from the earlier phases to implement a <i>migration factory</i> of teams, tools, and processes to streamline the migration of workloads through automation and agile delivery. This is the third phase of the <a href="#">AWS migration strategy</a> .
migration factory	Cross-functional teams that streamline the migration of workloads through automated, agile approaches. Migration factory teams typically include operations, business analysts and owners, migration engineers, developers, and DevOps professionals working in sprints. Between 20 and 50 percent of an enterprise application portfolio consists of repeated patterns that can be optimized by a factory approach. For more information, see the <a href="#">discussion of migration factories</a> and the <a href="#">CloudEndure Migration Factory guide</a> in this content set.
migration metadata	The information about the application and server that is needed to complete the migration. Each migration pattern requires a different set of migration metadata. Examples of migration metadata include the target subnet, security group, and AWS account.
migration pattern	A repeatable migration task that details the migration strategy, the migration destination, and the migration application or service used. Example: Rehost migration to Amazon EC2 with AWS Application Migration Service.
migration strategy	The approach used to migrate a workload to the AWS Cloud. For more information, see the <a href="#">7 Rs (p. 12)</a> entry in this glossary and see <a href="#">Mobilize your organization to accelerate large-scale migrations</a> .
operational-level agreement (OLA)	An agreement that clarifies what functional IT groups promise to deliver to each other, to support a service-level agreement (SLA).
operations integration (OI)	The process of modernizing operations in the cloud, which involves readiness planning, automation, and integration. For more information, see the <a href="#">operations integration guide</a> .

organizational change management (OCM)	A framework for managing major, disruptive business transformations from a people, culture, and leadership perspective. OCM helps organizations prepare for, and transition to, new systems and strategies by accelerating change adoption, addressing transitional issues, and driving cultural and organizational changes. In the AWS migration strategy, this framework is called <i>people acceleration</i> , because of the speed of change required in cloud adoption projects. For more information, see the <a href="#">OCM guide</a> .
playbook	A set of predefined steps that capture the work associated with migrations, such as delivering core operations functions in the cloud. A playbook can take the form of scripts, automated runbooks, or a summary of processes or steps required to operate your modernized environment.
portfolio assessment	A process of discovering, analyzing, and prioritizing the application portfolio in order to plan the migration. For more information, see <a href="#">Evaluating migration readiness</a> .
responsible, accountable, consulted, informed (RACI) matrix	A matrix that defines and assigns roles and responsibilities in a project. For example, you can create a RACI to define security control ownership or to identify roles and responsibilities for specific tasks in a migration project.
runbook	A set of manual or automated procedures required to perform a specific task. These are typically built to streamline repetitive operations or procedures with high error rates.
service-level agreement (SLA)	An agreement that clarifies what an IT team promises to deliver to their customers, such as service uptime and performance.
task list	A tool that is used to track progress through a runbook. A task list contains an overview of the runbook and a list of general tasks to be completed. For each general task, it includes the estimated amount of time required, the owner, and the progress.
workstream	Functional groups in a migration project that are responsible for a specific set of tasks. Each workstream is independent but supports the other workstreams in the project. For example, the portfolio workstream is responsible for prioritizing applications, wave planning, and collecting migration metadata. The portfolio workstream delivers these assets to the migration workstream, which then migrates the servers and applications.
zombie application	An application that has an average CPU and memory usage below 5 percent. In a migration project, it is common to retire these applications.

