

# AWS re:Invent

NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

# Develop event-driven applications using Amazon Aurora Serverless v2

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AWS

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AWS

# Amazon Aurora Serverless v2



**On demand** and automatically scaling configuration

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Automatically scales capacity based on application needs

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Simple **pay-per-use** pricing per second

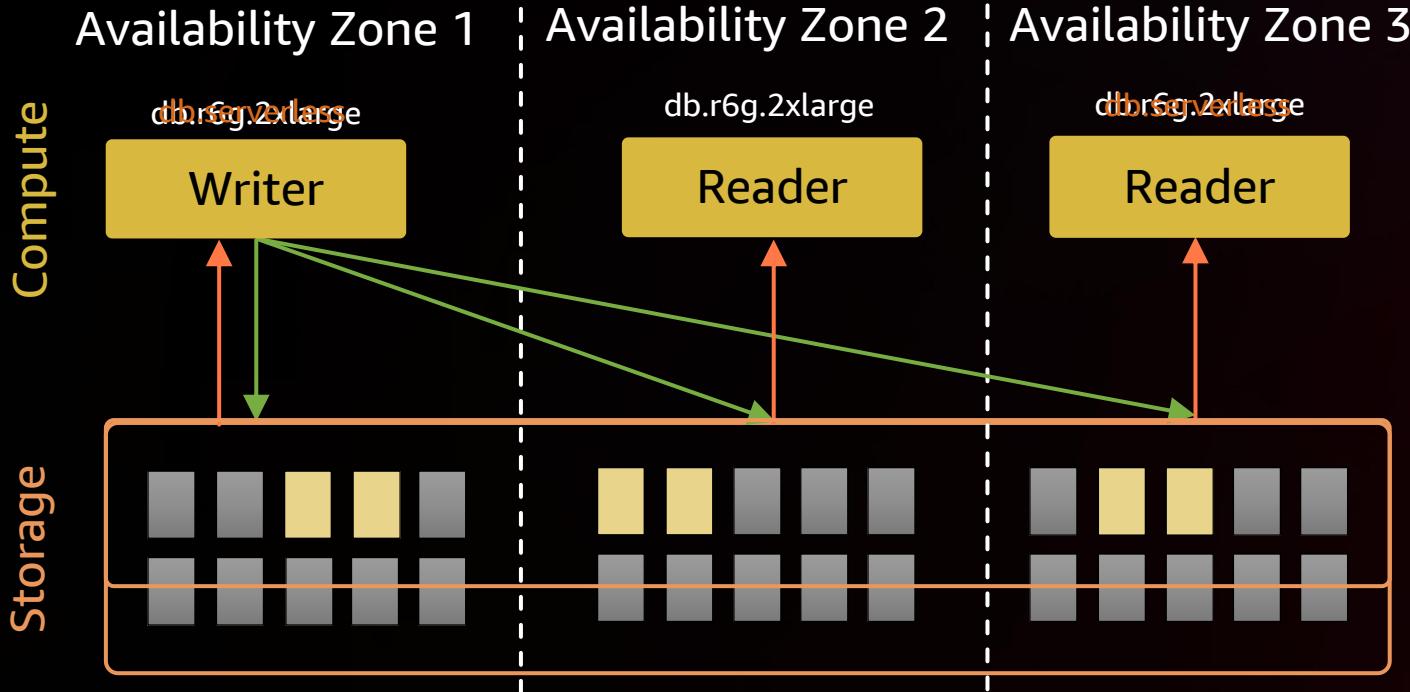
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Scales instantly to support demanding applications

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Straightforward database capacity management

