AWS Prescriptive Guidance
Evaluating modernization readiness for applications in the AWS Cloud
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Evaluating modernization readiness for applications in the AWS Cloud

Vijay Thumma, Global Practice Manager, AWS Professional Services

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Modernization evaluation is the process of putting together an assessment that helps determine the modernization readiness of an organization’s applications. Amazon Web Services (AWS) recommends using an application questionnaire in the assessment phase to evaluate and rationalize your organization’s application portfolio and determine the business, functional, technical, and financial significance of applications in the portfolio. This assessment determines how well your organization can support the future state architecture of these applications, after modernization.

This guide describes the modernization readiness assessment process, including steps, outcomes, and best practices, for application owners, business owners, architects, technical leads, and project managers.

The guide is part of a content series that covers the application modernization approach recommended by AWS. The series also includes:

- Strategy for modernizing applications in the AWS Cloud
- Phased approach to modernizing applications in the AWS Cloud
- Decomposing monoliths into microservices
- Integrating microservices by using AWS serverless services
- Enabling data persistence in microservices

Targeted business outcomes

You should expect three outcomes from a modernization readiness review:

- A roadmap for modernizing core business applications, including a capture of business benefits, risk factors, and dependencies.
- An application modernization blueprint to specify the technical and functional architecture for the target state of a modernized application, for one or two applications. This blueprint includes a proof of concept for delivering a minimum viable product (MVP).
- An action plan to resolve the identified gaps, so your organization can modernize at scale without having to pause to solve foundational issues.
Readiness assessment process

A readiness assessment consists of these four tasks, spread over two weeks:

1. Schedule the readiness assessment meeting and require attendance.
2. Conduct interviews with key stakeholders or personas for each application suite.
3. Gather information by using the application modernization questionnaire (see the appendix (p. 7)), analyze the gathered information, document observations, and determine next steps.
4. Schedule and conduct a debrief meeting.

The following sections discuss these tasks in more detail.

Scheduling the readiness assessment meeting

The first step of the readiness assessment process is to schedule the readiness assessment meeting with required attendees. Suggested attendees are:

- 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 (for first few applications)

Conducting interviews

In this step, you conduct interviews with key stakeholders or personas, starting with a one-hour or two-hour discussion with the executive team. This kick-off meeting starts the whole process, and it is a critical component of the assessment.

- During the kick-off meeting, understand the organization's business priorities, and identify the set of core applications that should be assessed during the two-week readiness assessment. The goal is to align with business priorities.
- When business and technology leaders are in alignment with respect to priorities, host a two-day vision workshop to define the details of the modernization strategy, and to drive alignment and executive commitment to resource allocation. The vision workshop has these specific goals:
  - Identify a prioritized short list of critical business outcomes that could be delivered as part of a modernization initiative.
Gathering information

In this step, use the application modernization questionnaire (see the appendix (p. 7)) to better understand and assess the current portfolio. You can assess applications through five lenses:

- Strategic or business fit
- Functional adequacy
- Technical adequacy
- Financial fit
- Digital readiness

Develop a journey guide so that everyone has a common understanding of the ecosystem, and focus on applications that will be replatformed, refactored, and replaced. Prioritize one or two workloads for modernization, and create a blueprint to modernize those applications.

- Check prerequisites. Confirm that all prerequisite steps have been completed before you create your blueprint. Prerequisites include confirming the drivers for application modernization, such as code remediation, performance, integration, serviceability, and decision for adoption path (replatform, refactor, or replace).
- Align assets. Identify which proposed or existing assets are required to support the prioritized workloads.
- Define iterations and releases. Determine the time blocks (iterations) allocated for the modernization work. Define releases (work to be done) before you change production processes.
- Identify actions for each area to help your organization get ready for modernization. The key is to ensure a smooth migration experience for the first few applications you are planning to modernize. 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.
- Identify deadlines and owners. For each action, provide a due date and one owner at the minimum. Ideally, you should create and start a project to ensure the timely closing of actions.

Presenting the results

Discuss (validate) the findings in a debrief meeting to build a roadmap that outlines the business plans discussed, risk factors identified, and paths for each application. Your analysis and observations might include:

- Grouping, ranking, and sequencing for applications
• Target and interim operating models
• Key technology and regulatory requirements
• Applications that have extensive data migration requirements
• The scope and volume of data to be converted

This helps set the right tone for the observations and activities that follow, which help deliver those outcomes. The objective of the debrief session is alignment and agreement on next steps, which will dive deeper into certain areas and start implementing and building momentum.
Outputs and next steps

The outputs from the readiness assessment process for applications include:

- An out-brief deck that summarizes observations and next steps
- A meeting scheduled to review outputs and next steps
- (Optional but recommended) Estimates and a proposal, such as a statement of work (SOW) for the work that needs to be completed, and a clearly defined minimum viable product (MVP) solution for the chosen use case

Upon successful completion of the vision workshop, the extended modernization team should perform a one-week inception engagement to:

- Align broader stakeholder groups.
- Define high-level technical solutions for the chosen business outcomes.
- Develop a modernization roadmap that details MVP development phases and milestones.
- Begin initial setup of cloud foundations by using landing zone templates and AWS Control Tower automation.

