Object storage

- Also referred as Blob (Binary large object) which is nothing but file
- Object storage
  - store any file
  - think of storage as unlimited
  - Access the data using http urls.
- AWS has a service called as S3 (Simple storage service) which launched Object storage
  - store any file of any type (each file size cannot be greater than 5 TB)
  - Storage size unlimited
  - Access the data using https urls
- Azure has launched storage account in which we have Blob storage for the same
  - store any file of any type (each file size cannot be greater than 4.7 TB)
  - Storage size unlimited
  - Access the data using https urls
- This type of storage has started new way of storing
  - Google Drive/One drive/icloud
  - Online video and audio streaming platforms
  - Backup and archival solutions
  - Media on websites
- New oppurtunities
  - cheaper way for hosting static websites
  - using object storage as data lakes.

AWS S3

- S3 organizes data under buckets.
- Bucket names are unique across aws accounts.
- Buckets will have
  - objects (file)
  - folders
- Restriction to access bucket can be done

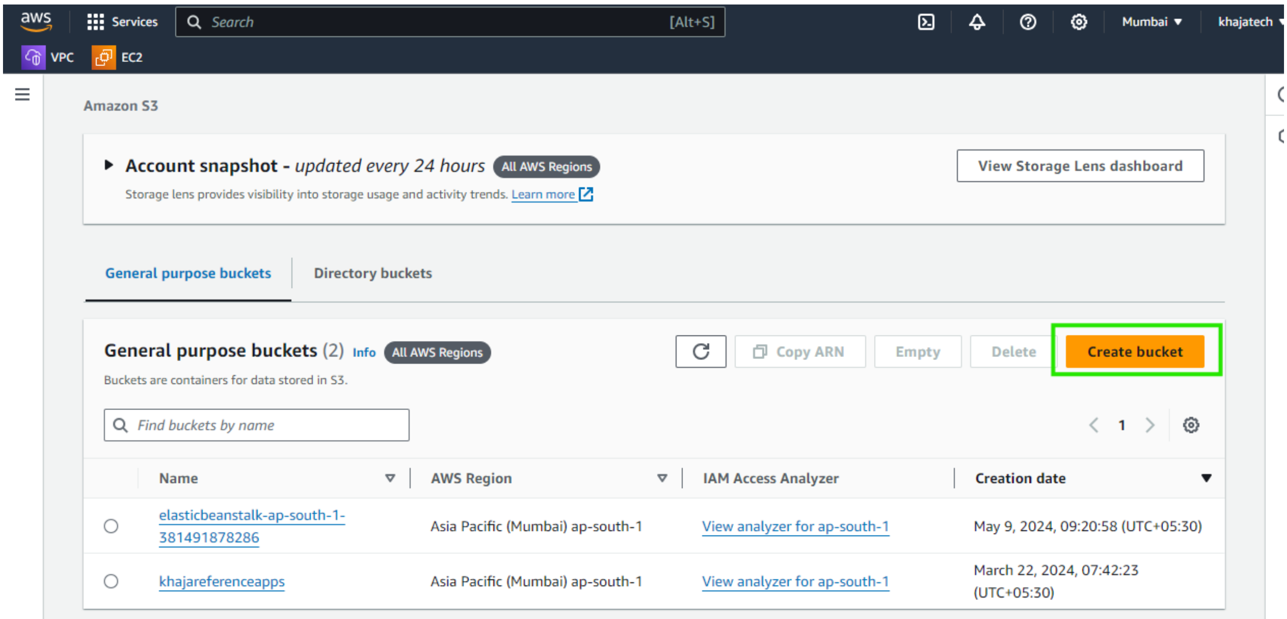
Create an anonymous read access s3 buckets

- lets upload

  - pdf
  - image
  - video

- Bucket belongs to a region

- Steps to create bucket



Amazon S3

▸ **Account snapshot** - *updated every 24 hours* All AWS Regions

Storage lens provides visibility into storage usage and activity trends. Learn more

View Storage Lens dashboard

General purpose buckets | Directory buckets

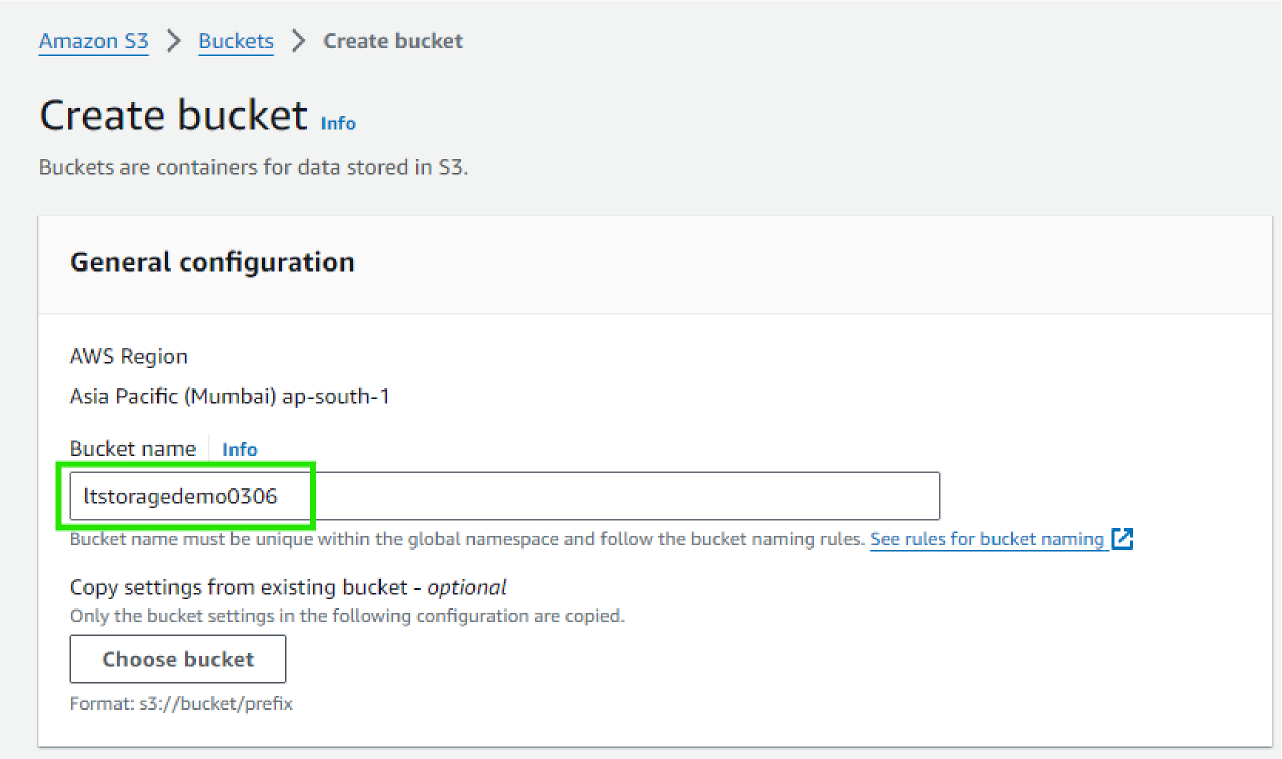
General purpose buckets (2) Info All AWS Regions

Buckets are containers for data stored in S3.

Copy ARN | Empty | Delete | Create bucket

Find buckets by name

	Name	AWS Region	IAM Access Analyzer	Creation date
○	elasticbeanstalk-ap-south-1-381491878286	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	May 9, 2024, 09:20:58 (UTC+05:30)
○	khajareferenceapps	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	March 22, 2024, 07:42:23 (UTC+05:30)



Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3.

