Lab

7

Restricting Access to Azure Storage Account Using Shared Access Signature (SAS)

Shared access signature utilizes a URL to grant restricted access to Azure resources for a limited time period.

ICON KEY

- Valuable information
- Test your knowledge
- Web exercise
- Workbook review

Lab Scenario

Shared access signature enables the implementation of a fine-grained access control to an Azure storage account. It also helps in restricting access to an Azure storage account. A user with a SAS can only access a specific storage account within a limited timeframe.

Lab Objectives

In this lab, you will learn how to create a new storage account; how to generate a SAS connection string, token, and URL that can be utilized to restrict access to the storage account; how to install Azure Storage Explorer, and how to regulate access to an Azure storage account using SAS.

In this lab you will:

- Create a new storage account
- Generate a SAS token to restrict access to an Azure storage account
- Install Azure Storage Explorer
- Restrict access to an Azure storage account using SAS URI

Lab Environment

To perform this lab, you need the following:

- Admin Machine VM
- Registered Microsoft Azure account

Lab Duration

Time: 20 minutes

Overview of SAS

Shared access signature is a uniform resource identifier (URI) that provides restricted access to Azure storage resources. Cloud security engineers can not only provide a SAS to clients or users who cannot be trusted with the storage account key, but also delegate access to specific storage account resources. By providing a SAS URI to these individuals, access to specific resources can be granted a particular time period.

A shared access signature (SAS) helps in providing a fine-grained access control over an Azure storage account. A SAS token helps you control the data that can be shared with a client. SAS is recommended over storage access keys for configuring Azure storage access.

Lab Tasks

Note: Web applications in a cloud environment may undergo frequent updates. As we are working on a cloud-based environment for this lab (i.e., Azure), the application interface may be updated with time. Hence, in case you happen to work on an updated version of Azure, the user interface you see on the application might differ from what you see in the lab. Consequently, the steps and screenshots demonstrated in this lab might also differ.

Note: Before starting this lab, you should create an Azure Free Account using the following link: https://azure.microsoft.com/free, in case you have already not created it for the previous module. Once the registration is complete, perform the following tasks:

Note: You can also use any existing Azure account but be aware that it may incur significant charges to your account.

TASK 1

Creating a New Storage Account in Azure

1. Launch the **Admin Machine** VM. Log in with the following credentials: username **Admin** and password **admin@123.**

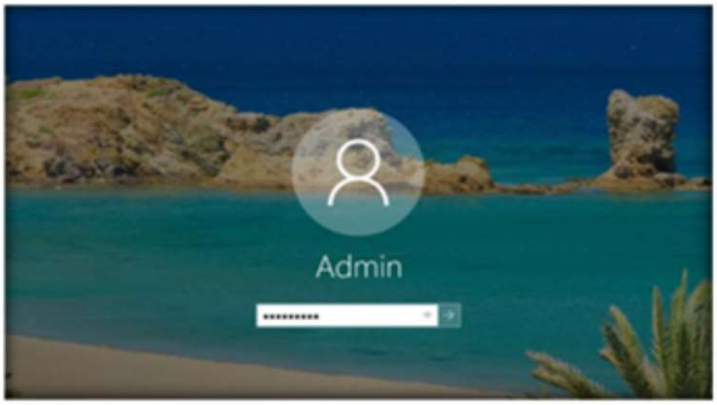


FIGURE 4.7.1: Launch Admin Machine and Log in

2. To open the browser, double-click on the **Google Chrome** icon on the desktop.

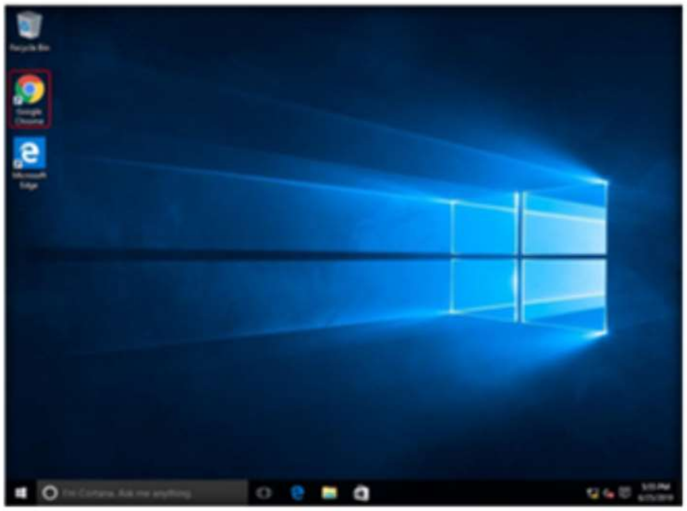
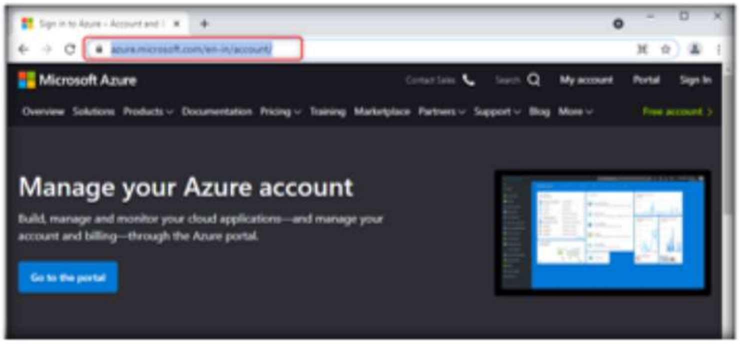


FIGURE 4.7.2: Navigating to the Chrome Browser from Taskbar

3. The **Google Chrome** browser opens. Go to the address bar, type **https://azure.microsoft.com/en-in/account/**, and press **Enter**.

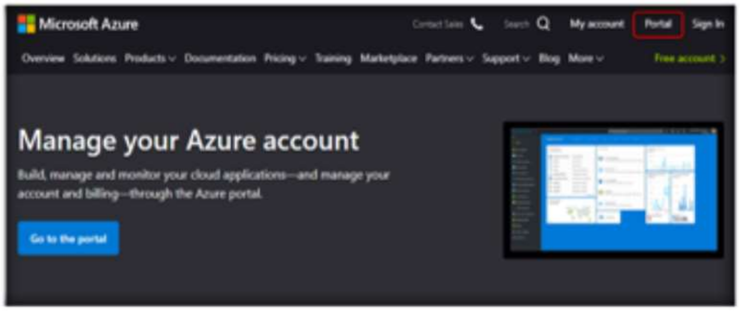


Manage your Azure account

Build, manage and monitor your cloud applications—and manage your account and billing—through the Azure portal.

FIGURE 4.7.3: Entering the URL of Microsoft Azure

4. The **Microsoft Azure** page will appear. Click on **Portal**.



Manage your Azure account

Build, manage and monitor your cloud applications—and manage your account and billing—through the Azure portal.

FIGURE 4.7.4: Sign in to Azure Portal

5. In the Sign in page, enter the **Account ID** and click on **Next.**

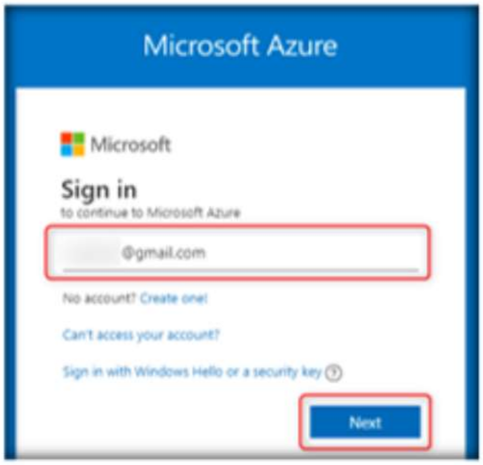

Microsoft Azure
Microsoft
Sign in
to continue to Microsoft Azure
@gmail.com
No account? Create one!
Can't access your account?
Sign in with Windows Hello or a security key ?
Next

FIGURE 4.7.5: Entering Account ID to continue

6. In the next window, enter the password and click on **Sign in**.

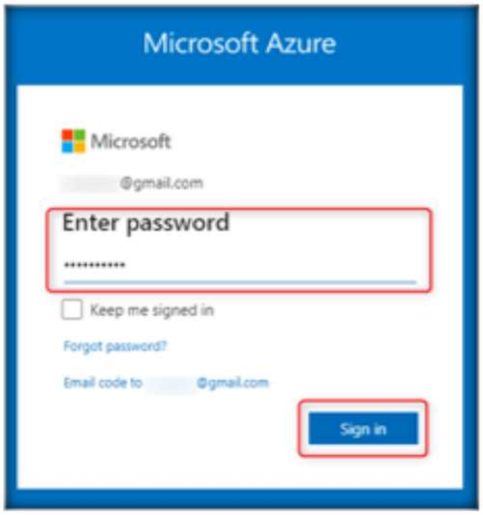


FIGURE 4.7.6: Sign in to Azure Account

7. Microsoft Azure portal will appear now. Click on **Resource groups** under Azure services.

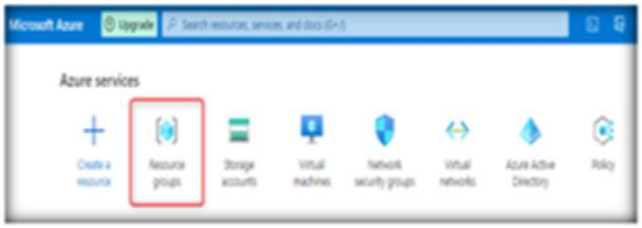


FIGURE 4.7.7: Selecting Resource group in Azure portal

8. Under the **Resource groups** pane, click on the **+Create** button.

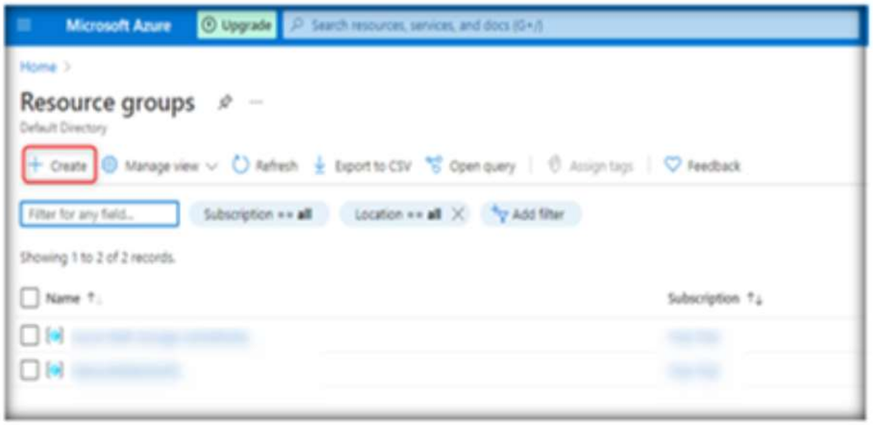
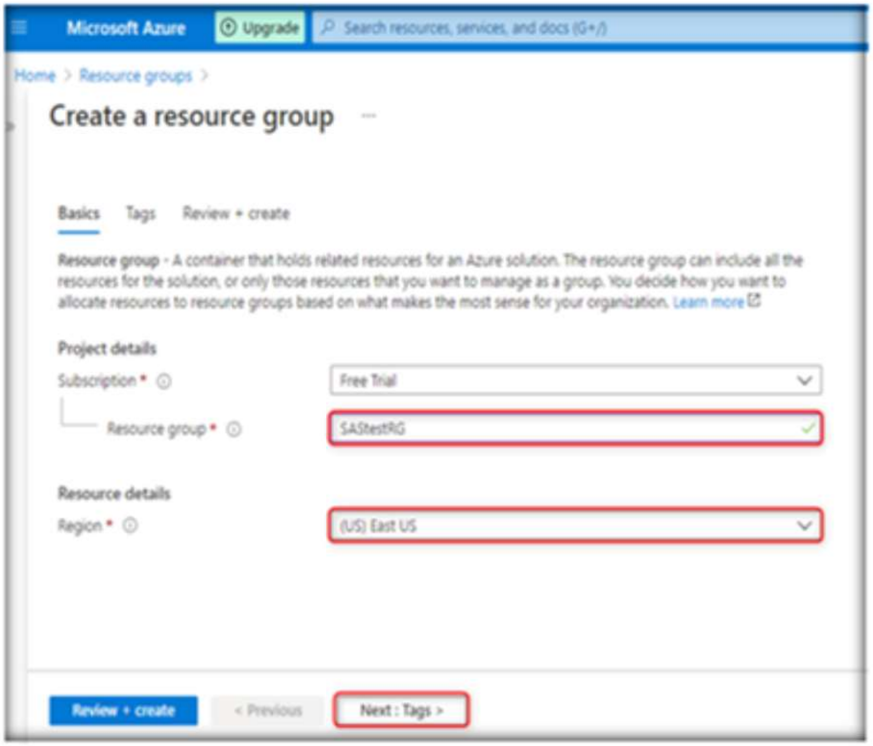


FIGURE 4.7.8: Click on +Create

9. **Create a resource group** page will open now. In the **Resource group** field, enter a **Resource group** name (**SAStestRG** in this lab), and in the **Region** field, enter a **Region** name (**(US) East US** in this lab). Now, click on the **Next: Tags>** button.



Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. Learn more

Project details

Subscription * : Free Trial

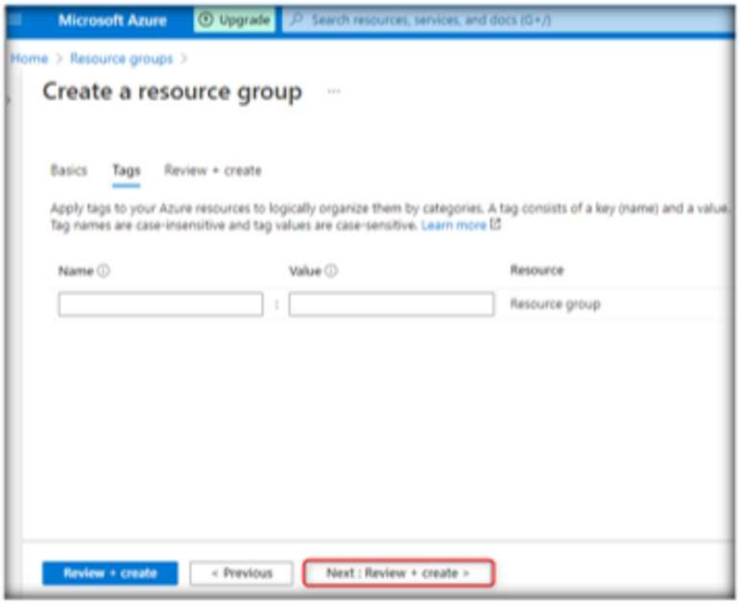
Resource group * : SAStestRG

Resource details

Region * : (US) East US

FIGURE 4.7.9: Entering Resource Group Name and Location

10. Retain the default **Tags** tab settings and click on the **Next: Review + create** button.

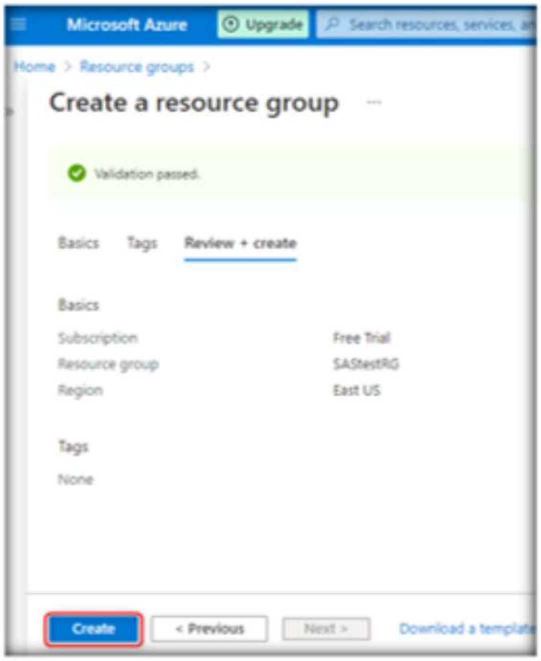


Apply tags to your Azure resources to logically organize them by categories. A tag consists of a key (name) and a value. Tag names are case-insensitive and tag values are case-sensitive. Learn more

Name	Value	Resource
		Resource group

FIGURE 4.7.10: Reviewing and Creating Resource Group

11. **A Review + create** page will appear. Wait for the **Validation passed** message and then click on **Create**.



Validation passed.

Basics

Subscription Free Trial
Resource group SAStestRG
Region East US

Tags

None

FIGURE 4.7.11: Validation Passed for Creating a Resource Group

12. Resource group name **SAStestRG** is successfully created now.

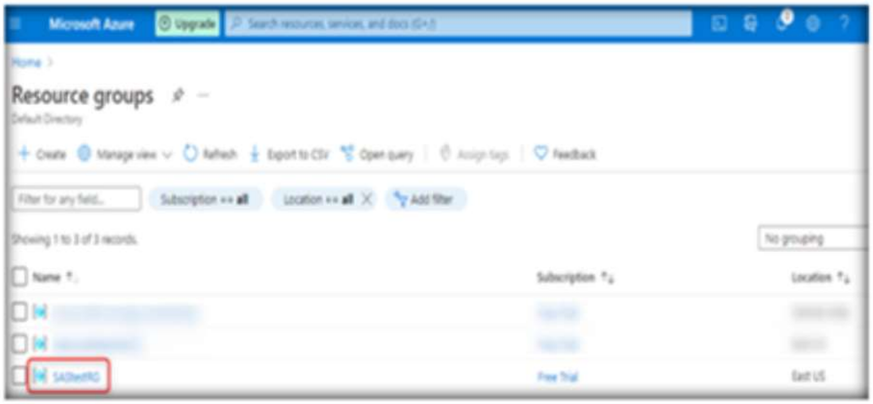


FIGURE 4.7.12: Successfully Creating Resource Group

13. Now, to create a storage account, click on **Storage accounts** under **Azure services**.

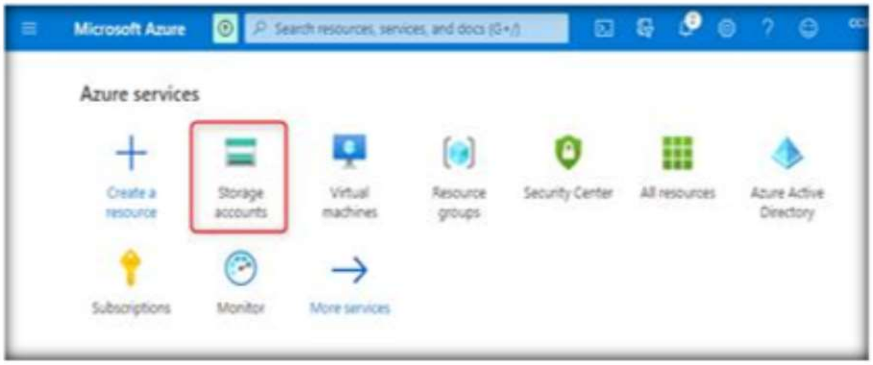


FIGURE 4.7.13: Selecting Storage accounts in Azure portal

14. In the **Storage accounts** window, click on **+Create**.

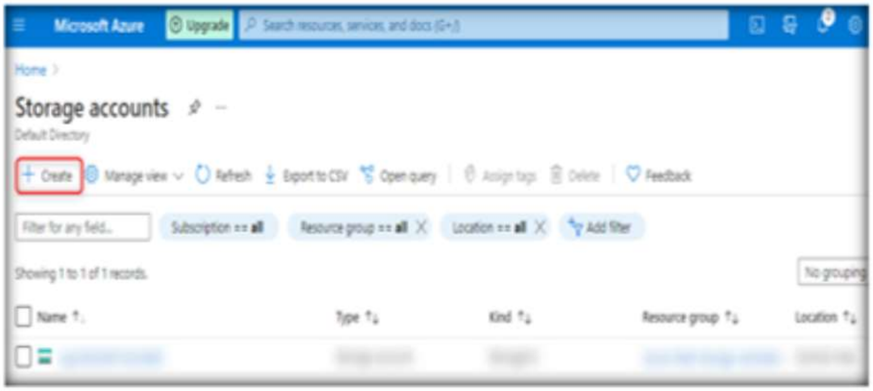
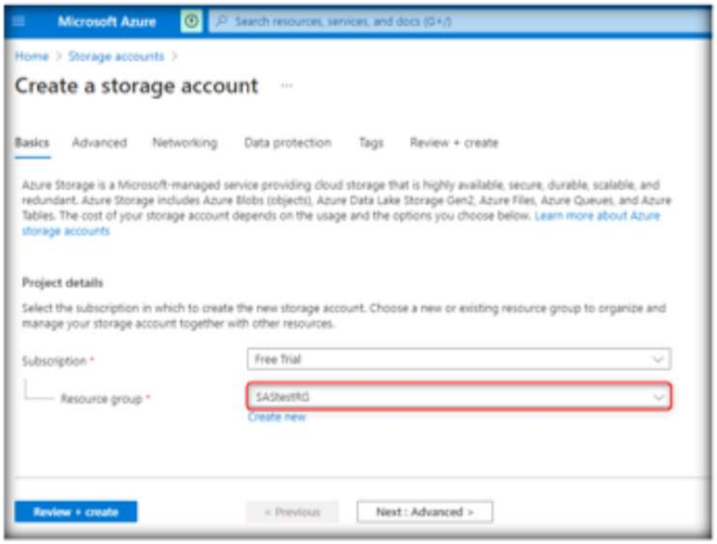


FIGURE 4.7.14: Creating a New Storage Account

15. A **Create a storage account** window will appear now; select the **Resource group** you have created (here, we have selected **SAStestRG**).

    Note: For this lab, we are keeping all parameters in their default state. You can change them according to your requirements.



Create a storage account

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.

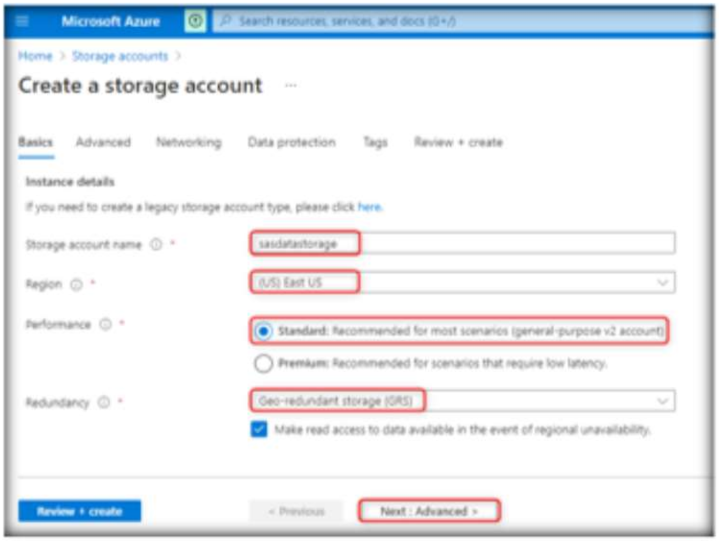
Subscription * Free Trial

Resource group * SAStestRG

Create new

FIGURE 4.7.15: Entering Resource Group Name

16. Scroll down. Under **Instance details**, type the storage account name (here, we have entered **sasdatastorage**). Leave the **Region**, **Performance** and **Redundancy** fields in their default state. Then, click on the **Next: Advanced>** button.



