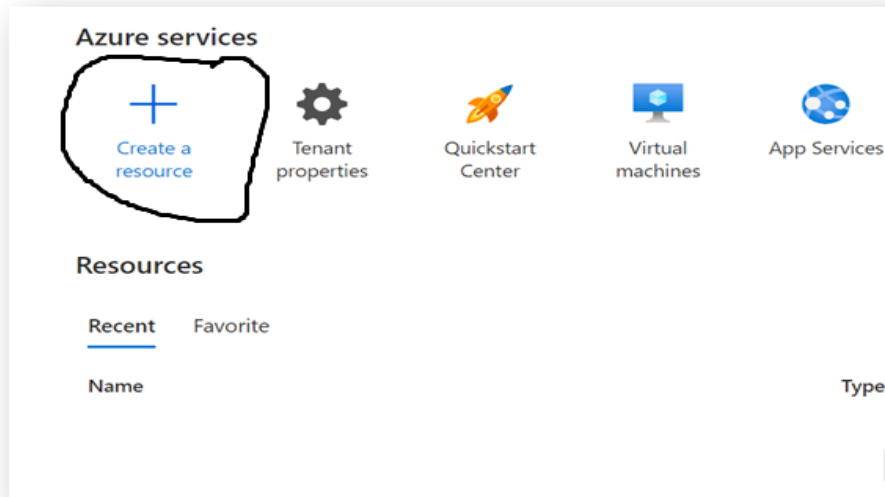
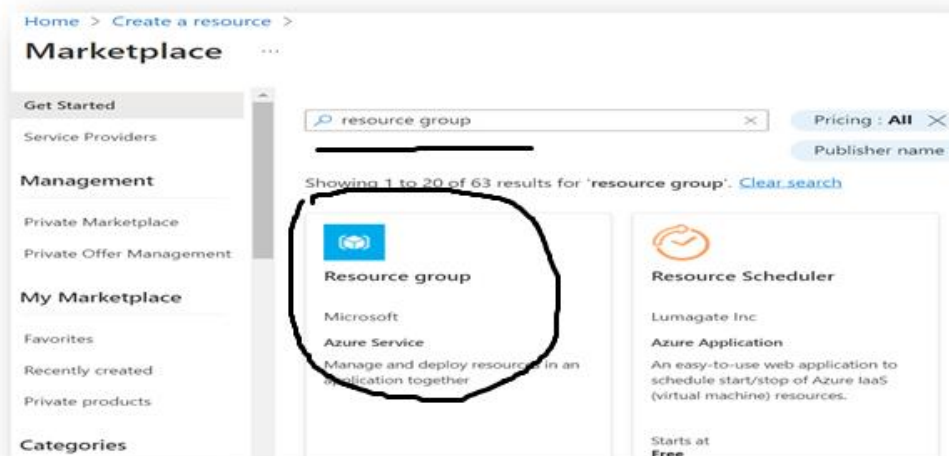


First we need to create RESOURCE.

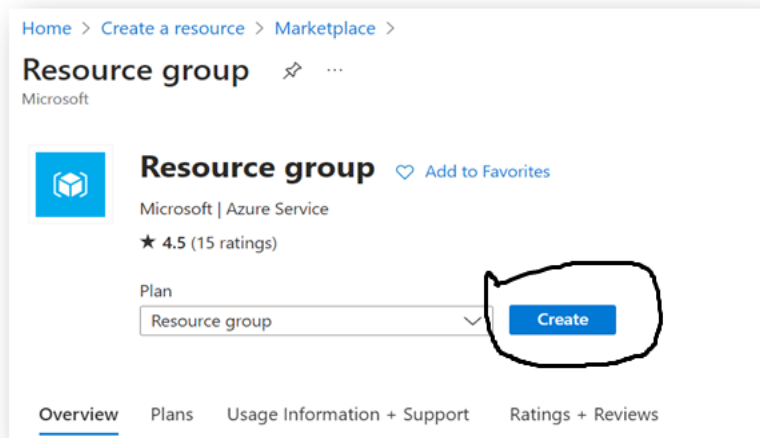
1. Click on **CREATE RESOURCE.**



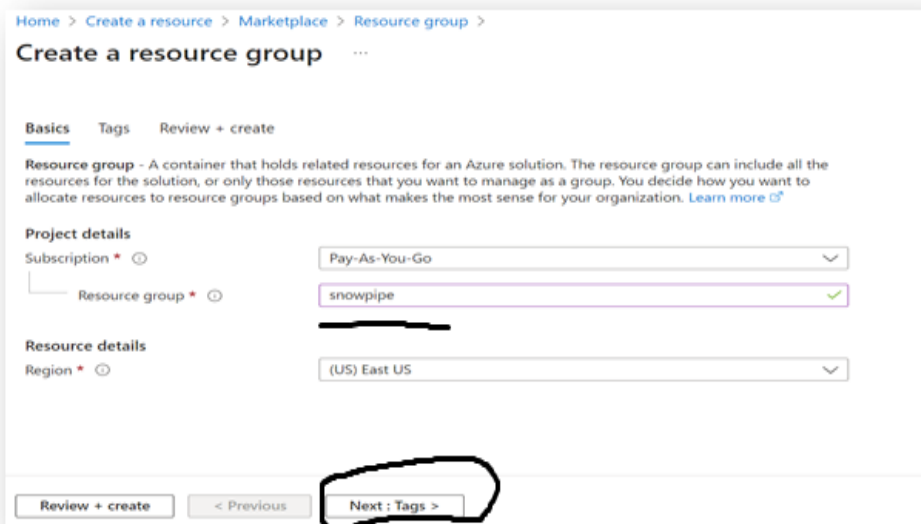
2. **SEARCH FOR RESOURCE GROUP** and click on it.



3. Click on **CREATE**.



4. Give **Resource Group** name and click on **review + create**.



5. Next click on **CREATE**.

Home > Create a resource > Marketplace > Resource group >

Create a resource group ...

✓ Validation passed.

Basics Tags Review + create

Basics

Subscription	Pay-As-You-Go
Resource group	snowpipe
Region	East US

Tags

None

Create < Previous Next > [Download a template for automation](#)

After validation completed successfully, resource will get created.

You can see this by typing resource group in home page.

Microsoft Azure Search resources, services, and docs (G+/I)

Home >

Resource groups

Default Directory (niharikaagrawal59gmail.onmicrosoft.com)

+ Create Manage view Refresh Export to CSV Open query Assign tags

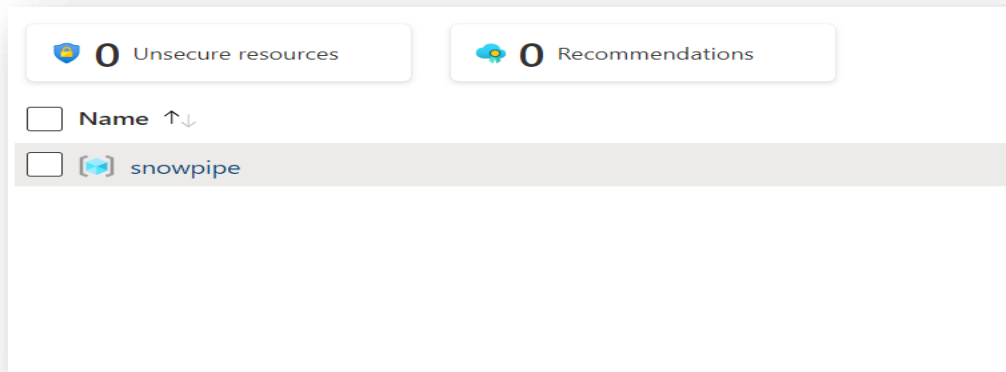
Filter for any field... Subscription equals all Location equals all Add filter

0 Unsecure resources 0 Recommendations No grouping List view

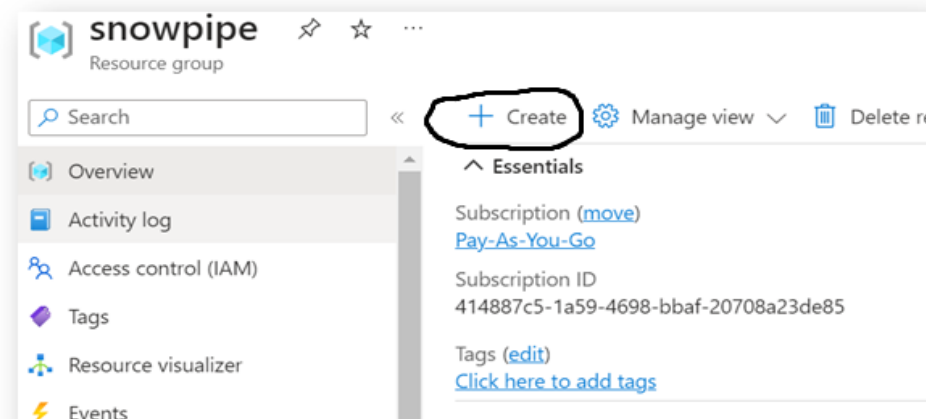
<input type="checkbox"/> Name ↑↓	Subscription ↑↓	Location ↑↓
<input type="checkbox"/> snowpipe	Pay-As-You-Go	East US

