

[illegible]

Amazon's Three Businesses



Consumer (Retail)
Business

Tens of millions of
active customer
accounts

Seven countries:
US, UK, Germany,
Japan, France,
Canada, China



Seller
Business

Sell on Amazon
websites

Use Amazon
technology for your
own retail website

Leverage Amazon's
massive fulfillment
center network



IT Infrastructure
Business

Cloud computing
infrastructure for
hosting web-scale
solutions

Hundreds of
thousands of
registered customers



How Did Amazon Get Into This?

- Amazon is fundamentally a technology company
- Years spent building a modular, loosely coupled infrastructure
- Started experimenting with web services in 2002
- Businesses asked how Amazon could help with infrastructure pain

What is Cloud Computing?

Cloud Computing is also a utility service - giving you access to technology resources managed by experts and available on-demand.



You simply access these services over the internet, with no up-front costs and you pay only for the resources you use.

Attributes of Cloud Computing

- ❏ No capital expenditure
- ❏ Pay as you go and pay only for what you use
- ❏ True elastic capacity; Scale up and down
- ❏ Improves time to market
- ❏ Managed – You can focus on what differentiates your business instead of managing the undifferentiated heavy lifting of infrastructure

The Cloud Scales: AWS Global Reach

AWS Regions

South America (Brazil)
US East (Northern Virginia)
US West (Northern California)
US West (Oregon)
GovCloud (Oregon)
Europe (Dublin)
Asia Pacific (Singapore)
Asia Pacific (Japan)



AWS CloudFront Locations (33)

Ashburn, VA / Dallas, TX / Los Angeles, CA / Miami, FL / Jacksonville, FL /
Newark, NJ / New York, NY / Palo Alto, CA / Seattle, WA / St. Louis, MO /
São Paulo, Brazil / Amsterdam / Dublin / Frankfurt / London / Paris /
Stockholm / Hong Kong / Tokyo / Singapore / Sydney

AWS: Leading the Cloud Computing Industry

Amazon Web Services

- Hundreds of Thousands of Registered Customers in over 190 Countries
- Fortune 500 Companies use AWS

