CLOUD COMPUTING INTERNSHIP – TASK 3

MULTI-CLOUD ARCHITECTURE (AWS + AZURE) DOCUMENTATION

Submitted by: HARINI P
College: AMRITA VISHWA VIDYAPEETHAM, NAGERCOIL CAMPUS
Program: B.Tech CSE – 2nd Year
Internship Batch: CODTECH CLOUD COMPUTING
Intern ID :CT04DR2529

ABSTRACT

This report presents an advanced multi-cloud architecture integrating **Amazon Web Services (AWS)** and **Microsoft Azure** to demonstrate distributed cloud services and interoperability. The design focuses on storage redundancy, cross-cloud data availability, and basic operational integration.

A file is uploaded and maintained in both AWS S3 and Azure Blob Storage, showing how workloads can operate across more than one cloud provider.

The solution is scalable, fault-tolerant, and suitable for real-world use cases such as migration, back-ups, and cross-cloud continuity.

SYSTEM DESIGN + WORKFLOW

1. Introduction

Multi-cloud architecture is a strategy where an application or workload uses services across **multiple cloud providers**.

This reduces vendor lock-in, increases flexibility, improves availability, and allows organizations to choose the best services from each provider.

This task implements a simple distributed storage design using **AWS S3** and **Azure Blob Storage**.

2. Architecture Components

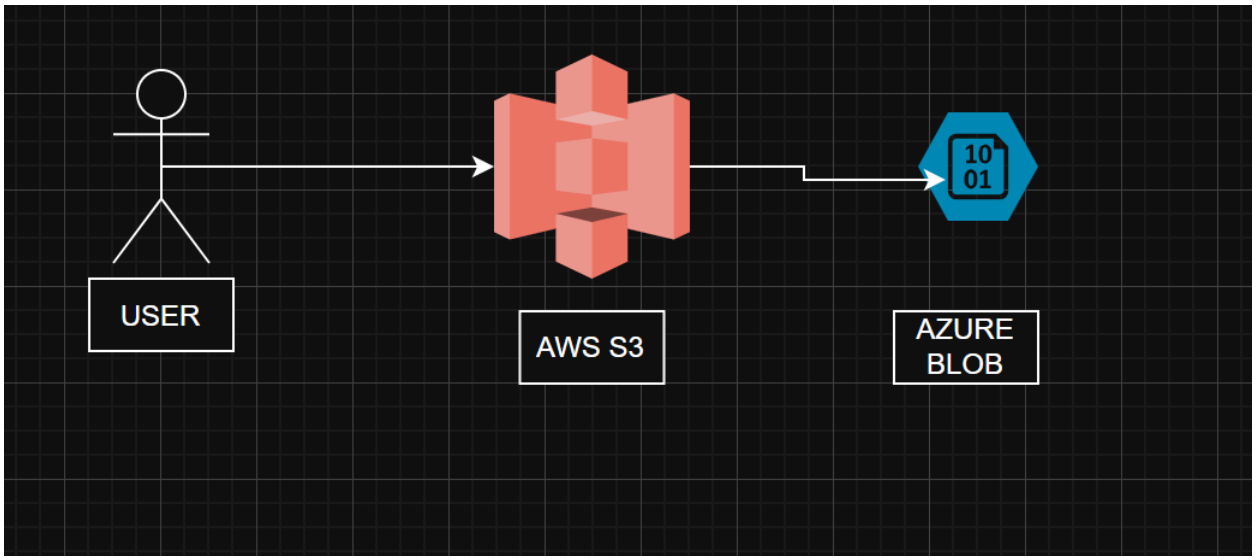
AWS Components:

- **Amazon S3 Bucket:** Primary object storage.
- **Region:** [Select region you used]
- **Uploaded File:** Sample test file (image/document/text).

Azure Components:

- **Azure Storage Account** (general-purpose v2)
- **Blob Container** named *cloud-demo*
- **Uploaded File:** Same file as in S3 to demonstrate cross-platform consistency

3. Architecture Diagram



4. System Workflow (Step-by-Step)

1. The user interacts with the system through AWS S3.
2. A file is uploaded to **Amazon S3 Bucket**.
3. The same file is also uploaded to **Azure Blob Storage** to maintain redundancy.

4. Both clouds store and serve the object independently.
5. This demonstrates interoperability and cross-cloud functionality.

IMPLEMENTATION + ADVANCED DETAILS

5. Implementation Procedure

5.1 AWS Implementation Steps

1. Logged into AWS Console
2. Opened S3 service
3. Created an S3 bucket with default configurations
4. Uploaded a sample file
5. Verified the upload using the AWS Console

5.2 Azure Implementation Steps

1. Logged into Azure Portal
2. Created a **Resource Group** named *multi-cloud-rg*
3. Created an Azure **Storage Account**
4. Created a Blob Container named *cloud-demo*
5. Uploaded the same sample file to Blob Storage
6. Verified access from the Azure Portal interface

6. Advantages of Multi-Cloud Architecture (Advanced)

6.1 High Availability

If one cloud fails, services remain available through the second cloud.

6.2 Vendor Independence

You’re not locked into AWS or Azure — workloads can move freely.

6.3 Optimized Performance

Each cloud offers strengths — S3 for stability, Azure for enterprise integration.

6.4 Disaster Recovery

Copies of the same files exist in two separate cloud environments.

6.5 Security & Compliance

You can match data location regulations by distributing across regions/providers.

7. Conclusion

This project successfully demonstrates an advanced multi-cloud architecture using **AWS S3** and **Azure Blob Storage**.
It highlights the capability of applications to operate across multiple cloud ecosystems, improving redundancy, flexibility, and reliability.
The completed setup fulfills the requirement of Task 3 by showing interoperability between two cloud providers along with a functional distributed storage workflow.