

# A Software Developer Guide to Working with AWS

Dror Helper | <http://helpercode.com> | @dhelper





# About.ME

Consultant & software architect

Developing software since 2002

Clean Coder & Test Driven Developer

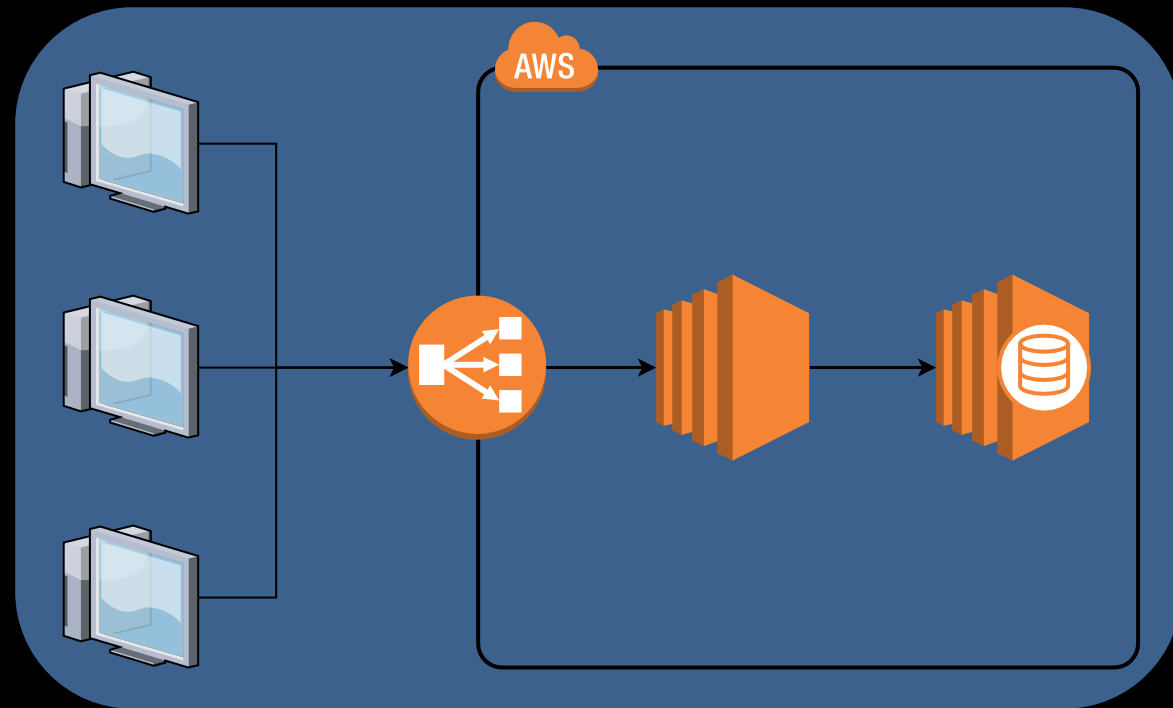
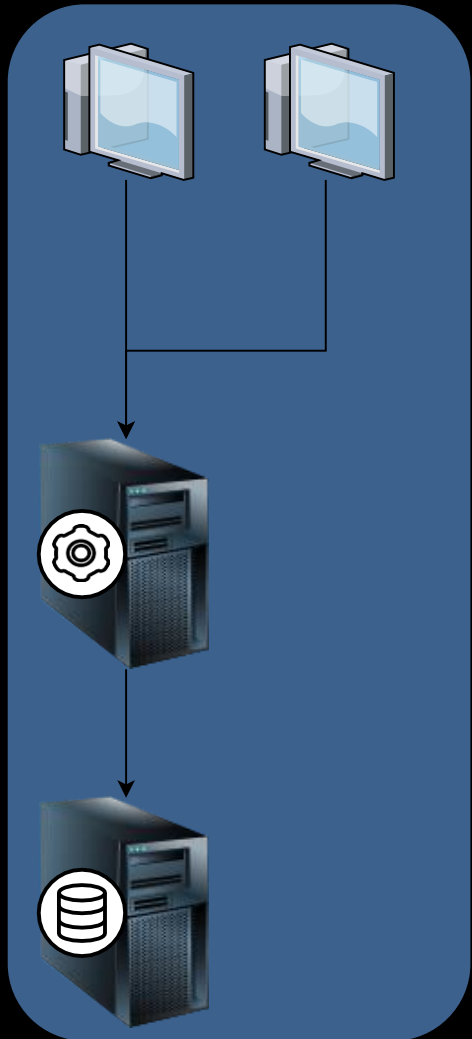
Pluralsight author