# Aurora architecture supports serverless



Purpose-built, log-structured, distributed storage designed for cloud databases

6 copies across 3 AZs for high availability, durability, and performance

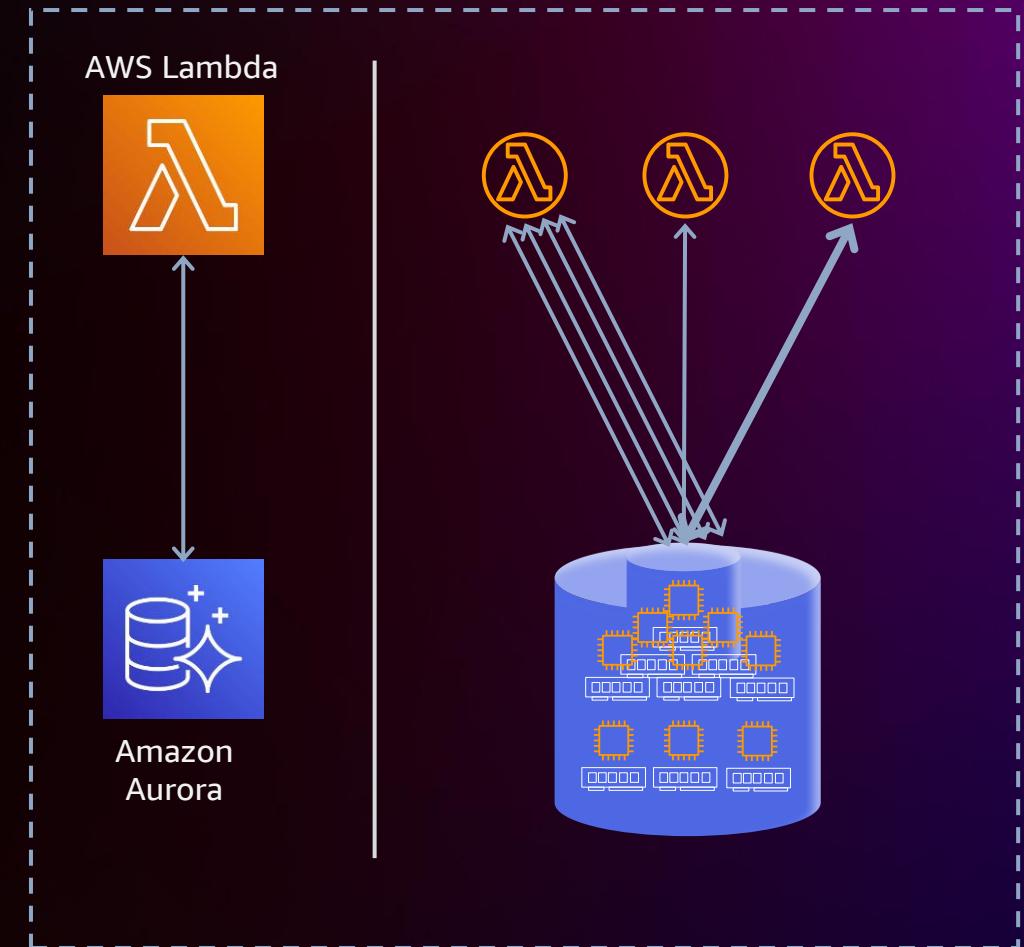
Separation of storage and compute

- Routine operations (such as backups) done without compute
- Up to 15 low-latency (<10 millisecond) read replicas
- **Compute scales independently**

Storage automatically grows and shrinks

# Instant, in-place scaling

- Scales in place in under a second by adding more CPU and memory resources, and billed by the second
- No impact due to scaling even when running hundreds of thousands of transactions



# What you will build today

- An event-driven, serverless, full-stack application
- Simulates a simple vote casting scenario
- React, Python, Amazon Aurora MySQL Serverless v2

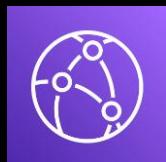
# Services used



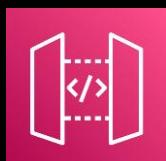
**Amazon Cognito**  
Identity store, sign in