Next step is to create STORAGE ACCOUNT

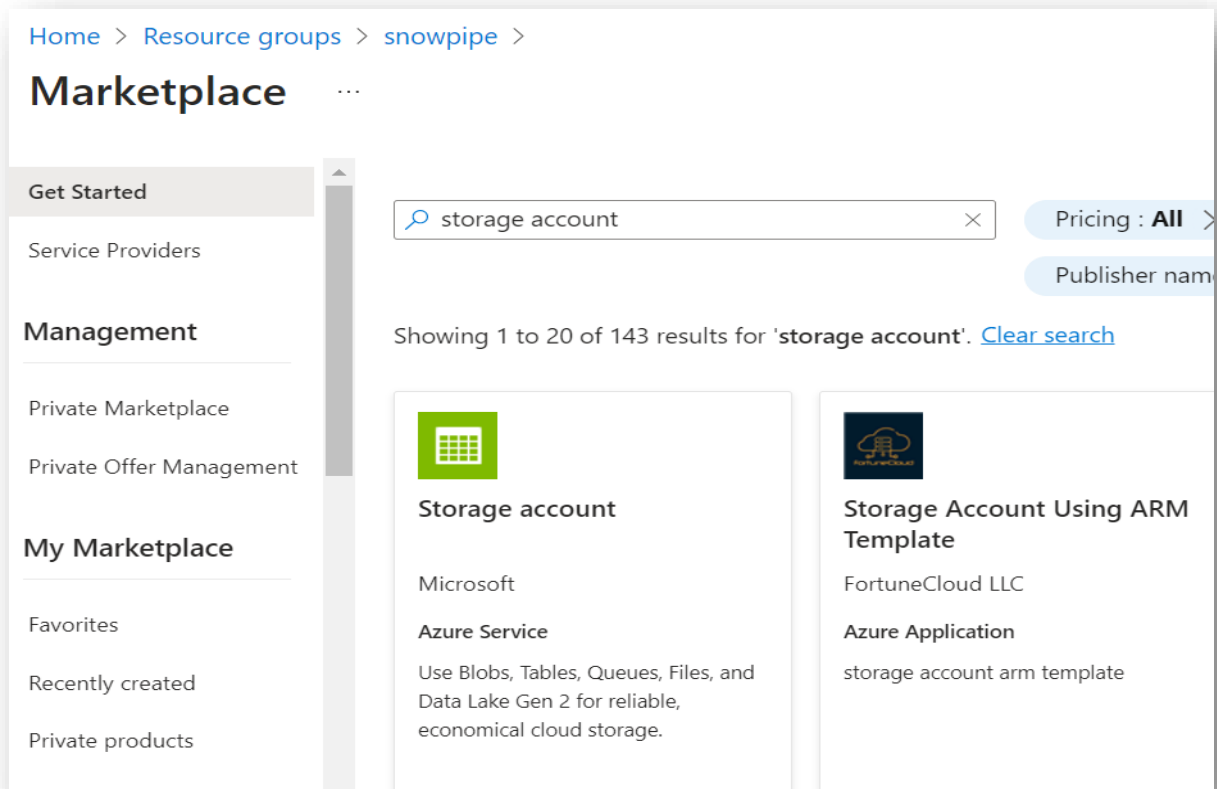
6. For that click on the **Resource Group** you created (Here Snowpipe).



7. Click on **+ Create**.



8. Now search for **Storage Account** and click on it.



9. Enter **Storage Account name(here: snowpipeautodataload)** and click on **Next:Advanced** (do till Review tab).

The screenshot shows the 'Create a storage account' wizard. The breadcrumb navigation is: Home > Resource groups > snowpipe > Marketplace > Storage account >. The main heading is 'Create a storage account'. There are tabs for 'Basics', 'Advanced', 'Networking', 'Data protection', 'Encryption', 'Tags', and 'Review'. The 'Basics' tab is selected. Below the tabs, there is a description: 'Select the subscription in which to create the new storage account. Select a new or existing resource group to organize and manage your storage account together with other resources.' There are two dropdown menus: 'Subscription *' with 'Pay-As-You-Go' selected, and 'Resource group *' with 'snowpipe' selected. Below the 'Resource group' dropdown is a link 'Create new'. Under the 'Instance details' section, there is a note: 'If you need to create a legacy storage account type, please click here.' There is a text input field for 'Storage account name' with a help icon and a required asterisk. At the bottom, there are three buttons: 'Review' (in blue), '< Previous', and 'Next : Advanced >'.

10. Once it is validated , click on **CREATE**.

The screenshot shows the 'Create a storage account' wizard in the Azure portal. The 'Review' tab is selected, showing a summary of the configuration. The 'Create' button at the bottom left is circled in red.

Section	Configuration
Subscription	Pay-As-You-Go
Resource Group	snowpipe
Location	eastus
Storage account name	snowpipeautodataload
Deployment model	Resource manager
Performance	Standard
Replication	Read-access geo-redundant storage (RA-GRS)

Advanced

[Create](#) [< Previous](#) [Next >](#) [Download a template for automation](#)

11. Once done you will land to deployment page. Successfully created Storage Account.

The screenshot shows the 'Overview' page for a deployment named 'snowpipeautodataload_1678877724292'. The page indicates that the deployment is complete.

Deployment Summary:

- Deployment name: snowpipeautodataload_167...
- Subscription: [Pay-As-You-Go](#)
- Resource group: [snowpipe](#)
- Start time: 3/15/2023, 4:25:34 PM
- Correlation ID: Sde5366a-4e05-422b-be17-c09a3...

Deployment details

Next steps

[Go to resource](#)

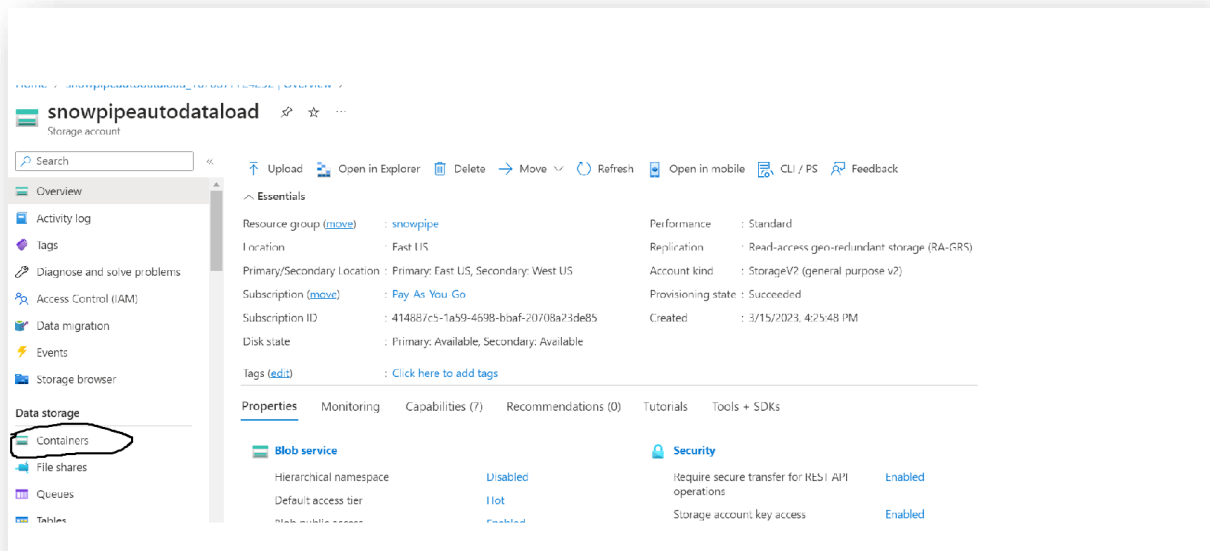
Give feedback

[Tell us about your experience with deployment](#)

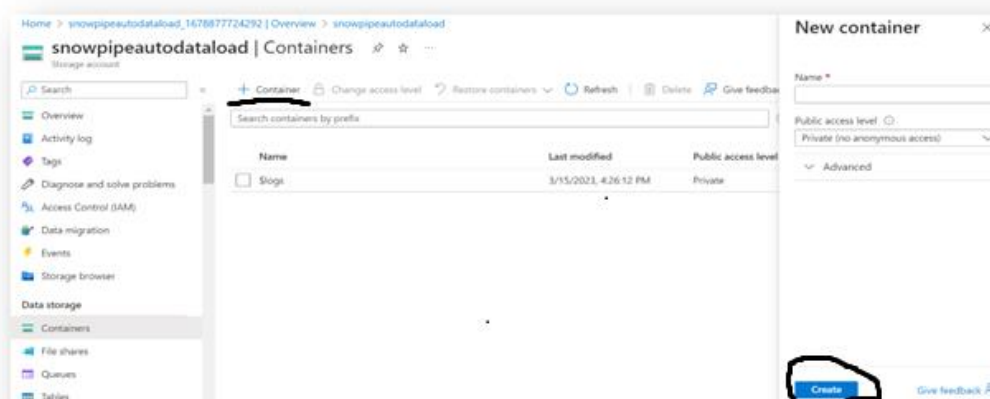
Now will proceed further with staging of file. For that we require container. Will do Creation of Container.

12. Go to **Storage Account** and click on the storage account you created above.

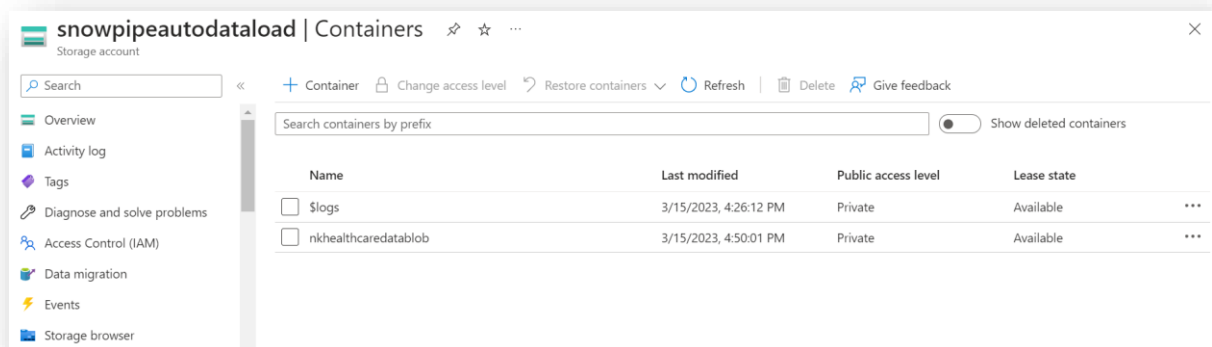
13. Click on **Container**.



