

AWS re:Invent

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ENT312-R

Modernizing your workload for speed and flexibility

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Agenda

Migrate to modernize (10 minutes)

Workshop instructions (5 minutes)

Lab execution (1 hour 45 minutes)

Our scenario

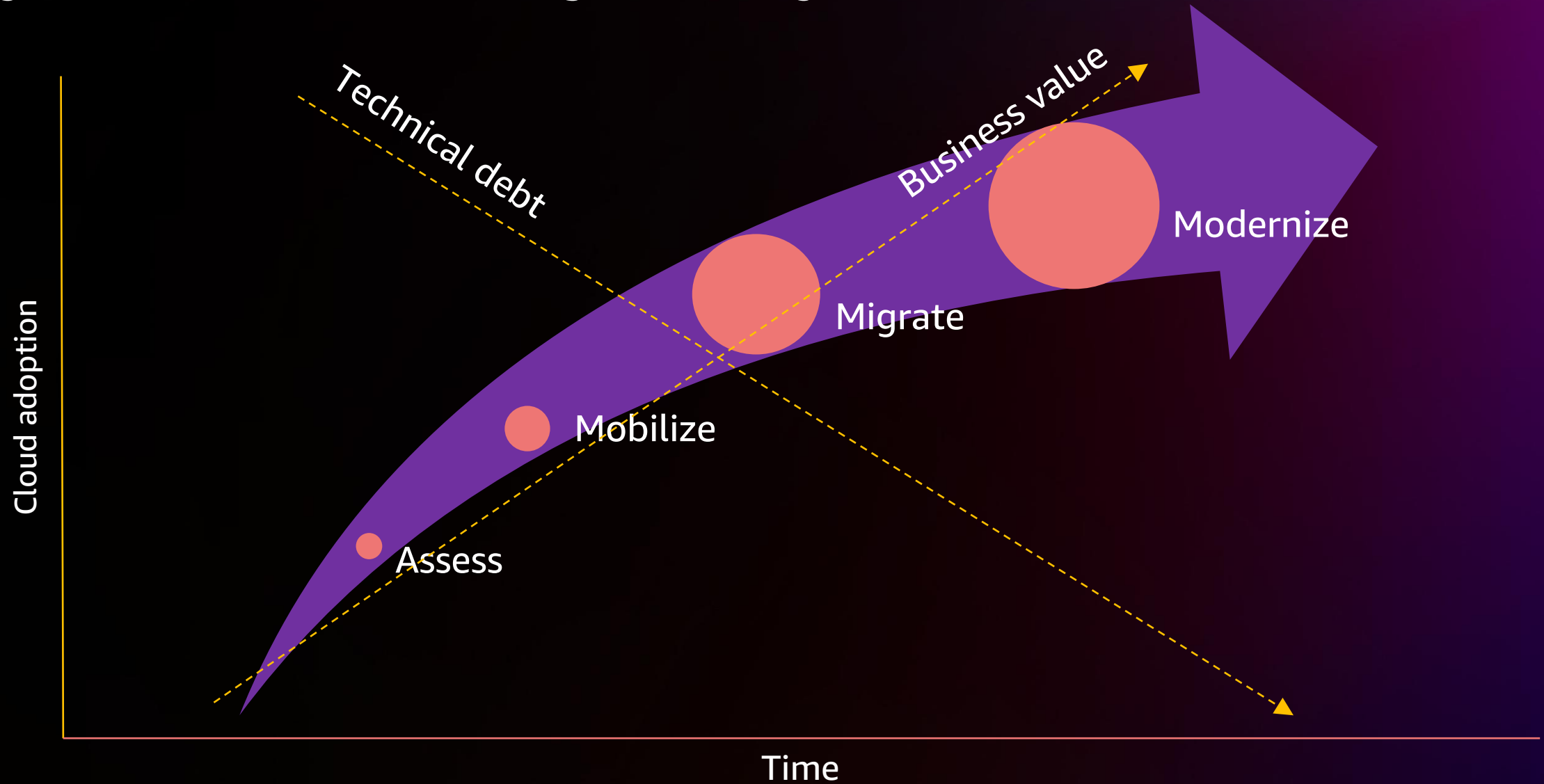
Scenario

- Data center exit goals in <2 years
- Modernization of business-critical apps
- Accelerate benefits of the cloud
- Reduce operational overhead

Workload pain points

- Infrastructure provisioned for peak, underutilized hardware outside of peak
- Codebase in the gigs increasing deployment times and downtimes
- Difficult to adopt new technologies