**Amazon S3**  
Object storage, static content hosting



**Amazon CloudFront**  
Content caching



**Amazon API Gateway**  
Create and publish API



**Amazon SNS**  
Notification service



**AWS Lambda**  
Serverless code execution



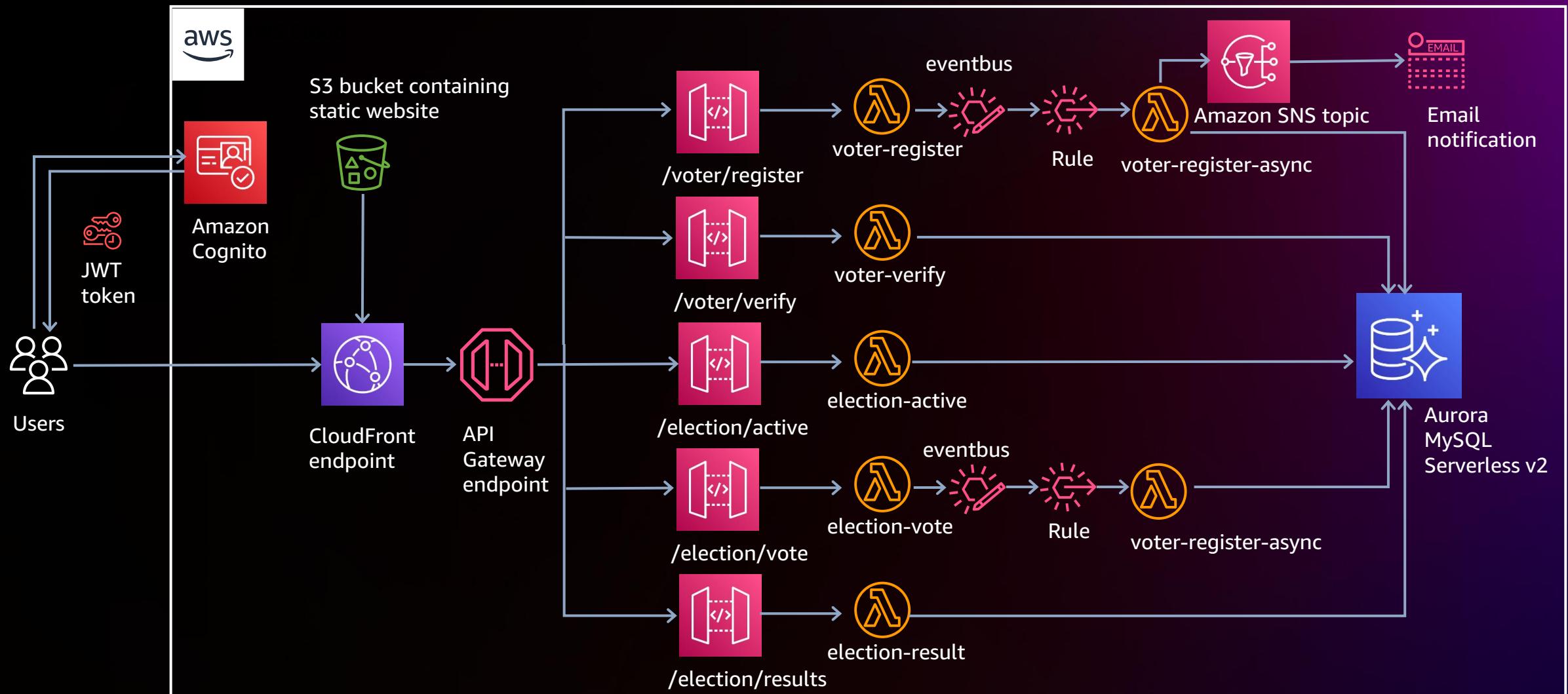
**Amazon Aurora Serverless**  
Serverless relational database



