

Comparison of Amazon Web Services, Microsoft Azure and Google Cloud Platform

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Load Balancing

A load balancer is a device that distributes network or application traffic across a number of servers. Load balancers are used to increase capacity (concurrent users) and reliability of applications.

Key Features

- AWS's Elastic Load Balancing (ELB) service allows you to direct traffic to your instances within one or several availability zones in a given region same as Azure and GCE.
- Additionally, Compute Engine lets you choose between a network (Layer 4) load balancer, which balances both UDP and TCP traffic regionally, and an HTTP(S) (Layer 7) load balancer, which can balance traffic globally as well as regionally.
- AWS & Azure Load balancer do not scale instantly, and can take one to seven minutes to respond to changes in traffic, however, Compute Engine's load balancer responds in real time to the traffic, without a delay or pre-warming.

Price US East (N. Virginia and Ohio)

Amazon Web Services - \$0.0225 per Application Load Balancer-hour.

Microsoft Azure - No hourly charge for the Standard load balancer itself when no rules are configured. First 5 rules: \$0.025/hour. Additional rules: \$0.01/rule/hour. NAT rules are free.

Google Compute Platform - First 5 forwarding rules at \$0.028/hour. Per additional forwarding rule \$0.011/hour. Ingress data processed by load balancer \$0.009/GB.

Auto Scaling

The amount of computational resources in a server farm scales automatically based on the load on the farm.

Key Features

- Amazon's Auto Scaling allows for three scaling plans: Manual, Scheduled, Dynamic
- In contrast, Compute Engine's autoscaler supports only dynamic scaling.
- Azure Autoscale allows for two types of autoscaling: scheduled and dynamic.
- AutoScaling is a free service on all the three platforms with prices charged for the resources.

Serverless Computing

Serverless computing is a cloud computing execution model in which the cloud provider dynamically manages the allocation of machine resources.

Key Features

AWS Lambda - Lambda supports a range of runtime environments including NodeJS, Python, Java and C# and has some advanced features like request chaining and edge processing. Runtime limit is 5 mins. AWS Lambda supports deploying from a zip or jar file or through CloudFormation or S3.

GCP Cloud Functions - Cloud Functions only support NodeJS. Runtime limit is 9 mins. In addition to zip files, GCP Cloud Functions can be deployed from a Git repository either in GitHub or Cloud Source Repositories.

Microsoft Azure - Azure Functions launched with a variety of supported runtimes including JavaScript, C#, Python and PHP. Runtime limit is 5 mins. Code your functions right in the portal or set up continuous integration and deploy your code through GitHub, Visual Studio Team Services.

Price US East (N. Virginia and Ohio)

AWS Lambda - The Lambda free tier includes 1M free requests per month and 400,000 GB-seconds of compute time per month. \$0.20 per 1M requests thereafter and \$0.00001667 for every GB-s used thereafter.

Azure Functions - The free tier includes 1M executions per month and 400,000 GB-seconds of execution time per month. \$0.20 per 1M executions thereafter and \$0.000016 for every GB-s used thereafter.

GCP Cloud Functions - The free tier includes 2M invocations per month and upto 1 Million seconds of free compute per month. \$0.40 per 1M invocations thereafter, \$0.0000025 for every GB-s used thereafter, \$0.12 per GB networking charge.

Thank you