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Semester: V

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Subject: Advanced Devops Lab (ADL)

Subject Lab Incharge: Ms. Mudra Doshi

EXPERIMENT NO. 12

Aim: To create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3.

Theory:

An Amazon S3 bucket is a public cloud storage resource available in Amazon Web Services (AWS) Simple Storage Service (S3), an object storage offering. Amazon S3 buckets, which are similar to file folders, store objects, which consist of data and its descriptive metadata.

How to use an S3 bucket

An S3 customer first creates a bucket in the AWS region of his or her choice and gives it a globally unique name. AWS recommends that customers choose regions geographically close to them to reduce latency and costs.

Once the bucket has been created, the user then selects a tier for the data, with different S3 tiers having different levels of redundancy, prices and accessibility. One bucket can store objects from different S3 storage tiers.

Then, the user can specify access privileges for the objects stored in a bucket, through mechanisms such as the AWS Identity and Access Management service, bucket policies and access control lists.

An AWS customer can interact with an Amazon S3 bucket via the AWS Management Console, AWS Command Line Interface or application programming interfaces (APIs).



Bucket name	Access	Region	Date created
testbucket-analysis-01	Net public *	US East (N. Virginia)	Jul 11, 2019 11:36:52 AM GMT-0400
testbucket-analysis-02	Net public *	US East (N. Virginia)	Jul 11, 2019 11:37:05 AM GMT-0400
testbucket-dev-01	Net public *	US East (N. Virginia)	Jul 11, 2019 11:36:06 AM GMT-0400
testbucket-dev-02	Net public *	US East (N. Virginia)	Jul 11, 2019 11:36:33 AM GMT-0400
testbucket-production-01	Net public *	US East (N. Virginia)	Jul 11, 2019 11:37:45 AM GMT-0400

Amazon S3 buckets on display in the AWS Management Console

S3 bucket features

AWS offers several features for Amazon S3 buckets. An IT professional can enable versioning for S3 buckets to preserve every version of an object when an operation is performed on it, such as a copy or delete operation. This helps an IT team prevent the accidental deletion of an object. Likewise, upon bucket creation, a user can set up server access logs, object-level API logs, tags and encryption.

Also, S3 Transfer Acceleration helps execute fast, secure transfers from a client to an S3 bucket via AWS edge locations.

S3 bucket limits, prices

There is no limit to the number of objects an IT professional can store in a bucket, though buckets cannot exist inside of other buckets.

S3 performance remains the same regardless of how many buckets an individual creates. Each AWS account can create 100 buckets, though more are available by requesting a service limit increase. The AWS account that creates a bucket owns it, and ownership is not transferable. An S3 customer can delete a bucket, but another AWS user can claim that globally unique name.

AWS charges customers for storing objects in a bucket and for transferring objects in and out of buckets. Bucket pricing varies by region.



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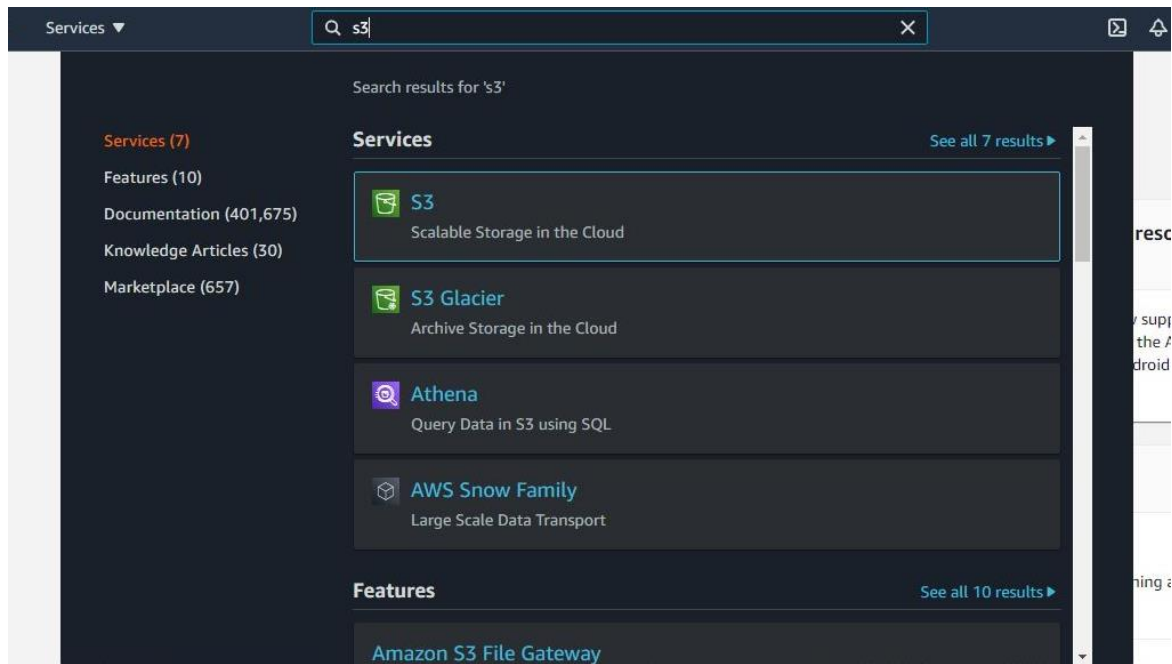
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Steps:

