😊 CREATING A BLOB STORAGE IN AZURE

Azure Storage is a cloud storage solution provided by Microsoft Azure, offering scalable, durable, and highly available storage for applications and data in the cloud. It provides various services to store and manage different types of data, including blobs, files, queues, tables, and disks. Here are the key components of Azure Storage:

1. **Blob Storage:** Blob (Binary Large Object) Storage is designed to store large amounts of unstructured data, such as text or binary data. It's commonly used for storing images, videos, documents, backups, and logs. Blob Storage offers hot, cool, and archive tiers to optimize storage costs based on access patterns.
2. **File Storage:** Azure File Storage provides fully managed file shares in the cloud, accessible via the Server Message Block (SMB) protocol. It allows you to create file shares that can be mounted as network drives from Windows, Linux, and macOS systems, enabling easy file sharing and collaboration across multiple machines.
3. **Queue Storage:** Azure Queue Storage is a messaging service that allows you to store and process messages asynchronously. It's often used for building scalable and decoupled applications by enabling communication between different components or services.
4. **Table Storage:** Azure Table Storage is a NoSQL data store that provides schema-less storage of structured data. It's suitable for storing large amounts of semi-structured data, such as IoT telemetry, user data, and metadata. Table Storage offers high availability and automatic scaling to handle growing workloads.
5. **Disk Storage:** Azure Disk Storage offers managed virtual hard disks (VHDs) that can be attached to virtual machines (VMs) as durable storage. It provides options for both HDD (Hard Disk Drive) and SSD (Solid State Drive) storage to meet different performance requirements. Disk Storage is commonly used for operating system disks, data disks, and temporary storage for VMs.

Azure Storage provides several features and capabilities to ensure data security, availability, and compliance, including encryption at rest and in transit, role-based access control (RBAC), geo-redundant storage (GRS), and data replication options. It integrates seamlessly with other Azure services and offers SDKs and APIs for easy integration into applications running on various platforms and frameworks. Overall, Azure Storage is a versatile and reliable solution for storing and managing data in the cloud.

🤔 What is Blob storage and why do we need to create it?

Azure Blob Storage is a cloud storage service provided by Microsoft Azure for storing large amounts of unstructured data, such as text or binary data. It's designed to be highly scalable, durable, and accessible from anywhere in the world over HTTP or HTTPS.

Here's why you might need to create Blob Storage:

1. **Storing Large Files:** Blob Storage is ideal for storing large files, such as images, videos, audio files, documents, backups, and logs. It can handle files of virtually any size, from small documents to terabyte-scale media files.
2. **Web Content Hosting:** Blob Storage can be used to host static websites by serving HTML, CSS, JavaScript, and other web assets directly from storage containers. This provides a cost-effective and scalable solution for hosting websites with minimal management overhead.
3. **Data Archiving:** Blob Storage offers a cost-effective solution for archiving rarely accessed data with the Archive access tier. You can store data that needs to be retained for compliance or regulatory purposes without incurring high storage costs.
4. **Data Analytics and Processing:** Blob Storage integrates with Azure services like Azure Data Lake Storage, Azure HDInsight, Azure Databricks, and Azure Synapse Analytics for data analytics, processing, and machine learning tasks. You can store raw or processed data in Blob Storage and analyze it using various Azure services.
5. **Backup and Disaster Recovery:** Blob Storage can be used as a backup target for on-premises and cloud-based applications. You can back up data to Blob Storage using Azure Backup or third-party backup solutions, providing reliable and scalable backup storage with geo-redundancy options.
6. **Content Distribution:** Blob Storage integrates with Azure Content Delivery Network (CDN) to deliver content to users with low latency and high throughput. You can cache blobs at edge locations worldwide to improve the performance of web applications and media streaming services.

Overall, Blob Storage is a versatile and cost-effective solution for storing and managing large volumes of unstructured data in the cloud. Whether you need to store files, host websites, archive data, analyze data, or back up applications, Blob Storage provides the scalability, durability, and accessibility required for modern cloud-based applications and workloads.

😄 Use cases of Blob Storage:

