
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

WPS303

Secure public sector environments using graph technology

Piyush Mathur

Product Leader
Amazon Neptune, AWS

Brian O'Keefe

Sr. Neptune Specialist SA
Amazon Neptune, AWS

Nicole Moldovan

Principal Neptune GTM Specialist
Amazon Neptune, AWS

Hooman Kashef

Sr. Neptune GTM Specialist
Amazon Neptune, AWS

Melissa Kwok

Neptune Specialist SA
Amazon Neptune, AWS



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Agenda

- What is a security graph?
- Why use a security graph?
- Let’s build a security graph!

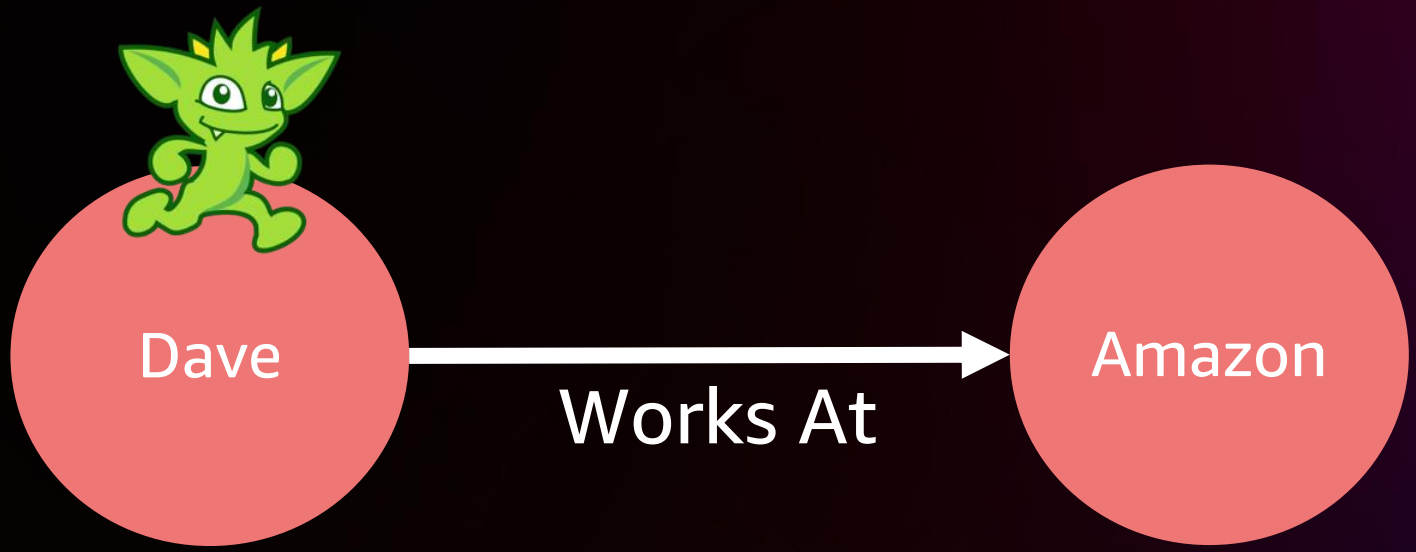
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What is a security graph?

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What is a graph?

- Graphs are purpose-built to store and navigate relationships
- Nodes represent real-world objects
- Edges store relationships between objects

