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Evaluating migration readiness

Migration specialists, AWS Professional Services

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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 in 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.
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 Mobilize. 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 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:**

<table>
<thead>
<tr>
<th>MRA Agenda</th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9:30</td>
<td>Introductions</td>
</tr>
<tr>
<td></td>
<td>9:45</td>
<td>Review business and technology goals and objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Review goals for migrating applications to AWS. Discuss short-term and long-term objectives, risks, and issues related to IT and business application migrations.</td>
</tr>
<tr>
<td></td>
<td>10:00 (with breaks every hour)</td>
<td>Assess migration readiness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Review current AWS footprint, applications, operational processes, and integration.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focus your discussions on the following topics:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Total cost of ownership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Governance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• People</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Platform</td>
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<tr>
<td></td>
<td></td>
<td>• Operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Security</td>
</tr>
<tr>
<td></td>
<td>15:00</td>
<td>Summarize feedback and actions</td>
</tr>
<tr>
<td></td>
<td>15:30</td>
<td>Adjourn</td>
</tr>
</tbody>
</table>

**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)](https://aws.amazon.com/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 activities of the mobilize phase. 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 mobilize phase of the migration 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
### AI and ML terms

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.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>binary classification</td>
<td>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?”</td>
</tr>
<tr>
<td>classification</td>
<td>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.</td>
</tr>
<tr>
<td>data preprocessing</td>
<td>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.</td>
</tr>
<tr>
<td>deep ensemble</td>
<td>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.</td>
</tr>
<tr>
<td>deep learning</td>
<td>An ML subfield that uses multiple layers of artificial neural networks to identify mapping between input data and target variables of interest.</td>
</tr>
<tr>
<td>exploratory data analysis (EDA)</td>
<td>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.</td>
</tr>
<tr>
<td>features</td>
<td>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.</td>
</tr>
<tr>
<td>feature importance</td>
<td>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 <strong>Machine learning model interpretability with AWS</strong>.</td>
</tr>
</tbody>
</table>
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 Machine learning model interpretability with AWS.

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 outcome variable. 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: Epistemic uncertainty is caused by limited, incomplete data, whereas aleatoric uncertainty is caused by the noise and randomness inherent in the data. For more information, see the Quantifying uncertainty in deep learning systems guide.

**Migration terms**

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**  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:

- 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.
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.
Conversion Tool (AWS SCT). It analyzes database schemas and code objects, application code, dependencies, and performance characteristics, and provides assessment reports.

**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 CCoE posts on the AWS Cloud Enterprise Strategy Blog.

**cloud stages of adoption**
The four phases that organizations typically go through when they migrate to the AWS Cloud:

- **Project** – Running a few cloud-related projects for proof of concept and learning purposes
- **Foundation** – Making foundational investments to scale your cloud adoption (e.g., creating a landing zone, defining a CCoE, establishing an operations model)
- **Migration** – Migrating individual applications
- **Re-invention** – Optimizing products and services, and innovating in the cloud

These stages were defined by Stephen Orban in the blog post The Journey Toward Cloud-First & the Stages of Adoption on the AWS Cloud Enterprise Strategy blog. For information about how they relate to the AWS migration strategy, see the migration readiness guide.

**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 access management, detective controls, infrastructure security, data protection, and incident response. For more information about epics in the AWS migration strategy, see the program implementation guide.

**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. AWS provides AWS SCT that helps 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.

**idle application**
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.

**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 operations integration guide.

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 MPA tool (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 migration readiness guide. MRA is the first phase of the AWS migration strategy.

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 migration factory of teams, tools, and processes to streamline the migration of workloads through automation and agile delivery. This is the third phase of the AWS migration strategy.

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 discussion of migration factories and the CloudEndure Migration Factory guide 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 7 Rs (p. 11) entry in this glossary and see Mobilize your organization to accelerate large-scale migrations.

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 operations integration guide.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>organizational change management (OCM)</td>
<td>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 <em>people acceleration</em>, because of the speed of change required in cloud adoption projects. For more information, see the OCM guide.</td>
</tr>
<tr>
<td>playbook</td>
<td>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.</td>
</tr>
<tr>
<td>portfolio assessment</td>
<td>A process of discovering, analyzing, and prioritizing the application portfolio in order to plan the migration. For more information, see Evaluating migration readiness.</td>
</tr>
<tr>
<td>responsible, accountable, consulted, informed (RACI) matrix</td>
<td>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.</td>
</tr>
<tr>
<td>runbook</td>
<td>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.</td>
</tr>
<tr>
<td>service-level agreement (SLA)</td>
<td>An agreement that clarifies what an IT team promises to deliver to their customers, such as service uptime and performance.</td>
</tr>
<tr>
<td>task list</td>
<td>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.</td>
</tr>
<tr>
<td>workstream</td>
<td>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.</td>
</tr>
<tr>
<td>zombie application</td>
<td>An application that has an average CPU and memory usage below 5 percent. In a migration project, it is common to retire these applications.</td>
</tr>
</tbody>
</table>

**Modernization terms**

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.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>business capability</td>
<td>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 Organized around business capabilities section of the Running containerized microservices on AWS whitepaper.</td>
</tr>
<tr>
<td>domain-driven design</td>
<td>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, <em>Domain-Driven Design: Tackling Complexity in the Heart of Software</em> (Boston: Addison-Wesley).</td>
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Professional, 2003). For information about how you can use domain-driven design with the strangler fig pattern, see Modernizing legacy Microsoft ASP.NET (ASMX) web services incrementally by using containers and Amazon API Gateway.

**microservice**
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 Integrating microservices by using AWS serverless services.

**microservices architecture**
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 Implementing microservices on AWS.

**modernization**
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 Strategy for modernizing applications in the AWS Cloud.

**modernization readiness assessment**
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 Evaluating modernization readiness for applications in the AWS Cloud.

**monolithic applications (monoliths)**
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 Decomposing monoliths into microservices.

**polyglot persistence**
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 Enabling data persistence in microservices.

**split-and-seed model**
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 Phased approach to modernizing applications in the AWS Cloud.

**strangler fig pattern**
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 introduced by Martin Fowler as a way to manage risk when rewriting monolithic systems. For an
example of how to apply this pattern, see Modernizing legacy Microsoft ASP.NET (ASMX) web services incrementally by using containers and Amazon API Gateway.

two-pizza team

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.

<table>
<thead>
<tr>
<th>update-history-change</th>
<th>update-history-description</th>
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<tbody>
<tr>
<td>Initial publication (p. 18)</td>
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<td>August 5, 2019</td>
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