



Azure Blob Storage

Tools and Web Access

Microsoft Azure Storage Explorer

EXPLORER

Search for resources

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Refresh All

Quick Access

Local & Attached

- Storage Accounts
- Cosmos DB Accounts (Preview)
- Data Lake Storage Gen1 (Preview)

CIS4010 (dastacey@uoguelph.ca)

- Storage Accounts
 - cis4010images
 - Blob Containers

images

- File Shares
- Queues
- Tables

Disks

images

Pay-As-You-Go (dastacey@uoguelph.ca)

images

Release Notes: 1.11.2



Upload



Download



Open



New Folder



Copy URL



Select All



Copy



Paste

...

More

← → ↕ Active blobs (default) images

Search by prefix (case-sensitive)

Name	Access Tier	Access Tier Last Modified	Last Modified	Blob Type	Content Ty
catCloud1.png	Hot (inferred)		1/4/2020, 3:29:46 PM	Block Blob	image/p

Showing 1 to 1 of 1 cached items

Actions Properties

Activities

URL https://cis4010images.blob.core.windows.net/images

[Clear completed](#) [Clear successful](#)

Type Blob Container

HNS Enabled false

Lease State available

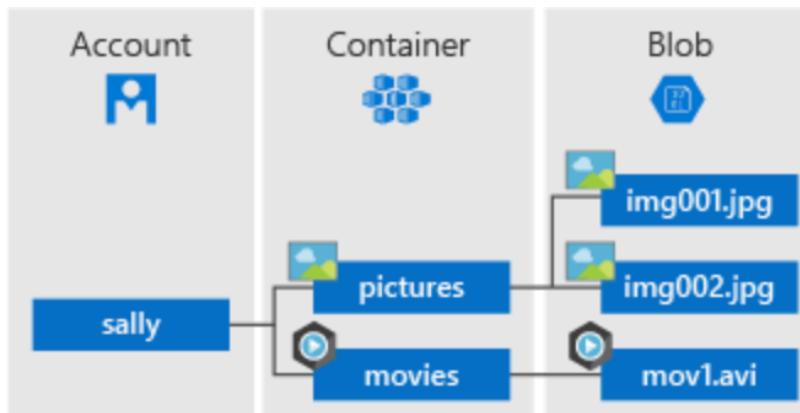
Lease Status unlocked

Public Read Access container

Last Modified Sat, 04 Jan 2020 20:28:24 GM

Azure Object Store: Azure Blob

The following diagram shows the relationship between these resources.



Use the following Python classes to interact with these resources:

- **BlobServiceClient**: The `BlobServiceClient` class allows you to manipulate Azure Storage resources and blob containers.
- **ContainerClient**: The `ContainerClient` class allows you to manipulate Azure Storage containers and their blobs.
- **BlobClient**: The `BlobClient` class allows you to manipulate Azure Storage blobs.

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-quickstart-blobs-python>

Microsoft Azure | portal.azure.com/#home

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Azure services

Create a resource Storage accounts Virtual machines App Services SQL databases Azure Database for PostgreSQL... Azure Cosmos DB Kubernetes services Function App More services

Storage accounts is circled in red.

Navigate

Subscriptions Resource groups All resources Dashboard

Tools

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Useful links

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portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts

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

Home > Storage accounts

Storage accounts

University of Guelph

+ Add Edit columns Refresh Export to CSV Assign tags Delete Feedback Leave preview

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 0 to 0 of 0 records. No grouping

Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
---------	---------	---------	-------------------	-------------	-----------------

No storage accounts to display

Create a storage account to store up to 500TB of data in the cloud. Use a general-purpose storage account to store object data, use a NoSQL data store, define and use queues for message processing, and set up file shares in the cloud. Use the Blob storage account and the hot or cool access tiers to optimize your costs based on how frequently your object data is accessed. [Learn more ↗](#)

Create storage account

portal.azure.com/?quickstart=true#blade/HubsExtension/DeploymentDetailsBlade/overview/id/%2Fsubscriptions%2F93184572-76d1-4faa-b359-36fc7b7ac4e4%2FresourceG...      ?    

