



Cloud-Powered Social Gaming With Amazon Web Services

Jeff Barr

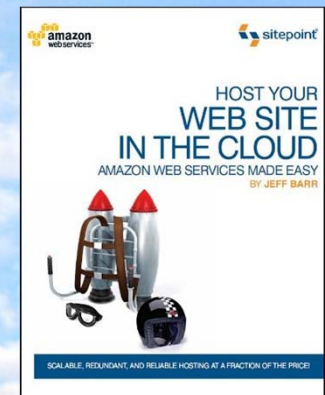
Senior Web Services Evangelist

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[@jeffbarr](https://twitter.com/jeffbarr)

Introduction

- Based in Seattle
- Frequent visitor to Japan
- Career path:
 - Startups
 - Microsoft
 - Consultant to VCs and startups
 - Amazon Web Services – 2002 – Present
- Gaming:
 - Pac-Man Player since 1980
- Author of “Host Your Website in the Cloud” (SitePoint, September 2010)

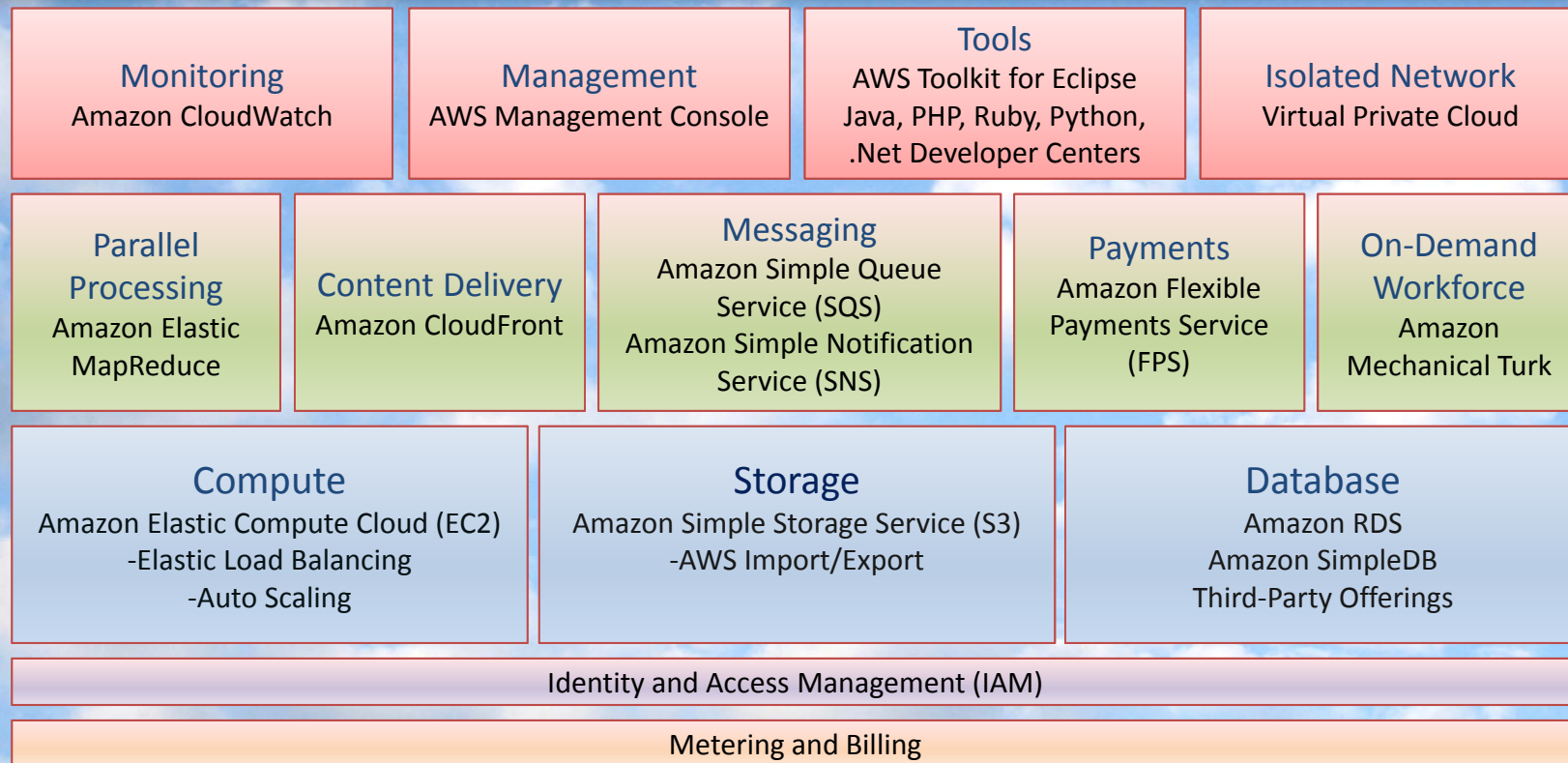


Goals

- Introduce you to AWS
- Describe common gaming use cases
- Show you how to implement them
- Prepare you to start your own AWS project

