

AWS re:Invent

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

STG316-R

Transforming your data with Amazon S3 Object Lambda

Lee Kear (she/her)

Principal Storage Solutions Architect
Amazon Web Services

Bimal Gajjar (he/him)

Sr. Storage Solutions Architect
Amazon Web Services



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

Agenda

Introduction of Amazon S3 Object Lambda

Workshop:

Lab 1: Deploying small object aggregator using Amazon S3 Object Lambda

Lab 2: Deploying single use presigned URL using Amazon S3 Object Lambda

Lab 3: Deploying a PII redaction Amazon S3 Object Lambda

Lab 4: Deploying a redaction with custom authorization

Amazon S3 Object Lambda

Add your own code to standard S3 GET, HEAD, and LIST requests to process and modify data returned to an application

Fully managed, powered by **AWS Lambda functions**

Eliminates the need to create and store derivative copies of your data or manage a proxy and requires no application changes



Getting started with Amazon S3 Object Lambda



STEP 1

Create an Amazon S3
Access Point



STEP 2

Create a
Lambda function



STEP 3

Create an Amazon S3
Object Lambda Access Point



STEP 4

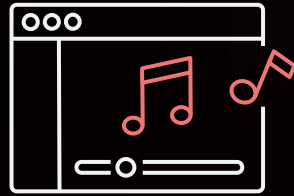
Update application

Insert your own code to process data as it is retrieved from Amazon S3

Use cases for Amazon S3 Object Lambda



**Compression and
decompression**



**Audio and video
transcoding**



**Custom
authorization**



**Image resizing and
watermarking**

Benefits of Amazon S3 Object Lambda

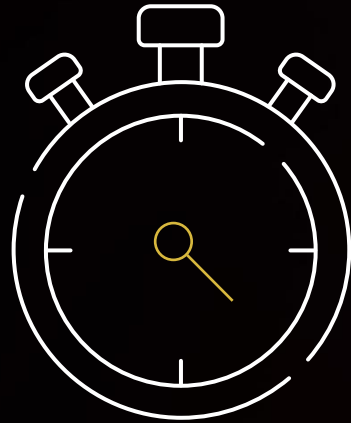


Agility



Cost savings

Benefits of Amazon S3 Object Lambda



Agility



Scan for
RyanAir blog

How Ryanair used S3 Object Lambda to deliver their COVID-19 wallet

by Joaquim Oliveira and Ronan Prenty | on 07 JUL 2021 | in [Amazon Simple Storage Service \(S3\)](#), [AWS Lambda](#), [Compute](#), [Customer Solutions](#), [Foundational \(100\)](#), [Industries](#), [Storage](#), [Travel And Hospitality](#) | [Permalink](#) | [Comments](#) | [Share](#)