Microsoft Azure        dastacey@uoguelph.ca UNIVERSITY OF GUELPH

Home > Microsoft.StorageAccount-20200104152323 - Overview

 Microsoft.StorageAccount-20200104152323 - Overview 

 Search (Cmd+/)  Delete  Cancel  Redeploy  Refresh

 Your deployment is complete

 Deployment name: Microsoft.StorageAccount-20200104152323  Subscription: CIS4010  Resource group: images  Start time: 1/4/2020, 3:25:48 PM  Correlation ID: 4b050f4b-74a6-4448-8c3f-a3f405040129

 Deployment details 

Resource	Type	Status	Operation details
 cis4010images	Microsoft.Storage/stora...	OK	Operation details

 Next steps 

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Home > Microsoft.StorageAccount-20200104152323 - Overview

Microsoft.StorageAccount-20200104152323 - Overview

Deployment

Search (Cmd+/)

Overview Inputs Outputs Template

Delete Cancel Redeploy Refresh

Your deployment is complete

Deployment name: Microsoft.StorageAccount-20200104152323
Subscription: CIS4010
Resource group: images

Start time: 1/4/2020, 3:2
Correlation ID: 4b050f4b-74a6-4448-8c3f-a3f405040129

Deployment details (Download)

Resource	Type	Status	Operation details
cis4010images	Microsoft.Storage/storageAccounts	OK	Operation details

Next steps

Go to resource

Operation details

Copy to clipboard

Operation ID: /subscriptions/93184572-76d1-4faa-b359-36fc7b7ac4e4/resourceGroups/images/pro...

Operation name: 82D1513CBA9D1F7D

Provisioning operation: Create

Provisioning state: Succeeded

Timestamp: 1/4/2020, 3:26:08 PM

Duration: 18 seconds

Tracking ID: a44c26c8-c8fa-4083-a8a9-f782c68329e5

Status: OK

Type: Microsoft.Storage/storageAccounts

Resource ID: /subscriptions/93184572-76d1-4faa-b359-36fc7b7ac4e4/resourceGroups/images/pro...

Resource: cis4010images

Deployment correlation ID: 4b050f4b-74a6-4448-8c3f-a3f405040129

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Home > Microsoft.StorageAccount-20200104152323 - Overview > cis4010images

cis4010images Storage account

Search (Cmd +/)

Overview

Resource group (change) : images Performance/Access tier : Standard/Hot
Status : Primary: Available, Secondary: Available Replication : Read-access geo-redundant storage (RA-GRS)
Location : Canada Central, Canada East Account kind : StorageV2 (general purpose v2)
Subscription (change) : CIS4010
Subscription ID : 93184572-76d1-4faa-b359-36fc7b7ac4e4
Tags (change) : Click here to add tags

Containers Scalable, cost-effective storage for unstructured data Learn more

File shares Serverless SMB file shares Learn more

Tables Tabular data storage Learn more

Queues Effectively scale apps according to traffic Learn more

Tools and SDKs

Storage Explorer (preview) PowerShell Azure CLI .NET Java Python Node.js

Monitoring

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days

Show data for: Account

Total egress 100B 80B

Total ingress 100B 80B

Average latency 100ms 80ms

<https://aka.ms/learnmore/blobstorage>

portal.azure.com/?quickstart=true#@uoguelphca.onmicrosoft.com/resource/subscriptions/93184572-76d1-4faa-b359-36fc7b7ac4e4/resourcegroups/images/providers/Micro...