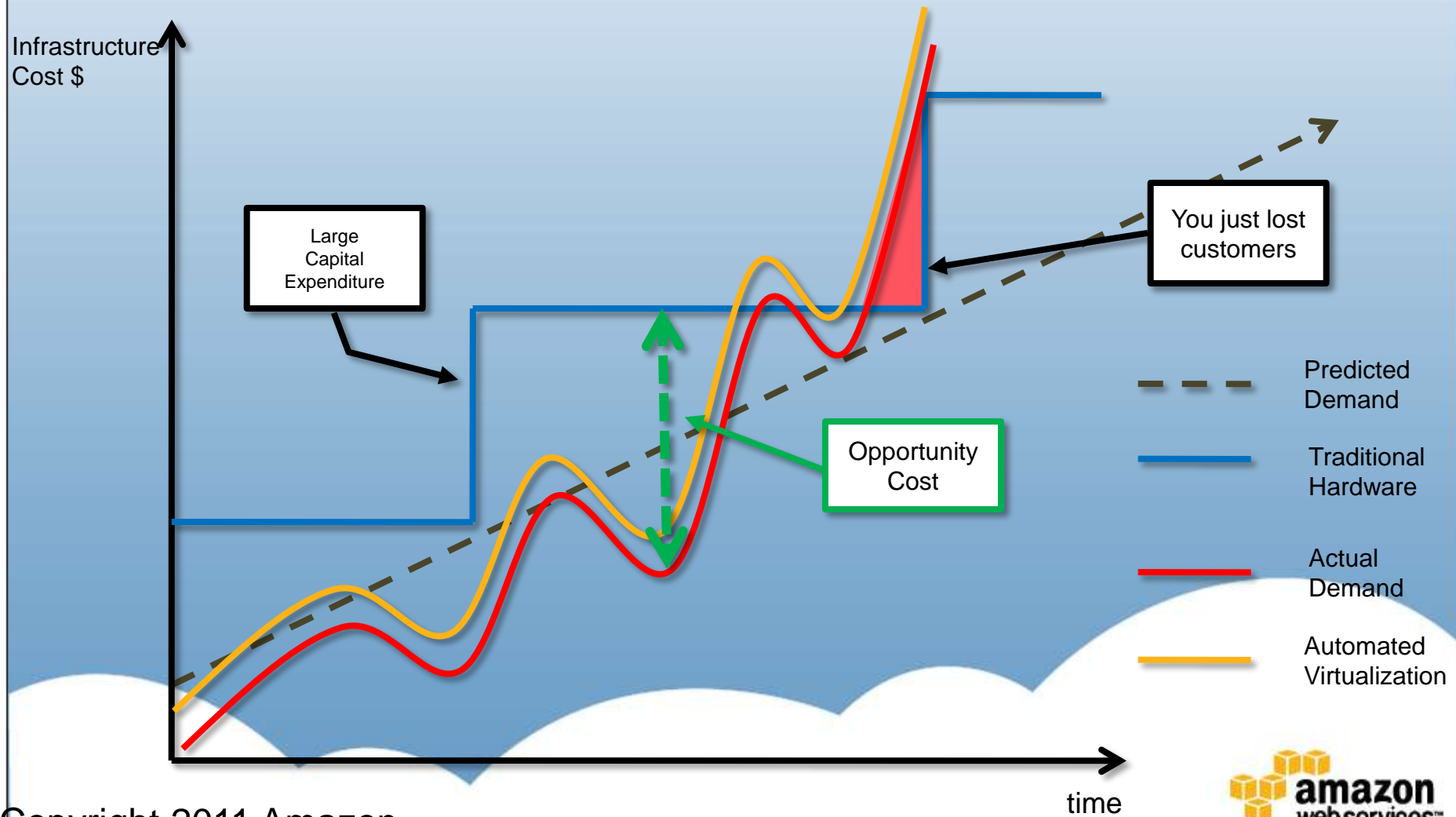


the 451 group
Feb. 2011

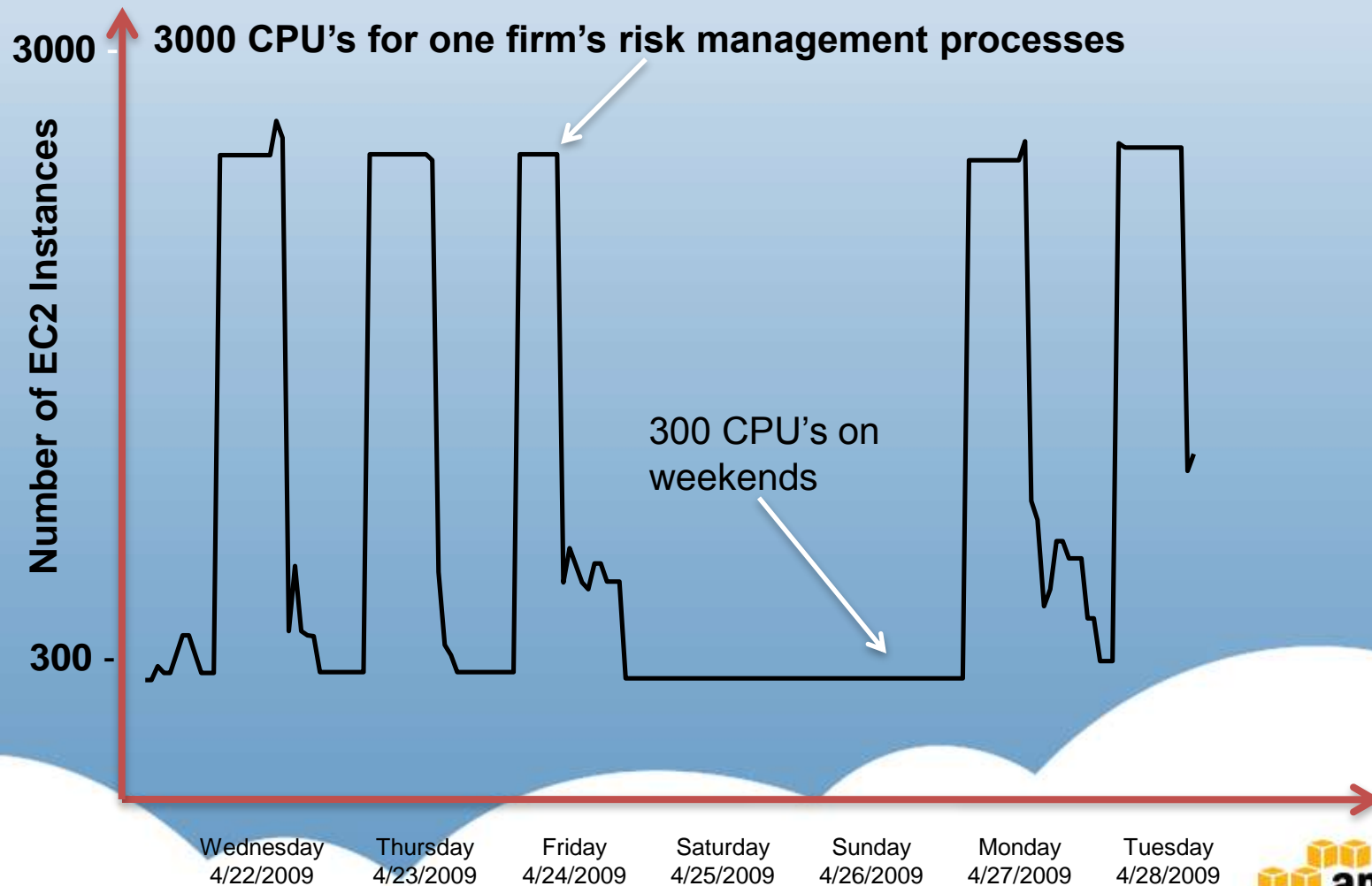
“Every day, AWS adds enough new capacity to support Amazon.com’s global infra thru the company’s first 5 yrs, when it was \$2.7B ann. Revenue”