Typical customer journey

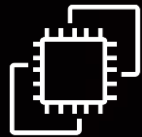


Our modernization journey

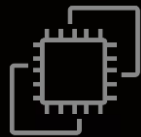
Rehost

MIGRATE

Self-managed
apps and databases run on
virtual machines (VMs)
No code changes



Amazon EC2



Amazon EC2



Minimal-effort
modernization
via Amazon
RDS for MySQL

Replatform

MOVE TO CONTAINERS

Fully managed container-run service
with auto scaling



AWS App Runner

MOVE TO MANAGED DATA

Managed provisioning, backups,
patching, monitoring, and scaling
No code changes



Amazon RDS for MySQL

Refactor

MOVE TO CLOUD-NATIVE

Microservices

Self-contained
Agility-
independent
releases
Flexible
technology
adoption

Serverless

Pay as you go
Build fast
Scale effortlessly



AWS Lambda

PURPOSE-BUILT DATABASES

Cloud-native and fully managed
The right database for the service



Amazon
Aurora



Amazon
DynamoDB



Amazon
Neptune



Amazon
Redshift

Java
application

MySQL
database

Why migrate first?

Reap cloud benefits early to free up resources for modernization

Elasticity and scalability

- Right-size instance and elastically scale
- Prevent need to renew hardware purchases

Reduce cost

- Capacity optimization through just-in-time infrastructure
- Pay only for what you use instead of provisioning for peak

Operational overhead

- Eliminate need to manage and operate a data center
- Eliminate need for hardware forecasting and procurement

And then modernize?

Enable focus for incremental modernization

Speed

- Increase speed of deployments
- Minimize/remove dev team dependencies
- Enables rapid experimentation

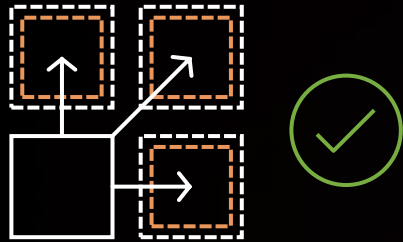
Flexibility

- Enable ability to adopt new technologies
- Use the best tool for the job
- Decoupled architectures improve resilience

Undifferentiated heavy lifting

- Focus on building business capabilities
- Get features to market faster with serverless