General configuration

AWS Region

Asia Pacific (Mumbai) ap-south-1

Bucket name Info

ltstoragedemo0306

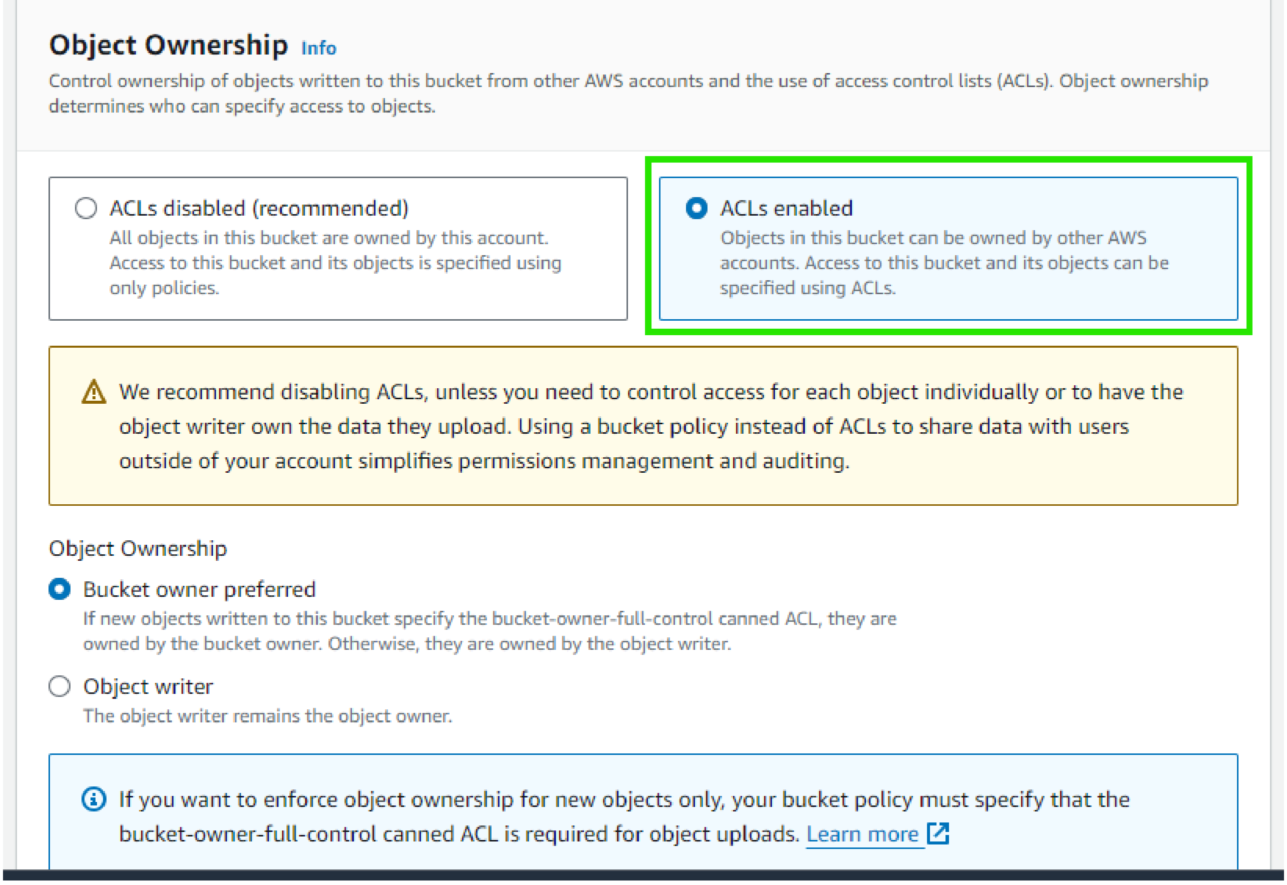
Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming

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.

○ ACLs disabled (recommended)
All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

● ACLs enabled
Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

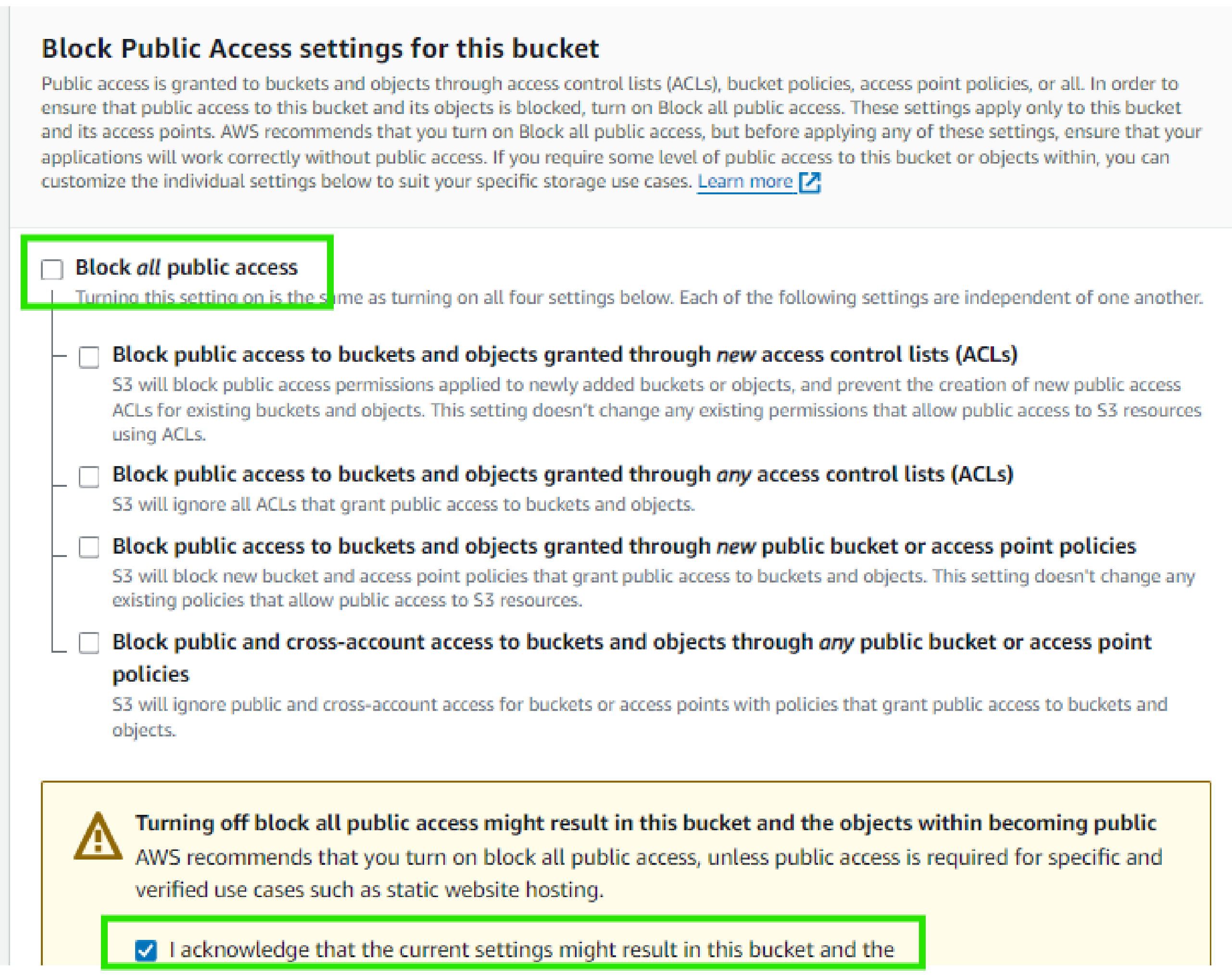
⚠ We recommend disabling ACLs, unless you need to control access for each object individually or to have the object writer own the data they upload. Using a bucket policy instead of ACLs to share data with users outside of your account simplifies permissions management and auditing.