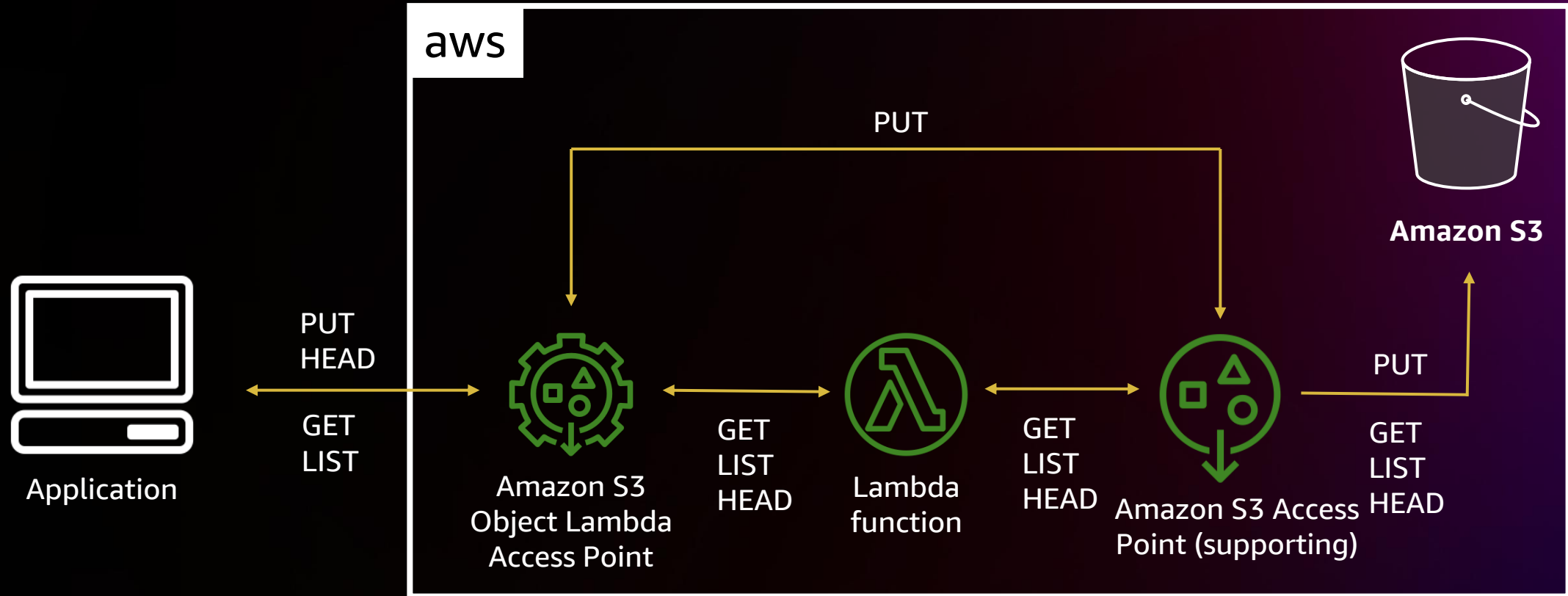
Benefits of Amazon S3 Object Lambda

- Speed of development
- Number of variants
- Replace expensive proxies



Cost savings

Amazon S3 Object Lambda: How it works



Update your client application

Upgrade your **AWS SDK** to support ARN format

Use the Object Lambda access point ARN in place of bucket

```
import S3 from 'aws-sdk/clients/s3';  
const S3Client = new S3();
```

```
await S3Client.getObject({  
  Bucket: 'my-bucket-name',  
  Key: 'my-object-key'  
}).promise().then(...)
```

```
import S3 from 'aws-sdk/clients/s3';  
const S3Client = new S3();
```

```
await S3Client.getObject({  
  Bucket: 'my-ol-ap-arn',  
  Key: 'my-object-key'  
}).promise().then(...)
```

Build your Lambda function

```
import S3 from 'aws-sdk/clients/s3';
const S3Client = new S3();

export async function handler (event: S3ObjectLambdaEvent) {

}
}
```



Build your Lambda function

```
import S3 from 'aws-sdk/clients/s3';
const S3Client = new S3();

export async function handler (event: S3ObjectLambdaEvent) {
  const objectResponse = await fetch(event.getObjectContext.inputsS3Url);
  const originalObject = await objectResponse.buffer();

}
```

Build your Lambda function

```
import S3 from 'aws-sdk/clients/s3';
const S3Client = new S3();

export async function handler (event: S3ObjectLambdaEvent) {
  const objectResponse = await fetch(event.getObjectContext.inputsS3Url);
  const originalObject = await objectResponse.buffer();

  const transformedObject = transformObject(originalObject);

}
```

Build your Lambda function

```
import S3 from 'aws-sdk/clients/s3';
const S3Client = new S3();

export async function handler (event: S3ObjectLambdaEvent) {
  const objectResponse = await fetch(event.getObjectContext.inputsS3Url);
  const originalObject = await objectResponse.buffer();

  const transformedObject = transformObject(originalObject);

  await s3Client.writeGetObjectResponse({
    RequestRoute: event.getObjectContext.outputRoute,
    RequestToken: event.getObjectContext.outputToken,
    Body: transformedObject
  });
}
```

What will you build today?



