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**Lab Details**

1. In this lab we will go through various steps to create Azure Storage account and explore various options provided by it like Blob storage, File Share,etc.

**Introduction**

**What is Azure Storage?**

* Azure Storage is the Azure platform's managed service for providing cloud storage. Azure Storage is composed of several core services and supporting features. It is highly available, secure, durable, scalable, and redundant.
* The word ‘Blob’ expands to a Binary Large Object. Blobs include images, text files, videos and audios. Azure Blob storage is Microsoft's object storage solution for the cloud and it is optimized for storing massive amounts of unstructured data. Unstructured data is data that doesn't adhere to a particular data model or definition, such as text or binary data.
* With Azure Blob Storage, the files (photos, videos, training documents, etc.), which are known as blobs, are put in containers which function similar to directories. These are then linked to the storage account.
* Azure Files offers fully managed file shares in the cloud that are accessible via the industry standard Server Message Block (SMB) protocol or Network File System (NFS).
* Azure file storage mainly can be used if we want to have a shared drive between two servers or across users. In that case, we will go for Azure file storage.
* We can create an unlimited number of file shares within a storage account. Once we create a file share, then we can create directories, just like folders, and then we can upload files into it. Once we create a file share, we can mount that on any virtual machine, whether it is in Azure or outside.

**Architecture Diagram**

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**Task Details**

1. Sign in to Azure Portal
2. Understand the performance, redundancy and access tiers
3. Create a Storage Account
4. Create a Container
5. Upload a Blob object
6. Create a File Share
7. Upload a File
8. Validation test
9. Delete the Resources

# **Lab Steps**

## **Task 1: Sign in to Azure Portal**

1. Go to the Azure portal by using URL [https://portal.azure.com](https://portal.azure.com/).
2. If it automatically logs into any other azure account, please logout of it and clear cache.
3. Sign in with your given username and password on Azure portal.

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## **Task 2: Understand the performance, redundancy, and access tiers**

1. **Performance:-**There are many kinds of storage accounts available in Azure Storage. Each type has its own set of features and pricing structure. Before you create a storage account, think about these distinctions to figure out which kind of account is ideal for your needs.

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        Premium block blobs, Premium file shares, and premium page blobs will be available when you choose **Premium**Performance while creating the storage account.

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2. **Redundancy :-**

There are different types of replications that you can perform in Azure. They are:-

**LRS:-** In the main region, locally redundant storage (LRS) duplicates your data three times inside a single data center. This kind of redundancy is useful for Rack Failures within the data center.

**ZRS:-** Your Azure Storage data is replicated synchronously across three Azure availability zones in the main region using zone-redundant storage (ZRS). Each availability zone is a physical location with its own power, cooling, and networking infrastructure. This kind of redundancy is useful for data center failures.

**GRS:-** Using LRS, geo-redundant storage (GRS) replicates your data three times synchronously inside a single physical location in the primary region. It then asynchronously replicates your data to a single physical place in a secondary area hundreds of kilometers distant from the original region. This kind of is useful for regional failures.

**GZRS:-** GZRS (geo-zone-redundant storage) combines the high availability offered by redundancy across availability zones with the protection afforded by geo-replication against regional failures. Data in a GZRS storage account is duplicated to a secondary geographic area for disaster recovery and is replicated across three Azure availability zones in the original region. If an availability zone becomes inaccessible or unrecoverable, you may still read and write data using a GZRS storage account.

The table below describes when to use what kind of replications.

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3. **Access Tiers:-**

Different access levels in Azure storage enable you to store blob object data in the most cost-effective way possible. Tiers of access are available, including:

**Hot** - Designed for storing data that is regularly accessed.

**Cool** - Designed to store data that is viewed rarely and kept for at least 30 days.

There is one more tier called the **archive tier**.

We can change the access tier to archive from Hot/Cold. We can’t mention the storage account blob as an archive directly while creating the storage account.

## **Task 3: Create a storage account**

1. At the top of the Azure portal, in the search box, search **Storage account**. Select **Storage accounts** in the search results.

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1. In **Storage accounts**, select**+ Create**.

Imagen que contiene Texto

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1. In **Create a storage account**page, enter or select the following information in the **Basics** tab:

* Resource group : Create new **rg\_eastus\_XXXXX**
* Instance details :
  + Storage account name : Enter mystorageacc[your name]
  + Region : Select **(US) Central US**
  + Performance : Select **Standard**
  + Redundancy: Select **Locally-redundant storage (LRS)**

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1. Leave all the settings as default and click on**Review + create**. Then, click on **Create**. Your deployment will be completed after a few minutes.

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## **Task 4: Create a Container**

1. In the Azure portal, go to the Storage account you created earlier. On the overview page of your storage account, in the **Data storage** section, select **Containers**.

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1. Click on **+ Container**.

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1. Now, on the **New Container** page, enter or select the following information :

* Name : Enter mycontainer25
* Public access level : Select **Private (no anonymous access)**
* Click on **Create**.

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1. Your container will be created and displayed in the containers section.

### **Do You Know?**

Azure Storage integrates seamlessly with other Azure services, such as Azure Functions, Azure Logic Apps, Azure Data Factory, Azure Machine Learning, and Azure Backup.

**Task 5: Upload a Blob object**

1. First, let us create a simple HTML file. Open **Notepad** on your local computer and enter <h1>This is a sample document!</h1>.

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1. Then , click on **Save as** and enter sample.htmland click on **Save**.
2. Now, if you try to open the sample.html file, you will see the page displaying the contents in it.

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1. Now, go to the container you created. Here, in the overview page of your container, click on **Upload**.

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1. On the **Upload blob** page, browse the file you created previously named **sample.html** on your local computer and select the file. Then, click on**Upload**.
2. You can now see that you have your file in place.

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## **Task 6: Create a File Share**

1. In the Azure portal, go to the Storage account you created earlier. On the overview page of your storage account, in the **Data storage** section, select **File shares.**

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1. Click on **+ File share**.

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1. Now, on the **New file share** page, enter or select the following information:

* Name : Enter myfile123
* Tier : Select **Hot**
* Click on **Create**.

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1. Your file share will be created and displayed in the file shares section.

## **Task 7: Upload a File**

1. Now, go to the file share you created. Here, in the overview page of your file share, click on **Upload**.

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1. On the **Upload files** page, browse any file on your local computer and select the file. Then, click on**Upload**.
2. You can now see that you have your file in place.

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## **Task 8: Delete the Resources**

1. In the search box at the top of the Azure portal, enter **Resource groups**. Select **Resource groups** from the search results.
2. Click on the name of **Resource groups**
3. Select all the Resoures in that **Resource groups**
4. Go to Three dots to the right and then click **Delete** button
5. Now type **delete**
6. Confirm delete

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# **Completion and Conclusions**

1. You have successfully signed into Azure Portal.
2. You have successfully Understood the main things regarding the creation of a storage account such as Performance, Redundancy and the access tiers.
3. You have successfully configured and created the storage account.
4. You have successfully created a container.
5. You have successfully uploaded a blob object.
6. You have successfully created an azure file share.
7. You have successfully uploaded a file.
8. You have successfully deleted the resources.