Create a storage account

Instance details

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

Storage account name * sasdatastorage

Region * (US) East US

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

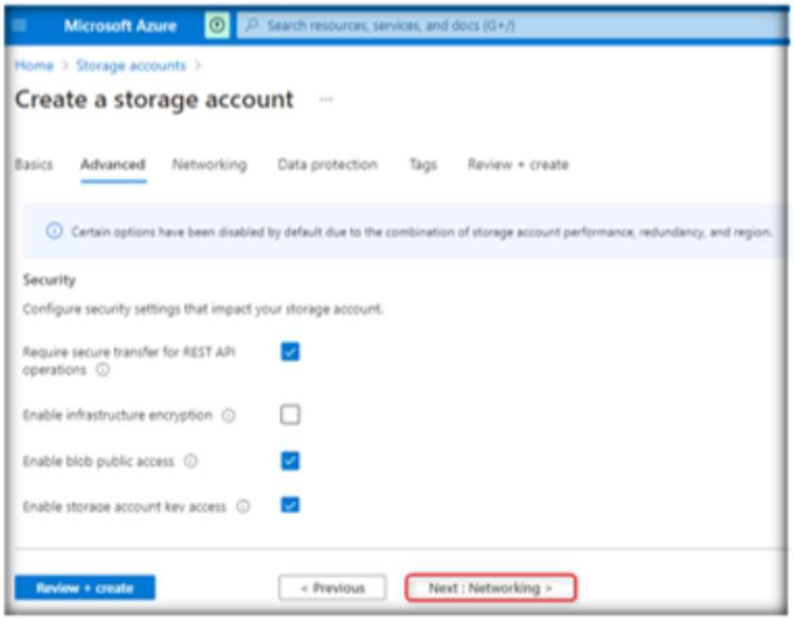
○ **Premium:** Recommended for scenarios that require low latency.

Redundancy * Geo-redundant storage (GRS)

☑ Make read access to data available in the event of regional unavailability.

FIGURE 4.7.16: Entering Storage account name and Region details

17. In the **Advanced** tab, leave everything in their default state and click on the **Next: Networking>** button.



Microsoft Azure
Search resources, services, and docs (G+/)
Home > Storage accounts >

Create a storage account

Basics Advanced Networking Data protection Tags Review + create

ⓘ Certain options have been disabled by default due to the combination of storage account performance, redundancy, and region.

Security

Configure security settings that impact your storage account.

Require secure transfer for REST API operations ⓘ ☑

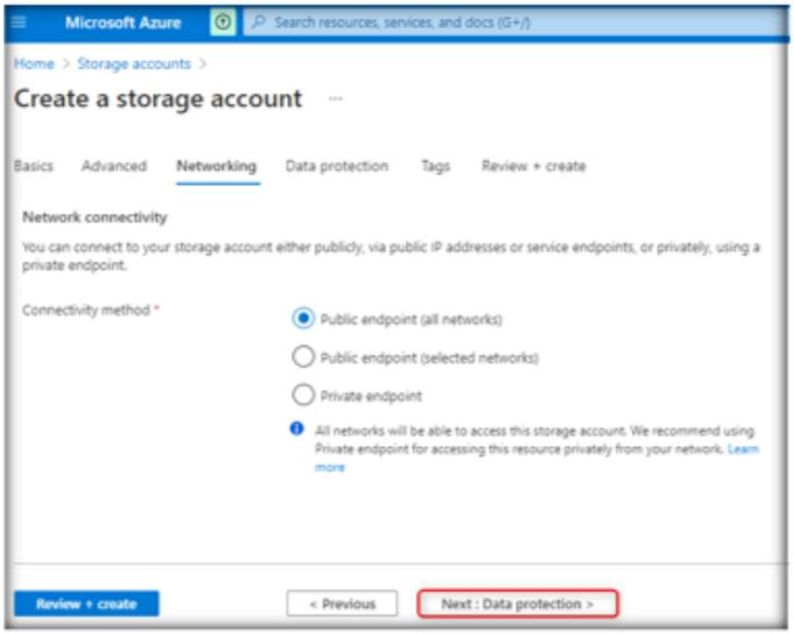
Enable infrastructure encryption ⓘ □

Enable blob public access ⓘ ☑

Enable storage account key access ⓘ ☑

FIGURE 4.7.17: Leaving Everything in Default State in Advanced Tab

18. In the **Networking** tab, leave everything in their default state and click on the **Next: Data protection>** button.



Microsoft Azure
Search resources, services, and docs (G+/)
Home > Storage accounts >

Create a storage account

Basics Advanced Networking Data protection 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)

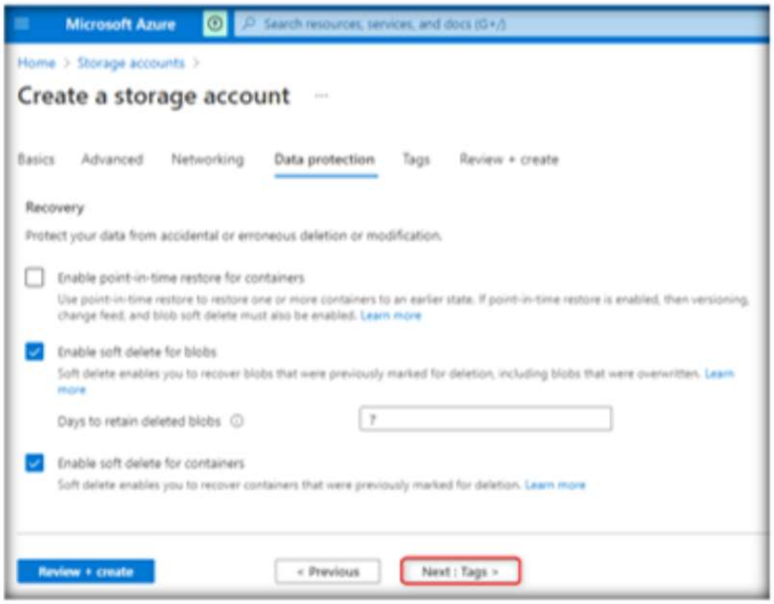
○ Public endpoint (selected networks)

○ Private endpoint

All networks will be able to access this storage account. We recommend using Private endpoint for accessing this resource privately from your network. Learn more

FIGURE 4.7.18: Leaving Everything in Default State in Networking Tab

19. In the **Data protection** tab, leave everything in their default state and click on the **Next: Tags>** button.



Microsoft Azure
Search resources, services, and docs (G+/)
Home > Storage accounts >

Create a storage account

Recovery

Protect your data from accidental or erroneous deletion or modification.

☐ Enable point-in-time restore for containers

Use point-in-time restore to restore one or more containers to an earlier state. If point-in-time restore is enabled, then versioning, change feed, and blob soft delete must also be enabled. Learn more

☑ Enable soft delete for blobs

Soft delete enables you to recover blobs that were previously marked for deletion, including blobs that were overwritten. Learn more

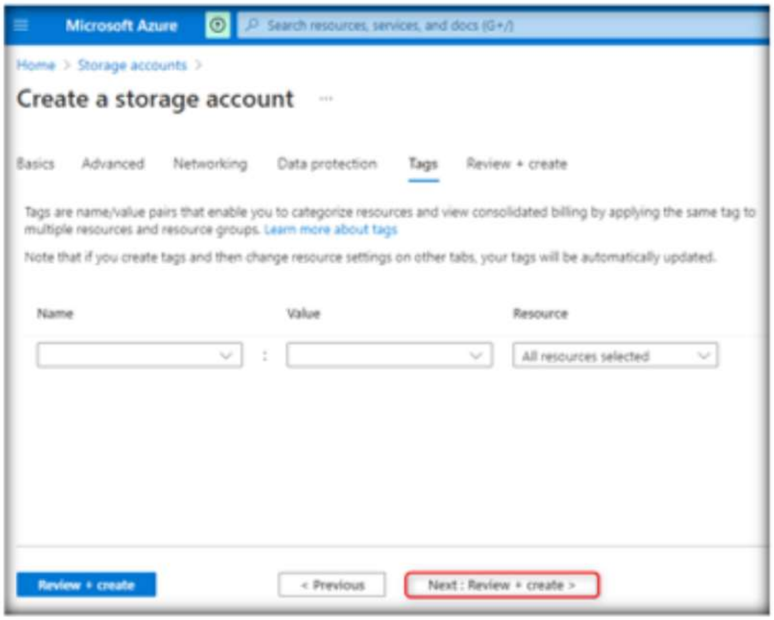
Days to retain deleted blobs: 7

☑ Enable soft delete for containers

Soft delete enables you to recover containers that were previously marked for deletion. Learn more

FIGURE 4.7.19: Leaving Everything in Default State in Data Protection Tab

20. In the **Tags** tab, leave everything in their default state and click on the **Next: Review+ create>** button.



Microsoft Azure
Search resources, services, and docs (G+/)
Home > Storage accounts >

Create a storage account

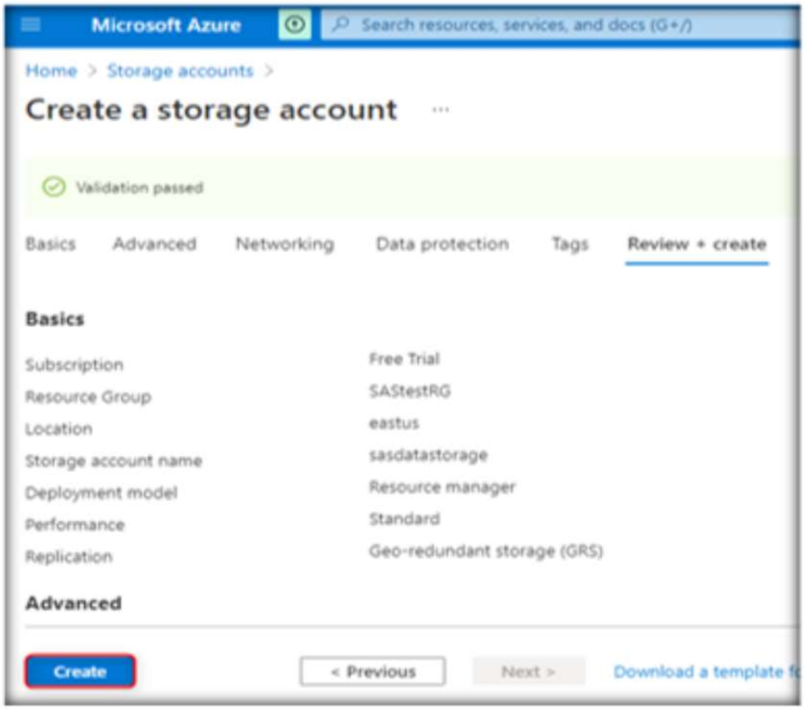
Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. Learn more about tags

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name	Value	Resource
		All resources selected

FIGURE 4.7.20: Leaving Everything in Default State in Tags Tab

21. After the **Validation passed** message, click on **Create**.



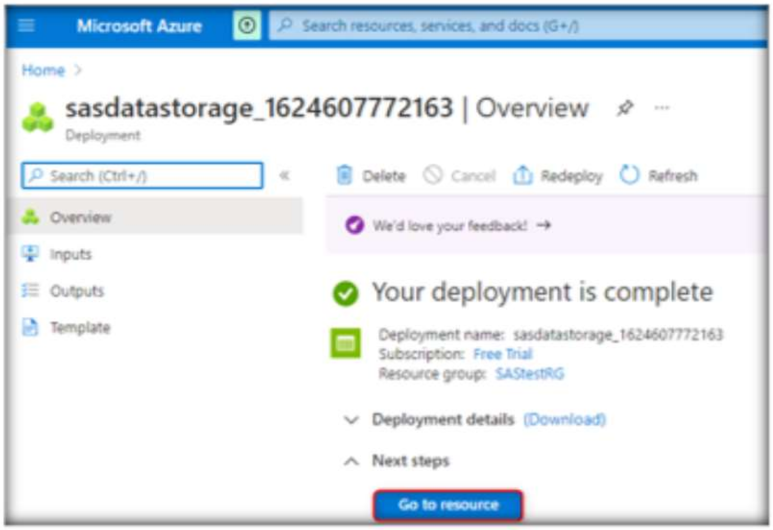
Basics

Subscription	Free Trial
Resource Group	SAStestRG
Location	eastus
Storage account name	sasdatastorage
Deployment model	Resource manager
Performance	Standard
Replication	Geo-redundant storage (GRS)

Advanced

FIGURE 4.7.21: Storage Account Passing the Validation

22. Wait for a few seconds. After the completion of deployment, click on the **Go to resource** button.



Microsoft Azure
Search resources, services, and docs (G+/)
Home >
sasdatastorage_1624607772163 | Overview
Deployment
Search (Ctrl+/)
Overview
Inputs
Outputs
Template
Delete
Cancel
Redeploy
Refresh
We'd love your feedback! →

Your deployment is complete

Deployment name: sasdatastorage_1624607772163
Subscription: Free Trial
Resource group: SAStestRG

Deployment details (Download)
Next steps
Go to resource

FIGURE 4.7.22: Deployment of Storage Account

23. The **storage account** is now successfully **created**.

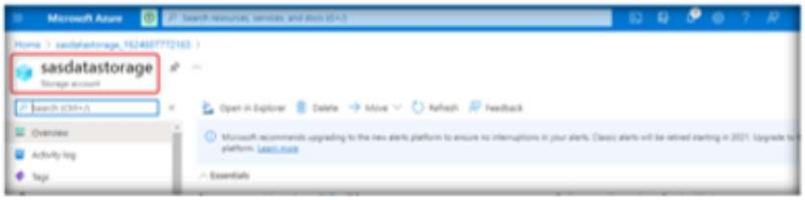


FIGURE 4.7.23: Successful Creation of New Storage Account

TASK 2

Generating SAS token to Restrict Access to Azure Storage Account

24. Now, to create a container in the storage account, click on **Containers** under **Data storage** in the left pane. Then, click on **+ Container** in the main page. In the **New container** side bar, enter the name of the container (**sascontainer** in this lab) and then click on **Create**.

