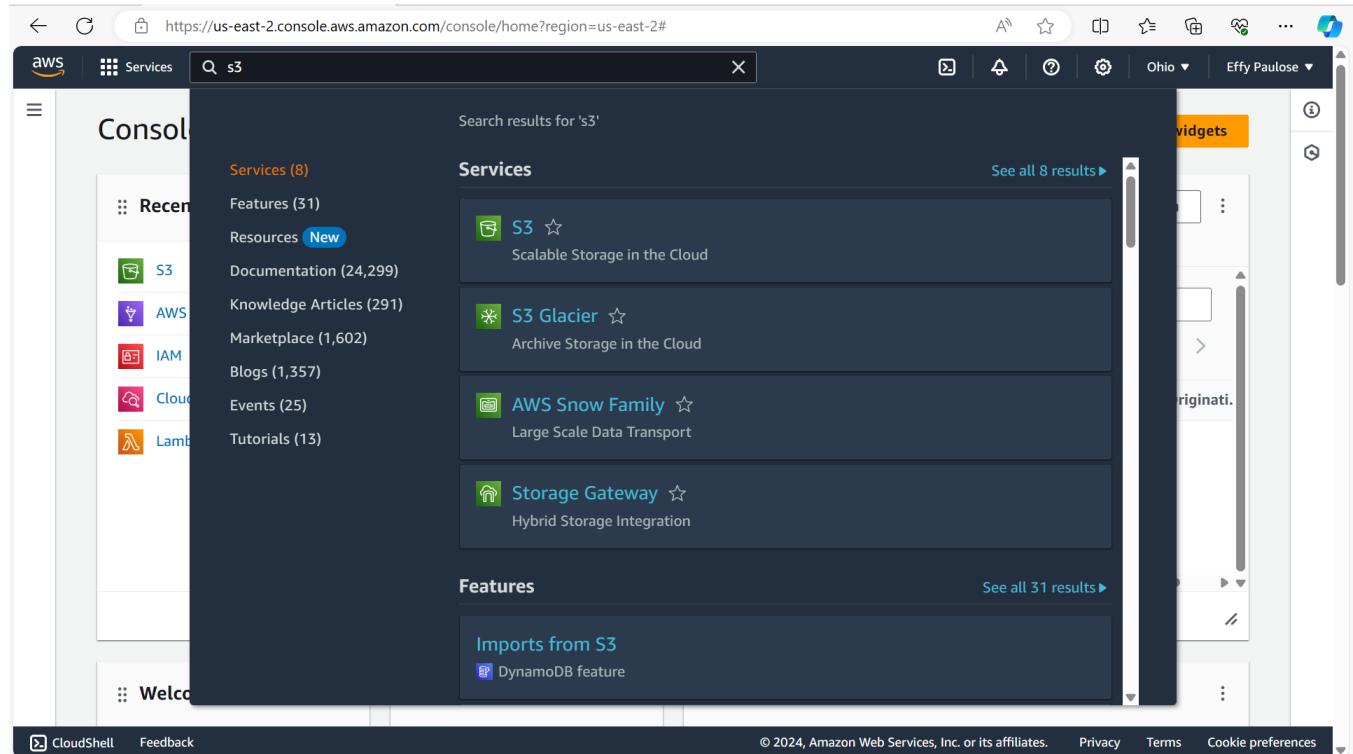


Setting up S3

Step 1



The screenshot shows the AWS CloudSearch interface with a search query of 's3'. The results are categorized into 'Services' and 'Features'.

Services (8 results):

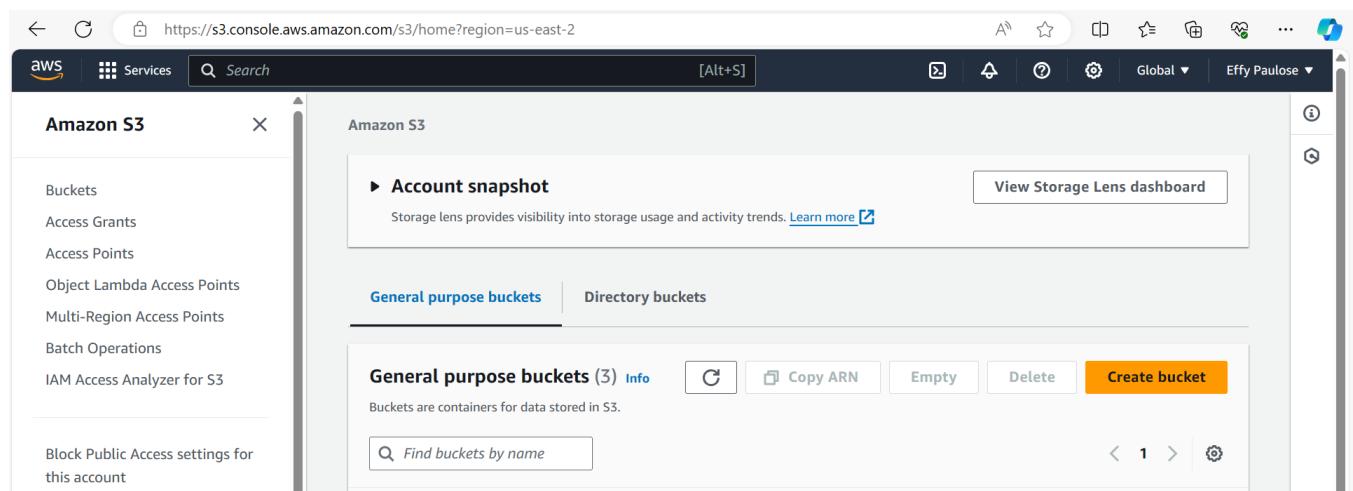
- S3: Scalable Storage in the Cloud
- S3 Glacier: Archive Storage in the Cloud
- AWS Snow Family: Large Scale Data Transport
- Storage Gateway: Hybrid Storage Integration

