Working with Azure Data Lake Gen2 account

Exercise 1 – Create Azure Data Lake Gen2 Account

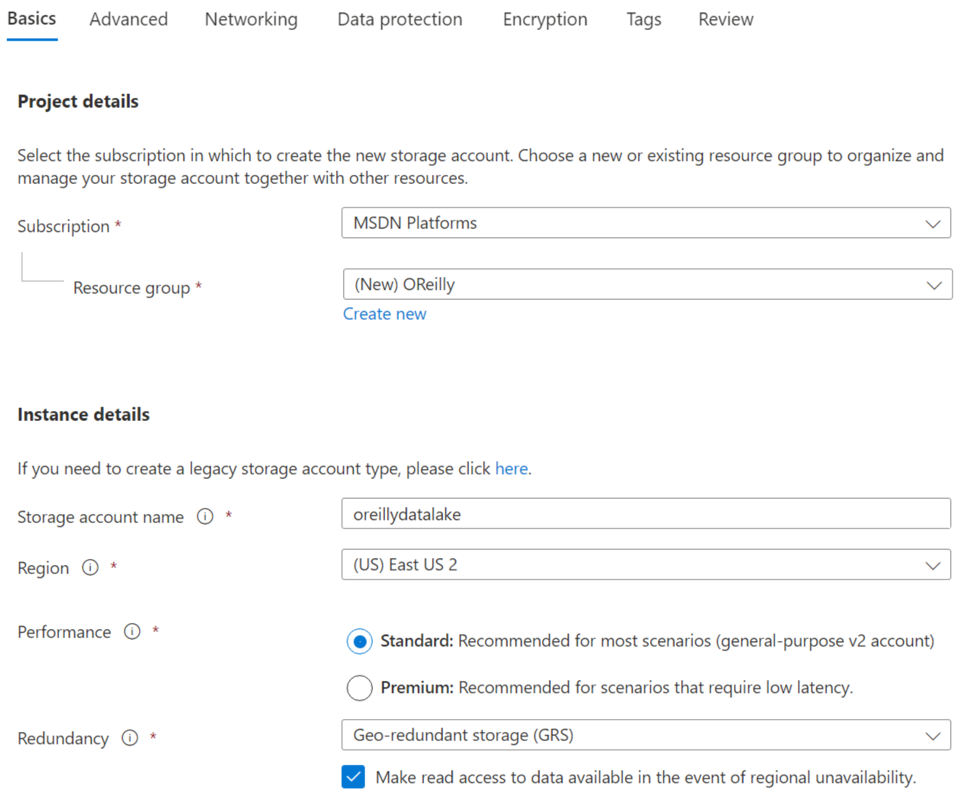
1. Go to Azure portal (portal.azure.com)

2. In the search bar, search for Storage Accounts. And select it

3. Click on Create New

4. Fill up the properties to create account

    a. [Basics Tab]
        i. Select subscription
        ii. On Resource Group, click Create new and provide a name
        iii. Provide a unique storage account name
        iv. Select region of your choice (example – East US 2)
        v. You have options for selecting performance & redundancy options – keep it as is.
        vi. Click Next



Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription * : MSDN Platforms

Resource group * : (New) OReilly

Create new

Instance details

If you need to create a legacy storage account type, please click here.

Storage account name ⓘ * : oreillydatalake

Region ⓘ * : (US) East US 2

Performance ⓘ *

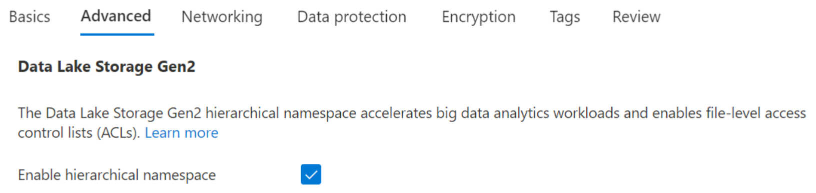
● **Standard:** Recommended for most scenarios (general-purpose v2 account)

○ **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.

    b. [Advanced Tab]
        i. In Data Lake Gen2 section -> Select "Enable Hierarchical Namespace" checkbox
        ii. Click Review



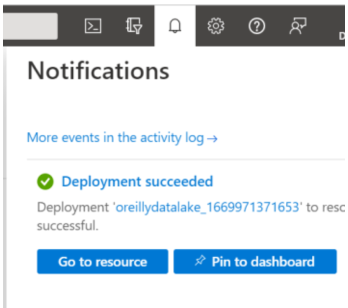
Data Lake Storage Gen2

The Data Lake Storage Gen2 hierarchical namespace accelerates big data analytics workloads and enables file-level access control lists (ACLs). Learn more

Enable hierarchical namespace ☑

   c. Click Create

5. This will create a new Azure Data Lake Gen2 account



Notifications

More events in the activity log →

Deployment succeeded

Deployment 'oreillydatalake_1669971371653' to resc successful.

