

AWS re:Invent

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

SAS403-R

SaaS microservices deep dive: Multi-tenancy meets microservices

Humberto Somensi (he/him)

Solutions Architect, AWS SaaS Factory
AWS

Syed Hussain (he/him)

Solutions Architect, AWS SaaS Factory
AWS

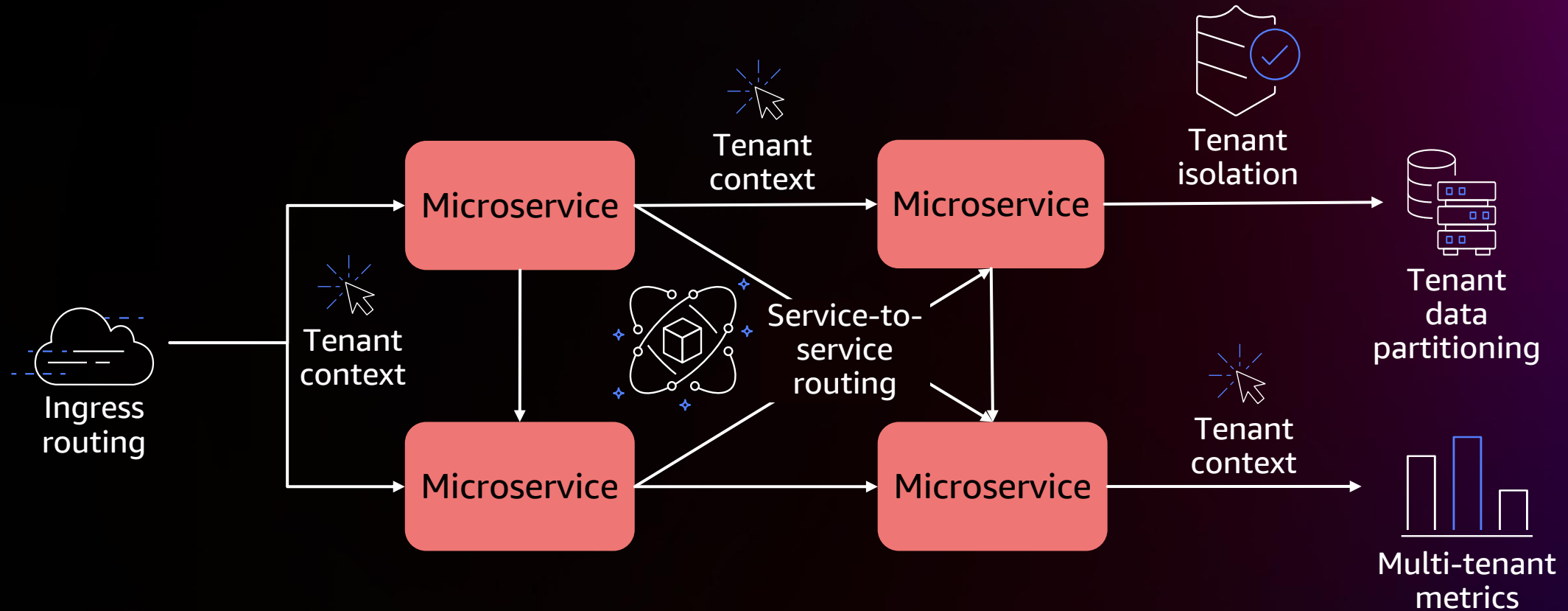


© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Workshop goals

- Learn how software as a service (SaaS) influences the inner working of microservices and apply solutions to multi-tenant microservice challenges
- Pass tenant context securely throughout the execution flow of microservices
- Isolate tenant data access outside the application code
- Deal with routing challenges without adding complexity to the application
- Instrument microservices to seamlessly produce tenant-aware metrics