Features (31 results):

- Imports from S3: DynamoDB feature

At the bottom, there are links for CloudShell, Feedback, and cookie preferences.

Step 2: Creating the bucket



The screenshot shows the Amazon S3 console with the 'General purpose buckets' tab selected. It displays three buckets and provides options to Copy ARN, Empty, Delete, or Create a new bucket.

General purpose buckets (3):

- Bucket 1 (Info)
- Bucket 2 (Info)
- Bucket 3 (Info)

Actions: Copy ARN, Empty, Delete, Create bucket.

Search bar: Find buckets by name.

Step 3: Selecting the server region as Ohio Us-east-2.

https://s3.console.aws.amazon.com/s3/bucket/create?region=us-east-2&bucketType=general

AWS Services Search [Alt+S] Global Effy Paulose

Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3.

General configuration

AWS Region: US East (Ohio) us-east-2

Bucket name: Info bucket1-effy-assignment3

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

Copy settings from existing bucket - *optional*: Only the bucket settings in the following configuration are copied. [Choose bucket](#)

Format: s3://bucket/prefix

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

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Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSL-KMS. [Learn more](#)

Enable

Advanced settings

Object Lock
Store objects using a write-once-read-many (WORM) model to help you prevent objects from being deleted or overwritten for a fixed amount of time or indefinitely. Object Lock works only in versioned buckets. [Learn more](#)

Disable

Enable
Permanently allows objects in this bucket to be locked. Additional Object Lock configuration is required in bucket details after bucket creation to protect objects in this bucket from being deleted or overwritten.

Object Lock works only in versioned buckets. Enabling Object Lock automatically enables Versioning.

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

Cancel **Create bucket**

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Folder name: test /

Folder names can't contain "/". [See rules for naming](#)

Server-side encryption [Info](#)
Server-side encryption protects data at rest.

The following encryption settings apply only to the folder object and not to sub-folder objects.

Do not specify an encryption key
The bucket settings for default encryption are used to encrypt the folder object when storing it in Amazon S3.

Specify an encryption key
The specified encryption key is used to encrypt the folder object before storing it in Amazon S3.

If your bucket policy requires objects to be encrypted with a specific encryption key, you must specify the same encryption key when you create a folder. Otherwise, folder creation will fail.

Cancel **Create folder**

Amazon S3 > Buckets > bucket1-effy-assignment3 [Info](#)

Objects (1) [Info](#)

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

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](#)

[Find objects by prefix](#)

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

Step 5: Repeating the process for the output bucket.

The screenshot shows the 'Create bucket' page in the AWS S3 console. The 'General configuration' section is active, displaying the following details:

- AWS Region:** US East (Ohio) us-east-2
- Bucket name:** bucket1-effy-assignment3-output
- Copy settings from existing bucket - optional:** Only the bucket settings in the following configuration are copied. A 'Choose bucket' button is present.

The 'Object Ownership' section is also visible, indicating control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

At the bottom, there are links for CloudShell, Feedback, and a copyright notice: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

The screenshot shows the 'bucket1-effy-assignment3-output' bucket details page. A green success message at the top states: 'Successfully created folder "test".'

The 'Objects' tab is selected, showing one object named 'test'. The object details are as follows:

Name	Type	Last modified	Size	Storage class
test	Folder	-	-	-

Below the table are standard S3 object actions: Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, and Upload. There is also a search bar labeled 'Find objects by prefix'.

At the bottom, there are links for CloudShell, Feedback, and a copyright notice: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

Step A: Creating a Lambda function.

The screenshot shows the AWS Lambda search results page. The search term 'lambda' has been entered into the search bar at the top. The results are categorized into 'Services' and 'Features'.

