

AWS re:Invent

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

Transforming your data with Amazon S3 Object Lambda

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Amazon Web Services

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

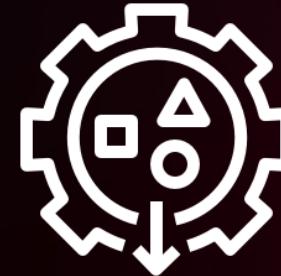
Getting started with Amazon S3 Object Lambda



STEP 1
Create an Amazon S3
Access Point



STEP 2
Create a
Lambda function



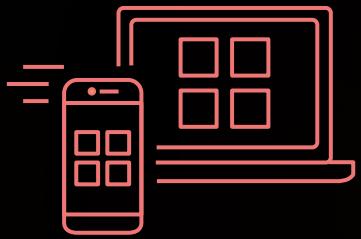
STEP 3
Create an Amazon S3
Object Lambda Access Point



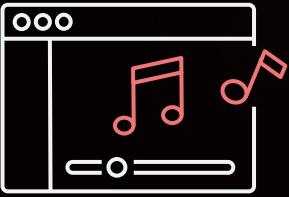
STEP 4
Update application

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



Scan for
RyanAir blog



Agility

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](#)



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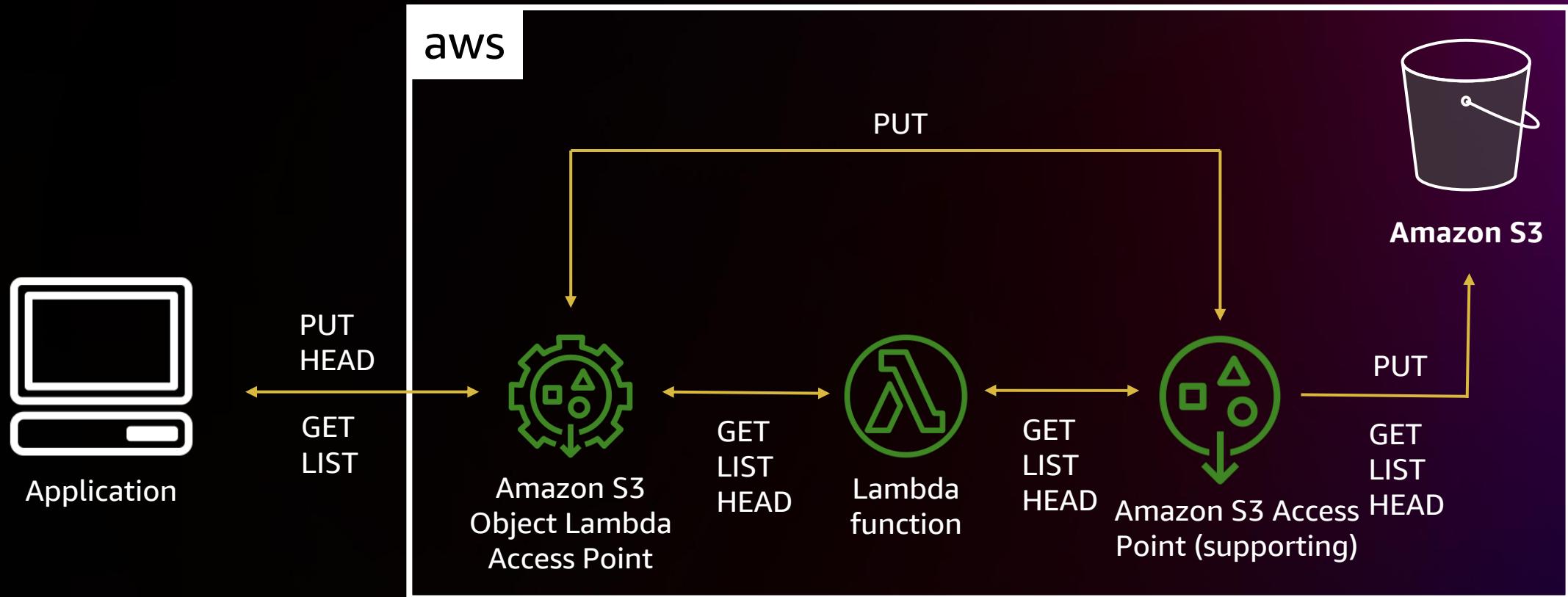
Benefits of Amazon S3 Object Lambda

- 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.inputs3Url);
  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.inputs3Url);
  const originalObject = await objectResponse.buffer();

  const transformedObject = transformObject(originalObject);

}

const 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.inputs3Url);
  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?



