

AWS 101 - Welcome

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Before we start ...



... we'd love your feedback

some
background



Consumer Business

Tens of millions of active customer accounts

13 countries:
US, UK, Germany, Japan,
France, Canada, China,
Italy, Brazil, Mexico, India,
Spain, Australia

Seller Business

Sell on Amazon websites

Use Amazon technology
for your own retail website

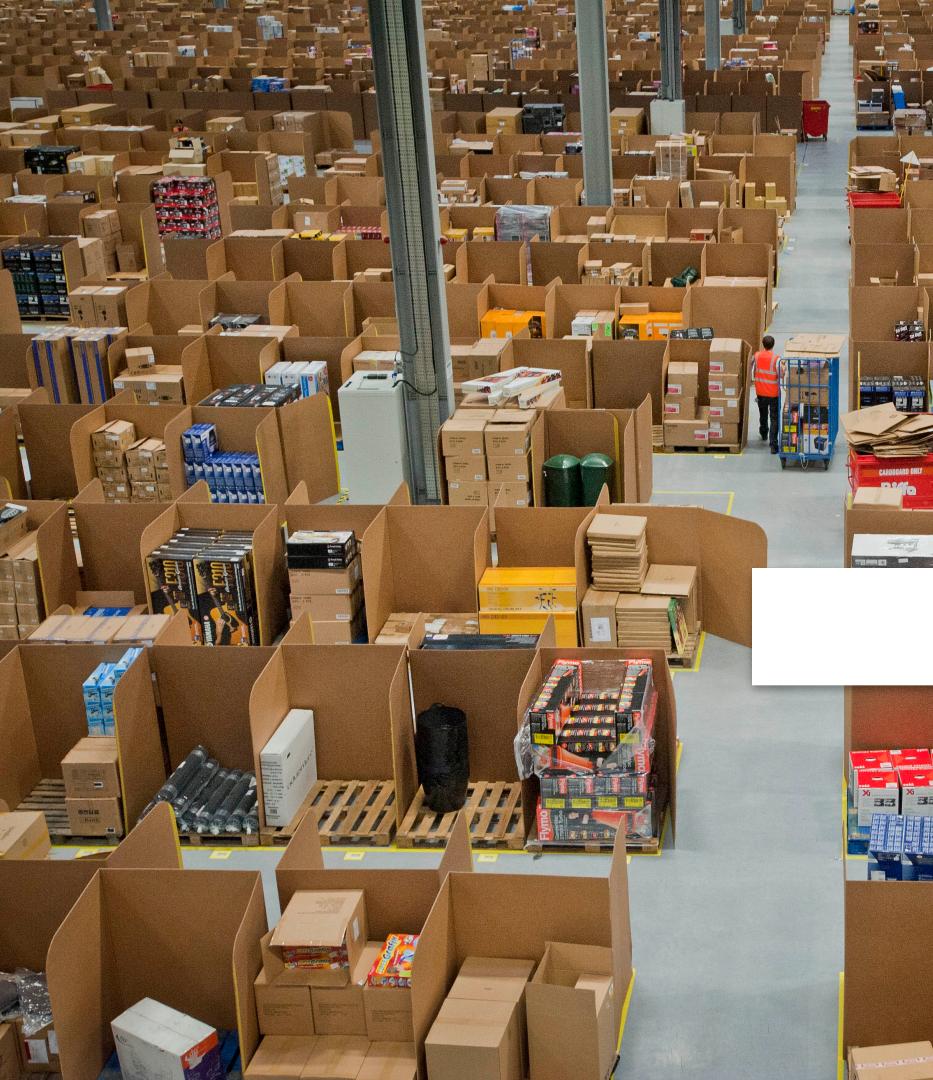
Leverage Amazon's
massive fulfilment centre
network

IT Infrastructure Business

Web-scale cloud computing infrastructure
for developing, deploying & operating applications

Over 1 million registered customers in over 190 countries





How did Amazon...



... get into Cloud Computing?

AWS Mission

Enable businesses and
developers to use web
services* to build scalable,
sophisticated applications.

*What people now call “the cloud”



What is Cloud Computing?

A broad and deep platform that helps customers
build sophisticated, scalable applications





Not excess capacity!



Who is using AWS and what are they using it for?

Startups on AWS





Ian



Help

List Your Space

WELCOME HOME

Rent unique places to stay from local hosts in 190 countries.

[How It Works](#)



airbnb

400,000

people are hosted
on any given night



Total Number of Guests

15M

12M

9M

6M

3M

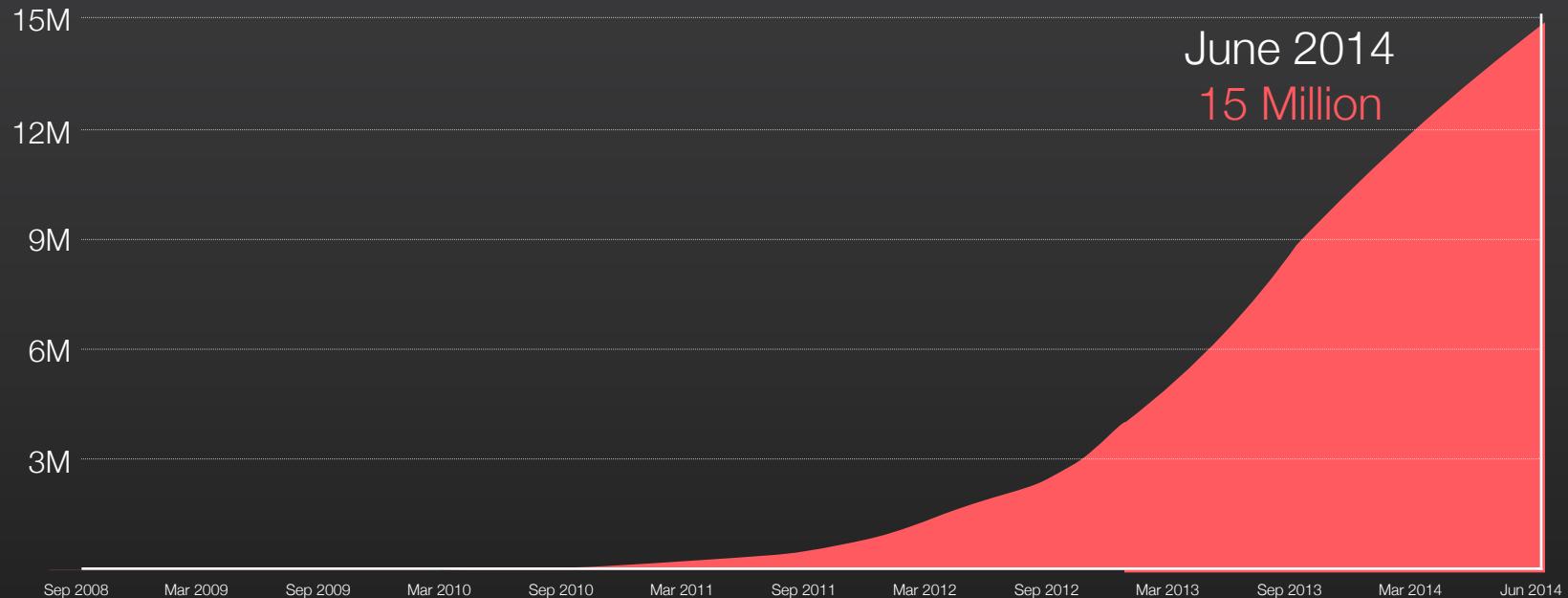
January 2013
4 Million

Sep 2008 Mar 2009 Sep 2009 Mar 2010 Sep 2010 Mar 2011 Sep 2011 Mar 2012 Sep 2012 Mar 2013 Sep 2013 Mar 2014 Jun 2014



