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# AWS Prescriptive Guidance

## Evaluating migration readiness



## **AWS Prescriptive Guidance: Evaluating migration readiness**

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## Table of Contents

Home .....	1
Targeted business outcomes .....	2
Understanding the current state of the cloud journey .....	2
Identifying areas of strength and weakness .....	2
Creating an action plan to enable scale and speed .....	3
Readiness assessment process .....	4
Before you begin .....	4
Tasks .....	4
Outputs .....	4
Guidelines .....	5
Conducting the assessment meeting .....	5
Choosing attendees .....	5
Facilitating the meeting .....	5
Analyzing the results and identifying actions .....	6
Presenting the results .....	7
Next steps .....	8
FAQ .....	9
How can I accurately assess my environment? .....	9
How can I identify and evaluate the right partners to help me? .....	9
AWS Prescriptive Guidance glossary .....	10
Document history .....	14

# Evaluating migration readiness

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A migration readiness assessment is a process of gaining insights into how far along an organization is in their cloud journey, understanding their current cloud-readiness strengths and weaknesses, and building an action plan to close identified gaps. You can use the Amazon Web Services (AWS) Cloud Adoption Framework (AWS CAF) and its six perspectives (business, people, governance, platform, security, and operations) as a framework to help ensure that you have a holistic view of the transformation initiative that is required for an effective move to the cloud.

The AWS Prescriptive Guidance migration strategy uses Migration Readiness Assessment (MRA) as the prescriptive model for the assessment phase. Although other methods are available, they might compromise the completeness or depth of the review.

Three outcomes are expected from a readiness review:

- An understanding of where an organization is in its cloud journey
- Identified areas of strength and weakness from a cloud-readiness perspective
- An action plan to resolve the identified gaps, so the organization can migrate at scale without having to pause to solve foundational issues

In addition, there are often these additional outcomes:

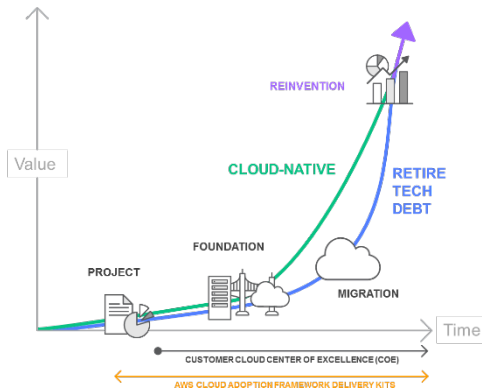
- Alignment and consensus building within the team
- Identification of best practices within the organization that can be leveraged and scaled
- A reduction in roadblocks that can disrupt progress

# Targeted business outcomes

This section discusses the three expected outcomes from a cloud-readiness review: understanding the current state, identifying strengths and weaknesses, and creating an action plan.

## Understanding the current state of the cloud journey

When organizations contemplate large-scale migration to AWS, they generally fall somewhere along the path of what is called the *stages of adoption*, as illustrated the following diagram. The four stages—project, foundation, migration, and reinvention—are discussed in the blog post [The Journey Toward Cloud-First & the Stages of Adoption](#) on the AWS Cloud Enterprise Strategy blog. The purpose of a readiness assessment is to determine how far along in the stages of adoption the organization is currently at, and which parts of the organization's environment are sufficiently mature to move to the next stage.



### Example:

If an organization is planning their first workload to move to the cloud, they're considered to be in the project (or proof of concept) phase. This phase doesn't require a unified account structure or other foundational constructs. However, to prepare a larger migration initiative, foundational aspects such as proper tagging should be in place. Otherwise, there is a risk of having to delay migrations to solve foundational issues.

## Identifying areas of strength and weakness

Identifying areas of strength and weakness is the second main outcome of a readiness assessment. Strengths determine the teams and practices that are ready for broad adoption across the organization. These are areas that don't require further work to enable successful cloud migrations at scale. Weaknesses are areas where actions need to be taken to improve the practices or capabilities to enable cloud migrations. Solving gaps early ensures a smooth migration process and eliminates the risk of project delays in building out foundational capabilities. The heat map illustrated in the following figure shows areas of strength and weakness across an organization. Action plans will need to be put in place for areas highlighted in yellow or red.

