

Amazon Web Services



Why Learn AWS ?

- Fastest growing cloud computing platform on the planet
- Largest public cloud computing platform on the planet
- More and more organizations are outsourcing their IT to AWS
- The AWS Certifications are the most popular IT certifications right now
- Top Paid IT Certification for 2016 according to Forbes

<http://bit.ly/2whWp9h>



<http://bit.ly/2uPswfT>



Gartner's Magic Quadrant

In August 2016 AWS was named as a leader in the IaaS Magic Quadrant for the 6th consecutive year

[Image Source: Gartner Magic Quadrant](#)

Figure 1. Magic Quadrant for Cloud Infrastructure as a Service, Worldwide



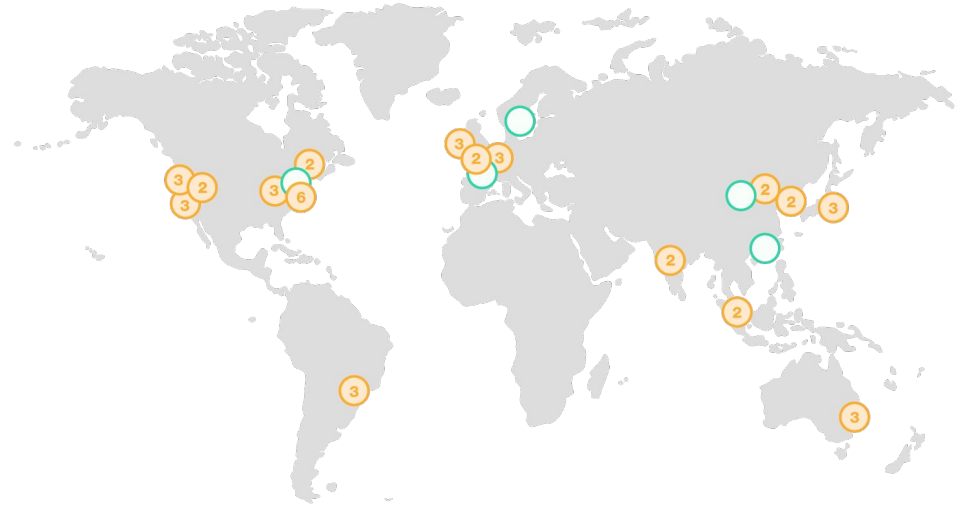
Source: Gartner (August 2016)

AWS Global Infrastructure

16 Regions & 44 Availability Zones

5 More Regions & 14 More Availability
Zones

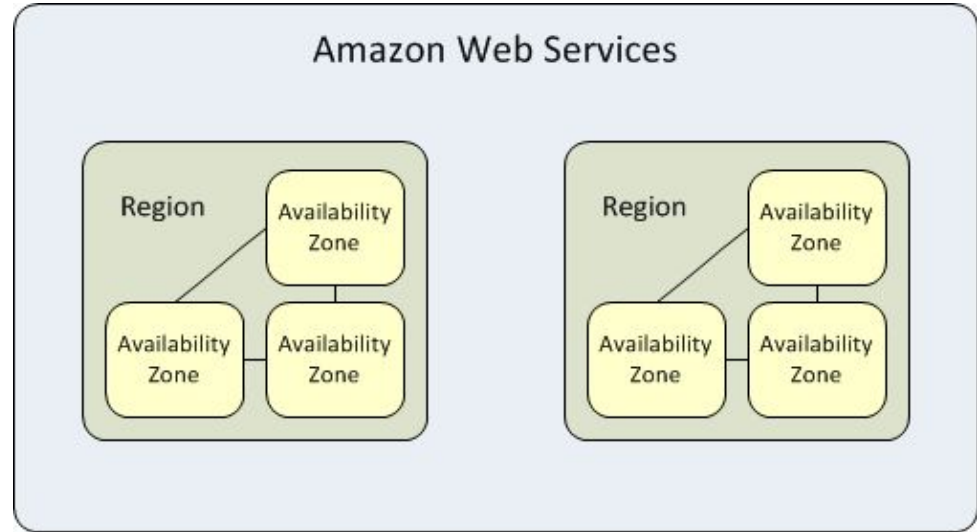
August 2017



[Image Source: AWS](#)

AWS Web Services

A Region is a geographical area.
Each Region consists of 2 (or more)
Availability Zones.
An Availability Zone (AZ) is Simply a
Data Center.