Services (15) - See all 15 results ▶

- Lambda: Run code without thinking about servers
- CodeBuild: Build and Test Code
- AWS Signer: Ensuring trust and integrity of your code
- Amazon Inspector: Continual vulnerability management at scale

Features (24) - See all 24 results ▶

- Lambda Insights: CloudWatch feature

Left sidebar:

- Buckets
- Access Grants
- Access Points
- Object Lambda Access
- Multi-Region Access
- Batch Operations
- IAM Access Analyzer
- Block Public Access settings for this account
- Storage Lens
- Dashboards
- Storage Lens groups
- AWS Organizations settings

Bottom navigation bar:

- CloudShell
- Feedback
- bucket1-effy
- US East (Ohio) us-east-2
- Bucket and objects not found
- 00:29:39 (UTC)
- © 2024, Amazon Web Services, Inc. or its affiliates.
- Privacy
- Terms
- Cookie preferences

The screenshot shows the AWS Lambda function creation wizard. The function name is set to 'lambdafunc1-effy-assignment3'. The runtime is chosen as Python 3.12, and the architecture is x86_64. The permissions section indicates that Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs.

Function name
Enter a name that describes the purpose of your function.

Runtime [Info](#)
Choose the language to use for writing your function. Note that the console code editor supports only Node.js, Python, and Ruby.
 [Change](#)

Architecture [Info](#)
Choose the instruction set architecture you want for your function code.
 x86_64
 arm64

Permissions [Info](#)
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

[Change default execution role](#)

[Advanced settings](#)

[Cancel](#) [Create function](#)

Tutorials

Learn how to implement common use cases in AWS Lambda.

Create a simple web app

In this tutorial you will learn how to:

- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

[Learn more](#) [Start tutorial](#)

Bottom navigation bar:

- CloudShell
- Feedback
- bucket1-effy
- US East (Ohio) us-east-2
- Bucket and objects not found
- 00:29:39 (UTC)
- © 2024, Amazon Web Services, Inc. or its affiliates.
- Privacy
- Terms
- Cookie preferences

The screenshot shows the AWS Lambda function configuration interface. On the left, there's a sidebar with a menu icon. The main content area has tabs for 'Info' and 'Tutorials'. Under 'Info', there are sections for 'Architecture' (set to x86_64) and 'Permissions' (set to Use an existing role, choosing 'role1-effy-assignment3'). A 'Create a simple web app' tutorial is visible on the right.

Step D: Adding Trigger to connect the S3 bucket to lambda.

Step E: Selecting Event type as ‘put’, ‘post’

The screenshot shows the 'Trigger configuration' page for an S3 event source. It includes fields for selecting the S3 bucket ('s3/bucket1-effy-assignment3') and choosing event types ('All object create events', 'PUT', 'POST'). A 'Create a simple web app' tutorial is visible on the right.

AWS Lambda Functions - lambdafunc1-effy-assignment3

lambdafunc1-effy-assignment3

Throttle | Copy ARN | Actions ▾

Function overview | Info | Export to Application Composer | Download ▾

Diagram | Template

Diagram

lambdafunc1-effy-assignment3

S3

+ Add destination

+ Add trigger

Description: -

Last modified: 2 minutes ago

Function ARN: arn:aws:lambda:us-east-2:851725309117:function:lambdafunc1-effy-assignment3

Function URL: Info -

Code | Test | Monitor | Configuration | Aliases | Versions

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Learn more | Start tutorial

AWS Lambda Functions - lambdafunc1-effy-assignment3

Code source | Info | Upload from ▾

File Edit Find View Go Tools Window Test Deploy

Environment Vari

lambda_function

```
1 import boto3
2 import json
3 import boto3
4 import json
5 s3 = boto3.resource('s3')
6 def lambda_handler(event, context):
7     bucket = s3.Bucket('bucket1-effy-assignment3')
8     dest_bucket=s3.Bucket('bucket1-effy-assignment3-output')
9     print(dest_bucket)
10    print(bucket)
11    for obj in bucket.objects.filter(Prefix='test/'):
12        dest_key=obj.key
13        print(dest_key)
14        print('copy file ' + dest_key)
15        s3.Object(dest_bucket.name, dest_key).copy_from(CopySource= {'Bucket':
```

Environment Vari

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Tutorials

Learn how to implement common use cases in AWS Lambda.

Create a simple web app

In this tutorial you will learn how to:

- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

Learn more | Start tutorial

Code | Test | Monitor | Configuration | Aliases | Versions

Executing function: succeeded ([logs](#))

Details

Creating IAM role and Policy

Step a

The screenshot shows the AWS Lambda search results for the term 'iam'. The search bar at the top contains 'Search results for 'iam''. Below it, there are two main sections: 'Services' and 'Features'.

Services (11)

- IAM: Manage access to AWS resources
- IAM Identity Center: Manage workforce user access to multiple AWS accounts and cloud applications
- Resource Access Manager: Share AWS resources with other accounts or AWS Organizations
- AWS App Mesh: Easily monitor and control microservices

Features

- Groups: IAM feature

On the right side of the interface, there is a sidebar titled 'common use' which includes sections for 'web', 'learn how', 'web app', 'lambda function', 'as a', 'application URL', and 'function URL'.

Step b: Creating role

The screenshot shows the AWS IAM Roles page. The left sidebar has 'Identity and Access Management (IAM)' selected. Under 'Access management', 'Roles' is also selected. The main area displays the 'Roles (3) Info' section.