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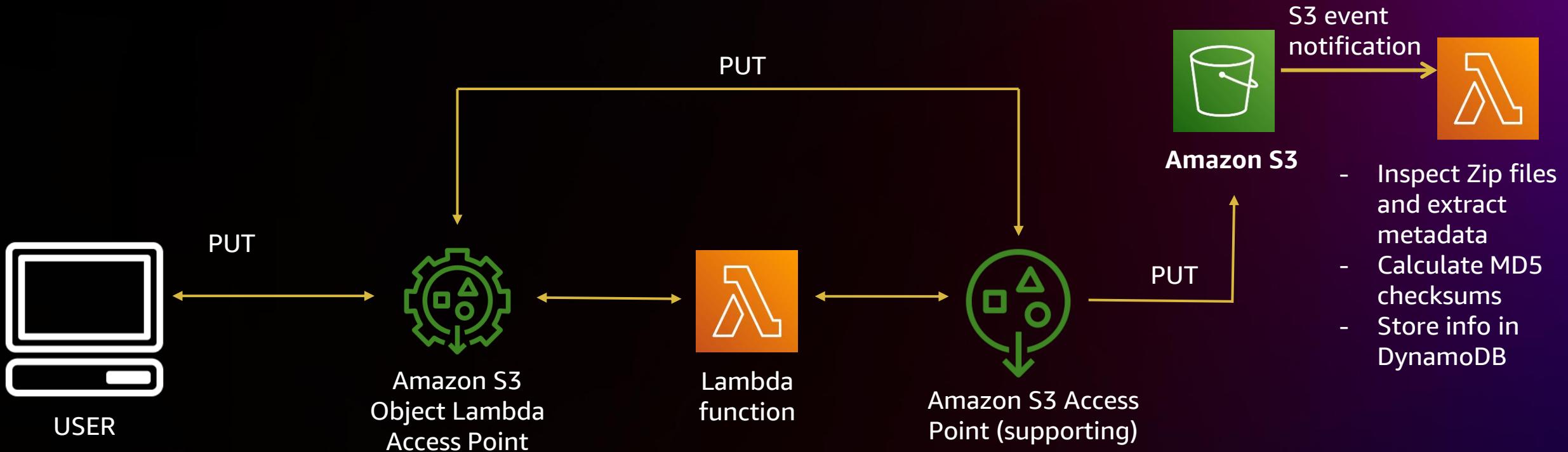
Amazon S3 Object Lambda lab #1