<https://www.pluralsight.com/authors/dror-helper>

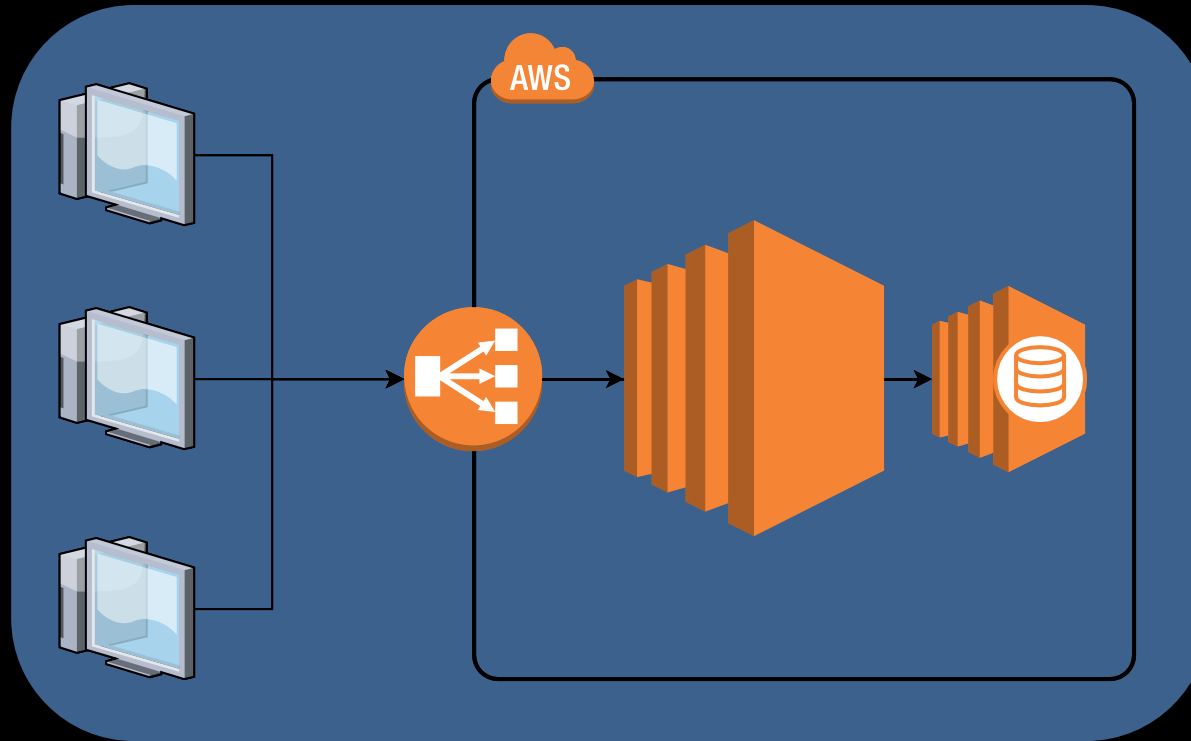
B: <http://helpercode.com>

T: @dhelper

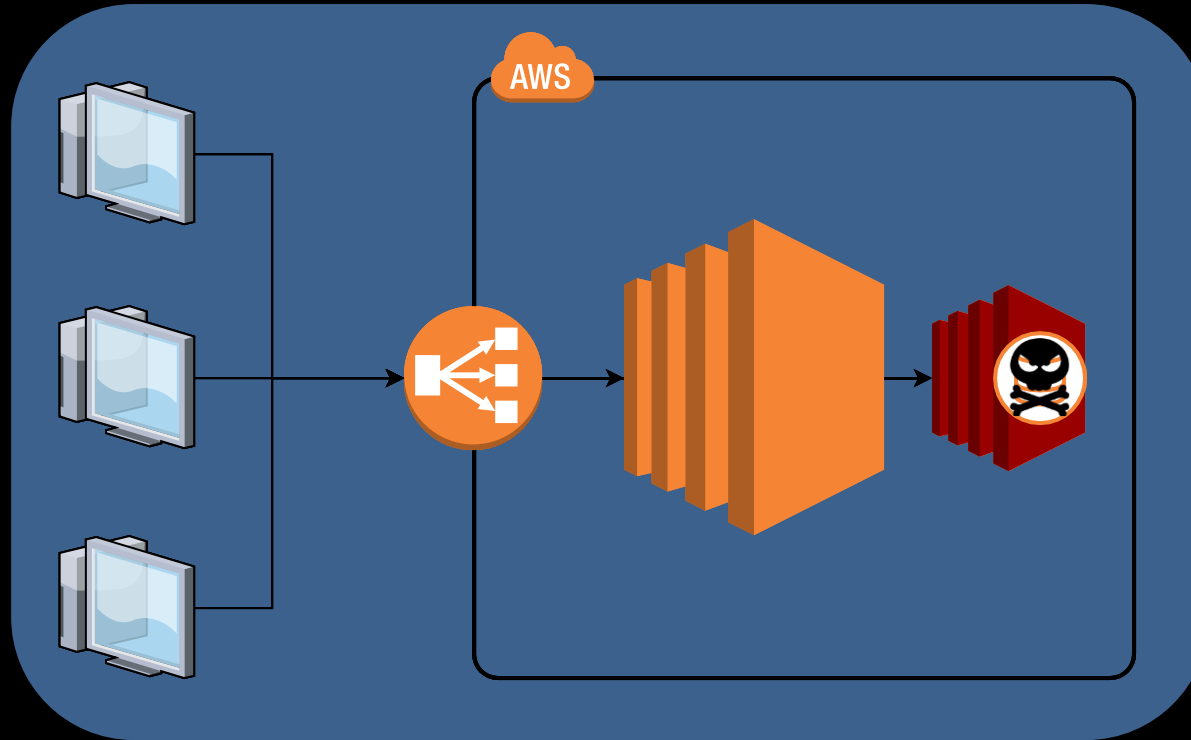