Roles (3) Info

An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

Role name	Trusted entities
AWSServiceRoleForSupport	AWS Service: support (Service-Linked)
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linked)
lambdafunc1-effy-assignment3-role-z55wnnho	AWS Service: lambda

Roles Anywhere

Authenticate your non AWS workloads and securely provide access to AWS services.

	Access AWS from your non AWS workloads		X.509 Standard		Temporary credentials
Use your own existing PKI		Use temporary credentials with ease			

The screenshot shows the AWS IAM 'Create role' wizard. The top navigation bar includes the AWS logo, a search bar, and a global menu. The left sidebar shows the navigation path: IAM > Roles > Create role, with 'Name, review, and create' selected. The main content area is titled 'Name, review, and create'. It contains a 'Role details' section with fields for 'Role name' (set to 'role1-effy-assignment3') and 'Description' (set to 'Allows Lambda functions to call AWS services on your behalf'). Below this is a 'Step 1: Select trusted entities' section with a 'Trust policy' field containing the number '1'. The bottom of the screen features the CloudShell feedback icon, copyright information for 2024, and links for Privacy, Terms, and Cookie preferences.

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The screenshot shows the AWS IAM 'Create New Role' wizard. In the first step, 'Select a role type', three options are listed:

- Web identity**: Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.
- SAML 2.0 federation**: Allows users federated with SAML 2.0 from a corporate directory to perform actions in this account.
- Custom trust policy**: Create a custom trust policy to enable others to perform actions in this account.

In the second step, 'Configure permissions for Lambda', the 'Service or use case' dropdown is set to 'Lambda'. Under 'Choose a use case for the specified service.', the 'Use case' dropdown is also set to 'Lambda', which is described as 'Allows Lambda functions to call AWS services on your behalf.' At the bottom right are 'Cancel' and 'Next' buttons.

The screenshot shows the 'Add tags - optional' section of the 'Step 3: Add tags' page. It includes a note about tags being key-value pairs used for identification and organization. A button to 'Add new tag' is present, with a note that up to 50 tags can be added. Navigation buttons at the bottom include 'Cancel', 'Previous', and a prominent orange 'Create role' button.

Step d: Creating policy: Switching to JSON and adding the code.

The screenshot shows the 'Specify permissions' step of the wizard. The 'Policy editor' tab is selected, displaying a JSON document with two statements. The first statement grants 'Allow' access to S3 actions on specific buckets and objects. The second statement grants 'Allow' access to S3 ListBucket on the same buckets. A sidebar on the right provides options to 'Edit statement', 'Select a statement', or 'Add new statement'.

```
1 {  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {  
5       "Sid": "VisualEditor0",  
6       "Effect": "Allow",  
7       "Action": [  
8         "s3:GetObject",  
9         "s3:DeleteObject"  
10      ],  
11      "Resource": [  
12        "arn:aws:s3:::bucket1-effy-assignment3",  
13        "arn:aws:s3:::bucket1-effy-assignment3/test/*"  
14      ]  
15    },  
16    {  
17      "Sid": "VisualEditor1",  
18      "Effect": "Allow",  
19      "Action": "s3>ListBucket",  
20      "Resource": [  
21        "arn:aws:s3:::bucket1-effy-assignment3",  
22        "arn:aws:s3:::bucket1-effy-assignment3/test/*"  
23      ]  
1 ]
```

https://us-east-1.console.aws.amazon.com/iam/home?region=us-east-2#/policies/create

IAM > Policies > Create policy

Step 1 Specify permissions

Step 2 Review and create

Review and create Info

Review the permissions, specify details, and tags.

Policy details

Policy name
Enter a meaningful name to identify this policy.

Maximum 128 characters. Use alphanumeric and '+-=,@-_' characters.

Description - optional
Add a short explanation for this policy.

Maximum 1,000 characters. Use alphanumeric and '+-=,@-_' characters.

Permissions defined in this policy Info

Permissions defined in this policy document specify which actions are allowed or denied. To define permissions for an IAM identity (user, user group, or role), attach a policy to it.

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CloudShell Feedback

Identity and Access Management (IAM)

Search IAM

Dashboard

Policies (1177) Info

A policy is an object in AWS that defines permissions.

Filter by Type

View policy

https://us-east-1.console.aws.amazon.com/iam/home?region=us-east-2#/roles/details/role1-effy-assignment3?section=permissions

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Access reports

Access Analyzer

External access

Unused access

Analyzer settings

Policy was successfully attached to role.

role1-effy-assignment3 Info

Allows Lambda functions to call AWS services on your behalf.

Summary

Creation date: March 03, 2024, 01:37 (UTC-06:00)

ARN: arn:aws:iam::851725309117:role/role1-effy-assignment3

Last activity: -

Maximum session duration: 1 hour

Permissions **Trust relationships** **Tags** **Access Advisor** **Revoke sessions**

Permissions policies (1) Info

You can attach up to 10 managed policies.

