

# AWS Developer: The Big Picture

---

WHAT IS AWS?



**Ryan Lewis**

WEB ENGINEER

@ryanmurakami [www.ryanhlewis.com](http://www.ryanhlewis.com)





Hello

my name is

Developer

# Summary

**What is the “Cloud”?**

**Getting to the bottom of AWS**

**Why & When to use AWS**

**AWS vs. X**

# Understanding the Core Services of AWS

**Elastic Cloud Compute (EC2)**

**Simple Storage Service (S3)**

**Relational Database Service (RDS)**

**Route53**

Enhancing  
Your App with  
AWS  
Databases and  
Application  
Services

**Elastic Beanstalk (EB)**

**DynamoDB & RedShift**

**Virtual Private Cloud (VPC)**

**CloudFront**

**CloudWatch**

# Harnessing the Power of AWS from the Command Line to Code

**Web Console**

**Command Line Interface Utility**

**Software Development Kits (SDK)**

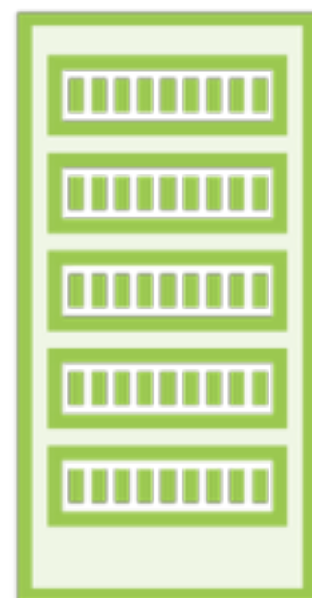
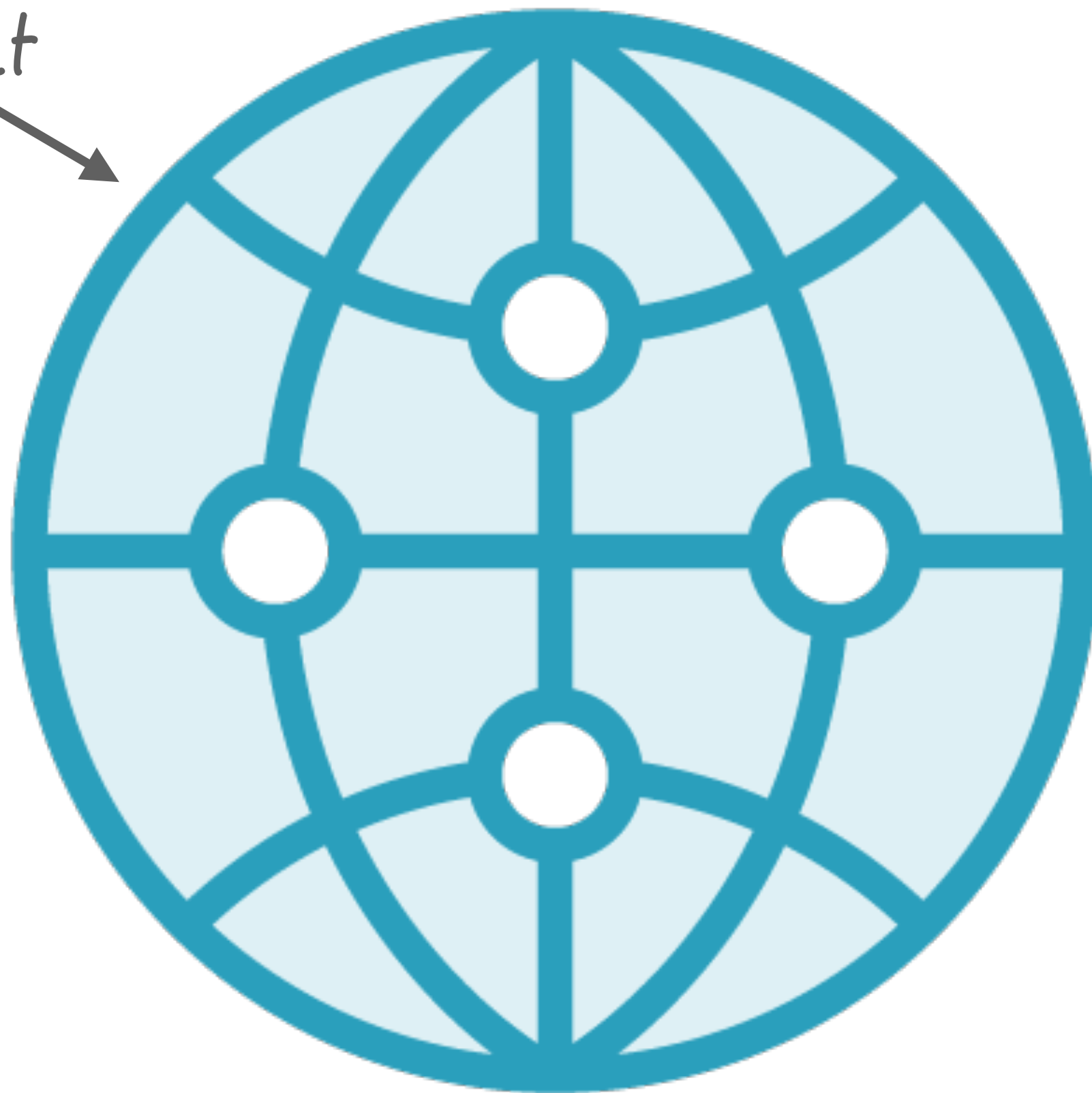
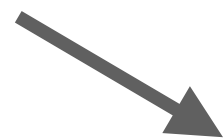
AWS is for Developers