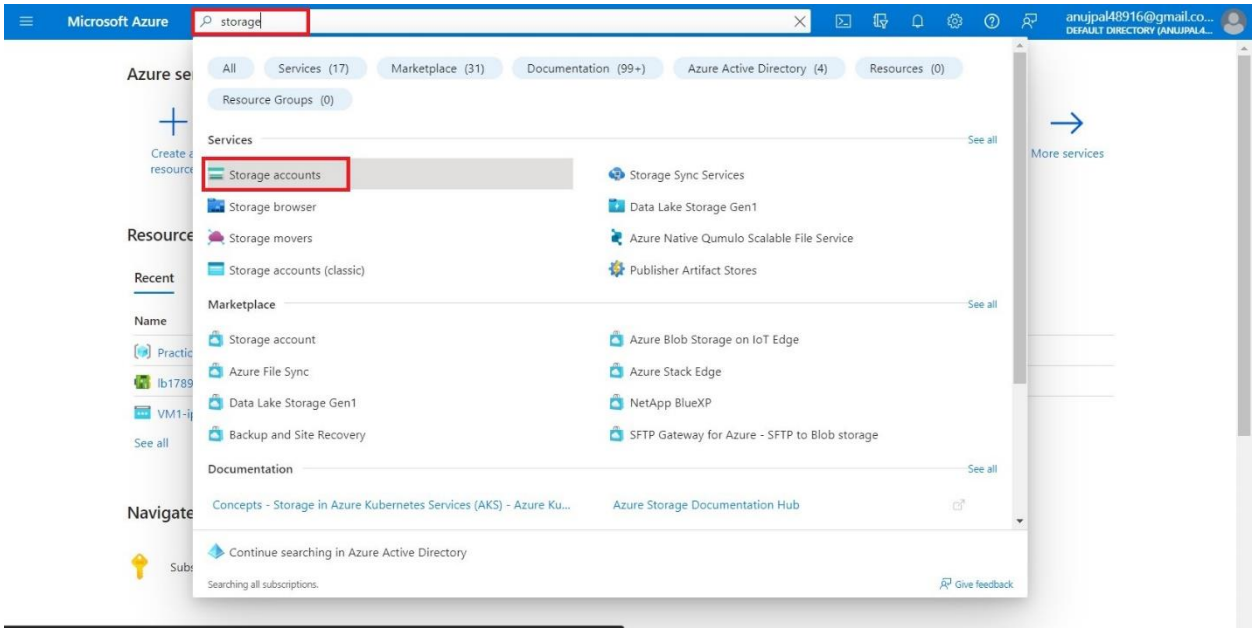
Azure Blob Storage offers a wide range of use cases due to its flexibility, scalability, and cost-effectiveness. Here are some common scenarios where Blob Storage is utilized:

1. **Media Storage and Streaming:** Storing and serving multimedia files such as images, videos, and audio files for websites, mobile apps, and streaming platforms.
2. **Backup and Recovery:** Storing backup copies of on-premises and cloud-based data, databases, virtual machines, and applications to ensure data protection and disaster recovery.
3. **Archiving and Compliance:** Archiving historical data, records, documents, logs, and compliance-related information for long-term retention and regulatory compliance.
4. **Content Distribution:** Hosting static website content, software downloads, firmware updates, and other digital assets for global distribution using Azure Content Delivery Network (CDN).
5. **Data Lakes and Analytics:** Storing raw or processed data for analytics, machine learning, data lakes, data warehousing, and big data processing using Azure services like Azure Data Lake Storage, Azure HDInsight, and Azure Databricks.
6. **IoT Telemetry and Sensor Data:** Collecting, storing, and analyzing telemetry data, sensor data, and Internet of Things (IoT) data streams for real-time monitoring, analytics, and decision-making.
7. **Collaborative Workflows:** Sharing files and documents within organizations, teams, and departments, enabling collaboration, versioning, and access control for shared resources.
8. **Content Management Systems (CMS):** Storing and managing content for CMS platforms, blogs, forums, and wikis, enabling content editors to upload, manage, and serve text and media assets.
9. **Application Data and State:** Storing application data, configuration files, user-generated content, and session state for cloud-native applications, web applications, and microservices architectures.
10. **Data Migration and Transfer:** Transferring large volumes of data between on-premises environments and the cloud, or between different cloud regions or storage accounts, using Azure Data Box or Azure Data Factory.

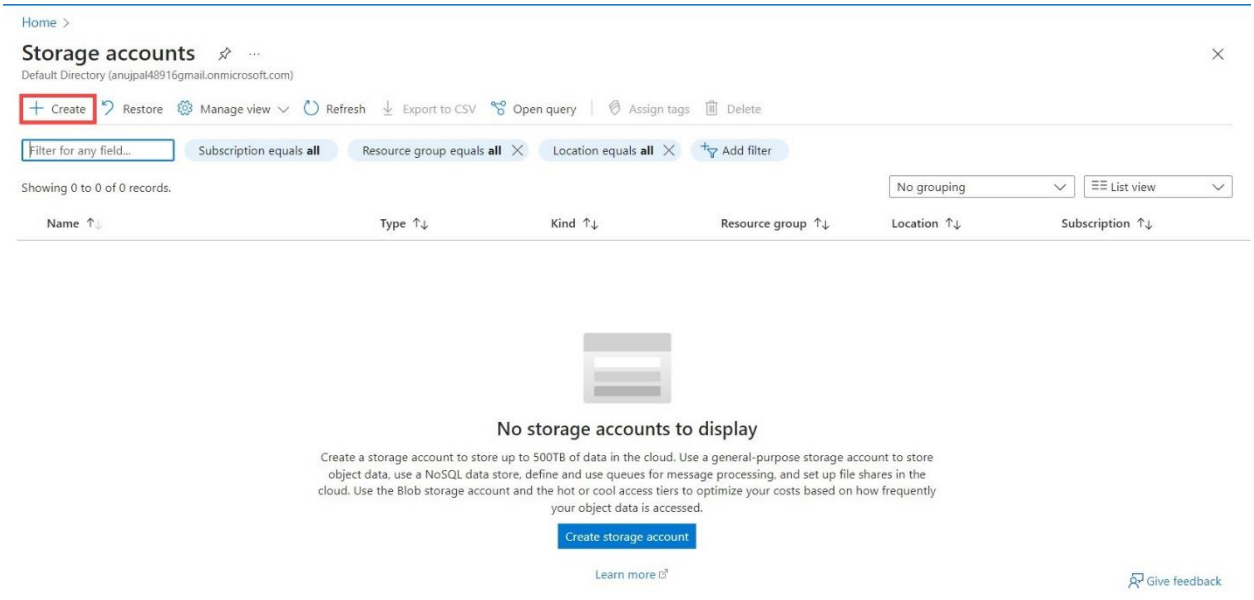
In this guide, we're creating Blob Storage in Azure, a cloud storage solution provided by Microsoft. The end goal is to set up a scalable, durable, and highly available storage solution for storing large amounts of unstructured data, such as images, videos, documents, backups, and logs. By following the outlined steps, we're configuring a Storage Account with the desired settings, creating a container within the account, uploading files to the container, and ensuring public access to the uploaded files. This setup allows for various use cases, including hosting websites, archiving data, backing up applications, and facilitating content distribution, all while leveraging the features and capabilities of Azure Blob Storage.