Filter by Type

Search All types

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Identity and Access Management (IAM)

role1-effy-assignment3

Allows Lambda functions to call AWS services on your behalf.

Summary

Creation date: March 05, 2024, 01:37 (UTC-06:00)

ARN: arn:aws:iam::851725309117:role/role1-effy-assignment3

Last activity: 17 hours ago

Maximum session duration: 1 hour

Permissions | Trust relationships | Tags | Access Advisor | Revoke sessions

Permissions policies (2)

You can attach up to 10 managed policies.

Policy name	Type	Attached entities
AmazonS3FullAccess	AWS managed	2
policy1-effy-assignment3	Customer managed	1

Finally, testing by copying a file into input bucket's test folder

Input bucket:

Amazon S3

Buckets

Access Grants

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

Feature spotlight

Copy S3 URI

Objects (2)

Find objects by prefix

Name	Type	Last modified	Size	Storage class
Hands-on-assignment-sample-data.csv	csv	March 4, 2024, 11:33:04 (UTC-06:00)	3.4 KB	Standard
test_file_1.txt	txt	March 3, 2024, 01:54:30 (UTC-06:00)	11.0 B	Standard

Output bucket:

The screenshot shows the AWS S3 console interface. The left sidebar is titled "Amazon S3" and includes links for Buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3, Block Public Access settings for this account, Storage Lens (Dashboards, Storage Lens groups, AWS Organizations settings), and Feature spotlight (7). The main content area shows the path "Amazon S3 > Buckets > bucket1-effy-assignment3-output > test/". Below this, there is a table titled "Objects (2) Info" with two items: "Hands-on-assignment-sample-data.csv" (Type: csv, Last modified: March 4, 2024, 11:33:06 (UTC-06:00), Size: 3.4 KB, Storage class: Standard) and "test_file_1.txt" (Type: txt, Last modified: March 4, 2024, 11:33:06 (UTC-06:00), Size: 11.0 B, Storage class: Standard). At the top right of the main area, there is a "Copy S3 URI" button. The bottom of the screen shows standard AWS footer links: CloudShell, Feedback, © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Exercise 2

Using AWS Glue to import a CSV file from the input S3 bucket, drop a **column** and export to the target S3 Bucket.

Step 1

The screenshot shows the AWS search results for the query "glue". The left sidebar is identical to the one in the previous screenshot. The main search results page has a header "Search results for 'glue'" and shows two sections: "Services" and "Features". The "Services" section lists "AWS Glue" (serverless data integration service), "AWS Glue DataBrew" (visual data preparation tool), "AWS Lake Formation" (makes it easy to set up a secure data lake), and "Athena" (serverless interactive analytics service). The "Features" section lists "AWS Glue Studio" (AWS Glue feature). There are "See all 5 results" and "See all 17 results" links at the end of each section. The bottom of the screen shows the same footer links as the previous screenshot.

Step 2: Selecting Visual ETL

The screenshot shows the AWS Glue Studio interface. On the left, there is a sidebar with navigation links for AWS Glue, ETL jobs (Visual ETL is selected), Notebooks, Job run monitoring, Data Catalog tables, Data connections, Workflows (orchestration), Data Catalog, Data Integration and ETL, and Legacy pages. Below this are links for What's New, Documentation, AWS Marketplace, and two toggle buttons for Enable compact mode and Enable new navigation.

The main area is titled "AWS Glue Studio" and shows the "Create job" section. It has three options: "Visual ETL" (selected), "Notebook", and "Script editor". Below this is a "Example jobs" section with a "Create example job" button. The "Your jobs" section shows a table with columns for Job name, Type, Last modified, and AWS Glue version. A message says "No jobs" and "You have not created a job yet." At the bottom is a "Create job from a blank graph" button.

At the bottom of the screen, there are links for CloudShell, Feedback, and several legal links: © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Step 3: Selecting appropriate fields

The screenshot shows the AWS Glue Visual ETL job editor for a job named "job1-effy-assignment3". The top bar includes a warning "Job has not been saved", a "Try new UI" button, and "Actions" and "Save" buttons.

The main area displays a data flow graph. It starts with a "Data source - S3 bucket" node labeled "Amazon S3", which points to a "Transform - Change Schema" node labeled "Change Schema", which then points to a "Data target - S3 bucket" node labeled "Amazon S3". The "Data source" and "Data target" nodes are highlighted with blue boxes. To the right of the graph is a "Data source properties - S3" panel. It shows the "Name" field set to "Amazon S3", the "S3 source type" section with "S3 location" selected (choosing a file or folder in an S3 bucket), the "S3 URL" field containing "s3://bucket1-effy-assic", and the "Data format" dropdown set to "CSV". There is also a checked checkbox for "Recursive" under "S3 URL".