# Let me tell you a story



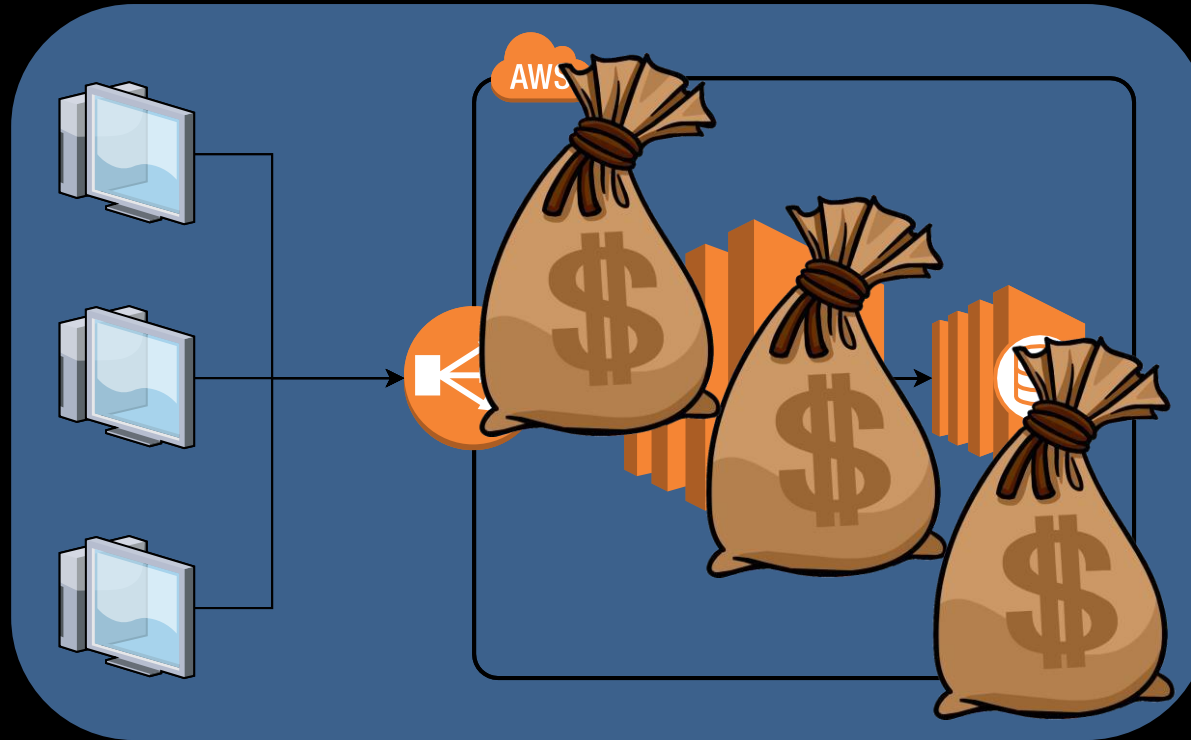
Performance issues → no problems



# What happened to my DB!?



I need to pay how much!?





