Day 45

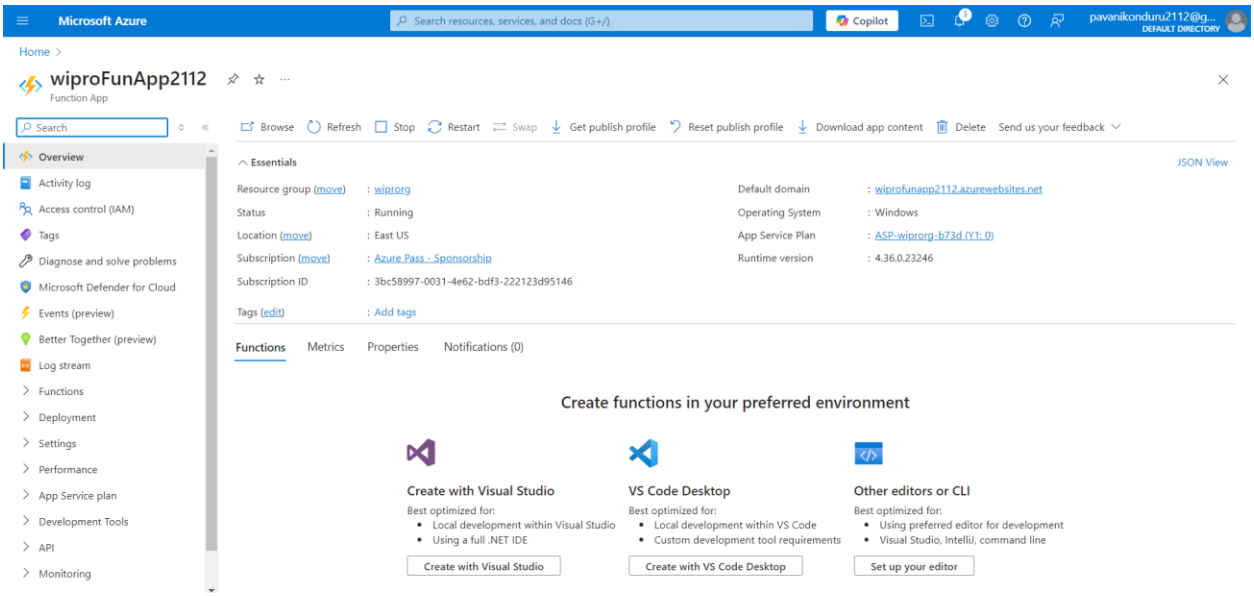
What does “Serverless” Mean?

“Serverless computing is a misnomer referring to a cloud-computing execution model to a cloud-computing execution model in which the cloud provider runs the server, and dynamically manages the allocation of machine resources.”

Azure Functions:

Azure Functions is a serverless solution that allows you to write less code, maintain less infrastructure, and save on costs. Instead of worrying about deploying and maintaining servers, the cloud infrastructure provides all the up-to-date resources needed to keep your applications running.

Creating a FunctionApp:



Scalability: Vertical and Horizontal Scaling

Definition of Scalability

Scalability in computing refers to a system's ability to handle increased load by adding resources, ensuring performance and reliability as demand grows.

Vertical Scaling (Scaling Up)

Definition

Vertical scaling involves adding more power to an existing machine by upgrading hardware components such as CPU, RAM, or storage.

Advantages

- **Simplicity**: Easier to manage since it involves fewer machines, reducing the complexity of deployment and maintenance.
- **Performance**: Can provide better performance for specific tasks that require high computing power.

Disadvantages

- **Limitations**: There's a maximum limit to how much you can upgrade a single machine, which can lead to constraints as demand grows.
- **Downtime**: Upgrading often requires downtime, impacting system availability and user experience.

Horizontal Scaling (Scaling Out)

Definition

Horizontal scaling involves adding more machines to your pool of resources, such as additional servers, to handle increased workloads.