Object Ownership

● Bucket owner preferred
If new objects written to this bucket specify the bucket-owner-full-control canned ACL, they are owned by the bucket owner. Otherwise, they are owned by the object writer.

○ Object writer
The object writer remains the object owner.

ⓘ If you want to enforce object ownership for new objects only, your bucket policy must specify that the bucket-owner-full-control canned ACL is required for object uploads. Learn more



Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. Learn more

□ Block *all* public access
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

□ Block public access to buckets and objects granted through *new* access control lists (ACLs)
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.

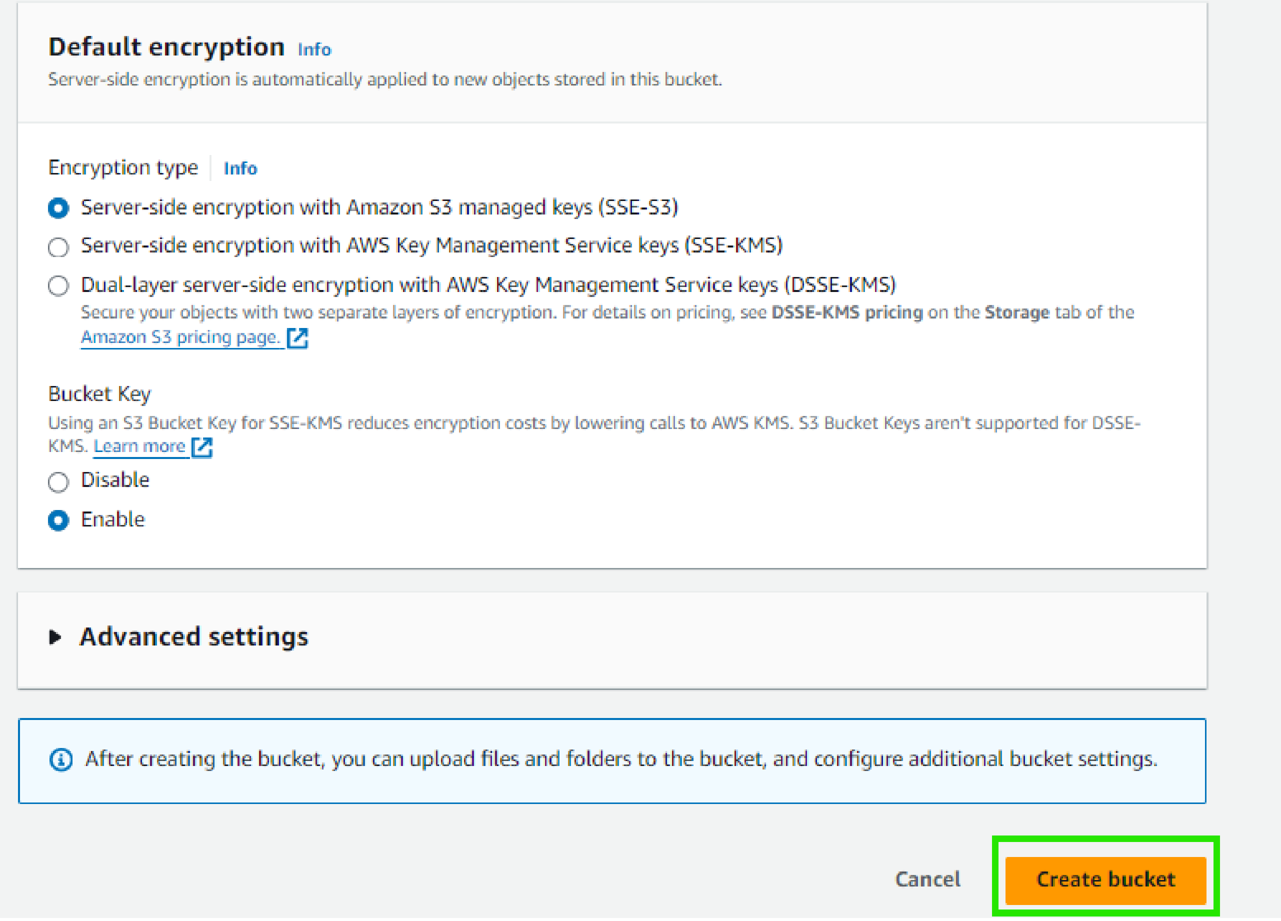
□ Block public access to buckets and objects granted through *any* access control lists (ACLs)
S3 will ignore all ACLs that grant public access to buckets and objects.

□ Block public access to buckets and objects granted through *new* public bucket or access point policies
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.

□ Block public and cross-account access to buckets and objects through *any* public bucket or access point policies
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

⚠ **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



Default encryption Info

Server-side encryption is automatically applied to new objects stored in this bucket.

Encryption type | Info

● Server-side encryption with Amazon S3 managed keys (SSE-S3)

○ Server-side encryption with AWS Key Management Service keys (SSE-KMS)

○ Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)
Secure your objects with two separate layers of encryption. For details on pricing, see **DSSE-KMS pricing** on the **Storage** tab of the Amazon S3 pricing page.

Bucket Key

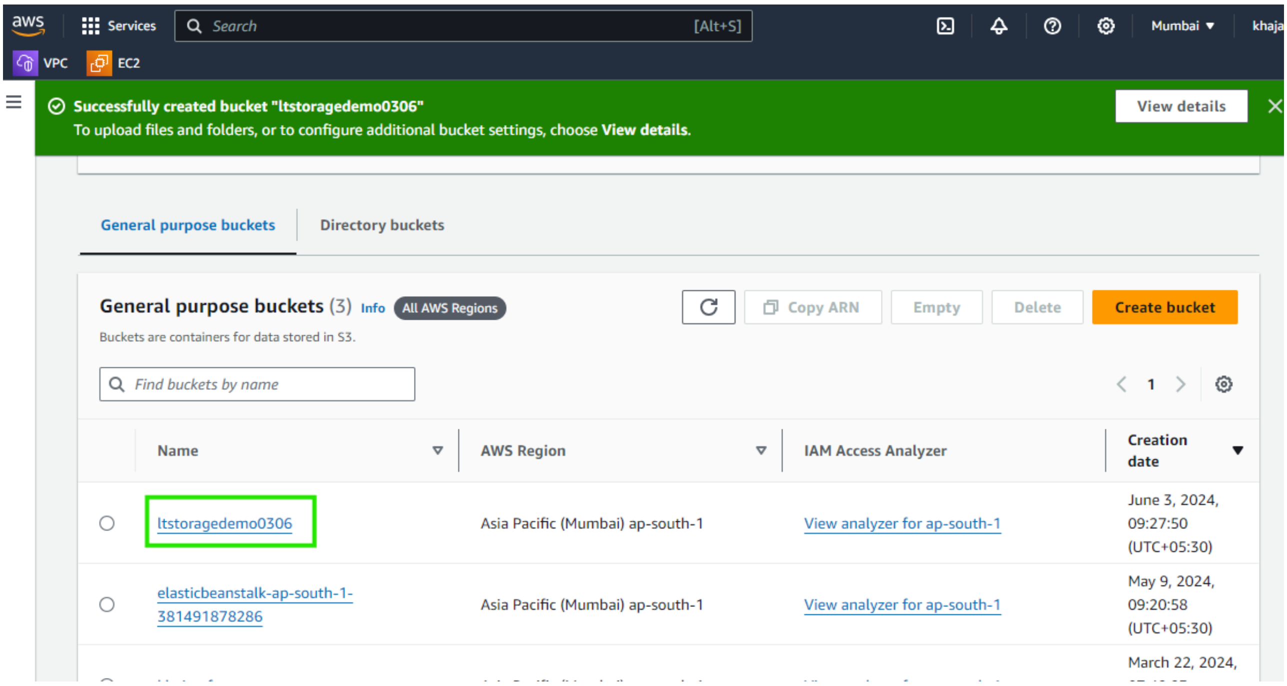
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. Learn more