Small object aggregator: ~45 minutes

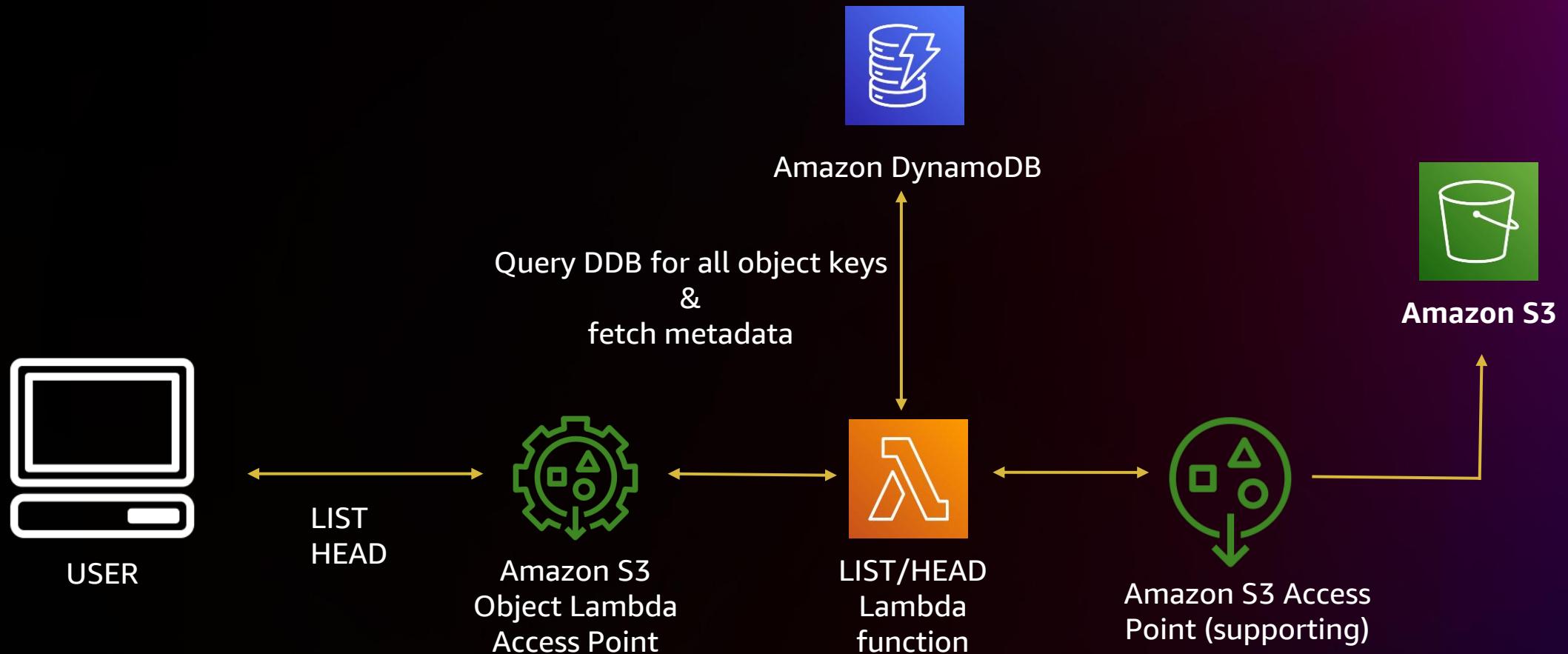
Premise: It is more efficient to store larger objects