## AWS Prescriptive Guidance Evaluating migration readiness Creating an action plan to enable scale and speed

Business Case	Customer Migration Project Plan	Skills & COE
High Level Business Case	Determine Delivery Model & Approach	Single Threaded Leader
Key Stakeholder Sign-off	Project Management Capability	COE Resource Commitment
Migration Funding Commitment	Migration Plan	Experience baseline
Specific Migration Workloads Committed		Design or Evolve COE
Detailed Business Case		Organizational Training

Landing Zone	Application Portfolio Discovery & Planning	Migration Process & Experience
AWS Master Account/Sub-Accounts	Application Discovery Data	Identification of Pilot Applications
Account Design & Configuration	Server & Infrastructure Discovery Data	Migration Experience
Existing Network & Data Center Architecture	Workload Owner Buy-in or Alignment	
	Migration Scope Scored & Targeted for Optimization	

Operating Model	Security & Compliance
Current Operations Model	Shared Responsibility Model Understood
Future Requirements	Security (IAM)
Managed Service Provider Identified	Security Cartography
AMIs/Patching	3rd Party Risk
Backup	Identity & Access Management
Asset Management	Logging & Monitoring
Config Management & Change Management	Infrastructure Security
BCP/DR	Data Protection
Service Catalog	Incident Response
Cost Management	Cloud Security Readiness Tested
Cloud Ready Operational Processes & Run Books	Compliance Design
CI/CD Pipelines	

### Example:

An IT team might build an account structure that is well suited to cover the upcoming needs of the organization, but application developers and owners might not be aware that their application will be migrated to the AWS Cloud, and might not have the skill set to operate that application in the AWS Cloud. This example illustrates a gap in application owner buy-in and development team preparedness, and the organization should plan corrective actions during readiness assessment.

## Creating an action plan to enable scale and speed

After you identify strengths and weaknesses, you will need to put an action plan in place to close the gaps and scale identified areas of strength within the organization. The plan should have assigned owners and due dates to ensure that the project drives forward. We recommend that you engage your internal process improvement and organizational change teams to help drive the cloud initiative forward. These teams usually have toolkits for baselining current capabilities, establishing communications, handling buy-in planning, and similar processes, which will be useful.

### Note

The AWS Professional Services team provides a program called Migration Readiness and Planning. This prescriptive model guides your organization to develop foundational capabilities across all areas of AWS CAF to address the areas identified in the Migration Readiness Assessment (MRA). The AWS Partner Network (APN) Partner community also provides services that can help you in your migration readiness efforts.

# Readiness assessment process

A readiness assessment consists of these four steps:

1. Schedule the readiness assessment meeting and require attendance.
2. Facilitate discussions by using an AWS CAF-aligned set of questions to guide the conversation.
3. Analyze the gathered information, document observations, and determine next steps.
4. Schedule and conduct a debrief.

The following sections discuss these steps in more detail.

## Note

These steps are part of the AWS Migration Readiness Assessment (MRA) process; other approaches will vary.

## Before you begin

- Understand your organization's strategy and scope for the assessment.
- Gain buy-in to support the assessment process.

## Tasks

1. **Schedule the readiness assessment meeting with the required attendees.** See [Choosing Attendees \(p. 5\)](#) in the next section.
2. **Facilitate discussions by using an AWS CAF-aligned set of discussion starters (like the MRA tool).** We recommend a 4-6 hour meeting with good cross-representation across your organization. This is a great opportunity to build consensus regarding the organization's current readiness state, identify and align around next actions, and determine any risks.
3. **Analyze the results, and build observations and next steps.** After the MRA meeting, the team facilitating the MRA should meet and compare notes, analyze the results, and build the out-brief pitch that contains the summary observations and next steps to fill the identified gaps. This is also a good time to build a statement of work (SoW) for closing the identified gaps and completing the suggested next steps.
4. **Schedule and conduct a debrief.** This can be done in as little as an hour, but be sure to bring any new attendees up-to-date on the process, share and review outputs, and agree on next steps.

