

Snowflake Demo Azure Snowpipe Integration

Create Azure Container -> get the tenant id from Entra-ID -> property

The screenshot shows the 'Default Directory' properties page in the Azure portal. The left sidebar lists various Azure services like Roles and administrators, Delegated admin partners, Enterprise applications, etc. The 'Properties' section is selected. The main form contains the following fields:

Name	Default Directory
Tenant Country/Region	United States
Data location (Primary Copy)	United States datacenters
Notification language	English
Tenant ID	[REDACTED]
Technical contact	abhijitsnowdemo2025@gmail.com
Global privacy contact	[REDACTED]
Privacy statement URL	[REDACTED]

Below the form, there's a note about data location and residency, a section for access management for Azure resources (with Rakhi Biswas listed), and a security defaults section indicating that security defaults are enabled.

Copy url and replace https with azure

The screenshot shows the 'Containers' page for the 'snowflakeaccountazure' storage account. It lists four containers: 'Logs', 'csv', 'json', and 'snowpipe'. The 'snowpipe' container is selected. A 'Container properties' pane on the right provides details for the 'snowpipe' container:

NAME	snowpipe
URL	https://snowflakeaccountazure.blob.core.windows.net/snowpipe
LAST MODIFIED	12/8/2025, 6:51:41 PM
ETAG	0x8DE36CDE1713500

Update the query and test it

```

1 CREATE OR REPLACE DATABASE SNOWPIPE;
2
3 -- create integration object that contains the access information
4 CREATE OR REPLACE STORAGE INTEGRATION azure_snowpipe_integration
5   TYPE = EXTERNAL_STAGE
6   STORAGE_PROVIDER = AZURE
7   ENABLED = TRUE
8   AZURE_TENANT_ID = ''
9   STORAGE_ALLOWED_LOCATIONS = ('azure://snowflakeaccountazure.blob.core.windows.net/snowpipe');
10
11
12 -- Describe integration object to provide access
13 DESC STORAGE INTEGRATION azure_snowpipe_integration;
14
15 ---- Create file format & stage objects ----
16
17 -- create file format
18
19 create or replace file format snowpipe.public.fileformat_azure

```

Results (2 minutes ago)

property	property_type	property_value	property_default
ENABLED	Boolean	true	false
STORAGE_PROVIDER	String	AZURE	
STORAGE_ALLOWED_LOCATIONS	List	azure://snowflakeaccountazure.blob.core.windows.net/snowpipe	
STORAGE_BLOCKED_LOCATIONS	List		
USE_PRIVATELINK_ENDPOINT	Boolean	false	false
AZURE_TENANT_ID	String	<REDACTED>	
AZURE_CONSENT_URL	String	https://login.microsoftonline.com	
AZURE_MULTI_TENANT_APP_NAME	String	<REDACTED>	
COMMENT	String		

Add read role to Snowflake on Azure Storage - > IAM

Microsoft Azure

Home > snowflakeaccountazure

snowflakeaccountazure | Access Control (IAM)

Storage account

Check access Role assignments Roles Deny assignments Classic administrators

My access

View my level of access to this resource.

View my access

Check access

Grant access to this resource

Grant access to resources by assigning a role.

Add role assignment

View access to this resource

View the role assignments that grant access to this and other resources.

Learn more ↗

View

View deny assignments

View the role assignments that have been denied access to specific actions at this scope.

