

Tutorial S2: Blob storage container

Creating a storage account in Azure will allow you to create containers of stored data that you can mount onto their machines.

This tutorial covers how to do the following steps through the Azure desktop portal:

1. Create a **storage account****
2. Create a **storage container** within the storage account
3. Read and write data to the storage container using azcopy
4. Look at data within the storage container
5. Get storage account name and key (for NotebookS4)

**The settings you select when creating the storage account are extremely important to make sure it is easily accessible later.

1. Creating a storage account

Create a storage account ...

- Basics
- Advanced
- Networking
- Data protection
- Encryption
- Tags
- Review

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

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 *

Zoe_Krauss

Resource group *

krausszoe

[Create new](#)

Review

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Next : Advanced >

 Give feedback

Create a storage account ...

Basics Advanced Networking Data protection Encryption Tags Review

Description

Resource group *

[Create new](#)

Instance details

If you need to create a legacy storage account type, please click [here](#).

Storage account name ⓘ *

✖ The value must not be empty.

Region ⓘ *

[Deploy to an edge zone](#)

Performance ⓘ *

Review

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Next : Advanced >

 Give feedback

We want to create a legacy storage account type, which makes it easier to access shared file storage. Click here.

Create storage account ...

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 *

Resource group *
[Create new](#)

Instance details

Storage account name * ⓘ

Location *

Performance ⓘ ☒ Standard ☐ Premium

Account kind ⓘ

Replication ⓘ

Review + create

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Next : Networking >

Name it whatever you like and tie it to your desired resource group.

For Replication, select either “Locally Redundant Storage” or “Zone Redundant Storage”.

Home > Create a resource > Marketplace > Storage account > Create a storage account >

Create storage account ...

Basics **Networking** Data protection Advanced Tags Review + create

Network connectivity

You can connect to your storage account either publicly, via public IP addresses or service endpoints, or privately, using a private endpoint.

- Connectivity method *
- ☐ Public endpoint (all networks)
 - ☒ Public endpoint (selected networks)
 - ☐ Private endpoint

Virtual networks

Only the selected network will be able to access this storage account. [Learn more about service endpoints](#)

Virtual network subscription ⓘ

Virtual network ⓘ

[Create virtual network](#)
[Manage selected virtual network](#)

Subnets * ⓘ

Review + create

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Next : Data protection >

Under networking, select
“Public endpoint (selected
networks)”

Select the virtual network you
will be working in, with the
default subnet.

Default Microsoft network
routing is fine.

Create storage account ...

Basics Networking Data protection Advanced Tags Review + create

Security

Require secure transfer for REST API operations  ☐ Disabled ☒ Enabled

Allow storage account key access  ☐ Disabled ☒ Enabled

Minimum TLS version  

Infrastructure encryption  ☒ Disabled ☐ Enabled

Blob storage

Allow Blob public access  ☐ Disabled ☒ Enabled

Blob access tier (default)  ☐ Cool ☒ Hot

NFS v3  ☐ Disabled ☒ Enabled

Data Lake Storage Gen2

Hierarchical namespace  ☐ Disabled ☒ Enabled

Azure Files

Large file shares  ☒ Disabled ☐ Enabled

Tables and Queues

Customer-managed keys support  ☒ Disabled ☐ Enabled

Data Protection selections can be left as default. Navigate to Advanced, and select the options shown to the left.

Make sure NFS v3 is enabled!
This is how we will be accessing containers in the storage account.

Review & create.

2. Create a storage container

Great! Now we have a storage account set up with the proper permissions and abilities enabled.

Now, we have to create a container within the account in which to actually store data.

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

Home > Storage accounts > seismiccloud

Storage accounts

UW (cloud.washington.edu)

+ Create ↶ Restore ...

Filter for any field...

Name ↑↓

- seismiccloud
- seismiccloud2

seismiccloud | Containers

Storage account

Search

+ Container Change access level Restore container

Search New container prefix

Show deleted containers

Name	Last modified	Public access level
<input type="checkbox"/> \$logs	1/20/2023, 3:07:57 PM	Private
<input type="checkbox"/> seismiccloud	1/20/2023, 3:12:53 PM	Private

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data migration

Events

Storage browser

Data storage

- Containers
- File shares
- Queues
- Tables

Security + networking

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Click on your storage account, and then “Containers” on the sidebar. Add a new container.

Name it anything you like, and specify “Container” as the public access level.

New container

Name *

seismiccloud3

Public 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. Anonymous access bypasses Access Control List (ACL) settings.