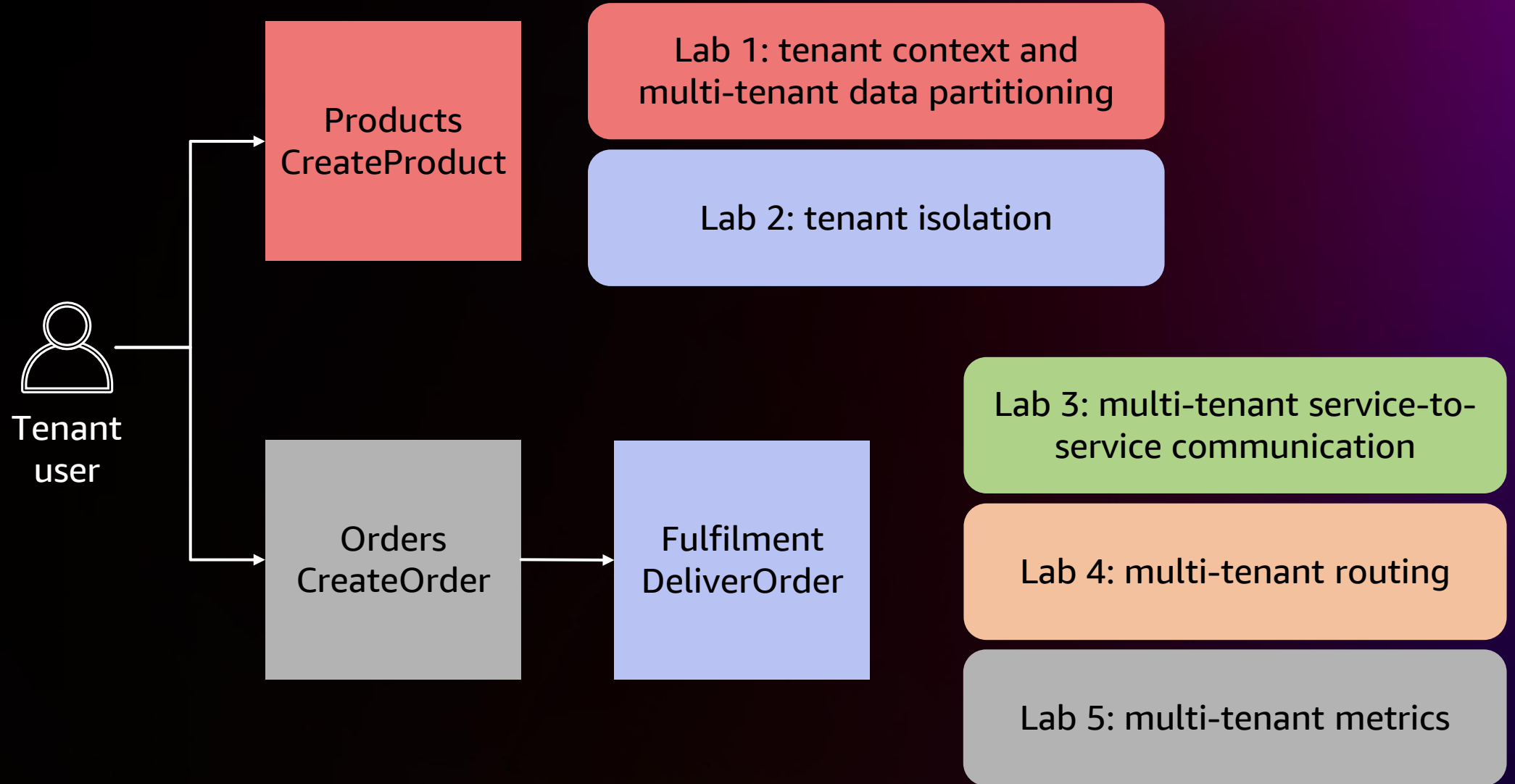
Multi-tenancy meets microservices



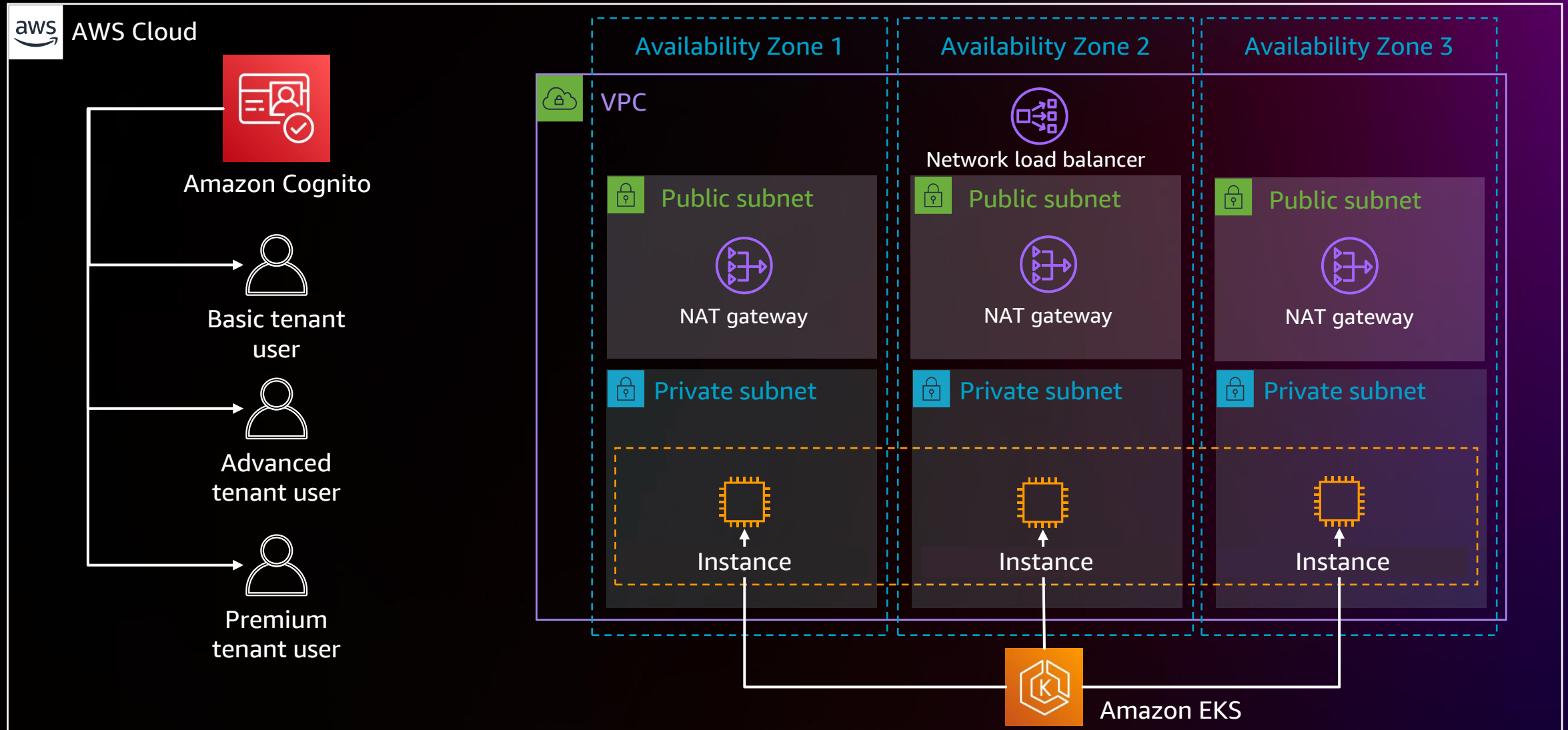
Introduction



Introduction: Application conceptual view

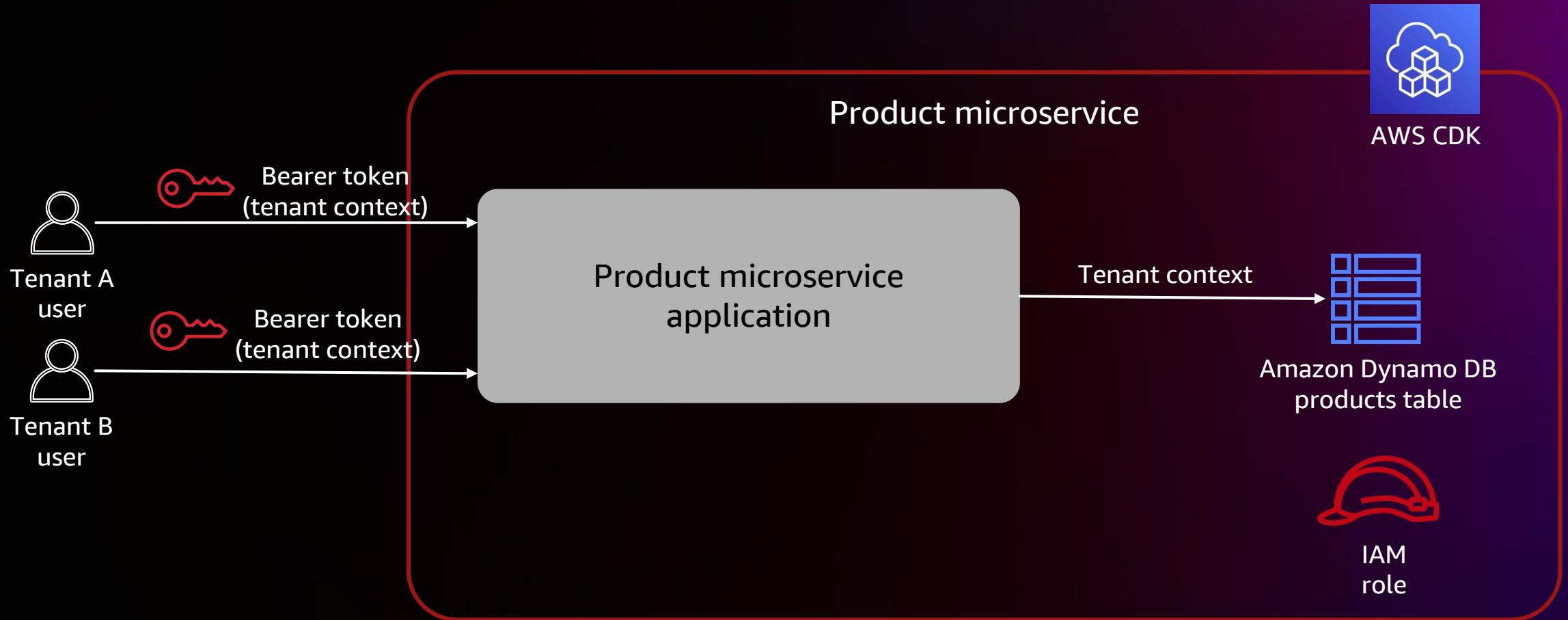


