AWS Lambda Using C#:

Getting Going Fast

Troy Miles, 9 February 2023

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Agenda

- The problem we are trying to solve
- One set of tools to solve it
- Building something very simple live
- How do you debug this?
- How do you measure it?

Clever Product Names

- .NET
- C# (and C++)
- Serverless Framework

Tool Check

- npm -v
- sls -v
- dotnet —version

Let’s Create the API

- serverless create --template-url https://github.com/pharindoko/serverlessDotNetStarter --path dn1
- cd dn1

Add Some Tooling

- dotnet tool install -g Amazon.Lambda.Tools
- dotnet tool install --global Amazon.Lambda.TestTool-6.0
- dotnet tool list -g

Add Support for C# to VS Code

- code --install-extension ms-dotnettools.csharp --force

Setup Amazon Lambda Tool

- "program": /Users/{user}/.dotnet/tools/dotnet-lambda-test-tool-6.0
- Usually, the user is you!

Lighter Her Up!

- Switch to *Run and Debug* mode.
- Click the Play icon (the green arrow next to .NET Co)
- The Lambda Mock Test Tool should be on *http://localhost:5050/*
- For Function select: *hello*
- Click the blue *Execute Function* button near the bottom

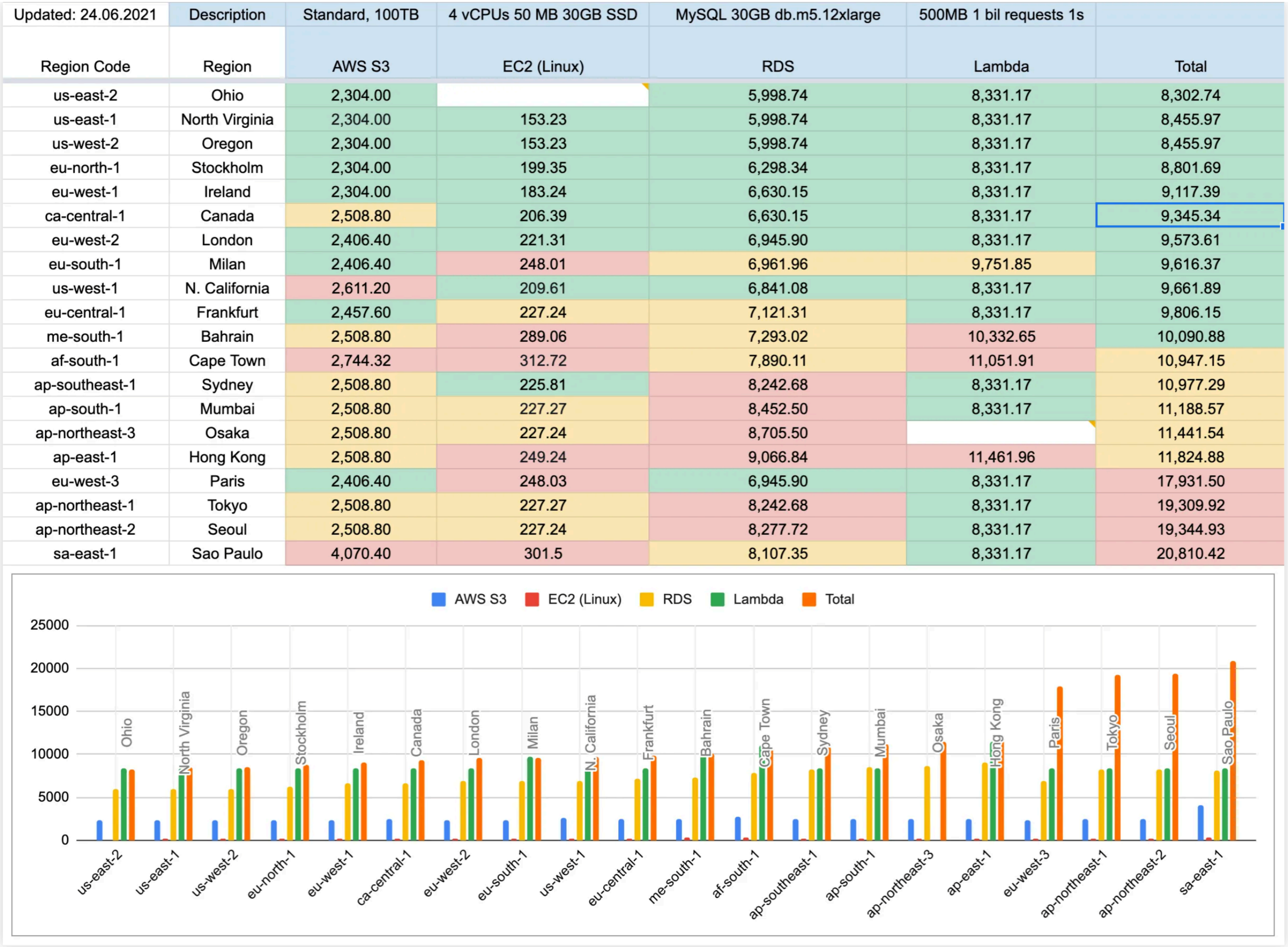
Another One!