Exercise 2 – Upload Files to Azure Data Lake Gen2 Account

0. In a separate browser window, go to following URL and download sample files:
   https://tinyurl.com/data-lake-bootcamp-2022

1. Open Data Lake account created in the previous step

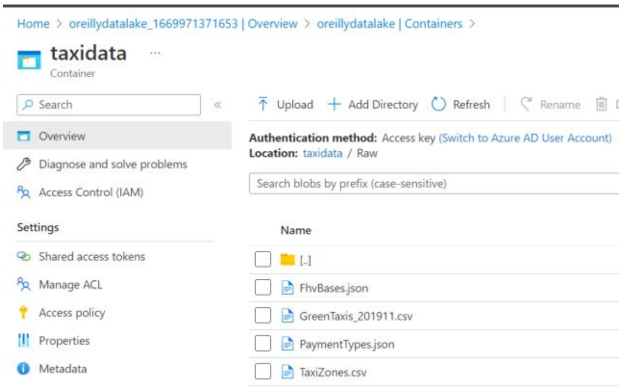
2. From left pane, go to Containers

3. Create a new container
   a. Name: taxidata
   b. Public access level: Private
   c. Click Create

4. Once created, open taxidata container

5. To store raw data, add a directory: Raw

6. In Raw directory, upload the files downloaded in Step 0.



Home > oreillydatalake_1669971371653 | Overview > oreillydatalake | Containers >

taxidata
Container

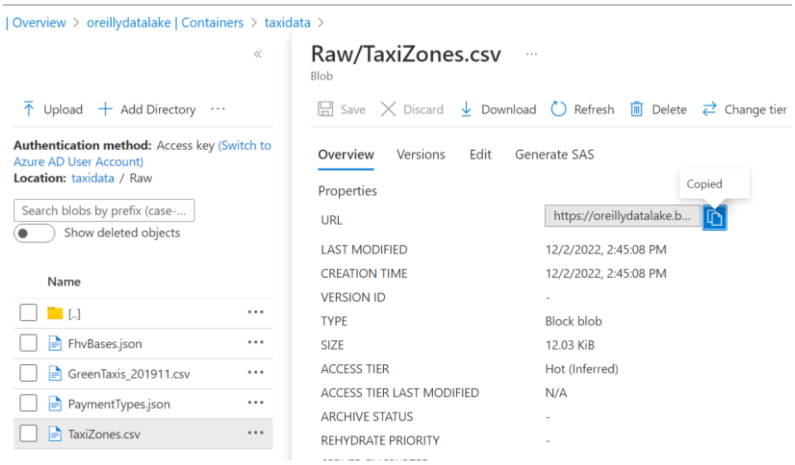
Authentication method: Access key (Switch to Azure AD User Account)
Location: taxidata / Raw

□	Name
□	[..]
□	FhvBases.json
□	GreenTaxis_201911.csv
□	PaymentTypes.json
□	TaxiZones.csv

Exercise 3 – Generate and use SAS Token

1. In taxidata container, click on TaxiZones.csv file.

2. Copy file URL for TaxiZones.csv



| Overview > oreillydatalake | Containers > taxidata >

Raw/TaxiZones.csv
Blob

Authentication method: Access key (Switch to Azure AD User Account)
Location: taxidata / Raw

Search blobs by prefix (case-...
Show deleted objects

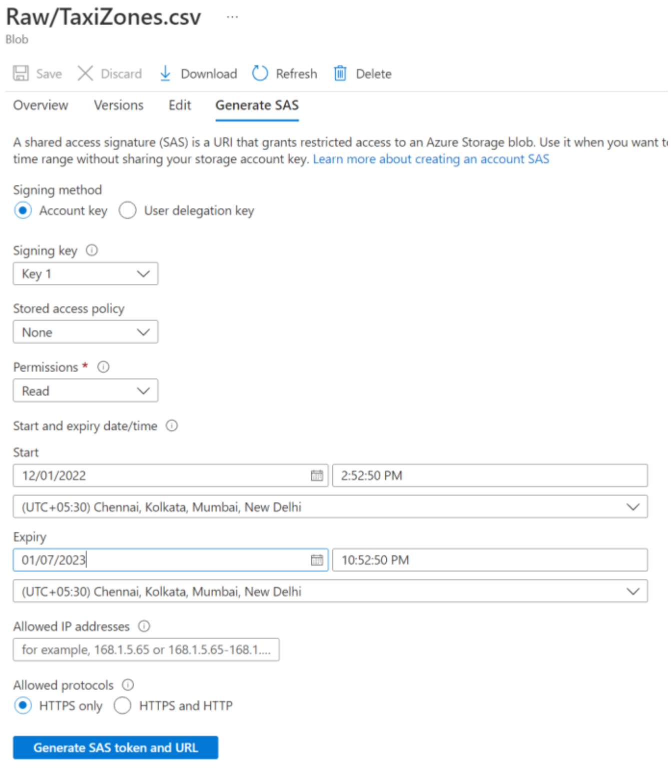
Name
[..]
FhvBases.json
GreenTaxis_201911.csv
PaymentTypes.json
TaxiZones.csv