1. Login with your AWS account.

2. Navigate to S3 bucket service from the Developer tools section as below:





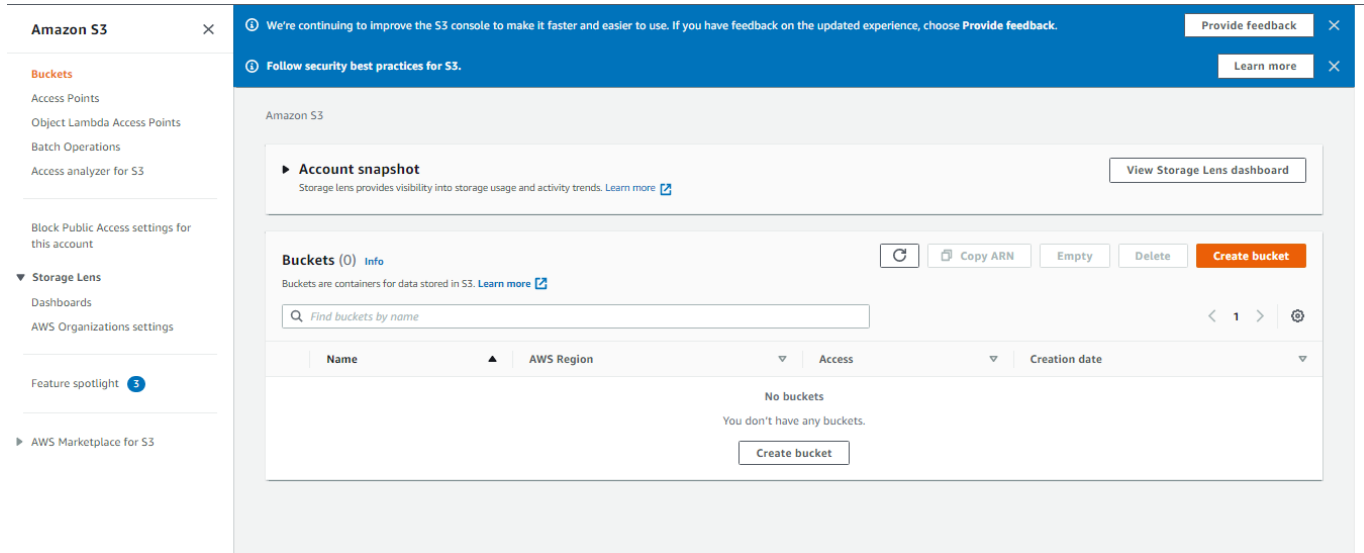
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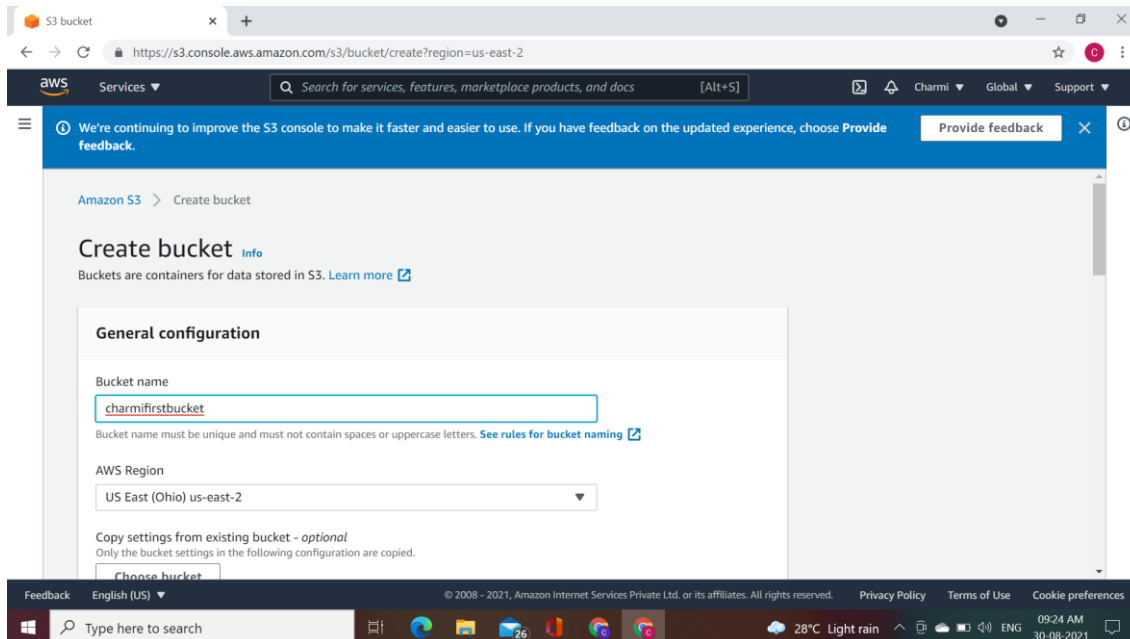
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3. Click on create bucket button on S3 bucket service:



4. Fill Create bucket Info as Show in Below Figure:



5. Then Click on create bucket button:



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Amazon S3

Buckets

Access Points

Object Lambda Access Points

Batch Operations

Access analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

AWS Organizations settings

Feature spotlight

AWS Marketplace for S3

We're continuing to improve the S3 console to make it faster and easier to use. If you have feedback on the updated experience, click here.

Warning

Turning off block all public access might result in this bucket and the objects within becoming public. AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.

☐ I acknowledge that the current settings might result in this bucket and the objects within becoming public.

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning

☒ Disable

☐ Enable

Tags (0) - optional

Track storage cost or other criteria by tagging your bucket. [Learn more](#)

No tags associated with this bucket.

Add tag

Default encryption

Automatically encrypt new objects stored in this bucket. [Learn more](#)

Server-side encryption

☒ Disable

☐ Enable

Advanced settings

After creating the bucket you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel

Create bucket

6. Now, Navigate to AWS Lambda Service :

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The screenshot displays the AWS Lambda console interface. The top navigation bar includes the AWS logo, a 'Services' dropdown, and a search bar. The left sidebar shows the 'AWS Lambda' section with options for 'Dashboard', 'Applications', 'Functions' (highlighted), 'Additional resources', and 'Related AWS resources'. The main content area, titled 'Functions (2)', shows a table with two functions: 'MyFunction' and 'MyFirstFunction'. Both functions have a 'Description' of '-', a 'Package type' of 'Zip', and a 'Runtime' of 'Python 3.8'. The table has columns for 'Function name', 'Description', 'Package type', and 'Runtime'. The bottom of the screenshot shows the Windows taskbar with the search bar and several application icons.

<input type="checkbox"/>	Function name	Description	Package type	Runtime
<input type="checkbox"/>	MyFunction	-	Zip	Python 3.8
<input type="checkbox"/>	MyFirstFunction	-	Zip	Python 3.8

