

COMPARATIVE ANALYSIS OF CLOUD SERVICE PROVIDERS - (CLOUD COMPUTING ASSIGNMENT)

Compute Services

AWS:

1. Amazon EC2 is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers.
2. Lambda: Run code without thinking about servers. Pay only for the compute time you consume.
3. Elastic Beanstalk: Platform-as-a-Service (PaaS) easy to use service for deploying and scaling applications and services in programming languages.

AZURE :

1. Azure Virtual Machines: Scalable compute instances with a variety of OS.
2. Azure Functions: Serverless computing similar to AWS Lambda.

GOOGLE COMPUTE PLATFORM:

1. Google Compute Engine: Virtual machines for custom workloads.
2. Google Cloud Functions: Serverless solution for running code.
3. App Engine: PaaS for deploying applications.

AKAMAI LINODE :

1. Akamai provides cloud solutions focused on web performance, security, and content delivery.
 2. This includes solutions for content delivery networks (CDN) and application performance optimization, but does not directly offer traditional compute resources like virtual machines.
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Storage Services

AWS:

1. Amazon Simple Storage Service (S3): An object storage service that supports multiple encryption types and compliance standards
2. Amazon Elastic Block Store (EBS): A block storage service that can be used for persistent data storage
3. Amazon Elastic File System (EFS): A file storage service that can be used for frequently accessed data

AZURE:

1. Azure Blob Storage Stores unstructured data like images, videos, and audio Objects stored in blobs don't necessarily have an extension
2. Azure Queue Storage Stores large messages in a queue format Useful for storing messages that are sent and received in a queue
3. Azure Disk Storage A managed storage service that creates and manages high-performance disk resources

GOOGLE COMPUTE PLATFORM:

1. Google Cloud Storage: Object storage service similar to AWS S3.
2. Persistent Disks: Block storage for virtual machine instances.
3. Google Cloud Archive: Low-cost storage for long-term archival needs.

AKAMAI LINODE:

1. Block storage : Adds storage capacity to a compute instance Similar to a USB drive that can be plugged into a computer
 2. Object storage: Stores unstructured data like images, videos, and documents Each object is given a unique URL for access Highly scalable, so users can add or remove items as needed
 3. NetStorage : A secure, cloud-based storage service that optimizes and scales content delivery Replicates content in multiple locations across the Akamai content delivery network Allows users to create storage groups, upload content, and manage content
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AI/ML Services

AWS:

1. Amazon SageMaker: Amazon SageMaker AI is a fully managed service that brings together a broad set of tools to enable high-performance, low-cost machine learning (ML) for any use case.
2. Rekognition : Amazon Rekognition automates image recognition and video analysis for your applications without machine learning (ML) experience.
3. AWS Deep Learning AMI: AWS AMIs to train custom models, experiment with new algorithms, and learn new deep learning skills and techniques.
4. AWS Deep Learning Containers: AWS Deep Learning Containers (DL Containers) are Docker images pre-installed with deep learning frameworks to make it easy to deploy custom machine learning environments quickly.

AZURE :

1. Azure Machine Learning: End-to-end platform for building, training, and deploying ML models.
2. Cognitive Services: AI tools for vision, speech, and language analysis.

GOOGLE COMPUTE PLATFORM:

1. Google AI Platform: Platform for training and deploying models.
2. AutoML: ML models for non-experts, automating model creation.

AKAMAI LINODE :

Akamai does not directly offer machine learning tools but provides AI-driven optimization for content delivery and security services, such as advanced web application firewalls and predictive insights for improving performance and security.

Pricing Models

AWS:

1. Offers a pay-as-you-go model.
2. Reserved Instances: Commit to usage for 1-3 years at a discounted rate.

Azure:

1. Pay-as-you-go model, which lets us pay only for the used infrastructure/services without any upfront costs.
2. Reserved Instances: Commit for 1-3 years, often at a discounted rate.

GOOGLE COMPUTE PLATFORM:

1. Pay-as-you-go offering flexible pricing model.
2. Commit to certain resource usage for 1-3 years to get discounts.

AKAMAI LINODE

Akamai primarily charges based on the amount of data delivered through its CDN services. Pricing is based on traffic, requests, and geographic distribution. Akamai also offers custom pricing models depending on the scale of service required.

Pricing Models

AWS:

1. On-demand pricing A pay-as-you-go model that charges for compute capacity by the hour or second. This model is good for workloads with variable usage patterns.
2. Reserved instances (RIs) A model that requires a one- or three-year commitment in exchange for a discount. This model is good for applications with predictable workloads.
3. Spot instances A model that allows users to bid on unused EC2 capacity. The cost of a spot instance varies based on demand and availability.

Azure:

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GOOGLE COMPUTE PLATFORM :

1. Pay-as-you-go: You only pay for the compute you use
2. Long-term committed use: You reserve instances for a longer period of time
3. Spot pricing: You get discounts for preemptive VMs