# The Web Application Conundrum

---

The Internet





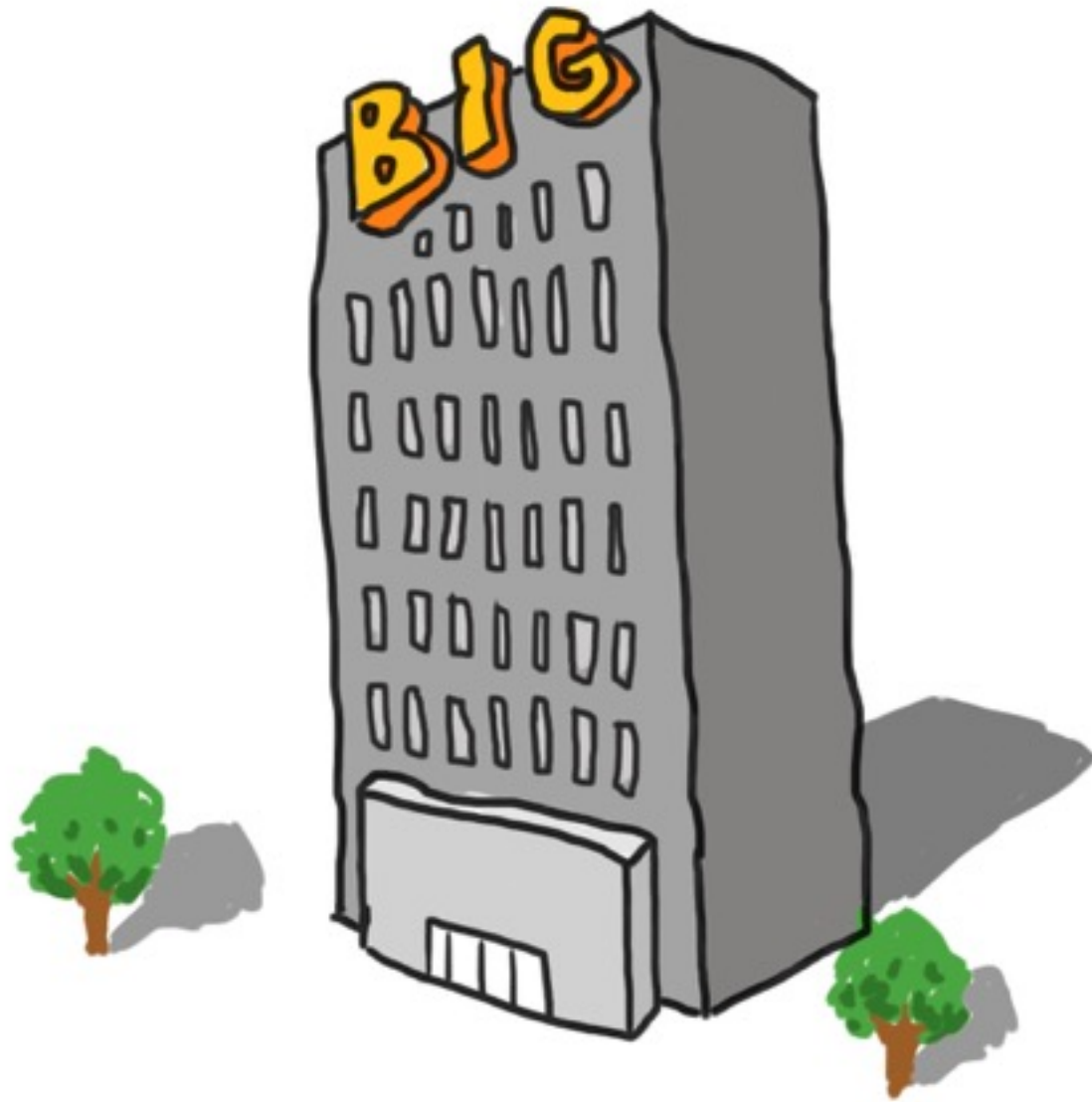
**Lisa**

**CEO & Very Special Person**

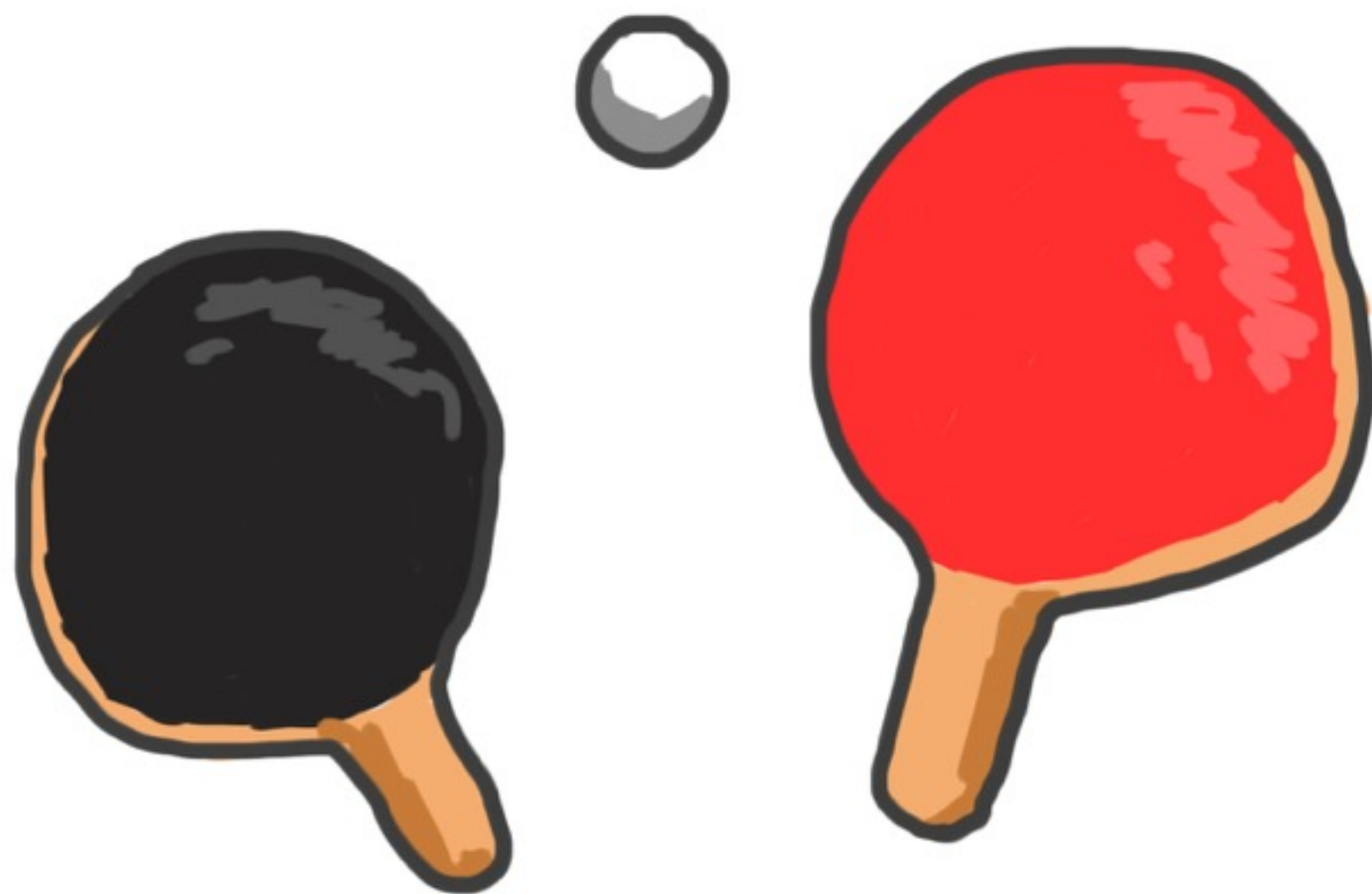