7. Open AWS Lambda function and Add trigger:

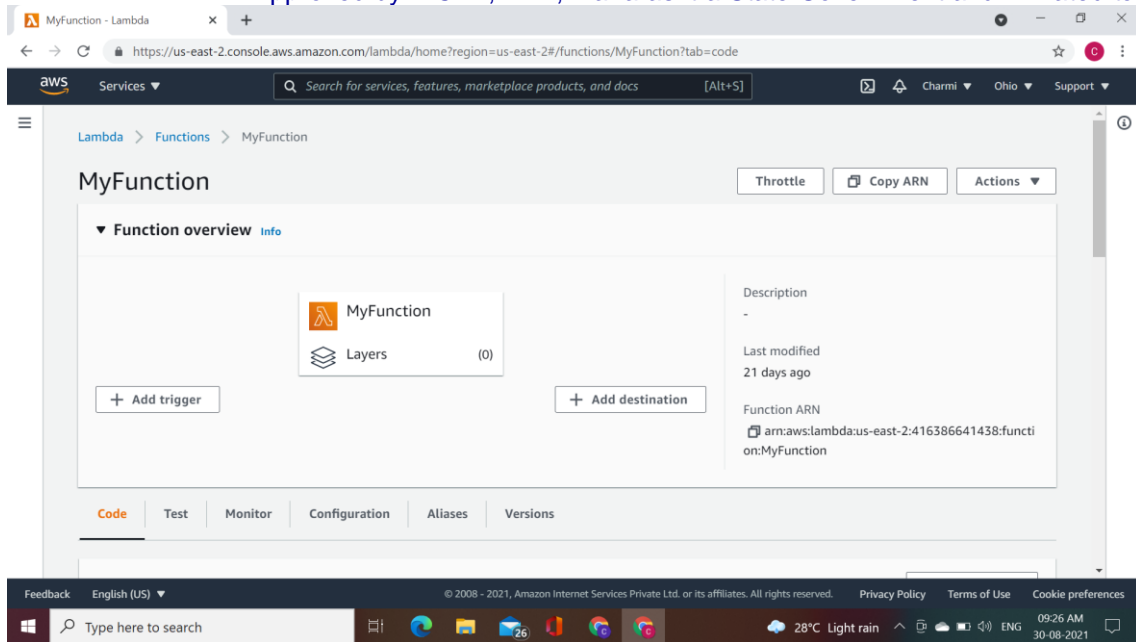


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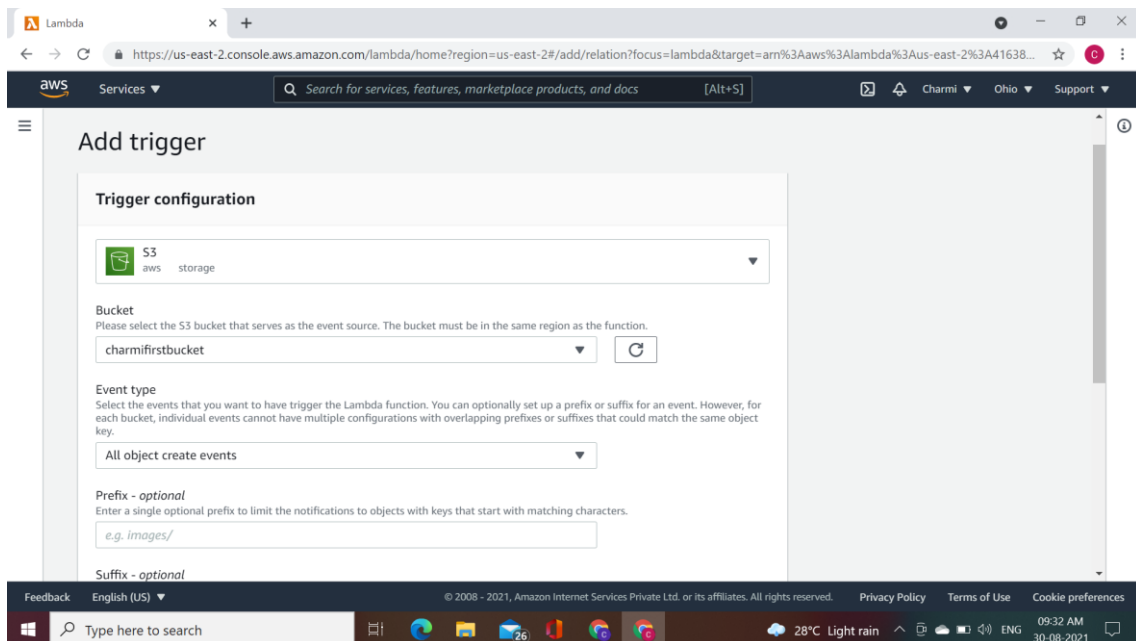
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8. Now, Select S3 Bucket in “Trigger configuration” and Select bucket name from the bucket name option And Click on add.