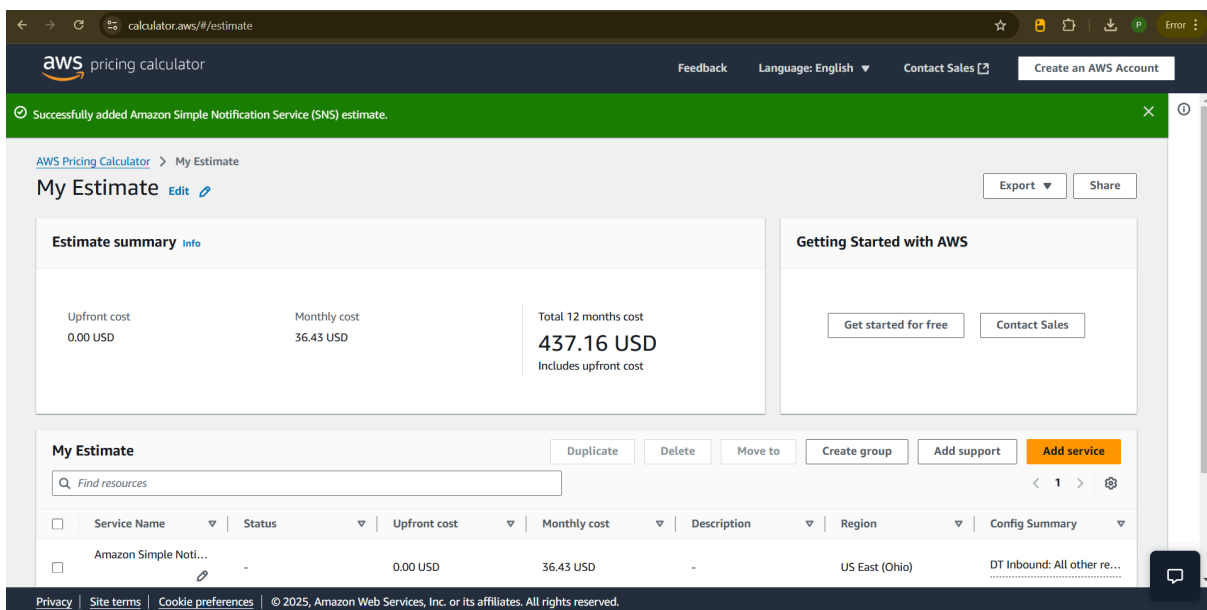
AKAMAI LINODE

1. Volume-based pricing: The primary factor determining cost is the amount of data delivered through Akamai's network, with lower prices for higher volumes.
2. Geographic pricing: Costs can vary based on the location where the data is being delivered to.
3. Tiered pricing: Depending on the service package chosen, there might be different price tiers based on features and functionalities.

Pricing Calculators

AWS:

The AWS Pricing Calculator allows users to estimate costs for services like storage, compute, etc.



The screenshot displays the AWS Pricing Calculator interface. At the top, there's a navigation bar with the AWS logo, 'pricing calculator', and links for 'Feedback', 'Language: English', 'Contact Sales', and 'Create an AWS Account'. A green notification banner states 'Successfully added Amazon Simple Notification Service (SNS) estimate.' Below this, the page title is 'My Estimate' with an 'Edit' link. On the right, there are 'Export' and 'Share' buttons. The main content area is divided into two sections: 'Estimate summary' and 'Getting Started with AWS'. The 'Estimate summary' section shows a table with the following data:

Category	Cost
Upfront cost	0.00 USD
Monthly cost	36.43 USD
Total 12 months cost	437.16 USD
<small>Includes upfront cost</small>	

The 'Getting Started with AWS' section contains two buttons: 'Get started for free' and 'Contact Sales'. Below the summary, there's a 'My Estimate' section with a search bar and a table of resources. The table has columns for 'Service Name', 'Status', 'Upfront cost', 'Monthly cost', 'Description', 'Region', and 'Config Summary'. One resource is listed: 'Amazon Simple Noti...' with an upfront cost of 0.00 USD and a monthly cost of 36.43 USD, located in 'US East (Ohio)'. At the bottom, there's a footer with 'Privacy', 'Site terms', 'Cookie preferences', and a copyright notice for Amazon Web Services, Inc. or its affiliates.

Azure:

The Azure Pricing Calculator helps estimate costs for VMs, storage, and more.

GOOGLE COMPUTE PLATFORM :

The GCP Pricing Calculator estimates costs based on services including compute and storage.

AKAMAI :

Akamai provides a custom pricing estimator on their website based on required services such as web performance, security, and media delivery.

Target Audience and Segmentation**AWS:**

1. Startups: AWS offers flexible pricing and a vast array of services, making it suitable for startups that require scalability and rapid growth.
2. SMBs: With its broad ecosystem and services, AWS is great for SMBs looking to scale, especially with the free tier and lower-cost options.
3. Enterprises: AWS is often the go-to cloud provider for enterprises due to its robustness, wide selection of services, and reliable infrastructure.

Azure:

1. Startups: Azure's integration with Microsoft products (e.g., Office 365, Active Directory) can be attractive to startups already using Microsoft solutions.
2. SMBs: Azure's hybrid cloud offerings and enterprise-grade solutions are appealing to SMBs looking for cost-effective and scalable solutions.
3. Enterprises: Azure is highly favored in enterprises, particularly those with existing Microsoft ecosystems. Azure's hybrid solutions (Azure Stack) allow on-premise and cloud resources to work seamlessly.

GOOGLE COMPUTE PLATFORM :

1. Startups: GCP offers competitive pricing and modern services, especially in AI/ML and data analytics, making it a good choice for data-centric startups.
2. SMBs: GCP's simple interface and strong emphasis on machine learning and data analytics services make it suitable for SMBs exploring these technologies.
3. Enterprises: While not as widely adopted as AWS and Azure, GCP is making strides with its AI/ML and data processing services, appealing to enterprises focusing on big data and analytics.

AKAMAI :

1. Startups: Akamai's edge computing and content delivery services are ideal for startups with a heavy focus on media, e-commerce, or high-performance web applications.

2. SMBs: SMBs in media, gaming, or e-commerce benefit from Akamai's content delivery and security solutions.
3. Enterprises: Akamai is widely used by large enterprises that need robust security, performance optimization, and global content delivery for high-traffic websites.