Werner Vogels, CTO Amazon.com

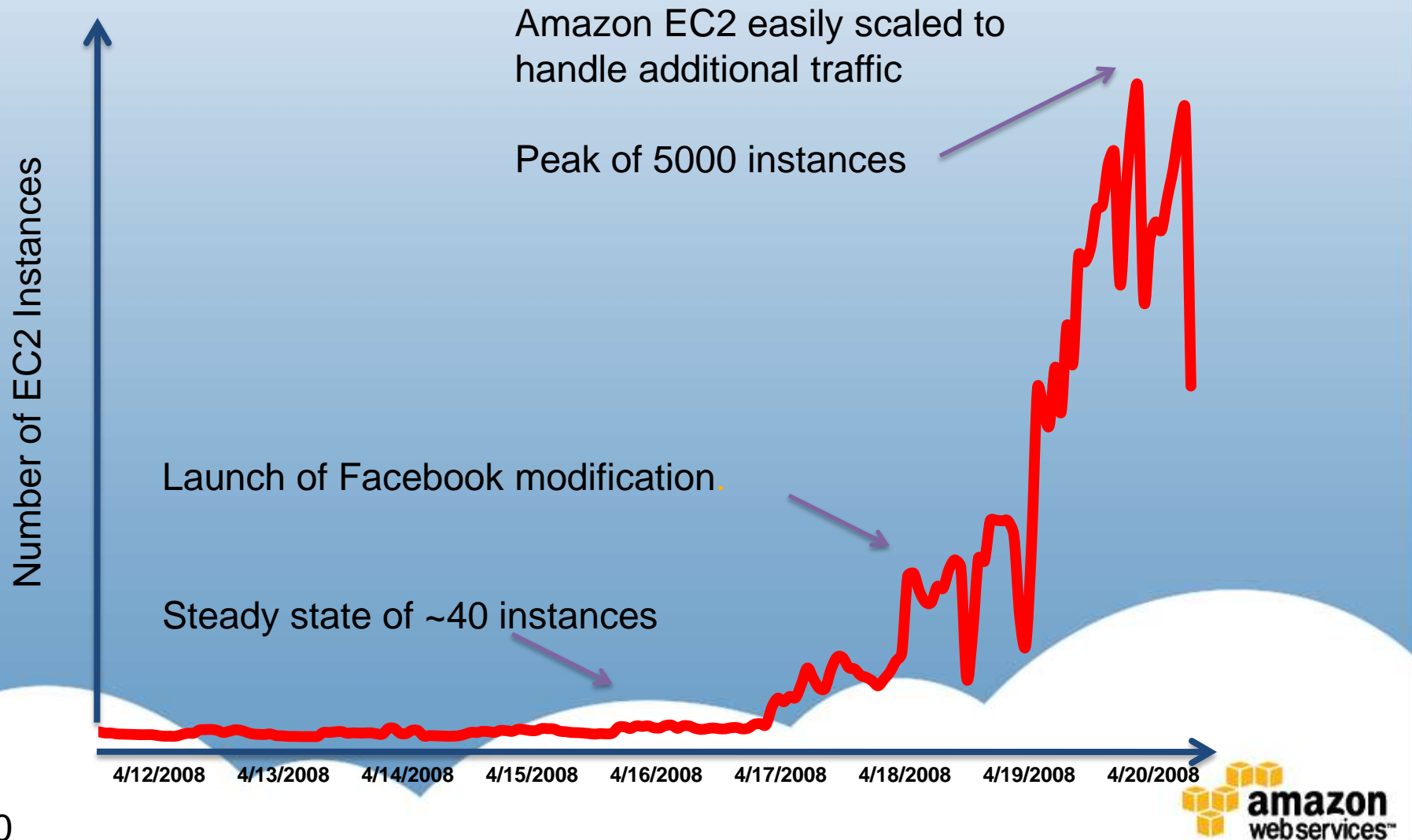
Elastic Nature of the Cloud



Wall Street App on Amazon EC2



Animoto and Amazon EC2



Friday, July 25, 2008

TimesMachine

TUESDAY

APRIL 16, 1912

PAGE 1

"All the News
That Was Fit to Print"

SHARE PRINT E-MAIL

1850s

1860s

1870s

1880s

1890s

1900s

1910s

1910

1911

1912

1913

1914

1915

1916

1917

1918

1919

1920s

"All the News That's
Fit to Print."

The New York Times.

THE WEATHER.

Unsettled Tuesday; Wednesday,
fair, cooler; moderate westerly
winds, becoming variable.
For full weather report see Page 12.

VOL. LXXI. NO. 13,569

NEW YORK, TUESDAY, APRIL 16, 1912—TWENTY-FOUR PAGES,

ONE CENT In Greater New York, 1 Cent
Elsewhere 10 Cts. and Monthlies 1.00

TITANIC SINKS FOUR HOURS AFTER HITTING ICEBERG; 866 RESCUED BY CARPATHIA, PROBABLY 1250 PERISH, ISMAY SAFE, MRS. ASTOR MAYBE, NOTED NAMES MISSIN

Col. Astor and B...
Isidor Straus and V...
and Maj. Butt Abo...

"RULE OF SEA" FOLL...

Women and Children Put Over
in Lifeboats and Are Supposed
to be Safe on Carpathia.

PICKED UP AFTER 8 HOURS

Vincent Astor Calls at White Star
Office for News of His Father
and Leaves Weeping.

FRANKLIN HOPEFUL ALL DAY

Manager of the Line Insisted
Titanic Was Unsinkable Even
After She Had Gone Down.

Col. Astor and Bride, Isidor Straus
and Wife, and Maj. Butt Aboard;
"RULE OF SEA" FOLLOWED

Full Article »



Biggest Liner Plunges
to the Bottom
at 2:20 A. M.

RESCUERS THERE TOO

Except to Pick Up the Few
dredged Who Took to the
Lifeboats.