At the bottom of the screen, there are links for CloudShell, Feedback, and several legal links: © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

The screenshot shows the AWS Glue Visual Editor interface. On the left, there's a sidebar with navigation links like 'Getting started', 'ETL jobs', 'Visual ETL', 'Data Catalog tables', 'Data connections', 'Workflows (orchestration)', 'Data Catalog', 'Data Integration and ETL', and 'Legacy pages'. Below that are 'What's New', 'Documentation', 'AWS Marketplace', and two toggle buttons for 'Enable compact mode' and 'Enable new navigation'. The main area is titled 'job1-effy-assignment3' and shows a 'Transform - Change Schema' node selected. The 'Transform' panel on the right has a 'Name' field set to 'Change Schema' and a dropdown for 'Node parents' containing 'Amazon S3'. The 'Change Schema (Apply mapping)' panel shows two mappings: 'height' to 'string' and 'weight' to 'string'. At the bottom, a progress bar says 'STARTING (60%)' and a note says 'Starting up data preview. This may take a few seconds.'

Step 4: Creating a new IAM role and Policy for AWS Glue.

The screenshot shows the 'Create New IAM Role' wizard. It's step 1, 'Set permissions'. It asks 'How would you like to grant permissions?'. There are three options: 'Web identity' (allows users federated by a specified external provider to assume the role), 'SAML 2.0 federation' (allows users federated with SAML 2.0 from a corporate directory to perform actions in this account), and 'Custom trust policy' (create a custom trust policy). Below this is a 'Use case' section with a note: 'Allow an AWS service like EC2, Lambda, or others to perform actions in this account.' It shows a dropdown for 'Service or use case' set to 'Glue' and a 'Use case' dropdown where 'Glue' is selected. At the bottom are 'Cancel' and 'Next' buttons.

Step 5: Selecting the following permissions:
AmazonRedshiftFullAccess, AmazonS3fullAccess and AWSGlueConsoleFullAccess

Role details

Role name
Enter a meaningful name to identify this role.
role2-effy-assignment3

Description
Add a short explanation for this role.
Allows Glue to call AWS services on your behalf.

Step 1: Select trusted entities

Trust policy

1 | {

Permissions policy summary

Policy name	Type	Attached as
AmazonRedshiftFullAccess	AWS managed	Permissions policy
AmazonS3FullAccess	AWS managed	Permissions policy
AWSGlueConsoleFullAccess	AWS managed	Permissions policy

Step 3: Add tags

Add tags - optional [Info](#)

Tags are key-value pairs that you can add to AWS resources to help identify, organize, or search for resources.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Create role

Step 6: Creating Role

The screenshot shows the 'Create role' wizard in the AWS IAM console. The left sidebar shows navigation steps: Step 1 (Select trusted entity), Step 2 (Add permissions), and Step 3 (Name, review, and create). The main area is titled 'Name, review, and create' and contains a 'Role details' section. In the 'Role name' field, 'role2-effy-assignment3' is entered. The 'Description' field contains the text 'Allows Glue to call AWS services on your behalf.' A note below states: 'Maximum 1000 characters. Use alphanumeric and '+,-,_' characters.'

Role details

Role name
Enter a meaningful name to identify this role.

Maximum 64 characters. Use alphanumeric and '+,-,_' characters.

Description
Add a short explanation for this role.

Maximum 1000 characters. Use alphanumeric and '+,-,_' characters.

Step 1: Select trusted entities

Trust policy

1 ▾ {

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The screenshot shows the 'Roles' page in the AWS IAM console. A green banner at the top indicates 'Role role2-effy-assignment3 created.' The main table lists five roles:

Role name	Trusted entities	AWS Service
AWSServiceRoleForSupport		support (Service-Linked)
AWSServiceRoleForTrustedAdvisor		trustedadvisor (Service-Linked)
lambdafunc1-effy-assignment3-role-z55wnnho		lambda
role1-effy-assignment3		lambda
role2-effy-assignment3		glue

Step 7: Job Run monitoring

Screenshot of the AWS Glue Studio interface showing job run monitoring.

The left sidebar shows navigation options like Getting started, ETL jobs, Visual ETL, Notebooks, Job run monitoring, Data Catalog tables, Data connections, Workflows (orchestration), Data Catalog, Data Integration and ETL, and Legacy pages. It also includes links for What's New, Documentation, and AWS Marketplace, along with compact mode and new navigation settings.

The main content area displays a job named "job1-effy-assignment3". A banner at the top says "How do you like the new UI? Let us know" with a note that the option to toggle to the old UI will be removed on Feb 29th, 2024. Below the banner, the "Runs" tab is selected, showing a table of job runs. One run is listed as "Running" and another as "Succeeded".

Run status	Retries	Start time (UTC)	End time (UTC)	Duration	Capacity...	Worker type	Glue version
Running	0	2024/03/05 17:04:54	-	1 m 20 s	10 DPUs	G.1X	4.0
Succeeded	0	2024/03/04 01:47:33	2024/03/04 01:49:18	1 m 31 s	10 DPUs	G.1X	4.0

Below the table, there are tabs for Run details, Input arguments (10), Continuous logs, Run insights, Metrics, and Spark UI. The Run details tab is active, showing job name, start time, glue version, and last modified time. The Input arguments tab shows 10 arguments. The Metrics tab shows success rate and DPU hours.