○ Disable

● Enable

▸ **Advanced settings**

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



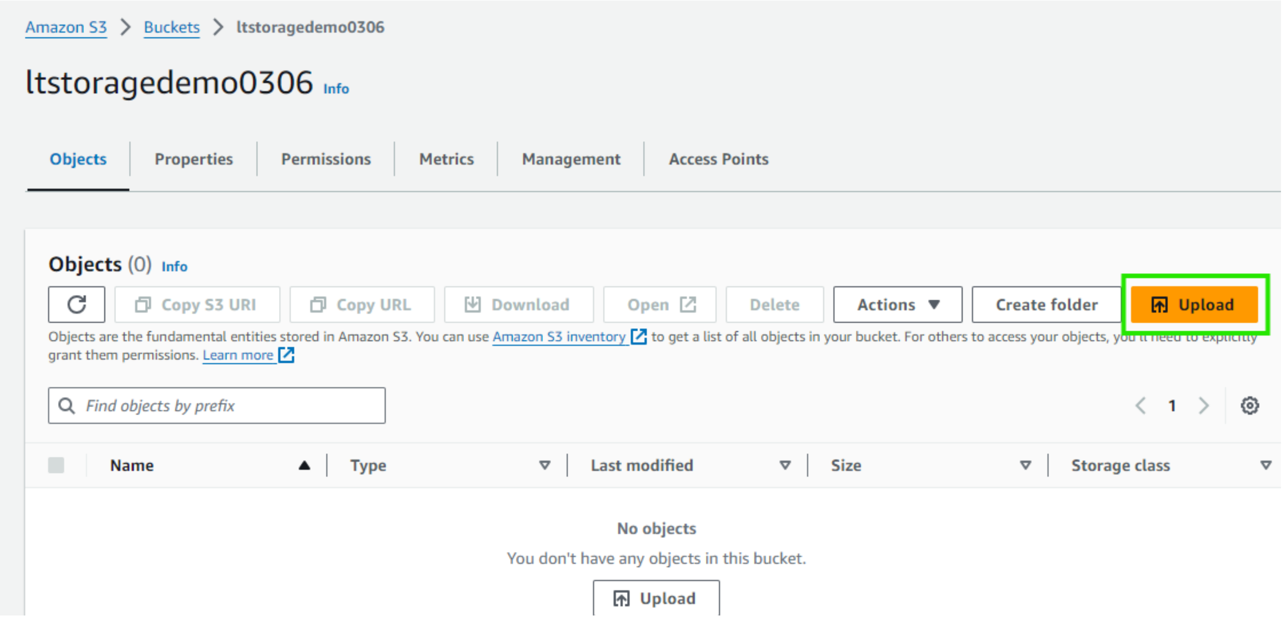
Successfully created bucket "ltstoragedemo0306"
To upload files and folders, or to configure additional bucket settings, choose **View details**.

General purpose buckets (3) Info All AWS Regions

Buckets are containers for data stored in S3.

	Name	AWS Region	IAM Access Analyzer	Creation date
○	ltstoragedemo0306	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	June 3, 2024, 09:27:50 (UTC+05:30)
○	elasticbeanstalk-ap-south-1-381491878286	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	May 9, 2024, 09:20:58 (UTC+05:30)
				March 22, 2024,

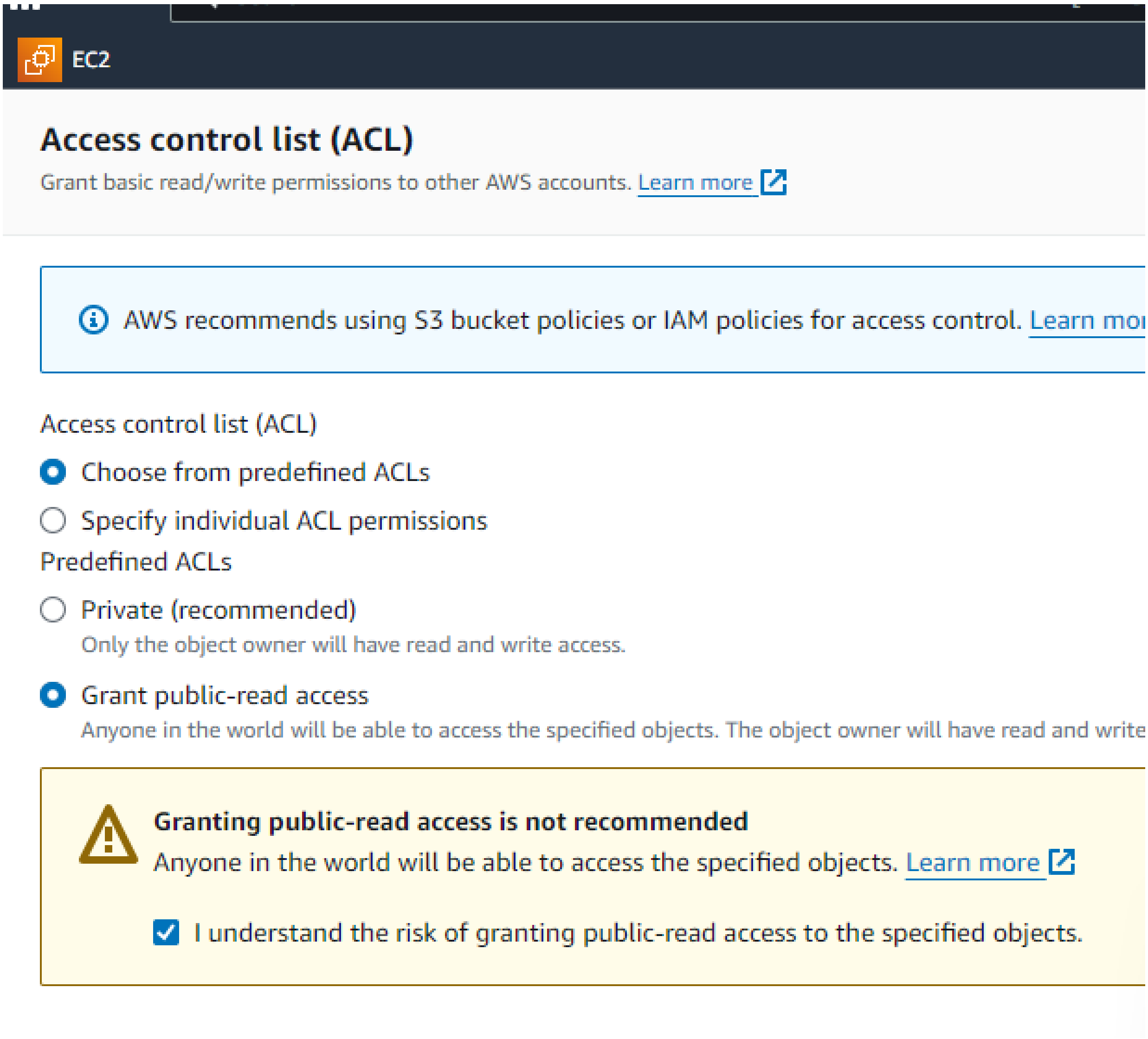
- Lets upload a pdf file



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

No objects

You don't have any objects in this bucket.