14. Click on **+ Container**, Enter container name and click on **Create**.

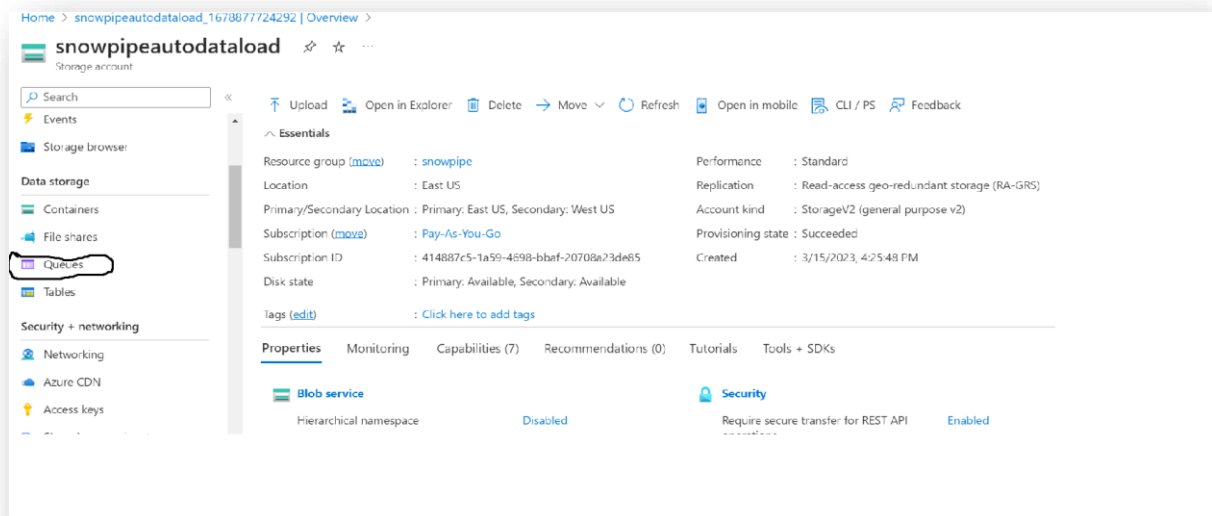


15. Once created successfully, it will display as below:

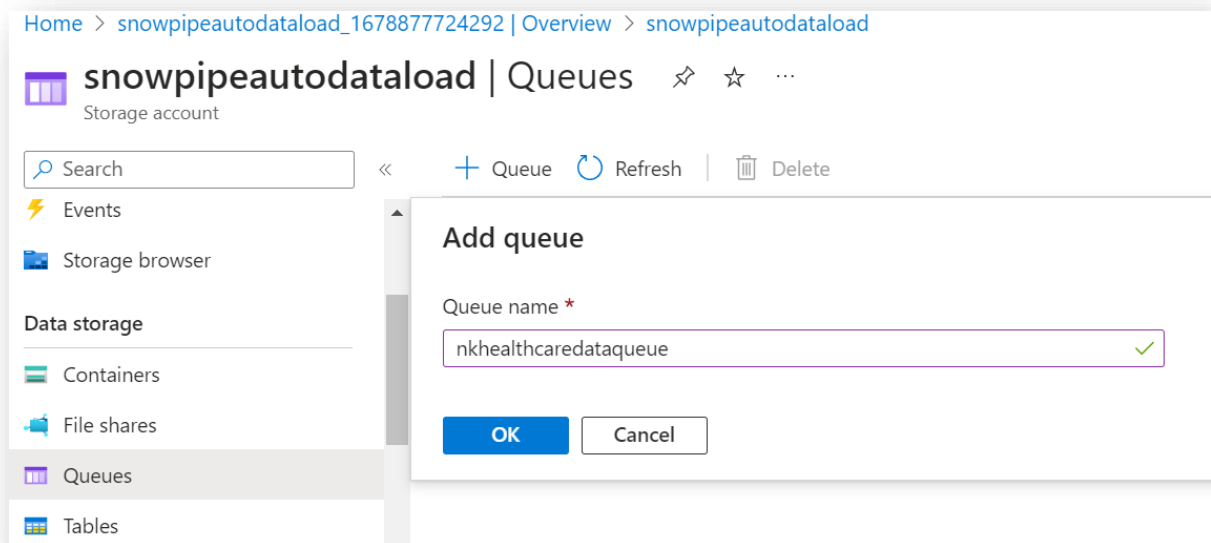


Now next thing is we need to create queue.

16. Go back to storage account and click on Queue.



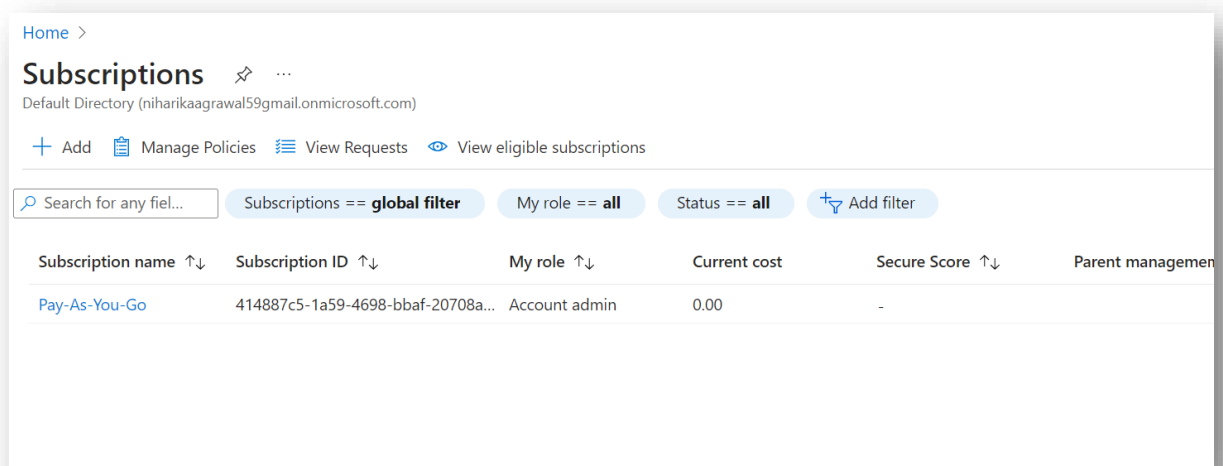
17. Click on **+ Queue** , enter the **name of queue** and click **OK**.



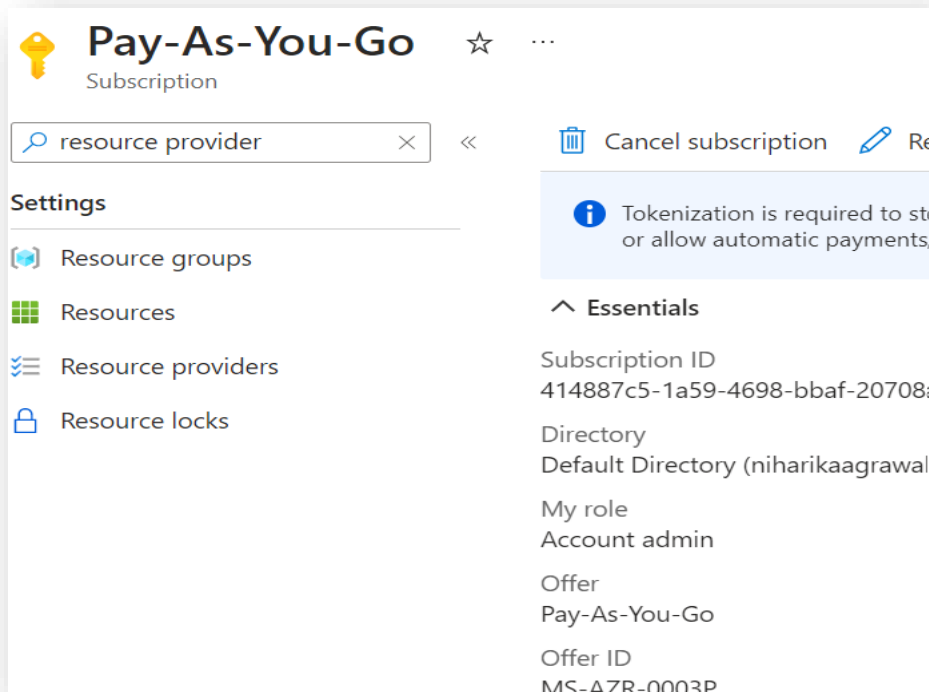
Next will add subscription .

18. Search **Subscription** and click on the subscription icon. You will get below page .

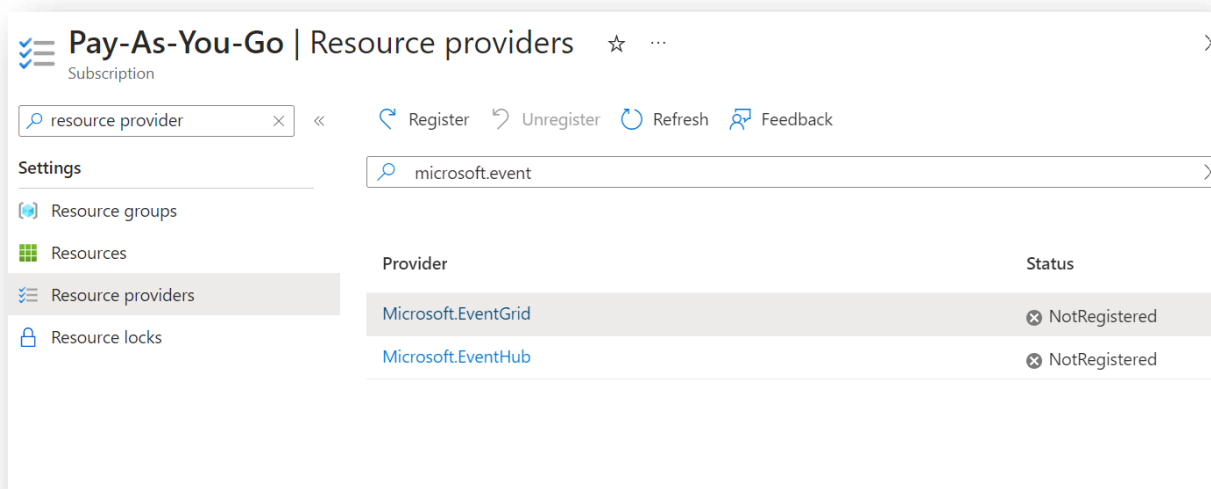
Click **Pay-As-You-Go**.