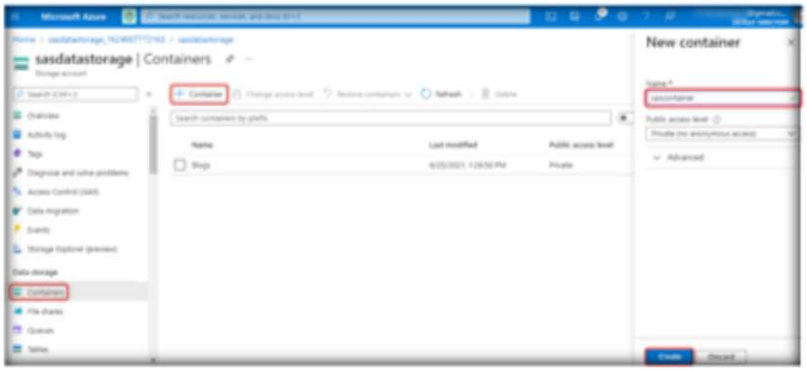


FIGURE 4.7.24: Creating a Container in Storage Account

25. Container **sascontainer** is successfully created now. Click on it.

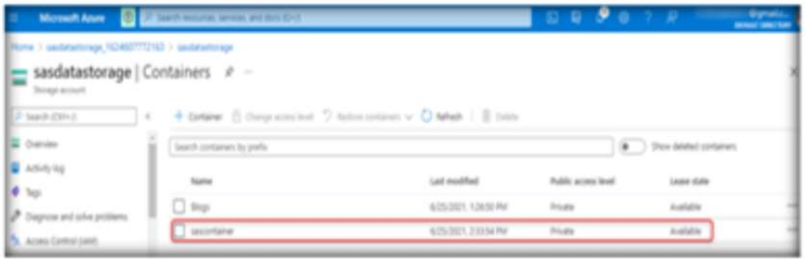


FIGURE 4.7.25: Container is Successfully Created

26. To upload some files into the container, click on **Upload** in the **sascontainer** window.

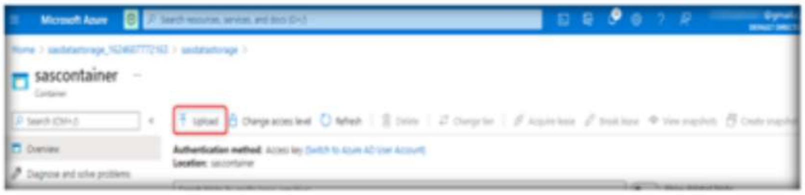
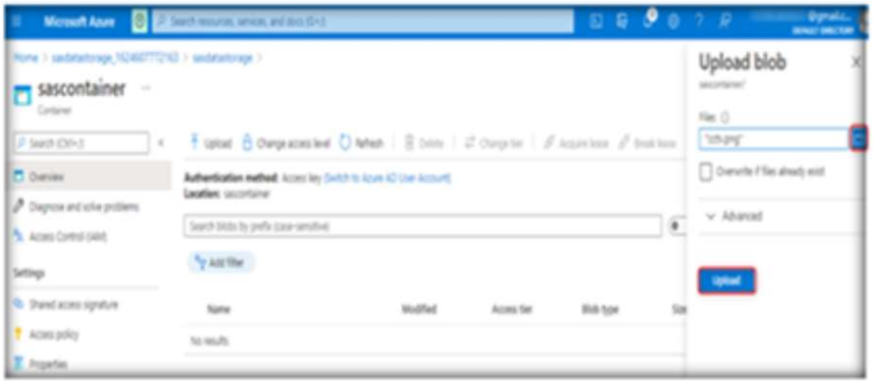


FIGURE 4.7.26: Selecting the Upload button

27. In the left pane, an **Upload blob** window will appear. Here, click on the folder icon, browse and select some random files, and then click on the **Upload** button.



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

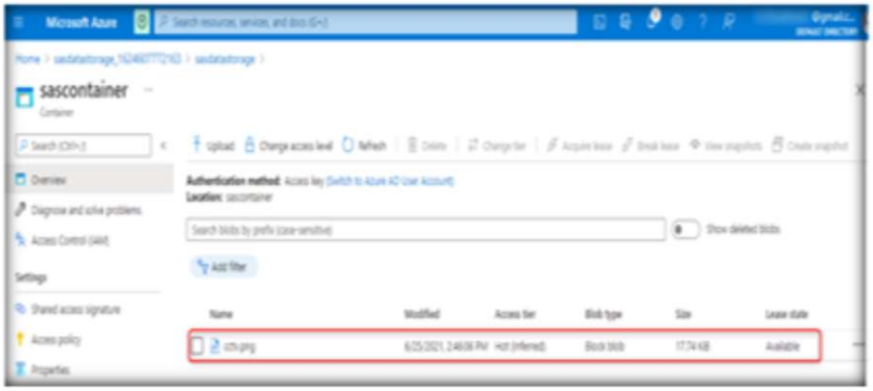
File: "ich.png"

□ Overwrite if files already exist

Name	Modified	Access tier	Blob type	Size
No results				

FIGURE 4.7.27: Browsing and Uploading a File

28. The file will be successfully added to the container.

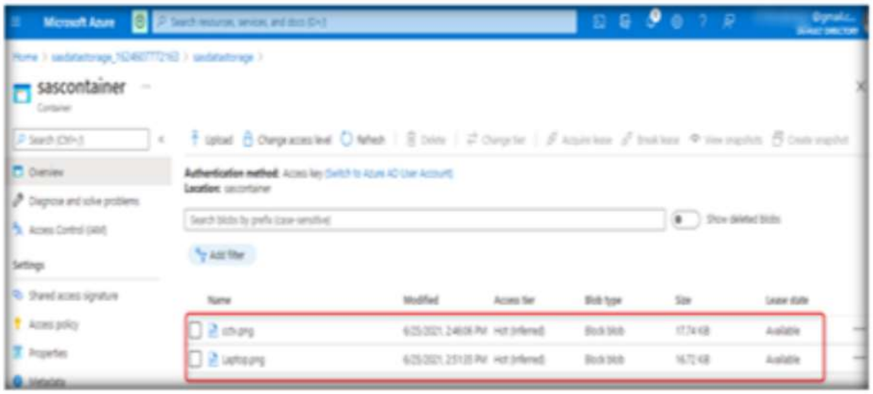


Authentication method: Access key (Switch to Azure AD User Account)
Location: sascontainer

Name	Modified	Access tier	Blob type	Size	Lease state
ich.png	6/25/2021, 2:46:08 PM	Hot (Inferred)	Block blob	17.74 KB	Available

FIGURE 4.7.28: File Successfully Uploaded in the Container

29. Similarly, add another file to the container by repeating **Steps 26–28**.



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

Name	Modified	Access tier	Blob type	Size	Lease state
ich.png	6/25/2021, 2:46:08 PM	Hot (Inferred)	Block blob	17.74 KB	Available
Laptop.png	6/25/2021, 2:51:20 PM	Hot (Inferred)	Block blob	16.72 KB	Available

FIGURE 4.7.29: Successfully Uploading Another File in the Container

30. Now, to generate a SAS token and connection string, go back to the Azure portal and click on **Storage accounts** under **Azure services**.

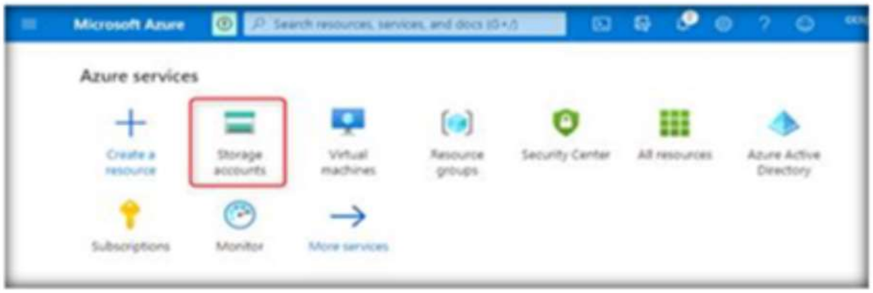
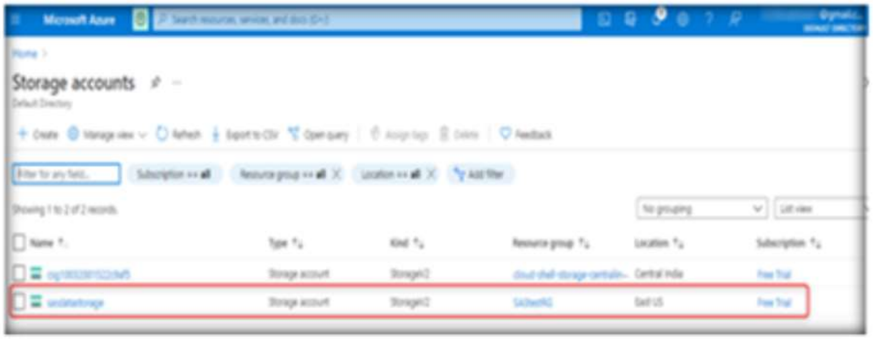


FIGURE 4.7.30: Selecting Storage accounts in Azure Portal

31. A list of storage accounts will be displayed. Select the storage account (**sasdatastorage**) to which you want to generate a shared access signature.

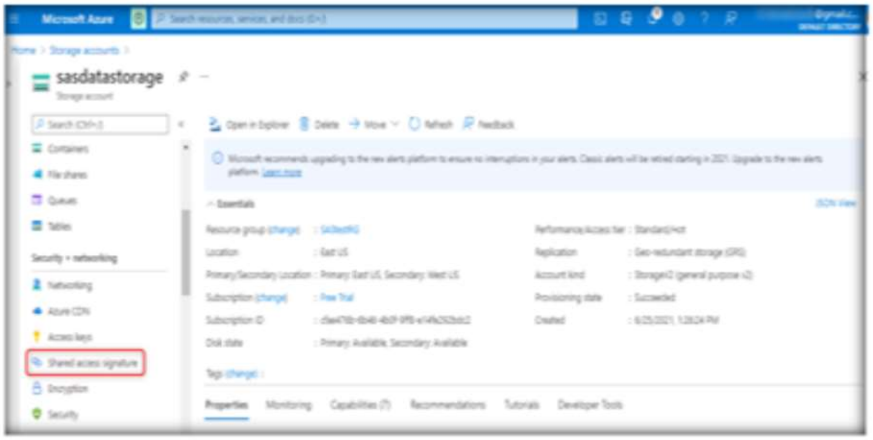


Showing 1 to 2 of 2 records.