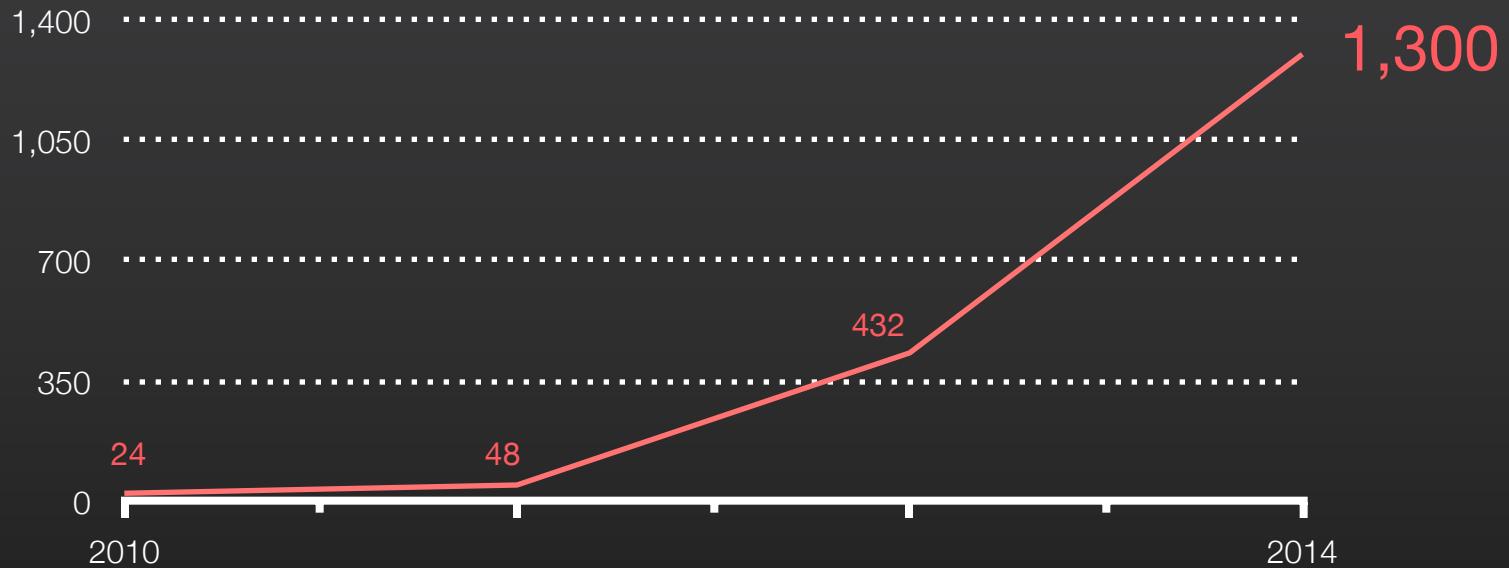
Total Number of Guests

Up by Over 10 Million in One Year





Total Number of EC2 instances



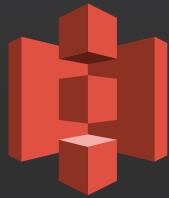
Why AWS?



EC2
Servers, Production Traffic,
Hive, Hadoop



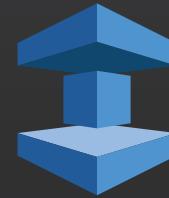
RDS
All Relational Databases



S3
Storage, User Generated
Content



DynamoDB
Rollups, Metadata



ElastiCache
Memcache



Route 53
DNS, Inventory



“ We have a 5 person operations team. ”

AWS allows us to devote our resources and mindshare to the core business.

Enterprises on AWS



Each day AWS adds enough server capacity to power Amazon when it was a global, \$7B enterprise

