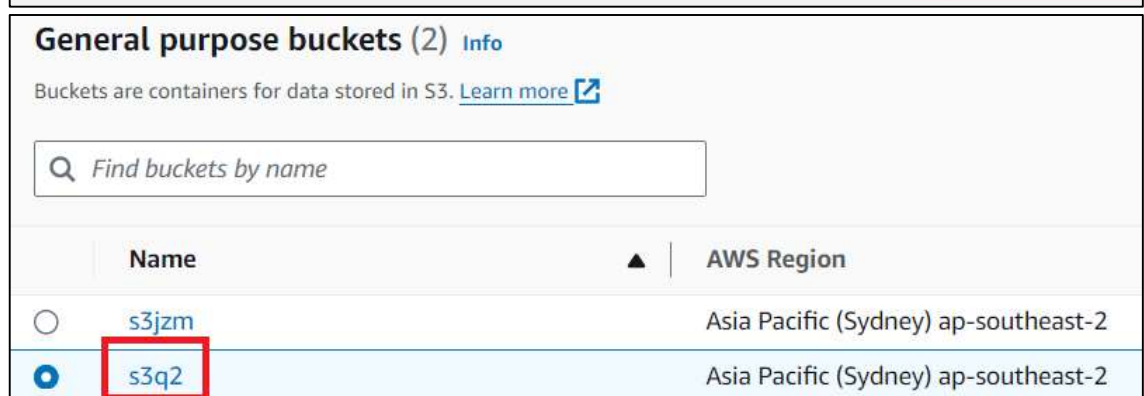1) Create a S3 Bucket with versioning
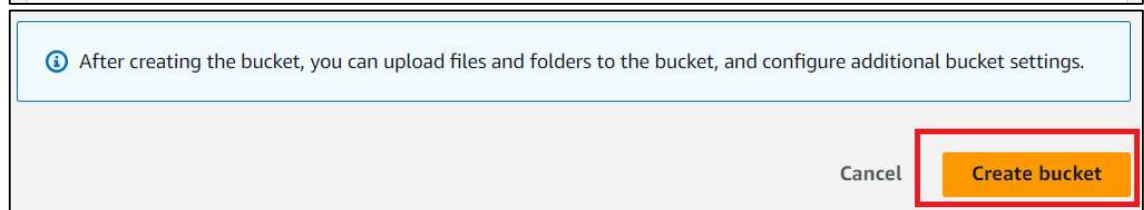