Name	Type	Kind	Resource group	Location	Subscription
[illegible]	Storage account	StorageV2	cloud-shell-storage-centralin...	Central India	Free Trial
sasdatastorage	Storage account	StorageV2	SASTestRG	East US	Free Trial

FIGURE 4.7.31: List of Storage Accounts

32. Under **Security + networking** in the left pane, click on **Shared access signature**.



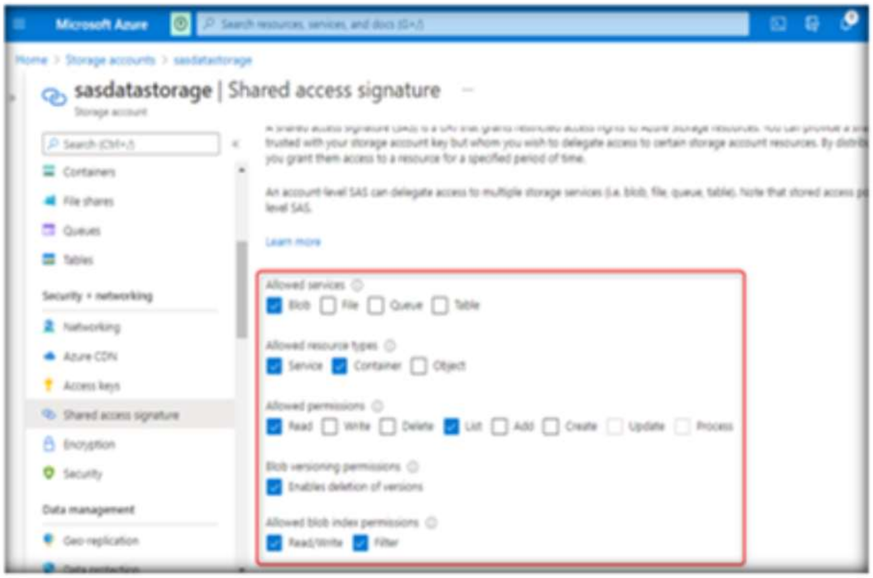
Microsoft recommends upgrading to the new alerts platform to ensure no interruptions in your alerts. Classic alerts will be retired starting in 2021. Upgrade to the new alerts platform. Learn more

Resource group (change) : SASTestRG
Location : East US
Primary/Secondary Location : Primary: East US, Secondary: West US
Subscription (change) : Free Trial
Subscription ID : [illegible]
Disk state : Primary: Available, Secondary: Available
Tags (change) :

Performance/Access tier : Standard/Hot
Replication : Geo-redundant storage (GRS)
Account kind : StorageV2 (general purpose v2)
Provisioning state : Succeeded
Created : 6/25/2021, 1:28:24 PM

FIGURE 4.7.32: Selecting Shared access signature

33. Select the **Allowed services** that you want to allow access to (here, we have selected **Blob**). Select **Allowed resource types** as per your requirement (here, we have selected **Service** and **Container**). Select the necessary **Allowed permissions** for the users or clients (here, we have selected **Read** and **List**). Leave **Blob versioning permissions** in its default state.



trusted with your storage account key but whom you wish to delegate access to certain storage account resources. By distrib
you grant them access to a resource for a specified period of time.

An account-level SAS can delegate access to multiple storage services (i.e. blob, file, queue, table). Note that stored access p
level SAS.

Allowed services
☑ Blob □ File □ Queue □ Table

Allowed resource types
☑ Service ☑ Container □ Object

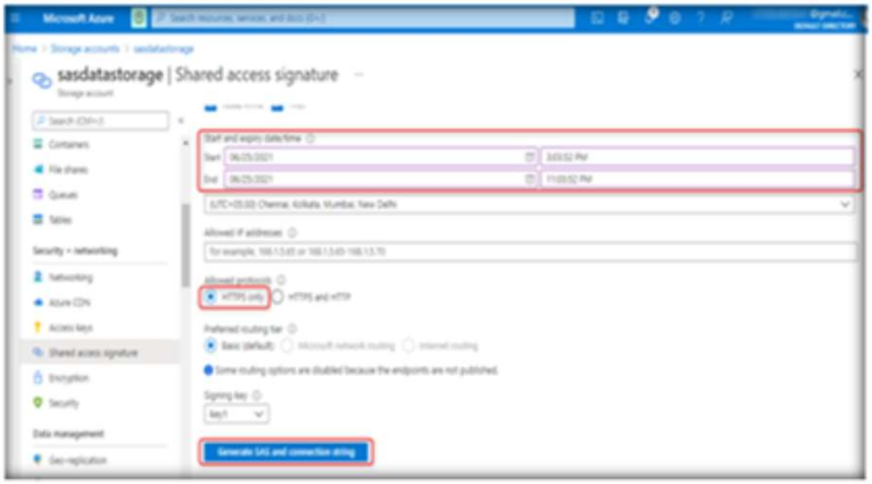
Allowed permissions
☑ Read □ Write □ Delete ☑ List □ Add □ Create □ Update □ Process

Blob versioning permissions
☑ Enables deletion of versions

Allowed blob index permissions
☑ Read/Write ☑ Filter

FIGURE 4.7.33: Selecting Allowed Services, Resources, and Permissions for SAS

34. Enter the **Start and expiry date/time** in their respective fields. For **Allowed protocols**, select the **HTTPS only** radio button. Leave **Preferred routing tier** as **Basic (default)**. Then, click on **Generate SAS and connection string** to generate tokens.



Start and expiry date/time
Start 06/25/2021 3:03:52 PM
End 06/25/2021 11:03:52 PM
(UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi

Allowed IP addresses
For example, 168.1.5.65 or 168.1.5.65-168.1.5.70

Allowed protocols
● HTTPS only ○ HTTPS and HTTP

Preferred routing tier
● Basic (default) ○ Microsoft network routing ○ Internet routing

Some routing options are disabled because the endpoints are not published.

Signing key
key1

FIGURE 4.7.34: Generating SAS and connection string

35. The SAS token and connection string will be successfully generated. This will be used by the users or a client to access the storage account.

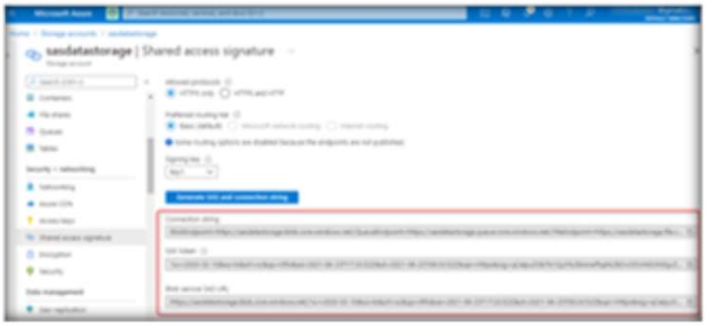
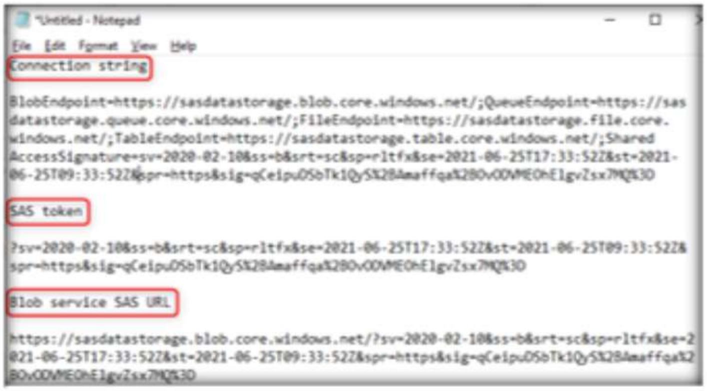


FIGURE 4.7.35: Successful Generation of SAS URI

36. Open Notepad and copy the **SAS URIs**. Then, save the notepad file on your desktop.



```
Connection string

BlobEndpoint=https://sasdatastorage.blob.core.windows.net/;QueueEndpoint=https://sas
datastorage.queue.core.windows.net/;FileEndpoint=https://sasdatastorage.file.core.
windows.net/;TableEndpoint=https://sasdatastorage.table.core.windows.net/;Shared
AccessSignature=sv=2020-02-10&ss=b&srt=sc&sp=rltfx&se=2021-06-25T17:33:52Z&st=2021-
06-25T09:33:52Z&spr=https&sig=qCeipuDSbTk1QyS%2BAmaffqa%2BOvODVMEOhElgvZsx7MQ%3D

SAS token

?sv=2020-02-10&ss=b&srt=sc&sp=rltfx&se=2021-06-25T17:33:52Z&st=2021-06-25T09:33:52Z&
spr=https&sig=qCeipuDSbTk1QyS%2BAmaffqa%2BOvODVMEOhElgvZsx7MQ%3D

Blob service SAS URL

https://sasdatastorage.blob.core.windows.net/?sv=2020-02-10&ss=b&srt=sc&sp=rltfx&se=2
021-06-25T17:33:52Z&st=2021-06-25T09:33:52Z&spr=https&sig=qCeipuDSbTk1QyS%2BAmaffqa%2
BOvODVMEOhElgvZsx7MQ%3D
```

FIGURE 4.7.36: Successful Generation of SAS URI

TASK 3

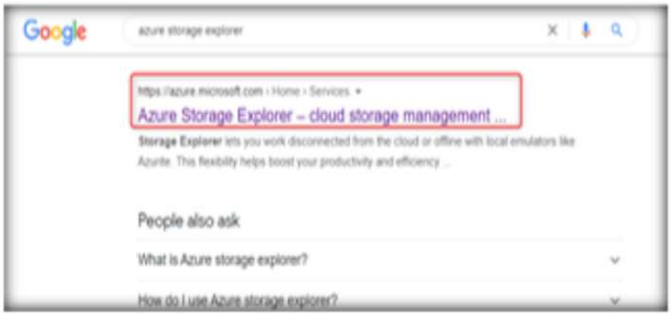
Installing Azure Storage Explorer

37. A cloud security administrator can use this SAS token to restrict access to Azure storage account.

To use the SAS token, a cloud security engineer needs to install Azure storage explorer on your VM. To install Azure storage explorer, open the Chrome browser and type Google in the address bar. Then, type **Azure Storage Explorer** in the Google search bar.

FIGURE 4.7.37: Searching for Azure Storage Explorer in Google

38. Click on the **Azure Storage Explorer – cloud storage management** link.



Google
azure storage explorer
People also ask
What is Azure storage explorer?
How do I use Azure storage explorer?

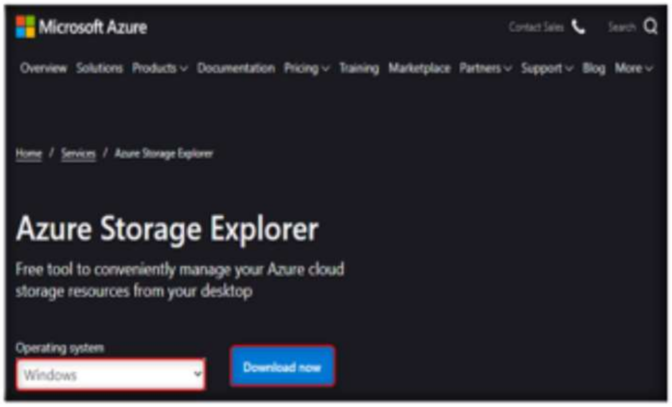
https://azure.microsoft.com › Home › Services

Azure Storage Explorer – cloud storage management ...

Storage Explorer lets you work disconnected from the cloud or offline with local emulators like Azurite. This flexibility helps boost your productivity and efficiency ...

FIGURE 4.7.38: Opening the link of Azure Storage Explorer

39. In the **Operating system** dropdown, select **Windows** and then click on the **Download now** button.



Microsoft Azure
Contact Sales
Search
Overview Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More
Home / Services / Azure Storage Explorer
Download now

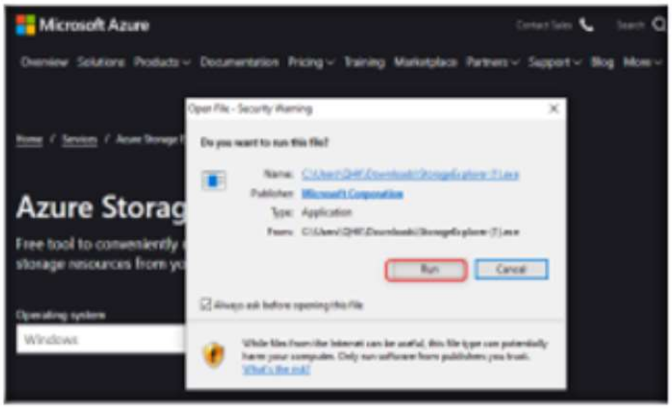
Azure Storage Explorer

Free tool to conveniently manage your Azure cloud storage resources from your desktop

Operating system: Windows

FIGURE 4.7.39: Downloading Azure Storage Explorer Application

40. **StorageExplorer.exe** file will be downloaded now. Run this file by clicking on it.