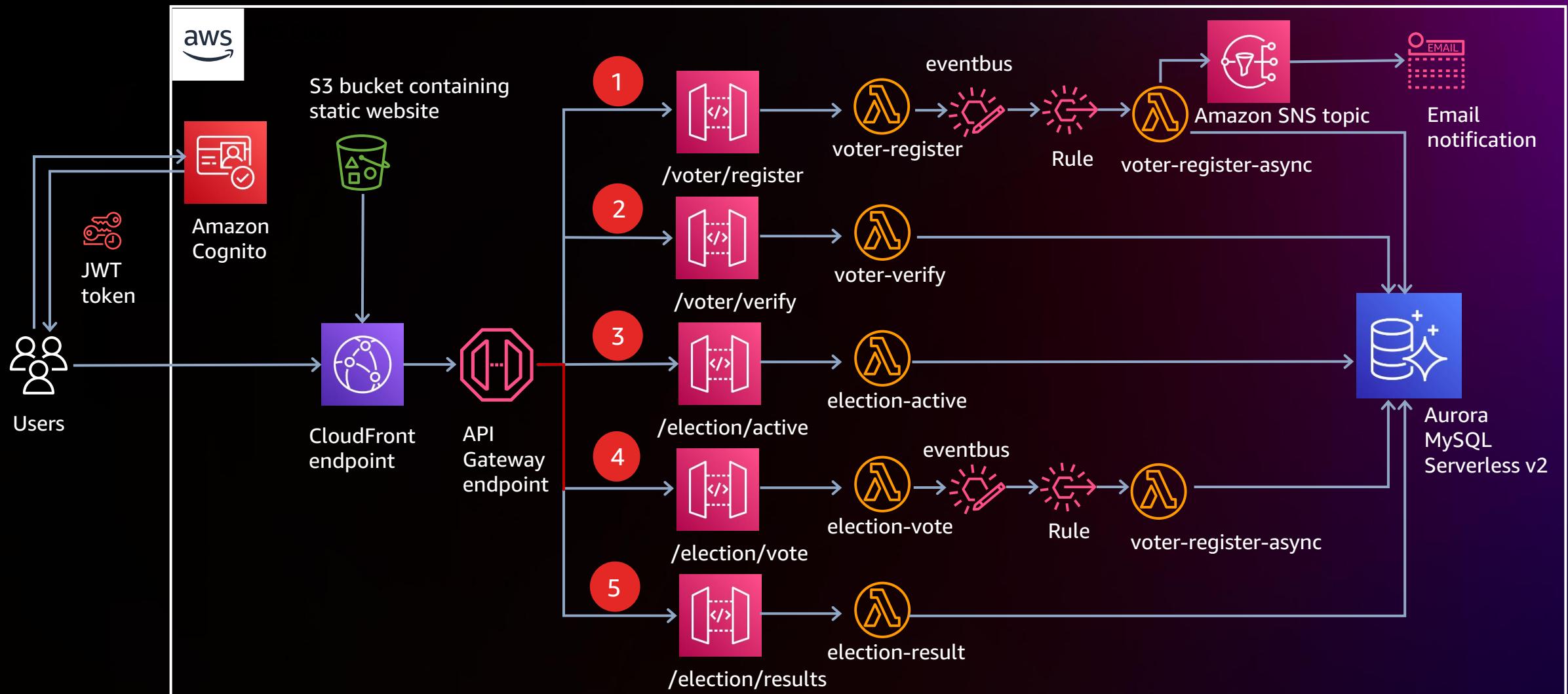
Amazon EventBridge

**Amazon EventBridge**  
Serverless event router

# Application architecture



# API workflow



# API scale test using Artillery

- Artillery is an open-source performance testing toolkit
- Stress testing entire stack by simulating API calls
- Test ramps up in 3 phases and winds down in the fourth
- Scenario for testing use
  1. Call register user API, register random user
  2. Call cast vote API, cast a random vote