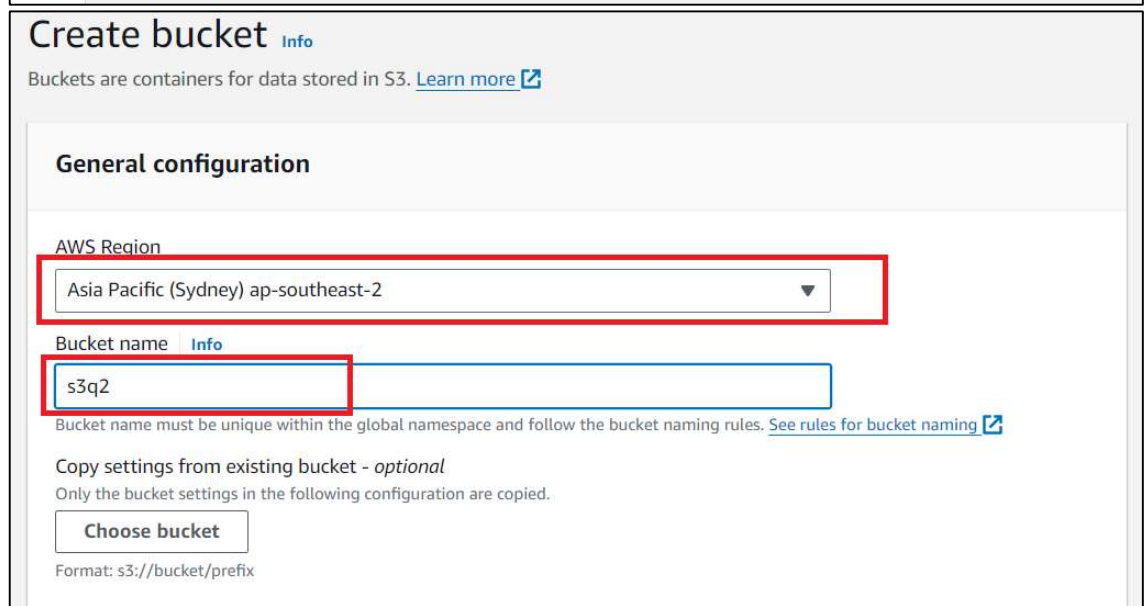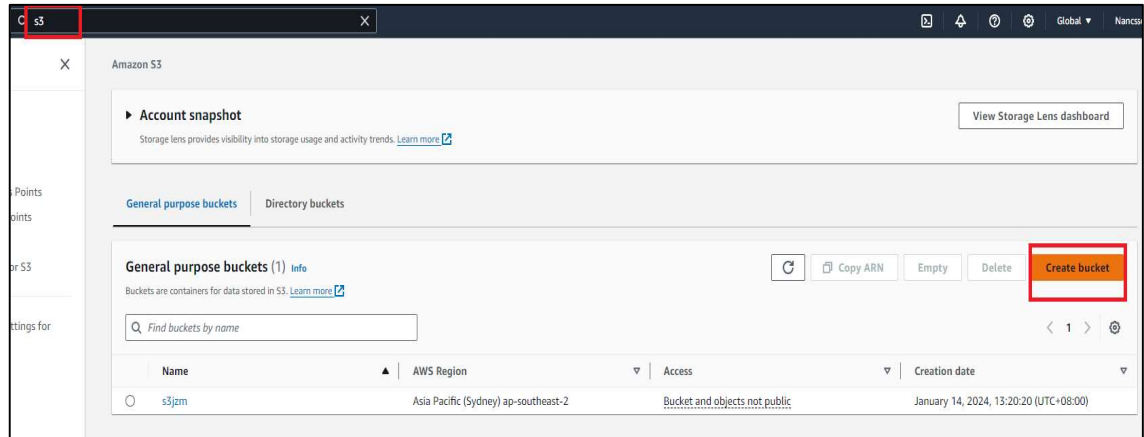
s3q2 Info