Introduction: Infrastructure starting point



Lab 1: Tenant context and multi-tenant data partitioning

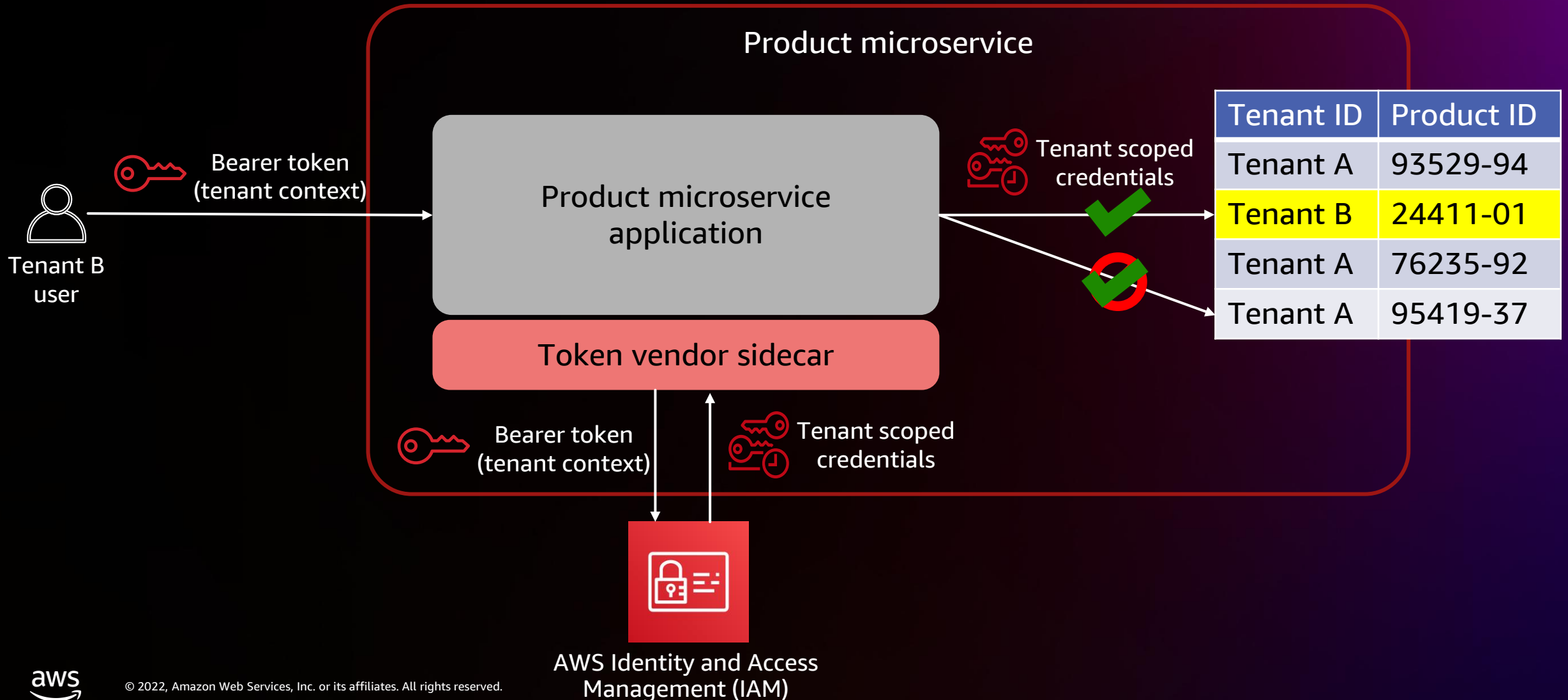
Lab 1: Acquiring tenant context