🤓 **Step 1:** Log in to Azure Portal

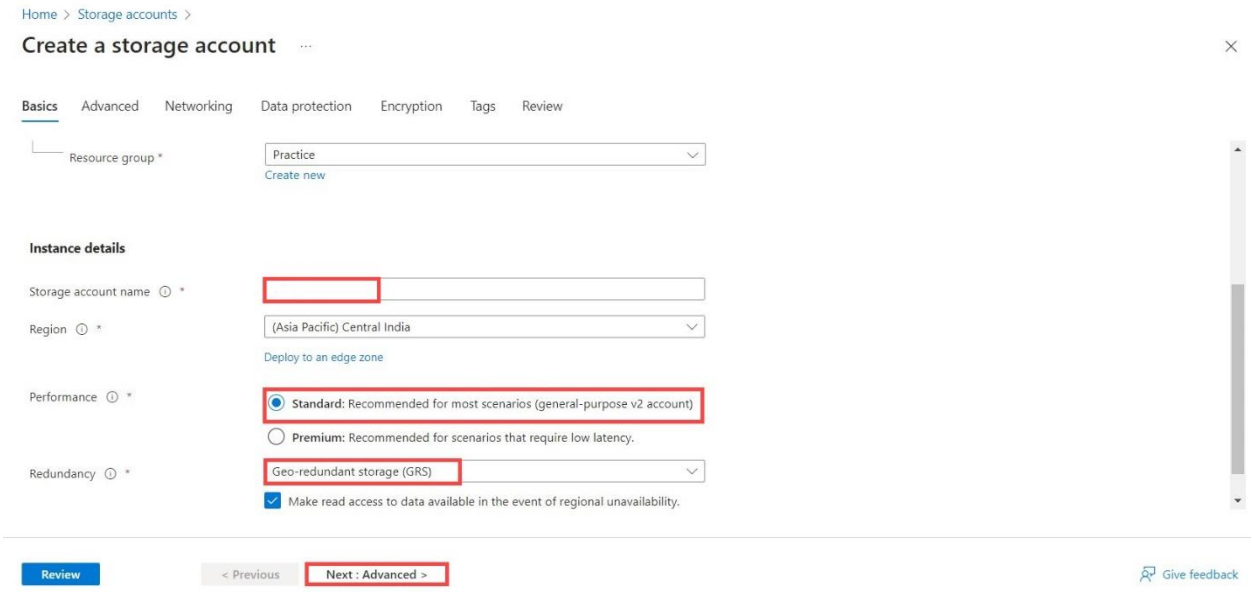
- The first step in creating Blob Storage is setting up the Storage Account. Click on the search bar and type “Storage Account”



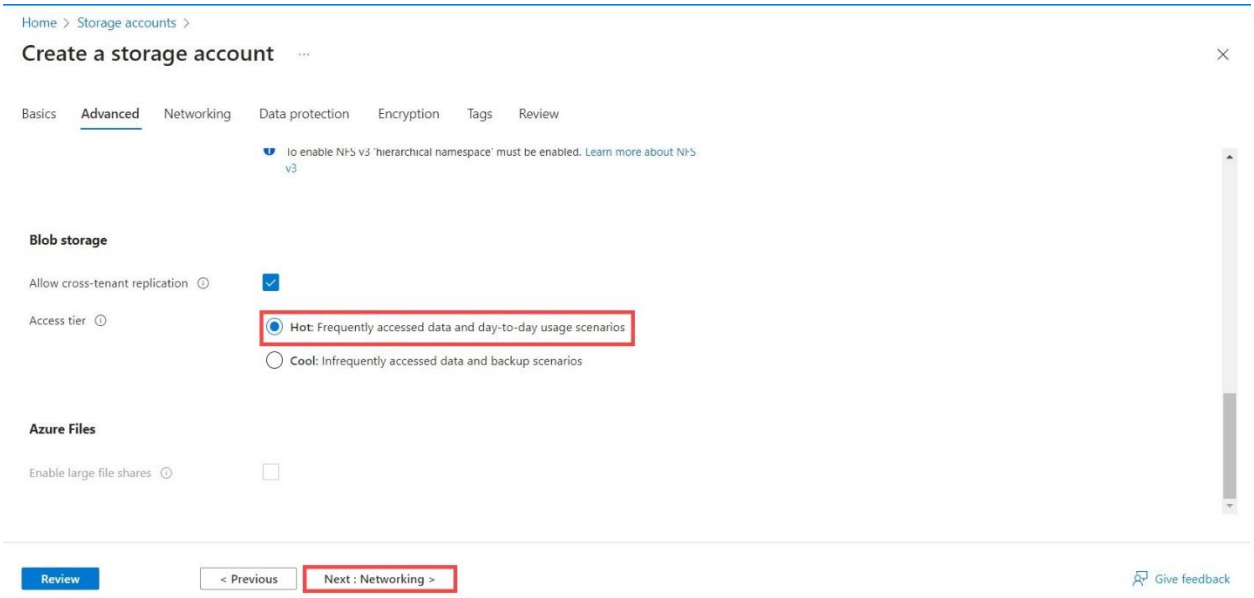
🤓 **Step 2:** After that, you have to fill the option to create a storage Account.