19. Search for **Resource Provider** and click on it.

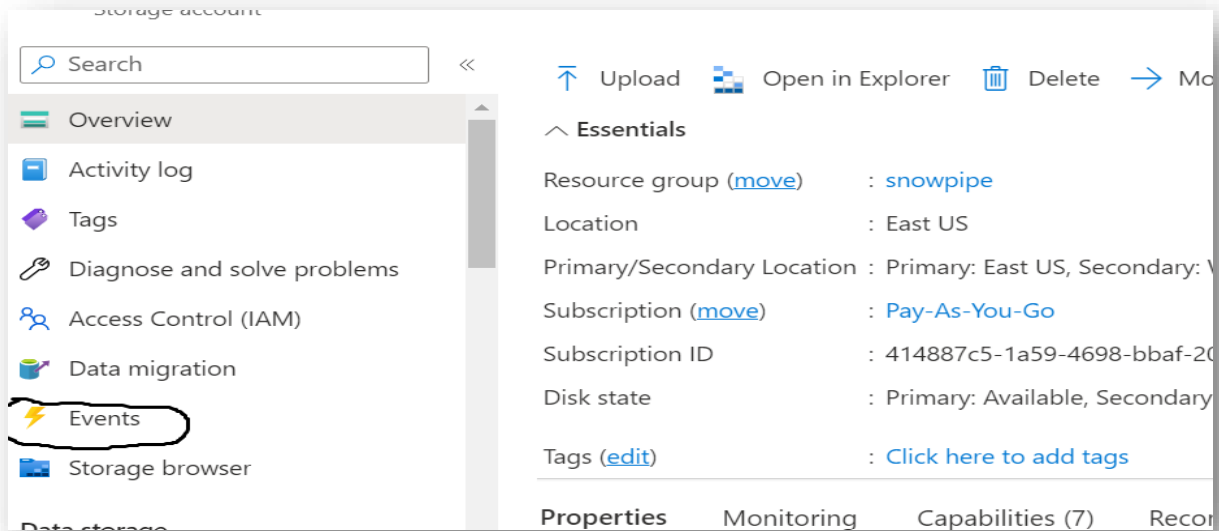


20. Inside resource provider , search **Microsoft.event**. Choose **Microsoft.EventGrid** and **Microsoft.Eventhub** one by one and then click on **register**. It will take 4-5 minute to get registered.



Next will create an Event.

21. Go back to **storage account** and click on **Event**.



22. Click on **Create Event Subscription**, enter **event name**, **system topic name**(here: snowflakesnowpipeeventgrid).

The screenshot shows the 'Create Event Subscription' form in the Azure portal. The form is divided into sections for 'EVENT SUBSCRIPTION DETAILS' and 'TOPIC DETAILS'.

EVENT SUBSCRIPTION DETAILS

- Name *: snowflakesnowpipeeventgrid (with a green checkmark)
- Event Schema: Event Grid Schema (dropdown menu)

TOPIC DETAILS

Pick a topic resource for which events should be pushed to your destination. [Learn more](#)

- Topic Type: Storage account
- Source Resource: snowpipeautodataload
- System Topic Name *: (empty text box)


At the bottom, there is a 'Create' button.

23. Enter **endpoint type** and click on **select an endpoint**.

ENDPOINT DETAILS


Pick an event handler to receive your events. [Learn more](#)

Endpoint Type *

 Storage Queues [\(change\)](#)

Endpoint *

[Select an endpoint](#)

 Please select an endpoint

24. Select **the storage Account** and select **the Queue**. And then click on **Create**.

Queues

Subscription

Pay-As-You-Go


Storage account ⓘ

snowpipeautodataload

Queue

☒ Select existing queue

☐ Create new queue

 Search queues by prefix

Queue	Url
nkhealthcaredataqueue	https://snowpipeautodataload.queue.core.windows.net

Select

Cancel

ENDPOINT DETAILS

Pick an event handler to receive your events. [Learn more](#)

Endpoint Type *  Storage Queues [\(change\)](#)

Endpoint * nkhealthcaredataqueue [\(change\)](#)

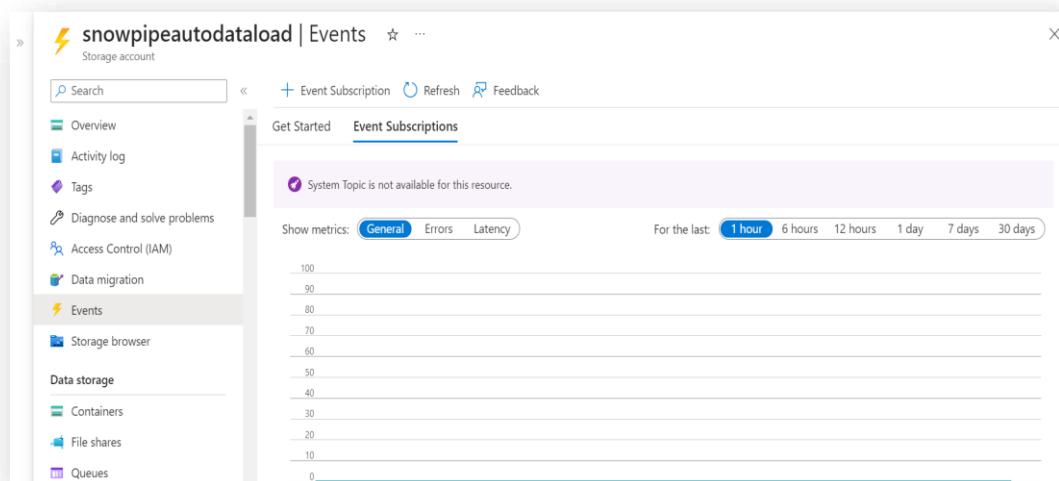
MANAGED IDENTITY FOR DELIVERY

Managed identities are used to authenticate an Event Grid topic to Azure service instances when delivering events. Select either a system assigned or a user assigned managed identity. You should have already configured one or more identities on the topic to which this event subscription is associated. [Learn more about Managed Identities](#)

Managed Identity Type

Create

25. Once deployed successfully , you will get below page.

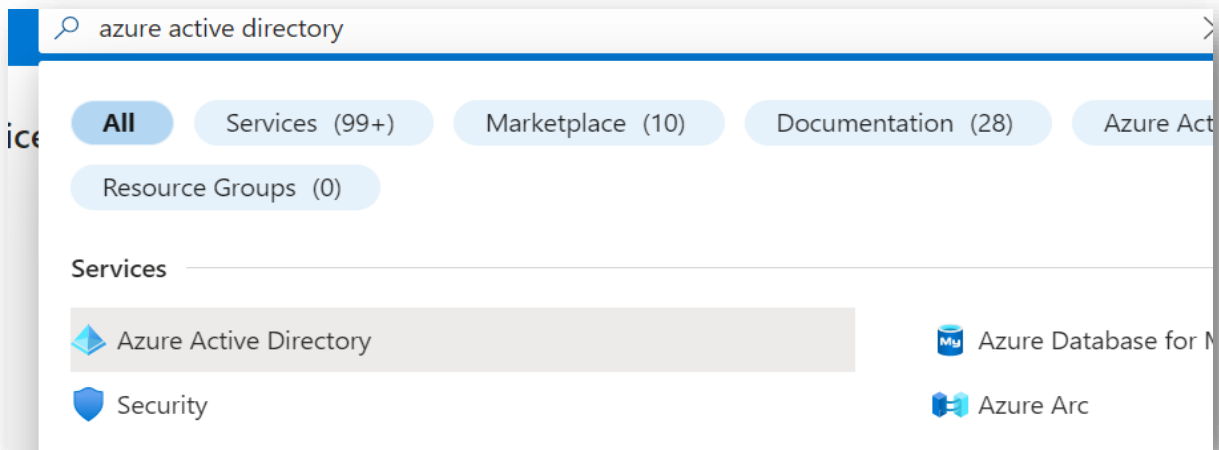


26. Two Important thing we need while running the code in snowflake for integration.

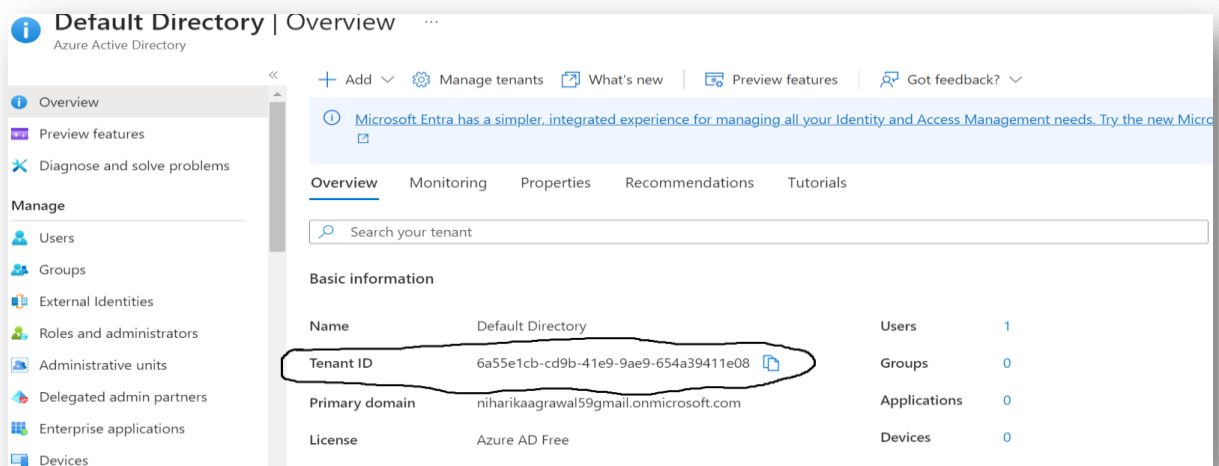
1. Tenant ID
2. Storage Notification Queue:

(a) How to get Tenant ID:

1. In home page, search **Azure Active Directory**. Click on it.

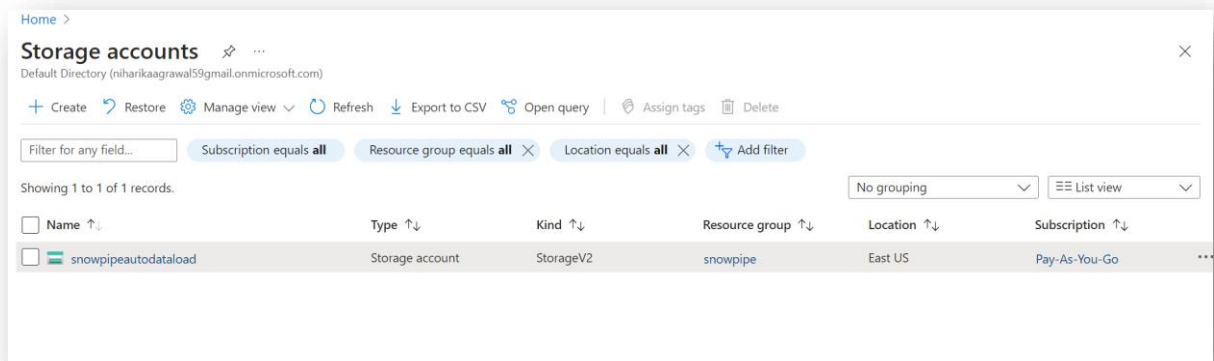


2. You will get Tenant ID here . **Copy this and keep it handy.**

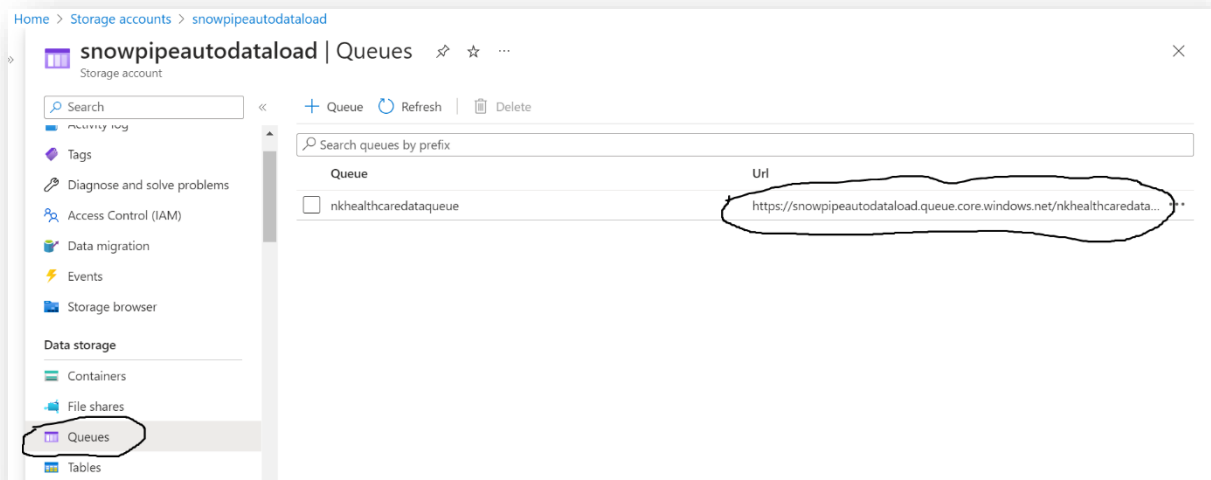


(b). How you can get Storage Notification Queue:

1.Go to **Storage Account** and click on the **account** created.



2.Click on **Queue** and then **copy the ID and keep it handy.**



Now you need to run code on Snowflake :

27. create database Azure_pipeline;

28. use Azure_pipeline;

29.

```
CREATE OR REPLACE TABLE AZ_HEALTHCARE(  
Patientid VARCHAR(15),  
gender CHAR(8),  
age VARCHAR(5)      ,  
hypertension CHAR(20),  
heart_disease CHAR(20),  
ever_married CHAR(30),  
work_type VARCHAR(60),  
Residence_type CHAR(30)      ,  
avg_glucose_level VARCHAR(20),  
bmi VARCHAR(20)      ,  
smoking_status VARCHAR(20),  
stroke CHAR(20)  
);
```

30.

--(Enter your Tenant Id and Queue ID):

```
CREATE OR REPLACE NOTIFICATION INTEGRATION AZ_HEALTHCARE_EVENT
```

```
ENABLED=TRUE
```

```
TYPE = QUEUE
```

```
NOTIFICATION_PROVIDER = AZURE_STORAGE_QUEUE
```

```
AZURE_STORAGE_QUEUE_PRIMARY_URI =
```

```
'https://snowpipeautodataload.queue.core.windows.net/nkhealthcaredataqueue' --(Refer step  
26.b.2 for Queue ID)
```

```
AZURE_TENANT_ID = '6a55e1cb-cd9b-41e9-9ae9-654a39411e08'; -- (Refer step 26.a for Tenant ID )
```

31. SHOW INTEGRATIONS;

32. DESC NOTIFICATION INTEGRATION AZ_HEALTHCARE_EVENT;

33. After running **DESC NOTIFICATION INTEGRATION AZ_HEALTHCARE_EVENT;** .Go to output section and click on **AZURE_CONSENT_URL**.

Click on the **URL** and **copy** it and **run** it in **new tab** as shown below:

32
33 DESC NOTIFICATION INTEGRATION AZ_HEALTHCARE_EVENT;
34

Results Data Preview Open History

✓ Query ID SQL 122ms 5 rows

Filter result... Copy Columns

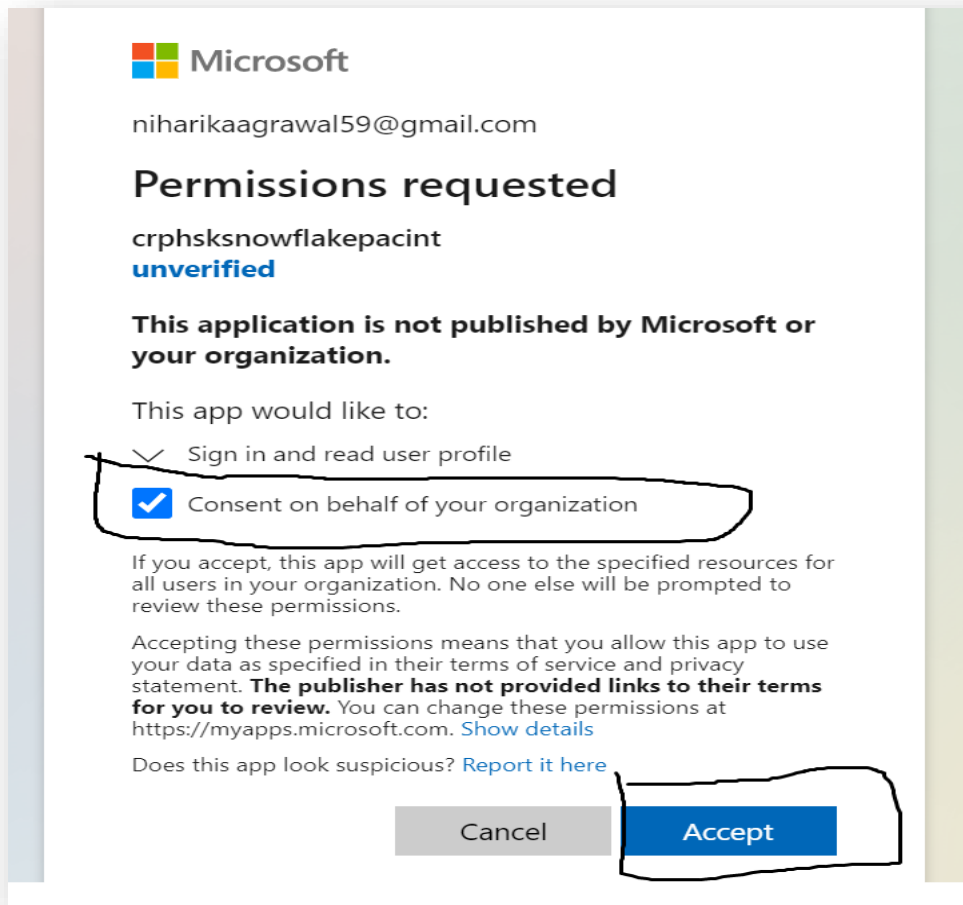
Row	property	property_type	property_value	property_default
1	ENABLED	Boolean	true	false
2	AZURE_STORAGE_QUEUE_PRIMAR...	String	https://snowpipeautodataload.que...	
3	AZURE_CONSENT_URL	String	https://login.microsoftonline.com/6...	
4	AZURE_MULTI_TENANT_APP_NAME	String	crphsksnowflakepacint_167891349...	
5	COMMENT	String		

Details

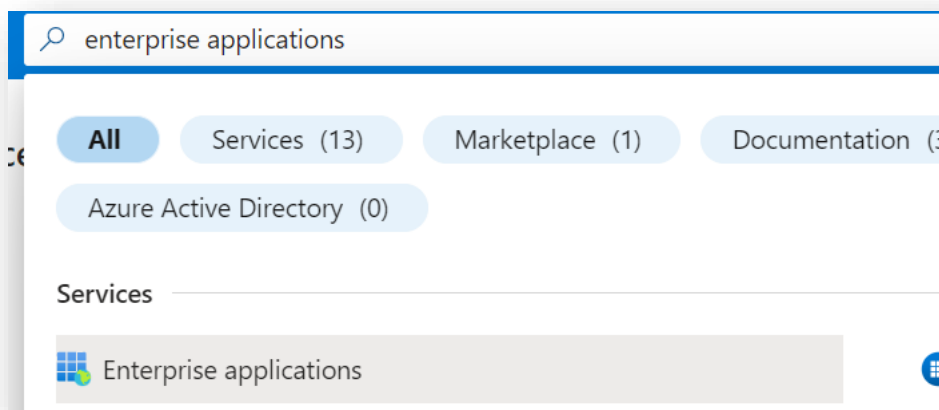
1 https://login.microsoftonline.com/6a55e1cb-cd9b-41e9-9ae9-654a39411e08/oauth2/authorize?client_id=7e37a6b6-f007-4dad-95e4-f1a78e2cea88&response_type=code