Web Applications need to scale



**Gary**  
**Developer Supreme**

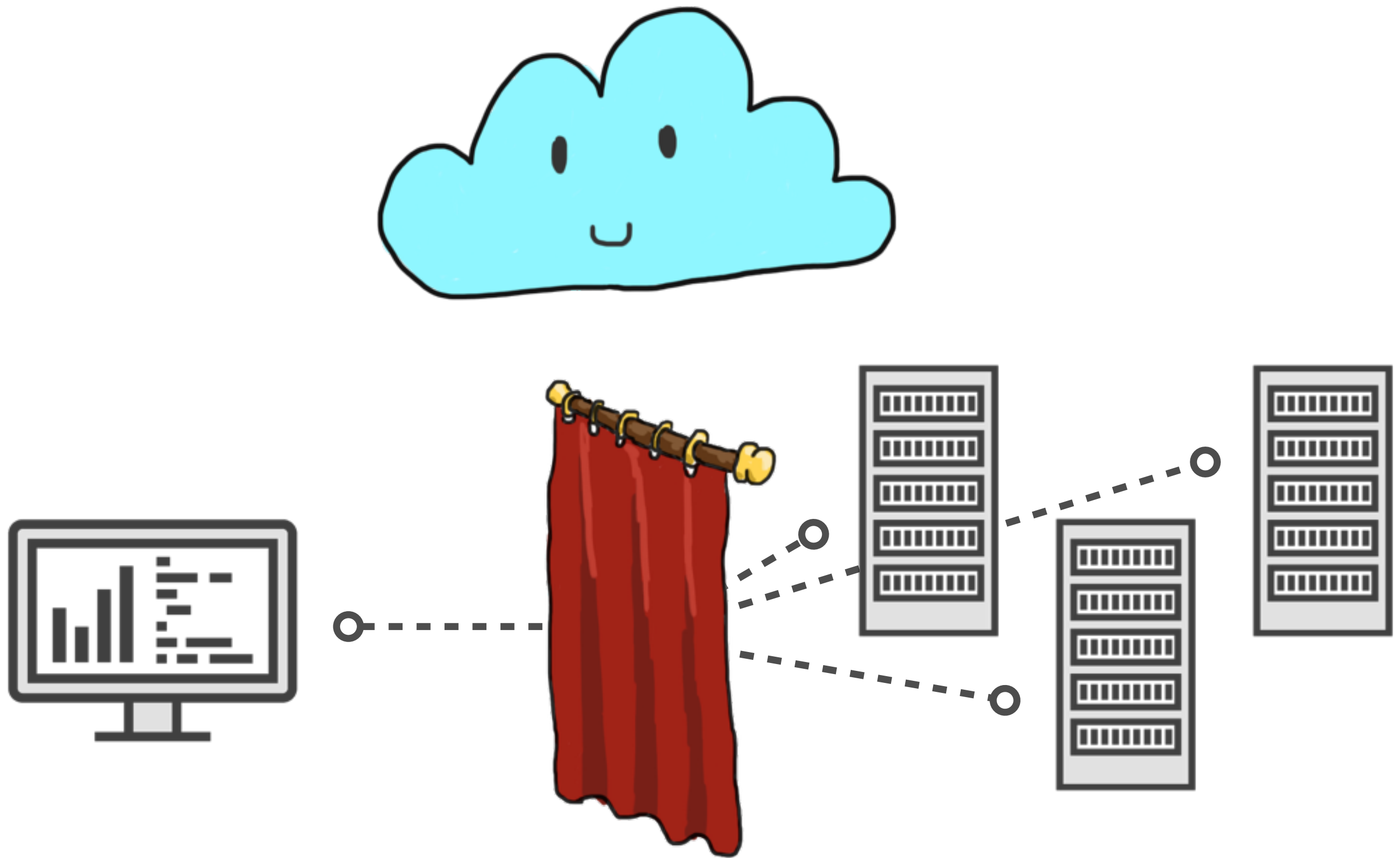


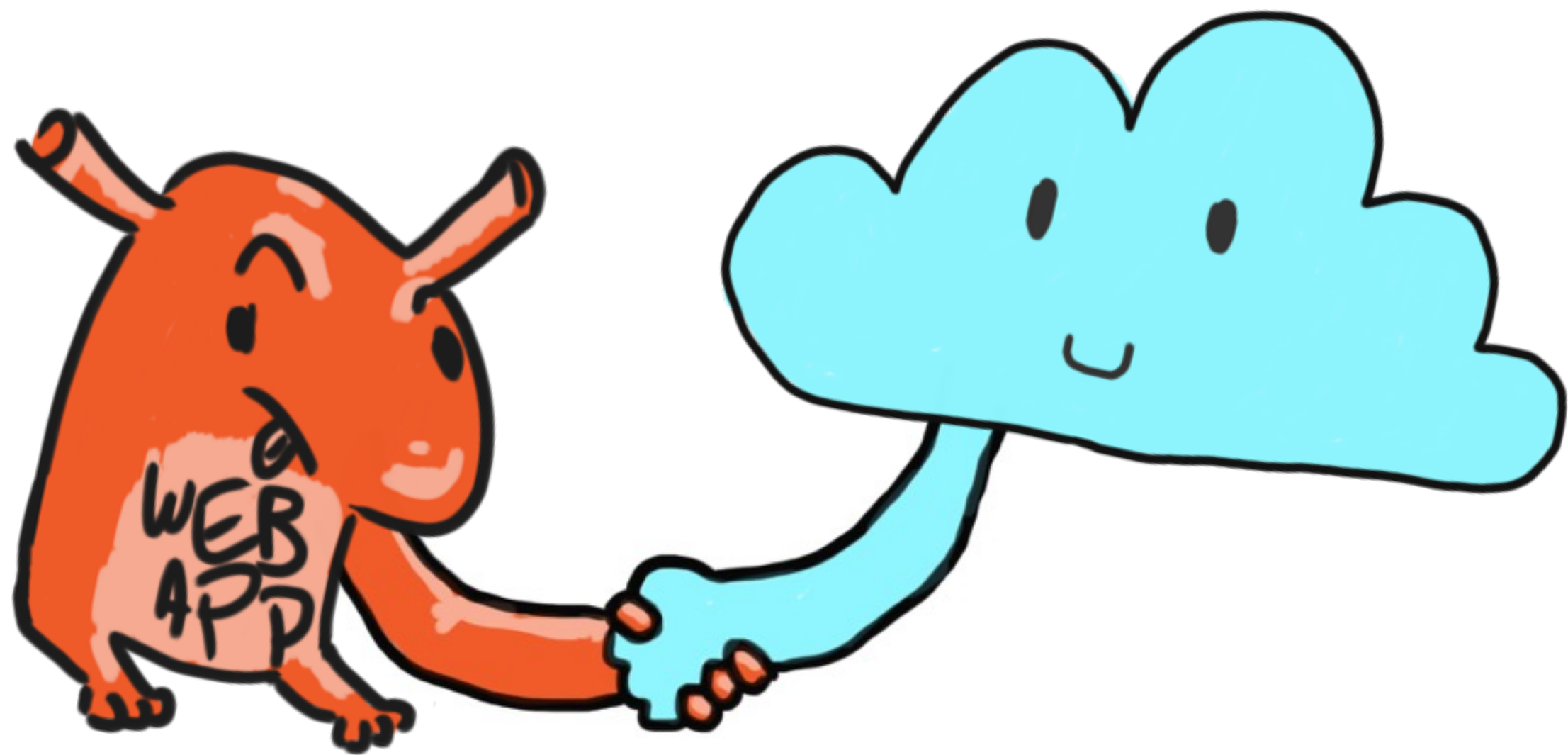


I wanna  
get big and  
strong!

Now!