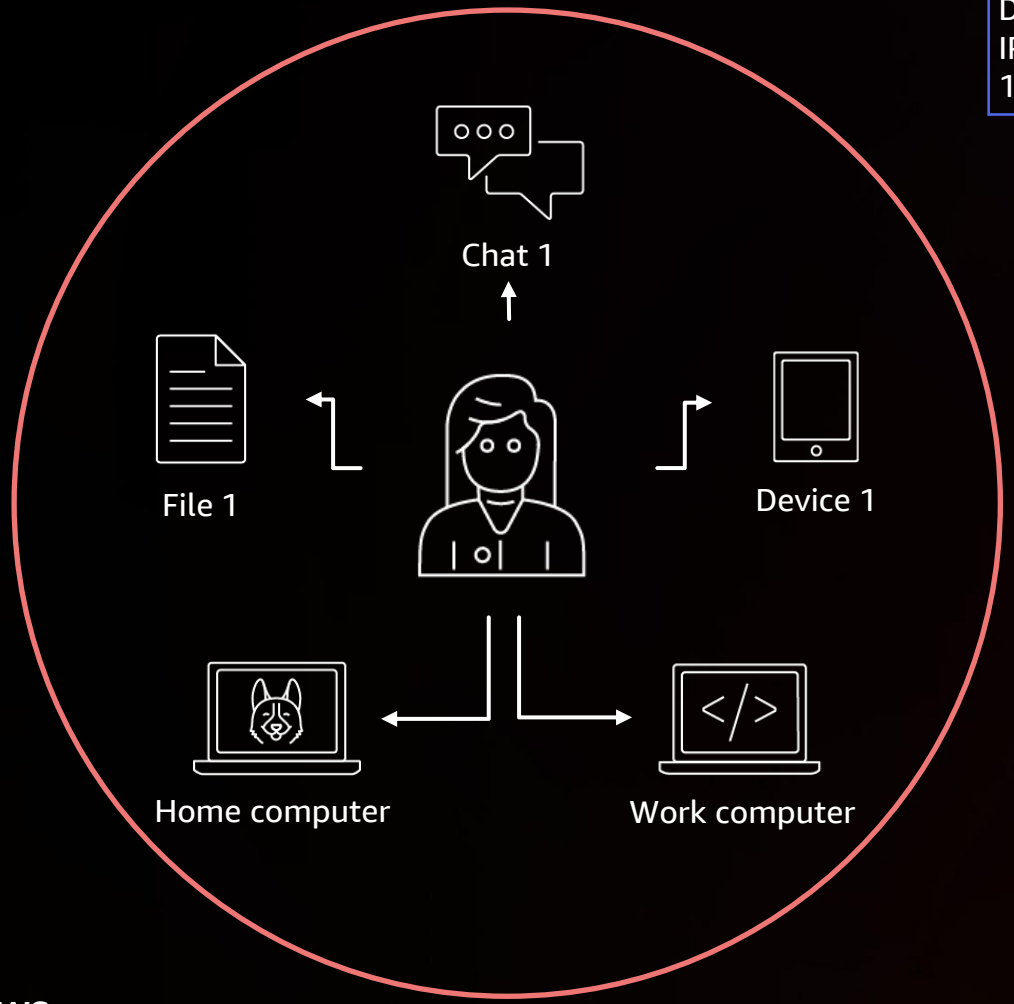


aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

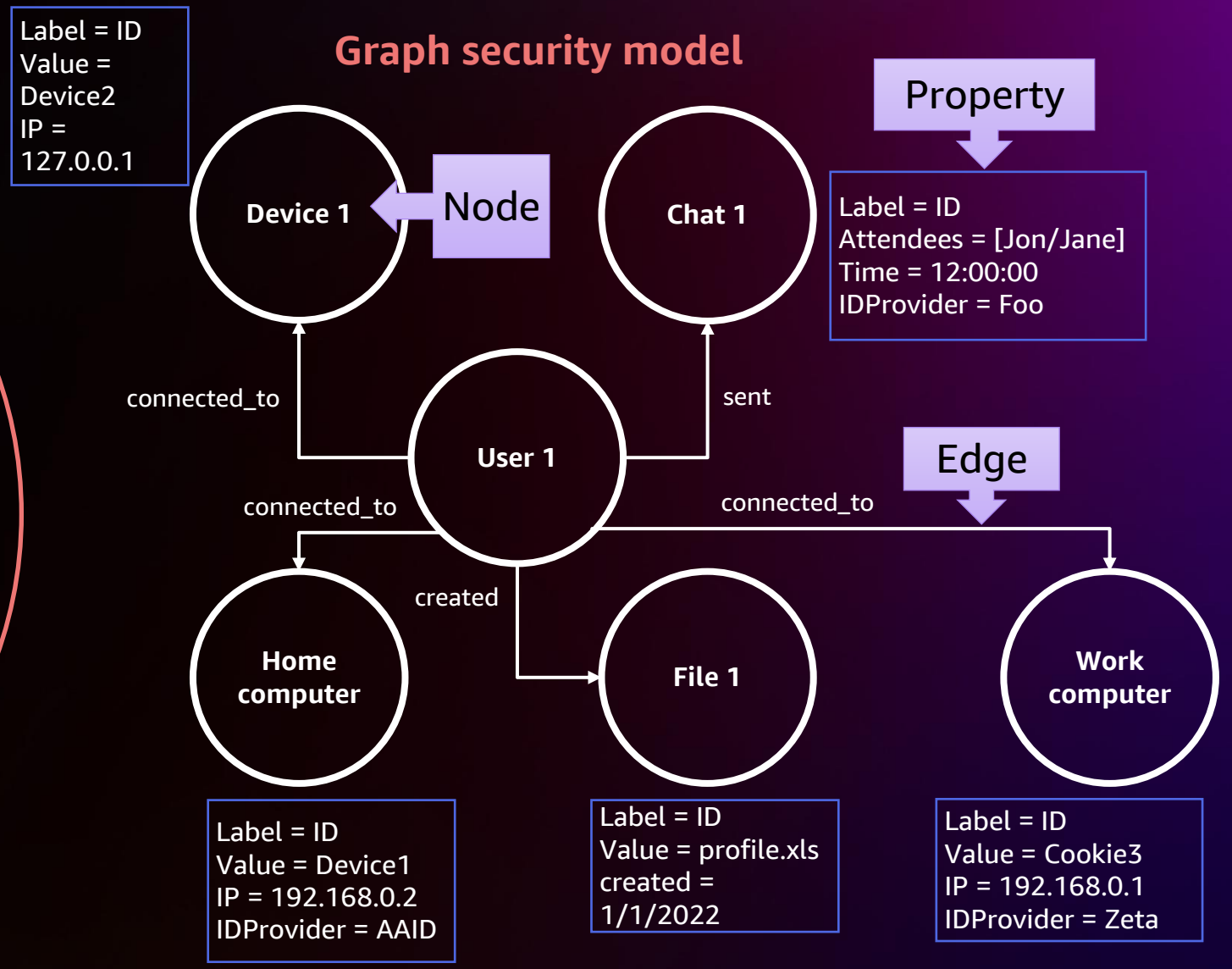
Modeling security as a graph

PURPOSE-BUILT FOR RELATIONSHIP PROBLEMS

Conceptual security model



Graph security model



aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Why use a security graph?

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Security graph business problems in the public sector



Cloud security posture management



Data flow / exfiltration



Identity and access management

aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Amazon Neptune for security graphs

FULLY MANAGED, PURPOSE-BUILT GRAPH DATABASE IN THE CLOUD



Cost-effective



No hardware management



Instant provisioning



Scaling



Security and compliance

- Optimized to **store and map billions of relationships**
- Enables **real-time navigation of connections with millisecond query** response time
- Supports **open standard query languages** openCypher, Gremlin, and SPARQL

aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Amazon Neptune compliance

- In scope for **FedRamp High** in AWS GovCloud US-West and US-East
- In scope for **FedRamp Moderate** in Ohio, N. Virginia, N. California, and Oregon
- Also accredits Neptune as a **DoD SRG IL-2 service in those regions**
  - Currently undergoing DISA Review for **DoD SRG IL-4 and IL-5**
- Also in scope for other compliances – see https://aws.amazon.com/compliance/services-in-scope/

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Some of our customers



Amazon Neptune

Customers across different verticals and use cases use Amazon Neptune in production today

LexisNexis
FINRA
SIEMENS
AstraZeneca
LIFEOMIC
freshworks
amazon alexa
THOMSON REUTERS
FACTSET
SAMSUNG
Blackfynn
Rappi
Uber ATG
HUUUGE
NBCUniversal
NETFLIX
Asurion
COX AUTOMOTIVE
PaySense
Intuit
Pearson
MARINUS ANALYTICS
NOONUM
audible FOR BUSINESS

aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Some of our customers



Amazon Neptune

Customers across different verticals and use cases use Amazon Neptune in production today