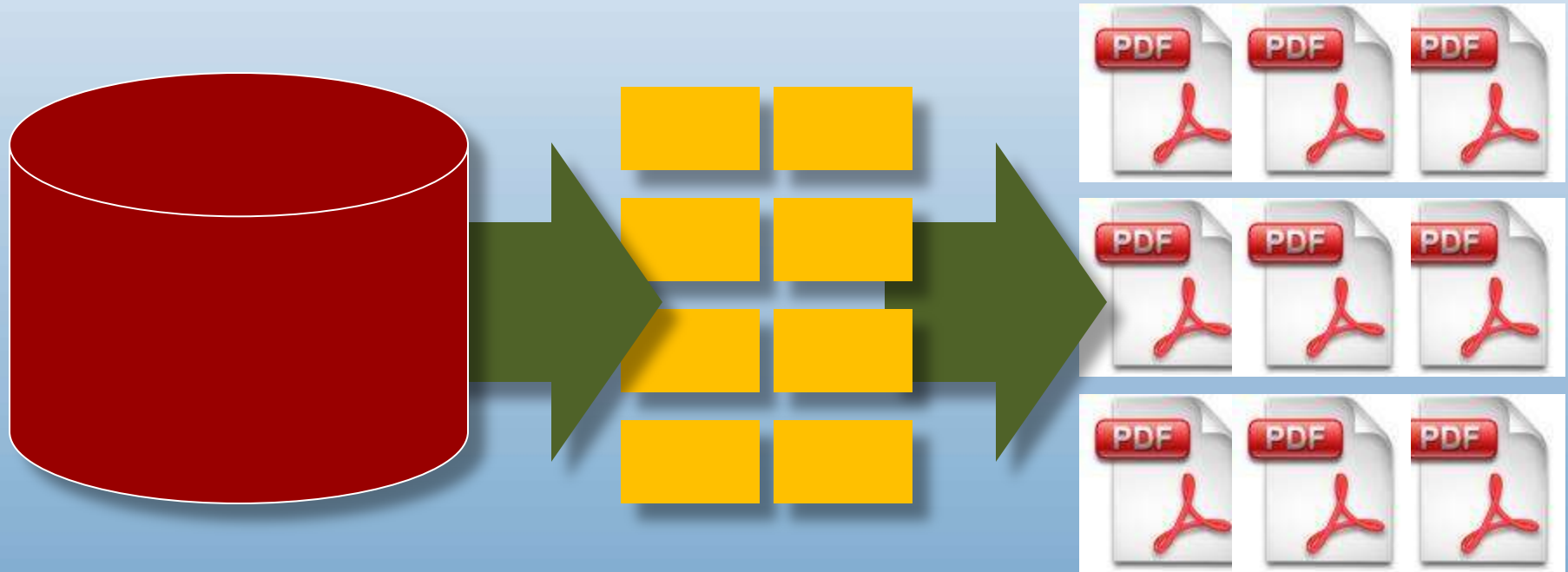
WOMEN AND CHILDREN

Cunarder Carpathia Rushes
New York with the
Survivors.

SEA SEARCH FOR OTI

The California Stands By
Chance of Picking Up Ot...

NY Times – TimesMachine



4 TB TIFF images (S3)

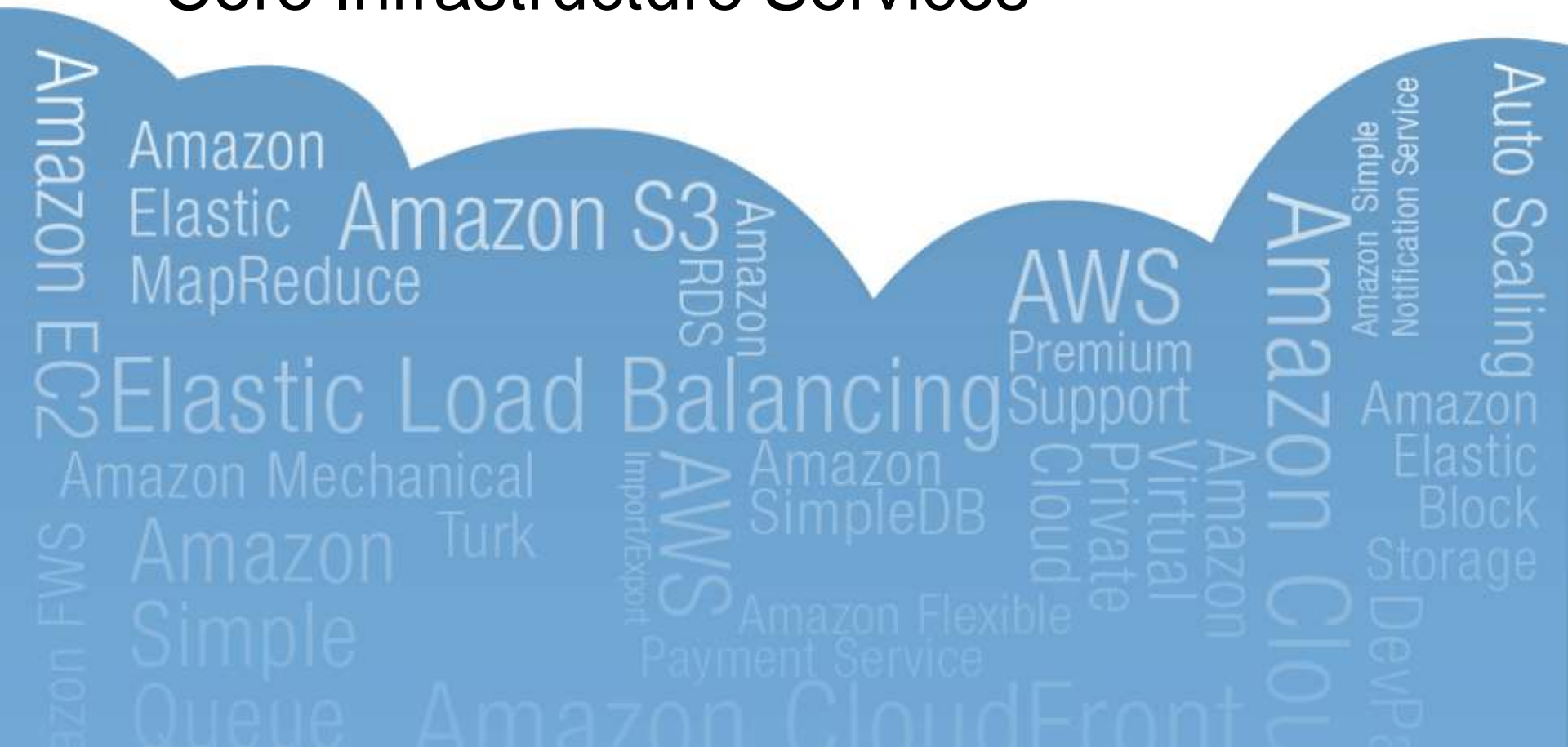
100 Nodes (EC2)