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

Home > cis4010images - Containers

cis4010images - Containers Storage account

Search (Cmd+/) + Container Change access level Refresh |

Search containers by prefix

Name	Last modified	Public access...	Lease state
images	1/4/2020, 3:28:24 PM	Container	Available

Settings

- Access keys
- Geo-replication
- CORS
- Configuration
- Encryption
- Shared access signature
- Firewalls and virtual networks
- Private endpoint connections (p...)
- Advanced security
- Static website
- Properties
- Locks

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

Home > cis4010images - Containers > images

images Container

Search (Cmd+/)

Overview

Access Control (IAM)

Settings

- Access policy
- Properties
- Metadata

Upload blob

images/

Files ①

"catCloud1.png"

Overwrite if files already exist

Advanced

Authentication type ①

Azure AD user account **Account key**

Blob type ①

Block blob

Upload .vhdx files as page blobs (recommended)

Block size ①

4 MB

Access tier ①

Hot (Inferred)

Upload to folder

Upload

No blobs found.

Upload

Change access level Refresh Delete Change tier Acquire lease Break lease

Authentication method: Access key ([Switch to Azure AD User Account](#))
Location: images

Search blobs by prefix (case-sensitive)

Name	Modified	Access tier
No blobs found.		

Microsoft Azure Search resources, services, and docs (G+/-) portal.azure.com/?quickstart=true#blade/Microsoft_Azure_Storage/ContainerMenuBlade/overview/storageAccountId/%2Fsubscriptions%2F93184572-76d1-4faa-b359-36fc7b... dastacey@uoguelph.ca UNIVERSITY OF GUELPH

Home > cis4010images - Containers > images

images Container

Search (Cmd +/)

Overview

Access Control (IAM)

Settings

Access policy

Properties

Metadata

Upload images/ **Upload Completed for catCloud1.png** 3:29 PM

832.55 KiB | cis4010images

Files Select a file Overwrite if files already exist

Advanced

Authentication type **Account key**

Blob type Block blob

Upload .vhf files as page blobs (recommended)

Block size 4 MB

Access tier Hot (Inferred)

Upload to folder

Upload

Current uploads

Dismiss: Completed All

catCloud1.png 833 KiB / 833 KiB ...

Name	Modified	Access tier
catCloud1.png	1/4/2020, 3:29:46 PM	Hot (Inferred)

A red circle highlights the file "catCloud1.png" in the list.

portal.azure.com/?quickstart=true#blade/Microsoft_Azure_Storage/ContainerMenuBlade/overview/storageAccountId/%2Fsubscriptions%2F93184572-76d1-4faa-b359-36fc7b... 5

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Home > cis4010images - Containers > images > catCloud1.png

images Container

Search (Cmd+/)

Overview

Access Control (IAM)

Settings

Access policy

Properties

Metadata

Upload Change access level ...

Authentication method: Access key (Switch to Azure AD User Account)

Location: images

Search blobs by prefix (case-sensitive)

Show deleted blobs

Name

catCloud1.png ...

catCloud1.png Blob

Save Discard Download Refresh Delete Change tier Acquire lease Break lease

Overview Snapshots Edit Generate SAS

Properties

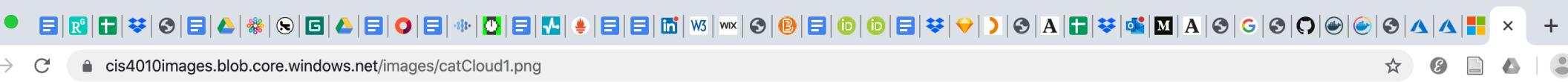
URL	https://cis4010images.blob.core.windows.net/images/catCloud1.png
LAST MODIFIED	1/4/2020, 3:29:46 PM
CREATION TIME	1/4/2020, 3:29:46 PM
TYPE	Block blob
SIZE	832.55 KiB
ACCESS TIER	Hot (Inferred)
ACCESS TIER LAST MODIFIED	N/A
SERVER ENCRYPTED	true
ETAG	0x8D79154D711E40D
CONTENT-TYPE	image/png
CONTENT-MD5	-
LEASE STATUS	Unlocked
LEASE STATE	Available
LEASE DURATION	-
COPY STATUS	-
COPY COMPLETION TIME	-

Undelete all snapshots

Metadata

<input type="checkbox"/>	key	value
<input type="text"/>	<input type="text"/>	

cis4010images.blob.core.windows.net/images/catCloud1.png





Quick Start Guide to Azure Blobs

Python: `azure.storage.blob`



https://docs.microsoft.com/en-us/azure/storage/blobs/storage-quickstart-blobs-python

Microsoft Azure

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Quickstart: Azure Blob storage client library v12 for Python

11/04/2019 • 8 minutes to read • +12

Get started with the Azure Blob storage client library v12 for Python. Azure Blob storage is Microsoft's object storage solution for the cloud. Follow steps to install the package and try out example code for basic tasks.