- For Function select: *getquerystring*
- Insert some JSON in the function input box

If You Build It, It Will Run

- From the project root
  - ./build.sh or build.cmd
  - sls deploy or formally, serverless deploy
- run from the command line with curl, like a guru
- run it from Postman like a champ

Costs Vary, Choose Wisely.



Updated: 24.06.2021	Description	Standard, 100TB	4 vCPUs 50 MB 30GB SSD	MySQL 30GB db.m5.12xlarge	500MB 1 bil requests 1s	
Region Code	Region	AWS S3	EC2 (Linux)	RDS	Lambda	Total
us-east-2	Ohio	2,304.00		5,998.74	8,331.17	8,302.74
us-east-1	North Virginia	2,304.00	153.23	5,998.74	8,331.17	8,455.97
us-west-2	Oregon	2,304.00	153.23	5,998.74	8,331.17	8,455.97
eu-north-1	Stockholm	2,304.00	199.35	6,298.34	8,331.17	8,801.69
eu-west-1	Ireland	2,304.00	183.24	6,630.15	8,331.17	9,117.39
ca-central-1	Canada	2,508.80	206.39	6,630.15	8,331.17	9,345.34
eu-west-2	London	2,406.40	221.31	6,945.90	8,331.17	9,573.61
eu-south-1	Milan	2,406.40	248.01	6,961.96	9,751.85	9,616.37
us-west-1	N. California	2,611.20	209.61	6,841.08	8,331.17	9,661.89
eu-central-1	Frankfurt	2,457.60	227.24	7,121.31	8,331.17	9,806.15
me-south-1	Bahrain	2,508.80	289.06	7,293.02	10,332.65	10,090.88
af-south-1	Cape Town	2,744.32	312.72	7,890.11	11,051.91	10,947.15
ap-southeast-1	Sydney	2,508.80	225.81	8,242.68	8,331.17	10,977.29
ap-south-1	Mumbai	2,508.80	227.27	8,452.50	8,331.17	11,188.57
ap-northeast-3	Osaka	2,508.80	227.24	8,705.50		11,441.54
ap-east-1	Hong Kong	2,508.80	249.24	9,066.84	11,461.96	11,824.88
eu-west-3	Paris	2,406.40	248.03	6,945.90	8,331.17	17,931.50
ap-northeast-1	Tokyo	2,508.80	227.27	8,242.68	8,331.17	19,309.92
ap-northeast-2	Seoul	2,508.80	227.24	8,277.72	8,331.17	19,344.93
sa-east-1	Sao Paulo	4,070.40	301.5	8,107.35	8,331.17	20,810.42

Summary

- Create a simple AWS Lambda API easily
- The Serverless Framework is an alternative to AWS SAM
- C# is a viable alternative to NodeJS and Python on AWS

URLs

Where to find the stuff yourself.

- .NET and .NET Core Support Policy
  - https://dotnet.microsoft.com/en-us/platform/support/policy/dotnet-core
- AWS SAM
  - https://aws.amazon.com/serverless/sam/
- AWS Lambda Power Tuning
  - https://docs.aws.amazon.com/lambda/latest/operatorguide/profile-functions.html

Even More URLs

- Serverless Framework
  - https://www.serverless.com/
  - https://github.com/serverless/serverless
  - https://www.serverless.com/examples/serverlessDotNetSample
  - https://www.serverless.com/framework/docs/providers/aws/cli-reference/config
- Cheapest AWS Regions
  - https://openupthecloud.com/which-aws-region-cheapest/