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THE STATE OF CLOUD COMPUTING IN 2018

AWS & IOS

TOPICS

- ▶ How is this relevant to me?
- ▶ Evolution of Cloud Computing
- ▶ Examples
 - ▶ Static website hosting (S3, CloudFront)
 - ▶ Prototyping a backend (Lambda, API Gateway)
 - ▶ Generating thumbnails
 - ▶ Plugging in a database (DynamoDB or Aurora)

HOW IS THIS RELEVANT TO ME?

- ▶ When we deep dive into iOS development, we might not always pay attention to other fields, so expanding your horizon
- ▶ Creating an app is a lot of work, you might not want to deal with your backend at this point
- ▶ We're in 2018 and we need SSL for network calls and luckily a lot of common issues have been solved by others

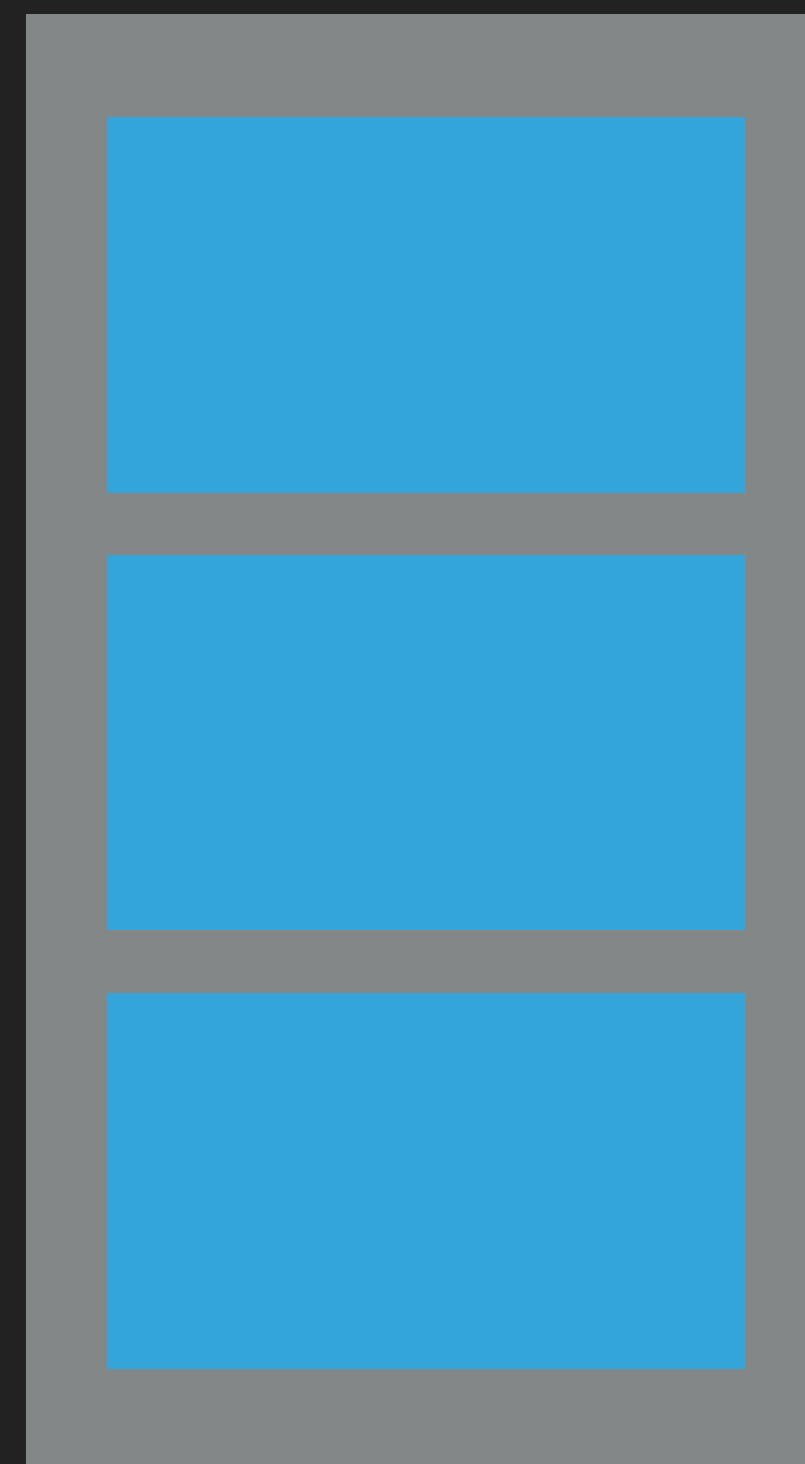
EVOLUTION OF CLOUD COMPUTING

Classic bare-metal servers

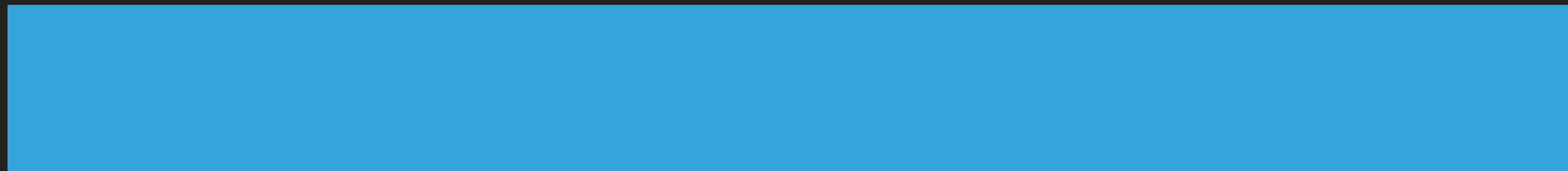


EVOLUTION OF CLOUD COMPUTING

Virtual machines

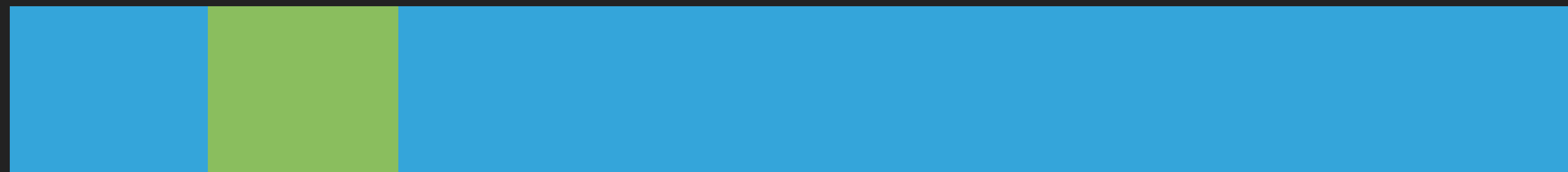


EVOLUTION OF CLOUD COMPUTING



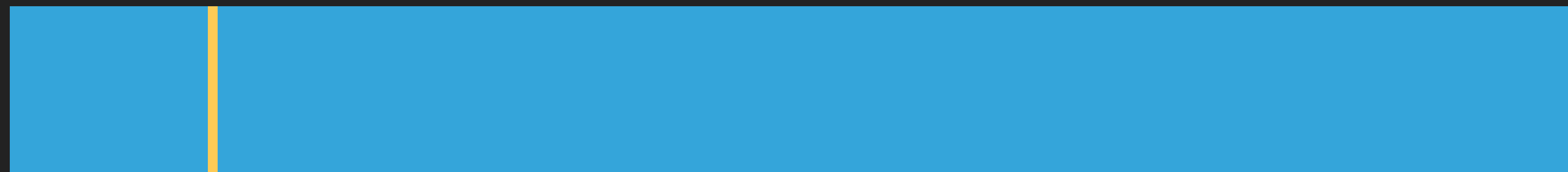
A Virtual Server (EC2)

EVOLUTION OF CLOUD COMPUTING



An application (Elastic Beanstalk)

EVOLUTION OF CLOUD COMPUTING



A Function (Lambda)

THE EVOLUTION OF CLOUD COMPUTING

- ▶ You pay for what you use
- ▶ Can be configured to be highly redundant if needed
- ▶ SSL for free*
- ▶ *Can* be configured without the command line
- ▶ Beware of limitations for edge cases (memory limit, execution time, ...)

EXAMPLES: STATIC WEBSITE

- ▶ Create a public S3 Bucket with website hosting enabled
 - ▶ You could stop here if you don't need SSL
- ▶ Create CloudFront distribution linked to S3 Bucket
- ▶ Setup your domain or subdomain
 - ▶ Either "just" a DNS entry, or go all-in with Route53