Amazon Web Services

Your Game



AWS / Cloud Benefits

- **Sophisticated Platform**
Leverage many man-years of work that has already been done.
- **Focus on your Game**
Use your unique skills to build a better product. Don't waste resources on low-level system-building activities.
- **Reduced Time to Market**
Use powerful services to create a great application more quickly.
- **Think Big Thoughts**
What if you have 1,000 or 1,000,000 or 1,000,000,000 users? What if the whole world shows up at your front door on the week of your launch?
- **Pay As You Go**
Use a scalable architecture, but get the actual resources only when you actually need them. Don't spend money until you need to.

Gaming Use Cases for AWS

- Software development
- Load testing
- Backup
- Content hosting – static & dynamic
- Game hosting
- Game analytics



AWS Management Console

The screenshot displays the AWS Management Console interface in a Mozilla Firefox browser window. The page title is "AWS Management Console - Mozilla Firefox" and the URL is "https://console.aws.amazon.com/ec2/home?region=us-west-1". The navigation bar includes "aws.amazon.com", "AWS | Products | Developers | Community | Support | Account", and "Welcome, Jeff@AWS | Settings | Sign Out".

The main content area is titled "Amazon EC2 Console Dashboard". A "Region:" dropdown menu is open, showing the following options:

- US East (Virginia)
- US West (N. California)
- EU West (Ireland)
- Asia Pacific (Singapore)

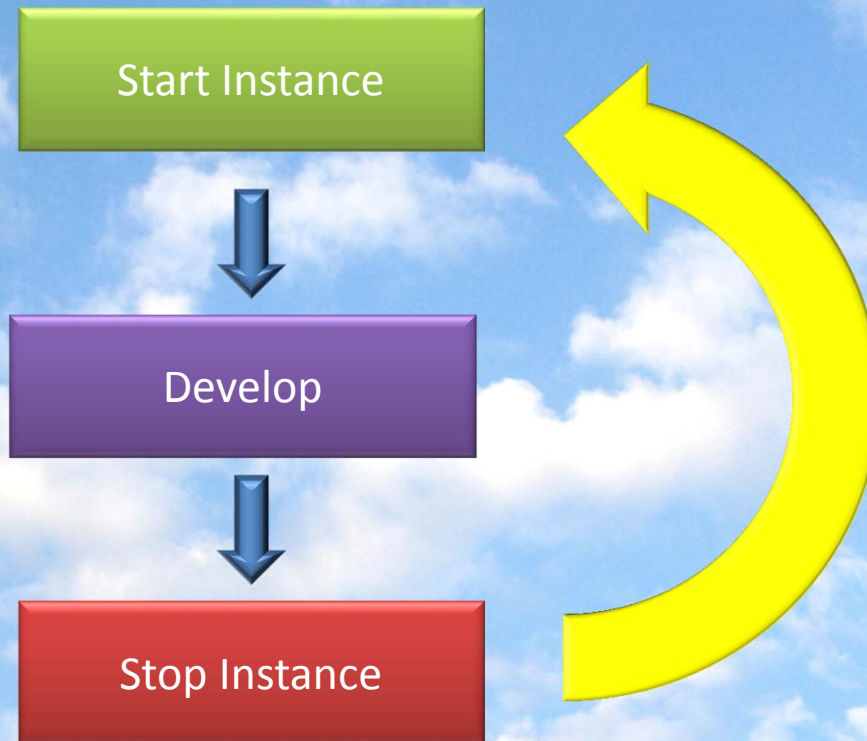
The "Asia Pacific (Singapore)" option is highlighted with a dashed border. The current region is "US West". The dashboard also shows a "Service Health" section with a "Current Status" of "Amazon EC2 (California)" and a "Resources" section listing "1 Elastic IP", "1 EBS Snapshot", "5 Security Groups", and "0 Placement Groups".

At the bottom of the page, the footer contains: "© 2008 - 2009, Amazon Web Services LLC or its affiliates. All right reserved. | Feedback | Support | Privacy Policy | Terms of Use | An amazon.com company".