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

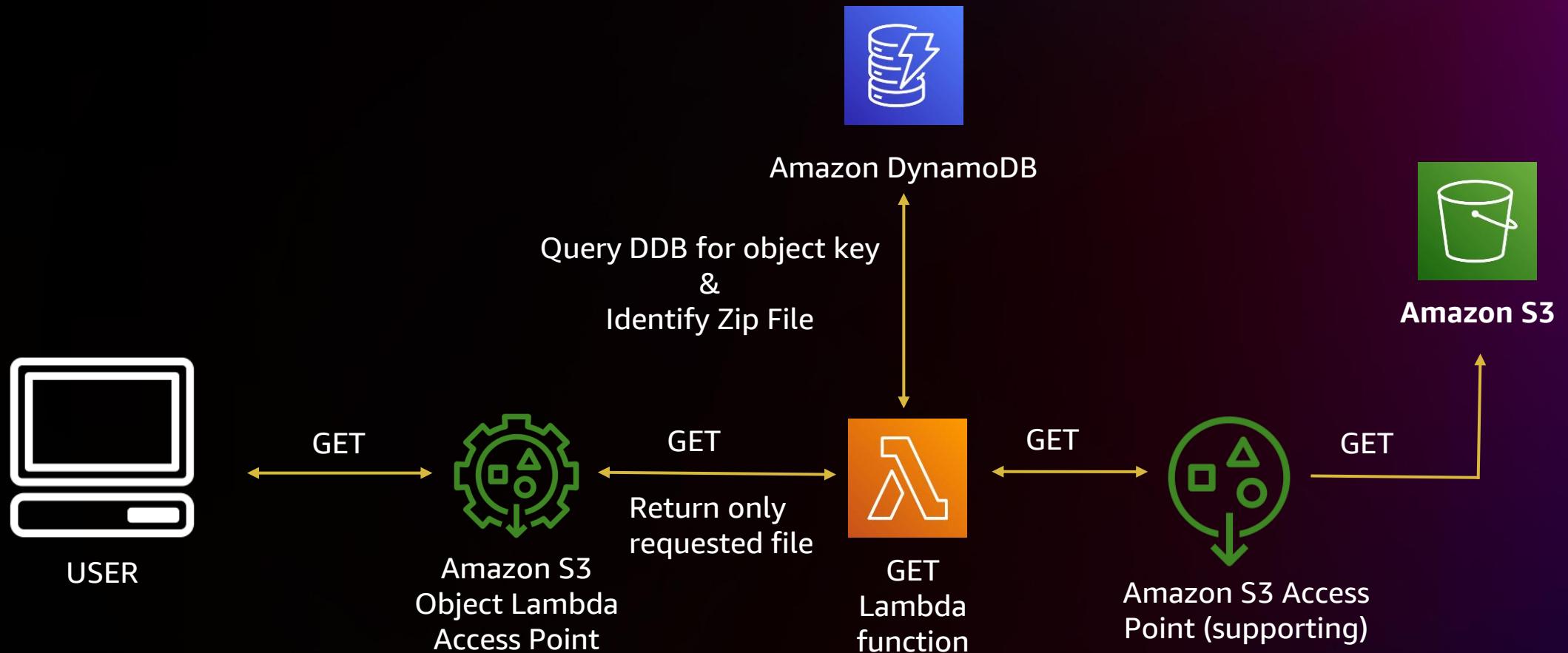
Amazon S3 Object Lambda



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

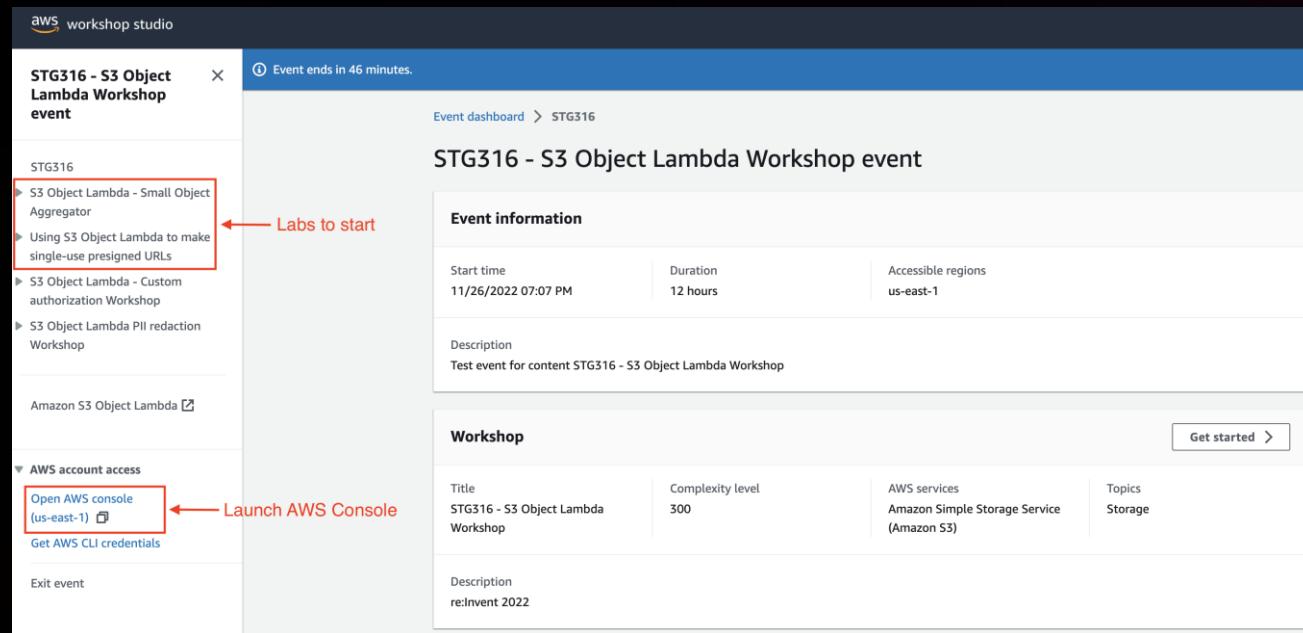
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I agree with the Terms and Conditions