# Hello Amazon Web Services

---

**amazon**

The Amazon logo, featuring the word "amazon" in a bold, dark grey sans-serif font. Below the text is a curved orange arrow that starts under the 'a' and points towards the 'n'.

I smell a  
business  
opportunity!



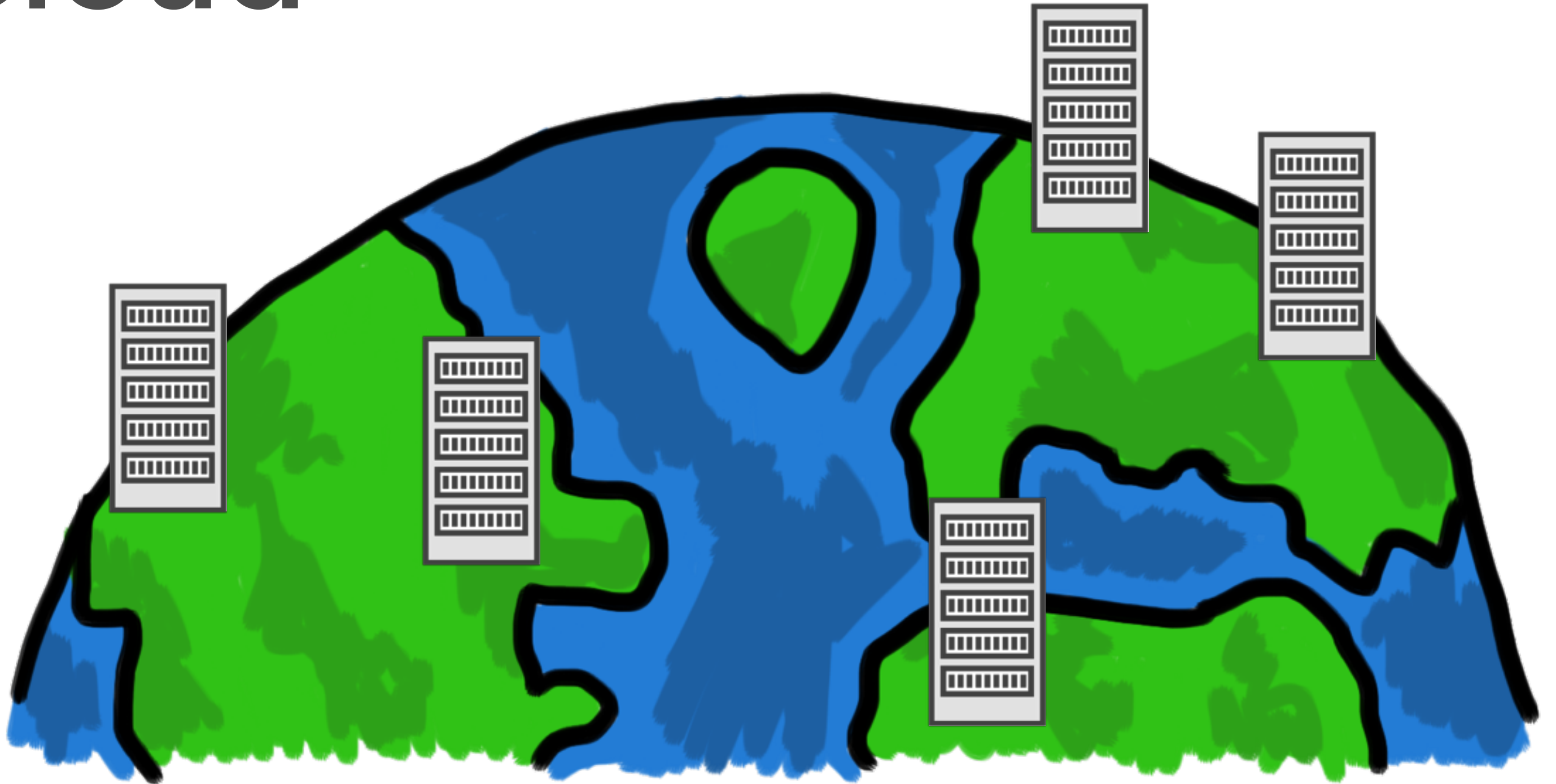
Launches first service **Simple Queue Service** around 2004

Collection of Cloud Computing Services

Can work together or independently


Runs or supports a Computer Program

# Cloud



# Computing

GET https://mysite.com/

  
<html> ... </html>

SELECT \* FROM myTable



product, category, price

2 + 2



..wait 4 no...



AWS is a provider of Cloud Services



# NETFLIX



# Why Depend on AWS?



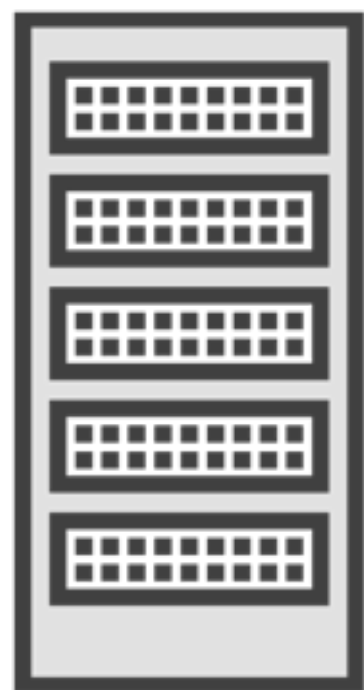
**Low  
Cost**



**Easy  
Scalability**

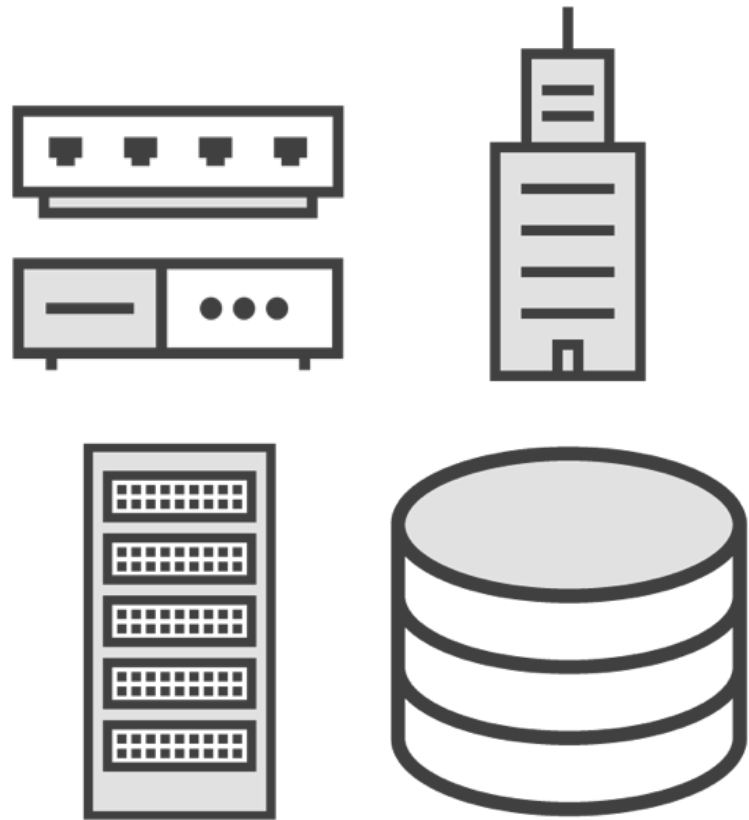


\$\$\$\$\$\$\$\$



With AWS, there are no upfront costs  
(for most services)