AWS - Lambda



Goals / Agenda

- When to use Lambda
- How to write functions
- Integration with event sources

Serverless

“No server is easier to manage
than no server at all”

Werner Vogels

[Image Source: Wikipedia](#)



Pricing and serverless

- Pricing matches usage
- Pay as you go
- Low-to-no upfront costs

Why lambda ?

- Simplicity
- Save \$\$\$
- Easy for ops
- Easy for devs

Use Cases

- ETL Jobs (S3)
- APIs (with API Gateway)
- Mobile backends
- Infrastructure automation
- Data Validation

How Lambda Works

Under the Hood

- Containers
- Shared EC2 Instances
- Resources isolation
- 100ms execution limits

How Lambda Works

Anatomy of an Application

- Code (and dependencies)
- Event (from another AWS services)
- Output

How Lambda Works

Event sources

- Schedules
- S3 event
- DynamoDB streams
- Kinesis streams
- SNS topics (Notification Services)
- API Gateway
- SDK invocation

<https://console.aws.amazon.com>



Select blueprint

Blueprints are sample configurations of event sources and Lambda functions. Choose a blueprint that best aligns with your desired scenario and customize as needed, or click on **Author from scratch** if you want to author a Lambda function and configure an event source separately. Except where otherwise noted, blueprints are licensed under [CC0](#).

Blueprints

[Export](#)[Author from scratch](#)[1](#)[2](#)[3](#)[4](#)[5](#)[6](#)[7](#)[...](#)[10](#)

kinesis-firehose-syslog-to-json



An Amazon Kinesis Firehose stream processor that converts input records from RFC3164 Syslog format to JSON.

nodejs · kinesis-firehose

alexa-skill-kit-sdk-factskill



Demonstrate a basic fact skill built with the ASK NodeJS SDK

nodejs6.10 · alexa

Hello World Handler

- Path to the function to be run
- Must accept 3 arguments
- Event, context and callback
- Uses index.js by default

Hello World

index.js

```
exports.handler = function(event, context, callback) {  
  console.log("Hi, everyone");  
  
  return callback(null, "hello!"); // Callback format is error, data  
}
```

Hello World

IAM Role

- Think “role” is in “job title”
- Can have many policies
- Policies have statements like:

```
{  
  "Effect": "Allow",  
  "Action": "logs:CreateLogGroup",  
  "Resources": "arn:aws:logs:*:*:*";  
}
```

Hello World

Memory and Performance

- CPU scales with memory
- More memory, more \$\$\$
- Up to 1.5 GB Gigabytes of RAM

Hello World Logs

- Automatically collected and stored
- Searchable
- Timestamped automatically

Lab: Lambda and S3



Lab

Overview

- AWS CLI Introduction
- Create function
- Deploy version 1
- Testing and debugging
- Deploy version 2
- Output and timeouts

AWS CLI



<https://docs.aws.amazon.com/cli/latest/userguide/installing.html>



Lab

S3 Bucket

- Simple Storage Service
- Bucket names are global
- Upload files

Lab

Lambda function

- Skip the blueprint
- Choose our role
- Test run!



Bucket

Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

cloud-conf-varna-lambda-lab ▼

Event type

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

Object Created (All) ▼

Prefix

Enter an optional prefix to limit the notifications to objects with keys that start with matching characters.

e.g. images/

Suffix

Enter an optional suffix to limit the notifications to objects with keys that end with matching characters.

.csv

Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

Enable trigger

Enable the trigger now, or create it in a disabled state for testing (recommended).



<http://bit.ly/aws-cloud-conf>