## Modernization terms

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The following are commonly used terms in modernization-related strategies, guides, and patterns provided by AWS Prescriptive Guidance. To suggest entries, please use the **Provide feedback** link at the end of the glossary.

business capability	What a business does to generate value (for example, sales, customer service, or marketing). Microservices architectures and development decisions can be driven by business capabilities. For more information, see the <a href="#">Organized around business capabilities</a> section of the <a href="#">Running containerized microservices on AWS</a> whitepaper.
domain-driven design	An approach to developing a complex software system by connecting its components to evolving domains, or core business goals, that each component serves. This concept was introduced by Eric Evans in his book, <i>Domain-Driven Design: Tackling Complexity in the Heart of Software</i> (Boston: Addison-Wesley

	<p>Professional, 2003). For information about how you can use domain-driven design with the strangler fig pattern, see <a href="#">Modernizing legacy Microsoft ASP.NET (ASMX) web services incrementally by using containers and Amazon API Gateway</a>.</p>
microservice	<p>A small, independent service that communicates over well-defined APIs and is typically owned by small, self-contained teams. For example, an insurance system might include microservices that map to business capabilities, such as sales or marketing, or subdomains, such as purchasing, claims, or analytics. The benefits of microservices include agility, flexible scaling, easy deployment, reusable code, and resilience. For more information, see <a href="#">Integrating microservices by using AWS serverless services</a>.</p>
microservices architecture	<p>An approach to building an application with independent components that run each application process as a microservice. These microservices communicate through a well-defined interface by using lightweight APIs. Each microservice in this architecture can be updated, deployed, and scaled to meet demand for specific functions of an application. For more information, see <a href="#">Implementing microservices on AWS</a>.</p>
modernization	<p>Transforming an outdated (legacy or monolithic) application and its infrastructure into an agile, elastic, and highly available system in the cloud to reduce costs, gain efficiencies, and take advantage of innovations. For more information, see <a href="#">Strategy for modernizing applications in the AWS Cloud</a>.</p>
modernization readiness assessment	<p>An evaluation that helps determine the modernization readiness of an organization's applications; identifies benefits, risks, and dependencies; and determines how well the organization can support the future state of those applications. The outcome of the assessment is a blueprint of the target architecture, a roadmap that details development phases and milestones for the modernization process, and an action plan for addressing identified gaps. For more information, see <a href="#">Evaluating modernization readiness for applications in the AWS Cloud</a>.</p>
monolithic applications (monoliths)	<p>Applications that run as a single service with tightly coupled processes. Monolithic applications have several drawbacks. If one application feature experiences a spike in demand, the entire architecture must be scaled. Adding or improving a monolithic application's features also becomes more complex when the code base grows. To address these issues, you can use a microservices architecture. For more information, see <a href="#">Decomposing monoliths into microservices</a>.</p>
polyglot persistence	<p>Independently choosing a microservice's data storage technology based on data access patterns and other requirements. If your microservices have the same data storage technology, they can encounter implementation challenges or experience poor performance. Microservices are more easily implemented and achieve better performance and scalability if they use the data store best adapted to their requirements. For more information, see <a href="#">Enabling data persistence in microservices</a>.</p>
split-and-seed model	<p>A pattern for scaling and accelerating modernization projects. As new features and product releases are defined, the core team splits up to create new product teams. This helps scale your organization's capabilities and services, improves developer productivity, and supports rapid innovation. For more information, see <a href="#">Phased approach to modernizing applications in the AWS Cloud</a>.</p>
strangler fig pattern	<p>An approach to modernizing monolithic systems by incrementally rewriting and replacing system functionality until the legacy system can be decommissioned. This pattern uses the analogy of a fig vine that grows into an established tree and eventually overcomes and replaces its host. The pattern was <a href="#">introduced by Martin Fowler</a> as a way to manage risk when rewriting monolithic systems. For an</p>

two-pizza team

example of how to apply this pattern, see [Modernizing legacy Microsoft ASP.NET \(ASMX\) web services incrementally by using containers and Amazon API Gateway](#).

A small DevOps team that you can feed with two pizzas. A two-pizza team size ensures the best possible opportunity for collaboration in software development. For more information, see the [Two-pizza team](#) section of the [Introduction to DevOps on AWS](#) whitepaper.

# Document history

The following table describes significant changes to this guide. If you want to be notified about future updates, you can subscribe to an [RSS feed](#).

update-history-change	update-history-description	update-history-date
<a href="#">Initial publication (p. 19)</a>	—	August 5, 2019