Learn more ↗

View

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Access Control (IAM)
 - Data migration
 - Events
 - Storage browser
 - Partner solutions
 - Resource visualizer
 - Data storage
 - Containers
 - File shares
 - Queues
 - Tables
 - Security + networking

Log Analytics Contributor	Log Analytics Contributor can read all monitoring data and edit monitoring settings. Editing monitoring settings includes adding the VM extension to VMs; ...	BuiltinRole	Analytics	View	
Log Analytics Reader	Log Analytics Reader can view and search all monitoring data as well as and view monitoring settings, including viewing the configuration of Azure diagno...	BuiltinRole	Analytics	View	
Managed Application Operator Role	Lets you read and perform actions on Managed Application resources	BuiltinRole	Management + Governance	View	
Managed Application Publisher Operator	Allows the publisher to read resources in the managed resource group for Managed Application and request JIT access for additional operations. This role ...	BuiltinRole	Management + Governance	View	
Monitoring Contributor	Can read all monitoring data and update monitoring settings.	BuiltinRole	Monitor	View	
Monitoring Policy Contributor	Allows read access to all monitoring data, update permissions for monitoring settings and permissions to deploy and remediate Azure Monitor alert policies.	BuiltinRole	None	View	
Monitoring Reader	Can read all monitoring data.	BuiltinRole	Monitor	View	
Reader and Data Access	Lets you view everything but will not let you delete or create a storage account or contained resource. It will also allow read/write access to all data contain...	BuiltinRole	Storage	View	
Resource Policy Contributor	Users with rights to create/modify resource policy, create support ticket and read resources/hierarchy.	BuiltinRole	Management + Governance	View	
Storage Blob Data Contributor	Allows for read, write and delete access to Azure Storage blob containers and data	BuiltinRole	Storage	View	
Storage Blob Data Reader	Allows for read access to Azure Storage blob containers and data	BuiltinRole	Storage	View	
Storage File Data Privileged Contributor	Customer has read, write, delete and modify NTFS permission access on Azure Storage file shares.	BuiltinRole	None	View	
Storage File Data Privileged Reader	Customer has read access on Azure Storage file shares.	BuiltinRole	None	View	
Storage File Data SMB Share Contributor	Allows for read, write, and delete access in Azure Storage file shares over SMB	BuiltinRole	Storage	View	
Storage File Data SMB Share Elevated Contributor	Allows for read, write, delete and modify NTFS permission access in Azure Storage file shares over SMB	BuiltinRole	Storage	View	
Storage File Data SMB Share Reader	Allows for read access to Azure File Share over SMB	BuiltinRole	Storage	View	
Storage Queue Data Contributor	Allows for read, write, and delete access to Azure Storage queues and queue messages	BuiltinRole	Storage	View	
Storage Queue Data Reader	Allows for read access to Azure Storage queues and queue messages	BuiltinRole	Storage	View	
Storage Table Data Contributor	Allows for read, write and delete access to Azure Storage tables and entities	BuiltinRole	Storage	View	
Storage Table Data Reader	Allows for read access to Azure Storage tables and entities	BuiltinRole	Storage	View	

Microsoft Azure Upgrade Search resources, services, and docs (G+) Copilot abhishekdemo2025...

Home > snowflakeaccounture | Access Control (IAM) > Add role assignment ...

Select members

Members

Selected role: Storage Blob Data Reader

Assign access to: User, group, or service principal

Members: + Select members

No members selected

Description: Optional

Selected members: Application

Review + assign Previous Next Select Close

Home Load_ADLS_Data Azure_Integration GCP_Integration.sql GCS_Load_Data.sql Snowpipe.sql +

My Workspace > Snowpipe.sql ACCOUNTADMIN COMPUTE_WH (X-Small)

```

19
20 ---- Create file format & stage objects ----
21
22 -- create file format
23 create database snowpipe
24
25 create or replace file format snowpipe.public.fileformat_azure
26   TYPE = CSV
27   FIELD_DELIMITER = ','
28   SKIP_HEADER = 1;
29
30 -- create stage object
31 create or replace stage snowpipe.public.stage_azure
32   STORAGE_INTEGRATION = azure_snowpipe_integration
33   URL = 'azure://snowflakeaccounture.blob.core.windows.net/snowpipe';
34   FILE_FORMAT = fileformat_azure;
35
36 -- List files
37 LIST @snowpipe.public.stage_azure;
38
39 
```

Results (just now)

Table Chart

name	size	md5	last_modified

Query produced no results

Setup a queue on Azure Storage

The screenshot shows the Microsoft Azure Storage Queues blade for the 'snowflakeaccountazure' storage account. On the left, there's a sidebar with various navigation options like Overview, Activity log, Tags, and Data storage. The 'Queues' option is selected. A central modal dialog titled 'Add queue' is open, prompting for a 'Queue name' which is set to 'snowpipequeue'. Below the input field are 'OK' and 'Cancel' buttons.