Done

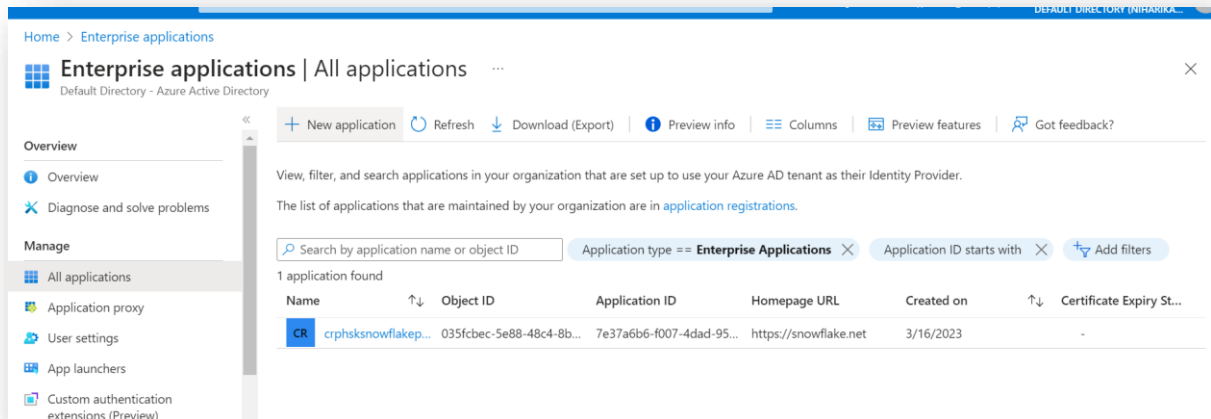
34. Once the link opens you will get a page to **provide consent**. Mark the **checkbox** and then click on **Accept** as shown below:



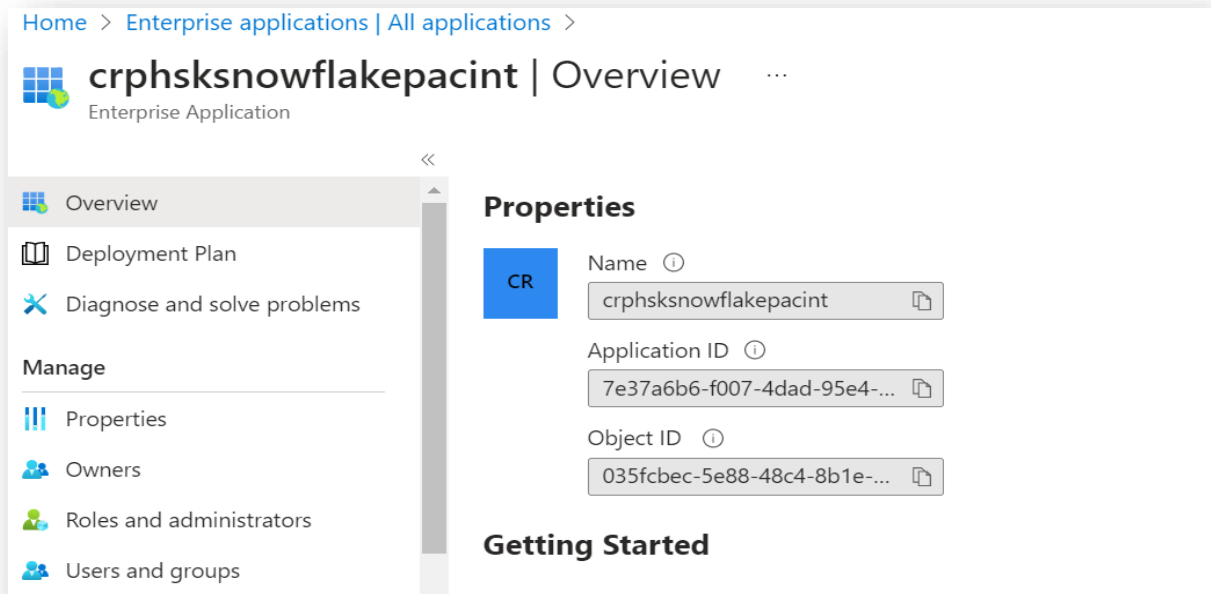
35. Now go to **Azure Dashboard**, Search **Enterprise Application** in search bar.



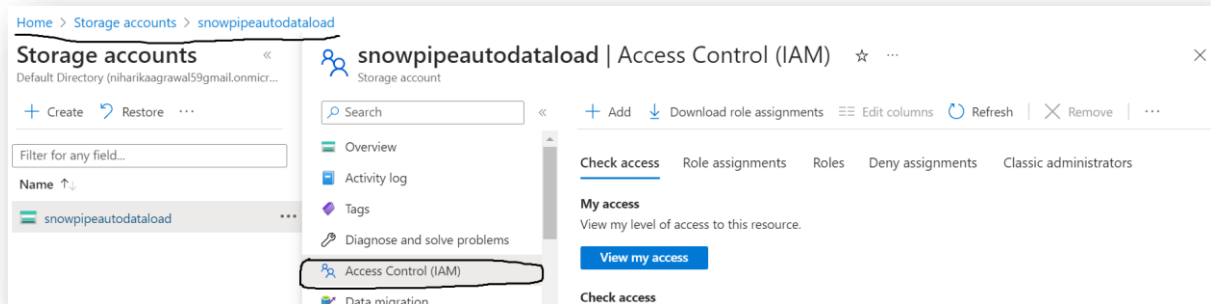
36. You can see application listed there.



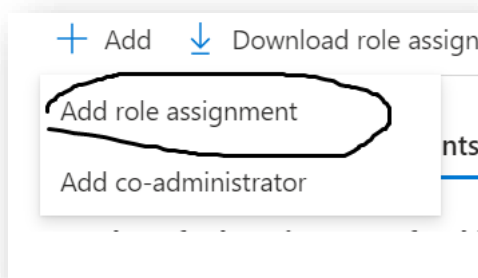
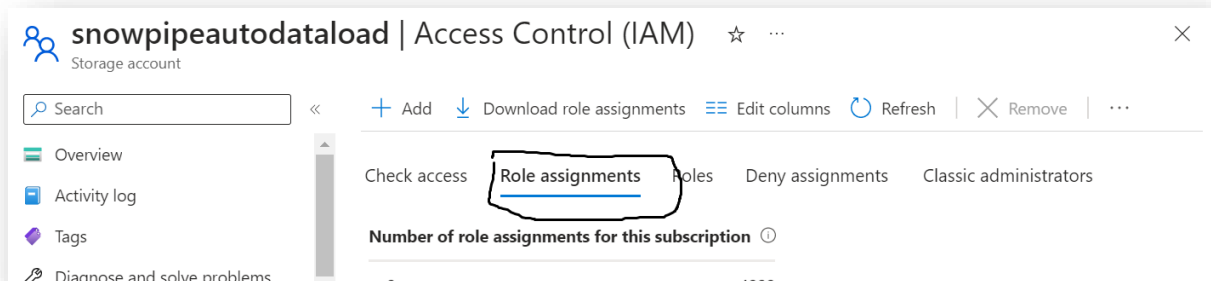
37. Click on Application listed and copy Snowflake/Enterprise Application Name , Application ID and Object Id and keep it handy.



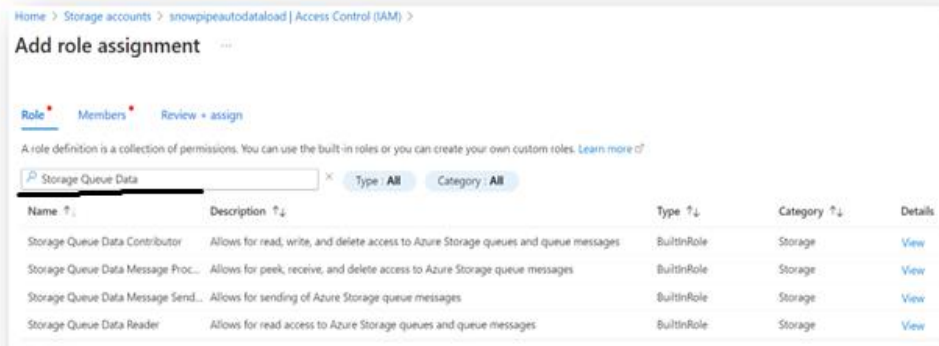
38. Now go back to home, Go to **Storage Account** and then click on **Access Control (IAM)**.



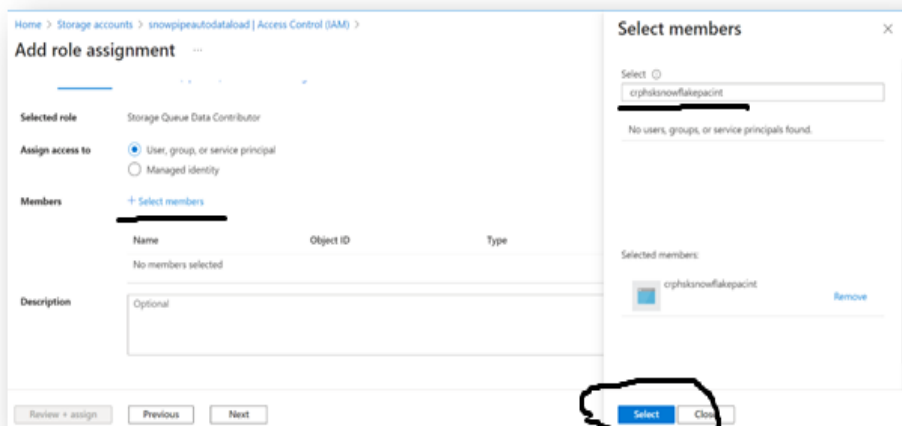
39. Go to **Role Assignment** and then click on **+ Add** and choose **Add role assignment**.



