



# Veritas University

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## **ASSIGNMENT QUESTION**

Write extensively on the following cloud computing terminologies:

I) AWS

II) Google cloud platform(GCP)

III) Microsoft Azure

## **ANSWER**

### **Cloud Computing Terminologies**

#### **Introduction**

Cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, and analytics—over the internet. It allows businesses and individuals to access computing resources without the need for physical infrastructure. Three major cloud service providers dominate the industry: **Amazon Web Services (AWS)**, **Google Cloud Platform (GCP)**, and **Microsoft Azure**. This document provides an extensive discussion of these platforms, their features, advantages, and real-world applications.

#### **1. Amazon Web Services (AWS)**

##### **Definition**

Amazon Web Services (AWS) is a cloud computing platform provided by Amazon. Launched in 2006, AWS offers a wide range of cloud-based services, including computing power, storage solutions, networking, and artificial intelligence. It is one of the most widely used cloud platforms globally.

## Features & Services

- **Compute Services:** Amazon EC2 (Elastic Compute Cloud) for virtual servers.
- **Storage Services:** Amazon S3 (Simple Storage Service) for data storage.
- **Database Services:** Amazon RDS (Relational Database Service).
- **AI & Machine Learning:** AWS SageMaker for building AI models.
- **Security & Compliance:** AWS Identity and Access Management (IAM).

## Advantages

- **Scalability:** Allows businesses to scale resources up or down as needed.
- **Global Reach:** Data centers are located worldwide for better performance.
- **Cost-Efficiency:** Pay-as-you-go pricing model reduces expenses.
- **Security:** Advanced security features protect data and applications.

## Use Cases

- Netflix uses AWS for video streaming and data storage.
- NASA leverages AWS for big data processing.

## 2. Google Cloud Platform (GCP)

### Definition

Google Cloud Platform (GCP) is a suite of cloud computing services provided by Google. It was launched in 2008 and offers infrastructure, platform, and serverless computing solutions. GCP is known for its integration with Google's powerful data analytics and AI tools.

### Features & Services

- **Compute Services:** Google Compute Engine for virtual machines.
- **Storage Services:** Google Cloud Storage for object storage.
- **Database Services:** Cloud SQL and BigQuery for database management.

- **AI & Machine Learning:** TensorFlow and Vertex AI for AI applications.
- **Security:** Google Security Command Center for monitoring threats.

### Advantages

- **High-Performance Networking:** Uses Google's fiber network for low-latency connections.
- **AI & Big Data Integration:** Strong tools for data science and analytics.
- **Sustainability:** Google Cloud is carbon-neutral and environmentally friendly.
- **Flexible Pricing:** Competitive pricing with free-tier services.

### Use Cases

- Spotify uses GCP for music streaming and data analytics.
- Twitter employs GCP for machine learning-based recommendations.

## 3. Microsoft Azure

### Definition

Microsoft Azure is a cloud computing platform and service provided by Microsoft. It was launched in 2010 and offers a wide range of cloud solutions for businesses, including computing, storage, AI, and hybrid cloud solutions. Azure is known for its seamless integration with Microsoft products such as Windows, Office 365, and Dynamics 365.

### Features & Services

- **Compute Services:** Virtual Machines (VMs) for cloud-based computing.
- **Storage Services:** Azure Blob Storage for unstructured data storage.
- **Database Services:** Azure SQL Database for relational data management.
- **AI & Machine Learning:** Azure Machine Learning for AI model development.
- **Hybrid Cloud Solutions:** Azure Arc for hybrid cloud management.

## Advantages

- **Enterprise Integration:** Works well with Microsoft products.
- **Security & Compliance:** High-level security features for data protection.
- **Hybrid Cloud Capabilities:** Supports both on-premise and cloud operations.
- **Global Reach:** Data centers in multiple regions for high availability.

## Use Cases

- LinkedIn uses Azure for cloud computing and AI-driven analytics.
- BMW utilizes Azure for automotive IoT and digital services.

## Conclusion

AWS, GCP, and Microsoft Azure are the leading cloud service providers, each offering unique advantages. **AWS** is the most popular and widely used for its broad range of services, **GCP** excels in AI and data analytics, while **Microsoft Azure** is preferred by enterprises that rely on Microsoft products. As cloud computing continues to evolve, businesses and developers will increasingly adopt these platforms for scalable, secure, and cost-efficient solutions.

## References

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