Blob storage is optimized for storing massive amounts of unstructured data.

Note

To get started with the previous SDK version, see [Quickstart: Azure Blob storage client library for Python](#).

Use the Azure Blob storage client library to:

- Create a container
- Upload a blob to Azure Storage
- List all of the blobs in a container
- Download the blob to your local computer
- Delete a container

[API reference documentation](#) | [Library source code](#) | [Package \(Python Package Index\)](#) | [Samples](#)

Note

Is this page helpful?

Yes No

In this article

Prerequisites

- [Setting up](#)
- [Object model](#)
- [Code examples](#)
- [Run the code](#)
- [Next steps](#)

```
import os, uuid
from azure.storage.blob import BlobServiceClient, BlobClient, ContainerClient

try:
    print("Azure Blob storage v12 - Python quickstart sample")

    # Retrieve the connection string for use with the application.
    connect_str = os.getenv('AZURE_STORAGE_CONNECTION_STRING')

    # Create the BlobServiceClient object which will be used to create a
    # container client
    blob_service_client =
        BlobServiceClient.from_connection_string(connect_str)

    # Create a unique name for the container
    container_name = "quickstart" + str(uuid.uuid4())

    # Create the container
    container_client = blob_service_client.create_container(container_name)
```

```
# Create a file in local Documents directory to upload and download
local_path = "./data"
local_file_name = "quickstart" + str(uuid.uuid4()) + ".txt"
upload_file_path = os.path.join(local_path, local_file_name)

# Write text to the file
file = open(upload_file_path, 'w')
file.write("Hello, World!")
file.close()

# Create a blob client using the local file name as the name for the blob
blob_client =
    blob_service_client.get_blob_client(container=container_name,
                                         blob=local_file_name)

print("\nUploading to Azure Storage as blob:\n\t" + local_file_name)

# Upload the created file
with open(upload_file_path, "rb") as data:
    blob_client.upload_blob(data)
```

```
# List the blobs in the container
print("\nListing blobs...")
blob_list = container_client.list_blobs()
for blob in blob_list:
    print("\t" + blob.name)

# Download the blob to a local file
# Add 'DOWNLOAD' before the .txt extension so you can see both files
download_file_path = os.path.join(local_path,
                                   str.replace(local_file_name ,'.txt', 'DOWNLOAD.txt'))
print("\nDownloading blob to \n\t" + download_file_path)

with open(download_file_path, "wb") as download_file:
    download_file.write(blob_client.download_blob().readall())

except Exception as ex:
    print('Exception:')
    print(ex)
```

```
% python blob-quickstart-v12.py
```

Azure Blob storage v12 - Python quickstart sample

Uploading to Azure Storage as blob:

```
quickstart0c84739b-6749-44ad-867b-ea6d0e41c378.txt
```