The screenshot shows the Microsoft Azure Storage Queues blade for the 'snowflakeaccountazure' storage account. The 'Queues' section lists a single queue named 'snowpipequeue'. To its right, the URL 'https://snowflakeaccountazure.queue.core.windows.net/snowpipequeue' is displayed.

Create an Event

The screenshot shows the Microsoft Azure 'Create Event Subscription' blade. It has several tabs at the top: Basics, Filters, Additional Features, and Delivery Properties. The 'Event Schema' dropdown is set to 'Event Grid Schema'. The 'Subscription' dropdown is set to 'Azure subscription 1'. The 'Storage account' dropdown is set to 'snowflakeaccountazure'. Under 'Queue', the 'Select existing queue' radio button is selected, and the queue 'snowpipequeue' is listed. The 'Url' field shows the queue URL. The 'Event Types' section shows 'Blob Created' selected. The 'Endpoint Details' section shows 'Storage Queue (inplace)' selected. The 'Managed Identity for Delivery' section indicates 'None' is selected. At the bottom, there's a 'Create' button.

Next we need to register Event Grid

Microsoft Azure Upgrade

Home > Subscriptions > Azure subscription 1

Subscriptions

Default Directory (abhishtnowdemo2025@gmail.on...

+ Add Manage Policies ...

Global administrators can manage all subscriptions in the list by updating their policy setting here.

View list of subscriptions for which you have role-based access control (RBAC) permissions to manage Azure resources. To view subscriptions for which you have billing access, click here.

Showing subscriptions in Default Directory directory. Don't see a subscription? Switch directories

Subscriptions : Filtered (1 of 1)

My role == all

Status == all

+ Add filter

Subscription name ↑

Azure subscription 1 ...

Tags

Diagnose and solve problems

Security

Resource visualizer

Events

Resource groups

Resources

Cost Management

Billing

Settings

Programmatic deployment

Billing properties

Preview features

Usage + quotas

Policies

My permissions

Resource providers

Deployments

Deployment stacks

Resource locks

Search resources, services, and docs (G+/)

Copilot

Azure subscription 1 | Resource providers

Provider ↑ Status Registration Policy

Provider ↑	Status	Registration Policy
<input checked="" type="checkbox"/> Microsoft.EventGrid	... NotRegistered	RegistrationRequired ⓘ
<input type="radio"/> Microsoft.EventHub	... NotRegistered	RegistrationRequired ⓘ

Register Unregister Refresh Feedback

event Status : All Registration Policy : All

Microsoft Azure Upgrade

Home > snowflakeaccountazure | Events >

Create Event Subscription

Event Grid

Basics Filters Additional Features Delivery Properties

Event Schema

TOPIC DETAILS
Pick a topic resource for which events should be pushed to your destination. Learn more.

Topic Type Storage account

Source Resource snowflakeaccountazure

System Topic Name *

EVENT TYPES
Pick which event types get pushed to your destination. Learn more.

Filter to Event Types *

ENDPOINT DETAILS
Pick an event handler to receive your events. Learn more.

Endpoint Type * Storage Queue (merge)

Cross-tenant delivery Disabled

Endpoint

MANAGED IDENTITY FOR DELIVERY
Managed identities are used to authenticate an Event Grid topic to Azure service instances when delivering events. If you want to use managed identities, select either System Assigned or a User Assigned option from the combo box. The identity selected will be enabled in the system topic being created and will be used as the identity when delivering events when using this event subscription. Learn more about Managed identities.