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Step 4: Access AWS account

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



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

Description

Test event for content STG316 - S3 Object Lambda Workshop

Workshop

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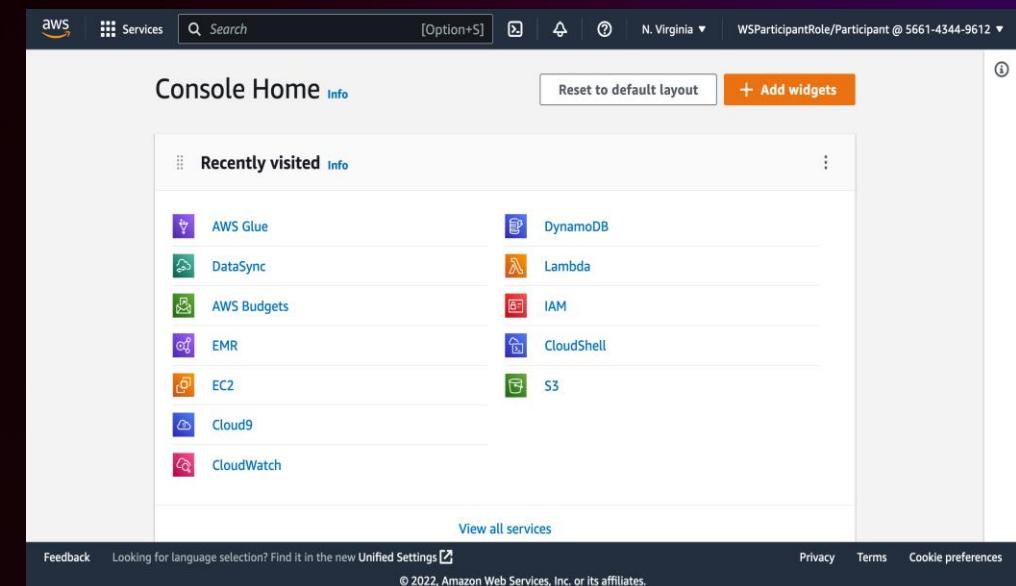
AWS account access

- Open AWS console (us-east-1) 
- Get AWS CLI credentials

Exit event

Labs to start

Launch AWS Console



aws

Services Search [Option+S] N. Virginia WSParticipantRole/Participant @ 5661-4344-9612

Console Home

Reset to default layout + Add widgets

Recently visited

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 Cloud9	
 CloudWatch	

View all services

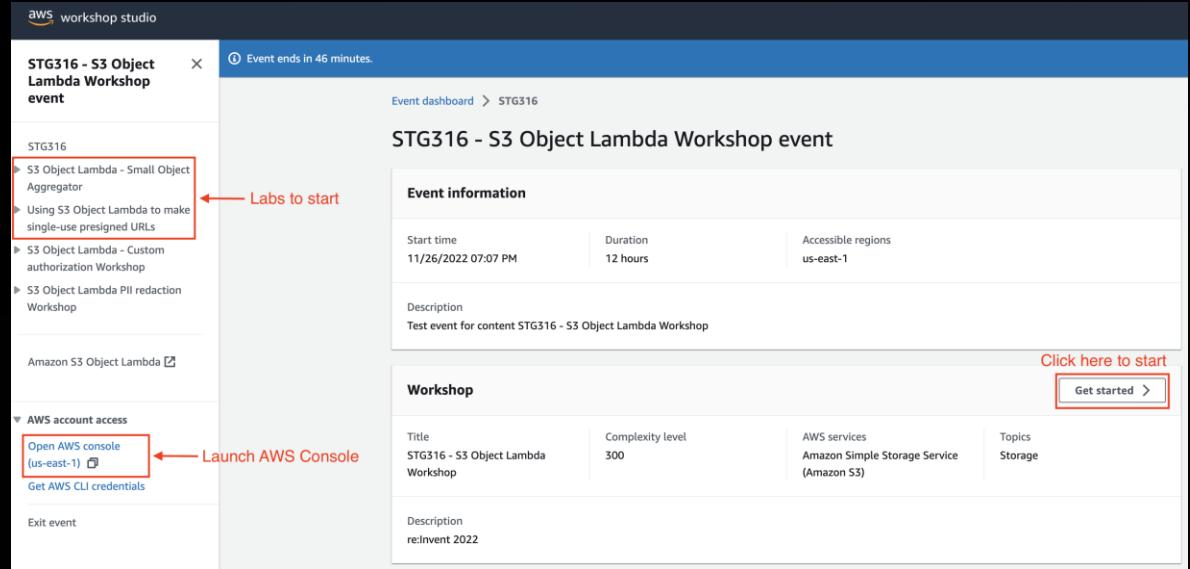
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Step 5: Get started with the workshop