Listing blobs...

```
quickstart0c84739b-6749-44ad-867b-ea6d0e41c378.txt
```

Downloading blob to

```
./data/quickstart0c84739b-6749-44ad-867bea6d0e41c378DOWNLOAD.txt
```

```
% ls data
```

```
quickstart0c84739b-6749-44ad-867b-ea6d0e41c378.txt
```

```
quickstart0c84739b-6749-44ad-867b-ea6d0e41c378DOWNLOAD.txt
```

```
import os, uuid
from azure.storage.blob import BlobServiceClient, BlobClient, ContainerClient
try:
    # Retrieve the connection string for use with the application.
    connect_str = os.getenv('AZURE_STORAGE_CONNECTION_STRING')
    # Create the BlobServiceClient object
    blob_service_client =
        BlobServiceClient.from_connection_string(connect_str)

    container_client = ContainerClient.from_connection_string(connect_str,
                                                               container_name="images")
    print("Listing blobs...")
    # List the blobs in the container
    blob_list = container_client.list_blobs()
    for blob in blob_list:
        print("\t" + blob.name)

except Exception as ex:
    print('Exception:')
    print(ex)
```

```
% python blob-list.py
```

```
Listing blobs...
```

```
    catCloud1.png
```

```
% python contain-list.py
```

```
Container: images
```

```
Listing blobs...
```

```
    catCloud0.png
```

```
    catCloud1.png
```

```
Container: quickstart570653e4-04d6-4fa7-93fe-930df5caf098
```

```
Listing blobs...
```

```
    quickstart0c84739b-6749-44ad-867b-ea6d0e41c378.txt
```

```
# Retrieve the connection string for use with the application.  
connect_str = os.getenv('AZURE_STORAGE_CONNECTION_STRING')  
  
# Create the BlobServiceClient object  
blob_service_client = BlobServiceClient.from_connection_string(connect_str)  
  
# List all containers  
all_containers = blob_service_client.list_containers(include_metadata=True)  
for container in all_containers:  
    print("\nContainer: " + container['name'])  
    containerName = container['name']  
    container_client = ContainerClient.from_connection_string(connect_str,  
                                                               container_name=containerName)  
  
    print("Listing blobs...")  
    # List the blobs in the container  
    blob_list = container_client.list_blobs()  
    for blob in blob_list:  
        print("\t" + blob.name)  
    print("\n")
```

Microsoft Azure Storage Explorer

EXPLORER

Search for resources × 🔍

Refresh All

Collapse All

Quick Access

Local & Attached

- Storage Accounts
- Cosmos DB Accounts (Preview)
- Data Lake Storage Gen1 (Preview)

CIS4010 (dastacey@uoguelph.ca)

- Storage Accounts
 - cis4010images
 - Blob Containers
 - images
 - File Shares
 - Queues
 - Tables
- Disks
 - images

Pay-As-You-Go (dastacey@uoguelph.ca)

quickstart570653e4-04d6-4fa7-93fe-930df5caf098

Upload Download Open New Folder Copy URL Select All More

← → ↘ ↙ Active blobs (default) quic... Search by prefix (case-sensitive)

Name	Access Tier	Access Tier La
quickstart0c84739b-6749-44ad-867b-ea6d0e41c378.txt	Hot (inferred)	

Showing 1 to 1 of 1 cached items

Actions	Properties	Activities
URL	https://cis4010images.blob.core.windows.net/quickstart/	Clear completed Clear successful
Type	Blob Container	
HNS Enabled	false	
Lease State	available	
Lease Status	unlocked	
Public Read Access	off	
Last Modified	Wed, 08 Jan 2020 19:05:37 GMT	

PHP - Display Image - Azure Blob Storage

```
● ○ ● TMB — ec2-user@ip-172-31-92-72:/var/www/html/CIS4010 — ssh -i TMBAWS.pem ec2-user@ec2-35-171-6-31.compute-1.amazonaws.com — 128x26
<html>
<head>
<title>CIS4010 Display Azure Image Example</title>
</head>
<body>

<?php
echo "<span style=\\\"font-size:20px;\\\"><br><br>Azure StorageV2 Display Image Example<br><br></span>";

$fileStr = "https://cis4010images.blob.core.windows.net/images/catCloud1.png";
$handle = fopen($fileStr, 'r');
if ( !$handle ) {
    echo "<span style=\\\"font-size:40px;\\\">No image found<br></span>";
} else {
    echo "<img src=\\\"https://cis4010images.blob.core.windows.net/images/catCloud1.png\\\" width=\\\"1052\\\" height=\\\"656\\\">";
}
?>

</body>
</html>

~
~
~
~

"displayAzureImage.php" 21L, 540C                                     8,1                                     All
```



Azure StorageV2 Display Image Example