11 Million PDFs (S3)

$$100 \text{ instances} \times 24 \text{ hours} \times \$0.10^* / \text{Hr} = \$240$$



Amazon Web Services Core Infrastructure Services



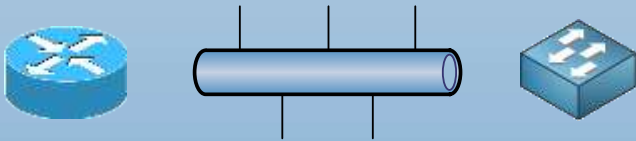
Amazon's Core Infrastructure Services

Enterprise Infrastructure

Security



Network



Servers

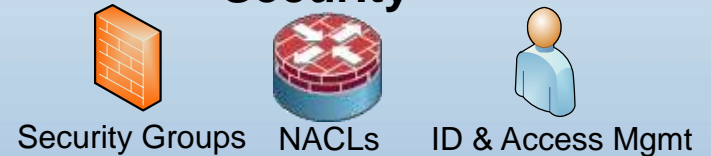


Storage



Amazon Web Services

Security



Network



EC2



Storage



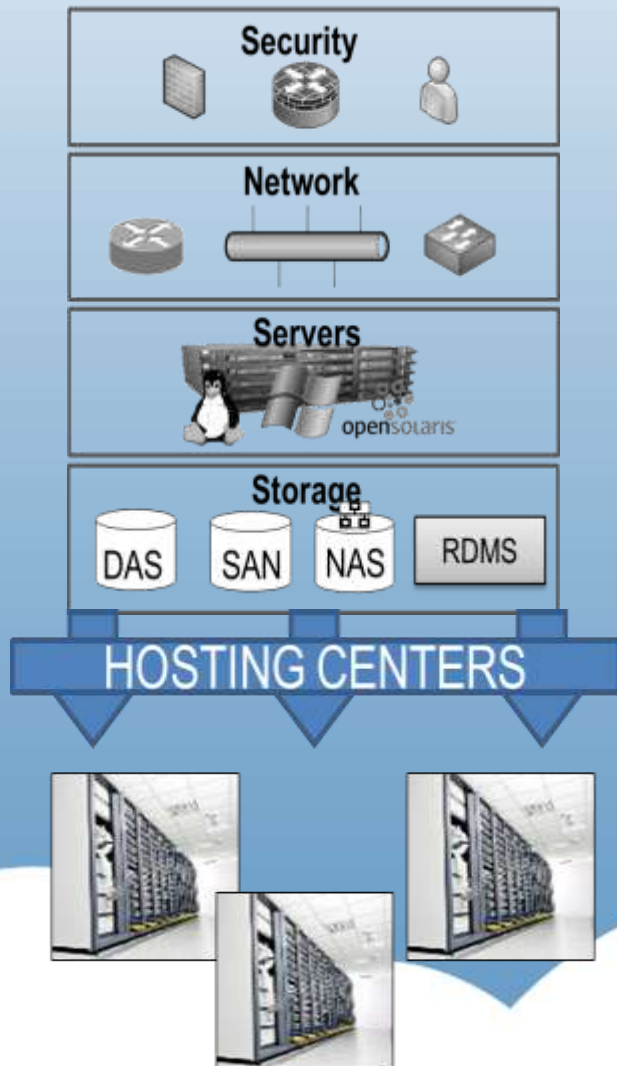
Provision

On-Demand

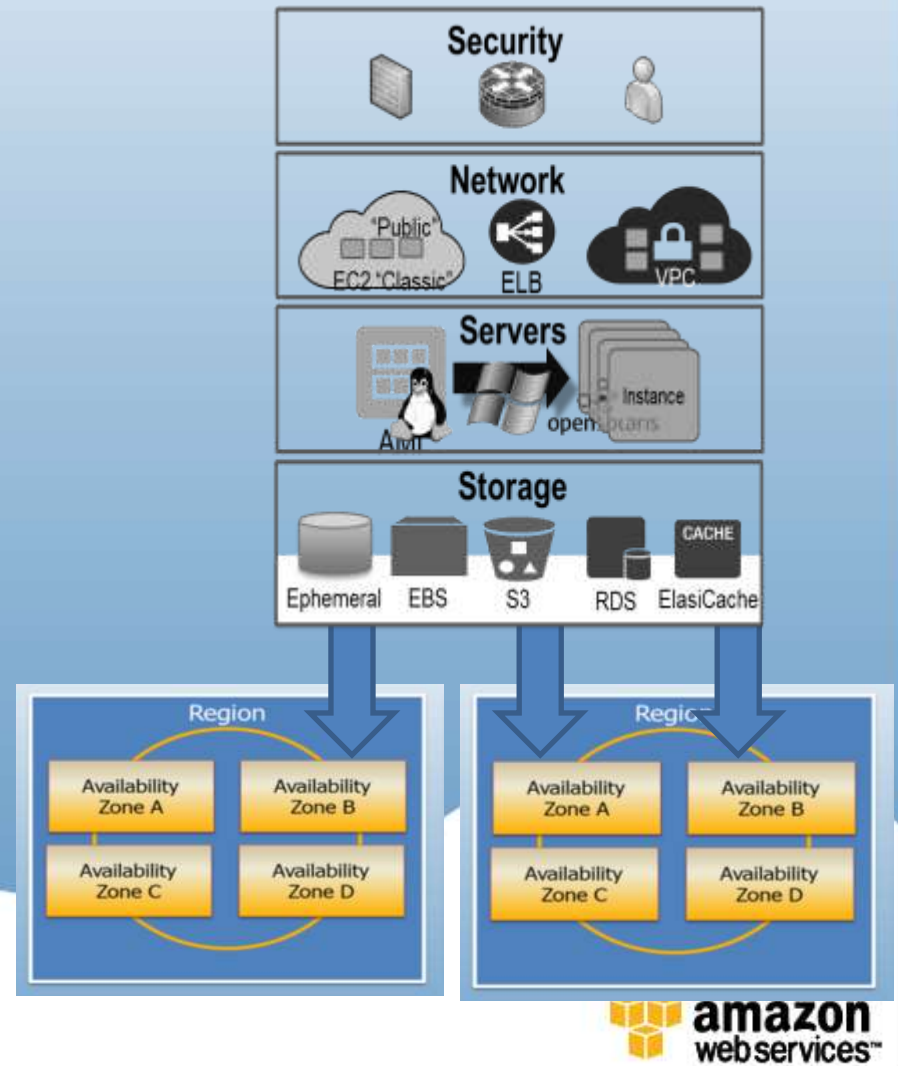
Expand