\$ \$ \$  
\$ \$ \$



\$



No really! Check it out here:

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

**amazon** web services **SIMPLE MONTHLY CALCULATOR**

Language: English

---

Get Started with AWS: [Learn more about our Free Tier](#) or [Sign Up for an AWS Account »](#)

FREE USAGE TIER: New Customers get free usage tier for first 12 months

[Reset All](#)

**Services**      Estimate of your Monthly Bill (\$ 0.00)

Common Customer Samples

**Choose region:** US-East / US Standard (Virginia)      Inbound Data Transfer is Free and Outbound Data Transfer is 1 GB free per region per month

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers. Amazon Elastic Block Store (EBS) provides persistent storage to Amazon EC2 instances.
 

[Clear Form](#)

**Compute: Amazon EC2 Instances:**

Description	Instances	Usage	Type	Billing Option	Monthly Cost
Add New Row					

**Storage: Amazon EBS Volumes:**

Description	Volumes	Volume Type	Storage	IOPS	Snapshot Storage
Add New Row					

**Elastic IP:**

Number of Additional Elastic IPs:

Elastic IP Non-attached Time:  Hours/Mon

Number of Elastic IP Remaps:  Per Month

**Data Transfer:**

Inter-Region Data Transfer Out:  GB/Month

Data Transfer Out:  GB/Month

Data Transfer In:  GB/Month

VPC Peering Data Transfer:  GB/Month

Intra-Region Data Transfer:  GB/Month

Public IP/Elastic IP Data Transfer:  GB/Month

**Elastic Load Balancing:**

Number of Elastic LBs:

Common Customer Samples

Free Website on AWS

AWS Elastic Beanstalk Default

Marketing Web Site

Large Web Application (All On-Demand)