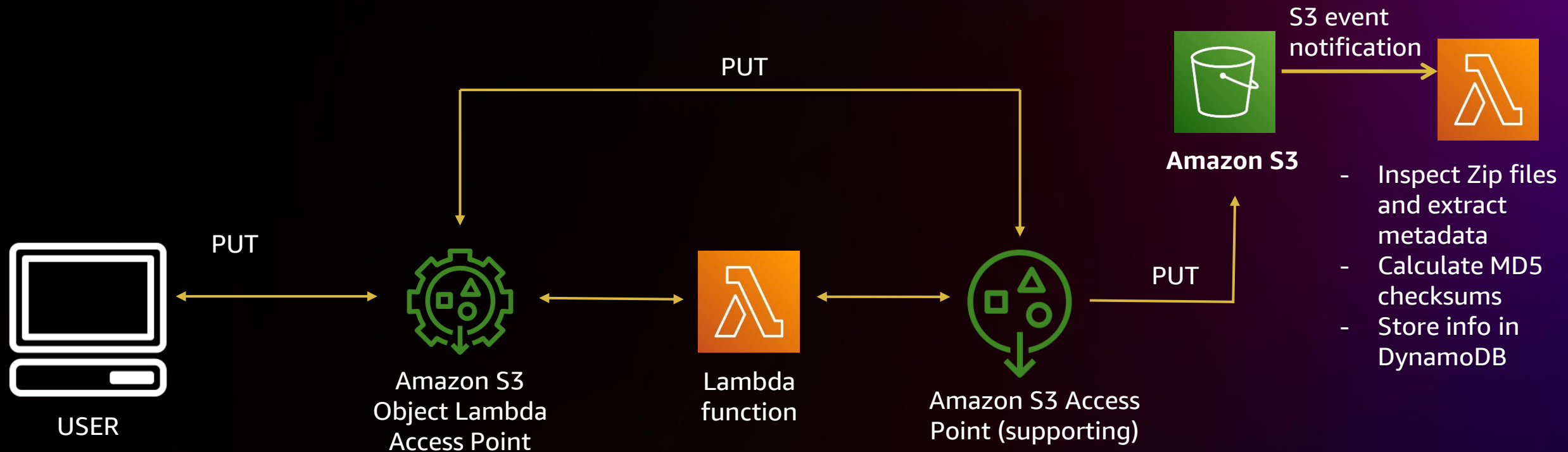
Amazon S3 Object Lambda lab #1

Small object aggregator: ~45 minutes

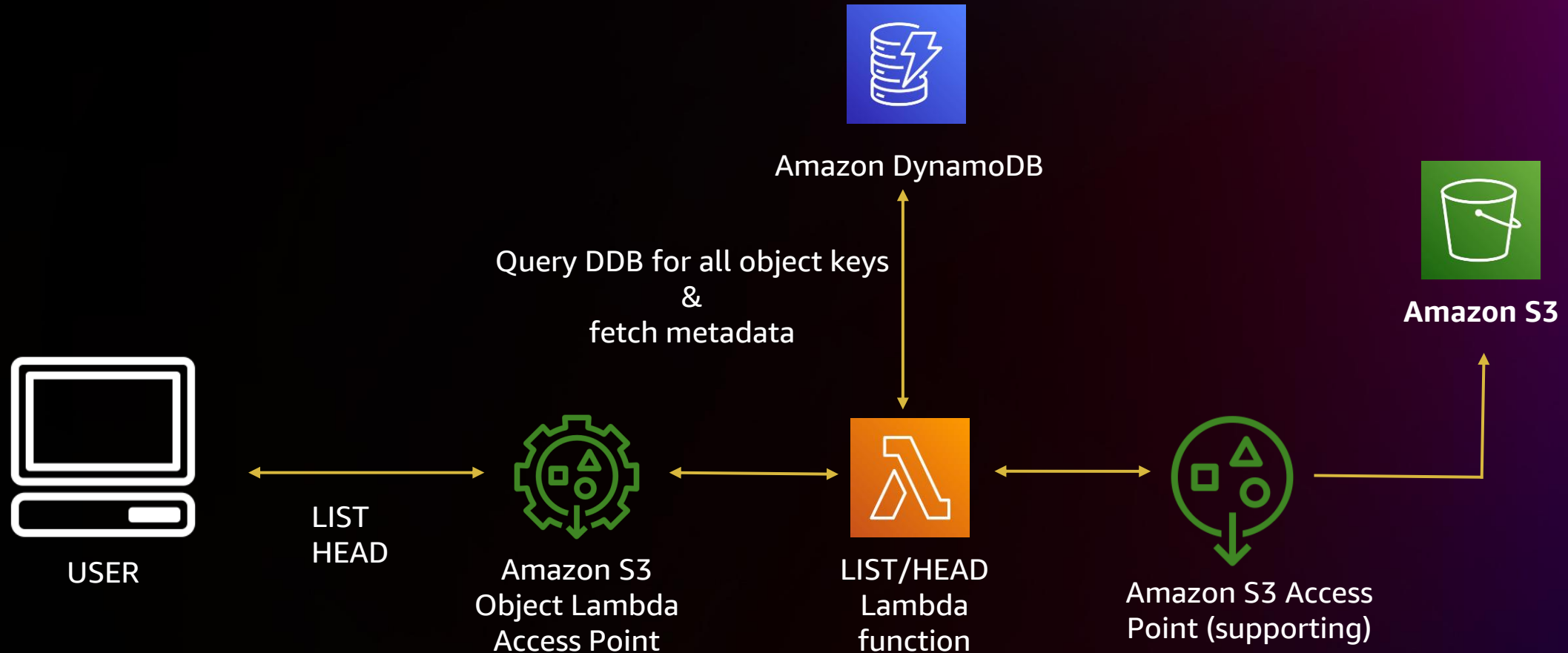
Premise: It is more efficient to store larger objects