Other pillars of modernization



Technology and architecture

Independent business functions



People, process, and culture

Organized for value



Ops and governance at scale

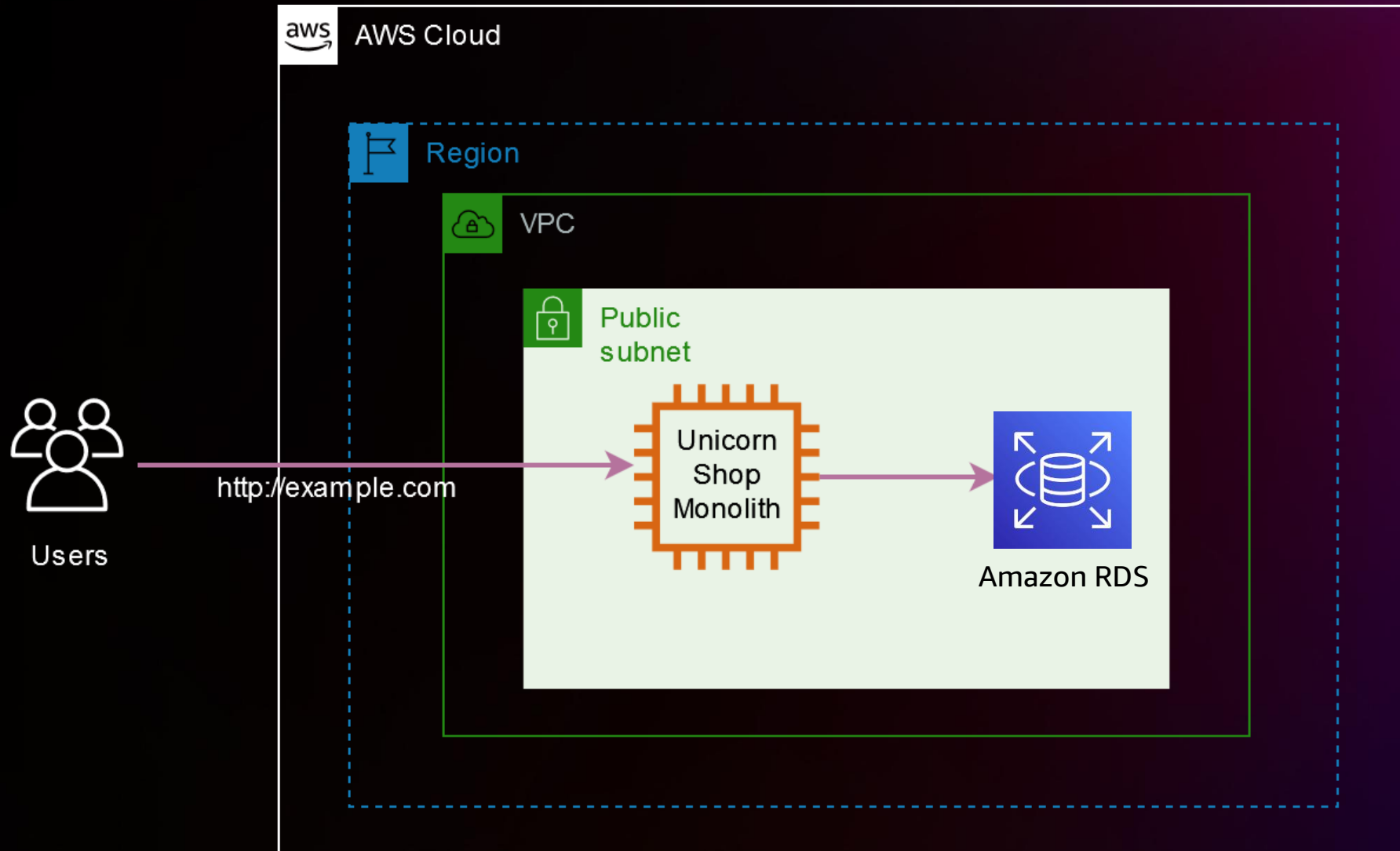
Automate, enable, and self-serve

Modernization is the refactoring of legacy technology by combining modern infrastructure, architecture, and organization patterns to maximize resiliency, engineering efficiency, and business agility

