Vivekanand Education Society's

Institute of Technology

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Department of Information Technology   A.Y. 2024-25

Advance DevOps Lab
Assignment 01

Aim:

Part 1 : To develop a website and host it on your local machine on a VM

Part 2 : To host the website developed as part 1 of Assignment 1 using AWS.

Roll No.	44
Name	GANESH SANJAY PANDHRE
Class	D15B
Subject	Advance DevOps Lab
LO Mapped	LO1: To understand the fundamentals of Cloud Computing and be fully proficient with Cloud based DevOps solution deployment options to meet your business requirements.
Grade:	

AIM : To develop a website and host it on your local machine on a VM Reference and hosting a static website on Amazon S3 (AWS).

THEORY :

Introduction
In DevOps, this experiment involves developing a website using a tech stack including HTML, CSS, JavaScript, and frameworks like React or Angular, and backend technologies such as Node.js or Python. The website is first hosted on a local development environment, then transitioned to Amazon S3 for scalable cloud-based hosting. This approach highlights the advantages of both local and cloud environments.

Hosting on a Local Machine Using Xampp

Setting Up a Local Development Environment with XAMPP :
XAMPP is an open-source cross-platform web server solution stack package developed by Apache Friends. It includes:
- Apache: A widely-used web server software.
- MySQL/MariaDB: Database management systems.
- PHP: A server-side scripting language.
- Perl: A high-level programming language.

Pros :
- Complete control over the development environment.
- Useful for development and testing phases.

Cons :
- Limited scalability.
- Requires manual management of infrastructure and updates.

Hosting a Static Website on Amazon S3 (AWS)

A static website consists of fixed content with HTML files and does not require server-side processing. This type of website is typically faster and easier to host.