- Under the instance details, give your storage account a globally unique name.
- For cost optimization, select the standard performance
- For redundancy, select the Geo Redundant Storage (GRS)



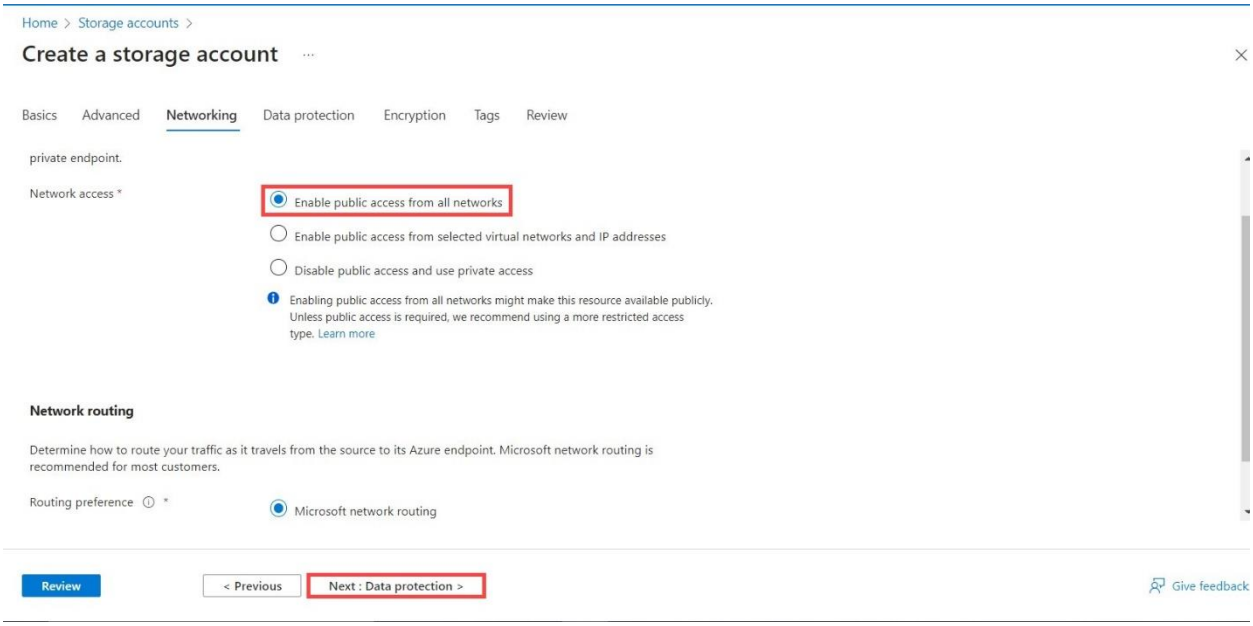
Step 3: Click on the Next -> Advanced Tab



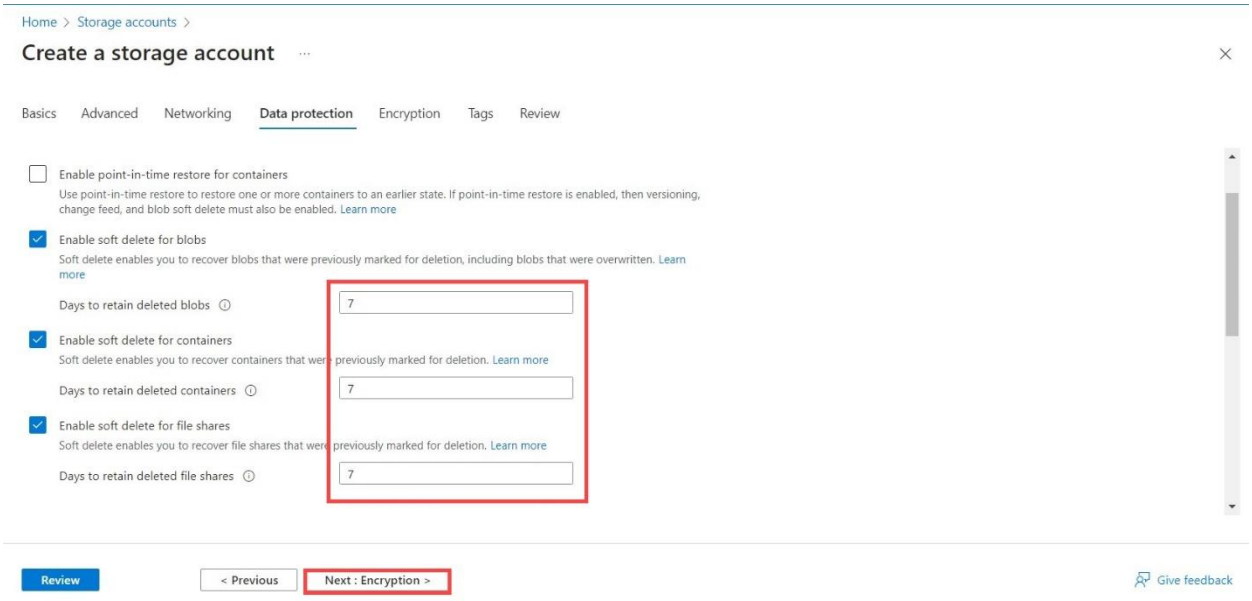
- On the Access tier, click on “Hot”

Step 4: Click on the Next-> Networking Tab

- Under the Network Connectivity section, click on “Enable public access from all networks” This option allows access to your storage account over the Internet.