40. Now search **Storage Queue Data** , From the drop down list choose **Storage Queue Data Contributor** and click on **Next**



41. Click on **+ Select members** , paste the **snowflake/enterprise application_name** copied in **step.37** . You will get the list . click on **select**.



42. Now click on **Review and assign** and then again review and assign on next page , Your role will get generated successfully within few seconds.

Home > Storage accounts > snowpipeautodataload | Access Control (IAM) >

Add role assignment

role | **members** | conditions (optional) | review + assign

Selected role Storage Queue Data Contributor

Assign access to ☒ User, group, or service principal ☐ Managed identity

Members + Select members

Name	Object ID	Type
crphsksnowflakepacint	035fcbec-5e88-48c4-8b1e-98d8ca4c4b1f	App

Description Optional

Review + assign Previous Next

Role successfully got generated:

Check access | **Role assignments** | Roles | Deny assignments | Classic administrators

Number of role assignments for this subscription ⓘ

1 4000

Search by name or email

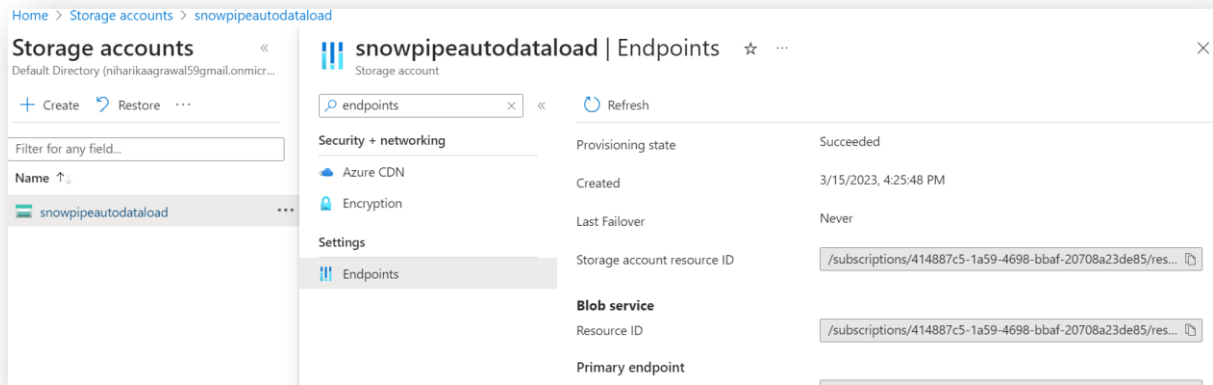
Type : All Role : All Scope : All scopes

Group by : Role

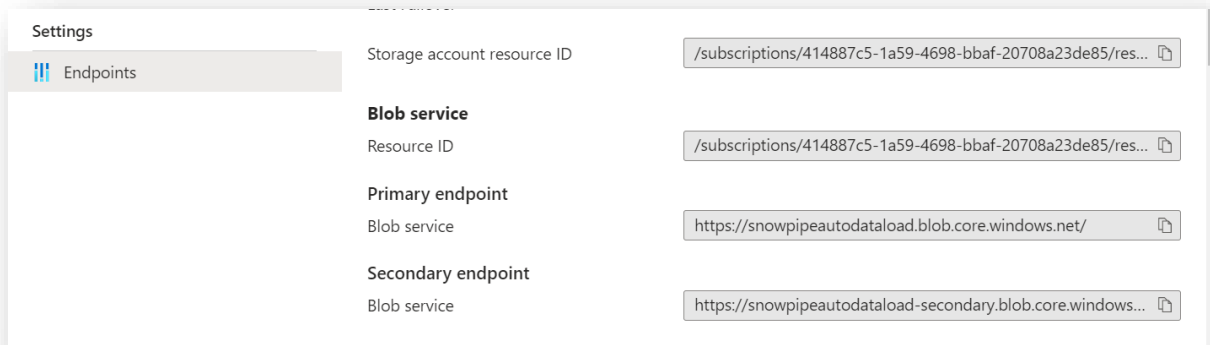
1 items (1 Service Principals)

Name	Type	Role	Scope
Storage Queue Data Contributor			
<input type="checkbox"/> crphsksnowflakepacint	App	Storage Queue Data Contributor ⓘ	This resource

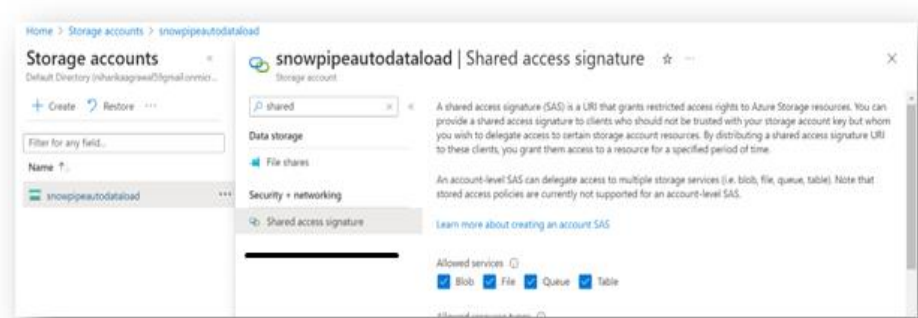
43. Now go back to **storage account** , select the account and then click on **Endpoints**.



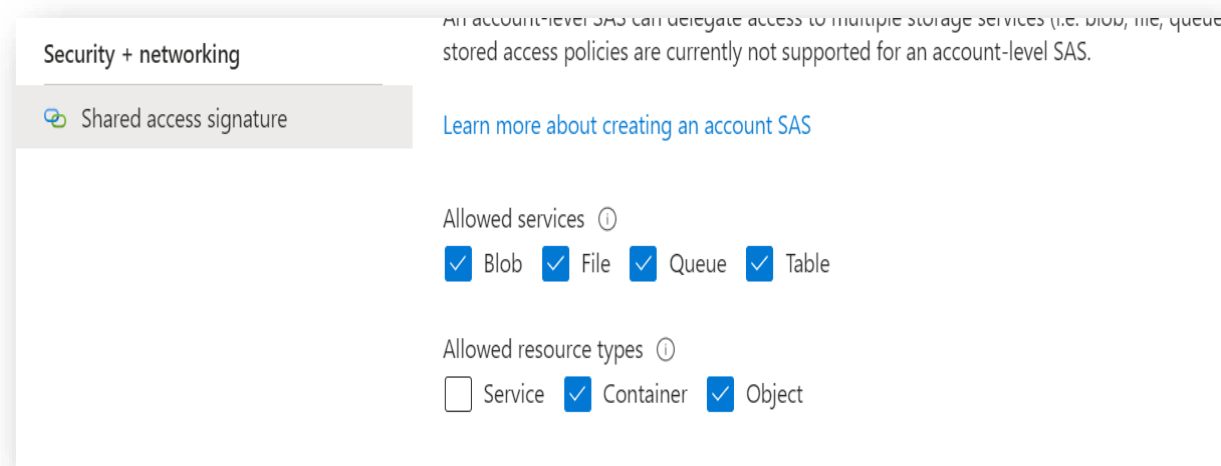
44. Now copy **Blob Service** and **Primary Endpoint** and keep it handy .



45. Now search **shared access signature** and click on it.



46. Tick mark container and object.



47. Now go down and click on **Generate SAS and connection string**.

The screenshot shows the 'Shared access signature' configuration page in the Azure portal. The left sidebar has 'Security + networking' selected, with 'Shared access signature' highlighted. The main area contains the following fields:

- Allowed IP addresses**: A text input field with the placeholder 'For example, 168.1.5.65 or 168.1.5.65-168.1.5.70'.
- Allowed protocols**: Two radio buttons, 'HTTPS only' (selected) and 'HTTPS and HTTP'.
- Preferred routing tier**: Three radio buttons, 'Basic (default)' (selected), 'Microsoft network routing', and 'Internet routing'.
- Signing key**: A dropdown menu showing 'key1'.
- Generate SAS and connection string**: A blue button at the bottom.

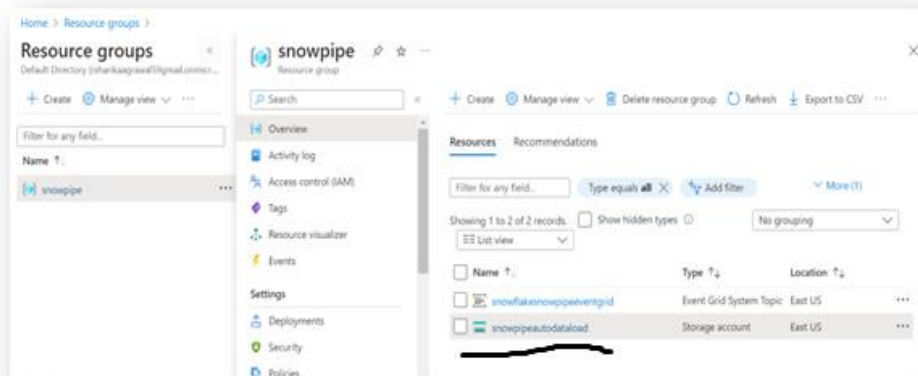
48. Now **copy Blob Service SAS Url and SAS token** and Keep it handy.