# 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

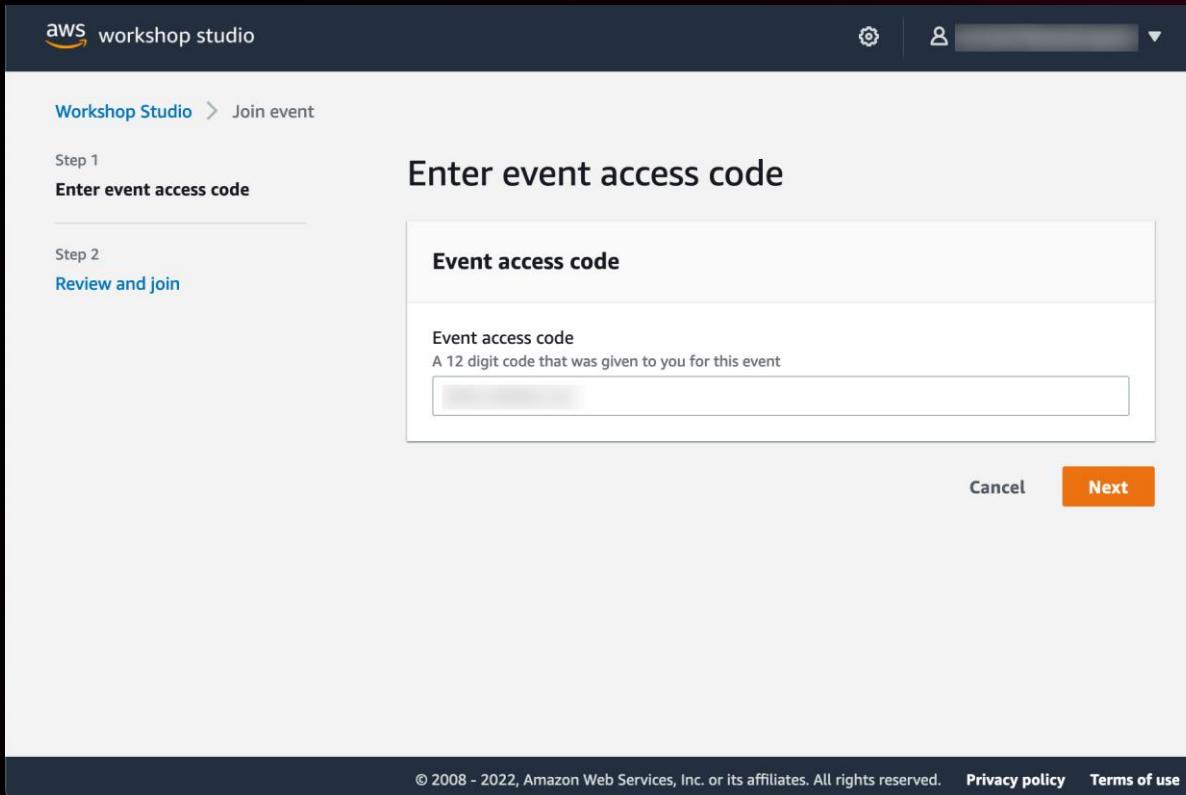
<https://catalog.workshops.aws/join>



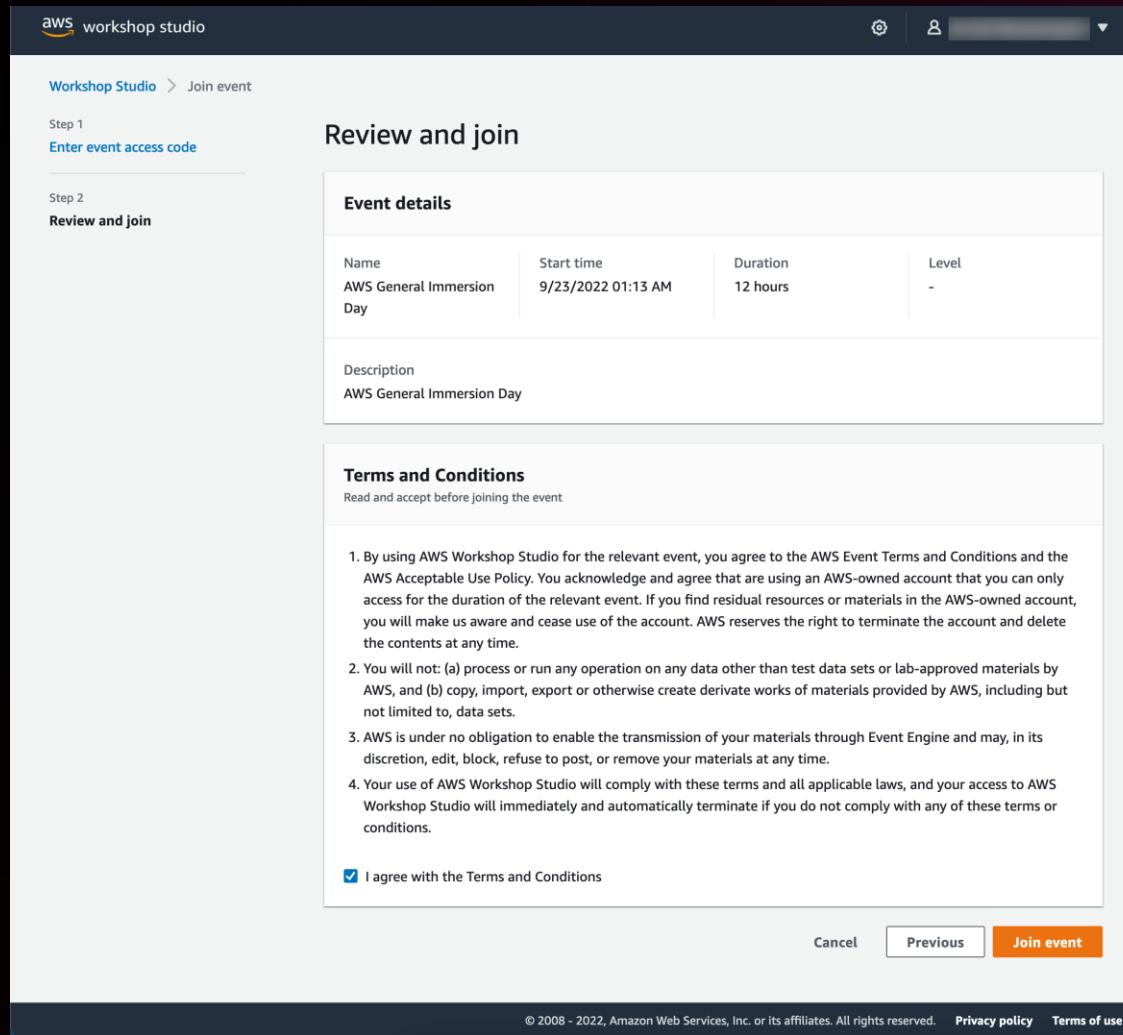
A screenshot of the AWS Workshop Studio sign-in interface. The top navigation bar includes the AWS logo and the text "workshop studio". Below the navigation, the text "Workshop Studio &gt; Sign in" is displayed. A central box is titled "Sign in" with the sub-instruction "Choose a preferred sign-in method". It features three options: "Email one-time password (OTP)" (highlighted with an orange background), "Login with Amazon" (with a light gray background), and "Amazon employee" (with a light gray background). The "Email one-time password (OTP)" option includes a sub-instruction "Enter your personal or corporate email to receive a one-time password". The "Login with Amazon" and "Amazon employee" options include sub-instructions: "Login with your Amazon.com retail account" and "Login with your Amazon Corporate account. Only for Amazon Employees." respectively. The bottom of the page contains a dark footer bar with the text "© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved." and links for "Privacy policy" and "Terms of use".

# Step 2: Enter event access code

Enter 12-digit event access code (**f193-00c456-0e**)



# Step 3: Review terms and join event



The screenshot shows the 'Review and join' step of the AWS Workshop Studio 'Join event' process. The interface is divided into two main sections: 'Event details' and 'Terms and Conditions'.

**Event details**

Name	Start time	Duration	Level
AWS General Immersion Day	9/23/2022 01:13 AM	12 hours	-

**Description**  
AWS General Immersion Day

**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 derivative 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.