Managed identity type

Create Give feedback

albijitnowdemo2025...
1912179-3004-4C13-3502-8700...
*** Deploying Event Subscription:
eventnewfile
Deployment of your Event Subscription is proceeding.
Creating System Topic: eventnewfile
Successfully created System Topic: eventnewfile

Home | Load_ADLS_Data | Azure_Integration | GCP_Integration.sql | GCS_Load_Data.sql | Snowpipe.sql | +

My Workspace > Snowpipe.sql

```

33    -- List files
34    LIST @snowpipe.public.stage_azure;
35
36
37    CREATE OR REPLACE NOTIFICATION INTEGRATION snowpipe_event
38        ENABLED = true
39        TYPE = QUEUE
40        NOTIFICATION_PROVIDER = AZURE_STORAGE_QUEUE
41        AZURE_STORAGE_QUEUE_PRIMARY_URI = 'https://snowflakeaccountazur.queue.core.windows.net/snowpipequeue'
42        AZURE_TENANT_ID = [REDACTED];
43
44
45    -- Register Integration
46
47    DESC notification integration snowpipe_event;
48
49
50
51
52

```

Results (just now)

Table **Chart**

status
1 Integration SNOWPIPE_EVENT successfully created.

Select the consent url

```

46    DESC notification integration snowpipe_event;
47
48
49
50
51
52

```

results (2 minutes ago)

Table **Chart**

property	property_type	property_value	property_default
ENABLED	Boolean	true	false
USE_PRIVATELINK_ENDPOINT	Boolean	false	false
AZURE_STORAGE_QUEUE_PRIMARY_URI	String	https://snowflakeaccountazur.queue.core.windows.net/snowpipequeue	
AZURE_CONSENT_URL	String	https://login.microsoftonline.com/[REDACTED]	
AZURE_MULTITENANT_APP_NAME	String	[REDACTED]	
DIRECTION	String	INBOUND	
COMMENT	String		

Copy & Save App Name, check the consent box



abhijitsnowdemo2025@gmail.com

Permissions requested

[REDACTED]
unverified

This application is not published by Microsoft or your organization.

This app would like to:

- ✓ Sign in and read user profile
- Consent on behalf of your organization

If you accept, this app will get access to the specified resources for all users in your organization. No one else will be prompted to review these permissions.

Accepting these permissions means that you allow this app to use your data as specified in their terms of service and privacy statement. **The publisher has not provided links to their terms for you to review.** You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

[Cancel](#)

[Accept](#)

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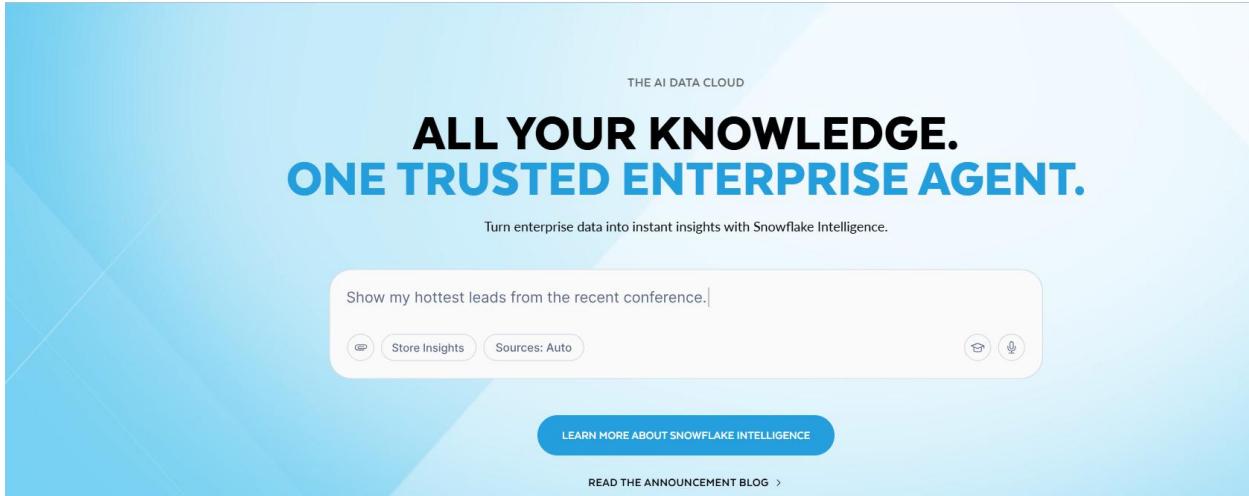
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Add Storage Queue Data Contributor role