Your organization’s senior business and technology leaders will be expected to communicate the vision and set the expectation with the joint execution team. However, the majority of workshops will be focused on the modernization working teams, which should include application owners, technical leads, business owners, and architects.

AWS will engage with your organization’s business development teams to drive technology modernization and to manage your end-to-end needs, including application architecture, design, and development; mobile enablement; testing; and collaborative solutions. These services combine proven processes, intelligent automation, use of data and patterns, open standards, and the right people to help you modernize your legacy applications. Primary goals are targeted to:

- Assist to develop a platform that offers a fully automated, tools-based approach for modernizing legacy technology, and couple it with holistic knowledge of modernization.
- Build an MVP with full stack teams, with modernization engineering capabilities focused on customer outcomes and scale.

AWS Professional Services and AWS Partners work directly with senior technology and business customer stakeholders to drive enterprise modernization, while iteratively delivering end-customer value.
Resources

Related guides

- Strategy for modernizing applications in the AWS Cloud
- Phased approach to modernizing applications in the AWS Cloud
- Modernizing operations in the AWS Cloud
- Decomposing monoliths into microservices
- Integrating microservices by using AWS serverless services
- Enabling data persistence in microservices
- Prescriptive guidance for migrating to the AWS Cloud

AWS resources

- AWS documentation
- AWS general reference
- AWS glossary
Appendix: Application modernization questionnaire

Use the questionnaire in this section as a starting point to gather information for the modernization assessment and planning phases of your project. You can download this questionnaire in Microsoft Excel format and use it to record your information.

Download questionnaire

Disposition

1. What is the application ID?
2. What is the application type?
3. What is the intended disposition of the application (for example, replatform, refactor, or replace)?

Revalidation of refactoring decision

1. Is this a high-value (revenue-generating) application?
2. Is this a customer-facing application?
3. Is this a strategic application that requires adding or enhancing business features?
4. Are you willing to transform the application to support an accelerated pace of innovation?
5. Does this application use a proprietary or custom framework or library? If yes, provide the name of the proprietary framework or library.
6. What is the application programming language framework and version? (Required for custom applications only)

Interfaces and dependencies

1. List the applications that will be reaching to this application (inbound interfaces).
2. List the applications that this application will reach out to (outbound interfaces). Is this a customer-facing application?
3. What is the interface type?
4. What is the interface protocol?
5. Provide a list of shared services that this application uses (for example, Active Directory, logging, backup, monitoring).
6. Provide a list of applications that are dependent on the current application's database.
7. Are the interfaces direct, brokered, or both?

Application characteristics and profile

1. What kind of caching strategy or technology does the application use?
2. What kind of clustering technology does the application use?
3. What kind of queueing service or technology does the application use?
4. Does the application support mobile interfaces? (Required for mobile channel only)
5. Is the application stateless?
6. How does the application support scalability?
7. What is the configured Java Virtual Machine (JVM) heap size for this application to run?
8. What is the application code size, as measured in number of lines? (Required for custom applications only)
9. Does this application provide the ability to quickly adapt to changes to regulatory requirements?
10. Do you have unit test scripts for this application?

COTS applications

1. Has the commercial off-the-shelf (COTS) application code been extended and customized?
2. What is the COTS customization programming language extension?
3. What is the size (number of lines) of the customized code extension for the COTS application?
4. Does this COTS application require custom configuration?
5. What is the overall effort to install, configure, and validate the application?

Database (custom)

1. What is the size of the database (in GB)?
2. What is the total number of database tables?
3. What is the total number of stored procedures?
4. What is the total size of the remote or local blobs that are stored outside the database? (Answer only if the blob is used by the application database.)
5. What is the average number of attributes per table?
6. How many database jobs exist for this application?

Screens, reports, and batch jobs (custom and COTS)

1. How many screens does the application include?
2. List all reports associated with the application.
3. List all batch jobs and processes associated with the application, and list the control systems that run the jobs.

Security and compliance

1. What is the source control or repository system?
2. List all the compliance requirements for this application.
3. What is the data classification?
4. Provide the name of the single sign-on (SSO) integration, if any, that this application uses.
5. Provide the name of the third-party authentication system, if any, that this application uses.
6. How is data being protected?

Operations

1. Is this application deployed behind a load balancer?
2. Does this application require sticky sessions?
3. Does this application require access to shared storage? If so, specify the size of shared storage.
4. What is the size of static content (for example, MP3, JPEG, AVI, WMV, PNG, GIF files), in GB?
5. What is the recovery time objective (RTO) and recovery point objective (RPO)?
6. Does this application require high availability?
7. Does the application require a secondary failover site for disaster recovery?
8. How many CPUs are used to run this application?
9. What is the memory size of the application?
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.

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