## Outputs

- An out-brief deck that summarizes observations, and next steps
- A scheduled meeting to review outputs and next steps
- (Optional but recommended) Estimates and a proposal (for example, a SoW) for the work that needs to be completed

# Guidelines

The following sections discuss the tasks listed in the [readiness assessment process \(p. 4\)](#) in more detail, and provide guidelines, tactics, and recommendations for each step.

- [Conducting the assessment meeting \(p. 5\)](#)
- [Analyzing the results and identifying actions \(p. 6\)](#)
- [Presenting the results \(p. 7\)](#)

## Conducting the assessment meeting

We recommend that you include all parties who will be involved in the migration effort in the assessment meeting. One of the primary outcomes of this activity is alignment on the current state of capabilities, and this consensus is best built through dialog with all interested parties.

Scheduling a meeting with a large number of attendees can take some coordination, so be sure to start planning and coordinating attendance two to three weeks before the meeting.

An experienced facilitator can conduct an MRA meeting in 4-6 hours. The ideal scenario is to have everyone in the same room to ensure maximum participation and to enable consensus building. Be sure to arrange comfortable seating with tables, and provide meals and breaks as needed.

Lastly, consider the timing of when particular individuals will be in the room. For example, if the CIO and head of IT Finance can't attend the entire meeting, plan topics accordingly. Strategy, business case, and budgeting are often the first topics to discuss, followed by account structure and tagging questions for bill-back or show-back considerations.

## Choosing attendees

Keeping the intent of consensus in mind, we recommend that you invite people who can provide both horizontal and vertical representation across the organization. Suggested attendees:

- CEO
- CTO / chief architect
- CIO
- Managing director
- Business unit owners
- IT finance
- Security leader
- Network leader
- Application development leader
- Infrastructure leader
- Operations leader
- Application owners (first few)

## Facilitating the meeting

The meeting should begin with general introductions, to make sure that everyone is aware of who is representing which part of the organization, and to confirm that the proper people are in the room. After



introductions, the CIO or their delegate can provide an overview of the cloud strategy and motivation behind the planned migration. This will be followed by detailed MRA discussions for alignment and buy-in.

**Example agenda:**

MRA Agenda		
9:30	Introductions	
9:45	Review business and technology goals and objectives	Review goals for migrating applications to AWS. Discuss short-term and long-term objectives, risks, and issues related to IT and business application migrations.
10:00 (with breaks every hour)	Assess migration readiness	Review current AWS footprint, applications, operational processes, and integration.  Focus your discussions on the following topics: <ul style="list-style-type: none"><li>• Total cost of ownership</li><li>• Business</li><li>• Governance</li><li>• People</li><li>• Platform</li><li>• Operations</li><li>• Security</li></ul>
15:00	Summarize feedback and actions	
15:30	Adjourn	

**Note**

AWS uses a list of around 70 questions that align to the AWS CAF and engage participants through the various areas under evaluation. These questions cover around 24 areas of readiness, and each area is assessed with 2-3 questions.

You can request an MRA facilitation or the list of questions from your AWS Account Manager.

To see the questions or to do a self-assessment with a smaller subset of questions, see the [AWS Cloud Adoption Readiness Tool \(CART\)](#).

## Analyzing the results and identifying actions

At the conclusion of the MRA session, you will have collected data across the dimensions of the AWS CAF and you can present observations as an executive summary of the general conversation. It isn't necessary at this stage to provide deep technical solutions for each area.

Identify actions for each area to help the organization get to a state where they are ready for migration. The key is to ensure a smooth migration experience for the first few applications they are planning to migrate. During this first pass, don't attempt to provide an action plan to solve every aspect of every

application; an iterative approach will help maintain quality and security while providing agility and speed.

For each action, provide a due date and an owner at the minimum. Ideally, a project should be created and started to ensure the timely closing of actions.

**Note**

Use the [AWS Migration Readiness Assessment \(MRA\) tool](#) (requires login) to gain access to questions. This tool also provides a report generator that assists in analyzing results, summarizing observations and recommended actions, and building a presentation.

## Presenting the results

Generally, presenting the observations, actions, and next steps takes about an hour. This session should include the attendees of the MRA discussion session and additional stakeholders if needed.