- ▶ Create a certificate
- ▶ Select certificate in CloudFront distribution
- ▶ You now have a SSL secured website, that is served via a high-speed CDN for users all over the world.

EXAMPLES: PROTOTYPING A BACKEND

- ▶ Create functions in Lambda
- ▶ Wiring up functions to REST endpoints via API Gateway
 - ▶ Example: Set up CRUD methods
 - ▶ Set up these methods to trigger your Lambda function
 - ▶ As first steps, maybe only serve static content or for a PUT, maybe return the “updated” data (which may not be persisted at this time)
- ▶ Same simple SSL integration

EXAMPLES: THUMBNAILS

- ▶ Use case: We need to generate a thumbnail for an image a user uploaded through their app.
- ▶ You can do this on the phone, but then you'll have to upload at least two files (full-res + thumbnail) and if you have multiple platforms, you'll have to write this for every platform.
- ▶ Better: Write a Lambda function that creates the thumbnail and invoke it, whenever there is a new file uploaded to S3.

EXAMPLES: PLUGGING IN A DATABASE

- ▶ Use case: You want to buffer data from an API for your users, because you have too many users and would hit the API rate limit (or pay more \$\$\$ to increase the rate limit)
- ▶ Create a Lambda function that adds data into a database (Dynamo DB, Aurora or maybe just a JSON file on S3?)
- ▶ Set up CloudWatch Events (daily as an example)
- ▶ Select the created CloudWatch event as trigger for your Lambda function
- ▶ Done

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PLEASE REACH OUT!

THANK YOU!

LAMBDA LIMITATIONS

- ▶ Memory from 128 MB to 3GB
- ▶ 512 MB Disk space
- ▶ 300 seconds (5 min max execution time)
- ▶ 6 MB payload size (HTTP), 128 KB (event)
- ▶ 1000 concurrent executions*