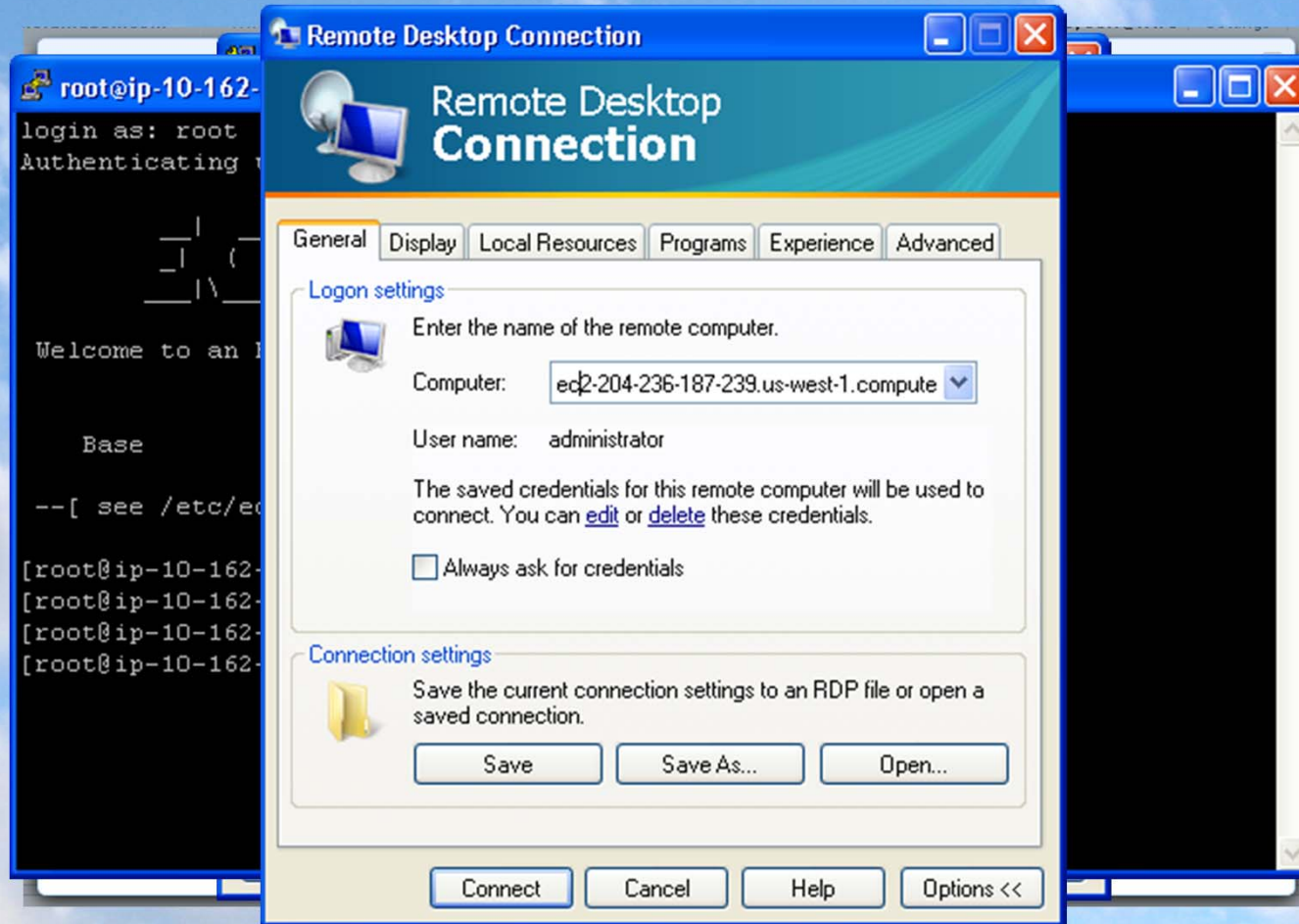
Software Development - 1

- Why AWS is better:
 - Choice of operating system:
 - Linux, Windows, OpenSolaris
 - Choice of middleware:
 - Open source
 - Commercial
 - Easy to build "master image"
 - Everyone builds in the same environment
 - Build and test in varied conditions
 - Launch & pay for instances only when needed

Software Development - 2



Software Development - 3

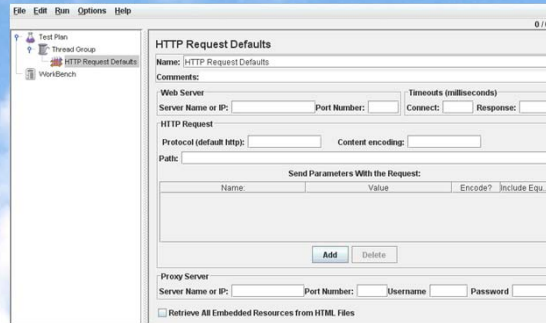


Load Testing

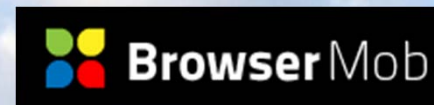
- Why AWS is better:
 - Get resources as needed
 - Test under real-world conditions
 - Generate full-scale load
 - Test in parallel
 - Easy to get testing resources when needed
 - Economical