Advanced

3. Write data to the storage container

There are several ways to do this, but the we found that the easiest and most straightforward was using Azure's azcopy Command Line Interface (CLI).

Now we have a container that we can read and write data from, and mount to machines!

You can do write data to the storage container using a CLI called azcopy, which you must install from Azure.

<https://learn.microsoft.com/en-us/azure/storage/common/storage-use-azcopy-files>

The command has the form:

```
>> azcopy cp "<directory to copy>"
```

```
"https://{storage_account_name}.blob.core.windows.net/{storage_container_name}?{sas_token}" -- recursive=True
```

The storage account name and storage container name you already have. Remember that we made a storage container *inside* the storage account! To get the SAS token for the storage container, check out the next slide...

seismiccloud | Shared access tokens ...

- Search
- Overview
- Diagnose and solve problems
- Access Control (IAM)
- Settings
 - Shared access tokens
 - Access policy
 - Properties
 - Metadata

Signing method
☒ Account key ☐ User delegation key

Signing key
Key 1

Stored access policy
None

Permissions *
4 selected

Start and expiry date/time

Start
01/20/2023 3:16:44 PM
(UTC-08:00) Pacific Time (US & Canada)

Expiry
03/15/2023 11:16:44 PM
(UTC-08:00) Pacific Time (US & Canada)

Allowed IP addresses
10.19.253.40

1. Click on the storage container you just created.

3. Select the permissions appropriate for what you'll want to do. Most commonly, read and write.

4. Specify how long you'll want this token (like a password) to last for you.

5. Input the IP address you plan to access the storage container from.

2. Navigate to "Shared access tokens" on the sidebar.

5. Generate the token. This is used in the azcopy command, and you should save and keep in a safe place.

Common problems when trying to write data to the storage container using azcopy...

- Copy and pasting the azcopy command (quotation marks get screwed up).
- “Description=This request is not authorized to perform this operation.”
 - Permission / authentication errors- in this case you want to check on the storage **account** under “Networking” and make sure the IP address you are trying to read/write from is allowed. Make sure to “save” your changes here!

4. Look at data in storage
account

Once your container is created, you can navigate to it and see what's inside.

Microsoft Azure

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

zakrauss@uw.edu
UW (CLOUD.WASHINGTON.EDU)

Home > seismiccloud2

seismiccloud2 | Containers

Storage account

Search

Container Change access level Restore containers Refresh Delete Give feedback

Search containers by prefix

Show deleted containers

Name	Last modified	Public access level	Lease state
<input type="checkbox"/> seismiccloud	2/3/2023, 9:37:32 AM	Container	Available

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

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Storage browser

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Containers

File shares

Queues

Tables

Security + networking

Within the storage account, navigate to "Containers" to see a list of containers you have.

Click on your container of interest to see what's inside!

Here you can click on different folders and navigate through files in the same way you would a laptop!

Microsoft Azure

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

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Home > seismiccloud2 | Containers >

seismiccloud
Container

Search

«

Upload

Add Directory

Refresh

Rename

Delete

Change tier

Acquire lease

Break lease

Give feedback

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

Shared access tokens

Manage ACL

Access policy

Properties

Metadata

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

Location: seismiccloud

Search blobs by prefix (case-sensitive)

Show deleted objects







Name	Modified	Access tier	Archive status	Blob type	Size
<input type="checkbox"/> endeavour					
<input type="checkbox"/> ml_output					
<input type="checkbox"/> mloutput_2016					
<input type="checkbox"/> mloutput_2017					
<input type="checkbox"/> outputs					

5. Get storage account
name and key

Navigate to your storage account


Microsoft Azure

Search resources, services, and docs (G+)



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Home > seismiccloud2

 **seismiccloud2** | Access keys

☆ ...

Storage account

Search

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Security + networking

Networking

Access keys

Shared access signature

Encryption

Microsoft Defender for Cloud

Data management

Set rotation reminder

Refresh

Give feedback

Access keys authenticate your applications' requests to this storage account. Keep your keys in a secure location like Azure Key Vault, and replace them often with new keys. The two keys allow you to replace one while still using the other.

Remember to update the keys with any Azure resources and apps that use this storage account.
[Learn more about managing storage account access keys](#)

Storage account name

seismiccloud2

key1

Rotate key

Last rotated: 2/3/2023 (103 days ago)

Key

.....

Show

key2

Rotate key

Last rotated: 2/3/2023 (103 days ago)

Key

.....

Show

Scroll down to Security & Networking, and click on "Access keys"

Your storage account name is here

And your storage account key is here. Copy it and save it to a secure place.