Media Application

European Web Application

Disaster Recovery and Backup







# Tracing the Global Infrastructure of AWS

---

# Why Deploy Globally?



**Reduced  
Latency**



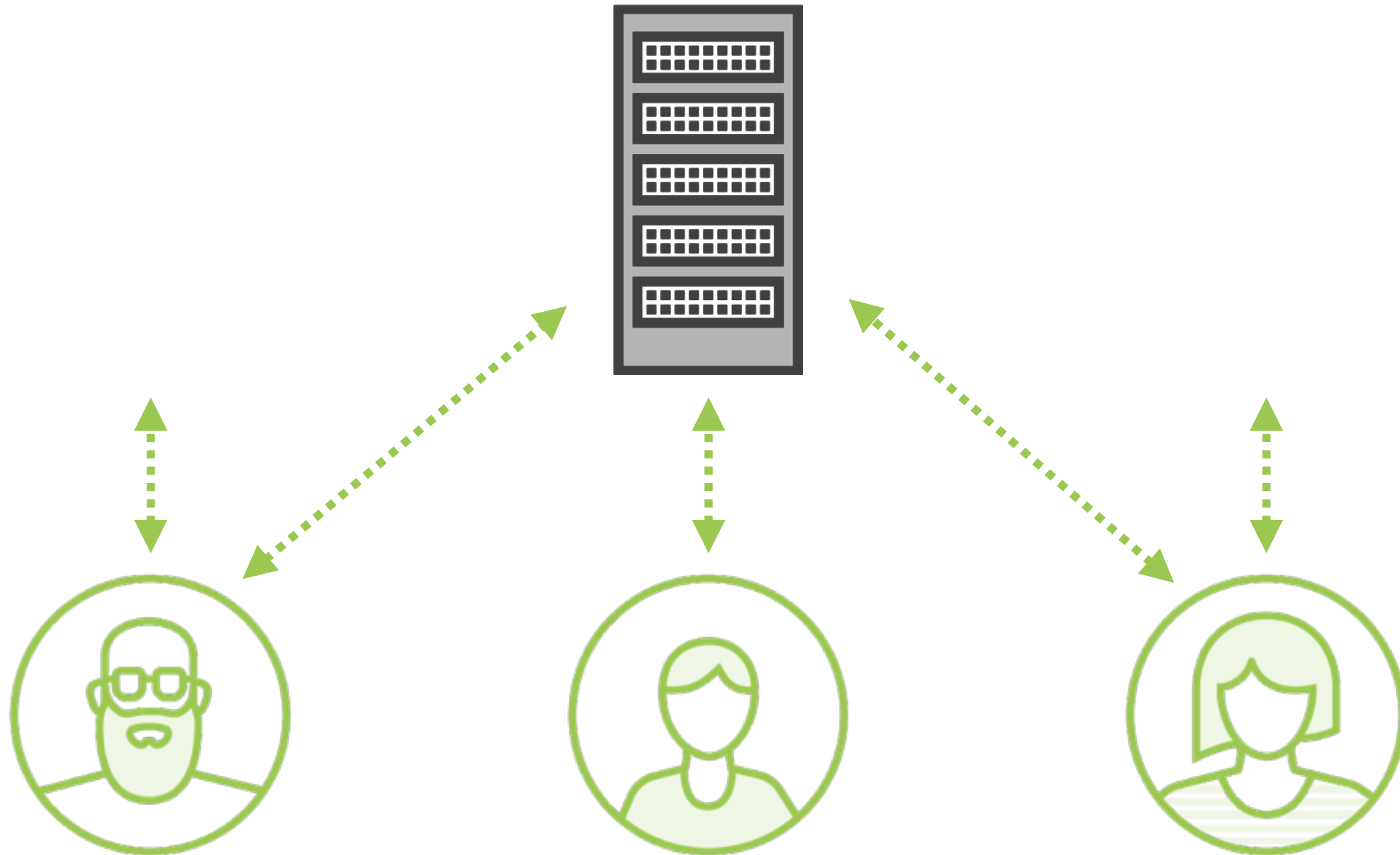
**Increased  
Redundancy**

Latency affects the user experience

Germany

USA

Singapore



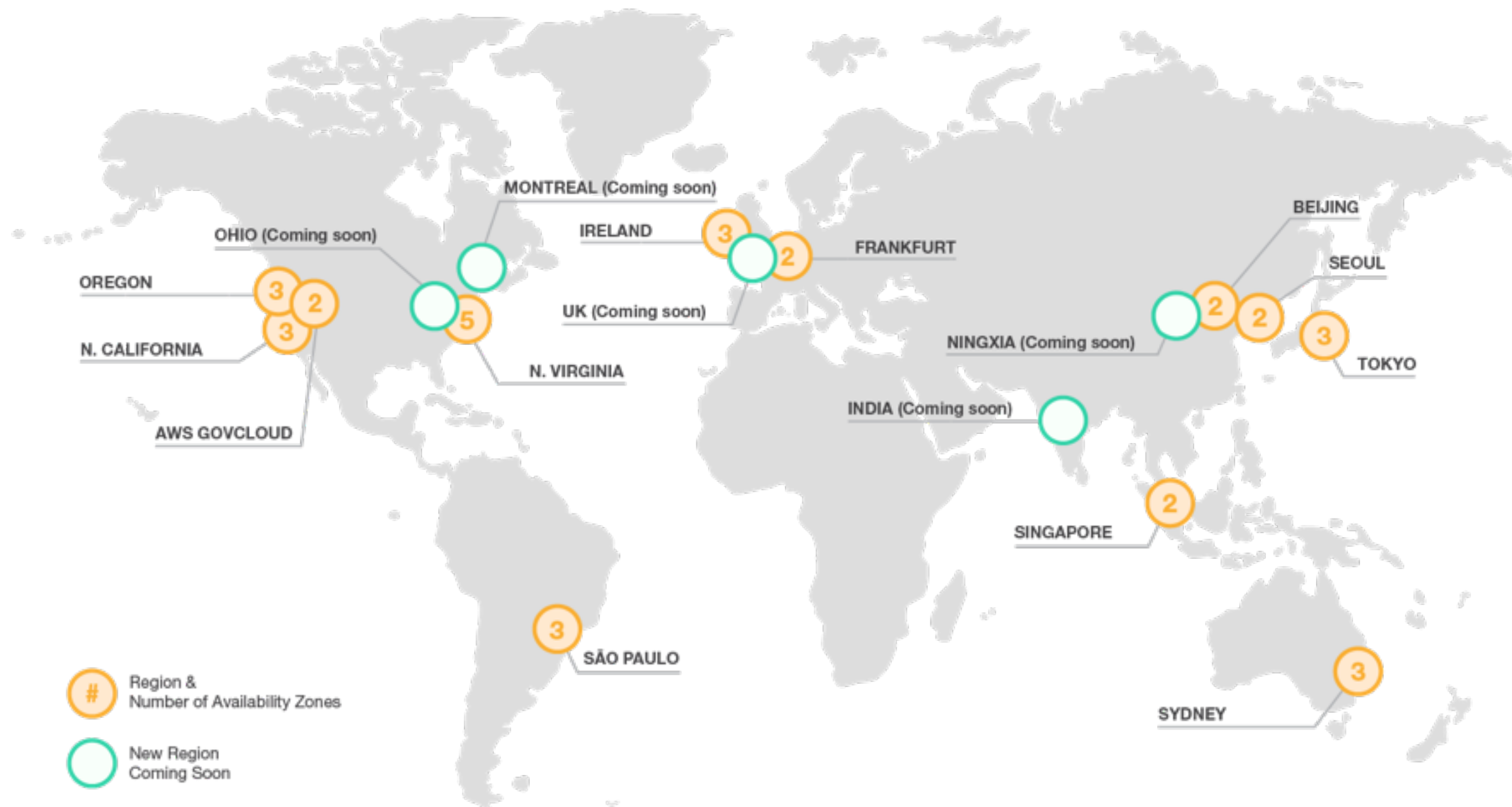
Germany

USA

Singapore