Lab 2: Tenant isolation

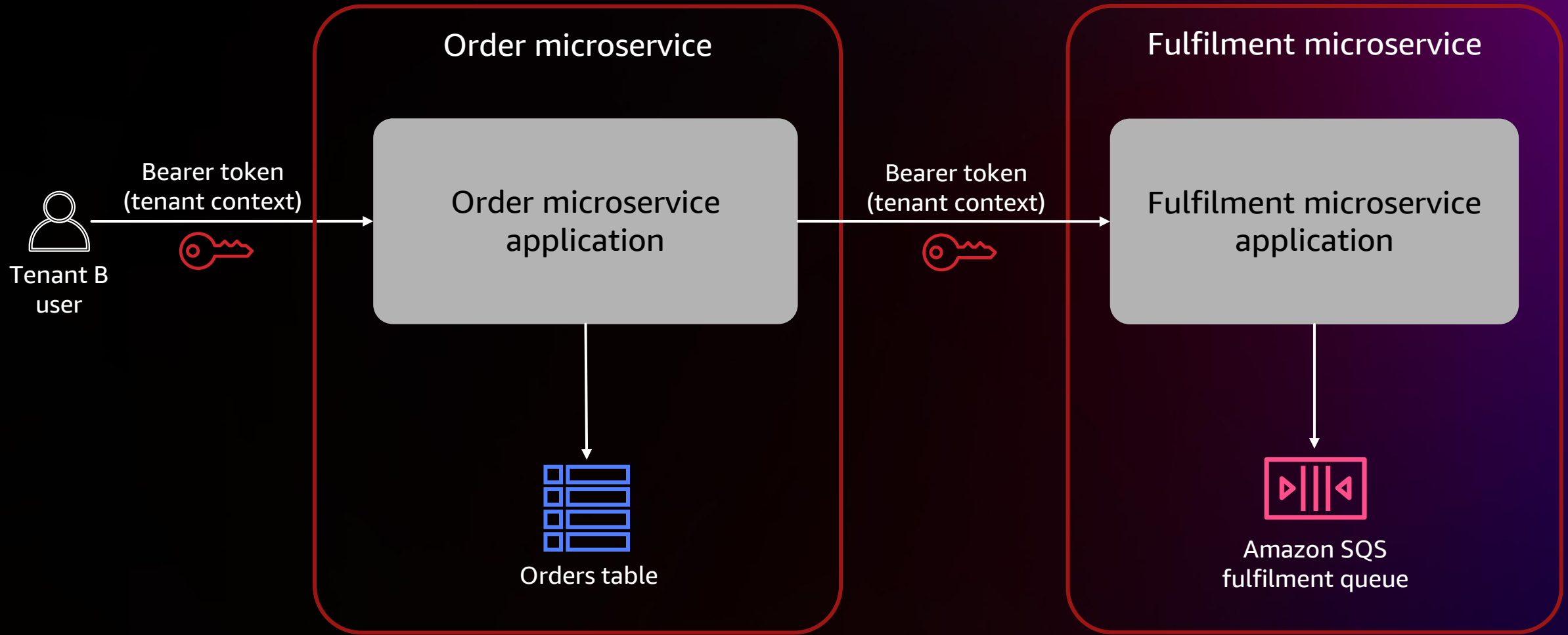


Lab 2: Hardening tenant isolation



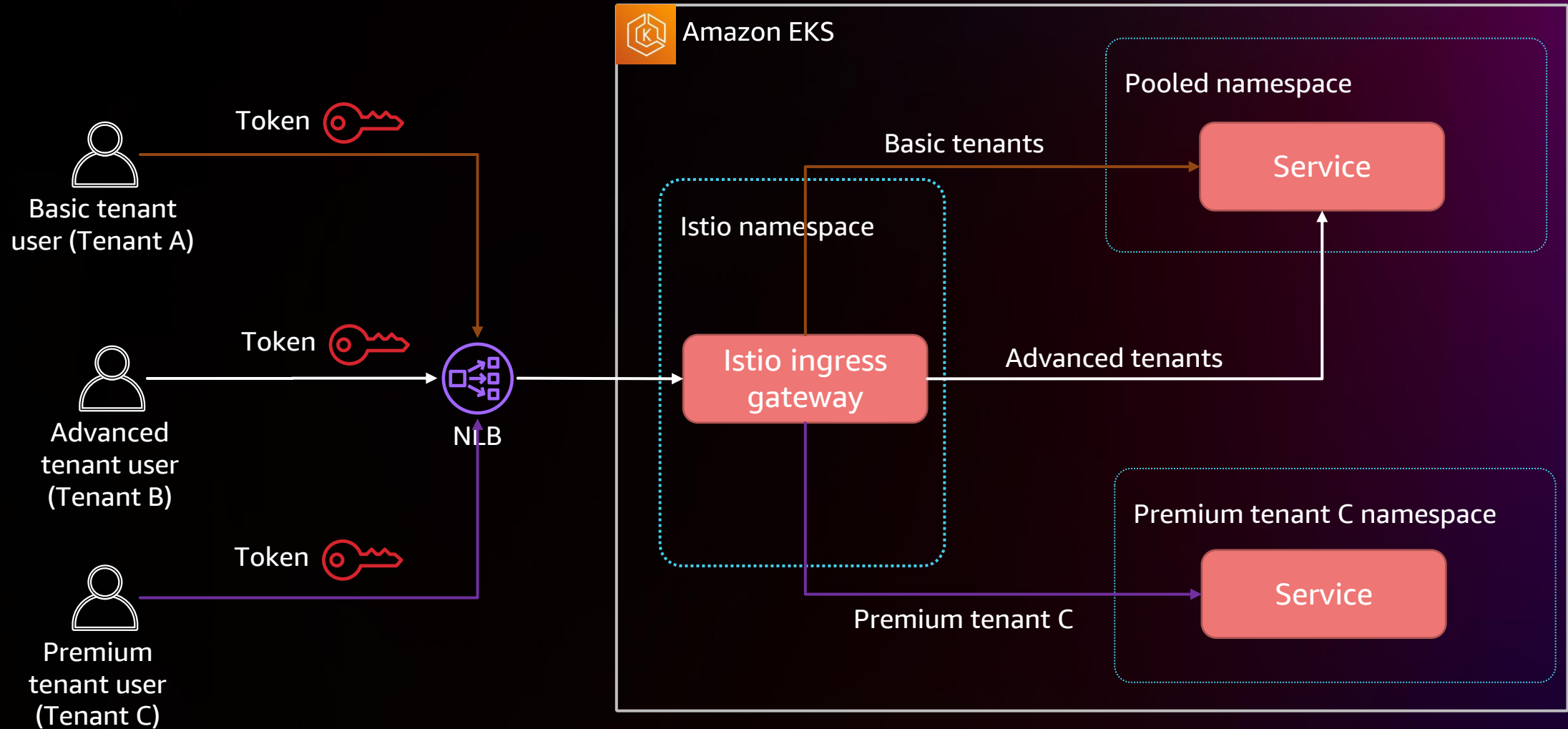
Lab 3: Multi-tenant service-to-service communication