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Single region/AZ deployment

---

Data and files stored “locally” (EBS)

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No horizontal scaling

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Wrong type of EC2 for DB

---

No expense estimation

---

Did not use AWS capabilities

What went wrong?

# The AWS Cloud





A large, faint, red-tinted graphic of Spider-Man's mask serves as a background for the central text area.

Elastic costs

Security considerations

Different performance

Need to know and understand your services

Where do I start?

POWER

WITH GREAT POWER COMES GREAT RESPONSIBILITY

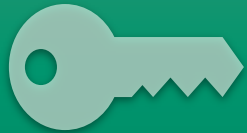
# Getting started with AWS

1. Create a new AWS account
2. Log in to your new account
3. Open Identity and Access Management (IAM)
4. Create an "administrator" user
5. Log out & log in using the new user
6. Never, ever use the root account again

\* It's also a good idea to add 2FA



Users & Groups



Roles



Policies

Identity & Account  
Management



## Compute

EC2  
 Lightsail [↗](#)  
 ECR  
 ECS  
 EKS  
 Lambda  
 Batch  
 Elastic Beanstalk  
 Serverless Application Repository



## Robotics

AWS RoboMaker



## Blockchain

Amazon Managed Blockchain



## Satellite

Ground Station



## Analytics

Athena  
 EMR  
 CloudSearch  
 Elasticsearch Service  
 Kinesis  
 QuickSight [↗](#)  
 Data Pipeline  
 AWS Glue  
 MSK



## Business Applications

Alexa for Business  
 Amazon Chime [↗](#)  
 WorkMail



## End User Computing

WorkSpaces  
 AppStream 2.0  
 WorkDocs  
 WorkLink

Now What???



## Storage

S3  
 EFS  
 FSx  
 S3 Glacier  
 Storage Gateway  
 AWS Backup



## Management & Governance

AWS Organizations  
 CloudWatch  
 AWS Auto Scaling  
 CloudFormation  
 CloudTrail  
 Config  
 OpsWorks  
 Service Catalog  
 Systems Manager  
 Trusted Advisor  
 Managed Services



## Security, Identity, & Compliance

IAM  
 Resource Access Manager  
 Cognito  
 Secrets Manager  
 GuardDuty  
 Inspector  
 Amazon Macie [↗](#)  
 AWS Single Sign-On  
 Certificate Manager  
 Key Management Service



## Internet Of Things

IoT Core  
 Amazon FreeRTOS  
 IoT 1-Click  
 IoT Analytics  
 IoT Device Defender  
 IoT Device Management  
 IoT Events  
 IoT Greengrass  
 IoT SiteWise  
 IoT Things Graph



## Database

RDS  
 DynamoDB



## Deciding on Compute type:

Execution duration

Number of calls per min/hour/day

Number of running instances

Organization's DevOp

Compute



EC2



Lambda



ECS

# Networking

Public or Private?

Who needs to access your resources?

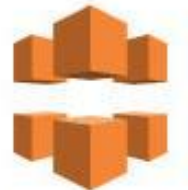
Which resources need to be in the same network?

What networks components do you need?