This lab will allow customers to aggregate many small objects into larger objects and be able to access them as if they were separate objects through S3 Object Lambda

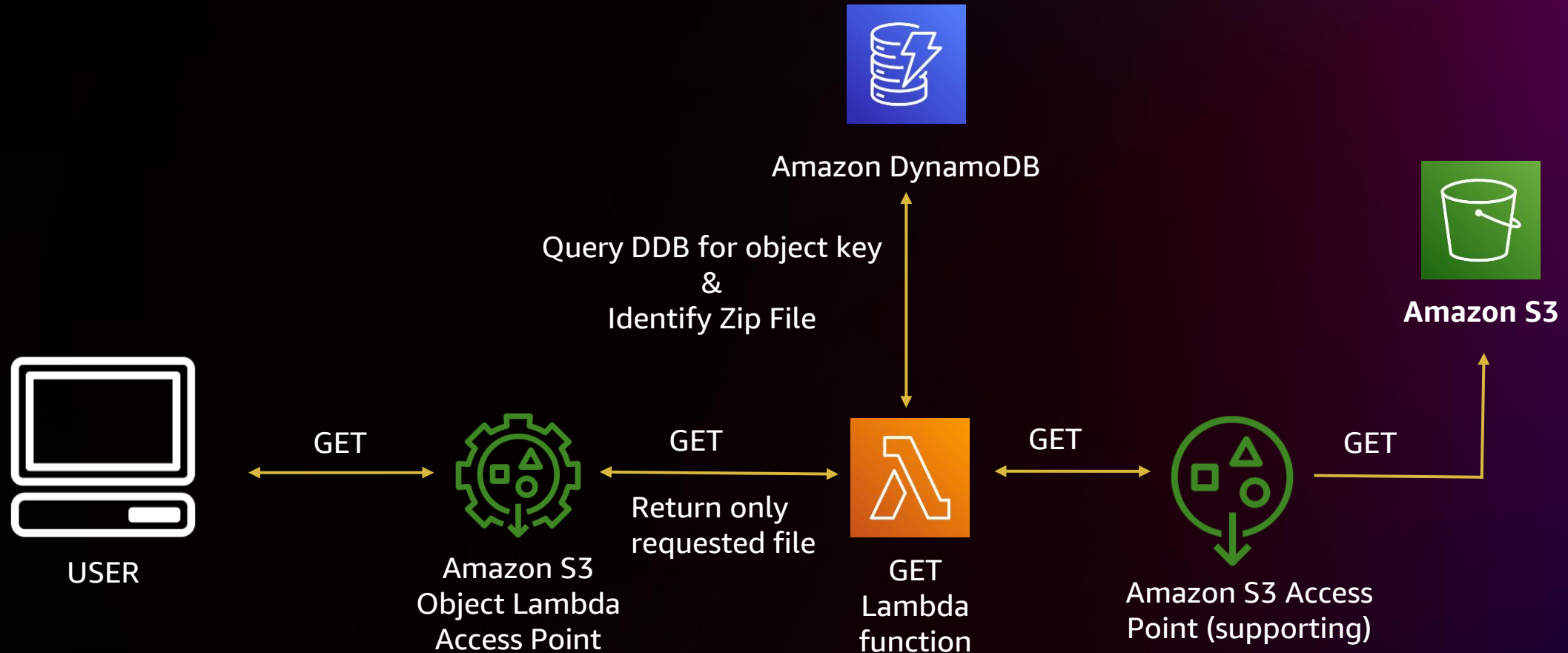
Amazon S3 Object Lambda



Amazon S3 Object Lambda



Amazon S3 Object Lambda



Amazon S3 Object Lambda lab #2

Single-use presigned URL: ~40 minutes

Premise: Presigned URLs are a great way to provide discrete access to a specific object

However, anyone who has the URL can use it before it expires

This solution will allow customers to deny requests from a presigned URL that has been already been used

Amazon S3 Object Lambda lab #3

Role-based redaction: ~40 minutes

Premise: Different roles need access to data that contains PII data, but each group needs a different view of the data