The screenshot shows the 'Shared access signature' page after clicking the 'Generate SAS and connection string' button. The left sidebar shows 'Data storage' selected, with 'File shares' and 'Shared access signature' visible. The main area displays the following generated values:

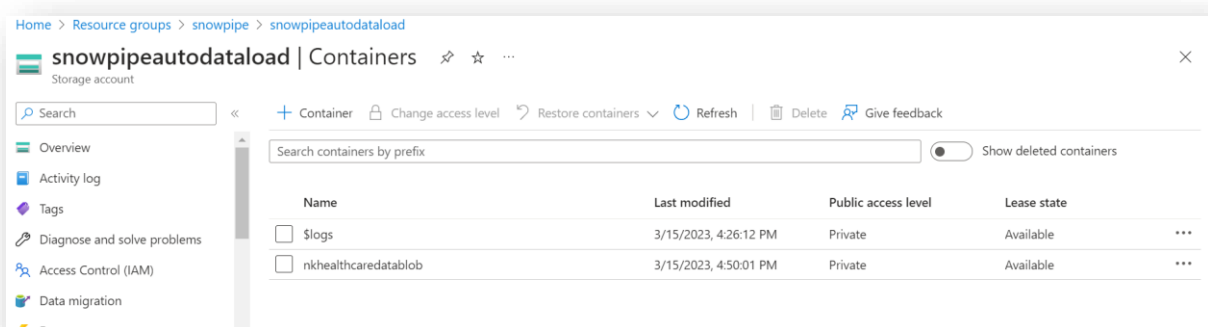
- Connection string**: A text box containing 'BlobEndpoint=https://snowpipeautodataload.blob.core.windows.net/;QueueEndpoint=https://snowpipe...'.
- SAS token**: A text box containing '?sv=2021-12-02&ss=bfqt&srt=co&sp=rwldacupiytfx&se=2023-03-16T19:09:21Z&st=2023-03-16T11:09:...'.
- Blob service SAS URL**: A text box containing 'https://snowpipeautodataload.blob.core.windows.net/?sv=2021-12-02&ss=bfqt&srt=co&sp=rwldacupiy...'.
- File service SAS URL**: A text box containing 'https://snowpipeautodataload.file.core.windows.net/?sv=2021-12-02&ss=bfqt&srt=co&sp=rwldacupiytf...'.
- Queue service SAS URL**: A text box containing 'https://snowpipeautodataload.queue.core.windows.net/?sv=2021-12-02&ss=bfqt&srt=co&sp=rwldacup...'.
- Table service SAS URL**: A text box containing 'https://snowpipeautodataload.table.core.windows.net/?sv=2021-12-02&ss=bfqt&srt=co&sp=rwldacupi...'.

49. Now go to **resource group** , click on the **group** you created and then click on the **resource** and there search **container** and **click** on it .

You will get **Blob name.Copy** it and keep it handy.



Blob Name:



Now again go to snowflake and run the code:

50.

---Now will create stage.

create or replace STAGE AZ_HEALTHCARE_STAGE

/* Here in url paste your **primary endpoint id (refer step: 44)** . replace https:// with azure:// and at the end your **blob name/ (refer step :49)**

https://snowpipeautodataload.blob.core.windows.net/ replace https:// with azure:// then we have

azure://snowpipeautodataload.blob.core.windows.net/

Now at the end add blob name that is

azure://snowpipeautodataload.blob.core.windows.net/nkhealthcaredatablob/.

*/

URL = 'azure://snowpipeautodataload.blob.core.windows.net/nkhealthcaredatablob/'

/*

In place of credentials we need to paste **SAS token id.(Refer step :48)**

*/

credentials = (azure_sas_token = '?sv=2021-12-02&ss=bfqt&srt=co&sp=rwdlacupiytfx&se=2023-03-16T19:09:21Z&st=2023-03-16T11:09:21Z&spr=https&sig=N5CX5j3twZVhvi2%2B5RFNpJY2ZkLL8cklbOM6eWOHe8%3D');

51. show stages;

52. LS @AZ_HEALTHCARE_STAGE;

53. --Now will create pipe.

create or replace pipe "AZ_HEALTHCARE_PIPE"

auto_ingest = true

integration = AZ_HEALTHCARE_EVENT

as

copy into AZ_HEALTHCARE

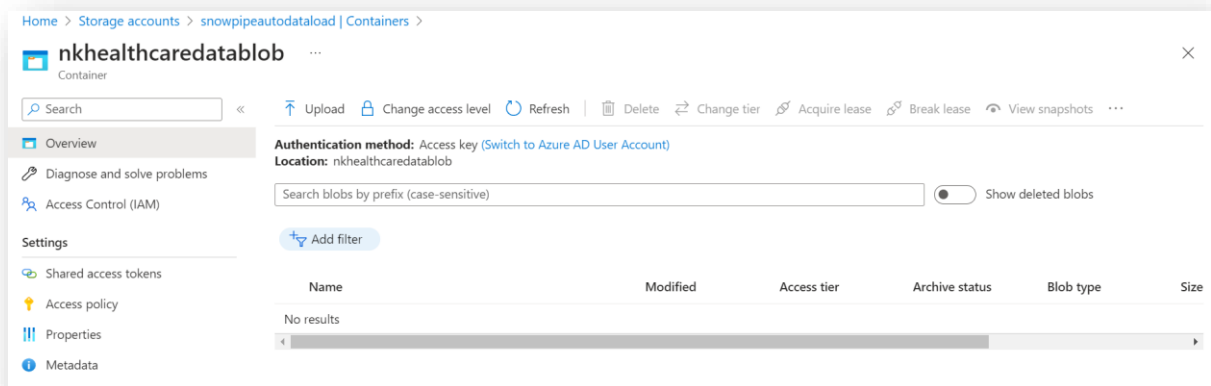
from @AZ_HEALTHCARE_STAGE

file_format = CSV_HEALTHCARE ;

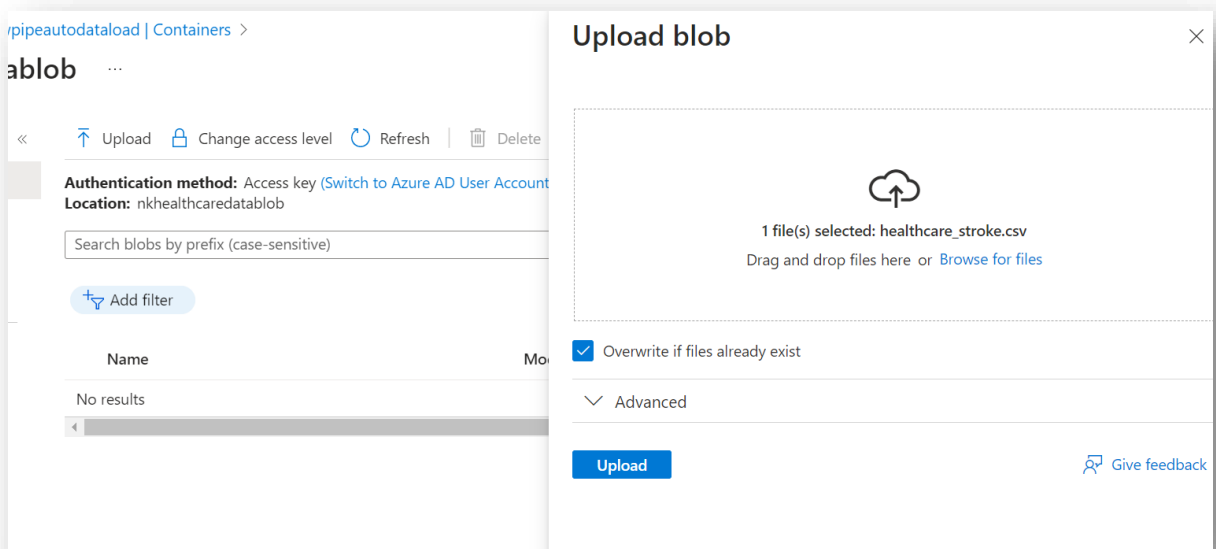
54. SHOW PIPES;

Now will upload file on Azure .

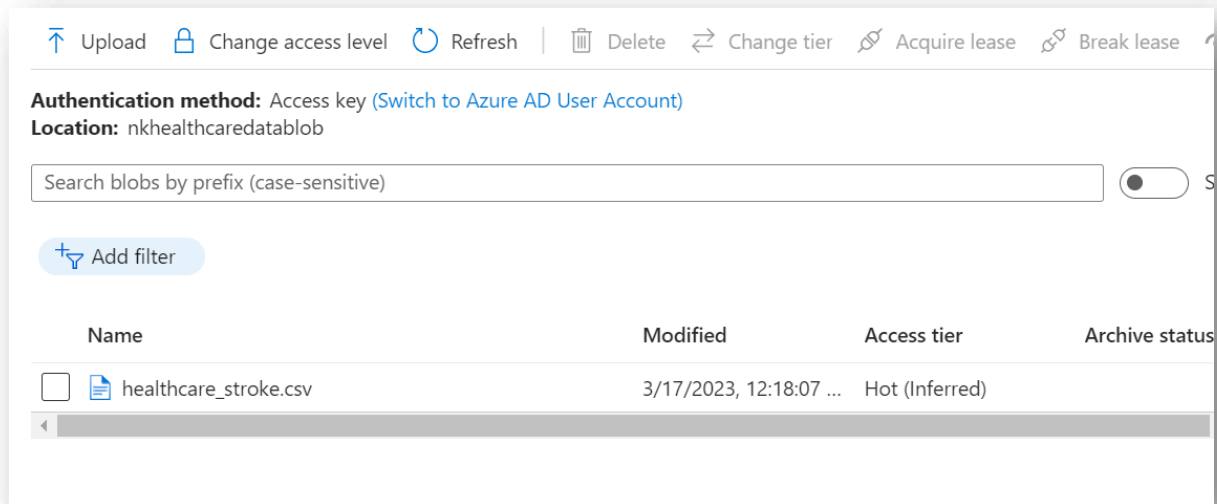
55. Now go to **storage account**-> choose **account** -> go to **container** . and there click on **+ upload** .



56. Now click on **Browse for files** and choose the file you want to upload . Tick the **checkbox** and then click on **upload**. It will take few minute to upload.



It will reflect once uploaded.



Last step now run below code on snowflake and check the data.

57. select * from AZ_HEALTHCARE;
58. alter pipe AZ_HEALTHCARE_PIPE refresh;

It will display data in the table. (Row Count: 5110)

Similarly upload another file and run the same code in snowflake and see if the row count increases or not. (Row Count : 5114)

Happy Learning !