Workshop setup

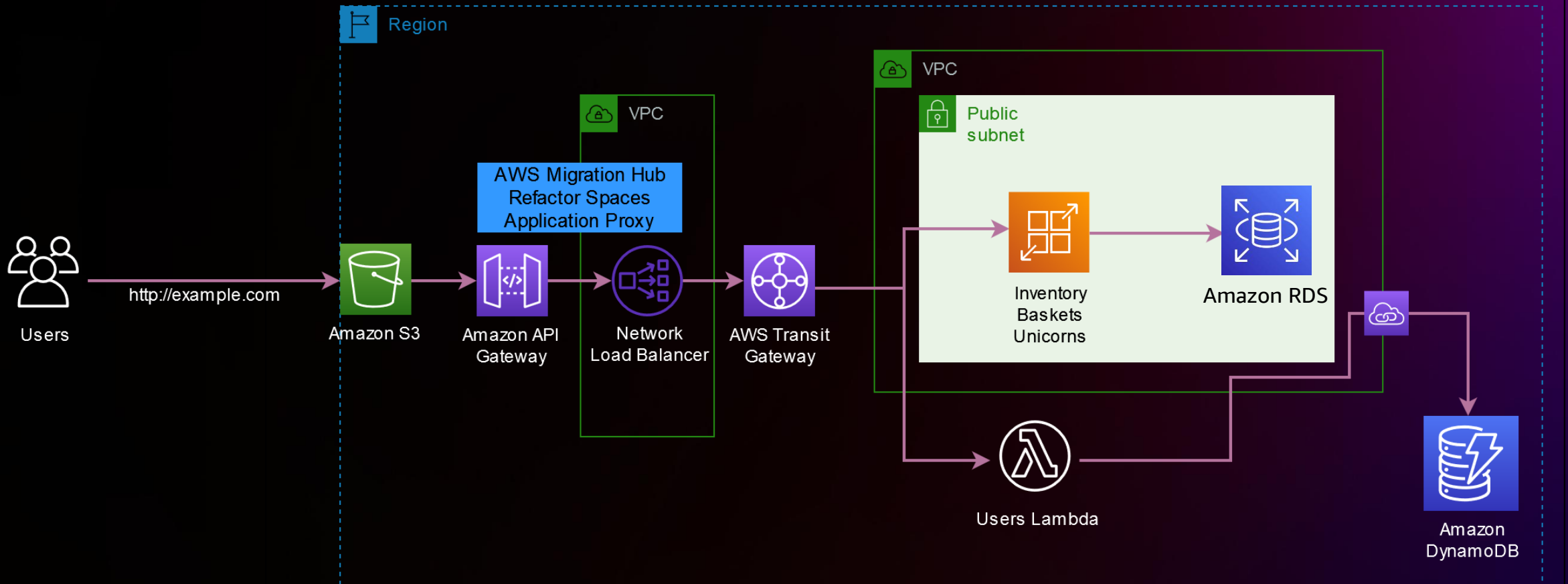


The existing application



What you will build today

AWS Cloud

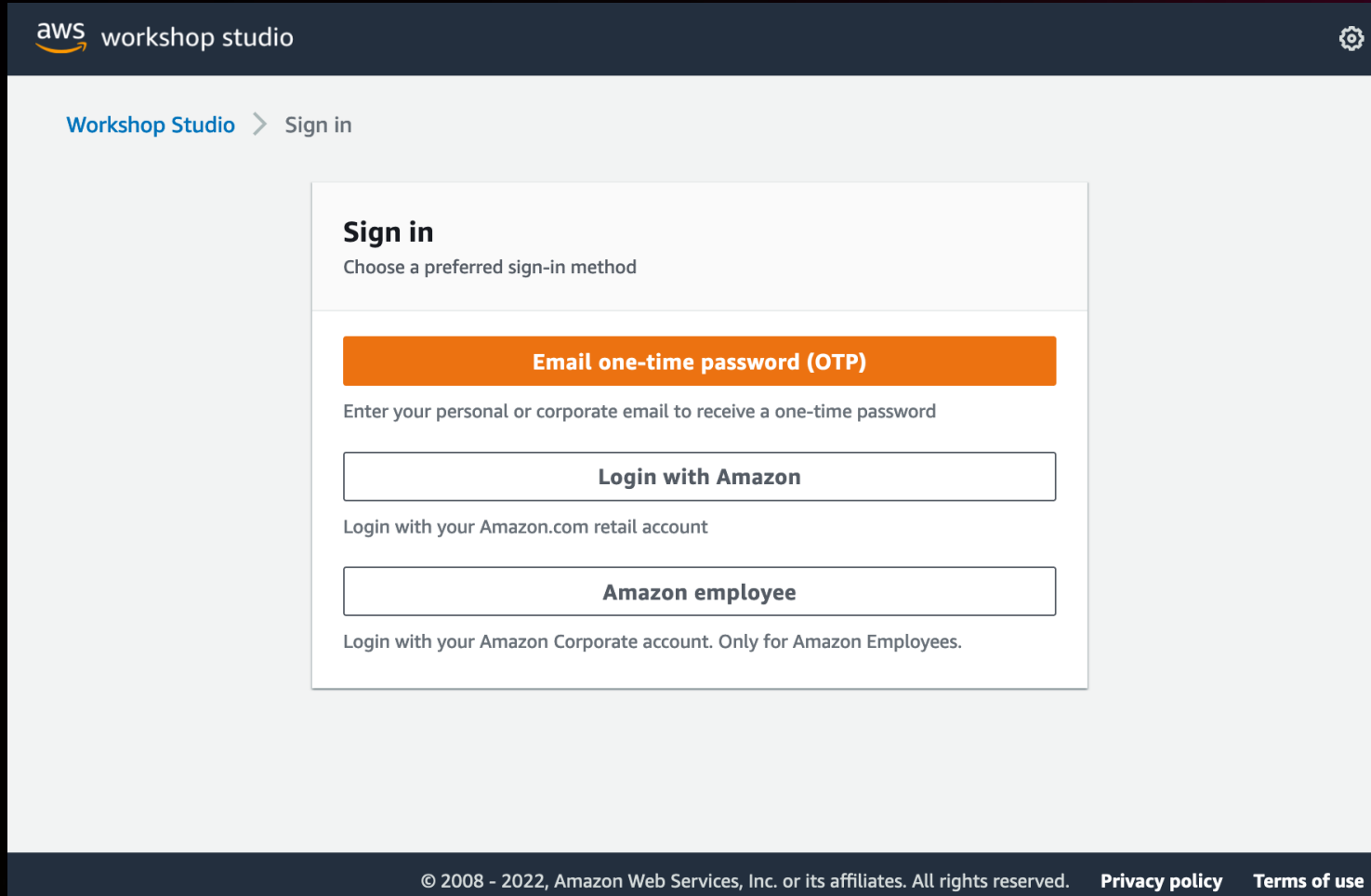


Getting started with this workshop

- As a participant, you will have access to an AWS account with any optional pre-provisioned infrastructure and IAM policies needed to complete this workshop.
- The AWS account will only be available for the duration of this workshop. You will lose access to the account thereafter.
- The optional pre-provisioned infrastructure will be deployed to a specific Region. Check your workshop content to determine whether other Regions will be used.
- Be sure to review the terms and conditions of the event. Do not upload any personal or confidential information in the account.

Step 1: Sign-in via your preferred method

Navigate to URL: <https://s12d.com/modernization>



The screenshot shows the AWS Workshop Studio sign-in interface. At the top, the header includes the AWS logo and 'workshop studio' text, along with a settings gear icon. Below the header, a breadcrumb trail reads 'Workshop Studio > Sign in'. The main content area is titled 'Sign in' with the instruction 'Choose a preferred sign-in method'. There are three sign-in options: 1. 'Email one-time password (OTP)' in an orange button, with the instruction 'Enter your personal or corporate email to receive a one-time password'. 2. 'Login with Amazon' in a white button, with the instruction 'Login with your Amazon.com retail account'. 3. 'Amazon employee' in a white button, with the instruction 'Login with your Amazon Corporate account. Only for Amazon Employees.' The footer contains the copyright notice '© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.' and links for 'Privacy policy' and 'Terms of use'.