utility
computing

On demand

Pay as you go



Uniform

Available

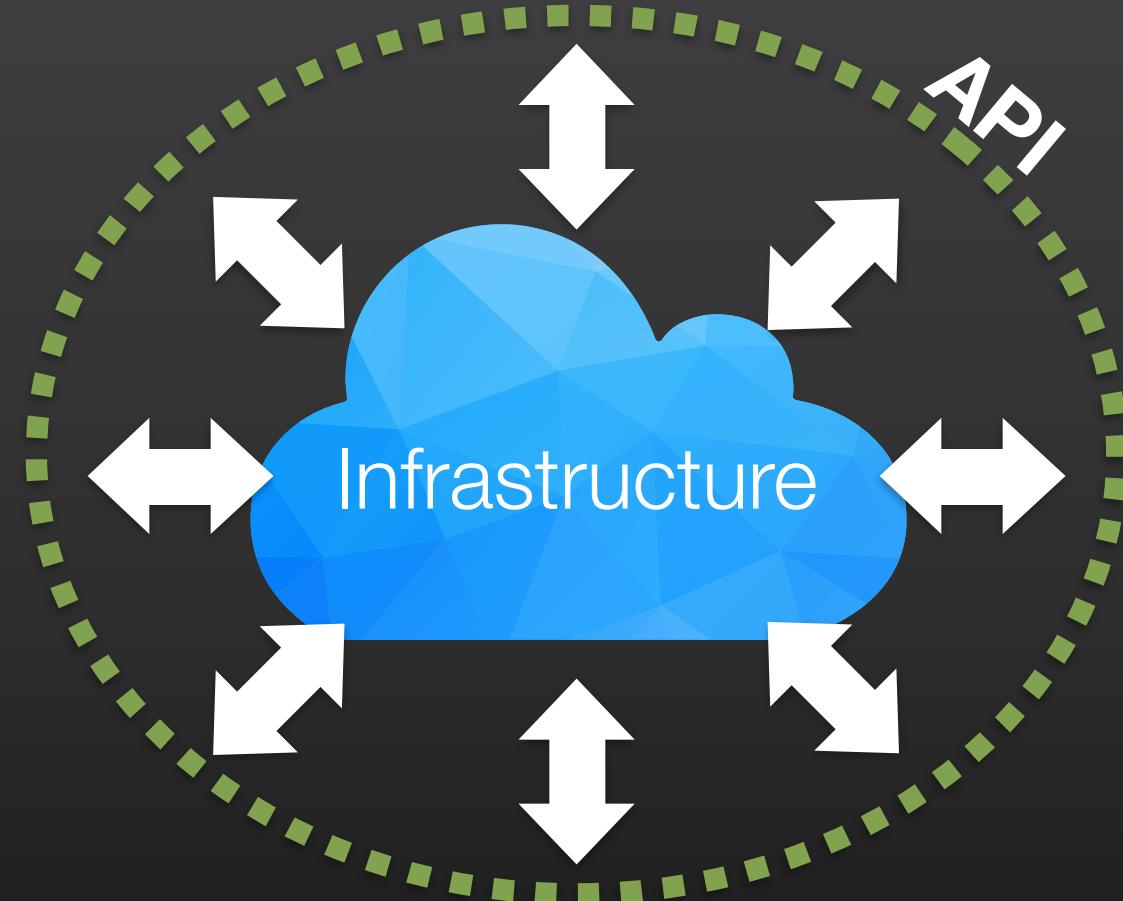
On demand

Pay as you go



Uniform

Available



Security

API

Compute **Monitoring**

Directory Load Balancing

Content Distribution

Database **DNS** Storage

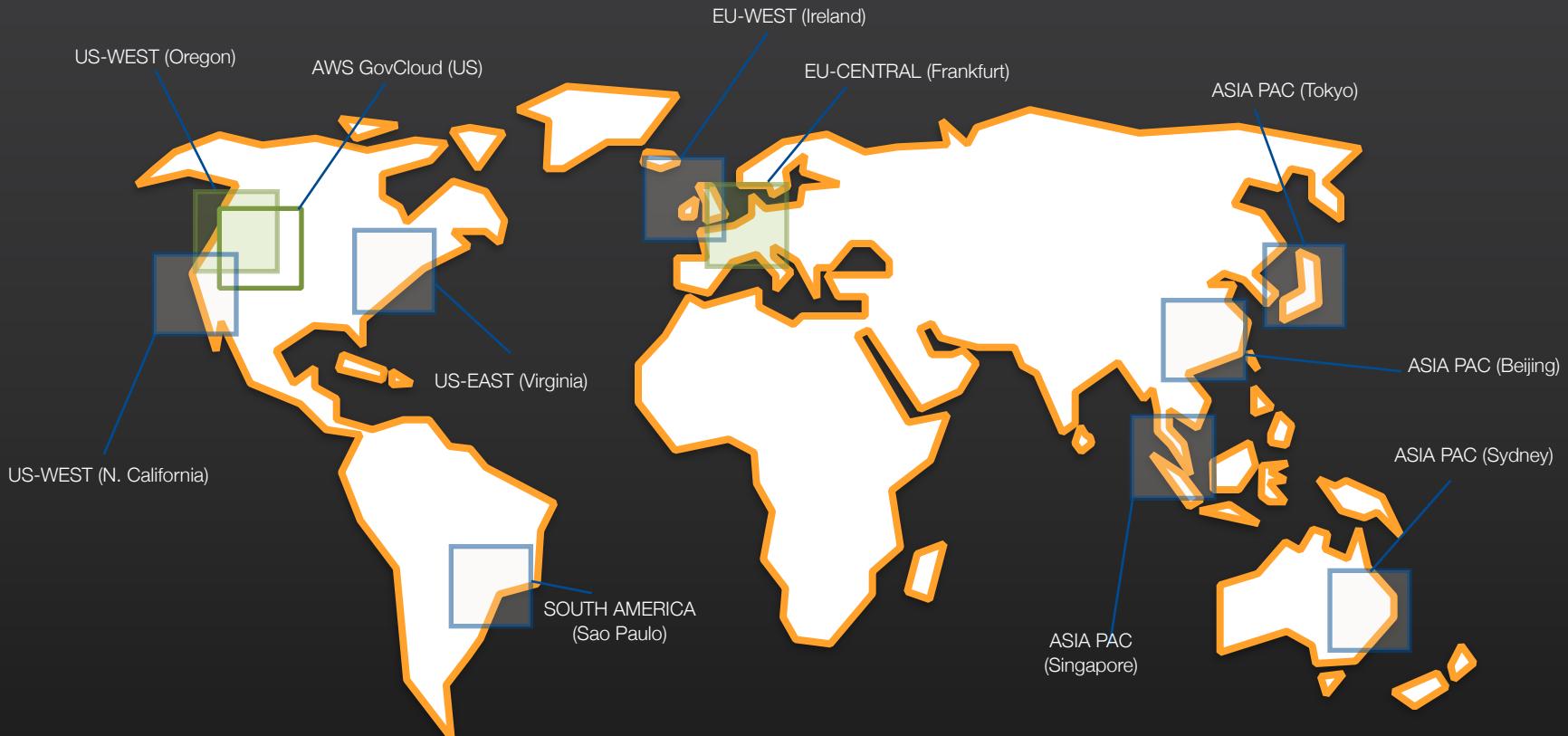
Networking Email

Messaging

global
footprint



AWS Regions



Availability Zones

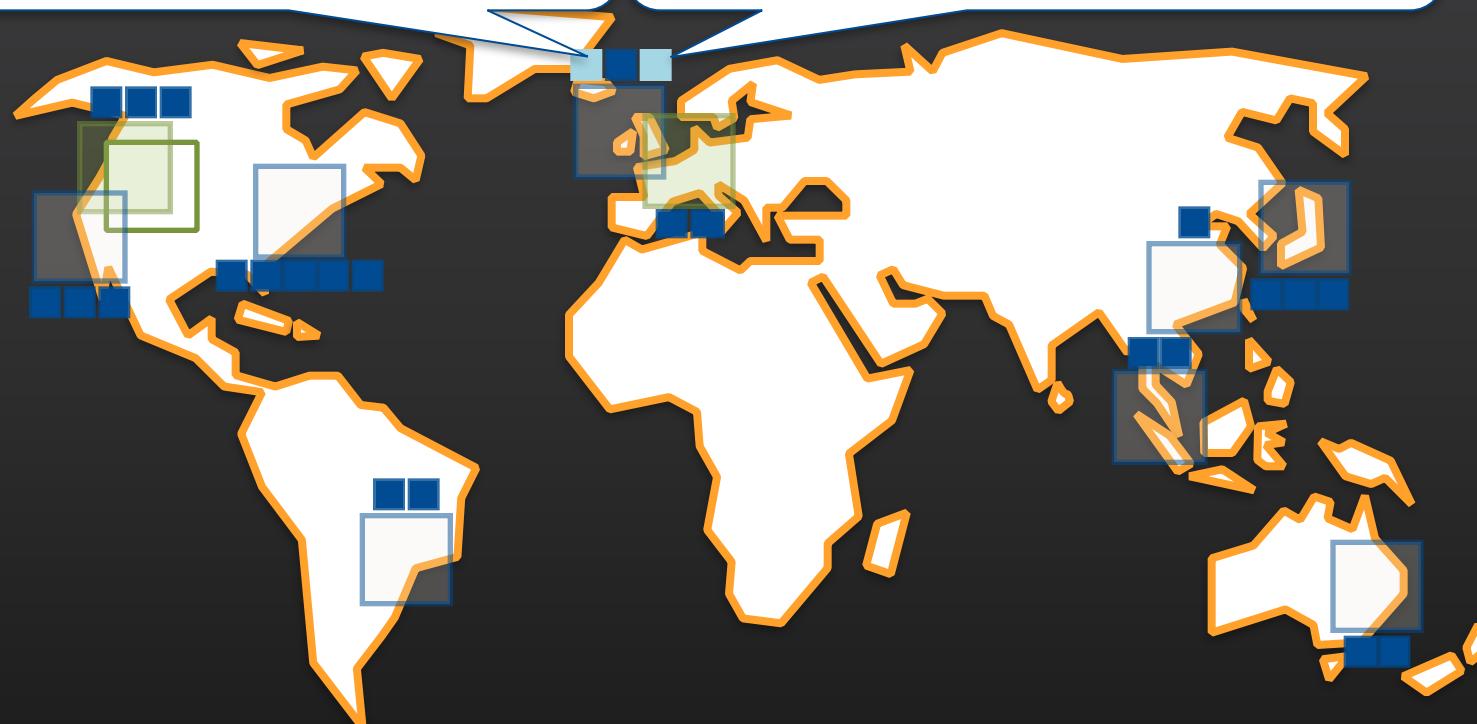


Accessible via API endpoints



```
aws ec2 run-instances  
--image-id ami-a813fadf  
--count 3  
--placement AvailabilityZone=eu-west-1a  
--instance-type m3.medium
```

```
aws ec2 run-instances  
--image-id ami-a813fadf  
--count 5  
--placement AvailabilityZone=eu-west-1c  
--instance-type m3.large
```



Amazon Web Services

Compute & Networking

- Direct Connect
- Virtual Private Cloud
- Route 53
- VPC

Storage & Content Delivery

- CloudFront
- Glacier
- S3
- Storage Gateway

Deployment & Management

- CloudFormation
- CloudTrail
- CloudWatch Metrics
- Instances
- Spot Requests
- Reserved Instances

AMI

- AMI Marketplace
- Optimally

EBS

- Amazon EBS
- Amazon EBS Snapshots

EC2

- Amazon EC2
- Amazon EC2 Metrics
- Amazon EC2 Reserved Instances
- Amazon EC2 Spot Requests

DynamoDB

- Amazon DynamoDB

RDS

- Amazon RDS

Data Pipeline

- Amazon Data Pipeline

Elastic MapReduce

Additional Resources

Getting Started

See our documentation to get started and learn more about how to use our services.