Introduction to AWS S3
Amazon S3 (Simple Storage Service) is a scalable object storage service that provides a simple web services interface to store and retrieve any amount of data at any time from anywhere on the web.
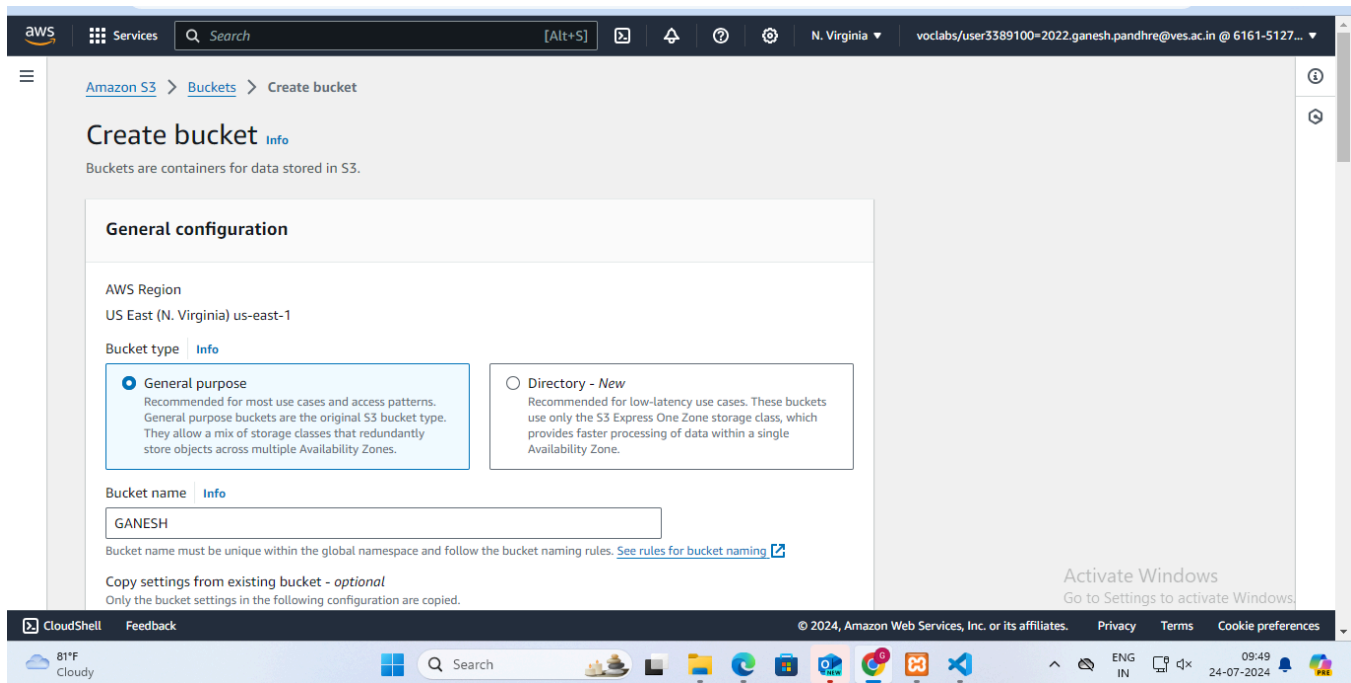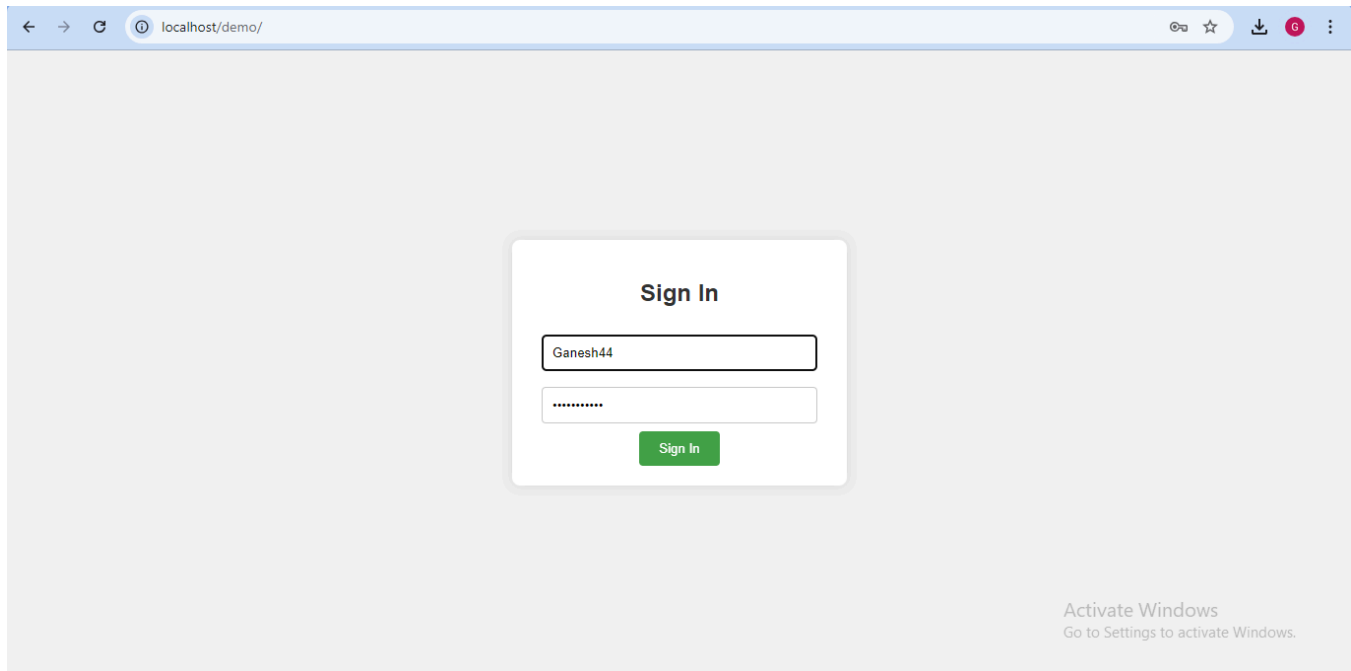
Pros :
- Highly scalable and cost-effective.
- Minimal management required.
- High availability and durability of data.

Cons :

- Limited to static content.
- Less control over the hosting environment compared to a VM.