LexisNexis
FINRA
SIEMENS
AstraZeneca
LIFEOMIC
freshworks
amazon alexa
THOMSON REUTERS
FACTSET
SAMSUNG
Blackfynn
Rappi
Uber ATG
HUUUGE
NBCUniversal
NETFLIX
Asurion
COX AUTOMOTIVE
PaySense
Intuit
Pearson
MARINUS ANALYTICS
NOONUM
audible FOR BUSINESS

aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Some of our customers



Amazon Neptune

Customers across different verticals and use cases use Amazon Neptune in production today

LexisNexis
FINRA
SIEMENS
AstraZeneca
LIFEOMIC
freshworks
amazon alexa
THOMSON REUTERS
FACTSET
SAMSUNG
Blackfynn
Rappi
Uber ATG
HUUUGE
NBCUniversal
NETFLIX
Asurion
COX AUTOMOTIVE
PaySense
Intuit
Pearson
MARINUS ANALYTICS
NOONUM
audible FOR BUSINESS

aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Some of our customers



Amazon Neptune

Customers across different verticals and use cases use Amazon Neptune in production today

LexisNexis
FINRA
SIEMENS
AstraZeneca
LIFEOMIC
freshworks
amazon alexa
THOMSON REUTERS
FACTSET
SAMSUNG
Blackfynn
Rappi
Uber ATG
HUUUGE
NBCUniversal
NETFLIX
Asurion
COX AUTOMOTIVE
PaySense
Intuit
Pearson
MARINUS ANALYTICS
NOONUM
audible FOR BUSINESS

aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Let’s build a security graph!