Objects | **Properties** | Permissions | Metrics | Management | Access Points

Bucket overview

AWS Region
Asia Pacific (Sydney) ap-southeast-2

Amazon Resource Name (ARN)
⊓ arn:aws:s3:::s3q2

Creation date
January 28, 2024, 21:57:47 (UTC+08:00)

Bucket Versioning   Edit

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
Disabled
Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. Learn more ↗
Disabled

Edit Bucket Versioning Info

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

○ Suspend
    This suspends the creation of object versions for all operations but preserves any existing object versions.

● Enable

ⓘ After enabling Bucket Versioning, you might need to update your lifecycle rules to manage previous versions of objects.

Multi-factor authentication (MFA) delete

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Disabled

Cancel   **Save changes**

2) Enable Lambda PUT Event notification

Create function Info

Choose one of the following options to create your function.

- ○ **Author from scratch**
  Start with a simple Hello World example.

- ● **Use a blueprint**
  Build a Lambda application from sample code and configuration presets for common use cases.

- ○ **Container i**
  Select a cont

Basic information Info

Blueprint name

Get S3 object   python3.10 ▼
An Amazon S3 trigger that retrieves metadata for the object that has been updated.

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

PutEventFunction

Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime

python3.10

Architecture

x86_64

Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console ↗.

- ● **Create a new role with basic Lambda permissions**
- ○ Use an existing role
- ○ Create a new role from AWS policy templates

Lambda function code

Code is preconfigured by the chosen blueprint. You can configure it after you create the function. Learn more ↗ about deploying Lambda functions.

```python
import json
import urllib.parse
import boto3

print('Loading function')

s3 = boto3.client('s3')


def lambda_handler(event, context):
    #print("Received event: " + json.dumps(event, indent=2))

    # Get the object from the event and show its content type
    bucket = event['Records'][0]['s3']['bucket']['name']
    key = urllib.parse.unquote_plus(event['Records'][0]['s3']['object']['key'], encoding='utf-8')
    try:
        response = s3.get_object(Bucket=bucket, Key=key)
        print("CONTENT TYPE: " + response['ContentType'])
        return response['ContentType']
    except Exception as e:
        print(e)
        print('Error getting object {} from bucket {}. Make sure they exist and your bucket is in the same region as this function.'.format(key, bucket))
        raise e
```

Cancel   **Create function**

Generated lambda function:

Code source Info   Upload from ▼

File Edit Find View Go Tools Window   **Test** ▼   Deploy

Go to Anything (Ctrl-P)   **lambda_function** ×   Environment Var × ⊕

▼ 📁 PutEventFunction ⚙▼
  🔹 lambda_function.py

```python
import json
import urllib.parse
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        print("CONTENT TYPE: " + response['ContentType'])
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    except Exception as e:
        print(e)
        print('Error getting object {} from bucket {}. Make sure they exist and your bucket is in the same region as this function.'.format(key, bucket))
        raise e
```

Select S3 bucket:

General purpose buckets (2) Info

Buckets are containers for data stored in S3. Learn more ☐

🔍 Find buckets by name

	Name	▲	AWS Region
○	s3jzm		Asia Pacific (Sydney) ap-southeast-2
⬤	s3q2		Asia Pacific (Sydney) ap-southeast-2

s3q2 Info

Objects | **Properties** | Permissions | Metrics | **Management** | Access Points

Bucket overview

AWS Region	Amazon Resource Name (ARN)	Creation date
Asia Pacific (Sydney) ap-southeast-2	⎘ arn:aws:s3:::s3q2	January 28, 2024, 21:57:47 (UTC+08:00)

Event notifications   Edit | Delete | **Create event notification**

Send a notification when specific events occur in your bucket. Learn more ☐

☐	Name	▲	Event types	Filters	Destination type	Destination

No event notifications

Choose **Create event notification** to be notified when a specific event occurs.

Create event notification

Amazon EventBridge   Edit

Create event notification Info

To enable notifications, you must first add a notification configuration that identifies the events you want Amazon S3 to publish and the destinations where you want Amazon S3 to send the notifications.

General configuration

Event name

Lambda PUT Event

Event name can contain up to 255 characters.

Prefix - *optional*
Limit the notifications to objects with key starting with specified characters.

images/

Suffix - *optional*
Limit the notifications to objects with key ending with specified characters.

.jpg

Event types

Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all eve
can choose one or more individual events.

Object creation

☐ **All object create events**
   s3:ObjectCreated:*

☑ **Put**
   s3:ObjectCreated:Put

☐ **Post**
   s3:ObjectCreated:Post

☐ **Copy**
   s3:ObjectCreated:Copy

☐ **Multipart upload completed**
   s3:ObjectCreated:CompleteMultipartUpload

Destination

ⓘ Before Amazon S3 can publish messages to a destination, you must grant the Amazon S3 principal the
necessary permissions to call the relevant API to publish messages to an SNS topic, an SQS queue, or a
Lambda function. Learn more ↗

Destination
Choose a destination to publish the event. Learn more ↗

🔘 **Lambda function**
   Run a Lambda function script based on S3 events.

◯ **SNS topic**
   Fanout messages to systems for parallel processing or directly to people.

◯ **SQS queue**
   Send notifications to an SQS queue to be read by a server.

Specify Lambda function

🔘 Choose from your Lambda functions

◯ Enter Lambda function ARN

Lambda function

PutEventFunction ▼

Cancel   **Save changes**

3) Create a S3 Lifecycle policy
   Select S3 bucket:

Create lifecycle rule Info

Lifecycle rule configuration

Lifecycle rule name

s3q2 Lifecycle

Up to 255 characters

Choose a rule scope
- ⚪ Limit the scope of this rule using one or more filters
- 🔵 Apply to all objects in the bucket

⚠️ **Apply to all objects in the bucket**
If you want the rule to apply to specific objects, you must use a filter to identify those obj
"Limit the scope of this rule using one or more filters". Learn more 🔗

☑️ I acknowledge that this rule will apply to all objects in the bucket.