Deployment for High Availability

Enterprise Infrastructure



Amazon Web Services



Fault Separation and Geo Diversity

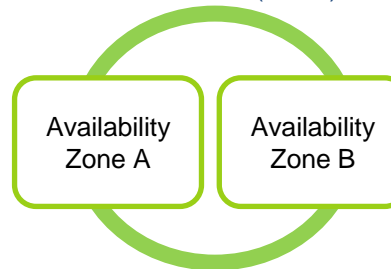
US West Region (N. CA)



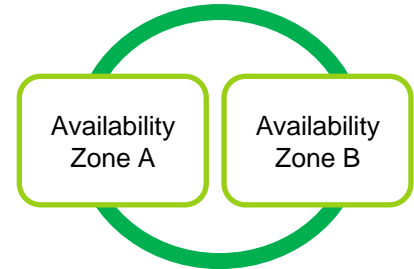
US East Region (N. VA)



South America (Brazil)



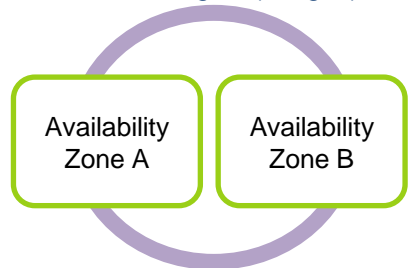
EU Region (Ireland)



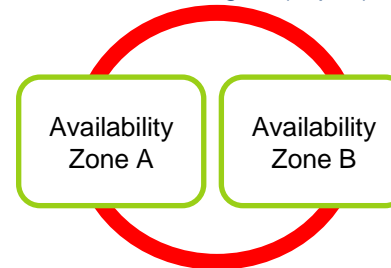
GovCloud Region (Oregon)



US West Region (Oregon)



Asia Pacific Region (Japan)

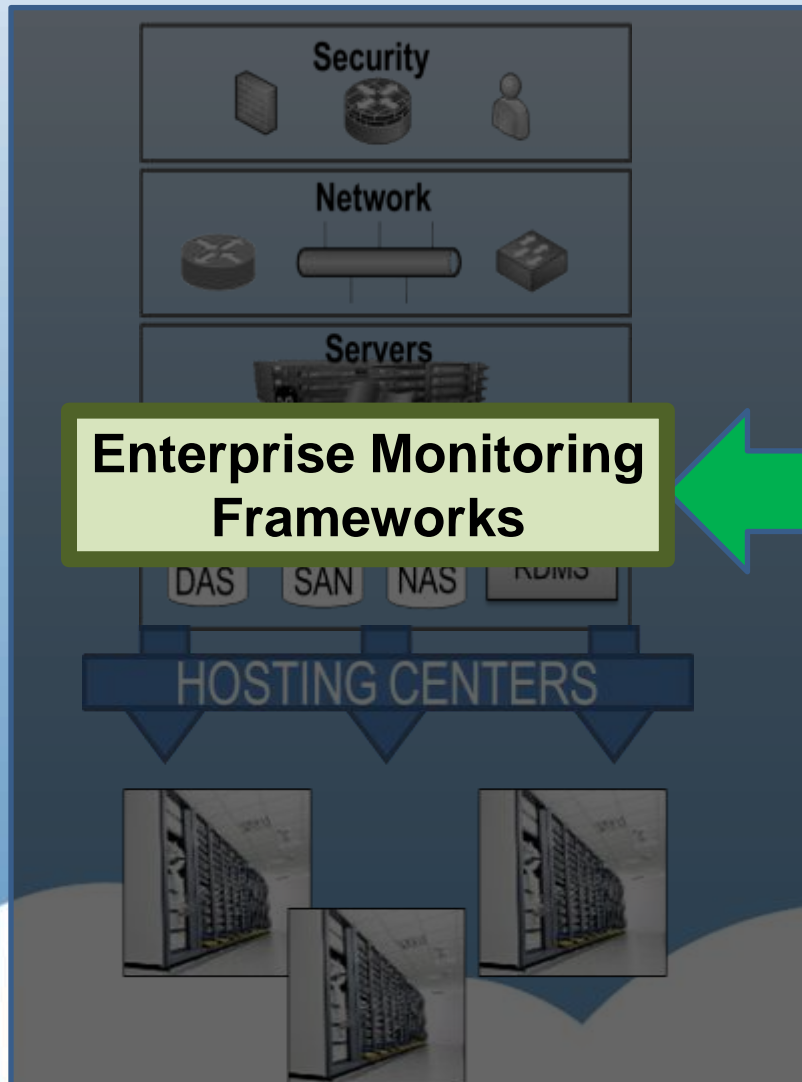


Asia Pacific Region (Singapore)