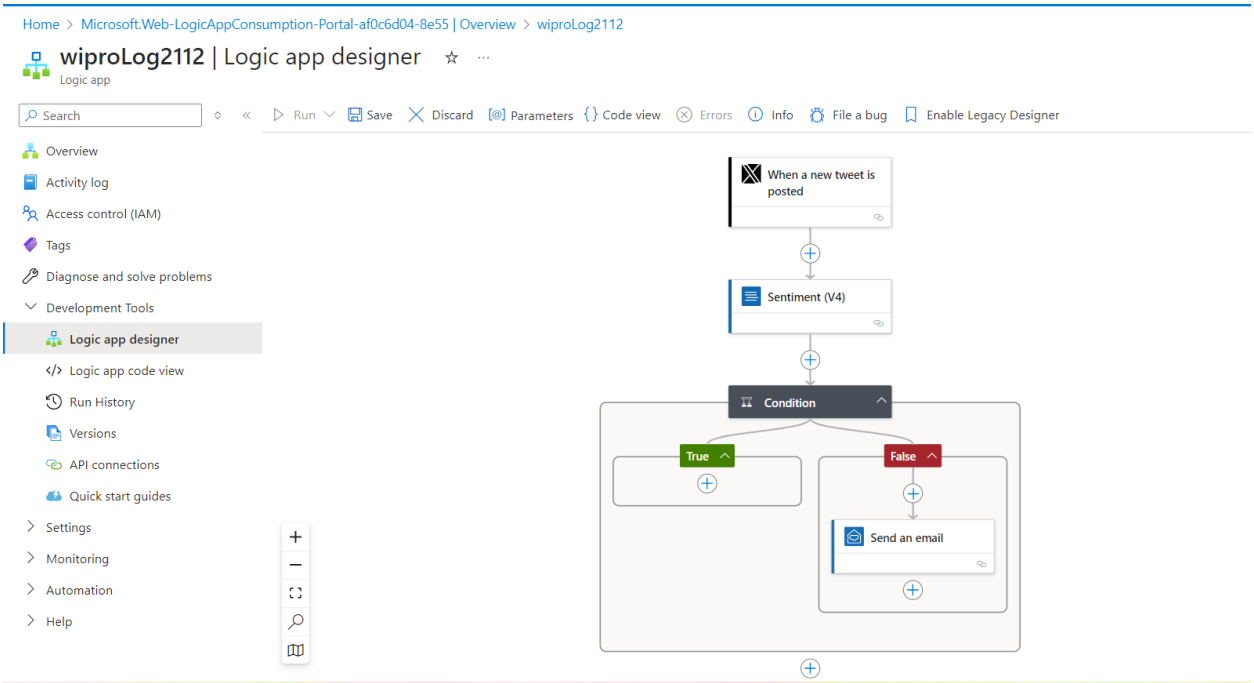
Advantages

- **Flexibility**: Allows you to scale out as needed, often at a lower cost per unit of additional capacity.
- **Redundancy**: More machines can lead to improved fault tolerance and higher availability, minimizing the risk of a single point of failure.

Disadvantages

- **Complexity**: Managing multiple machines can be more complex, requiring load balancing, orchestration, and coordination among resources.
- **Network Latency**: Increased communication overhead between machines can potentially lead to performance issues.

Creating a logic App



Azure Storage:

- The Azure Storage platform is Microsoft's cloud storage solution for modern data storage scenarios. Azure Storage offers highly available, massively scalable, durable, and secure storage for a variety of data objects in the cloud.
- Azure Storage data objects are accessible from anywhere in the world over HTTP or HTTPS via a REST API. Azure Storage also offers client libraries for developers building applications or services with .NET, Java, Python, JavaScript, C++, and Go.
- Developers and IT professionals can use Azure PowerShell and Azure CLI to write scripts for data management or configuration tasks. The Azure portal and Azure Storage Explorer provide user-interface tools for interacting with Azure Storage.

Benefits of Azure Storage:

- **Durable and highly available.** Redundancy ensures that your data is safe in the event of transient hardware failures.

- **Secure.** All data written to an Azure storage account is encrypted by the service. Azure Storage provides you with fine-grained control over who has access to your data.
- **Scalable.** Azure Storage is designed to be massively scalable to meet the data storage and performance needs of today's applications.
- **Managed.** Azure handles hardware maintenance, updates, and critical issues for you.
- **Accessible.** Data in Azure Storage is accessible from anywhere in the world over HTTP or HTTPS.