Lifecycle rule actions

Choose the actions you want this rule to perform. Per-request fees apply. Learn more 🔗 or see Amazon S3 pricing

☐ Move current versions of objects between storage classes
☑️ Move noncurrent versions of objects between storage classes
☐ Expire current versions of objects
☑️ Permanently delete noncurrent versions of objects
☑️ Delete expired object delete markers or incomplete multipart uploads

Transition noncurrent versions of objects between storage classes

Choose transitions to move noncurrent versions of objects between storage classes based on your use case scenario and performance acce
requirements. These transitions start from when the objects become noncurrent and are consecutively applied. Learn more 🔗

Choose storage class transitions	Days after objects become noncurrent	Number of newer versions to retain - *Optional*	
One Zone-IA ▼	60	5	Remove

Can be up to 100 versions. All
other noncurrent versions will
be moved.

Glacier Flexible Ret... ▼	90	5	Remove

Can be up to 100 versions. All
other noncurrent versions will
be moved.

Add transition

⚠️ **Transitioning small objects to Glacier Flexible Retrieval (formerly Glacier) or Glacier Deep Archive will incur a per object cost**

You will be charged for each object you transition to S3 Glacier Flexible Retrieval (formerly Glacier) or S3 Glacier Deep Archive. A fixed amount of storage is also added to each object to accommodate metadata for managing the object which increases storage costs. You can reduce these costs by limiting the number of objects to transition (by prefix, tag, or version), or by aggregating objects before transitioning them. Learn more about Glacier Flexible Retrieval (formerly Glacier) cost considerations 🔗 or review the table on Requests and data retrievals tab on the Amazon S3 pricing page 🔗

☑️ acknowledge that this lifecycle rule will incur a one-time lifecycle request
cost per object if it transitions small objects.

Permanently delete noncurrent versions of objects

Choose when Amazon S3 permanently deletes specified noncurrent versions of objects. Learn more ⤴

Days after objects become noncurrent

```
100                              ⇅
```

Number of newer versions to retain - *Optional*

```
10
```

Can be up to 100 versions. All other noncurrent versions will be moved.

Delete expired object delete markers or incomplete multipart uploads

Expired object delete markers

This action will remove expired object delete markers and may improve performance. An expired object delete marker is removed if all noncurrent versions of an object expire after deleting a versioned object. This action is not available when "Expire current versions of objects" is selected. Learn more ⤴

☑ Delete expired object delete markers

Incomplete multipart uploads

This action will stop all incomplete multipart uploads, and the parts associated with the multipart upload will be deleted. Learn more ⤴

☑ Delete incomplete multipart uploads

Number of days

```
7
```

Integer must be greater than 0.

Review transition and expiration actions

Current version actions

Day 0

No actions defined.

Noncurrent versions actions

Day 0

- Objects become noncurrent

↓

Day 60

- 5 newest noncurrent versions are retained
- All other noncurrent versions move to One Zone-IA

↓

Day 90

- 5 newest noncurrent versions are retained
- All other noncurrent versions move to Glacier Flexible Retrieval (formerly Glacier)

↓

Day 100

- 10 newest noncurrent versions are retained
- All other noncurrent versions are permanently deleted

Cancel   **Create rule**

---

s3q2

Objects | Properties | Permissions | Metrics | **Management** | Access Points

Lifecycle rules (1)

[⟳] | View details | Edit | Delete | Actions ▾ | Create lifecycle rule

Use lifecycle rules to define actions you want Amazon S3 to take during an object's lifetime such as transitioning objects to another storage class, archiving them, or deleting them after a specified period of time. Learn more [↗]

	Lifecycle rule name	Status	Scope	Current version actions	Noncurrent versions actions	Expired object delete markers	Incomplete multipart uploads
○	s3q2 Lifecycle	⊘ Enabled	Entire bucket	-	Transition to One Zone-IA, then	Permanently delete	Permanently delete

View lifecycle configuration