Lab 3: Flowing tenant context through services

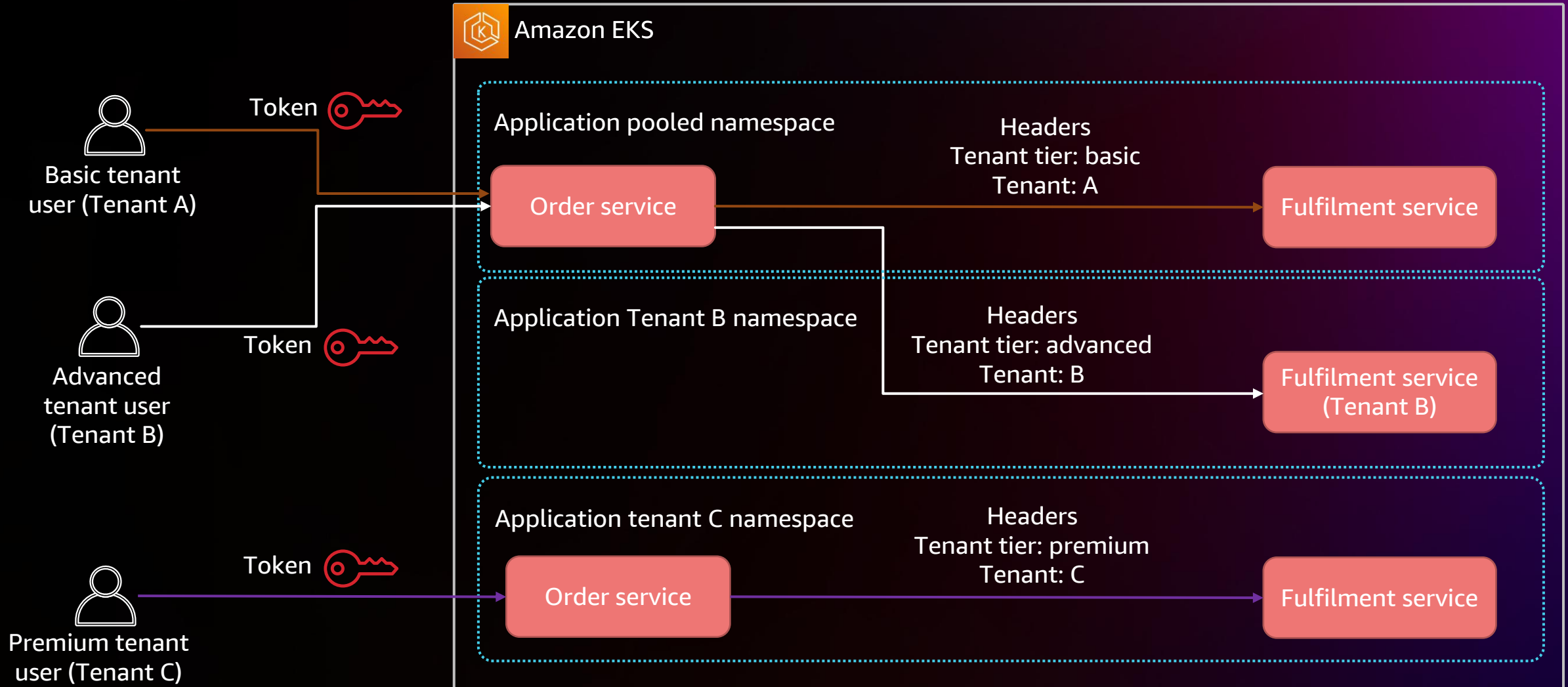


Lab 4: Multi-tenant routing challenges

Lab 4: Tenant context ingress routing



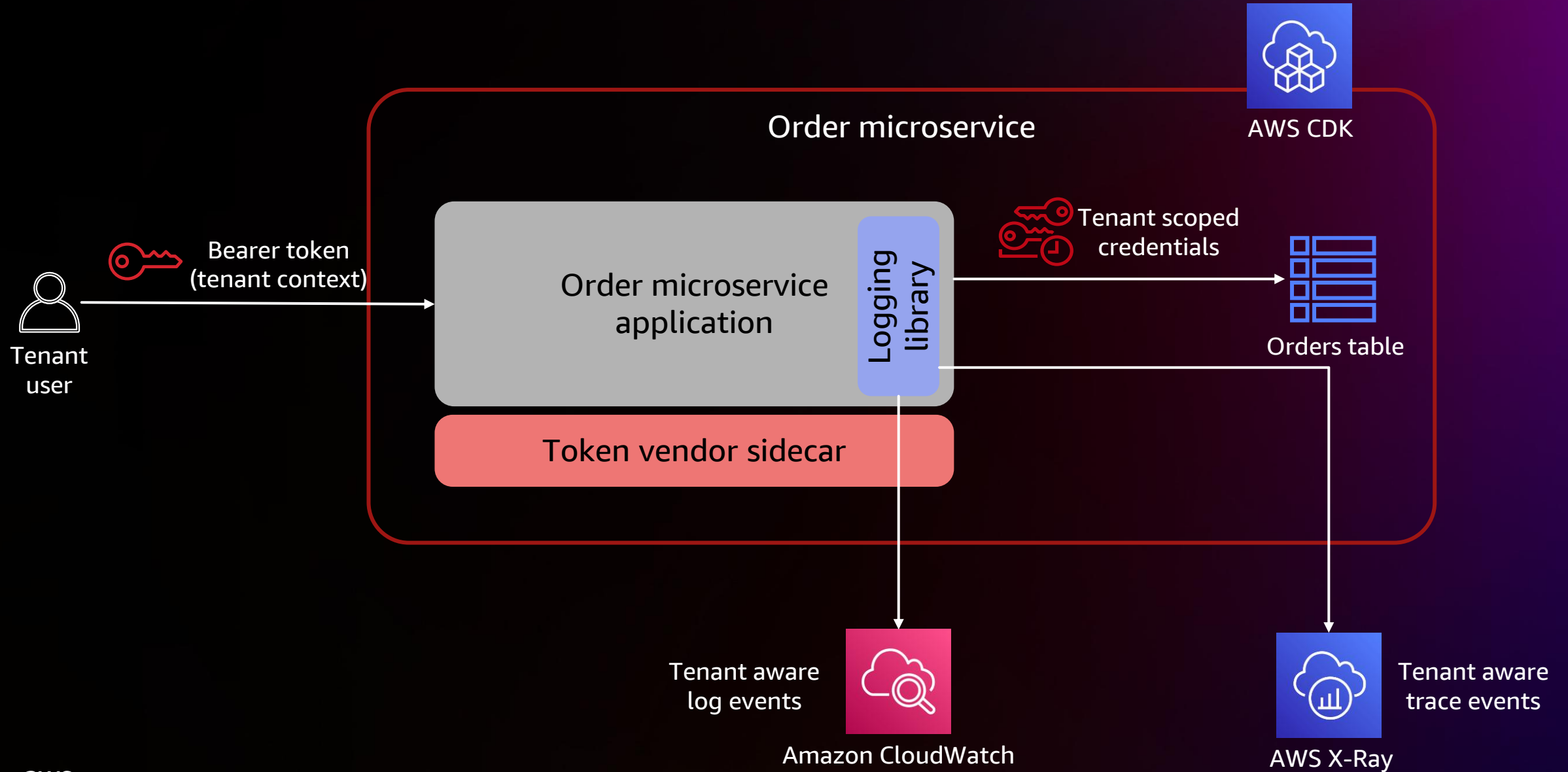
Lab 4: Tenant context service-to-service routing



Lab 5: Multi-tenant metrics



Lab 5: Multi-tenant metrics

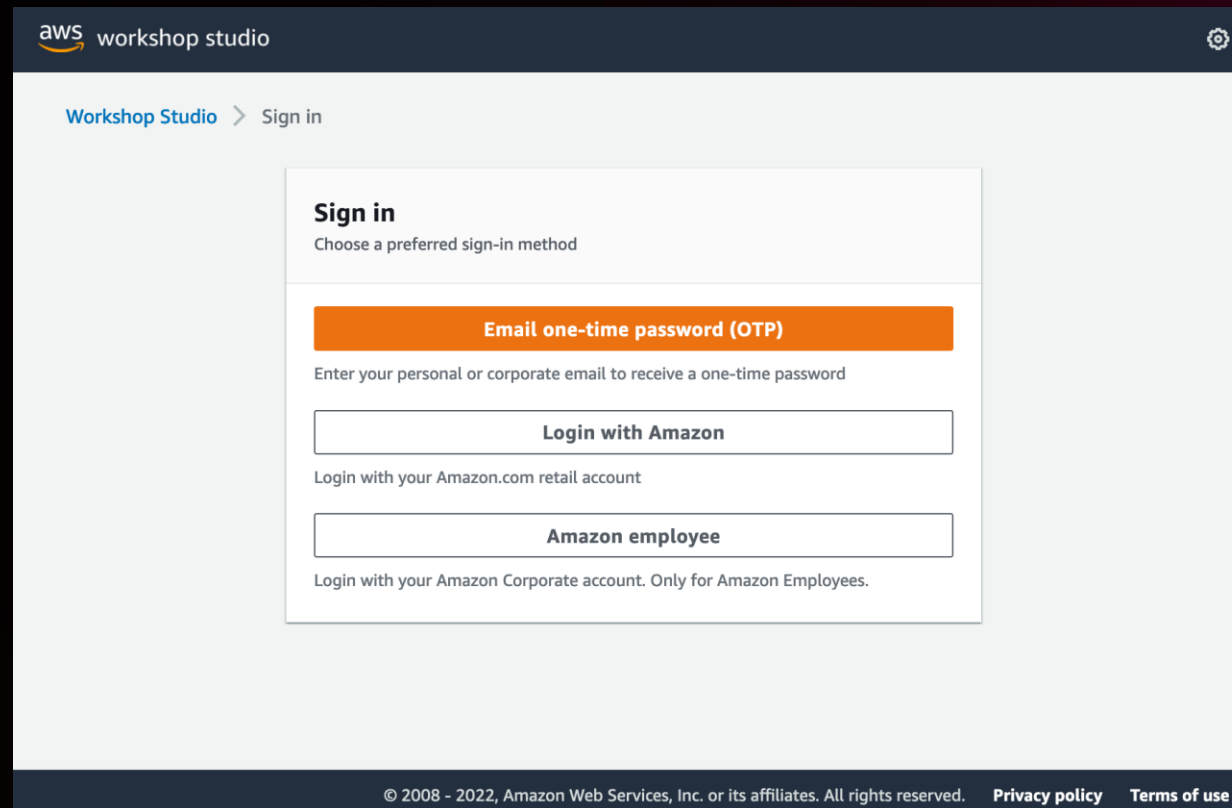


Getting started with this workshop

- 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://s12d.com/SAS403>



The screenshot shows the AWS Workshop Studio sign-in interface. At the top, the 'aws workshop studio' header is visible. Below it, a breadcrumb trail shows '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.' At the bottom of the page, there is a footer with 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