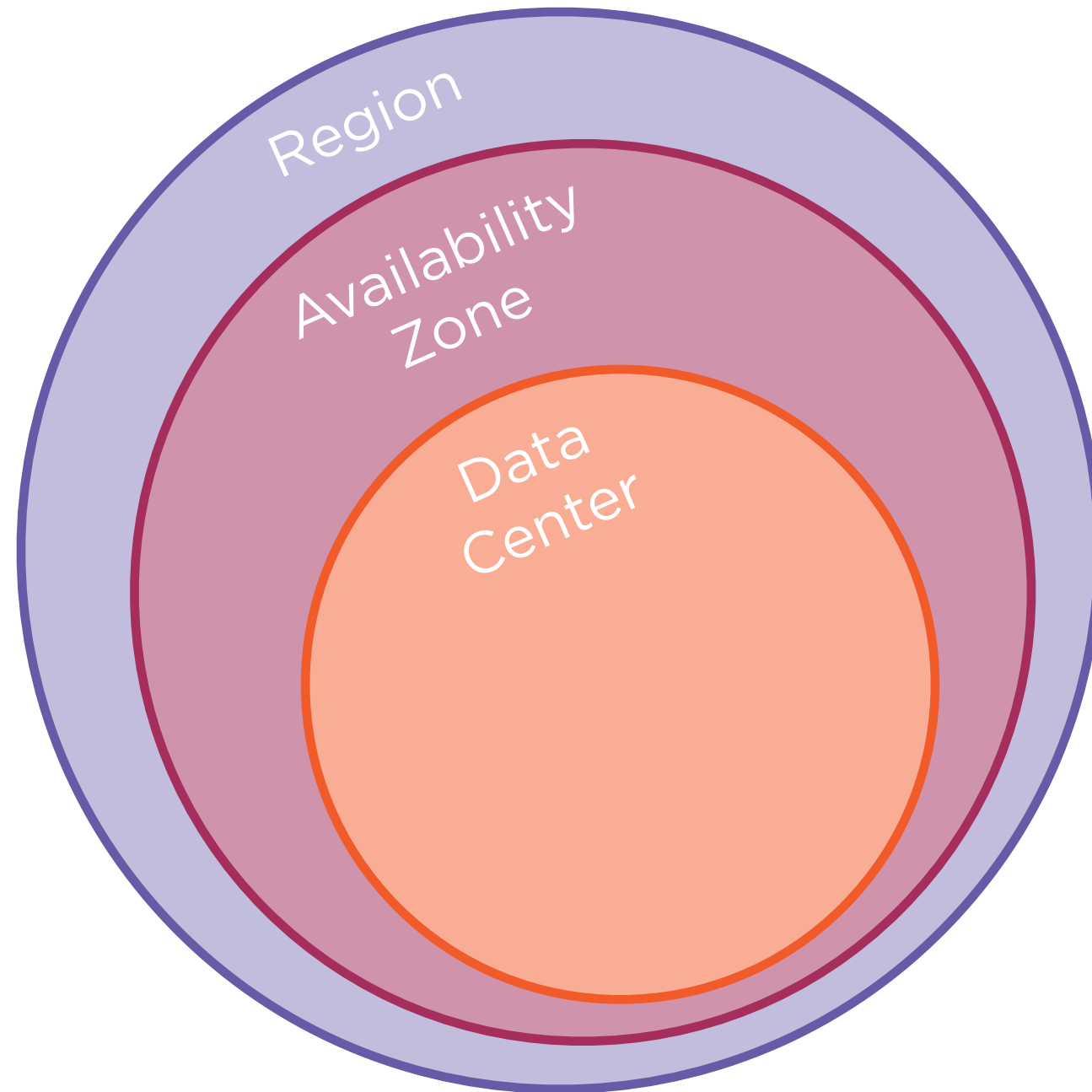
AWS has the most Data Servers

# AWS Regions & Availability Zones



March 2016

# AWS Geographic Organization





Scaling across Regions and AZ's increases redundancy

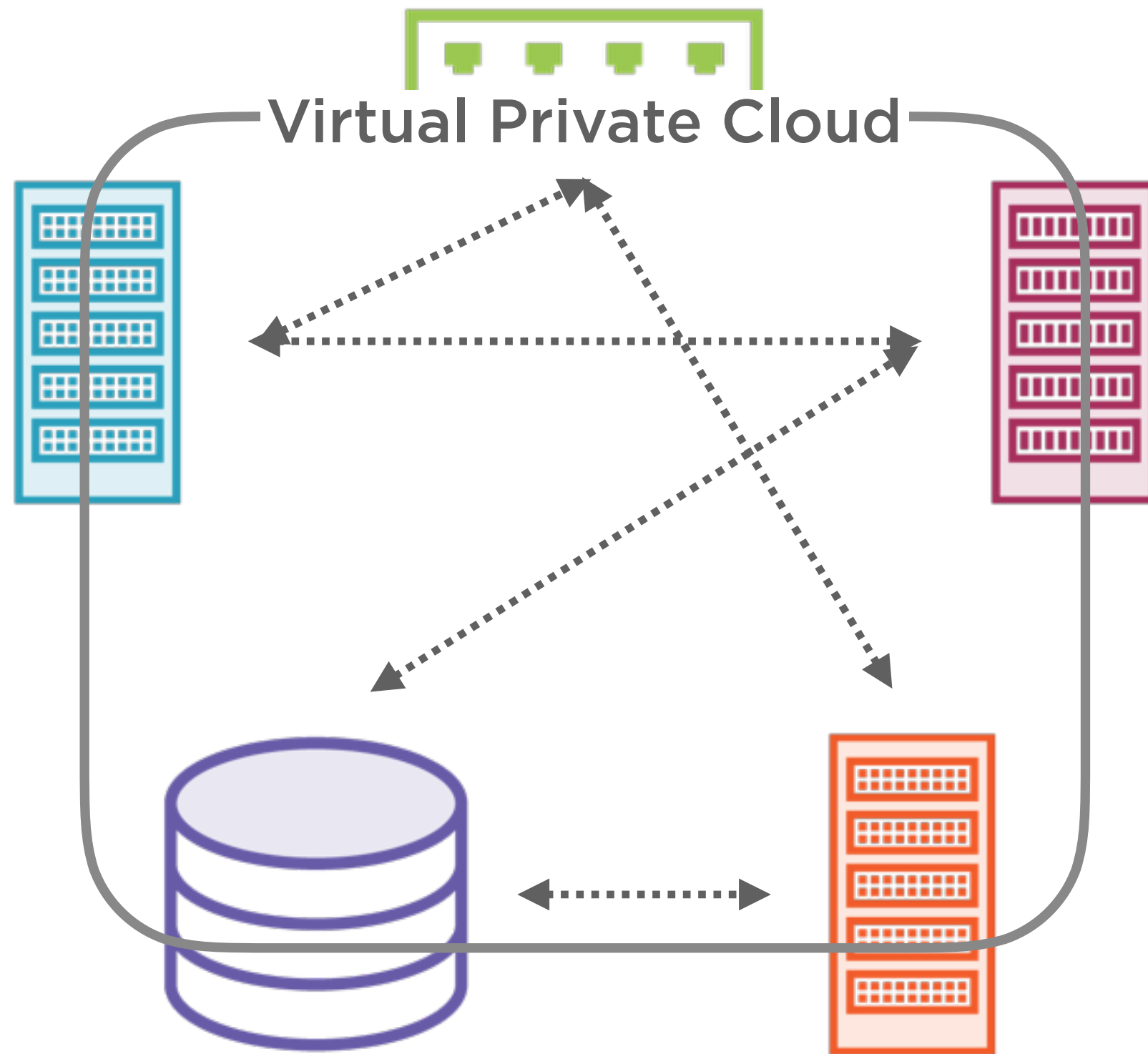
AWS Service Health Dashboard

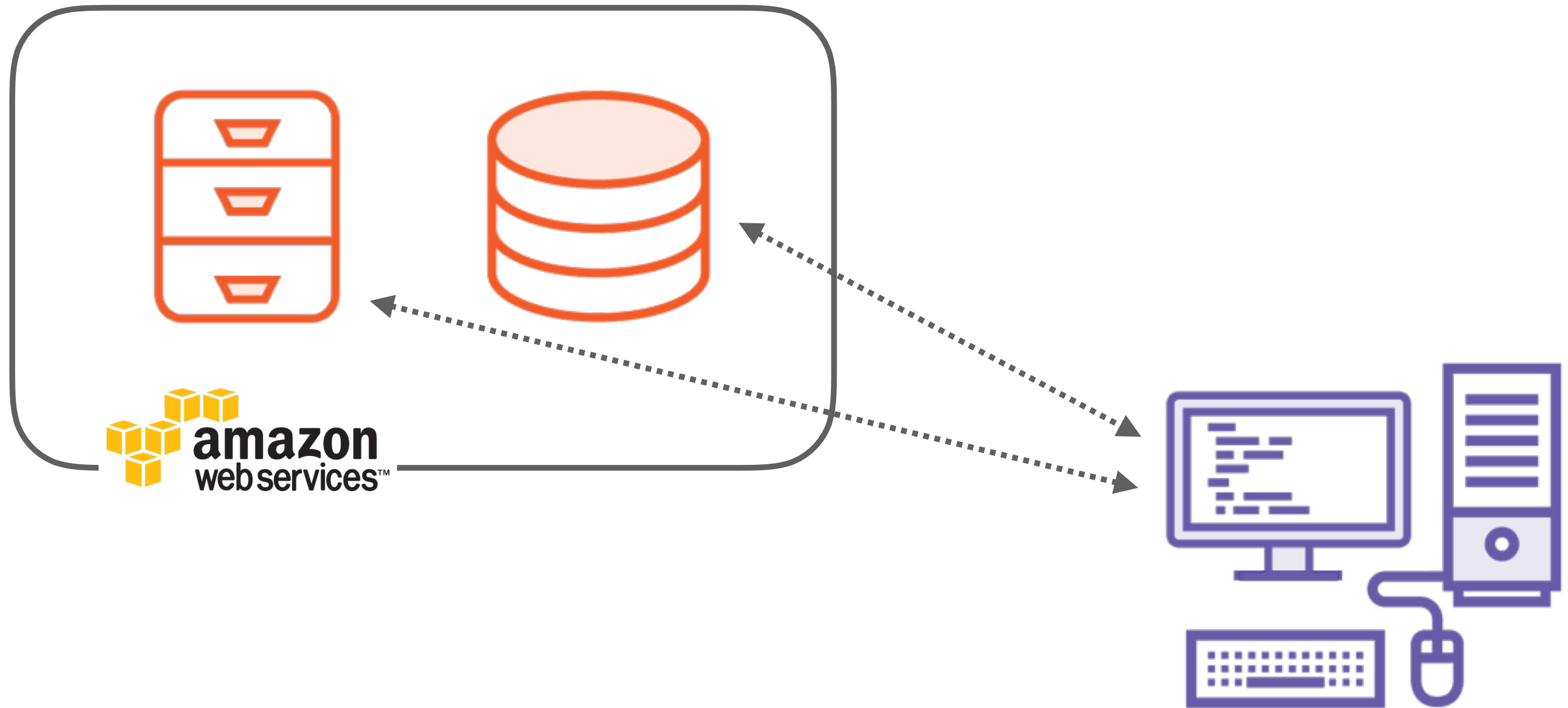
[\*\*http://status.aws.amazon.com/\*\*](http://status.aws.amazon.com/)