aws workshop studio

Workshop Studio > Sign in

Sign in
Choose a preferred sign-in method

Email one-time password (OTP)
Enter your personal or corporate email to receive a one-time password

Login with Amazon
Login with your Amazon.com retail account

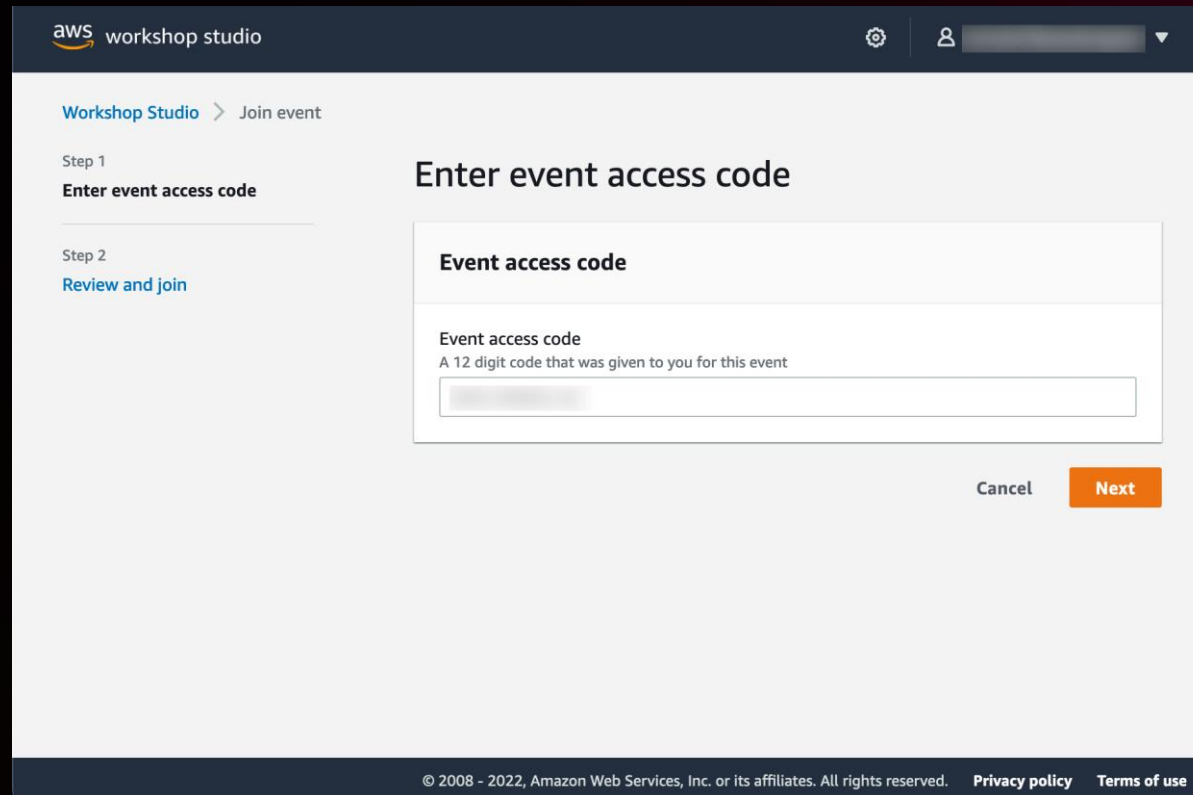
Amazon employee
Login with your Amazon Corporate account. Only for Amazon Employees.

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Step 2: Enter event access code

Confirm the 12-digit event access code.



The screenshot shows the AWS Workshop Studio interface. At the top, there's a header with the AWS logo and 'workshop studio' text. Below the header, a breadcrumb trail shows 'Workshop Studio > Join event'. The main content area is titled 'Enter event access code'. On the left side of this area, there's a sidebar with 'Step 1 Enter event access code' (highlighted) and 'Step 2 Review and join'. The main form area contains a section titled 'Event access code' with a description: 'Event access code A 12 digit code that was given to you for this event'. Below this is a text input field. At the bottom right of the form, there are two buttons: 'Cancel' and 'Next' (which is orange and highlighted). The footer of the page contains copyright information: '© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.' and links to 'Privacy policy' and 'Terms of use'.

aws workshop studio

Workshop Studio > Join event

Step 1
Enter event access code

Step 2
Review and join

Enter event access code

Event access code



Event access code
A 12 digit code that was given to you for this event

Cancel Next

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Step 3: Review terms and join event

aws workshop studio



Workshop Studio > Join event

Step 1

[Enter event access code](#)