## Networking



VPC

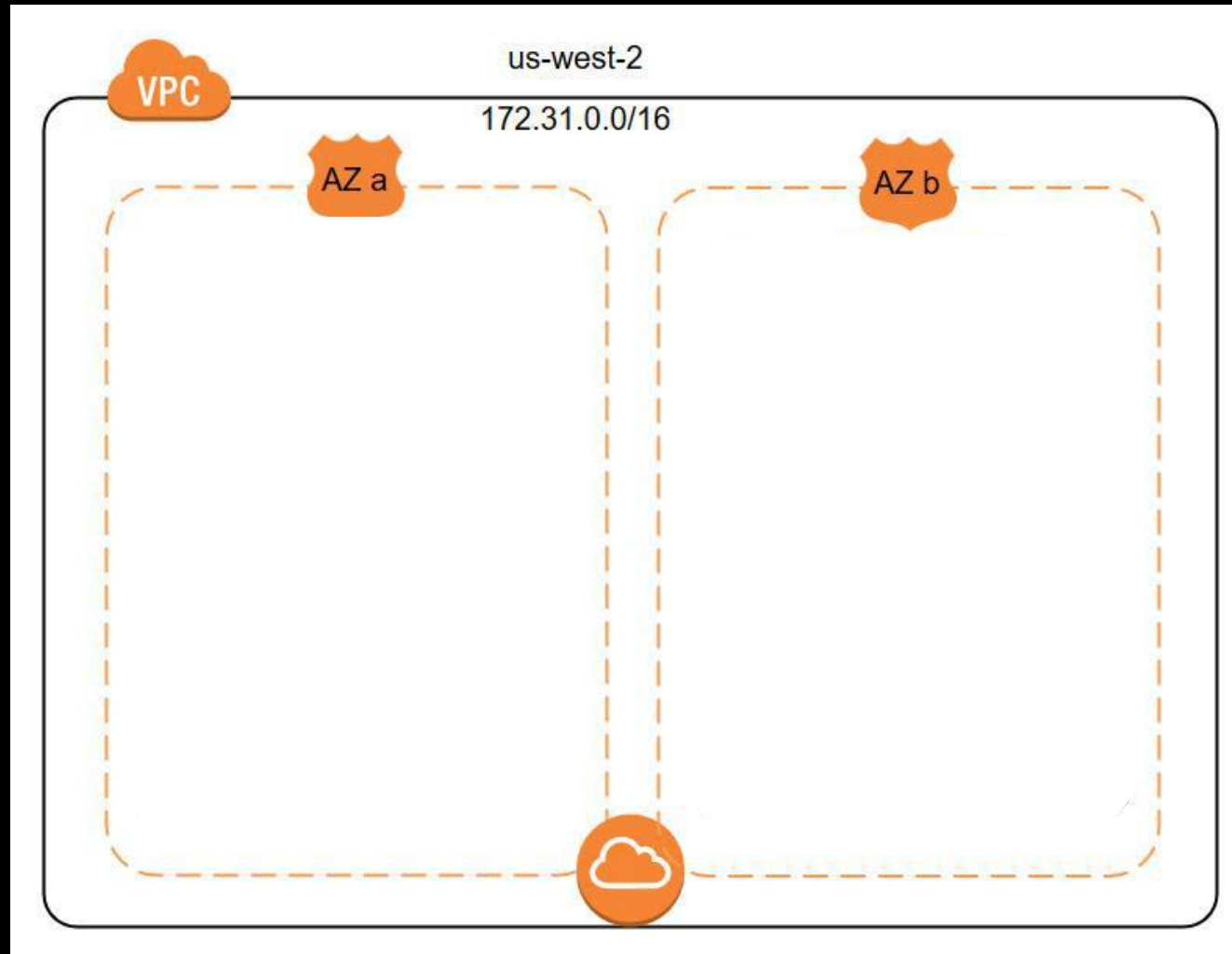


Cloud Front

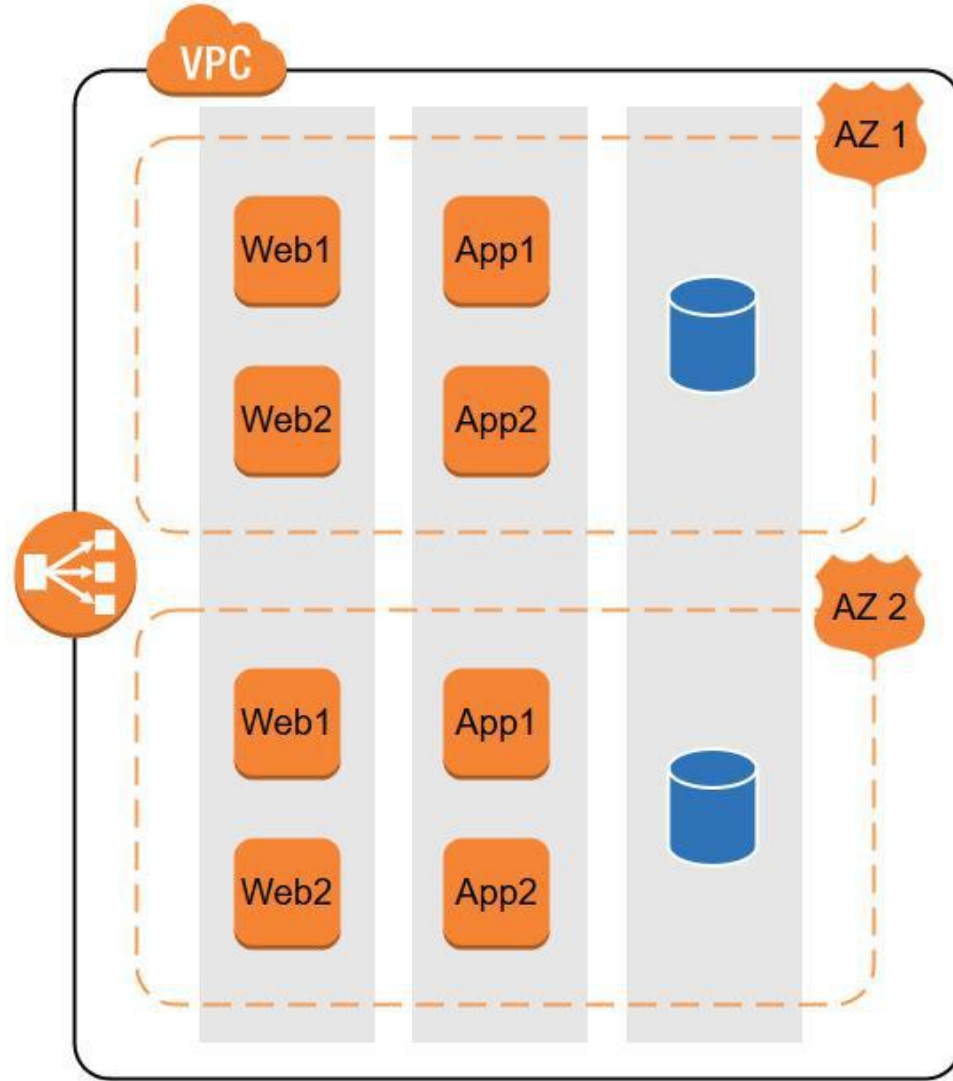


Route 53

# VPC in Action







## Architecting for High Availability



# Storage & Databases



EBS

HD on the cloud



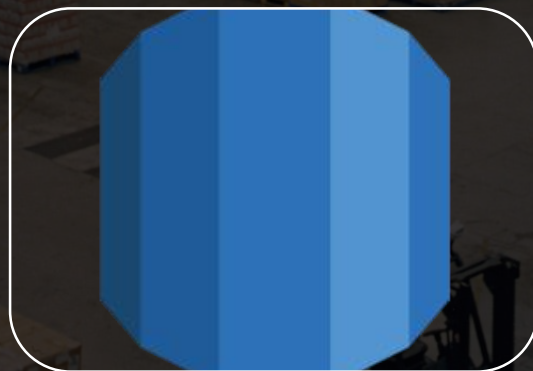
EFS

network share



S3

Infinite file store



RDS

Rational Database  
Service



DynamoDB

Document DB

REST API

SDKs

IDE  
toolkits

Command  
line