Screenshot of the AWS Glue Monitoring interface.

The left sidebar is identical to the Glue Studio sidebar, showing the same navigation options and settings.

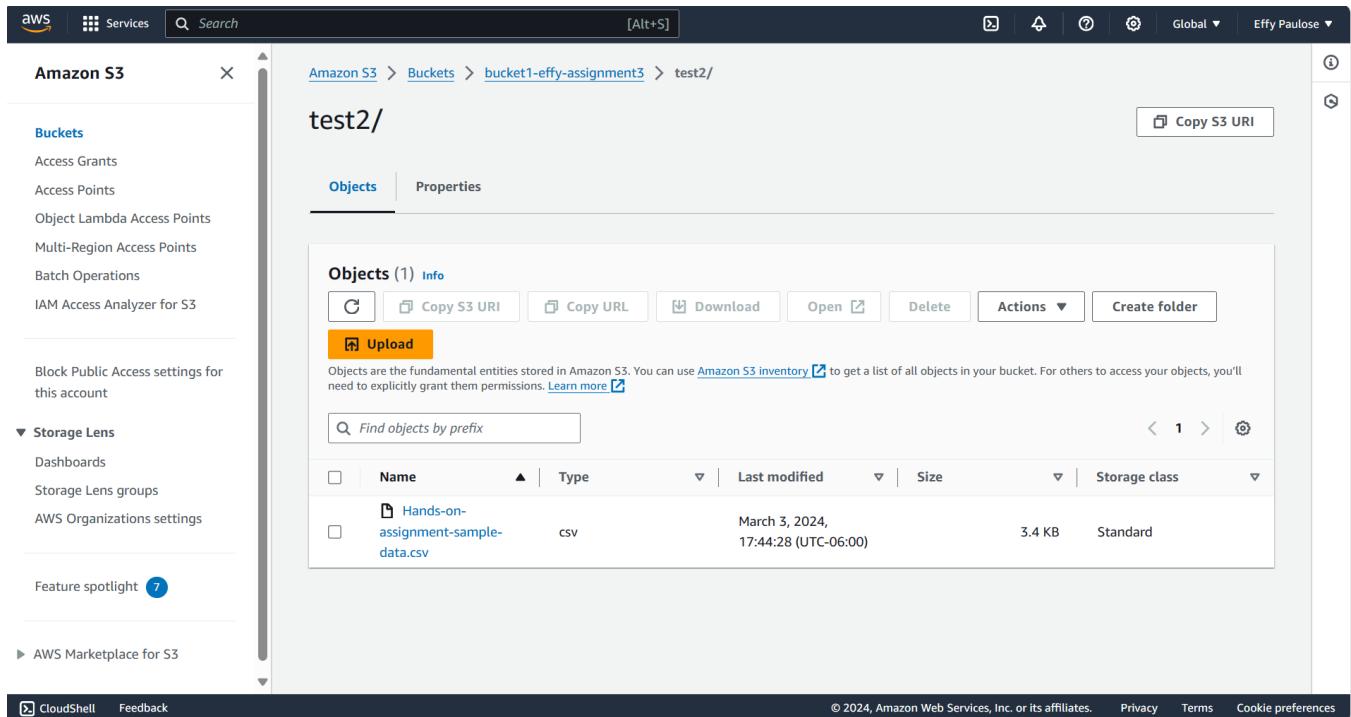
The main content area shows a "Monitoring" section with a "Job runs summary" card. The card displays the following data:

Total runs	Running	Canceled	Success	Failed	Success rate	DPU hours
12	1	0	9	2	82 %	3

Below the summary card is a table of "Job runs (12)". The table includes columns for Job name, Run status, Type, Start time (UTC), End time (UTC), and Run time. One row is visible, showing "job1-effy-assignment3" as "Running" with other details.