EC2 Management Console

Services

Resources

You are using the following Amazon EC2 resources in the EU West (Ireland) region:

Running Instances	Elastic IPs
0	0

Volumes	Snapshot
0	1

Key Pairs	Load Balancers
0	0

Placement Groups	Security Groups
0	4

Optimize your resources' cost, performance and security with AWS Trusted Advisor

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the EU West (Ireland) region.

Service Health

Service Status:

- EU West (Ireland): This service is operating normally

Availability Zone Status:

- eu-west-1a: Availability zone is operating normally
- eu-west-1b: Availability zone is operating normally
- eu-west-1c: Availability zone is operating normally

Service Health Dashboard

Scheduled Events

EU West (Ireland): No events

Account Attributes

Supported Platforms

- VPC
- Default VPC
- 192.0.2.1/32/32

Additional Information

Getting Started Guide

Documentation

All EC2 Resources

Forum

Pricing

Contact Us

Popular AMIs on AWS Marketplace

Vyatta Virtual Router/Firewall/VPN

Provided by Vyatta, Inc.

Rating: ★★★★☆

Pay by the hour for software and AWS usage

View all Networking Software

Alert Logic Threat Manager for EC2

Provided by Alert Logic

Rating: ★★★★☆

Pay by the hour for software and AWS usage

View all Security Software

Adobe ColdFusion

Provided by Oracle

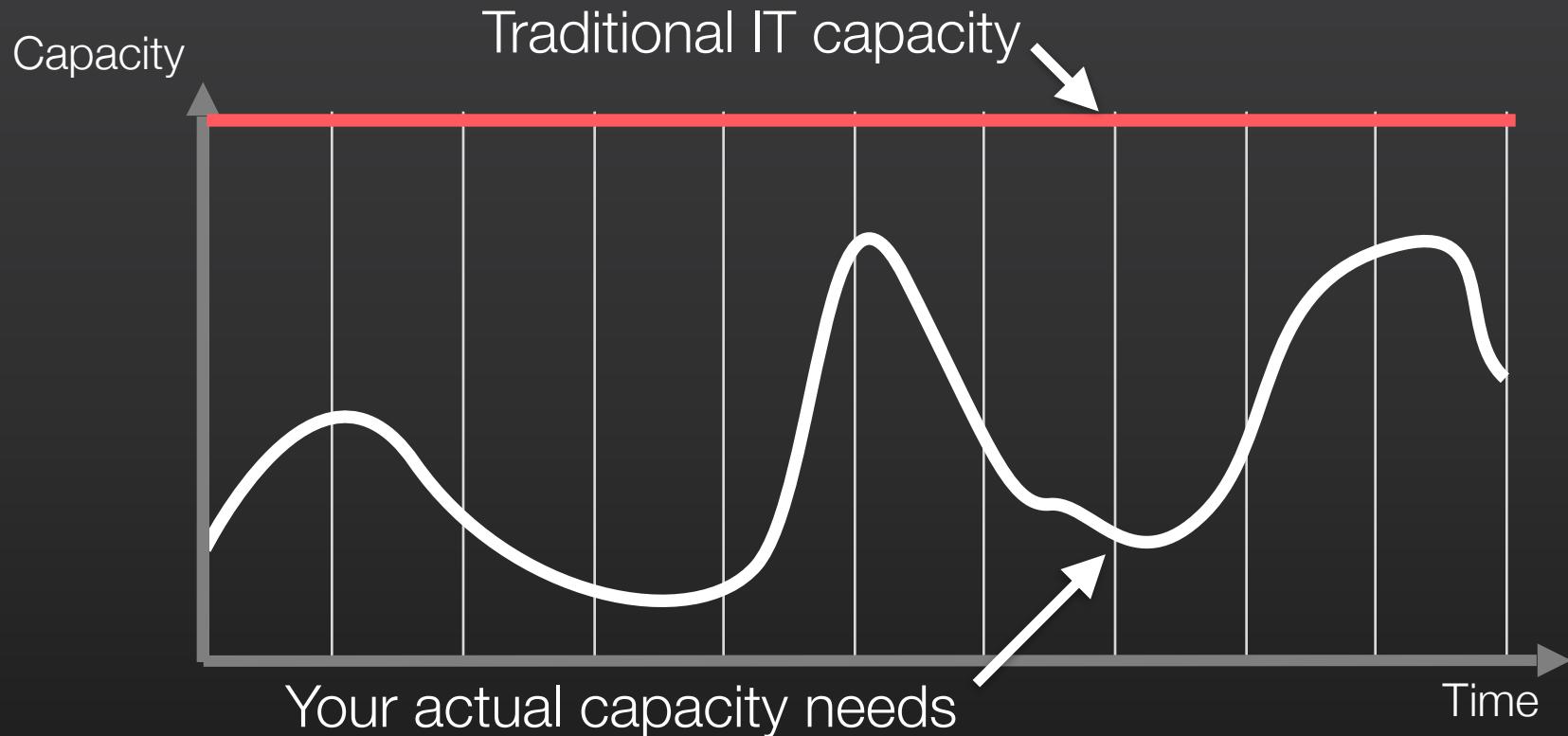
Rating: ★★★★☆

Pay by the hour for software and AWS usage

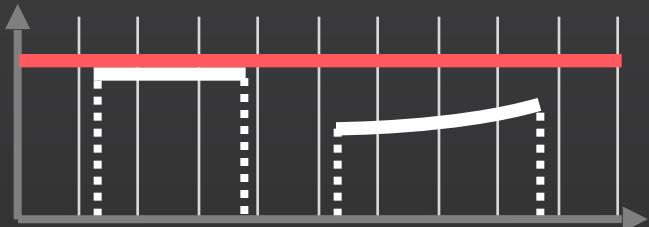
Feedback

elasticity

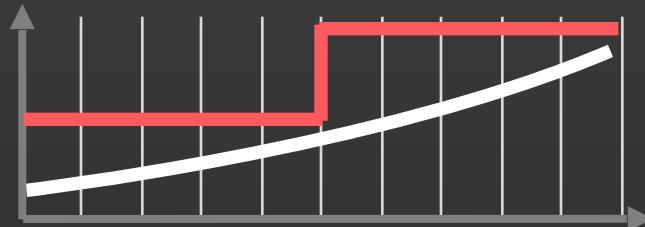
Elastic Capacity (or lack of in this case)



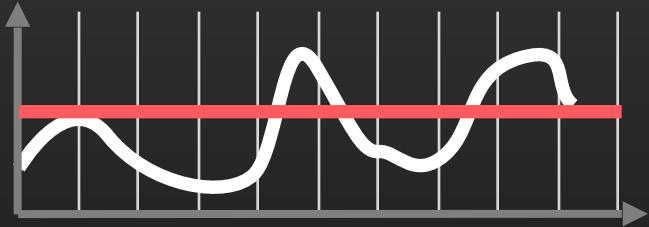
Elastic Capacity (or lack of in this case)