Properties

URL	https://oreillydatalake.b...
LAST MODIFIED	12/2/2022, 2:45:08 PM
CREATION TIME	12/2/2022, 2:45:08 PM
VERSION ID	-
TYPE	Block blob
SIZE	12.03 KiB
ACCESS TIER	Hot (Inferred)
ACCESS TIER LAST MODIFIED	N/A
ARCHIVE STATUS	-
REHYDRATE PRIORITY	-

3. Paste URL in browser and see if its accessible
   - This should not work, since no access is available

4. Click on Generate SAS, and define the permissions
   a. Permissions: Read
   b. Start: Keep one day before to avoid Timezone issues
   c. End: One month ahead in future
   d. Click on Generate SAS token and URL



Raw/TaxiZones.csv
Blob

A shared access signature (SAS) is a URI that grants restricted access to an Azure Storage blob. Use it when you want t time range without sharing your storage account key. Learn more about creating an account SAS

Signing method
● Account key ○ User delegation key

Signing key: Key 1

Stored access policy: None

Permissions *: Read

Start and expiry date/time

Start: 12/01/2022 2:52:50 PM
(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi

Expiry: 01/07/2023 10:52:50 PM
(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi

Allowed IP addresses: for example, 168.1.5.65 or 168.1.5.65-168.1....

Allowed protocols
● HTTPS only ○ HTTPS and HTTP

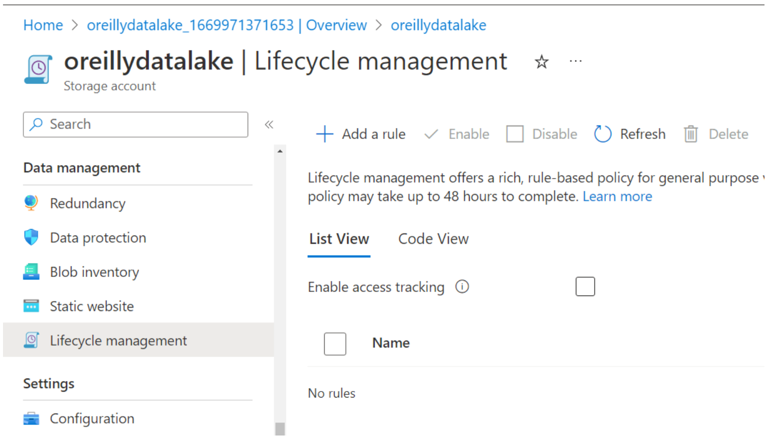
Generate SAS token and URL

5. Copy Blob SAS URL
   - This will include file URL and SAS token

6. Paste URL in browser and see if its accessible
   - This should work, since access is provided via SAS token

Exercise 4 – Configure Data Lifecycle

1. From left pane of storage account, navigate to Lifecycle management tab



oreillydatalake | Lifecycle management

Storage account

Lifecycle management offers a rich, rule-based policy for general purpose
policy may take up to 48 hours to complete. Learn more

Enable access tracking □

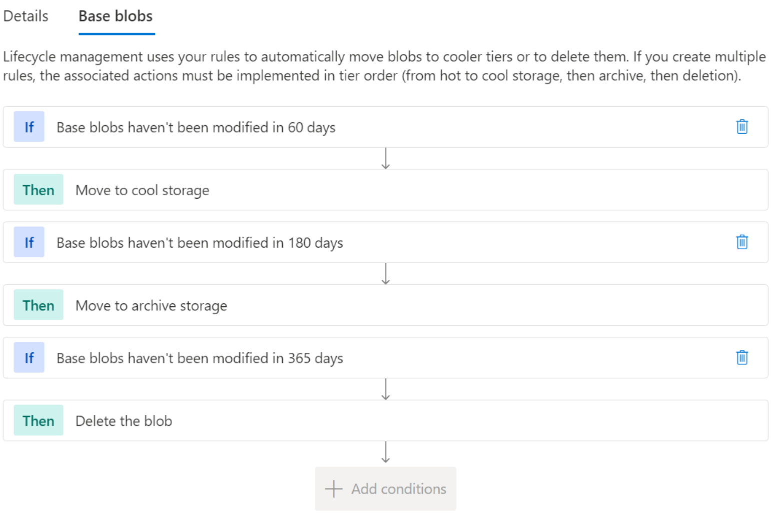
□ Name

No rules

2. Click on Add a rule

3. Provide details:
   a. Rule name: Rule1
   b. Rule scope: Apply rule to all blobs in your storage account
   c. Blob type: Block blobs
   d. Blob subtype: Base blobs
   e. Click Next

4. Define rule conditions:
   a. If Base blobs haven’t been modified in 60 days, then move to Cool storage
   b. If Base blobs haven’t been modified in 180 days, then move to Archive storage
   c. If Base blobs haven’t been modified in 365 days, then Delete the blob
   d. Save



Lifecycle management uses your rules to automatically move blobs to cooler tiers or to delete them. If you create multiple rules, the associated actions must be implemented in tier order (from hot to cool storage, then archive, then deletion).

If Base blobs haven't been modified in 60 days

Then Move to cool storage

If Base blobs haven't been modified in 180 days

Then Move to archive storage

If Base blobs haven't been modified in 365 days

Then Delete the blob