Microsoft Azure [Upgrade](#) Copilot

Home > snowflakeaccountazure | Access Control (IAM) > [Add role assignment](#) ...

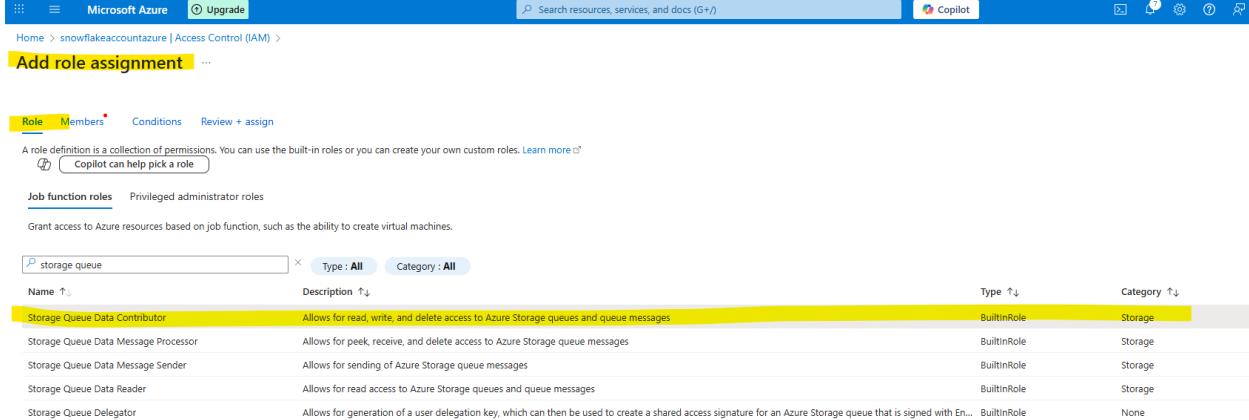
[Role](#) [Members](#) * [Conditions](#) [Review + assign](#)

A role definition is a collection of permissions. You can use the built-in roles or you can create your own custom roles. [Learn more](#)  Copilot can help pick a role

[Job function roles](#) Privileged administrator roles

Grant access to Azure resources based on job function, such as the ability to create virtual machines.

Name	Description	Type	Category
storage queue	Type : All Category : All		
Storage Queue Data Contributor	Allows for read, write, and delete access to Azure Storage queues and queue messages	BuiltinRole	Storage
Storage Queue Data Message Processor	Allows for peek, receive, and delete access to Azure Storage queue messages	BuiltinRole	Storage
Storage Queue Data Message Sender	Allows for sending of Azure Storage queue messages	BuiltinRole	Storage
Storage Queue Data Reader	Allows for read access to Azure Storage queues and queue messages	BuiltinRole	Storage
Storage Queue Delegator	Allows for generation of a user delegation key, which can then be used to create a shared access signature for an Azure Storage queue that is signed with En...	BuiltinRole	None



Microsoft Azure

Home > snowflakeaccountazure | Access Control (IAM) > Add role assignment ...

Role Members Conditions Review + assign

Selected role Storage Queue Data Contributor

Assign access to User, group, or service principal

Members + Select members

Name	Object ID	Type
No members selected		

Description Optional

Review + assign Previous Next Select Close

Microsoft Azure

Home > snowflakeaccountazure | Containers > snowpipe ...