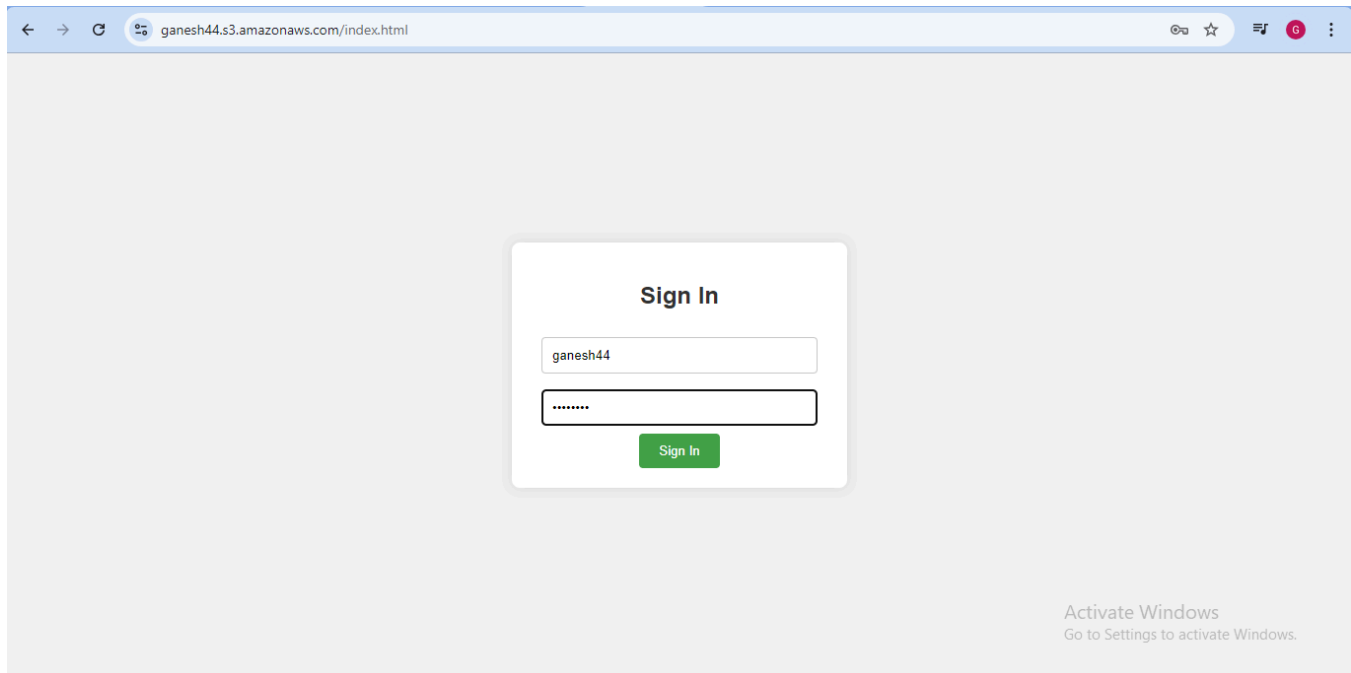| Aspect	Local Hosting (VM with XAMPP)	Cloud Hosting (AWS S3)
Performance	Works well for development but may struggle with high traffic in production.	Usually performs better with global access and fast content delivery.
Security	You're responsible for setting up and managing security.	AWS provides strong security features, reducing your management burden.
Accessibility	Only accessible on your local network unless configured otherwise.	Accessible from anywhere, great for public websites.
Cost	No extra hosting fees, but you handle all maintenance and updates.	Pay for what you use, which can be cost-effective but needs monitoring.
Deployment	Requires manual file transfers and updates.	Supports automated deployment with tools like AWS CodePipeline.
Continuous Integration	Less automated; may need custom scripts.	Easily integrates with CI/CD tools for automated updates.
Scalability	Limited; adding more servers is manual and complex.	Automatically adjusts to traffic changes and scales easily.
Maintenance	You handle all updates and server management.	AWS manages the infrastructure, so less manual work for you.

localhost/demo/

Sign In

Ganesh44

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Sign In

Activate Windows
Go to Settings to activate Windows.

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Amazon S3 > Buckets > Create bucket

Create bucket Info

Buckets are containers for data stored in S3.

General configuration

AWS Region
US East (N. Virginia) us-east-1

Bucket type Info

○ **General purpose**
Recommended for most use cases and access patterns.
General purpose buckets are the original S3 bucket type.
They allow a mix of storage classes that redundantly
store objects across multiple Availability Zones.

○ **Directory - New**
Recommended for low-latency use cases. These buckets
use only the S3 Express One Zone storage class, which
provides faster processing of data within a single
Availability Zone.

Bucket name Info

GANESH

Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming ↗

Copy settings from existing bucket - *optional*
Only the bucket settings in the following configuration are copied.

Activate Windows
Go to Settings to activate Windows.

CloudShell   Feedback   © 2024, Amazon Web Services, Inc. or its affiliates.   Privacy   Terms   Cookie preferences

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CONCLUSION :

This experiment demonstrates the process of developing a website and the flexibility of hosting it on different platforms. Hosting on a local VM provides insights into infrastructure management, while hosting on AWS S3 showcases the benefits of cloud-based solutions. Understanding both approaches equips one with the skills to choose the appropriate hosting solution based on the project requirements and scalability needs.