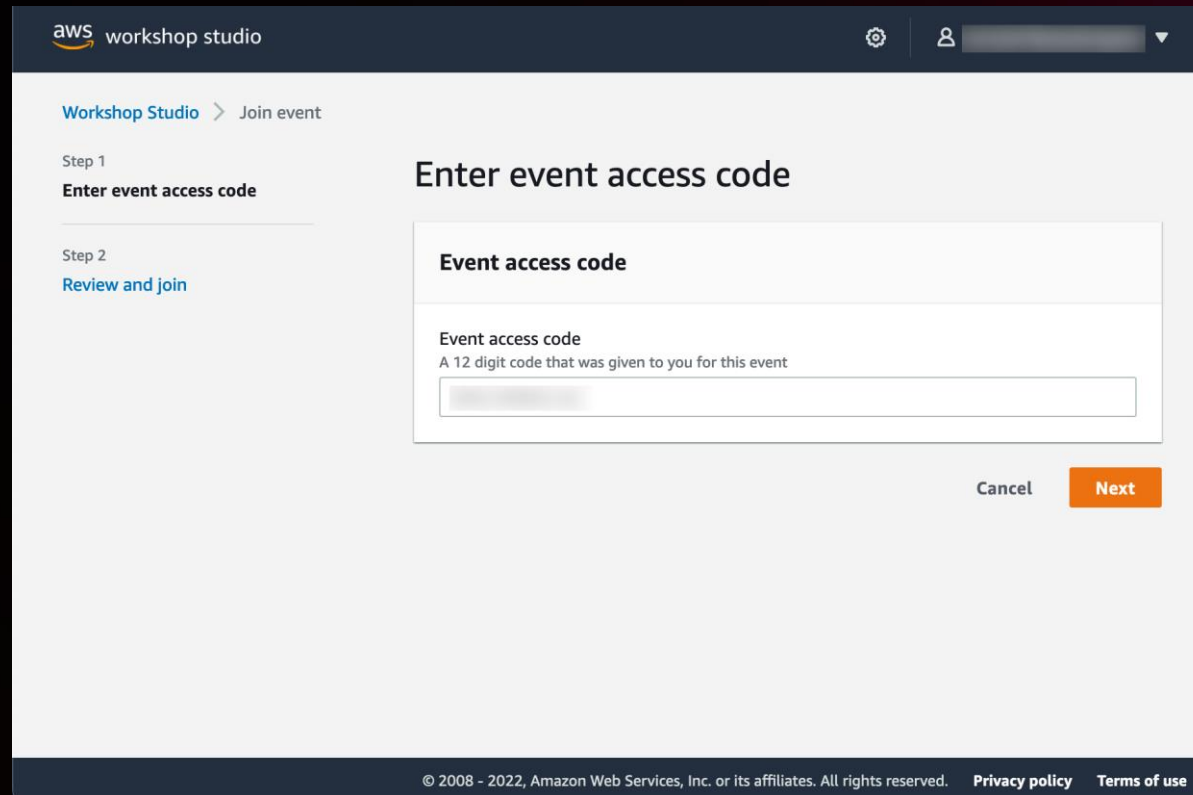
Login with Amazon
Login with your Amazon.com retail account

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

© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy policy](#) [Terms of use](#)

Step 2: Enter event access code

Enter 12-digit event access code; if you were given a one-click join link, you can skip this step



The screenshot shows the AWS Workshop Studio interface for joining an event. The top navigation bar includes the AWS logo, 'workshop studio', a settings gear icon, a user profile icon, and a dropdown arrow. The breadcrumb trail is 'Workshop Studio > Join event'. On the left, a progress indicator shows 'Step 1 Enter event access code' as the current step and 'Step 2 Review and join' as the next step. The main heading is 'Enter event access code'. Below this, a box titled 'Event access code' contains the instruction 'Event access code' and 'A 12 digit code that was given to you for this event', followed by a text input field. At the bottom right of the form area are 'Cancel' and 'Next' buttons. The footer contains the copyright notice '© 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

© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy policy](#) [Terms of use](#)

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
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 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