Step 2

Review and join

Review and join

Event details

Name	Start time	Duration	Level
[REDACTED]	9/23/2022 01:13 AM	12 hours	-

Description

[REDACTED]

Terms and Conditions

Read and accept before joining the event

1. By using AWS Workshop Studio for the relevant event, you agree to the AWS Event Terms and Conditions and the AWS Acceptable Use Policy. You acknowledge and agree that are using an AWS-owned account that you can only access for the duration of the relevant event. If you find residual resources or materials in the AWS-owned account, you will make us aware and cease use of the account. AWS reserves the right to terminate the account and delete the contents at any time.
2. You will not: (a) process or run any operation on any data other than test data sets or lab-approved materials by AWS, and (b) copy, import, export or otherwise create derivate works of materials provided by AWS, including but not limited to, data sets.
3. AWS is under no obligation to enable the transmission of your materials through Event Engine and may, in its discretion, edit, block, refuse to post, or remove your materials at any time.
4. Your use of AWS Workshop Studio will comply with these terms and all applicable laws, and your access to AWS Workshop Studio will immediately and automatically terminate if you do not comply with any of these terms or conditions.

☒ I agree with the Terms and Conditions

Cancel


Previous

Join event

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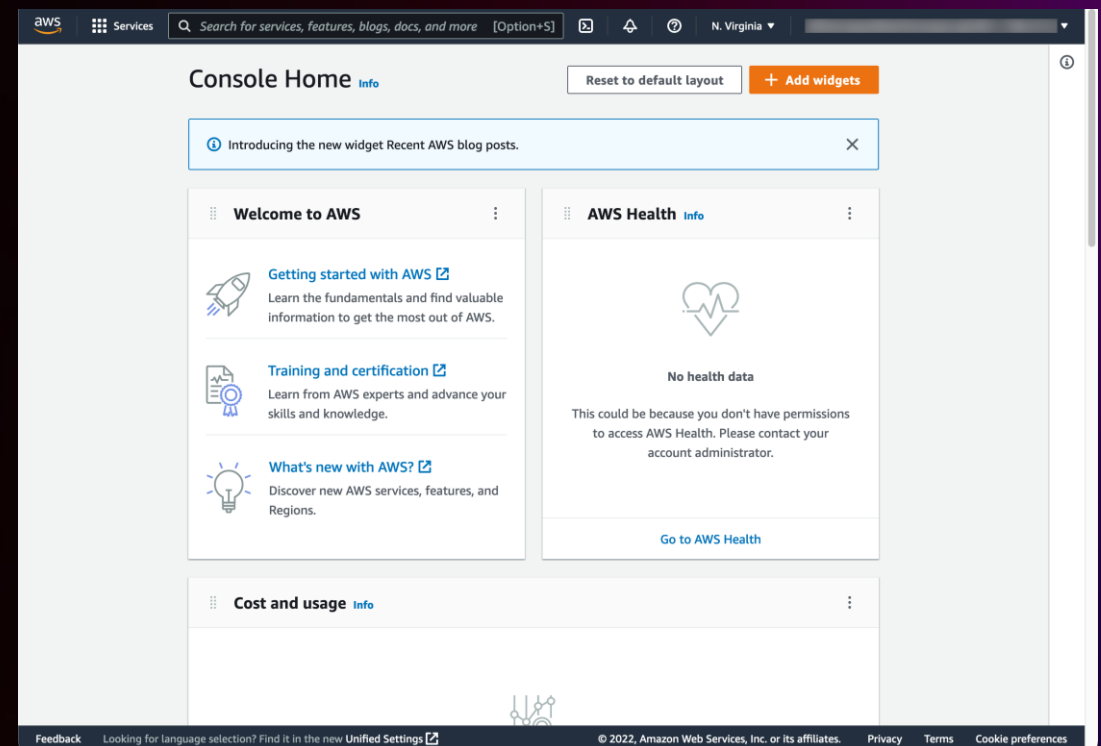
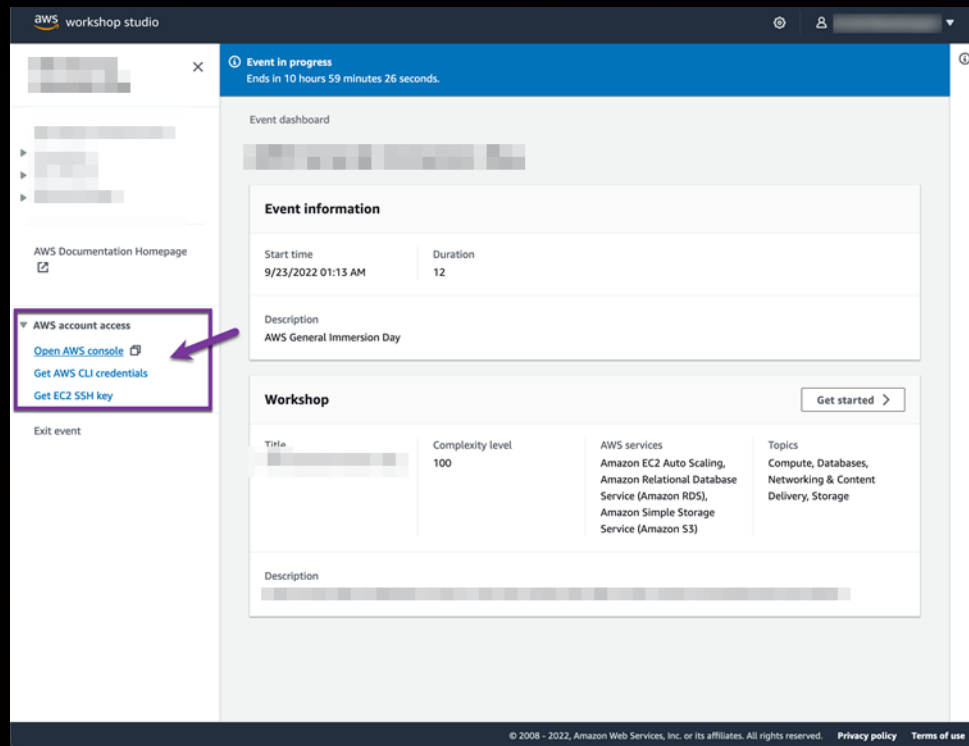
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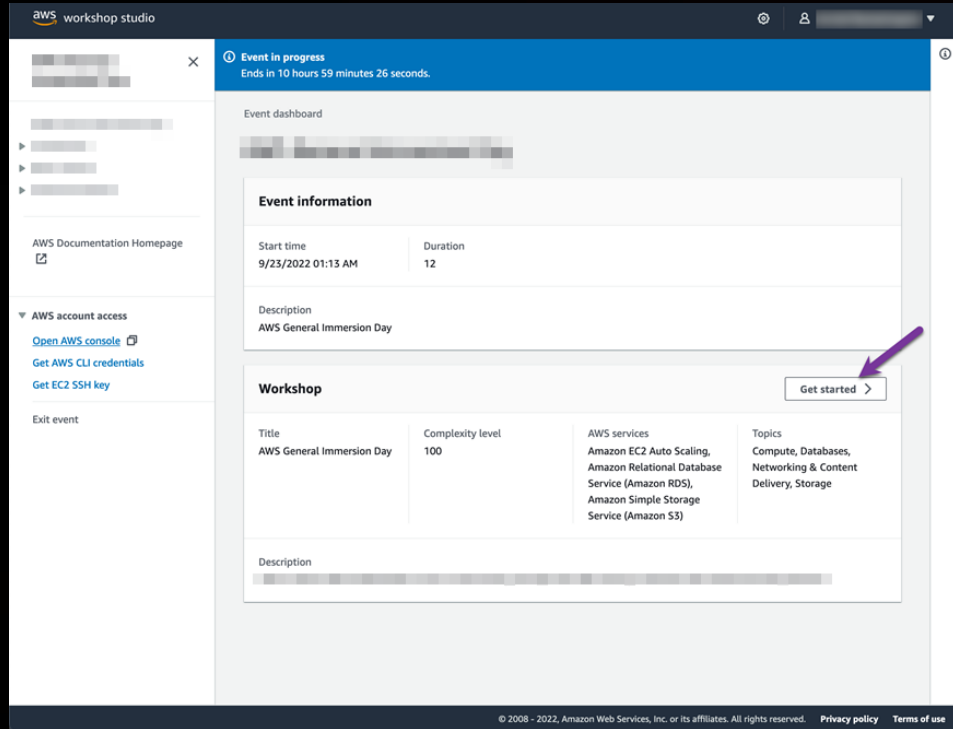
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Step 4: Access AWS account