9. After the opening of Bucket, click on the Upload button



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We're continuing to improve the S3 console to make it faster and easier to use. If you have feedback on the updated experience, choose [Provide feedback](#).

[Provide feedback](#)

hetfirstbucket [Info](#)

[Objects](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

Objects (0)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

[Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

< 1 > [Settings](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
--------------------------	------	------	---------------	------	---------------

No objects

You don't have any objects in this bucket.

[Upload](#)

10. After the opening of the Upload page, Add project-related files to it and Click on Upload Button.



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11. After Uploading File, Navigate to AWS Lambda Service and open the Monitor tab and click on view logs in clouds.

The screenshot shows the AWS CloudWatch console. The left sidebar contains navigation options like Dashboards, Alarms, Logs, Metrics, Events, Application monitoring, Insights, and Settings. The main content area displays the 'Log events' for a specific Lambda function. It includes a search bar, a 'View as text' button, and a table of log events. The events are as follows:

Timestamp	Message
2021-08-09T16:27:34.228+05:30	START RequestId: 1eb2e175-3b6c-41bb-a03e-5c03cf9cc514 Version: \$LATEST
2021-08-09T16:27:34.231+05:30	END RequestId: 1eb2e175-3b6c-41bb-a03e-5c03cf9cc514
2021-08-09T16:27:34.231+05:30	REPORT RequestId: 1eb2e175-3b6c-41bb-a03e-5c03cf9cc514 Duration: 0.99 ms Billed Duration:...

11.Entry of S3 Bucket

The screenshot shows the AWS CloudWatch console. The left sidebar contains navigation options like Dashboards, Alarms, Logs, Metrics, Events, Application monitoring, Insights, and Settings. The main content area displays the 'Log events' for a specific Lambda function. It includes a search bar, a 'View as text' button, and a table of log events. The events are as follows:

Timestamp	Message
2021-08-27T13:33:06.769+05:30	START RequestId: 3562b84d-0439-47aa-a37b-9e014e75053c Version: \$LATEST
2021-08-27T13:33:06.770+05:30	my name is het
2021-08-27T13:33:06.770+05:30	{\"Records\": [{\"eventVersion\": \"2.1\", \"eventSource\": \"aws:s3\", \"awsRegion\": \"us-east-2\", \"eventTime\": \"2021-08-27T08:02:59.790Z\", \"eventName\": \"ObjectCreated:Put\", \"userIdentity\": {\"principalId\": \"A1SBK8J5UK80BY\"}, \"requestParameters\": {\"sourceIPAddress\": \"103.58.154.246\"}, \"responseElements\": {\"x-amz-request-id\": \"BF0038N30403XZMV\", \"x-amz-id-2\": \"jE/Ne4Rn/tS0YhY2e3tkk91AGQRtuzG12mEXS2pguF2aDggJ0ht/Kh1MSZhz6BQHFAxjQK5119QZovSag+4UbTVhjQdJMGH\"}, \"s3\": {\"s3SchemaVersion\": \"1.0\", \"configurationId\": \"da8924b3-c8e0-4046-91fa-88336e7ab0b\", \"bucket\": {\"name\": \"hetfirstbucket\", \"ownerIdentity\": {\"principalId\": \"A1SBK8J5UK80BY\"}, \"arn\": \"arn:aws:s3:::hetfirstbucket\"}, \"object\": {\"key\": \"WAREHOUSE+INVENTORY+SALES+AND+PURCHASE+MANAGEMENT+SYSTEM.PY\", \"size\": 14284, \"eTag\": \"50ebb601a13a4192dd09915a8919ecb8\", \"sequencer\": \"0061289C38CFD87E3D\"}}}]}
2021-08-27T13:33:06.773+05:30	END RequestId: 3562b84d-0439-47aa-a37b-9e014e75053c
2021-08-27T13:33:06.773+05:30	REPORT RequestId: 3562b84d-0439-47aa-a37b-9e014e75053c Duration: 1.33 ms Billed Duration: 2 ms Memo...

For more info, related to AWS-S3 Bucket you can refer following Docs.

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<https://aws.amazon.com/s3/>

Conclusion: I understand the benefits S3 Bucket and setup S3 Bucket,

Launch S3 Bucket and performed the Collaboration Demonstration