© 2008 - 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

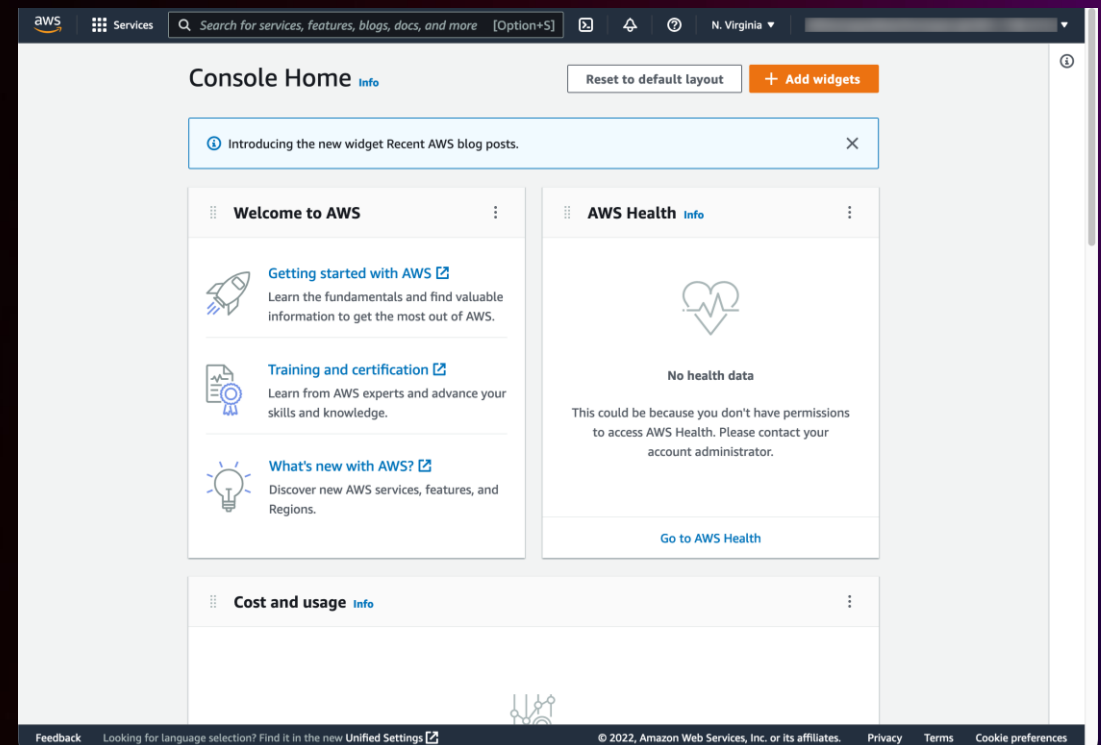
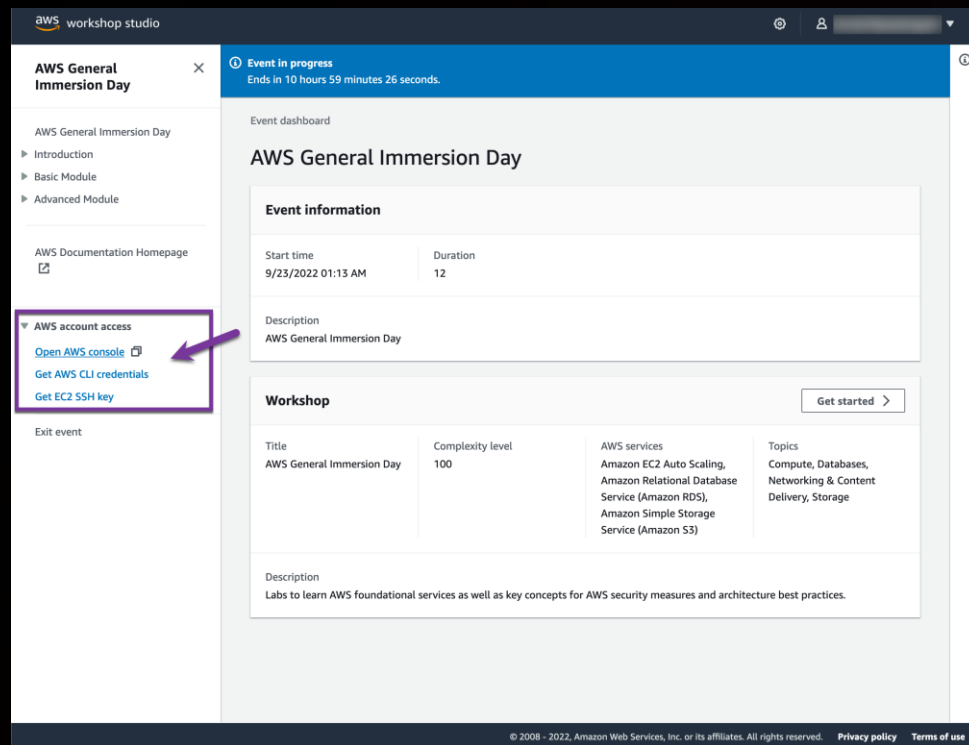
[Privacy policy](#)

[Terms of use](#)



Step 4: Access AWS account

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



More SaaS sessions

Breakout sessions

- SAS305 – SaaS architecture patterns: From concept to implementation
- SAS405 – SaaS microservices deep dive: Simplifying multi-tenant development
- SAS306 – SaaS migration: Inside a real-world multi-tenant transformation
- SAS302 – Supporting extensibility in SaaS environments
- PEX310 – Optimizing your multi-tenant SaaS architecture

Workshops

- SAS403 – SaaS microservices deep dive: Multi-tenancy meets microservices
- SAS402 – Serverless meets SaaS: Inside a real-world serverless SaaS solution
- SAS401 – Amazon EKS SaaS: Building a working multi-tenant environment

Business session

- PEX209 – Building your SaaS journey on AWS

More SaaS sessions

Chalk talks

- SAS307 – DevOps and SaaS: Applying automation in multi-tenant environments
- SAS303 – SaaS anywhere: Building SaaS that runs in hybrid models
- SAS301 – Multi-tenant meets ML: Building ML-based SaaS environments
- SAS304 – Solving the SaaS compliance puzzle
- PEX313 – The SaaS control plane: The heart of SaaS growth
- ARC403 – EKS SaaS deep dive: Inside a multi-tenant EKS solution
- ARC323 – Designing a multi-tenant SaaS tiering and throttling strategy
- SVS315 - Building multi-tenant applications with AWS Lambda and AWS Fargate

Builder session

- ARC327 – How to optimize cost in your multi-tenant architecture

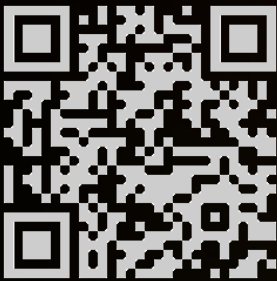


Additional resources

1

Subscribe to AWS SaaS Insights

Get monthly emails with advice
and the latest updates



2

Explore SaaS on AWS hub

Check out the SaaS on AWS page
for more resources and insights



3

Discover resources for builders

Access our curated list of SaaS
reference solutions, demos, tech
events, and more



Thank you!



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