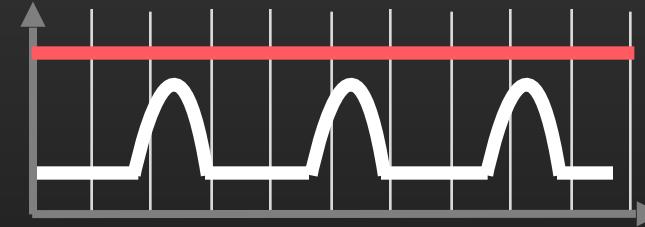
On and Off



Fast Growth

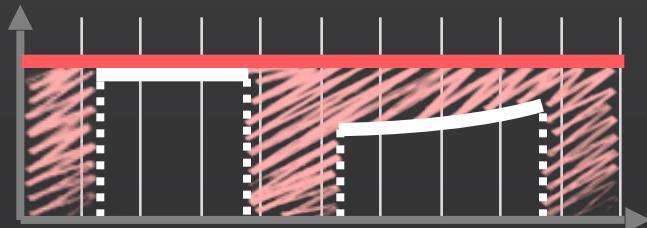


Variable peaks



Predictable peaks

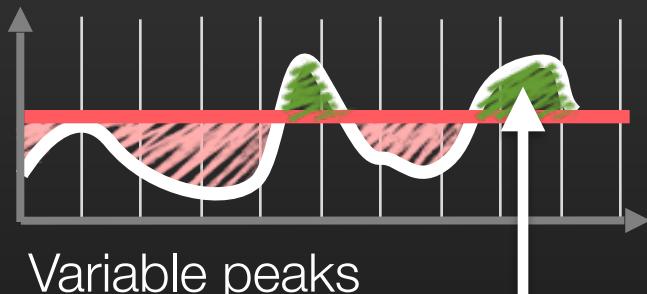
Elastic Capacity (or lack of in this case)