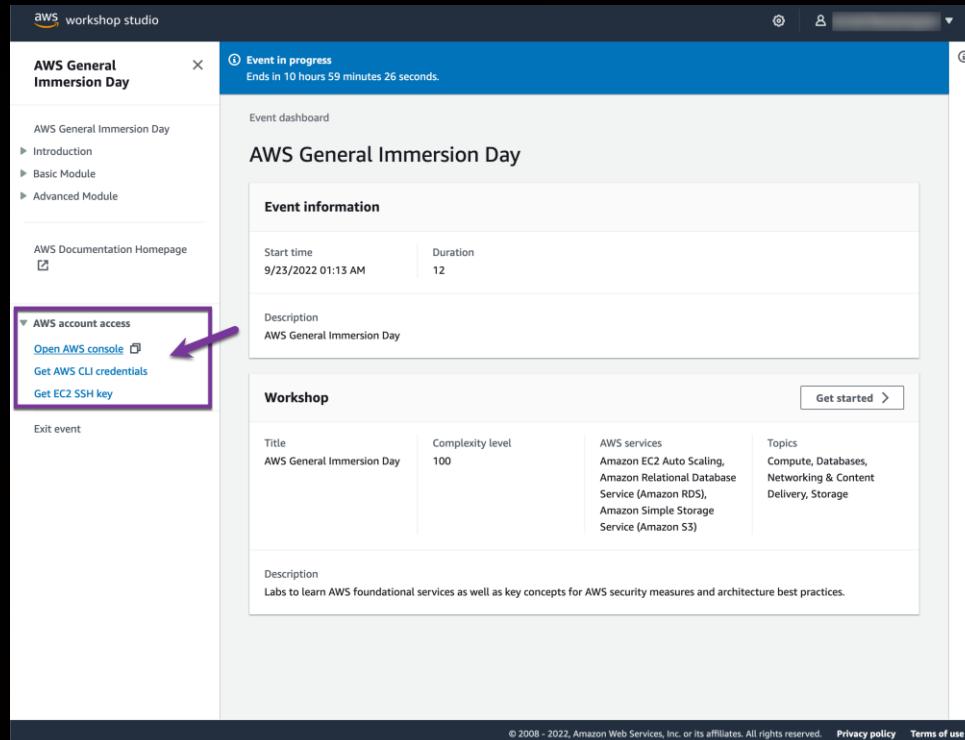
I agree with the Terms and Conditions

Cancel Previous **Join event**

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# Step 4: Access AWS account

Access the AWS Management Console or generate AWS CLI credentials as needed



AWS General Immersion Day

Event in progress  
Ends in 10 hours 59 minutes 26 seconds.

Event dashboard

**AWS General Immersion Day**

**Event information**

Start time	9/23/2022 01:13 AM	Duration	12
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Description  
AWS General Immersion Day

**Workshop**

Title	AWS General Immersion Day	Complexity level	100
AWS services	Amazon EC2 Auto Scaling, Amazon Relational Database Service (Amazon RDS), Amazon Simple Storage Service (Amazon S3)	Topics	Compute, Databases, Networking & Content Delivery, Storage