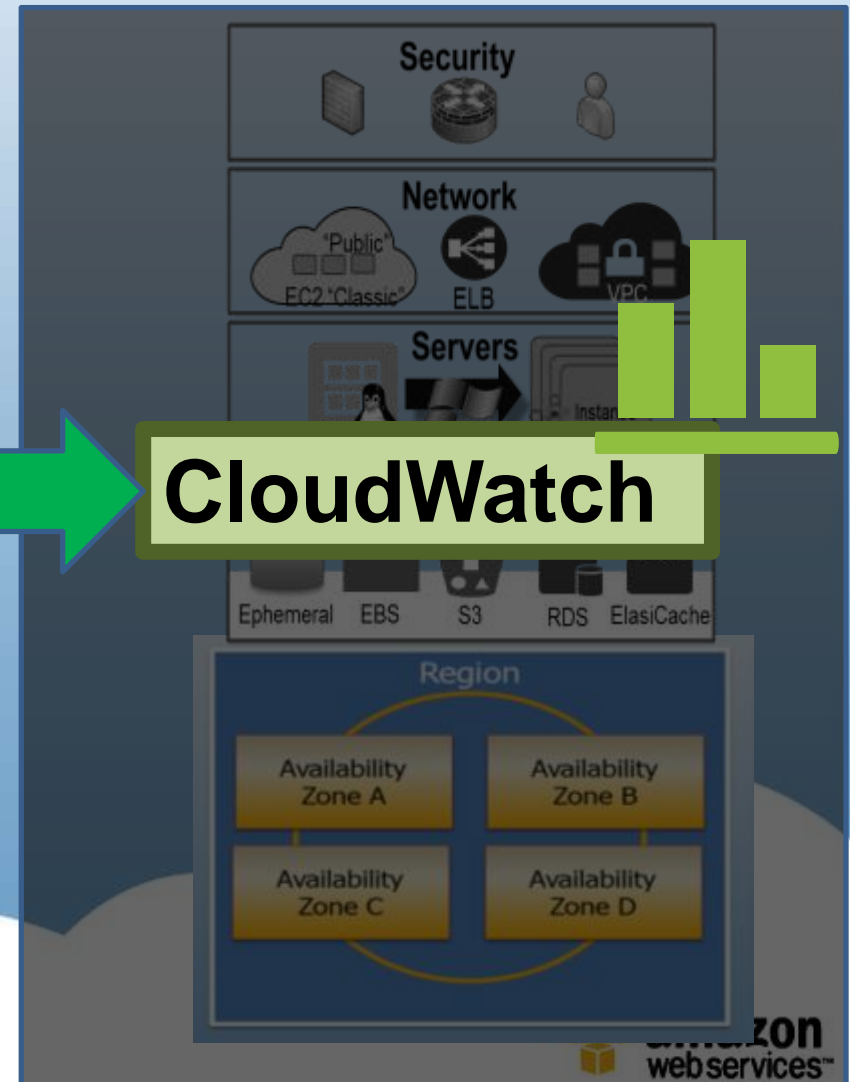
Managing Your Cloud Infrastructure

Enterprise Infrastructure



Enterprise Monitoring Frameworks

Amazon Web Services



CloudWatch

AWS Console

aws.amazon.com

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Welcome, Kevin Kelly | [Settings](#) | [Sign Out](#)

[Amazon S3](#) [Amazon EC2](#) [Amazon VPC](#) [Amazon Elastic MapReduce](#) [Amazon CloudFront](#) [Amazon RDS](#) [Amazon SNS](#)

Navigation

Region: US East

> EC2 Dashboard

INSTANCES

- > **Instances**
- > Spot Requests

IMAGES

- > **AMIs**
- > Bundle Tasks

ELASTIC BLOCK STORE

- > **Volumes**
- > Snapshots

NETWORKING & SECURITY

- > **Elastic IPs**
- > Security Groups
- > Placement Groups
- > Load Balancers
- > Key Pairs

My Instances

[Launch Instance](#) [Instance Actions](#) [Reserved Instances](#)

[Show/Hide](#) [Refresh](#) [Help](#)

Viewing: All Instances All Instance Types

1 to 4 of 4 Instances

	Name	Instance	AMI ID	Root Device	Zone	Type	Status	Security	Key Pair	Monitoring	Virtualization
<input type="checkbox"/>	Ubuntu 9.10 with NX	i-f0280e9d	ami-6743ae0e	ebs	us-east-1d	c1.medium	running	default	kekelly@amazon.com	detailed	paravirtual
<input checked="" type="checkbox"/>	Windows 2008 Java	i-51a7-100	ami-6743ae0e	ebs	us-east-1d	c1.medium	running	default	kekelly@amazon.com	detailed	hvm
<input type="checkbox"/>	Windows 2008 Pres	i-51a7-100	ami-6743ae0e	ebs	us-east-1d	m1.small	running	default	kekelly@amazon.com	detailed	hvm
<input type="checkbox"/>	Windows 2008 Ruby	i-51a7-100	ami-6743ae0e	ebs	us-east-1b	c1.medium	running	default	kekelly@amazon.com	detailed	hvm

Instance Management

Connect

- Get System Log
- Create Image (EBS AMI)
- Add/Edit Tags
- Bundle Instance (S3 AMI)
- Get Windows Password
- Launch More Like This
- Disassociate IP Address

Instance Lifecycle

- Terminate
- Reboot
- Stop
- Start

CloudWatch Monitoring

- Enable Detailed Monitoring
- Disable Detailed Monitoring

1 EC2 Instance selected

EC2 Instance: i-51a7-100

Description Monitor

AMI ID:

Security Groups:

Status:

VPC ID:

Virtualization:

Reservation: r-b50d7cdf

Platform: windows

Kernel ID:

Zone: us-east-1d

Type: c1.medium

Owner: 514133273397

Subnet ID:

Placement Group:

RAM Disk ID:

Key Pair Name: kekelly@amazon.com

Monitoring: detailed

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Amazon Web Service API

- Most of the time, whatever API wrapper you use will dictate the interface
- AWS has wrappers for
 - .NET
 - Java
 - PHP
 - Ruby
 - JavaScript

API	Interfaces
EC2	SOAP, Query
SimpleDB	SOAP, REST
SQS	SOAP, REST, Query
S3	SOAP, REST
CloudFront	REST

API, Console or Tool?