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STG316 - S3 Object Lambda Workshop event

Event ends in 46 minutes.

Event dashboard > STG316

STG316 - S3 Object Lambda Workshop event

Event information

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

Click here to start [Get started >](#)

STG316

- S3 Object Lambda - Small Object Aggregator
- Using S3 Object Lambda to make single-use presigned URLs
- S3 Object Lambda - Custom authorization Workshop
- S3 Object Lambda PII redaction Workshop

Amazon S3 Object Lambda

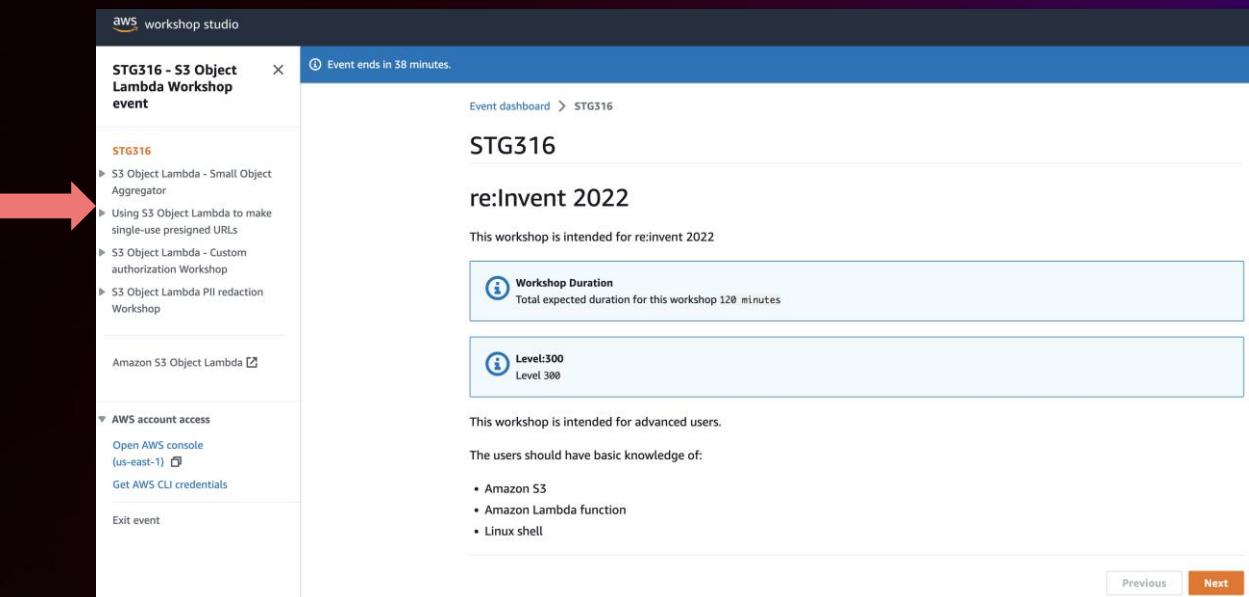
AWS account access

- [Open AWS console \(us-east-1\)](#)
- [Get AWS CLI credentials](#)

Exit event

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

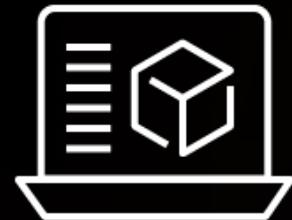
<https://s12d.com/9QIT5XQX>



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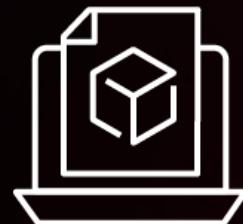
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aws.training/storage

Thank you!

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bggajjar@amazon.com



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