Container

Search Add Directory Upload Refresh Delete Copy Paste Rename Acquire lease Break lease Edit columns

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

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

Search blobs by prefix (case-sensitive)

Showing all 1 items

Name	Last modified	Access tier
word-happiness-report-2021.csv	12/8/2025, 7:54:02 PM	Hot (Inferred)

Upload to snowpipe folder while the table is empty

```

119
120     SELECT SYSTEM$PIPE_STATUS( 'AZURE_PIPE' );
121
122     select * from snowpipe.public.happiness
123
124
125
126
127
128
129
130
131
132

```

results (2 minutes ago)

Table Chart

COUNTRY_NAME	REGIONAL_INDICATOR	LADDER_SCORE	STANDARD_ERROR	UPPERWHISKER	LOWERWHISKER	LOGGED_GDP	SOCIAL_SUPPORT	HEALTHY_LIFE_EXPECTA
Query produced no results								

Microsoft Azure Upgrade

Home > Storage center | Blob Storage > snowflakeaccountazure | Containers >

snowpipe ...

Container

Search o

Add Directory Upload Refresh Delete Copy Paste Rename Acquire lease Break lease Edit columns

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

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

Search blobs by prefix (case-sensitive)

No items found

Name Last modified Access

Showing all 0 items

Upload blob

1 file(s) selected: word-happiness-report-2021.csv

Drag and drop files here or [Browse for files](#)

Overwrite if files already exist

Advanced

Upload Give feedback

Results (just now)

Table Chart

SYSTEM\$PIPE_STATUS('AZURE_PIPE')

["executionState":"RUNNING","pendingFileCount":1,"notificationChannelName":"https://snowflakeaccountazure.queue.core.windows.net/snowpipequeue","numOutstandingMessagesOnChannel":1,"lastReceivedMessageTimestamp":"2025-12-10T02:57:25Z"]

116
117
118
119
120 SELECT SYSTEM\$PIPE_STATUS('AZURE_PIPE');
121
122 select * from snowpipe.public.happiness
123
124
125
126

Results (just now)

Table Chart

COUNTRY_NAME	REGIONAL_INDICATOR	LADDER_SCORE	STANDARD_ERROR	UPPERWHISKER	LOWERWHISKER	LOGGED_GDP	SOCIAL_SUPPORT	HEALTHY_LIFE_EXPECTANCY	FREEDOM_OF_INFORMATION
Afghanistan	0.7%	Sub-Saharan Afr...	24.2%	2.523	7.842	0.026	0.173	7.904	7.78
Albania	0.7%	Western Europe	14.1%	2.596	7.904	2.449	7.78	6.635	11.647
+8 more									
1 Finland	Western Europe	7.842	0.032	7.904	7.78	10.775	0.954	72.000	
2 Denmark	Western Europe	7.820	0.035	7.887	7.552	10.933	0.954	72.700	
3 Switzerland	Western Europe	7.571	0.036	7.643	7.500	11.117	0.942	74.400	
4 Iceland	Western Europe	7.554	0.059	7.670	7.438	10.878	0.983	73.000	
5 Netherlands	Western Europe	7.464	0.027	7.518	7.410	10.932	0.942	72.400	
6 Norway	Western Europe	7.392	0.035	7.462	7.323	11.053	0.954	73.300	
7 Sweden	Western Europe	7.363	0.036	7.433	7.293	10.867	0.934	72.700	
8 Luxembourg	Western Europe	7.324	0.037	7.396	7.252	11.647	0.908	72.600	
New Zealand	North America and ANZ	7.777	0.040	7.355	7.198	10.643	0.948	73.400	

Yes, Snowpipe can cost money, but only minimally when idle. Actual cost occurs mainly when it ingests files. Snowpipe Streaming costs continuously.