Microsoft Azure
Contact Sales
Search
Overview Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More
Open File - Security Warning
Run
Cancel

Do you want to run this file?

Name: C:\Users\QHR\Downloads\StorageExplorer (7).exe

Publisher: Microsoft Corporation

Type: Application

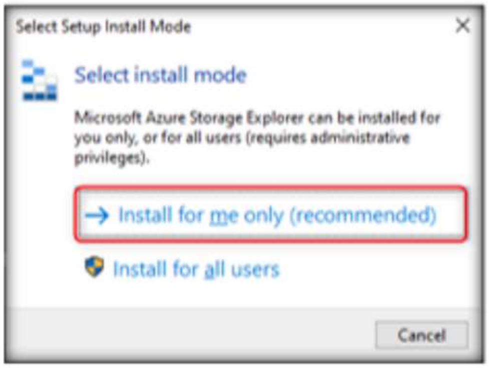
From: C:\Users\QHR\Downloads\StorageExplorer (7).exe

☑ Always ask before opening this file

While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?

FIGURE 4.7.40: Running Azure Storage Explorer Application

41. A **Select Install Mode** window will now appear. Click on **Install for me only**.



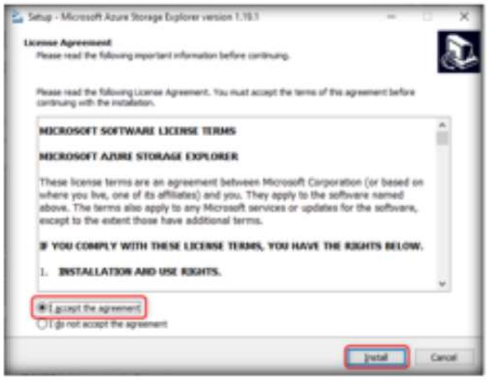
Select Setup Install Mode

Select install mode

Microsoft Azure Storage Explorer can be installed for you only, or for all users (requires administrative privileges).

FIGURE 4.7.41: Selecting the Installation Mode

42. A **License Agreement** window will appear now. Select **I accept the agreement** radio button and then click on the **Install** button.



Setup - Microsoft Azure Storage Explorer version 1.19.1

License Agreement
Please read the following important information before continuing.

Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.

MICROSOFT SOFTWARE LICENSE TERMS

MICROSOFT AZURE STORAGE EXPLORER

These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. They apply to the software named above. The terms also apply to any Microsoft services or updates for the software, except to the extent those have additional terms.

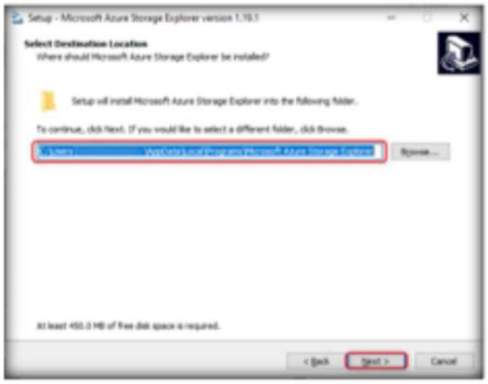
IF YOU COMPLY WITH THESE LICENSE TERMS, YOU HAVE THE RIGHTS BELOW.

1. INSTALLATION AND USE RIGHTS.

● I accept the agreement
○ I do not accept the agreement

FIGURE 4.7.42: Accepting the License Agreement

43. Select the location where you want to install **Microsoft Azure Storage Explorer** and then click on **Next**.



Setup - Microsoft Azure Storage Explorer version 1.19.1

Select Destination Location
Where should Microsoft Azure Storage Explorer be installed?

Setup will install Microsoft Azure Storage Explorer into the following folder.

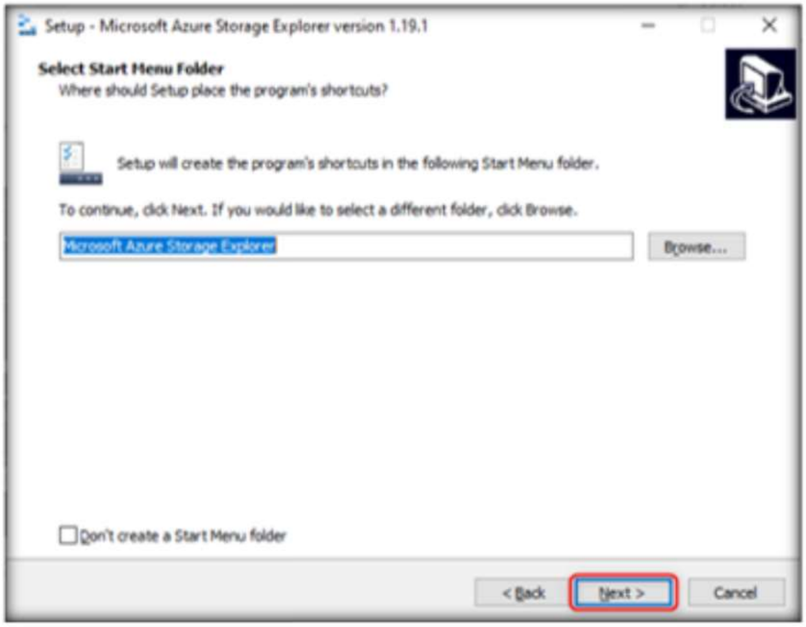
To continue, click Next. If you would like to select a different folder, click Browse.

C:\Users\ \AppData\Local\Programs\Microsoft Azure Storage Explorer

At least 450.3 MB of free disk space is required.

FIGURE 4.7.43: Choosing the location for Azure Storage Explorer

44. A **Select Start Menu Folder** window will appear now. Leave it in its default state and click on **Next**.



Setup - Microsoft Azure Storage Explorer version 1.19.1

Select Start Menu Folder

Where should Setup place the program's shortcuts?

Setup will create the program's shortcuts in the following Start Menu folder.

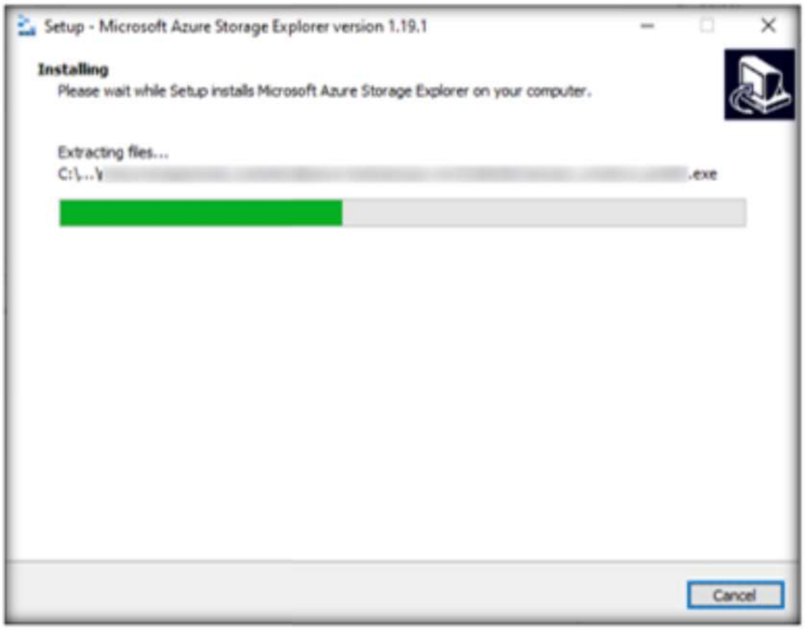
To continue, click Next. If you would like to select a different folder, click Browse.

Microsoft Azure Storage Explorer

☐ Don't create a Start Menu folder

FIGURE 4.7.44: Start Menu Window Selection

45. Wait for a few seconds for the installation to complete.



Setup - Microsoft Azure Storage Explorer version 1.19.1

Installing

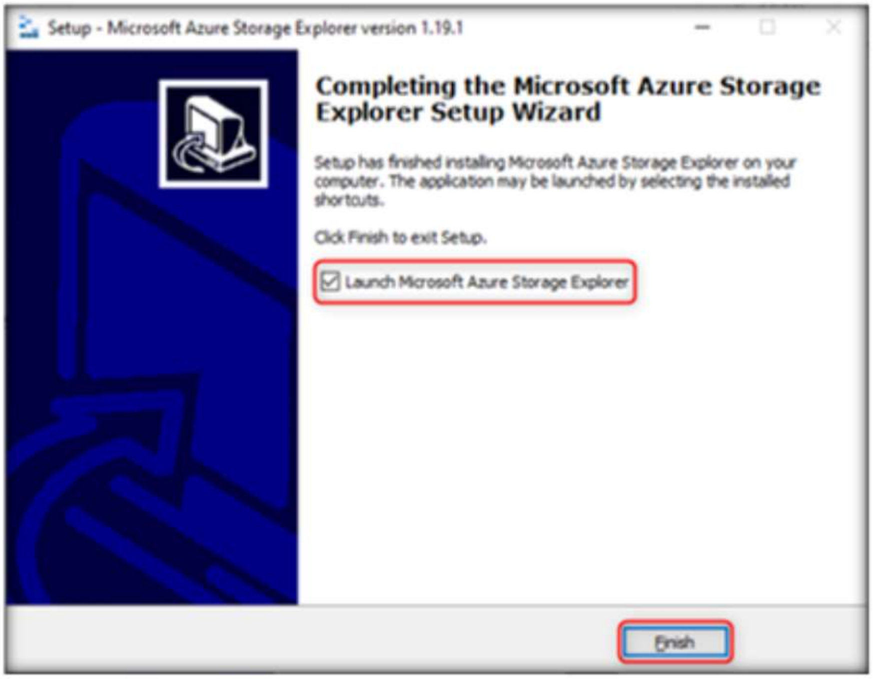
Please wait while Setup installs Microsoft Azure Storage Explorer on your computer.

Extracting files...

C:\...\ .exe

FIGURE 4.7.45: Progress of Azure Storage Explorer Installation

46. A **Completing the Microsoft Azure Storage Explorer Setup Wizard** window will appear now. Check the **Launch Microsoft Azure Storage Explorer** option and then click on **Finish**.



Setup - Microsoft Azure Storage Explorer version 1.19.1

Completing the Microsoft Azure Storage Explorer Setup Wizard

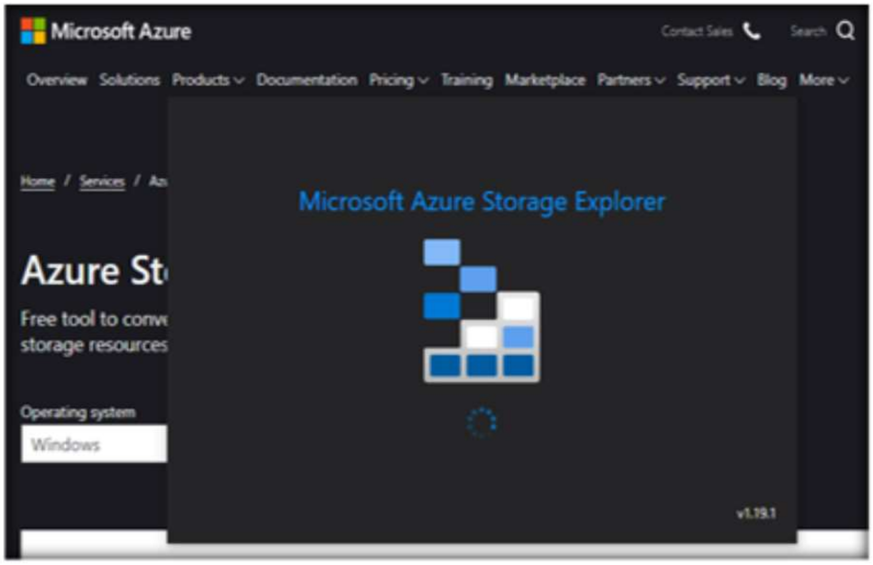
Setup has finished installing Microsoft Azure Storage Explorer on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.