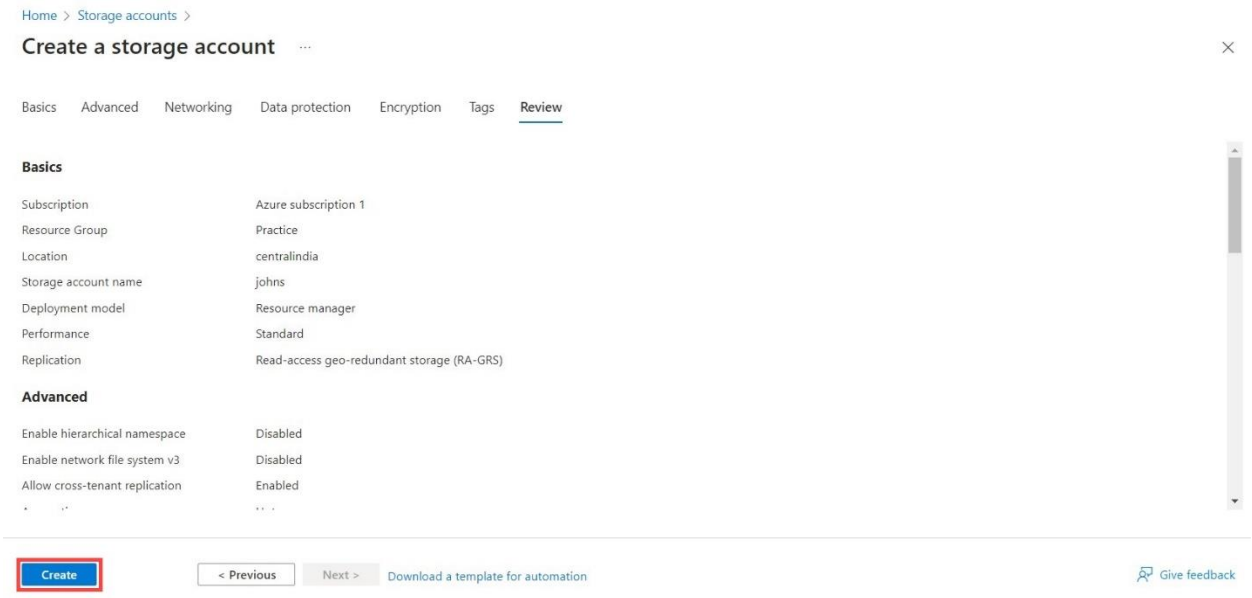


Step 5: On the Data Protection Tab, leave the recovery options in the default mode.

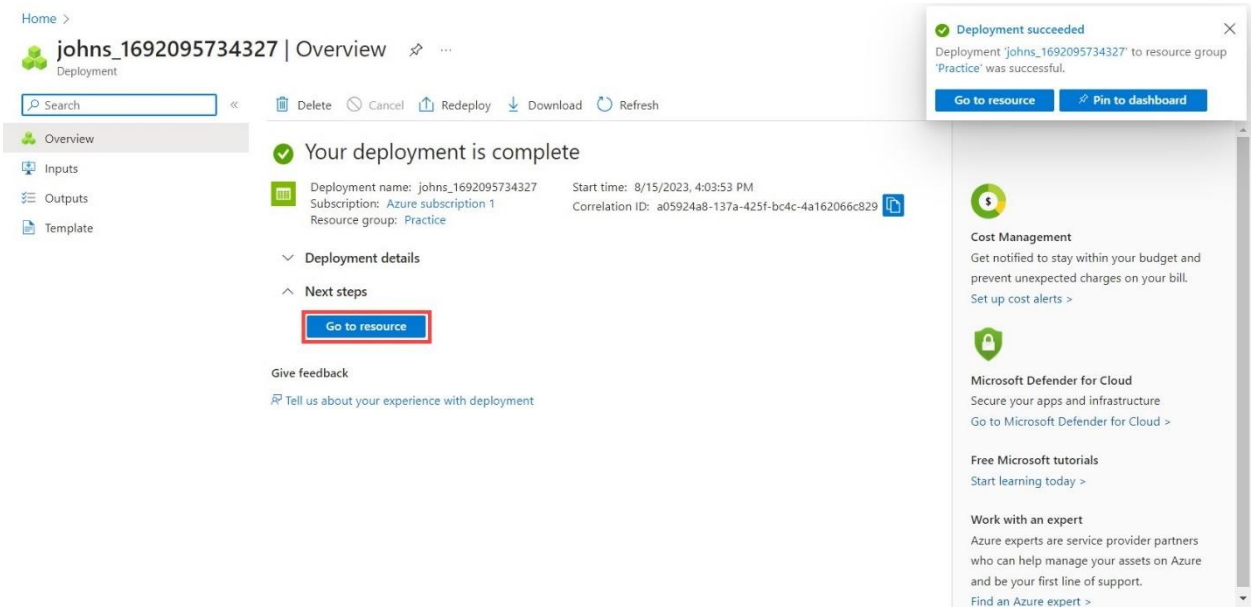


Step 6: You can skip the Tag and the Encryption Tab and click “Review” to make sure all the settings are correct.