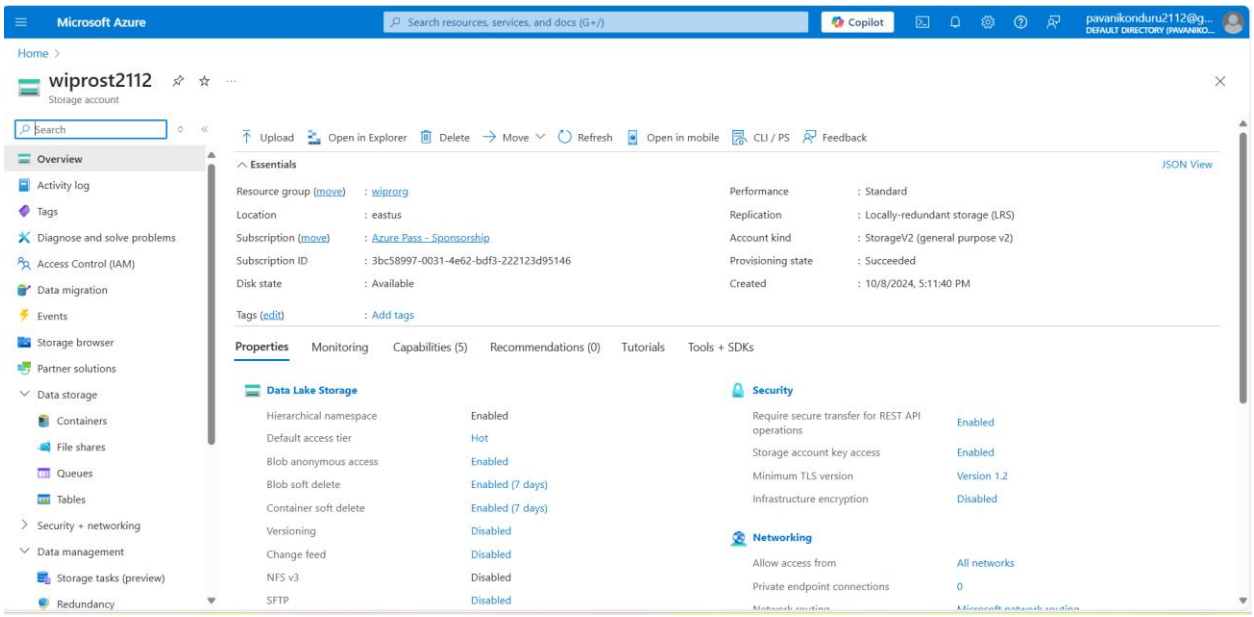


Fig-1: Creating a Storage Account

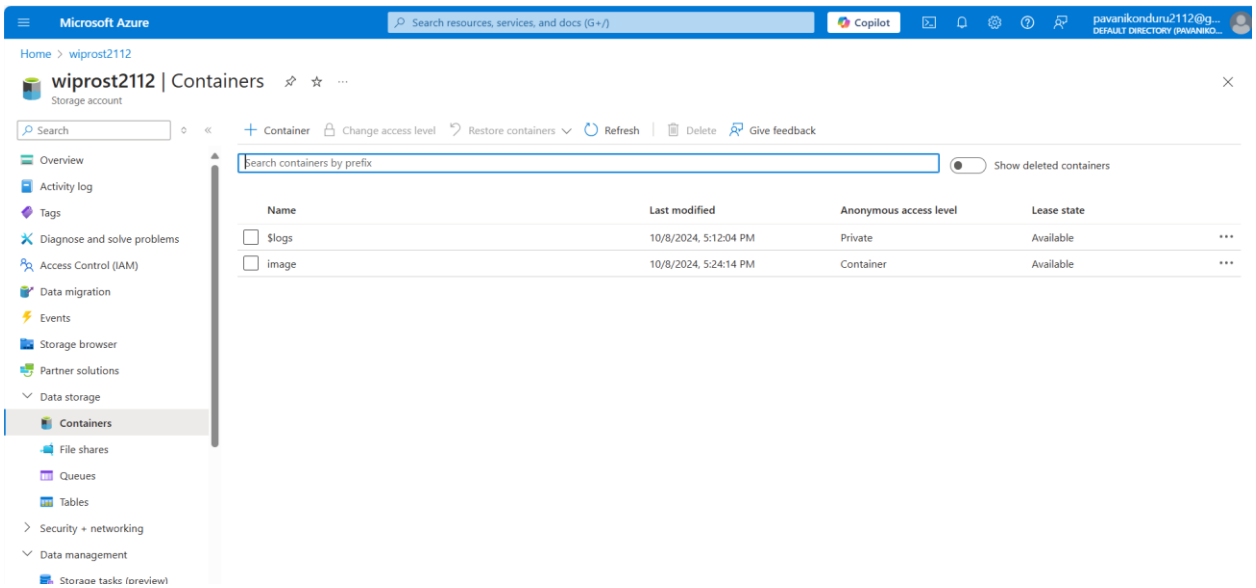


Fig-2: Uploading an Image