☑ Launch Microsoft Azure Storage Explorer

FIGURE 4.7.46: Azure Storage Explorer Installation Completion

47. **Microsoft Azure Storage Explorer** will be launched in a few seconds.



Microsoft Azure
Contact Sales
Search
Overview Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More
Home / Services / Az
Azure St
Free tool to conve
storage resources
Operating system
Windows
Microsoft Azure Storage Explorer
v1.19.1

FIGURE 4.7.47: Launching of Azure Storage Explorer

48. **Azure Storage Explorer** application dashboard will be displayed now.

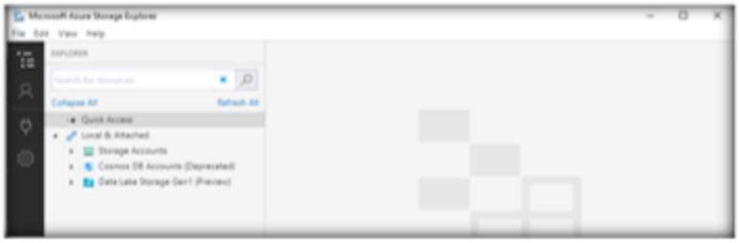


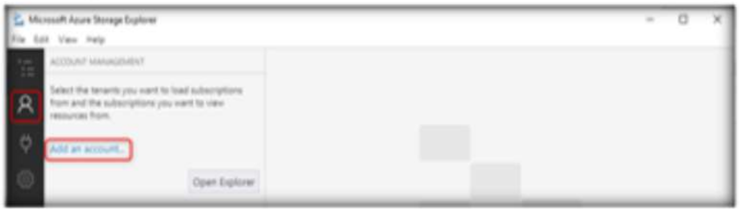
FIGURE 4.7.48: Dashboard of Azure Storage Explorer

TASK 4

Restricting Access to the Azure storage account using the SAS URI

49. A security administrator can allow access to clients or users with a SAS token for the storage account. A client or user without a SAS token or with an expired SAS token cannot access the storage account. Thus, a security administrator can regulate the activities on a storage account with a SAS token.

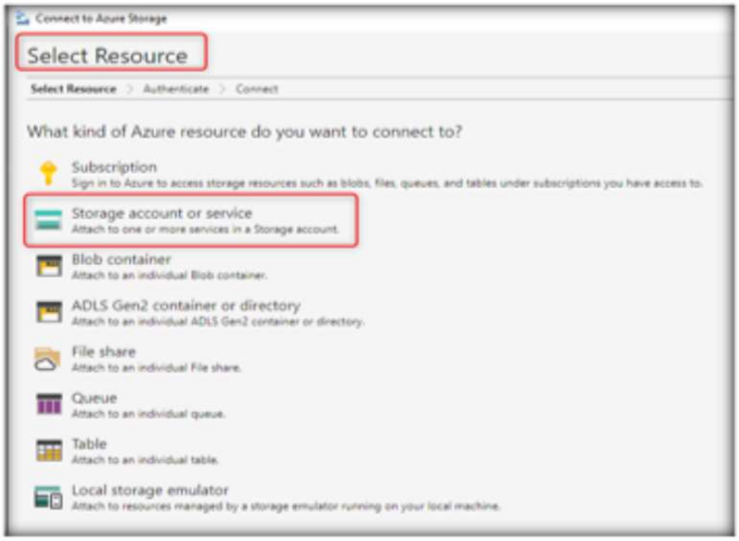
    In the **Microsoft Azure Storage Explorer** dashboard, click on the **Manage Account** icon and then click on **Add an account….**



Select the tenants you want to load subscriptions from and the subscriptions you want to view resources from.

FIGURE 4.7.49: Adding Storage Account in Azure Storage Explorer

50. In the **Select Resource** window that appears, navigate and click on **Storage account or service**.



What kind of Azure resource do you want to connect to?

Subscription
Sign in to Azure to access storage resources such as blobs, files, queues, and tables under subscriptions you have access to.

Storage account or service
Attach to one or more services in a Storage account.

Blob container
Attach to an individual Blob container.

ADLS Gen2 container or directory
Attach to an individual ADLS Gen2 container or directory.

File share
Attach to an individual File share.

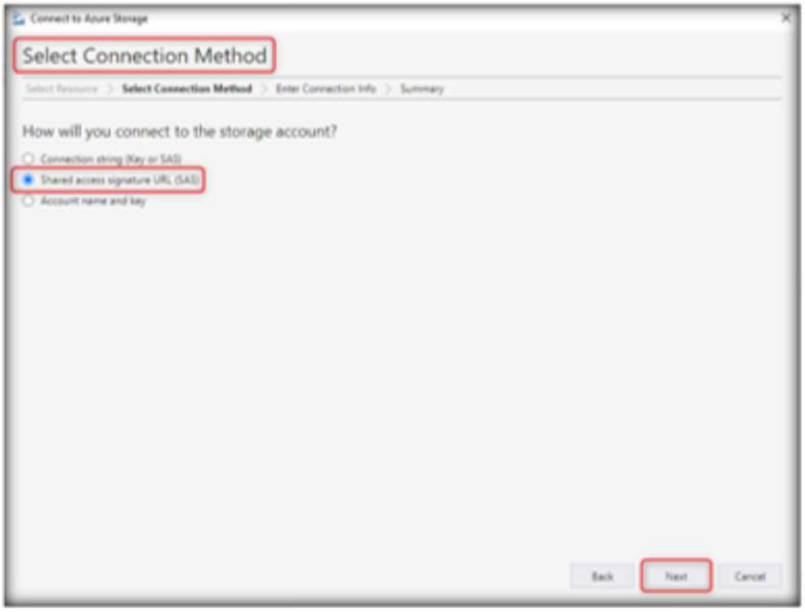
Queue
Attach to an individual queue.

Table
Attach to an individual table.

Local storage emulator
Attach to resources managed by a storage emulator running on your local machine.

FIGURE 4.7.50: Selecting Storage Account or Service in Azure Storage Explorer

51. The **Select Connection Method** window will appear now. Select **Shared access signature URL (SAS)** and then click on **Next**.



Connect to Azure Storage

Select Connection Method

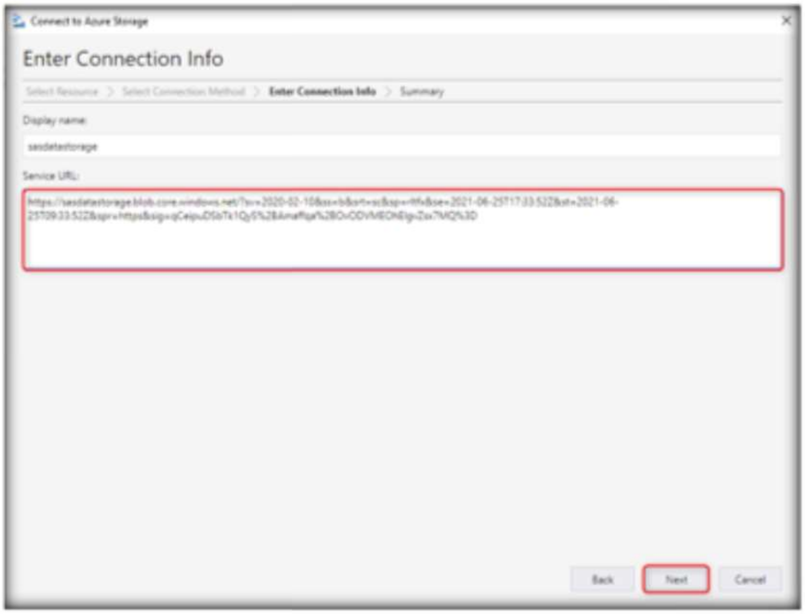
Select Resource > **Select Connection Method** > Enter Connection Info > Summary

How will you connect to the storage account?

○ Connection string (Key or SAS)
● Shared access signature URL (SAS)
○ Account name and key

FIGURE 4.7.51: Selecting the radio button of Shared access signature URL

52. The **Enter Connection info** window will appear now. In the **Service URL** box, paste the **SAS URL** that was copied in **Step 30** and click on the **Next** button.



Connect to Azure Storage

Enter Connection Info

Select Resource > Select Connection Method > **Enter Connection Info** > Summary

Display name:

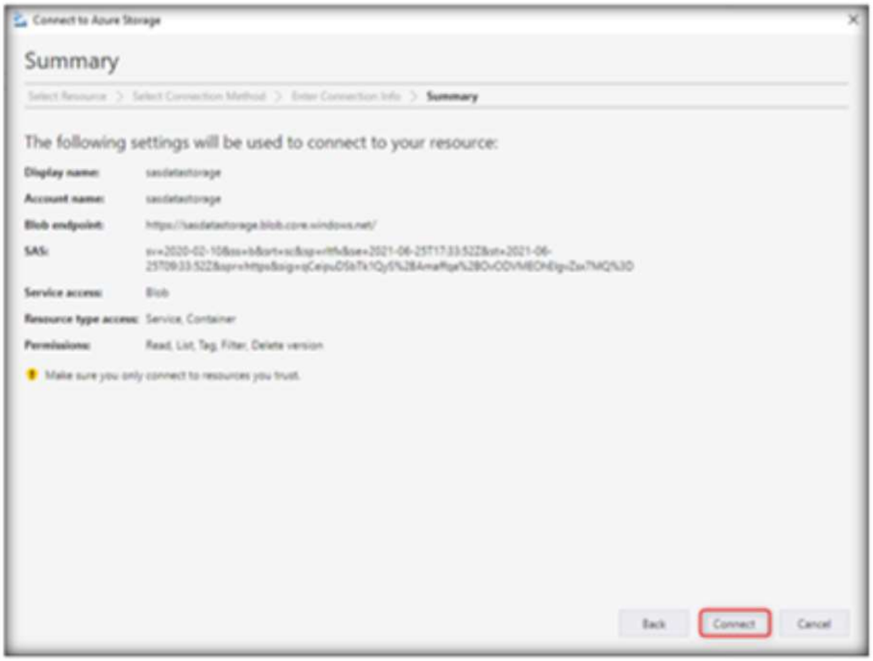
sasdatestorage

Service URL:

https://sasdatestorage.blob.core.windows.net/?sv=2020-02-10&ss=b&srt=sc&sp=rlfx&se=2021-06-25T17:33:52Z&st=2021-06-25T09:33:52Z&spr=https&sig=qCeipuD5bTx1Qy5%2BAmafkja%2BOvODVMEONEIgvZsx7MQ%3D

FIGURE 4.7.52: Pasting the SAS URL

53. In the **Summary** window that appears, click on the **Connect** button.


Connect to Azure Storage
Select Resource > Select Connection Method > Enter Connection Info > Summary
Back
Connect
Cancel

Summary

The following settings will be used to connect to your resource:

Display name: sasdatastorage

Account name: sasdatastorage

Blob endpoint: https://sasdatastorage.blob.core.windows.net/

SAS: sv=2020-02-10&ss=b&srt=sc&sp=rltfx&se=2021-06-25T17:33:52Z&st=2021-06-25T09:33:52Z&spr=https&sig=qCeipuDSbTk1QyS%2B4mafIqa%2BOvODVMEOHEIg=Zsx7MQ%3D

Service access: Blob

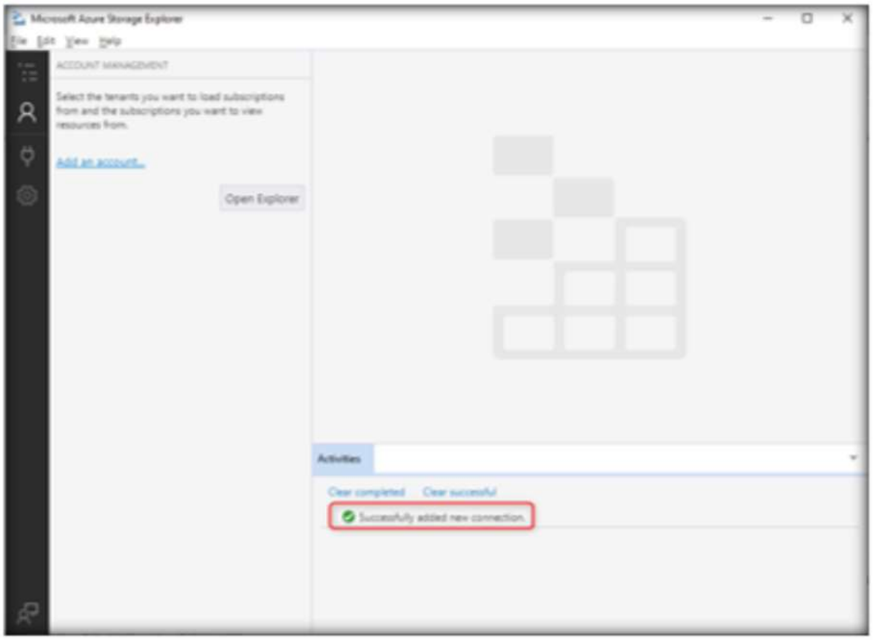
Resource type access: Service, Container

Permissions: Read, List, Tag, Filter, Delete version

Make sure you only connect to resources you trust.