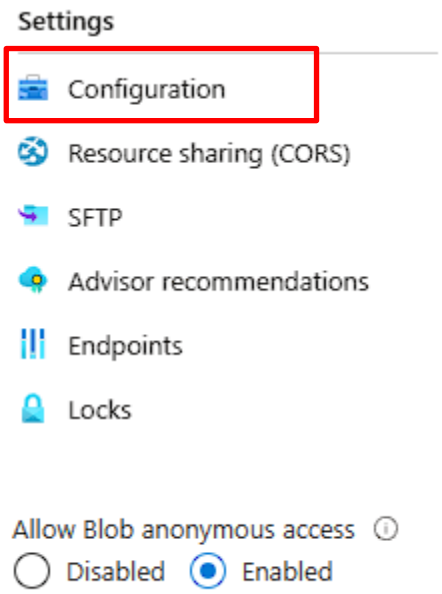
- After that Review your details and click on “Create”.



🤓 **Step 7:** Your storage account will be created as shown below. Then click on the "Go to Resource" option to get inside your storage account.

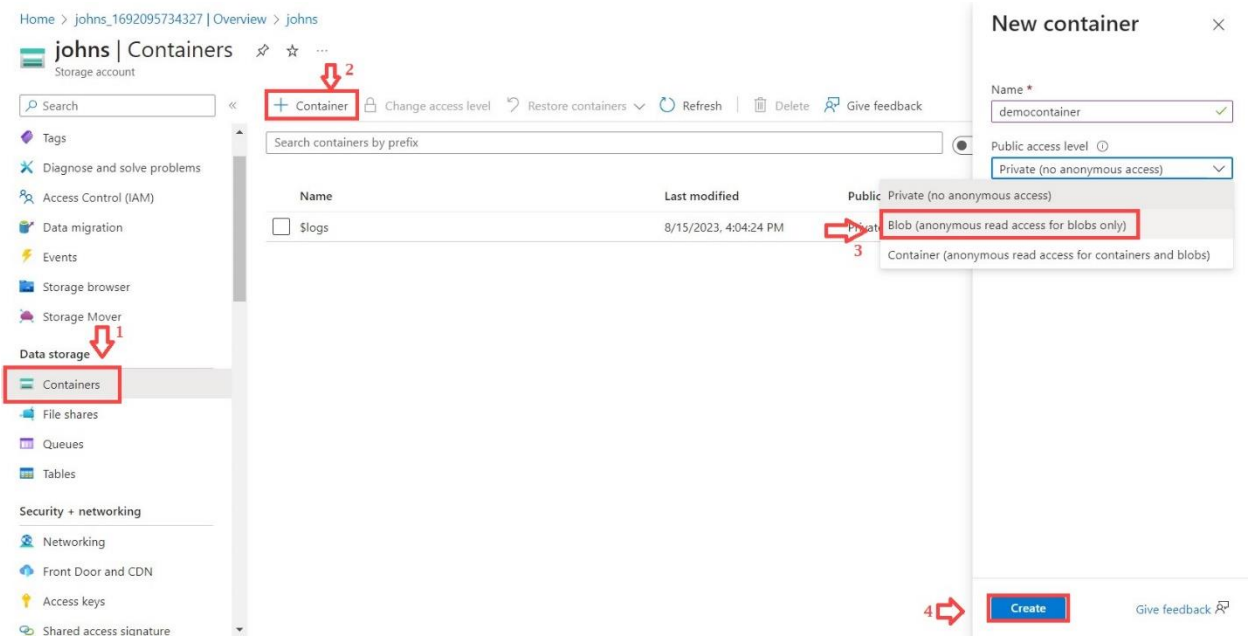


🤓 **Step 8:** Now go to your resources and from the left pane scroll down to settings and navigate to configuration. In there, you have to enable **Blob anonymous access**.