- ❏ Generally speaking, you do not have to code against the API if you do not want to
 - Sequenced steps are easier (i.e. run instance, attach EBS, associate Elastic IP)
- ❏ Command-line EC2 tools have the most functionality
 - GetPassword for Windows EC2
 - Create volume based on Public Data Set snapshot
 - Launch an AMI given its id



Amazon Web Services

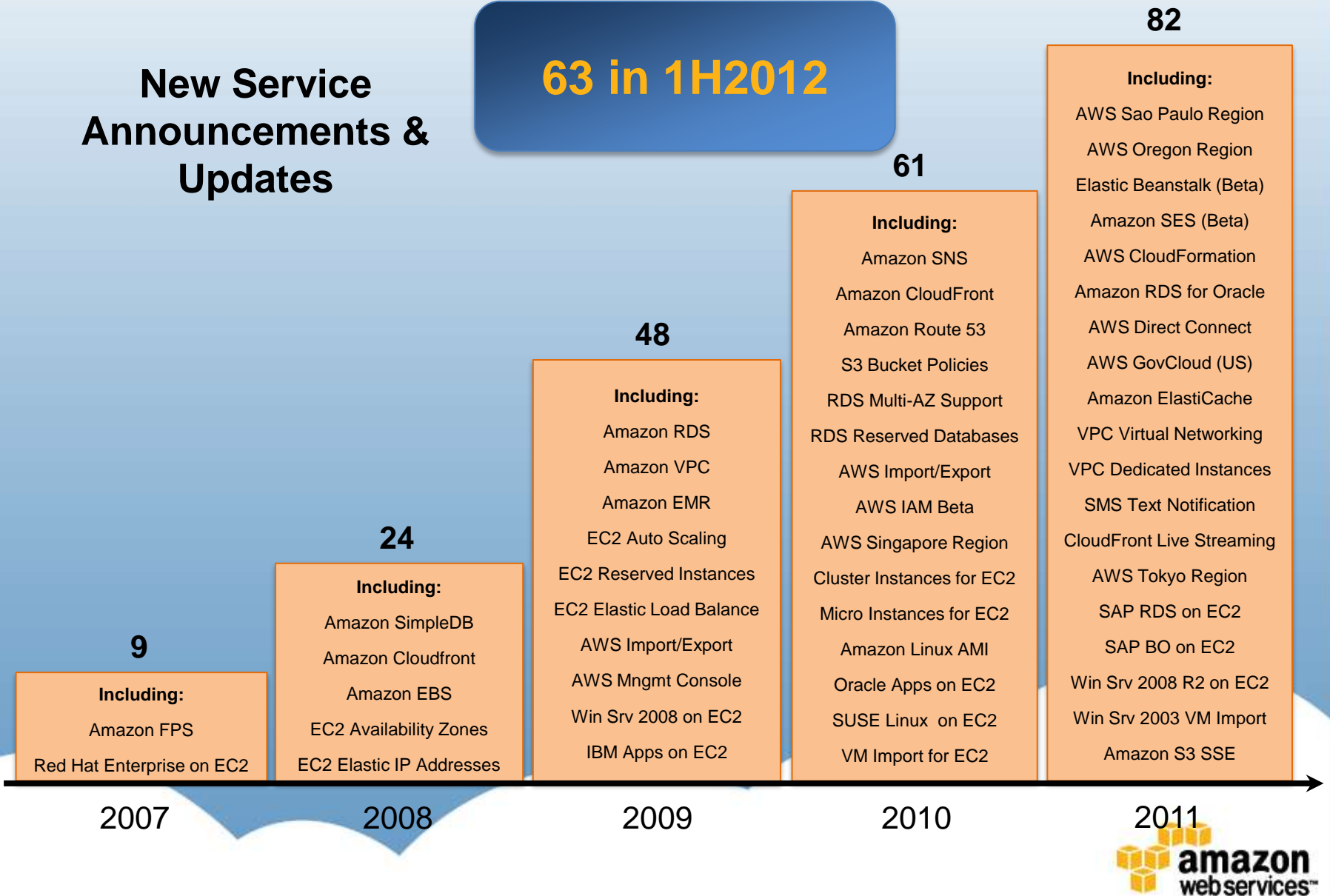
A Platform for Growth



AWS Pace of Innovation

New Service Announcements & Updates

63 in 1H2012



AWS Platform

Your Applications

Management & Administration

Identity & Access

AWS IAM
Identity Federation
Consolidated Billing

Web Interface

Management Console

Monitoring

Amazon CloudWatch

Deploy & Automation

AWS Elastic Beanstalk
AWS CloudFormation
AWS CloudSearch

Application Platform Services

Content Distribution

Amazon CloudFront

Messaging

Amazon SNS
Amazon SQS
Amazon SES

Parallel Processing

Elastic MapReduce

Libraries & SDKs

Java, PHP, Python,
Ruby, .NET

Foundation Services

Compute

Amazon EC2
Auto Scale

Storage

Amazon S3
Amazon EBS

Database

Amazon RDS
Amazon DynamoDB
Amazon SimpleDB
Amazon ElastiCache

Networking

Amazon VPC
Elastic Load Balancing
Amazon Route 53
AWS Direct Connect

AWS Global Infrastructure

Availability Zones

Regions

Edge Locations