FIGURE 4.7.53: Connecting with Azure Storage Account

54. The new connection will be added successfully to the storage account.

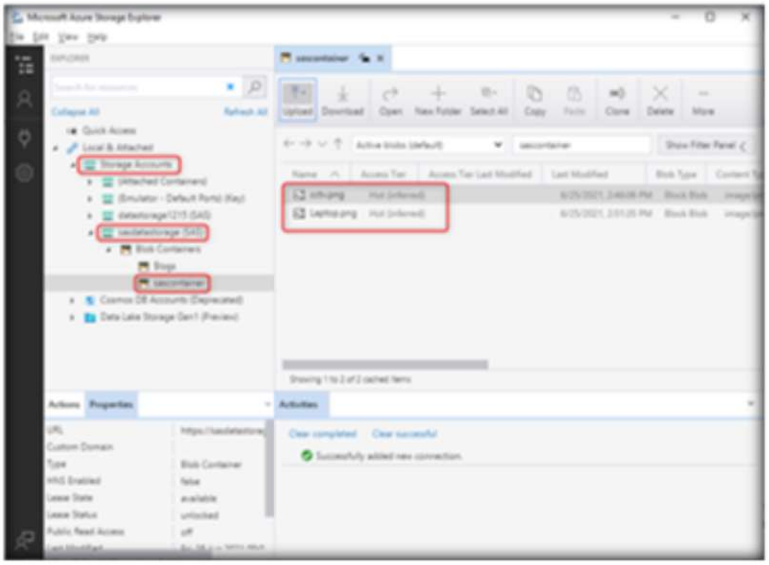


Select the tenants you want to load subscriptions from and the subscriptions you want to view resources from.

Successfully added new connection.

FIGURE 4.7.54: Successfully Establishing the Connection with Azure Storage Account

55. Click on **Microsoft Azure Storage Explorer**, navigate and expand **Storage Accounts** and then the **sasdatastorage (SAS)** account, and finally click on the **sascontainer** container. You will observe the files present in the container.



Name	Access Tier	Access Tier Last Modified	Last Modified	Blob Type
icth.png	Hot (inferred)		6/25/2021, 2:46:08 PM	Block Blob
Laptop.png	Hot (inferred)		6/25/2021, 2:51:35 PM	Block Blob

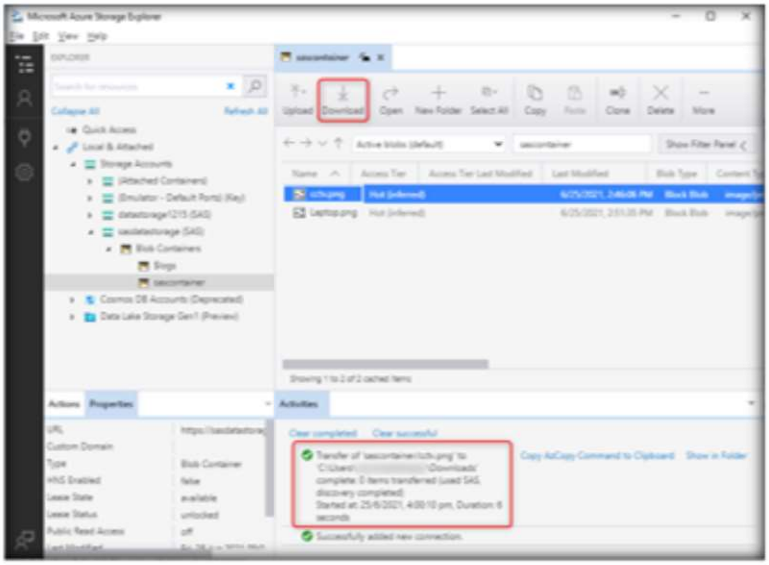
Showing 1 to 2 of 2 cached items

URL	https://sasdatastora
Custom Domain	
Type	Blob Container
HNS Enabled	false
Lease State	available
Lease Status	unlocked
Public Read Access	off

Successfully added new connection.

FIGURE 4.7.55: Checking the Container of Azure Storage Account in Azure Storage Explorer

56. The client or the user is allowed to read and list the content of the storage account. They are not allowed to delete or upload any content on the storage account. Now, if you try to download the file, it will be downloaded.



Name	Access Tier	Access Tier Last Modified	Last Modified	Blob Type
icth.png	Hot (inferred)		6/25/2021, 2:46:08 PM	Block Blob
Laptop.png	Hot (inferred)		6/25/2021, 2:51:35 PM	Block Blob

Showing 1 to 2 of 2 cached items

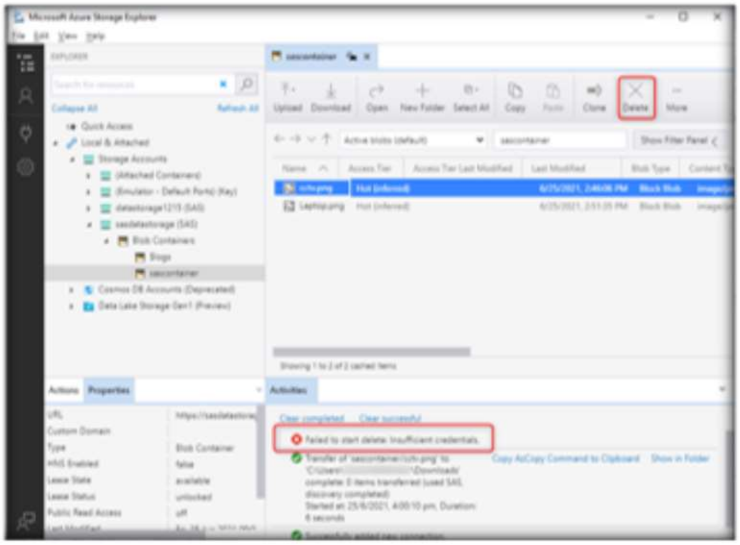
URL	https://sasdatastora
Custom Domain	
Type	Blob Container
HNS Enabled	false
Lease State	available
Lease Status	unlocked
Public Read Access	off

Transfer of 'sascontainer/icth.png' to 'C:\Users\[redacted]\Downloads' complete: 0 items transferred (used SAS, discovery completed)
Started at: 25/6/2021, 4:00:10 pm, Duration: 6 seconds

Successfully added new connection.

FIGURE 4.7.56: Downloading File from the Container of Azure Storage Account

57. Click on **Delete** at the top right corner. The client or user will not be able to delete the file as the delete permission has not been given to them.



Failed to start delete: Insufficient credentials.

Transfer of 'sascontainer/ccfr.png' to 'C:\Users\[redacted]\Downloads' complete: 1 items transferred (used SAS, discovery completed)
Started at 25/6/2021, 4:00:10 pm, Duration: 6 seconds

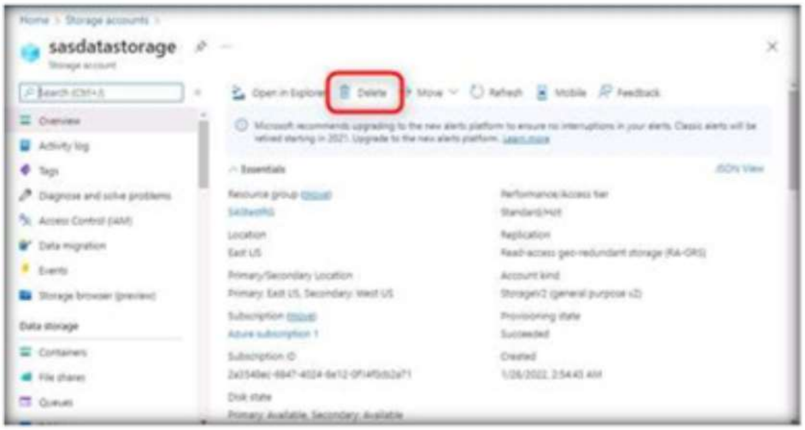
Successfully added new connection.

FIGURE 4.7.57: Failed to Delete File from the Container of Azure Storage Account

58. This way, a cloud security administrator can stringently regulate the access to a storage account. Based on the requirements, an administrator can give or restrict access to users or clients through shared access signature.

Caution: Ensure you **delete, shut down, or terminate** all resources created and used in this lab to prevent their billing.

59. Navigate to **Storage accounts** in Azure Portal. Click on the name of the storage account (**sasdatastorage**) to open the **Overview** window. Click on **Delete** at the top. Type the storage account name in the **Delete storage account** window and click on **Delete**.

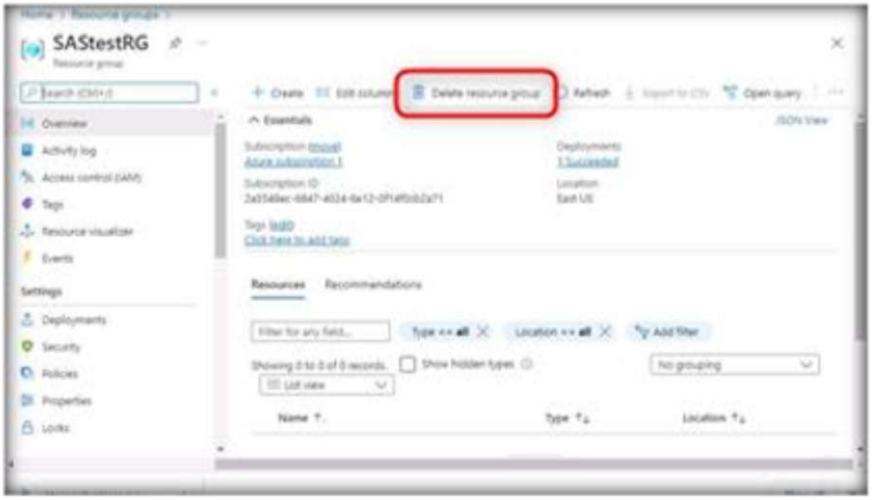


Microsoft recommends upgrading to the new alerts platform to ensure no interruptions in your alerts. Classic alerts will be retired starting in 2021. Upgrade to the new alerts platform. Learn more

Resource group (move): SASTestRG
Location: East US
Primary/Secondary Location: Primary: East US, Secondary: West US
Subscription (move): Azure subscription 1
Subscription ID: 2a3540ec-6847-4024-8e12-0f14f0cb2a71
Disk state: Primary: Available, Secondary: Available
Performance/Access tier: Standard/Hot
Replication: Read-access geo-redundant storage (RA-GRS)
Account kind: StorageV2 (general purpose v2)
Provisioning state: Succeeded
Created: 1/26/2022, 2:54:43 AM

FIGURE 4.7.58: Deleting Storage Account

60. Navigate to **Resource groups** in the Azure portal. Click on the name of the resource group (**SastestRG**) to open the **Overview** window. Click on **Delete resource group**. In the **Delete resource group** window, type the name of the resource group and click on **Delete**.



Subscription (move)
Azure subscription 1

Subscription ID
2a3540ec-6847-4024-8a12-0f14f5bb2a71

Tags (edit)
Click here to add tags

Deployments
1 Succeeded

Location
East US

Showing 0 to 0 of 0 records. □ Show hidden types

FIGURE 4.7.57: Deleting Resource Group

Lab Analysis

Analyze and document the results of this lab exercise. Provide your opinion on your target's security posture and exposure through free public information.

PLEASE TALK TO YOUR INSTRUCTOR IF YOU HAVE QUESTIONS ABOUT THIS LAB.