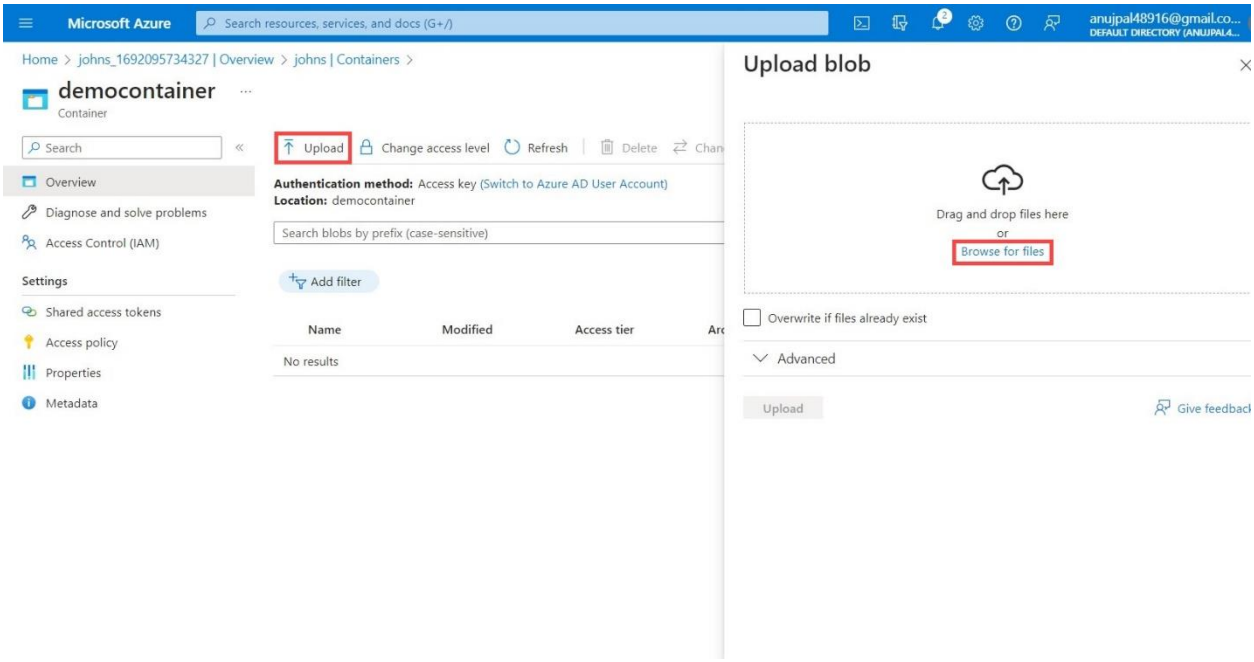


Step 9: After opening the Storage Account Click on “containers” and click on “+ container” to create a new container.

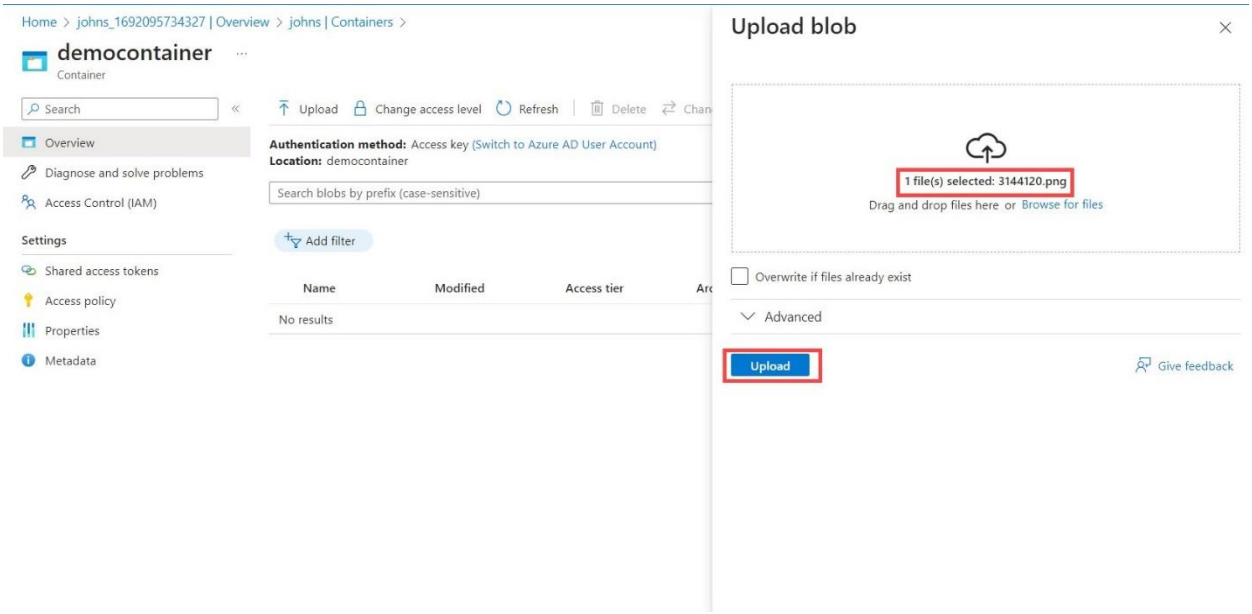
- Give an appropriate Name to your container And Select the Public Access level to your container as shown below. Click on Create