Access control list (ACL)

Grant basic read/write permissions to other AWS accounts. Learn more

AWS recommends using S3 bucket policies or IAM policies for access control. Learn mor

Access control list (ACL)

● Choose from predefined ACLs

○ Specify individual ACL permissions

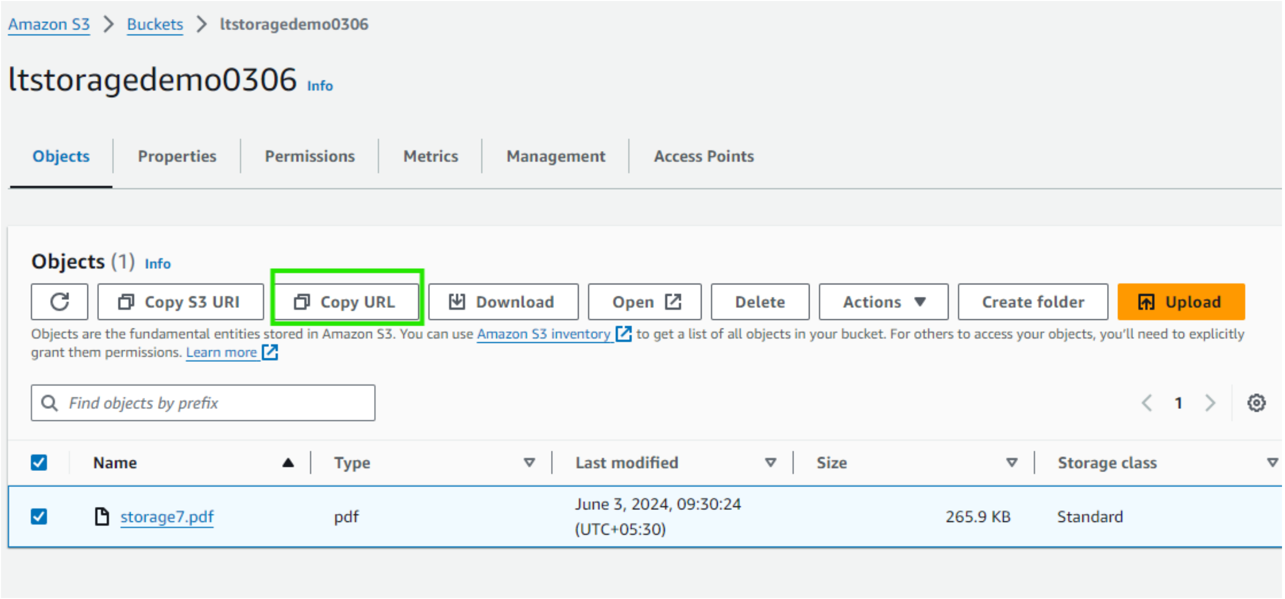
Predefined ACLs

○ Private (recommended)
Only the object owner will have read and write access.

● Grant public-read access
Anyone in the world will be able to access the specified objects. The object owner will have read and write

Granting public-read access is not recommended
Anyone in the world will be able to access the specified objects. Learn more

☑ I understand the risk of granting public-read access to the specified objects.



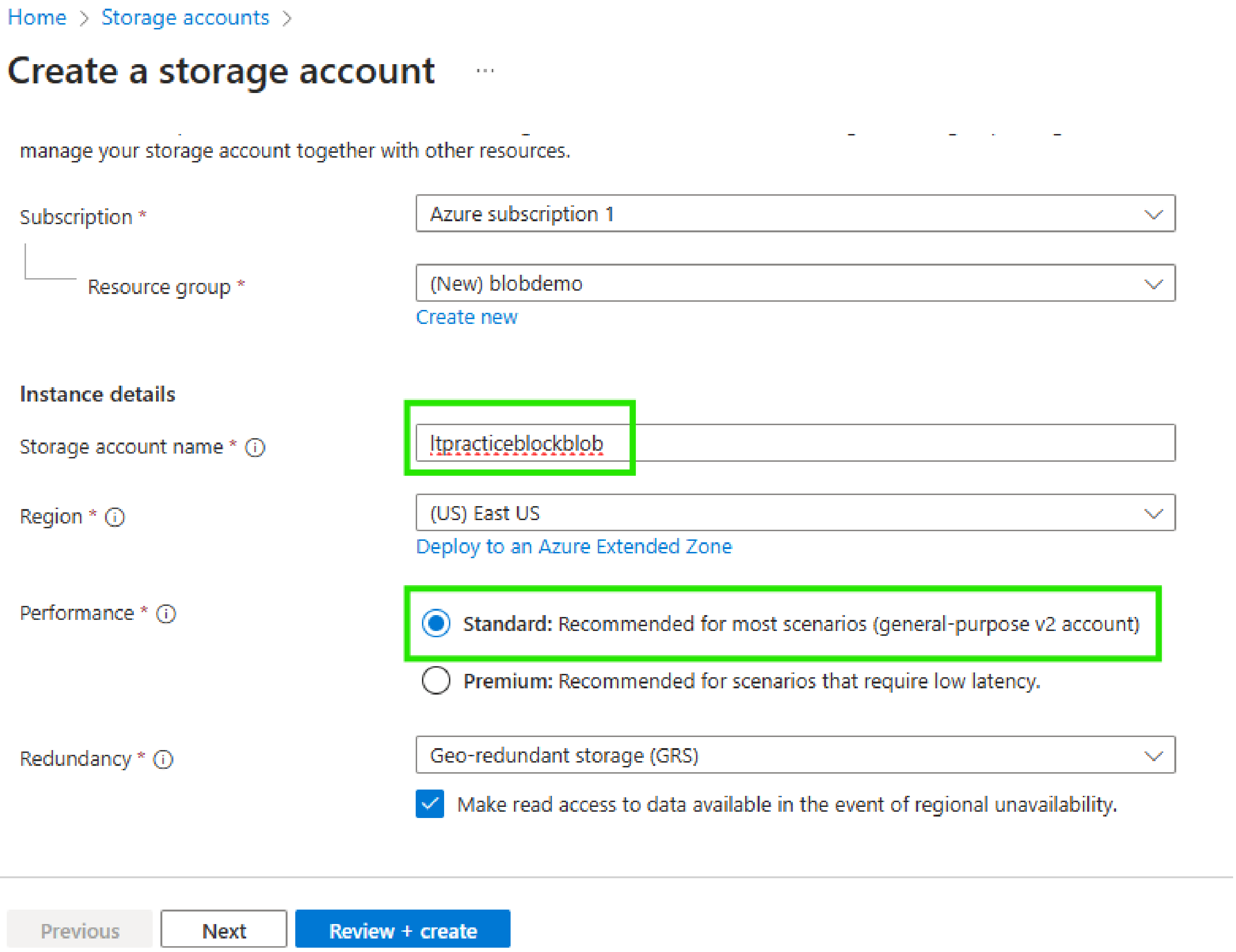
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

☑	Name	Type	Last modified	Size	Storage class
☑	storage7.pdf	pdf	June 3, 2024, 09:30:24 (UTC+05:30)	265.9 KB	Standard

- Let get the url `https://ltstoragedemo0306.s3.ap-south-1.amazonaws.com/storage7.pdf`
- Pattern `https://<bucket-name>.s3.<region>.amazonaws.com/<object-path>`
- Upload other formats

Azure Blob Storage

- Azure Blob Storage is part of storage account and the storage for any file type is called as BlockBlob
- Azure support 3 types of Blobs
    - Block Blob
    - Append Blob (used for logging)
    - Page Blob (Virtual hard disk)
- Lets create a storage account



Home > Storage accounts >

Create a storage account

manage your storage account together with other resources.