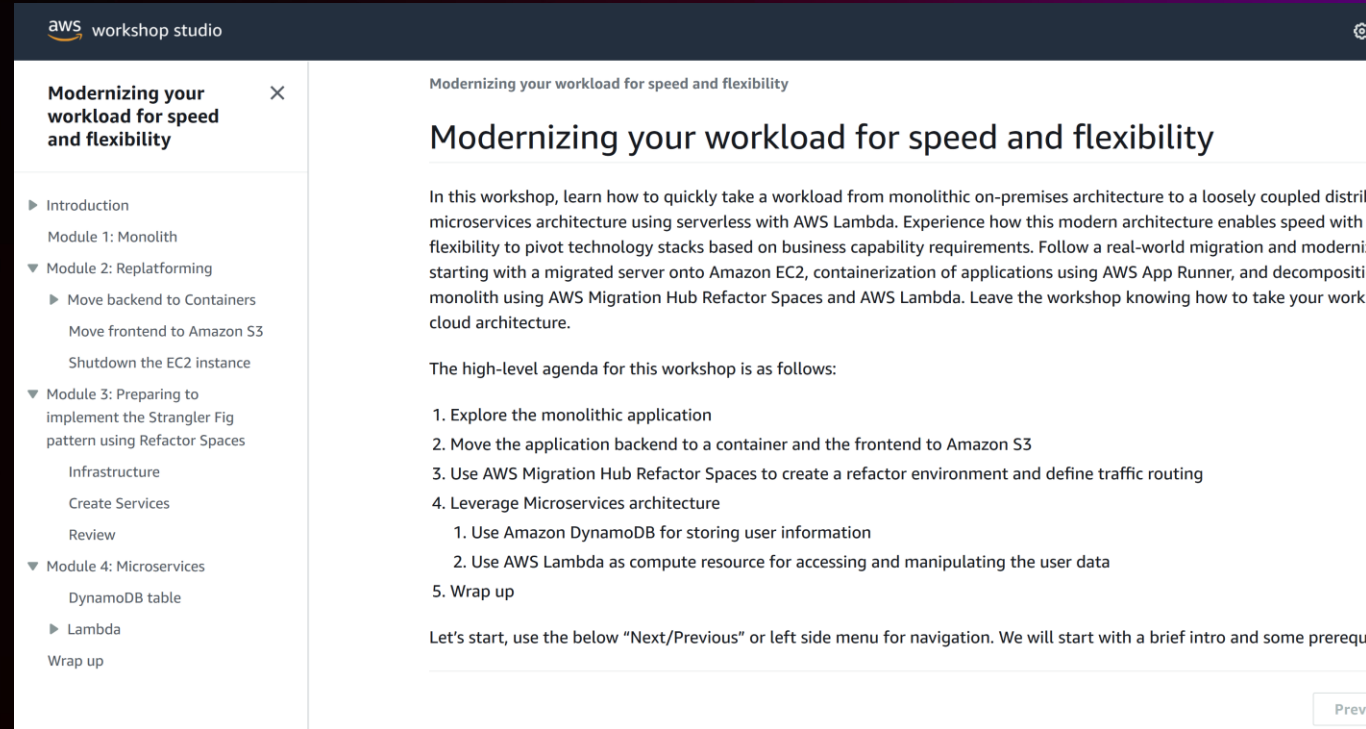
Access the AWS console



Step 5: Get started with the workshop



The screenshot shows the AWS Workshop Studio interface during an event. The top bar indicates the event is in progress and ends in 10 hours 59 minutes 26 seconds. The left sidebar contains links for AWS Documentation, account access (console, CLI, SSH key), and an exit event button. The main content area is divided into 'Event information' and 'Workshop' sections. The 'Workshop' section displays the title 'AWS General Immersion Day', a complexity level of 100, a list of AWS services (Amazon EC2 Auto Scaling, Amazon Relational Database Service, Amazon Simple Storage Service), and topics (Compute, Databases, Networking & Content Delivery, Storage). A 'Get started' button with a right arrow is located at the bottom right of the workshop details, highlighted by a purple arrow.



The screenshot shows the workshop content page. The title is 'Modernizing your workload for speed and flexibility'. The page includes an introduction, a table of contents with four modules (Monolith, Replatforming, Preparing to implement the Strangler Fig pattern, and Microservices), and a list of five agenda items. A 'Prev' button is visible in the bottom right corner.

Modernizing your workload for speed and flexibility

In this workshop, learn how to quickly take a workload from monolithic on-premises architecture to a loosely coupled distributed microservices architecture using serverless with AWS Lambda. Experience how this modern architecture enables speed with flexibility to pivot technology stacks based on business capability requirements. Follow a real-world migration and modernization starting with a migrated server onto Amazon EC2, containerization of applications using AWS App Runner, and decomposing a monolith using AWS Migration Hub Refactor Spaces and AWS Lambda. Leave the workshop knowing how to take your workload to a cloud architecture.

The high-level agenda for this workshop is as follows:

1. Explore the monolithic application
2. Move the application backend to a container and the frontend to Amazon S3
3. Use AWS Migration Hub Refactor Spaces to create a refactor environment and define traffic routing
4. Leverage Microservices architecture
 1. Use Amazon DynamoDB for storing user information
 2. Use AWS Lambda as compute resource for accessing and manipulating the user data
5. Wrap up

Let's start, use the below "Next/Previous" or left side menu for navigation. We will start with a brief intro and some prerequisites.

Thank you!

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Consider visiting session
ENT324 *How Georgia-Pacific is
accelerating modernization &
improving resilience* to see a
real customer example.



Please complete the session
survey in the **mobile app**