Start the discussion with a reminder of the business objectives and outcomes that are being pursued. This helps set the right tone as the observations and activities that follow help deliver those outcomes. Follow this up with a general summary and high-level summaries across the areas that were analyzed. Focus on highlighting the broad areas of strength and weakness, and then share the plan that addresses the weaknesses, to enable the organization to meet the level of readiness required for a successful migration. The objective of the session is alignment and agreement on next steps to dive deeper into certain areas and start implementing and building momentum.

**Note**

If you're following the AWS MRA methodology and tools, areas will be identified by green, red, or yellow (see the [heat map \(p. 3\)](#) earlier in this guide) to indicate their level of readiness. You can remedy red and yellow scores by completing the Migration Readiness and Planning (MRP) activities. These scores are not a reflection of the current on-premises status of the application.

## Next steps

In this guide, we discussed Migration Readiness Assessment (MRA), which is a method for identifying where an enterprise is in their cloud journey. Using the AWS CAF ensures that you're looking at your enterprise's environment holistically and considering buy-in and business concerns instead of focusing solely on the technical aspects of migration. To learn more, contact an AWS Account Manager.

After a readiness assessment, you should complete the identified actions and implement the defined plan. If you're following AWS methodologies, this would include implementing the Migration Readiness and Planning (MRP) project.

Getting workloads migrated should be the objective of activities after the MRA. To help facilitate this, identify low-risk or easy-to-move workloads that can move in early stages while other actions are being completed. This enables the team to start building up success stories to help gain buy-in and excitement from other teams.

## FAQ

This section provides answers to commonly raised questions about migration readiness assessment.

### How can I accurately assess my environment?

Consider the volume of resources used by each application, and automate the assessment process to confirm that it is done rapidly and accurately. Assessing your environment manually is a time-consuming process. It exposes your organization to human error. Automating the process will give you insight into what you don't know, and will help you more clearly understand and define these uncertainties so they can be factored into your migration strategy.

### How can I identify and evaluate the right partners to help me?

For details on offerings from APN Partners, see:

- [AWS Migration Partner Solutions](#)
- [Migration solutions in AWS Marketplace](#)
- [A Tools Catalog for Accelerating Migration with Automation](#)

# AWS Prescriptive Guidance glossary

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6 Rs

Six 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:

- 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.
- 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 RDS for Oracle in the AWS Cloud.
- 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 Amazon Aurora PostgreSQL.
- Repurchase (drop and shop) – Switch to a different product, typically by moving from a traditional license to an SaaS model. Example: Migrate your customer relationship management (CRM) system to Salesforce.com.
- Retire – Decommission or remove applications that are no longer needed in your source environment.
- 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.

For details, see the [AWS migration whitepaper](#).

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](#).

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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 <a href="#">AWS CAF website</a> and the <a href="#">AWS CAF whitepaper</a> .
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 <a href="#">Setting up a secure and scalable multi-account AWS environment</a> .
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 Conversion Tool (AWS SCT). It analyzes database schemas and code objects, application code, dependencies, and performance characteristics, and provides assessment reports. For more information, see the <a href="#">AWS WQF documentation</a> .
business continuity planning (BCP)	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.
Cloud Center of Excellence (CCoE)	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.
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)	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.
epic	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

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	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 execution guide</a> .
heterogeneous database migration	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 Schema Conversion Tool (AWS SCT)</a> can help with schema conversions.
homogeneous database migration	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.
IT information library (ITIL)	A set of best practices for delivering IT services and aligning these services with business requirements. ITIL provides the foundation for ITSM.
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> .
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 Readiness and Planning (MRP)	The process of gaining hands-on migration experience, including tools, processes, and best practices, to prepare your organization for cloud migration. This phase involves migrating 10 to 30 business applications to lay the foundation for migrating your systems at scale. It consists of a defined set of activities across <a href="#">eight workstreams</a> . MRP is the second 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.
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.
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.



# 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 from the top navigation bar on this page.

update-history-change	update-history-description	update-history-date
<a href="#">— (p. 14)</a>	Initial publication	August 5, 2019