Subscription * : Azure subscription 1

Resource group * : (New) blobdemo

Create new

Instance details

Storage account name * : ltpracticeblockblob

Region * : (US) East US

Deploy to an Azure Extended Zone

Performance * :

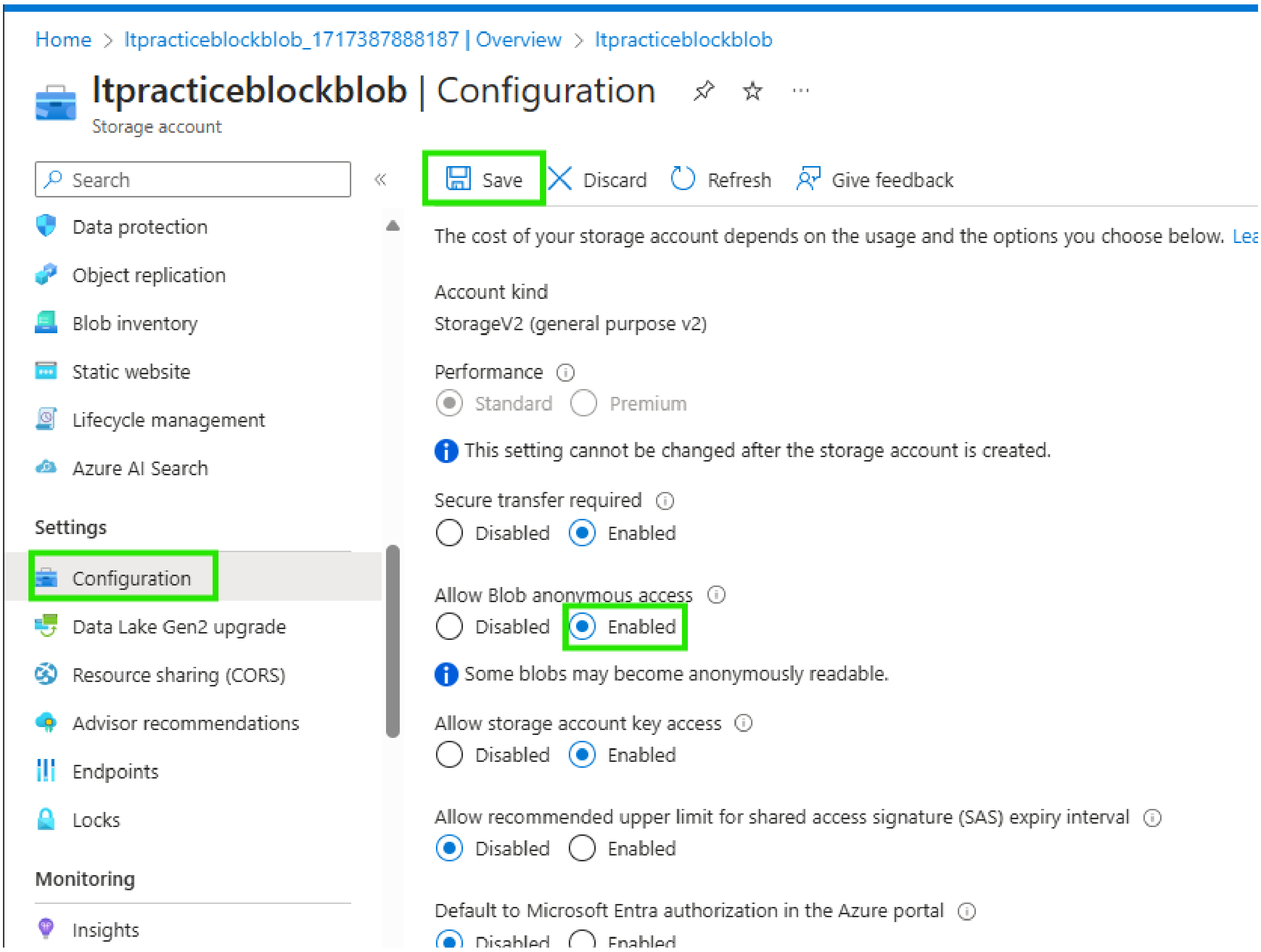
● **Standard:** Recommended for most scenarios (general-purpose v2 account)

○ **Premium:** Recommended for scenarios that require low latency.

Redundancy * : Geo-redundant storage (GRS)

☑ Make read access to data available in the event of regional unavailability.

- Enable anonymous access to blobs



Home > ltpracticeblockblob_1717387888187 | Overview > ltpracticeblockblob

ltpracticeblockblob | Configuration

Storage account

The cost of your storage account depends on the usage and the options you choose below. Lea

Account kind

StorageV2 (general purpose v2)

Performance

● Standard ○ Premium

This setting cannot be changed after the storage account is created.

Secure transfer required

○ Disabled ● Enabled

Allow Blob anonymous access

○ Disabled ● Enabled

Some blobs may become anonymously readable.

Allow storage account key access

○ Disabled ● Enabled

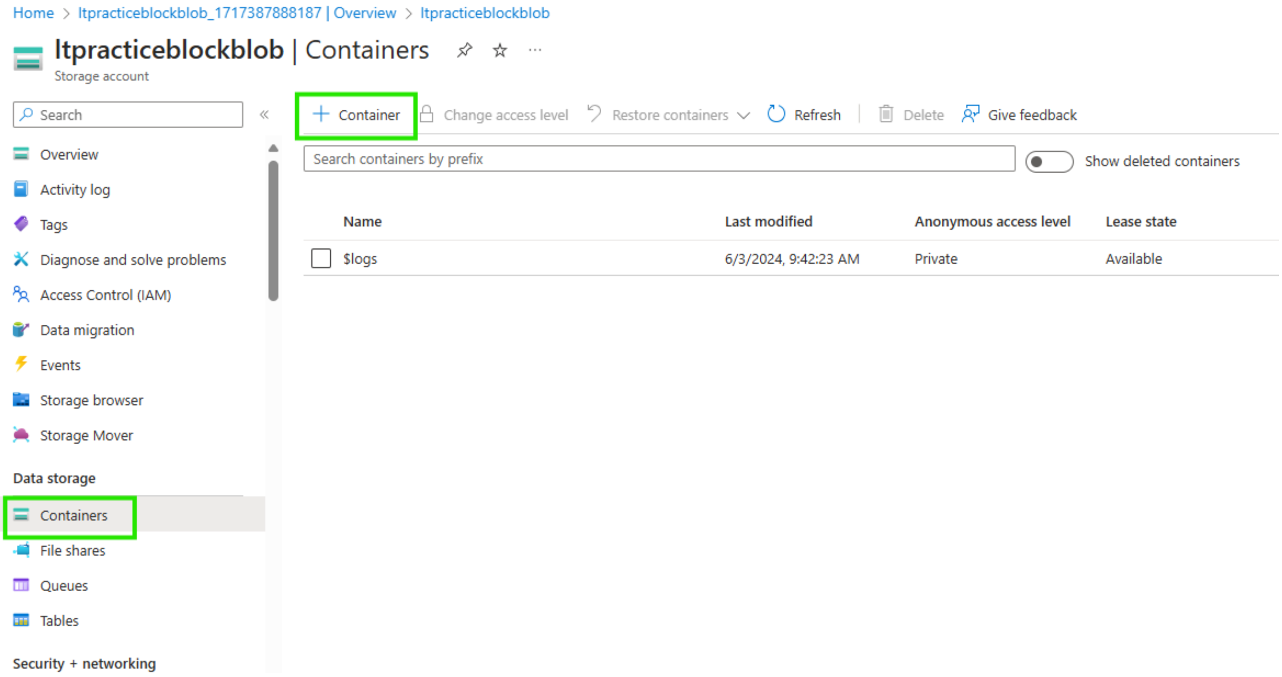
Allow recommended upper limit for shared access signature (SAS) expiry interval