Step 8: Checking input and output bucket for the result

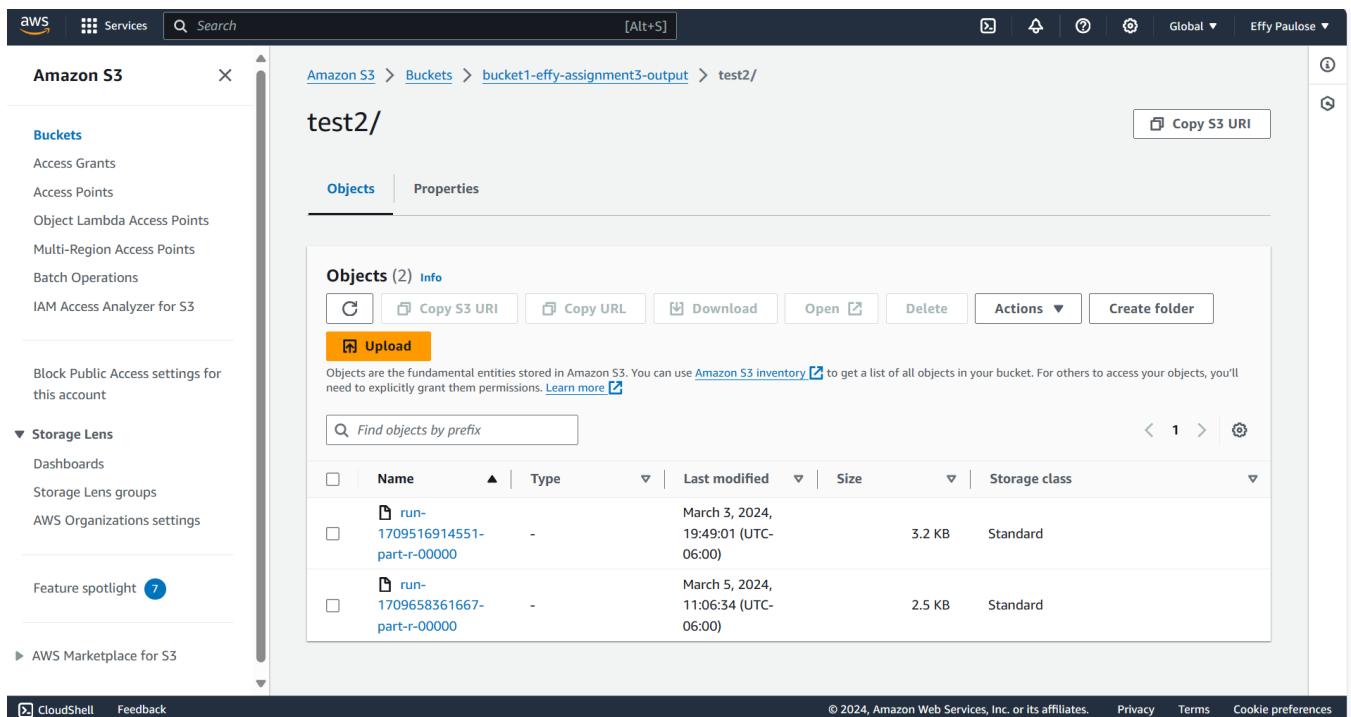
Input bucket:



The screenshot shows the AWS S3 console interface. The left sidebar is collapsed. The main area displays the contents of the 'test2' folder within the 'bucket1-effy-assignment3' bucket. There is one object named 'Hands-on-assignment-sample-data.csv' which is a CSV file. The table below provides details about this object.

Name	Type	Last modified	Size	Storage class
Hands-on-assignment-sample-data.csv	csv	March 3, 2024, 17:44:28 (UTC-06:00)	3.4 KB	Standard

Output bucket:



The screenshot shows the AWS S3 console interface. The left sidebar is collapsed. The main area displays the contents of the 'test2' folder within the 'bucket1-effy-assignment3-output' bucket. There are two objects named 'run-1709516914551-part-r-00000' and 'run-1709658361667-part-r-00000'. The table below provides details about these objects.

Name	Type	Last modified	Size	Storage class
run-1709516914551-part-r-00000	-	March 3, 2024, 19:49:01 (UTC-06:00)	3.2 KB	Standard
run-1709658361667-part-r-00000	-	March 5, 2024, 11:06:34 (UTC-06:00)	2.5 KB	Standard

Downloaded and opened it in Excel

The screenshot shows a Microsoft Excel spreadsheet titled "run-1709658361667-part-r-0...". The data is located in column A, starting from row 1. The first row contains the header "height,weight". The subsequent rows contain numerical values, likely representing height and weight measurements. The Excel ribbon is visible at the top, and the status bar at the bottom indicates "Ready".

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	height,weight																	
2	65.78,112.99																	
3	71.52,136.49																	
4	69.4,153.03																	
5	68.22,142.34																	
6	67.79,144.3																	
7	68.7,123.3																	
8	69.8,141.49																	
9	70.01,136.46																	
10	67.9,112.37																	
11	66.78,120.67																	
12	66.49,127.45																	
13	67.62,114.14																	
14	68.3,125.61																	
15	67.12,122.46																	
16	68.28,116.09																	
17	71.09,140																	
18	66.46,129.5																	
19	68.65,142.97																	
20	71.23,137.9																	

Step 9: Selected the IAM role with the three 'full access permissions'

The screenshot shows the AWS IAM Roles page. The left sidebar shows "Identity and Access Management (IAM)" with "Roles" selected. The main area displays the details for the role "role1-effy-assignment3". The "Summary" section shows the creation date (March 03, 2024, 01:37 (UTC-06:00)), ARN (arn:aws:iam::851725309117:role/role1-effy-assignment3), and last activity (17 hours ago). The "Permissions" tab is selected, showing two managed policies attached: "AmazonS3FullAccess" (AWS managed, 2 entities) and "policy1-effy-assignment3" (Customer managed, 1 entity). The status bar at the bottom indicates "Ready".