- After opening the container Click on “upload” to add files

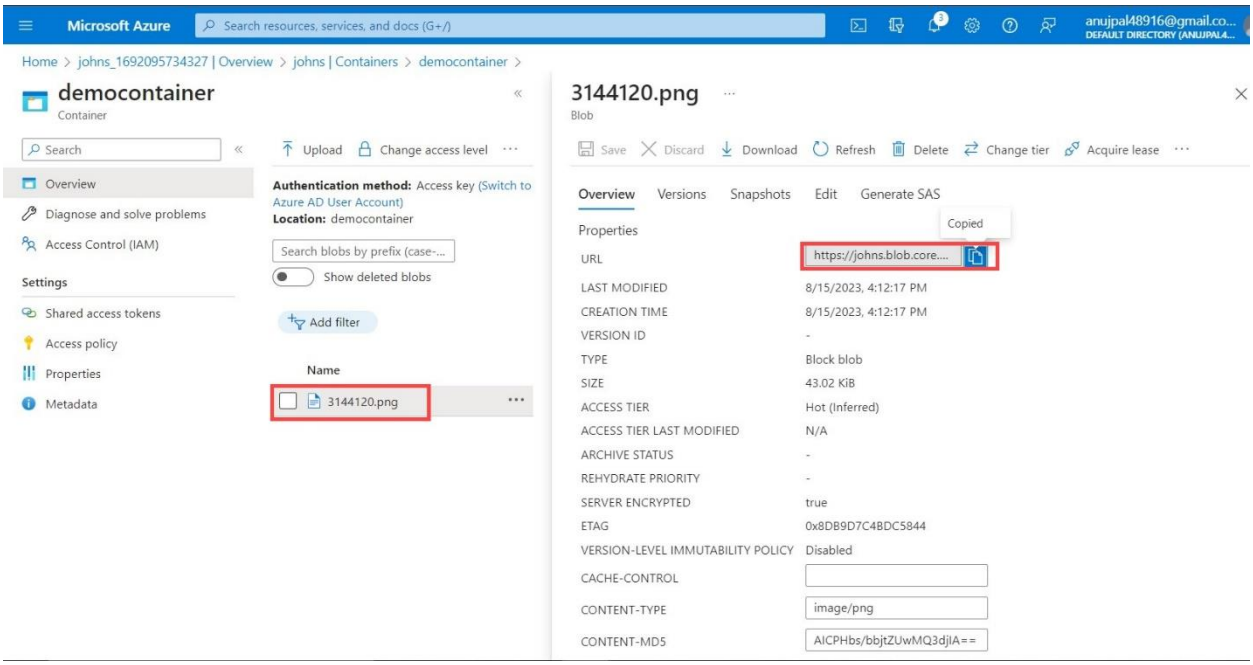


- Click on Browse to locate the file you want to upload and click Open



- Click on the uploaded blob file

Step 9: Copy the URL of the uploaded blob file and paste it into your browser's new tab

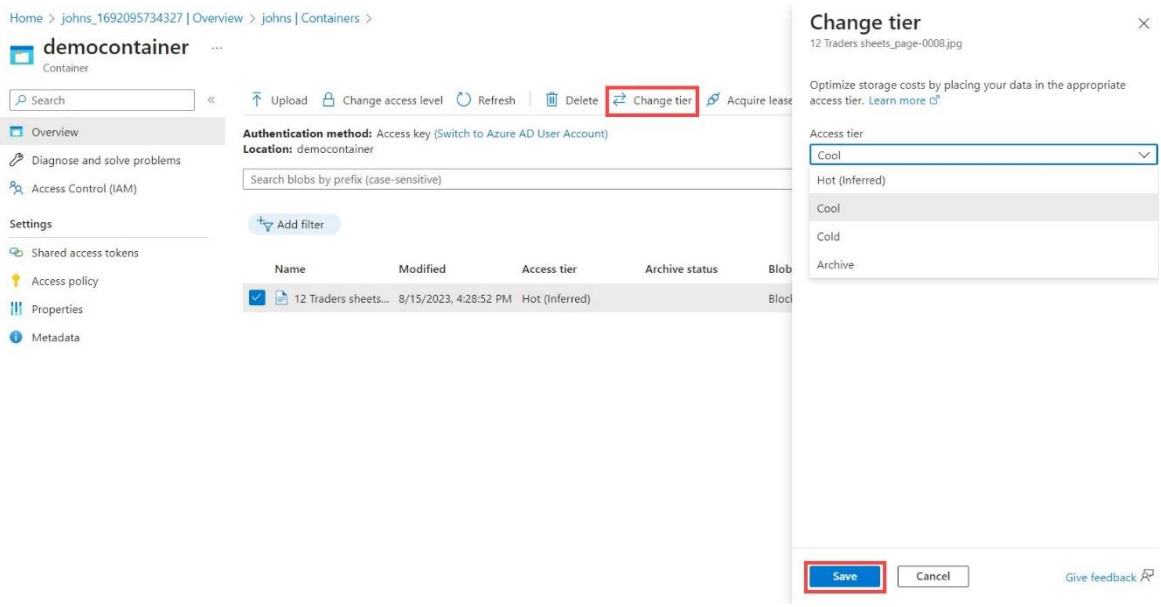


- You can see the uploaded image on your browser.

Azure Storage Access Tiers: -

- Hot: Frequently accessed data (high availability)
- Cool: Infrequently accessed data (lower availability and high durability)
- Archive: Rarely (if ever) accessed

You can change Storage Access Tiers by clicking “change tier on the blob storage menu, click on the dropdown menu to select your preferred access tier as shown below:


Home > johns_1692095734327 | Overview > johns | Containers >
democontainer
Container
Search
Overview
Diagnose and solve problems
Access Control (IAM)
Settings
Shared access tokens
Access policy
Properties
Metadata
Upload
Change access level
Refresh
Delete
Change tier
Acquire lease
Authentication method: Access key (Switch to Azure AD User Account)
Location: democontainer
Search blobs by prefix (case-sensitive)
Add filter
Name
Modified
Access tier
Archive status
Blob
12 Traders sheets...
8/15/2023, 4:28:52 PM
Hot (Inferred)
Change tier
12 Traders sheets_page-0008.jpg
Optimize storage costs by placing your data in the appropriate access tier. Learn more
Access tier
Cool
Hot (Inferred)
Cool
Cold
Archive
Save
Cancel
Give feedback