● Disabled ○ Enabled

Default to Microsoft Entra authorization in the Azure portal

● Disabled ○ Enabled

- Now create a container

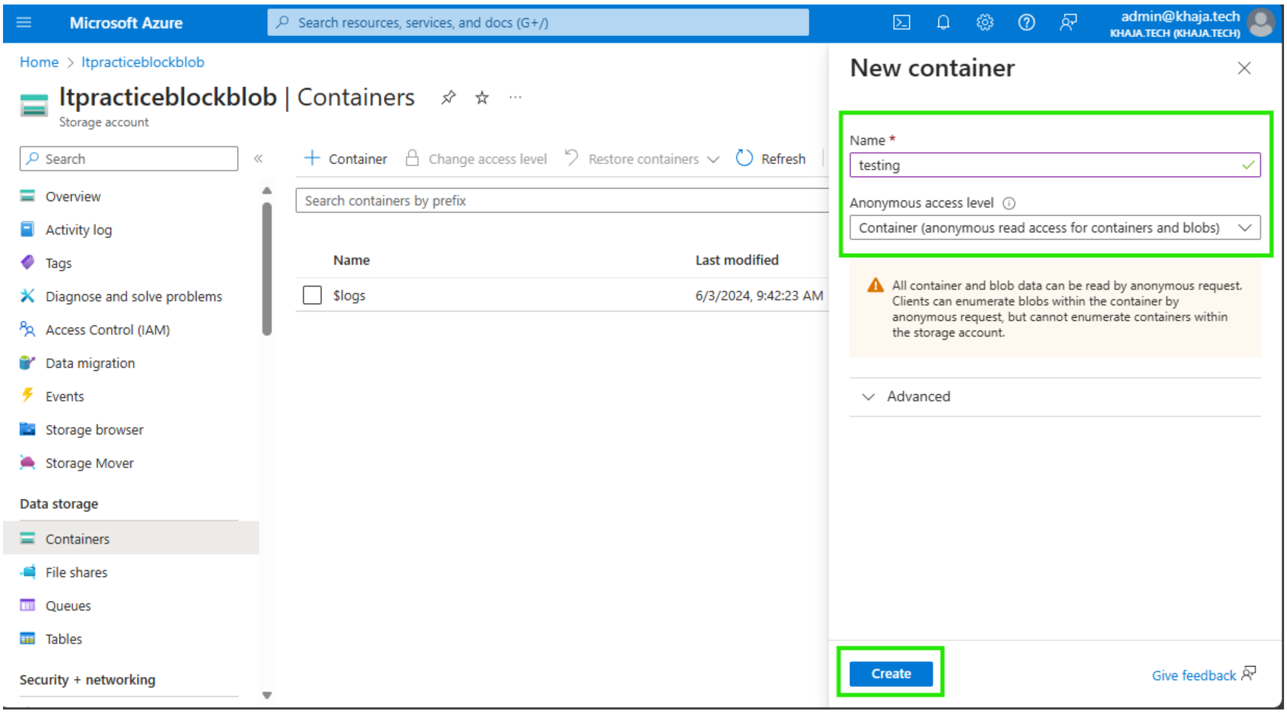


Home > ltpracticeblockblob_1717387888187 | Overview > ltpracticeblockblob

ltpracticeblockblob | Containers

Storage account

	Name	Last modified	Anonymous access level	Lease state
□	$logs	6/3/2024, 9:42:23 AM	Private	Available



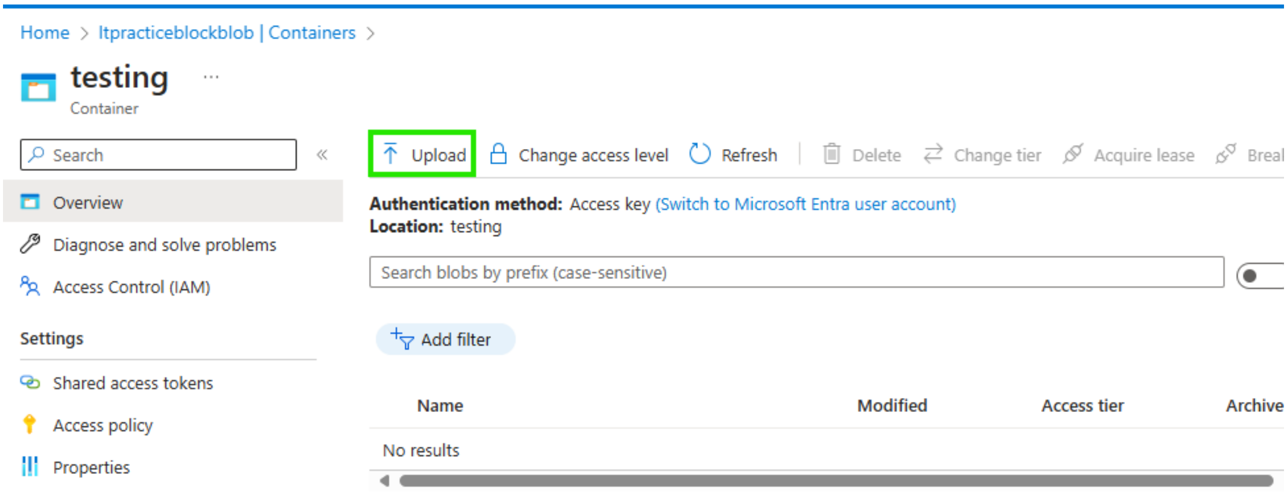
New container

Name *: testing

Anonymous access level: Container (anonymous read access for containers and blobs)

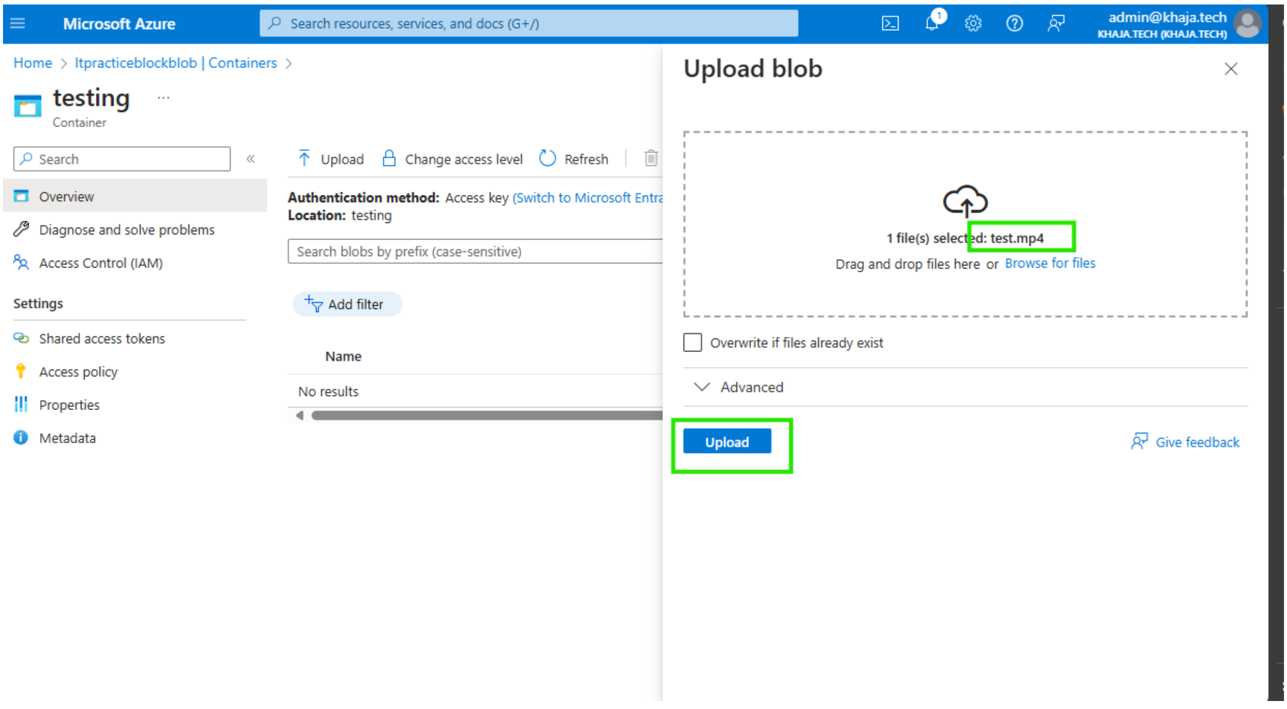
All container and blob data can be read by anonymous request. Clients can enumerate blobs within the container by anonymous request, but cannot enumerate containers within the storage account.