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

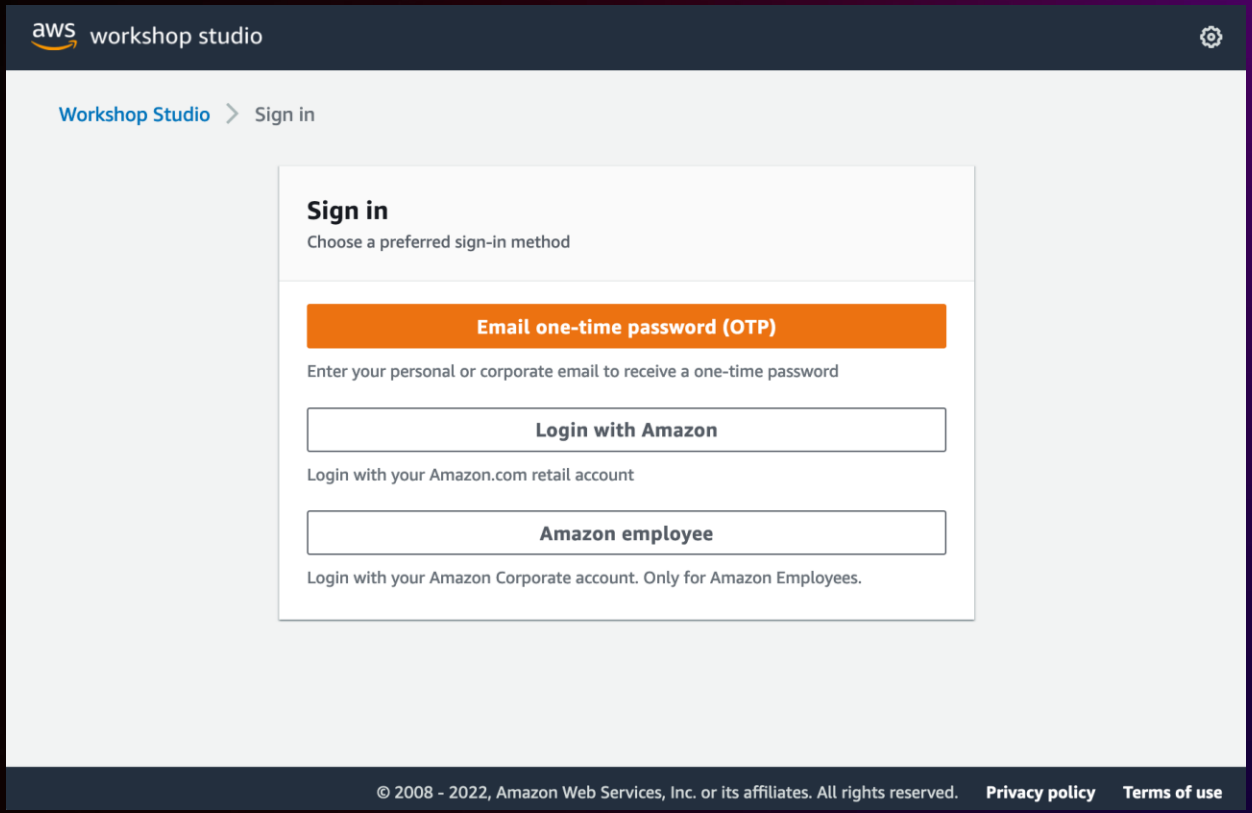
Getting started with this workshop

- As a participant, you will have access to an AWS account with the 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 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.