Using services  
from your code





## Unit tests

- Fake “AWS” classes

## Integration tests

- Altassian Localstack
- GoAWS
- DynamoDB Local
- SAM Local

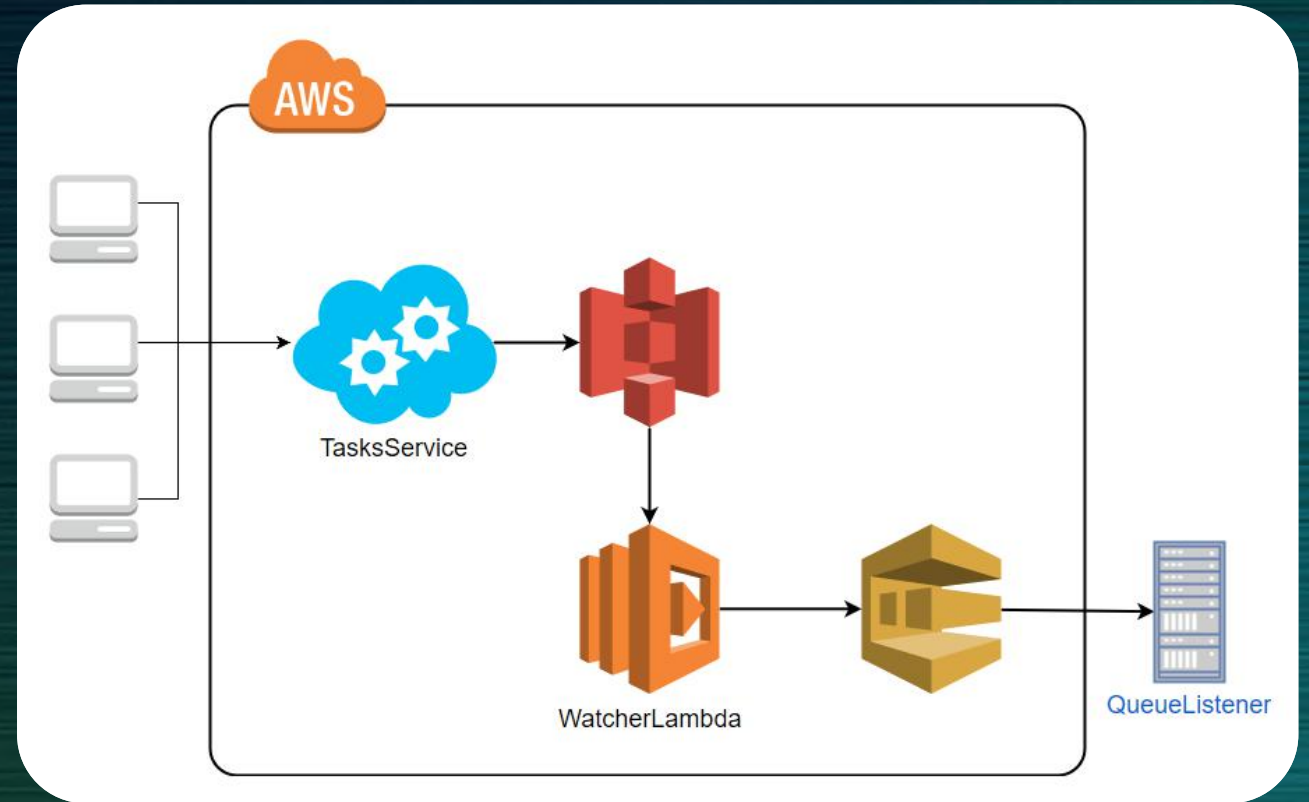
Use Docker to  
create your  
environment

Run & test services  
on your machine



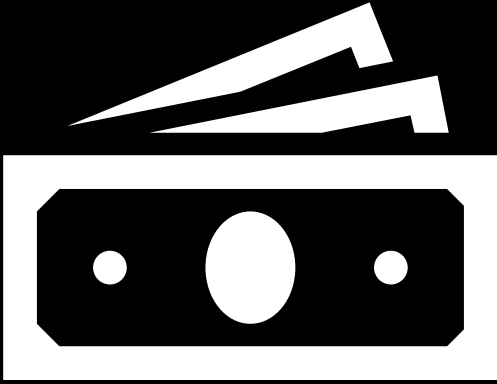
# DEMO

Calling AWS from your code

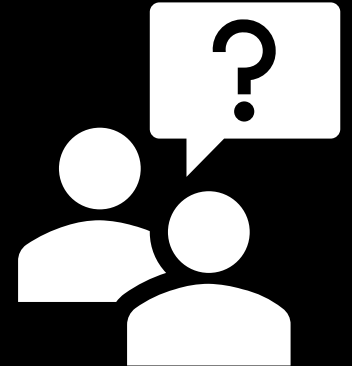


Source code: <https://github.com/dhelper/DotNetCoreAWS>





# How much does it cost?



<https://calculator.s3.amazonaws.com/index.html>

# Getting started with AWS

**Create a new AWS Account:** <https://aws.amazon.com/free/>

**Hands on tutorials & Labs:**

- <https://aws.amazon.com/getting-started/>
- <https://aws.amazon.com/getting-started/tutorials/>

**Find online courses**

**Prepare for the AWS certification exam**



Thank you 😊

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