Demo of service dashboard

# How Does AWS Work?

---

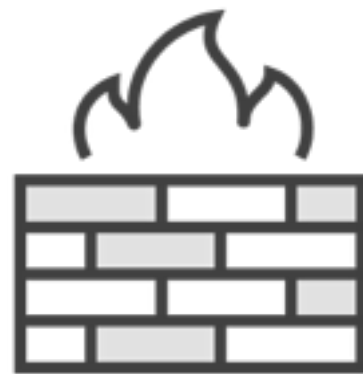




Local  
Development



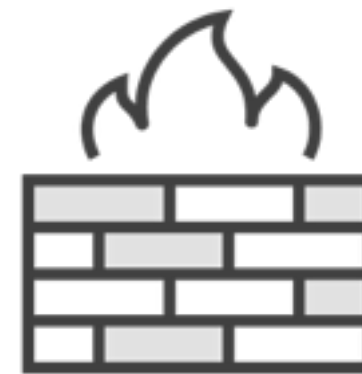
Instance



Security Group



Instance



Security Group



Instance

Remember...







# Amazon Web Services (AWS) Fundamentals for System Administrators

by Elias Khnaser

Learn the essential skillset required to build a cost-effective, scalable, and reliable infrastructure on the AWS platform.

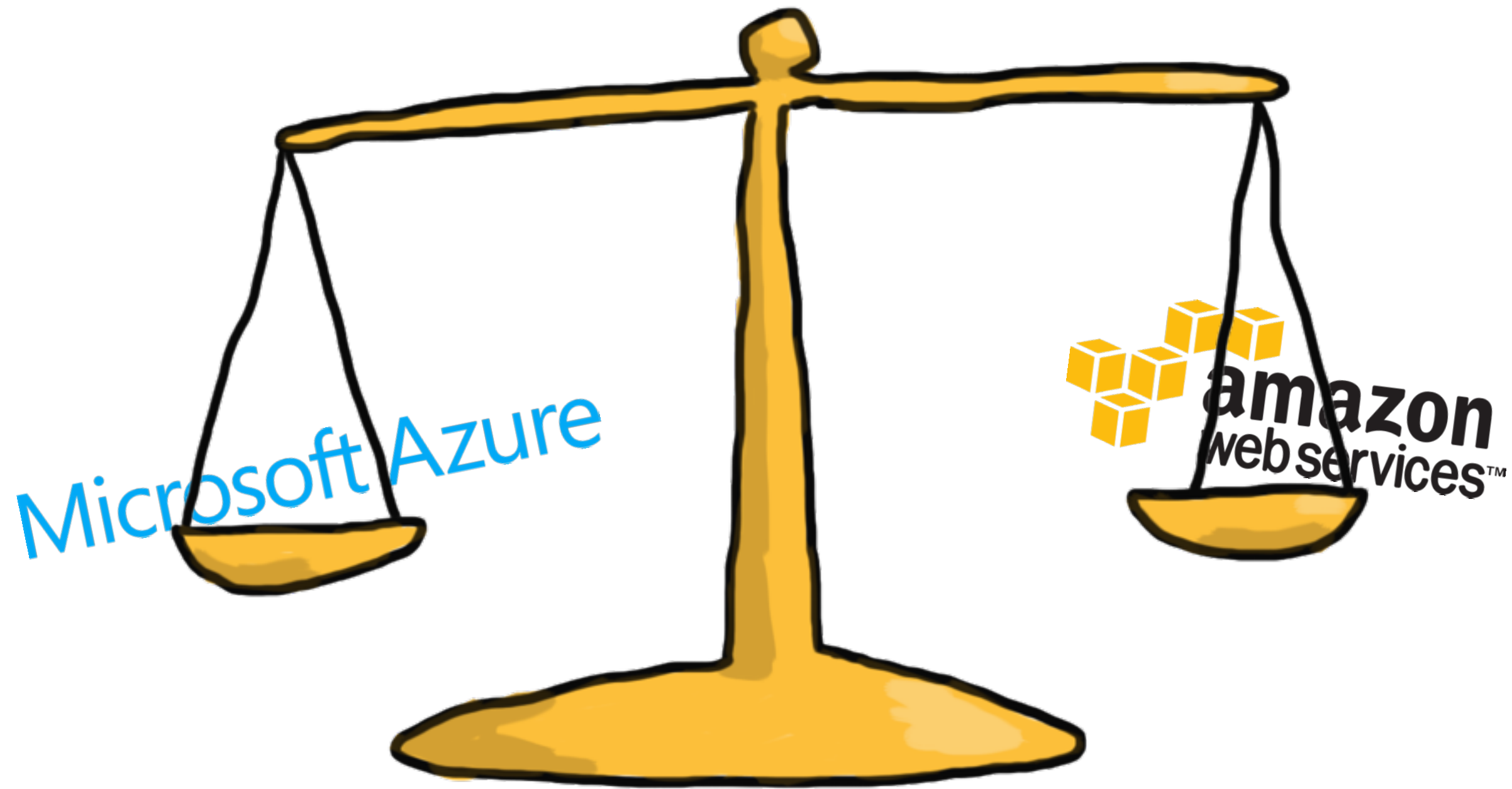
<https://app.pluralsight.com/library/courses/aws-system-admin-fundamentals>

# AWS vs. the Rest

---

# Microsoft Azure

Cloud Services Provider started around 2010



# Microsoft Azure



If you need Windows Virtual Machines



If you're working with .NET applications



If you want the latest and greatest from Microsoft

# Microsoft Azure



If you need global reach



If it lacks services from AWS that you need



If you want the latest and greatest from Amazon



# Understanding the Difference Between Microsoft Azure and Amazon AWS

by Elias Khnaser

Understanding the difference between Amazon AWS and Microsoft Azure will position you to make more informed decisions as you plan the migration of your workloads to the public cloud.

<https://app.pluralsight.com/library/courses/understanding-microsoft-azure-amazon-aws>



Cloud Services Provider started around 2014





Implements the

CLOUD **FOUNDRY**

Open Source Infrastructure specification



If you want to be provider independent



If you want your training and skills to be portable



- 👎 If you don't need portability
- 👎 If you want services not covered by CloudFoundry
- 👎 If you need portability and want the latest from IBM



Cloud Services Provider started around 2007

Now



Heroku app deployment is dead simple...

...but it lacks the breadth and reach of AWS

# Conclusion

---



# Summary

**Web Apps <3 The Cloud**

**The Birth of AWS**

**Price + Scalability + Location**

**AWS Service Interactions**

**Azure, Bluemix, Heroku, oh my!**

Up Next:

Understanding the Core Services of AWS

# AWS Core Services



EC2



S3



RDS



Route53