Name	Last modified
$logs	6/3/2024, 9:42:23 AM



Authentication method: Access key (Switch to Microsoft Entra user account)
Location: testing

Name	Modified	Access tier	Archive
No results			



Authentication method: Access key (Switch to Microsoft Entra

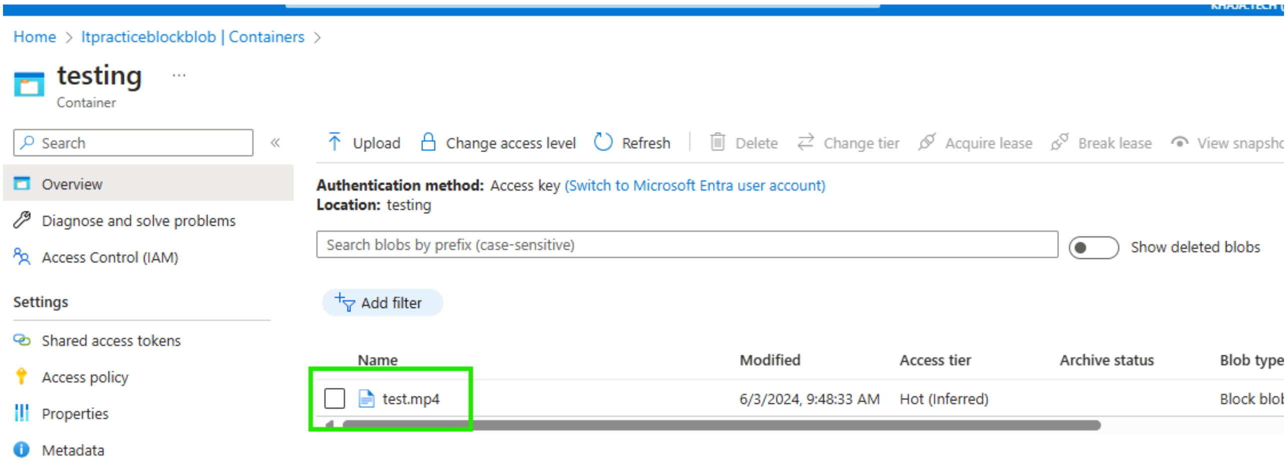
Location: testing

Search blobs by prefix (case-sensitive)

No results

1 file(s) selected: test.mp4

□ Overwrite if files already exist



Authentication method: Access key (Switch to Microsoft Entra user account)

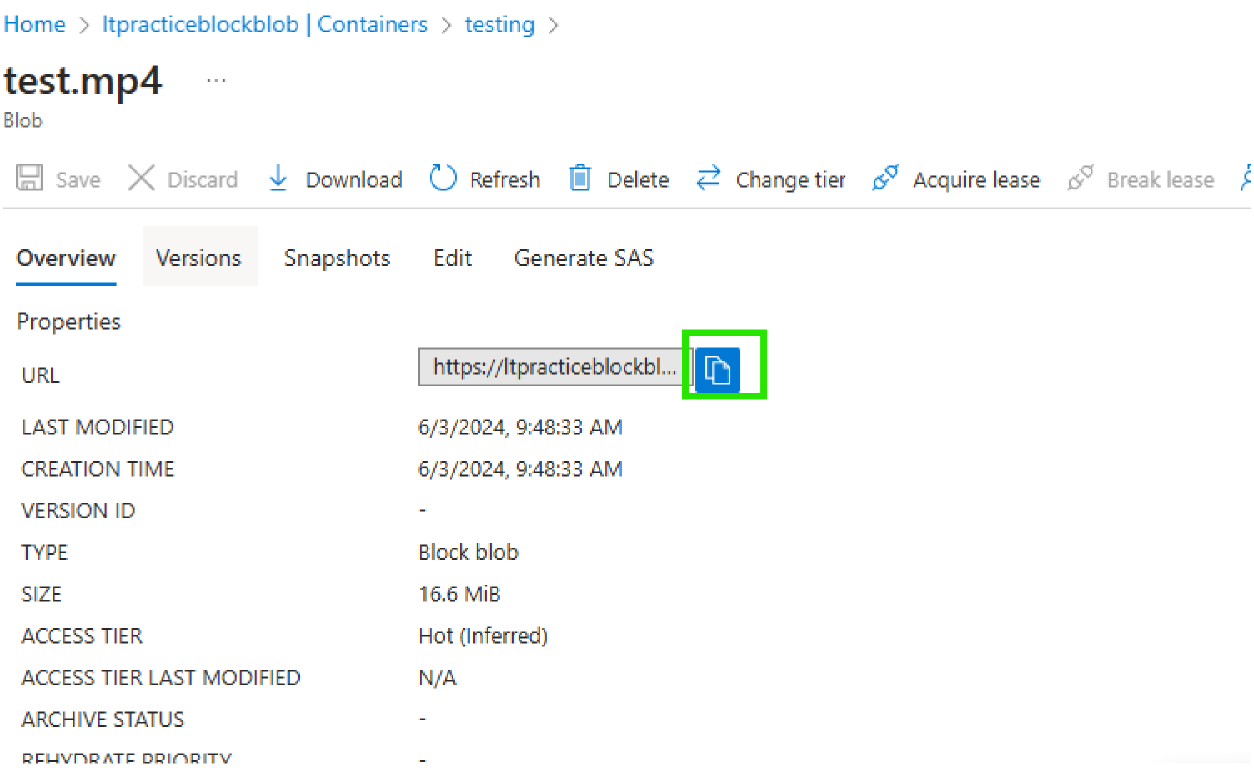
Location: testing

Search blobs by prefix (case-sensitive)

Show deleted blobs

	Name	Modified	Access tier	Archive status	Blob type
□	test.mp4	6/3/2024, 9:48:33 AM	Hot (Inferred)		Block blol

- Copy url



Properties

URL	https://ltpracticeblockbl...
LAST MODIFIED	6/3/2024, 9:48:33 AM
CREATION TIME	6/3/2024, 9:48:33 AM
VERSION ID	-
TYPE	Block blob
SIZE	16.6 MiB
ACCESS TIER	Hot (Inferred)
ACCESS TIER LAST MODIFIED	N/A
ARCHIVE STATUS	-
REHYDRATE PRIORITY	-

- url = `https://ltpracticeblockblob.blob.core.windows.net/testing/test.mp4`
- pattern = `https://<storage-acc-name>.blob.core.windows.net/<container>/<object-name>`