aws
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

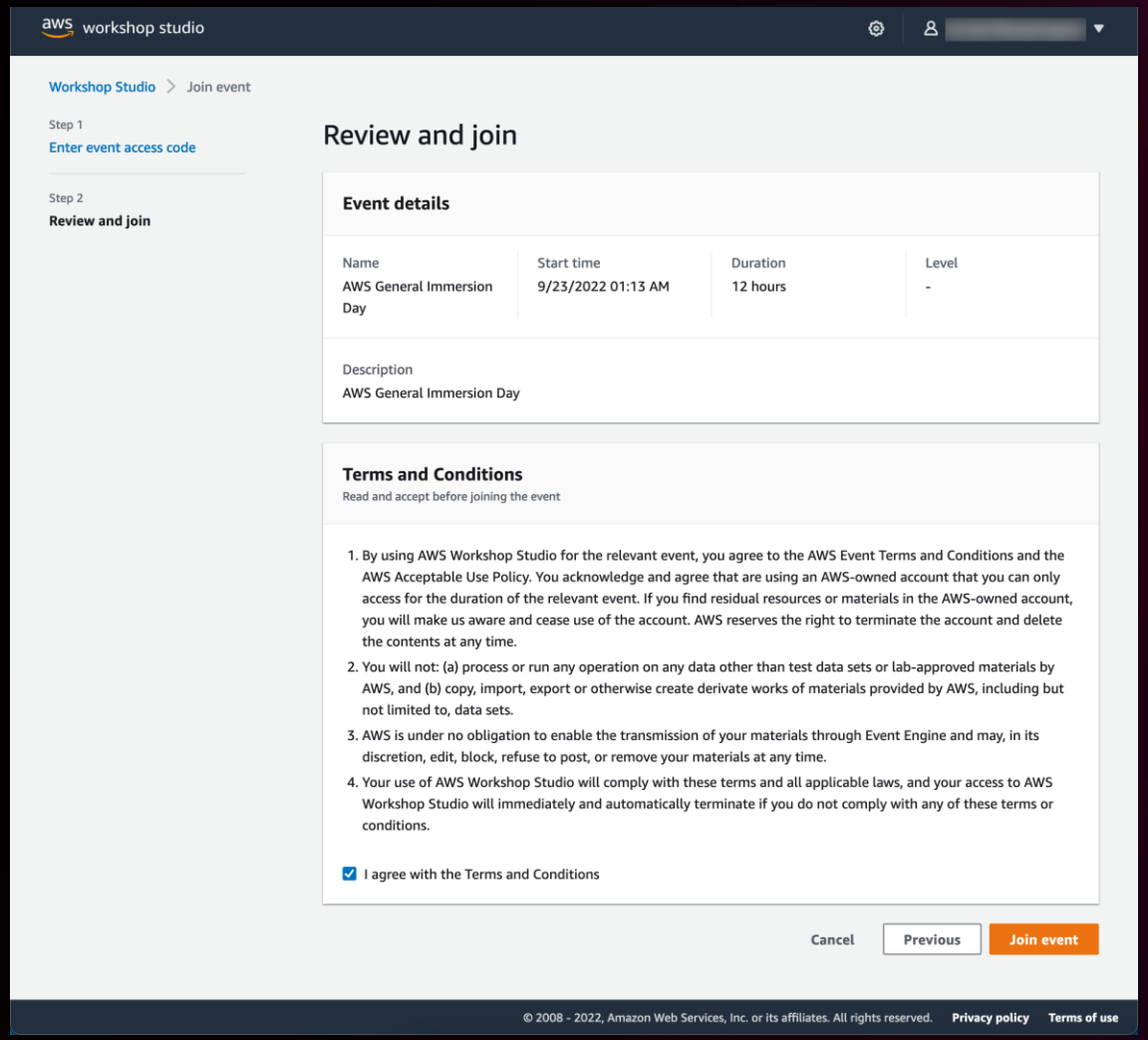
Step 1: Sign in with one-time password

https://s12d.com/WPS303



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

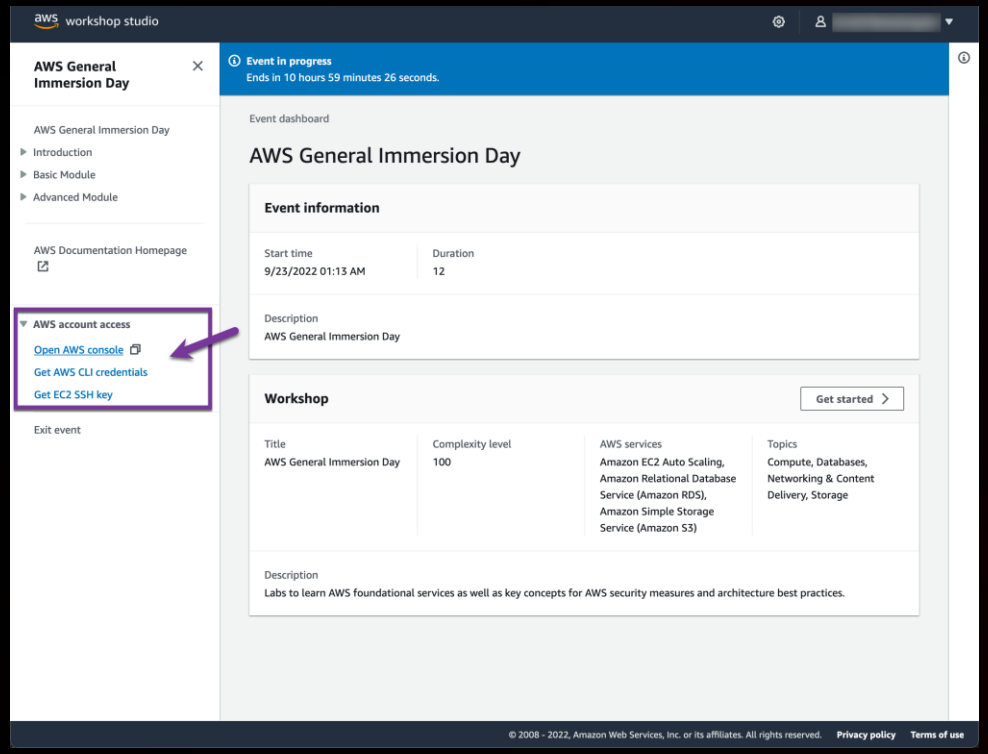
Step 2: Review terms and join event

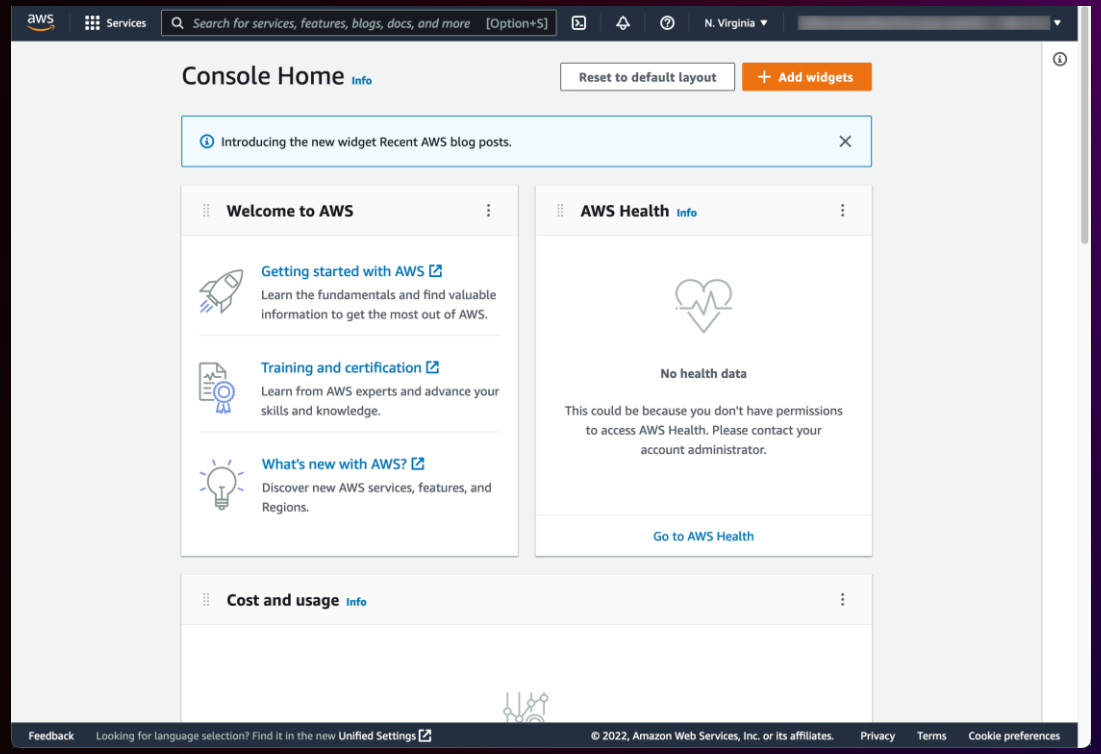


© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Step 3: Access AWS account

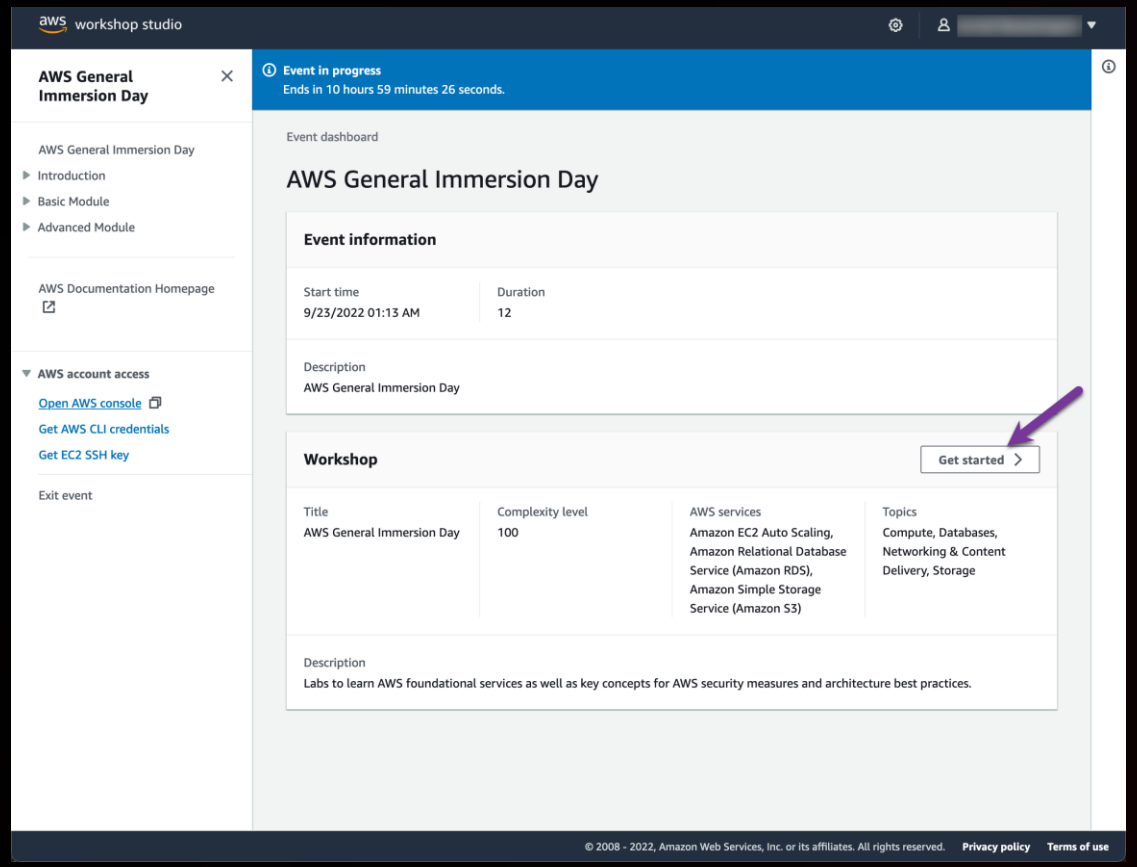
Access the AWS console

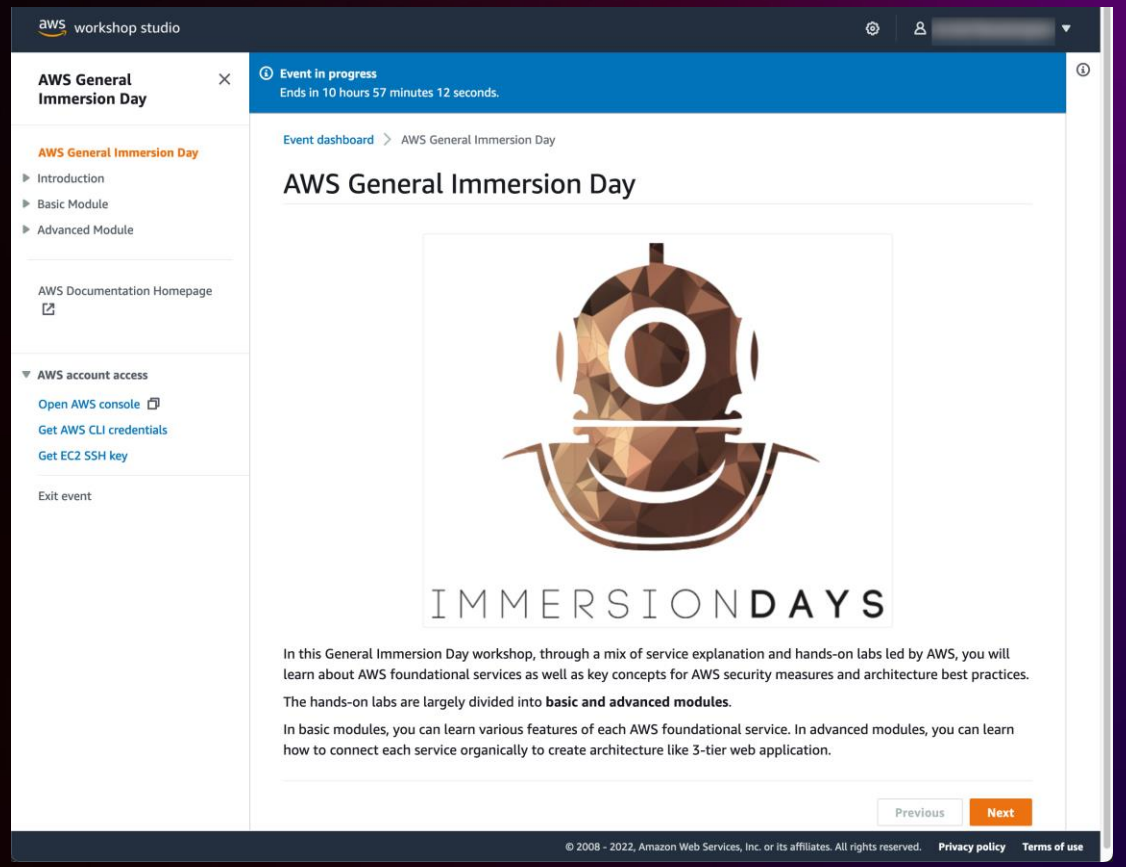




© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Step 4: Get started with the workshop





© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you!

Piyush Mathur
mathup@amazon.com

Brian O'Keefe
briokeef@amazon.com

Melissa Kwok
kwokmeli@amazon.com

Hooman Kashef
hkashef@amazon.com

Nicole Moldovan
nictune@amazon.com



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

aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.