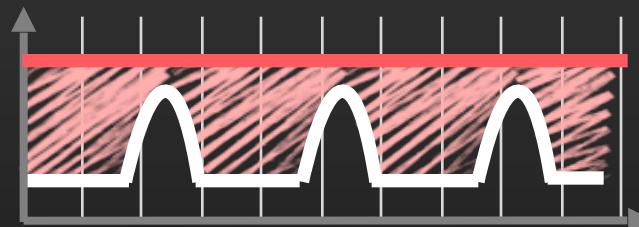
On and Off



Fast Growth



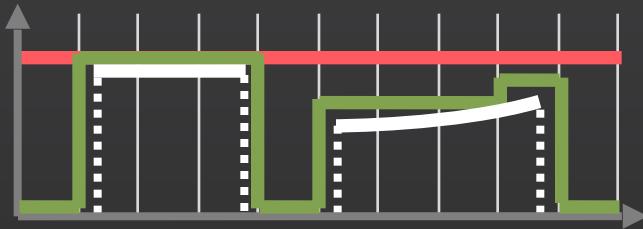
Variable peaks



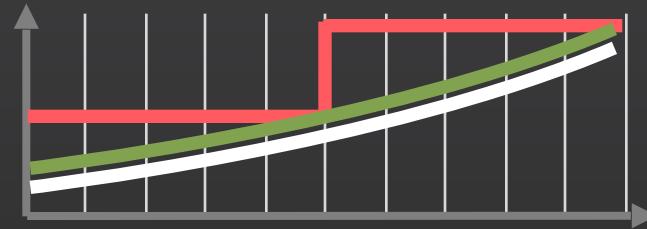
Predictable peaks

Customer Dissatisfaction

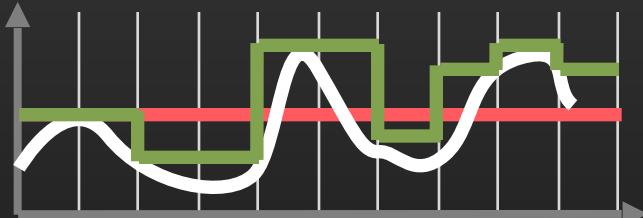
Elastic Capacity



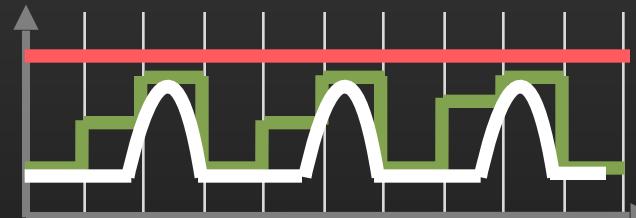
On and Off



Fast Growth



Variable peaks

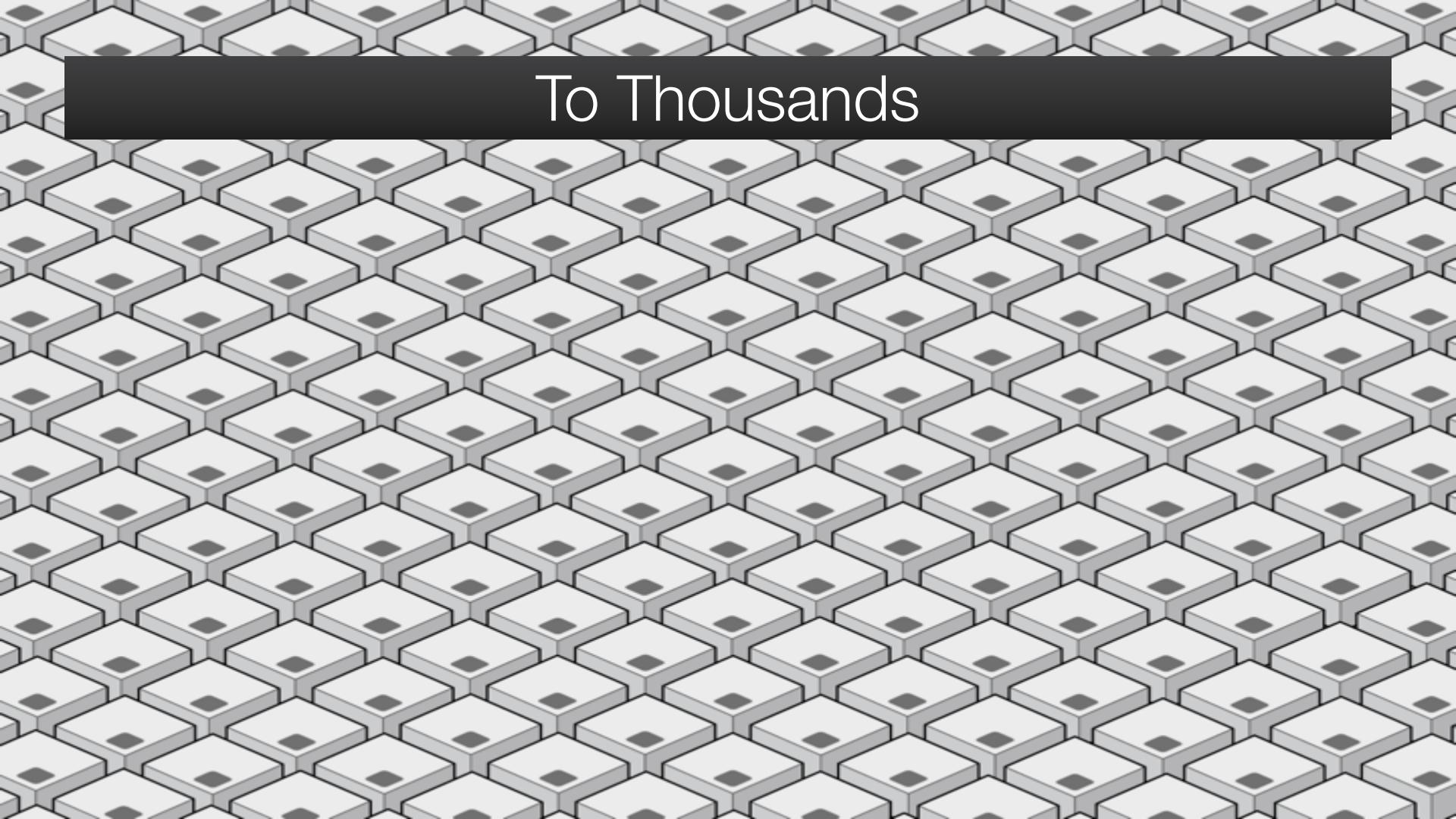


Predictable peaks

From One Instance



To Thousands

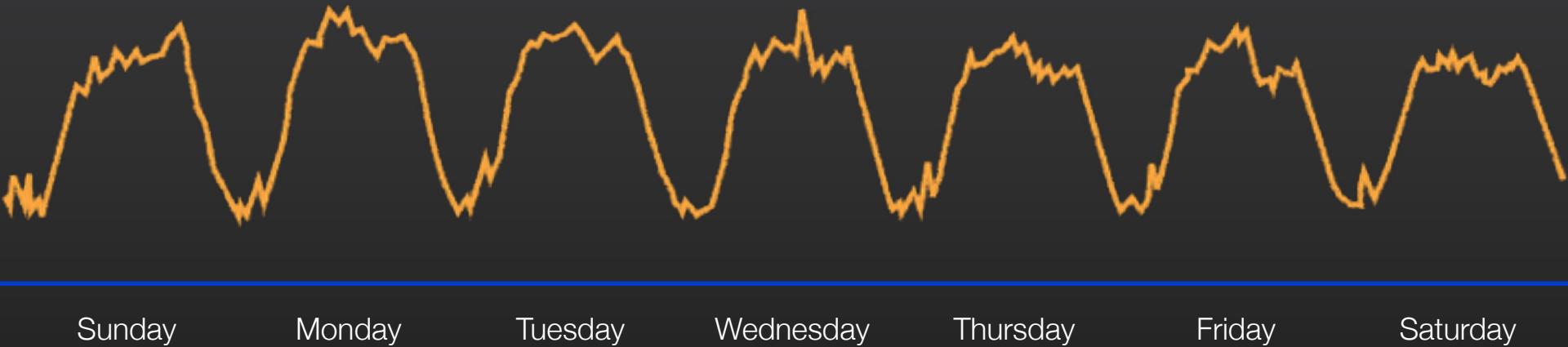


And Back Again

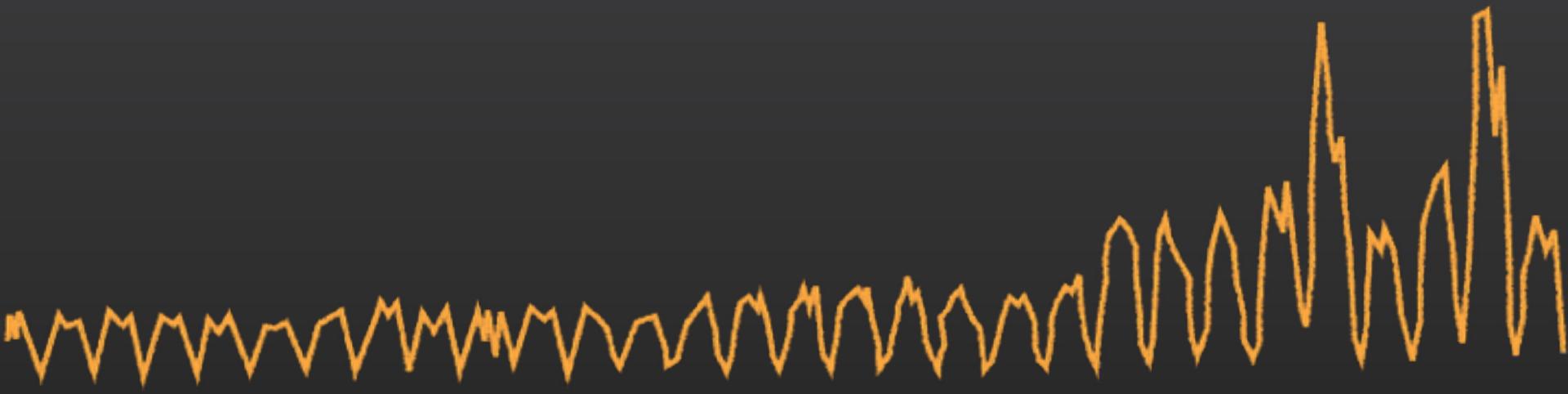


exploiting elasticity

Typical weekly traffic to Amazon.com



November traffic to Amazon.com



November

November traffic to Amazon.com

Provisioned capacity



November

November traffic to Amazon.com

Provisioned capacity

76%

November

24%

the toolbox



What are AWS's services and how
do I use them to run my workloads?

A Broad Range of Services

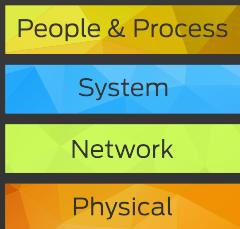
Technical & Business Support	 Big Data & HPC	 Business Apps	 Security	 Development	 Backup	 Databases	 Industry Solutions	AWS Marketplace
Support	 Virtual Desktops	 Sharing & Collaboration	 Corporate Email	Enterprise Applications				
Professional Services	 Analytics	 App Services	 Developer Tools & Operations	 Mobile Services				Platform Services
Partner Ecosystem	 Hadoop	 Queueing & Notifications	 Transcoding	 One-Click web app deployment	 Resource Templates	 Identity		
Training & Certification	 Real-time Streaming Data	 Workflow	 Email	 DevOps Resource Management	 Container Management	 Sync		
Solutions Architects	 Data Warehouse	 Data Pipelines	 App Streaming	 Search	 Application Lifecycle Management	 Event-driven Computing	 Mobile Analytics	
Account Management	 Identity Management	 Resource & Usage Auditing	 Access Control	 Key Management & Storage	 Monitoring & Logs			Administration & Security
Security & Pricing Reports	 Compute (VMs, Auto-scaling & Load Balancing)	 Storage (Object, Block and Archival)	 CDN	 Databases (Relational, NoSQL, Caching)	 Networking (VPC, DX, DNS)			Core Services
	 Regions	 Availability Zones		 Points of Presence				Infrastructure

Infrastructure

11 regions
28 availability zones
53 edge locations



Increasing your Security Posture in the Cloud



AWS security
approach



Size of AWS
security team



Visibility into
usage & resources

Broadest Certification & Accreditations



Security Benefits from Community Network Effect



Partner
ecosystem



Pinterest

Customer ecosystem



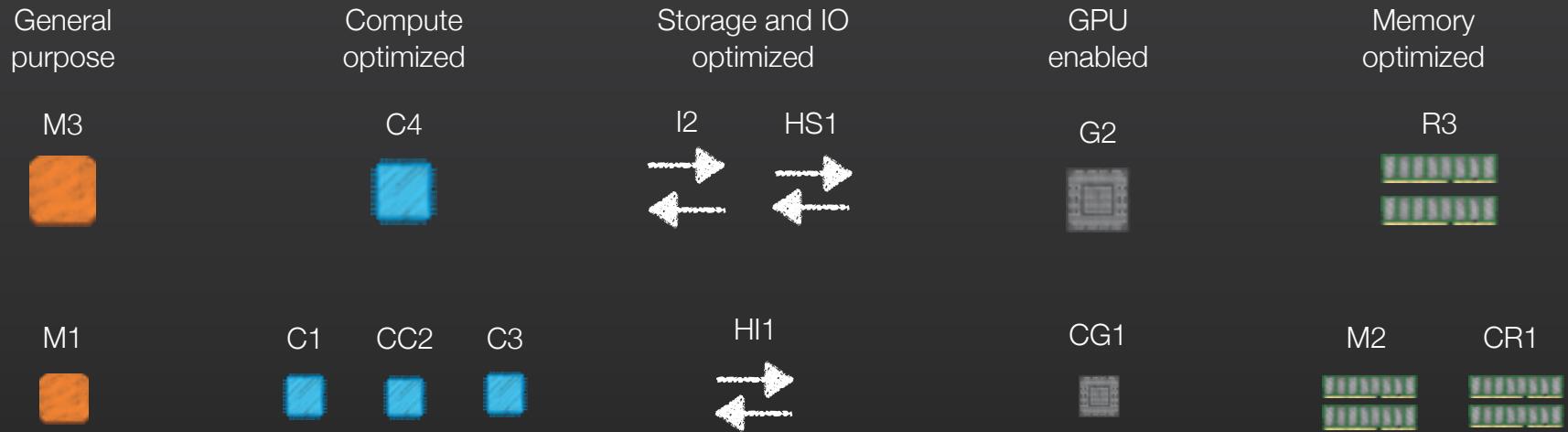
Everyone
benefits

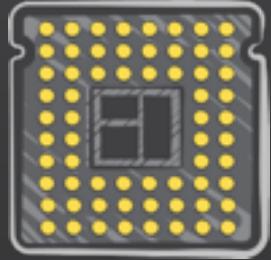
Compute



Compute
(EC2 Instances, Auto-scaling and Load Balancing)

Broad Set of Compute Instance Types...