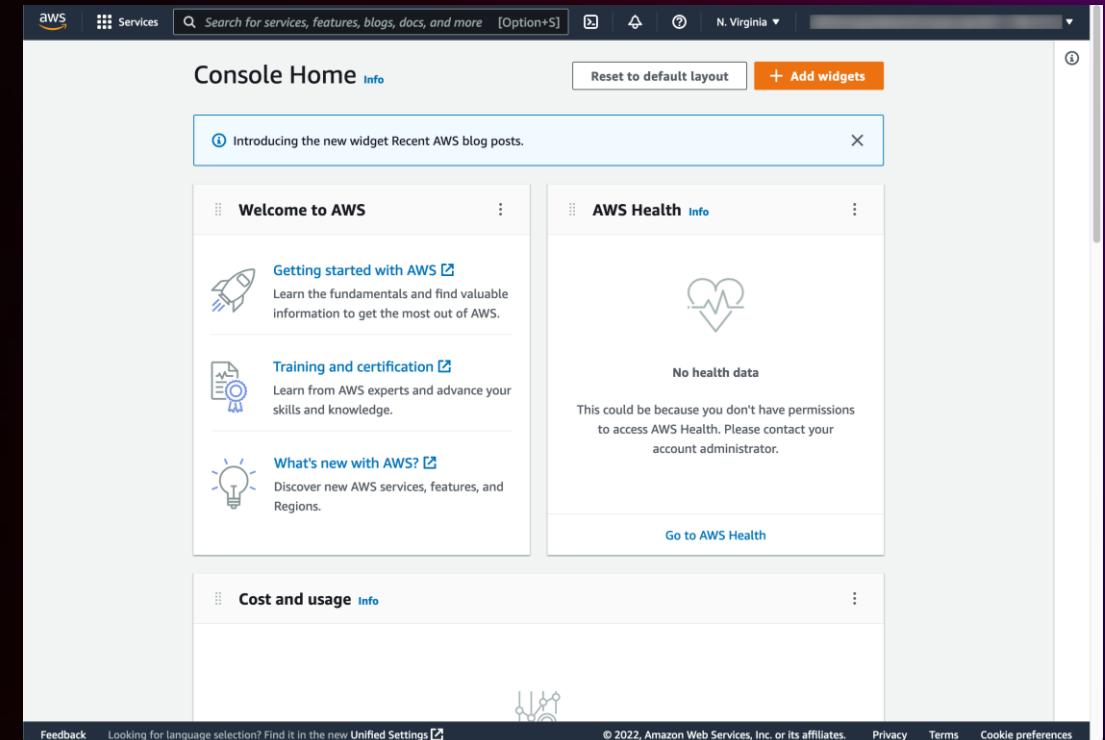
**Description**  
Labs to learn AWS foundational services as well as key concepts for AWS security measures and architecture best practices.

**AWS account access**

- Open AWS console
- Get AWS CLI credentials
- Get EC2 SSH key

Exit event

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- Getting started with AWS
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Go to AWS Health

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# Step 5: Get started with the workshop

AWS workshop studio

**AWS General Immersion Day**

Event in progress  
Ends in 10 hours 59 minutes 26 seconds.

Event dashboard

## AWS General Immersion Day

**Event information**

Start time	Duration
9/23/2022 01:13 AM	12

Description  
AWS General Immersion Day

**Workshop**

Title	Complexity level	AWS services	Topics
AWS General Immersion Day	100	Amazon EC2 Auto Scaling, Amazon Relational Database Service (Amazon RDS), Amazon Simple Storage Service (Amazon S3)	Compute, Databases, Networking & Content Delivery, Storage

Description  
Labs to learn AWS foundational services as well as key concepts for AWS security measures and architecture best practices.

**Get started >**



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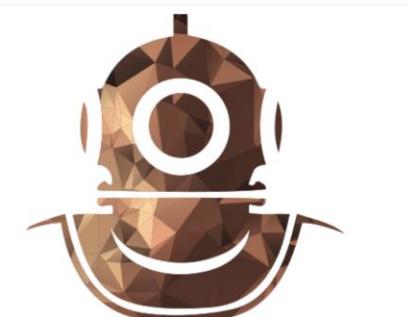
AWS workshop studio

**AWS General Immersion Day**

Event in progress  
Ends in 10 hours 57 minutes 12 seconds.

Event dashboard > AWS General Immersion Day

## AWS General Immersion Day



**IMMERSION DAYS**

In this General Immersion Day workshop, through a mix of service explanation and hands-on labs led by AWS, you will learn about AWS foundational services as well as key concepts for AWS security measures and architecture best practices. The hands-on labs are largely divided into **basic** and **advanced** modules. In basic modules, you can learn various features of each AWS foundational service. In advanced modules, you can learn how to connect each service organically to create architecture like 3-tier web application.

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# Thank you!

Grant McAlister

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[ausamant@amazon.com](mailto:ausamant@amazon.com)



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survey in the **mobile app**