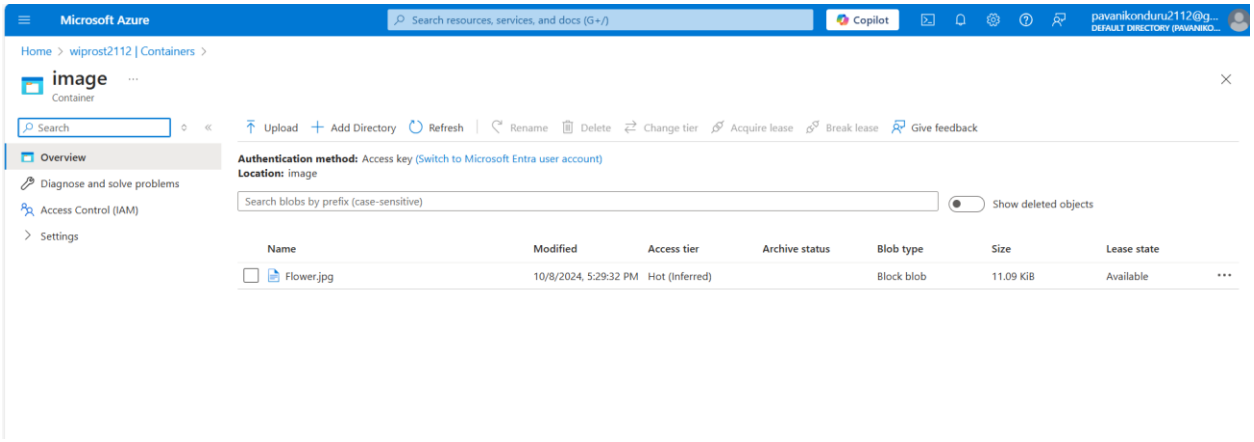


Fig-3:Image Uploaded

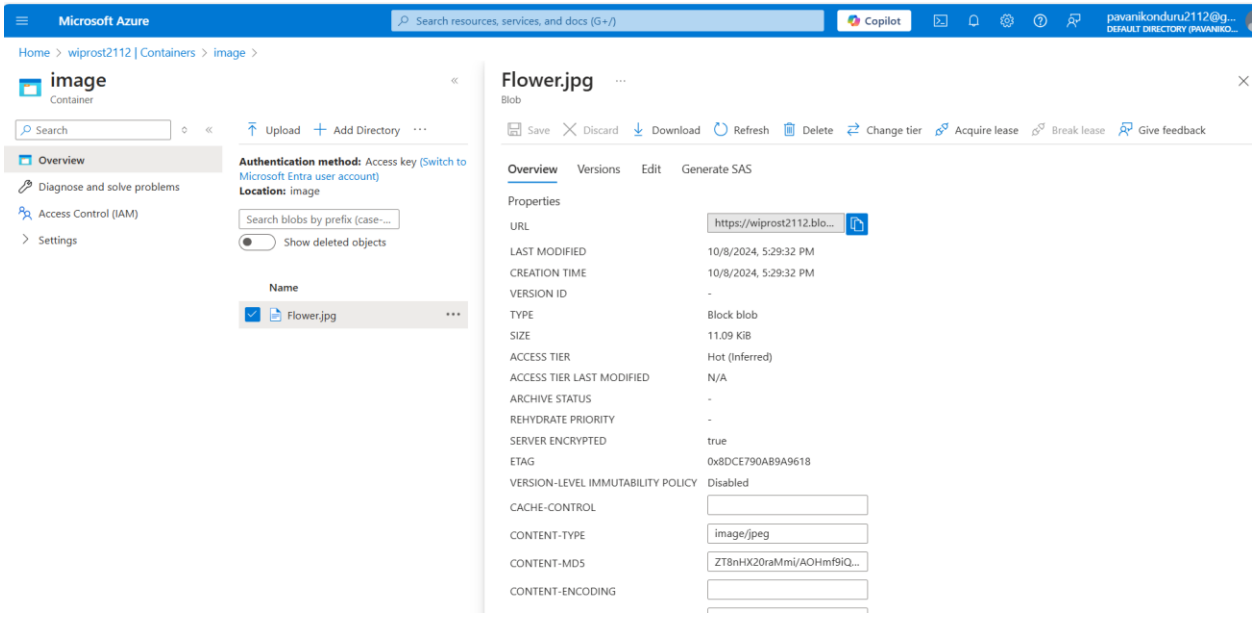


Fig-4: Image Uploaded Successfully (Details)