EC2 Instance Type: C4

Compute Optimized

2.9 GHz E5 v3 (Haswell)

Up to 36 vCPUS

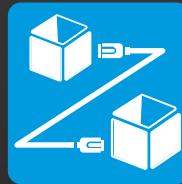
EBS-optimized by default, at no extra cost

Networking, Security & Access Control



Security

IAM
CloudTrail
CloudHSM



Networking

VPC
Route 53
Direct Connect

Storage



Storage
(Object, Block and Archive)



Amazon S3

Highly durable and available cloud storage



Amazon Glacier

Extremely low-cost cloud archive storage service



Amazon EBS

Persistent block level storage volumes for
use with Amazon EC2 instances

Databases



Relational



NoSQL



Caching

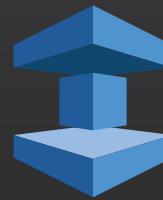
AWS Database Services



Amazon
RDS



Amazon
DynamoDB



Amazon
Elasticache

Amazon Aurora

Commercial-grade Database Engine at Open-source Cost



Amazon Aurora

Commercial-grade Database Engine at Open-source Cost

- MySQL compatible

- 5X better performance than standard MySQL

- Available, durable and fault tolerant

- Highly scalable and secure

- Available through Amazon RDS

Analytics



Hadoop



Real-time



Data warehouse



Data workflows

Running Analytics Workloads on AWS

Sources of Truth



Amazon S3
Amazon EFS
Amazon Redshift

Real time



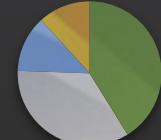
Amazon Kinesis

High Performance Databases



Amazon DynamoDB
Amazon Aurora

Analysis Platforms



Amazon EMR

App Services



Queuing



Orchestration



App Streaming



Transcoding



Email



Search

AWS Lambda

An event-driven computing service for
dynamic applications

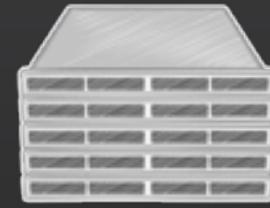
A Focus on Functions, Data and Events



Events from AWS services



Cloud Functions



Automatic

Deployment & Management



Containers



Dev/ops Tools



Resource Templates



Usage Tracking



Monitoring and Logs

Mobile Services



Identity



Sync



Mobile Analytics



Notifications

So, what are we going
to build today?

A dynamic web application featuring:

A highly available, fault tolerant architecture

Elasticity to deal with spikes in load

A fully managed database

Static content served through a CDN

break

innovation
at AWS

Small, “Two Pizza” Teams

Small, autonomous teams
Roadmap ownership
Decoupled launch schedules

Get Core Functionality in the Hands of Customers, Quickly

Operational stability
High scale
Limited initial feature set

Iterate Based on Customer Feedback

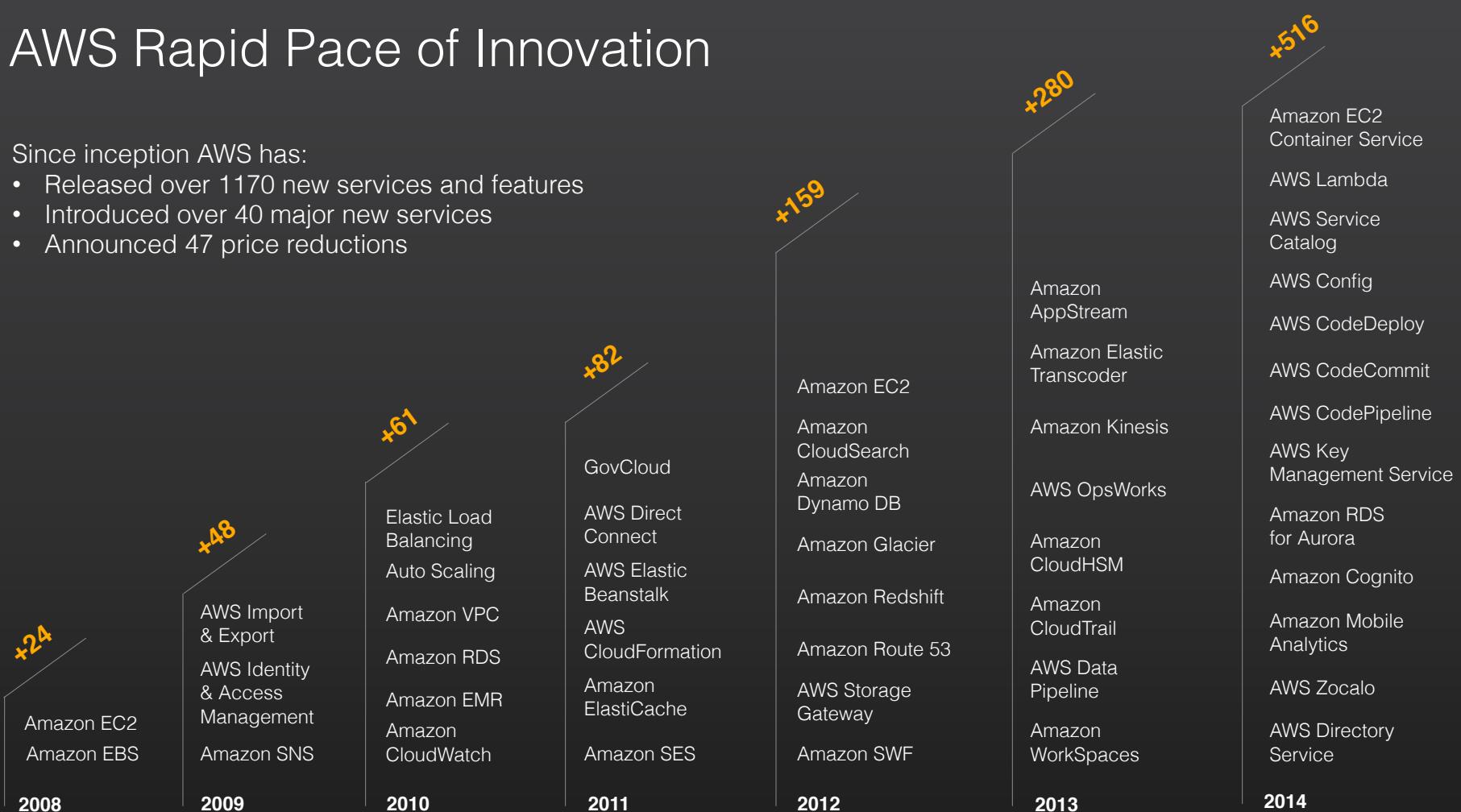


Epic
Collaboration

AWS Rapid Pace of Innovation

Since inception AWS has:

- Released over 1170 new services and features
- Introduced over 40 major new services
- Announced 47 price reductions



Every New Feature and Service Arrives Ready to Use

On-premises infrastructure

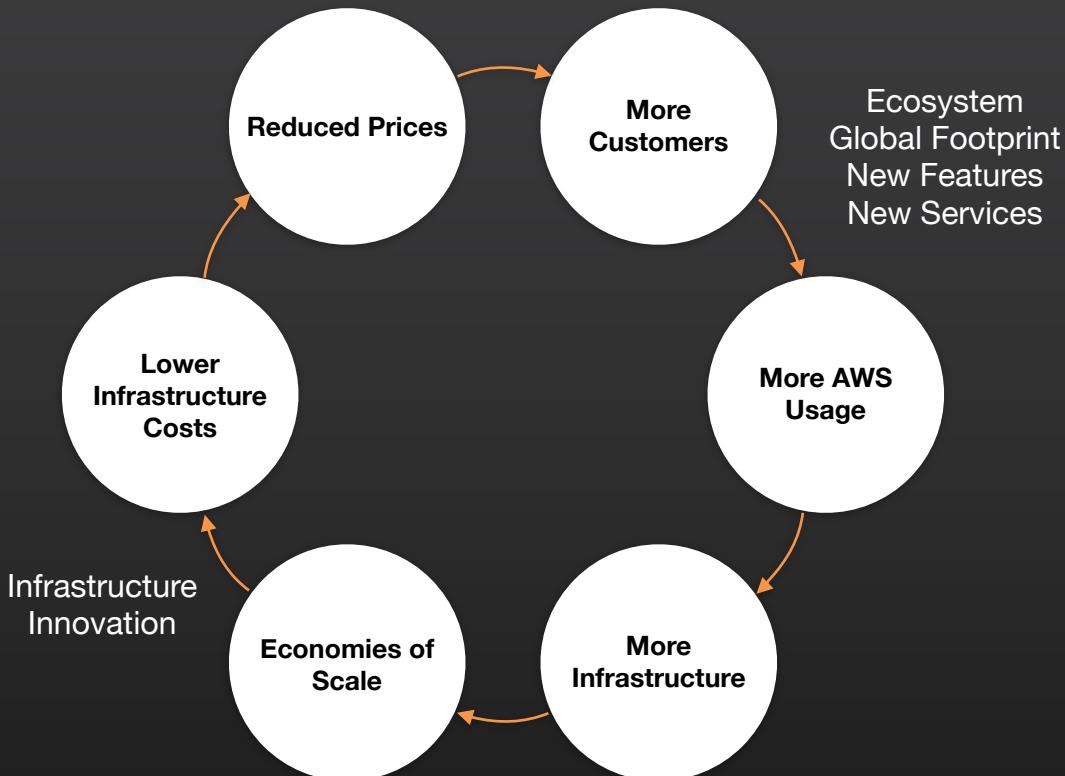


Upgrades are your responsibility



Upgrades happen automatically

AWS PRICING PHILOSOPHY



47
PRICE
REDUCTIONS

We pass the savings along to our customers in the form of low prices and continuous reductions



What is the next step and
how do I take it?

AWS Free Tier

To help you get started with the AWS Cloud, the AWS Free Tier allows you to gain hands-on experience with a broad selection of AWS products and services.



Amazon EC2

Resizable compute capacity in the Cloud.

[Learn More »](#)

750 hours per month of Linux, RHEL, or SLES t2.micro instance usage

750 hours per month of Windows t2.micro instance usage



Amazon S3

Highly scalable, reliable, and low-latency data storage infrastructure.

[Learn More »](#)

5 GB of Standard Storage

20,000 Get Requests

2,000 Put Requests



AWS Trusted Advisor

New AWS Free Tier Offer

AWS Cloud Optimization Expert.

[Learn More »](#)

4 best-practice checks on performance and security (service limits, security groups, IAM, and MFA)

Notification and customization features



Amazon Mobile Analytics

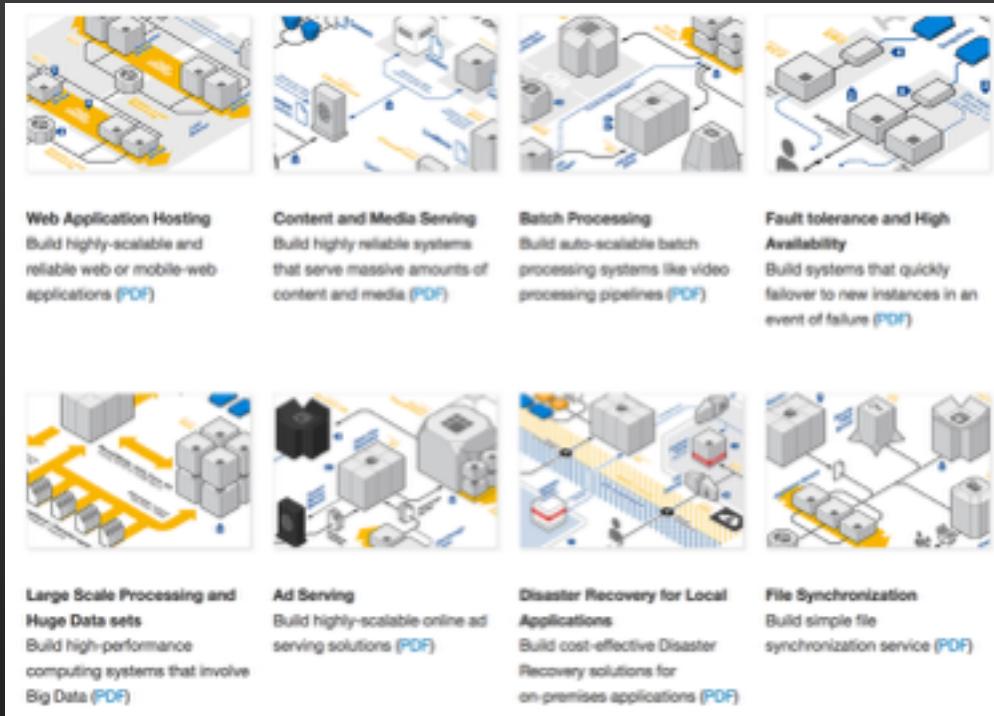
New AWS Free Tier Offer

Fast, secure mobile app usage analytics.

[Learn More »](#)

100 Million free events per month

Design your application for the AWS cloud



For more, visit the AWS Architecture Center : <http://aws.amazon.com/architecture/>

AWS Training & Certification

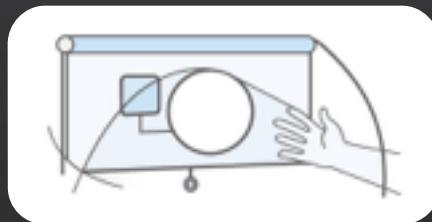
Self-Paced Labs



Try products, gain new skills, and get hands-on practice working with AWS technologies

[aws.amazon.com/training/
self-paced-labs](https://aws.amazon.com/training/self-paced-labs)

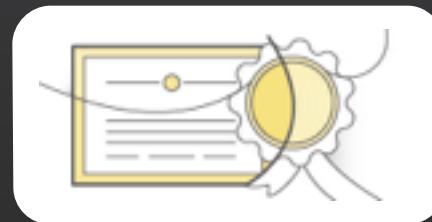
Training



Build technical expertise to design and operate scalable, efficient applications on AWS

aws.amazon.com/training

Certification



Validate your proven skills and expertise with the AWS platform

aws.amazon.com/certification

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... we'd love your feedback

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Ian Massingham — Technical Evangelist

 @ianMmmm



@AWS_UK for local AWS events & news



@AWScloud for Global AWS News & Announcements