This solution will create 3 different S3 Object Lambda Access Points for 3 different roles and provide different levels of redaction

Amazon S3 Object Lambda lab #4

Custom authorization: ~40 minutes

Premise: Different users need access to data that contains PII data, but each user needs a different view of the data

This solution will create an S3 Object Lambda Access Point that will use custom configuration to determine how to redact the data based on the caller

How to start this workshop



Getting started with this workshop

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

Workshop

STG316 – S3 Object Lambda Workshop

https://s12d.com/VG_daDaa



Step 3: Review terms and join event

Event details

Name	Start time	Duration	Level
STG316 - S3 Object Lambda Workshop event	11/26/2022 07:07 PM	12 hours	-

Description

Test event for content STG316 - S3 Object Lambda Workshop

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



Step 4: Access AWS account

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

The screenshot shows the AWS Workshop Studio interface. On the left, a sidebar lists the event content. Under the 'STG316' section, the first two items are highlighted with a red box and labeled 'Labs to start': 'S3 Object Lambda - Small Object Aggregator' and 'Using S3 Object Lambda to make single-use presigned URLs'. Below this, under the 'AWS account access' section, the 'Open AWS console (us-east-1)' link is highlighted with a red box and labeled 'Launch AWS Console'. The main area displays event information: Start time (11/26/2022 07:07 PM), Duration (12 hours), Accessible regions (us-east-1), and a description: 'Test event for content STG316 - S3 Object Lambda Workshop'. A 'Workshop' section shows the title 'STG316 - S3 Object Lambda Workshop', complexity level '300', AWS services 'Amazon Simple Storage Service (Amazon S3)', and topics 'Storage'. A 'Get started' button is visible.



The screenshot shows the AWS Management Console Home page. The top navigation bar includes the AWS logo, 'Services', a search bar, and the region 'N. Virginia'. The main content area is titled 'Console Home' and features a 'Recently visited' section with a grid of service tiles: AWS Glue, DataSync, AWS Budgets, EMR, EC2, Cloud9, CloudWatch, DynamoDB, Lambda, IAM, CloudShell, and S3. A 'View all services' link is at the bottom of the grid. The footer contains a feedback link, language selection information, and copyright notice: '© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.'



Step 5: Get started with the workshop

aws workshop studio

STG316 - S3 Object Lambda Workshop event

Event ends in 46 minutes.

Event dashboard > STG316

STG316 - S3 Object Lambda Workshop event

Event information

Start time	Duration	Accessible regions
11/26/2022 07:07 PM	12 hours	us-east-1

Description
Test event for content STG316 - S3 Object Lambda Workshop

Workshop

Title	Complexity level	AWS services	Topics
STG316 - S3 Object Lambda Workshop	300	Amazon Simple Storage Service (Amazon S3)	Storage

Description
re:Invent 2022

Get started >

Click here to start

Labs to start

Launch AWS Console



aws workshop studio

STG316 - S3 Object Lambda Workshop event

Event ends in 38 minutes.

Event dashboard > STG316

STG316

re:Invent 2022

This workshop is intended for re:invent 2022

Workshop Duration
Total expected duration for this workshop 120 minutes

Level:300
Level 300

This workshop is intended for advanced users.

The users should have basic knowledge of:

- Amazon S3
- Amazon Lambda function
- Linux shell

Previous Next



Workshops

STG316 – S3 Object Lambda

https://s12d.com/VG_daDaa



Only available during
this session

Role-based redaction

<https://s12d.com/-yGgFbFg>



Publicly available

Custom authorization

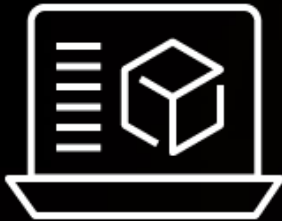
<https://s12d.com/9QIT5XQX>



Publicly available

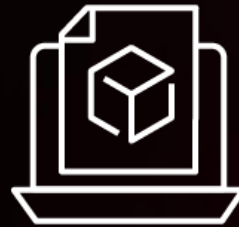
Continue your AWS Storage learning

**Build a
learning plan**



Set your AWS Storage
Learning Plans via
AWS Skill Builder

**Increase your
knowledge**



Use our **Ramp-Up Guides**
to build your storage
knowledge

**Earn AWS
Storage badges**



Demonstrate your
knowledge by achieving
digital badges

aws.training/storage



Thank you!

Lee Kear (she/her)
leke@amazon.com

Bimal Gajjar (he/him)
bggajjar@amazon.com



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