Load Testing

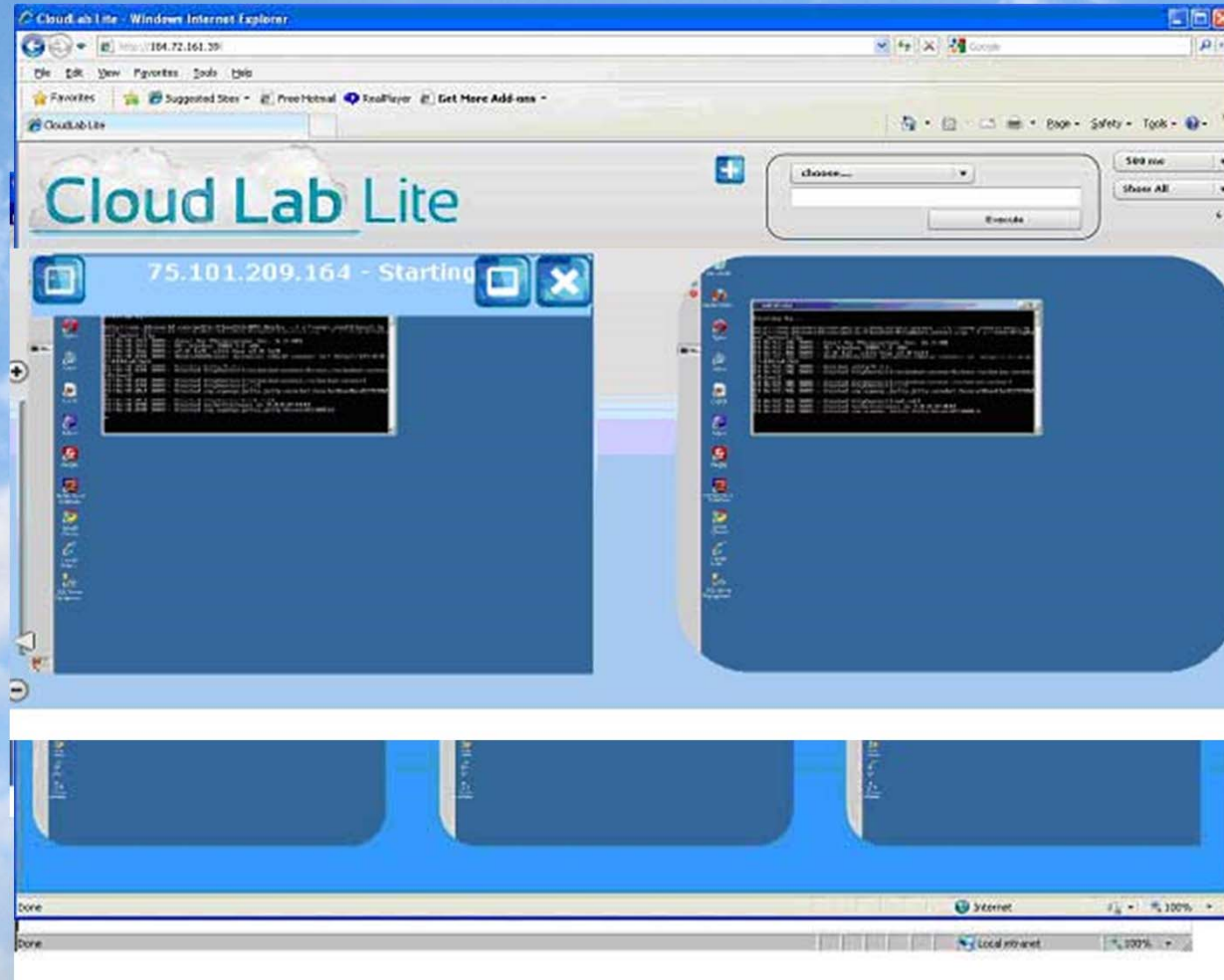
- Open Source Testing Tools:



- Commercial Testing Services (cloud-powered):
 - BrowserMob
 - SOASTA
 - CapCal



Load Testing - CapCal



Backup

- Why AWS is better:
 - Easy
 - Secure
 - Off-site
 - Unlimited space
 - Cost-effective



Backup

- Create S3 bucket
- Create file archive
- Transfer to S3 using console

Backup

The screenshot displays the AWS Management Console interface within a Mozilla Firefox browser window. The browser's address bar shows the URL `https://console.aws.amazon.com/s3/home`. The console header includes navigation links for AWS, Products, Developers, Community, Support, and Account, along with a user greeting: "Welcome, Jeff@AWS | Sign Out".

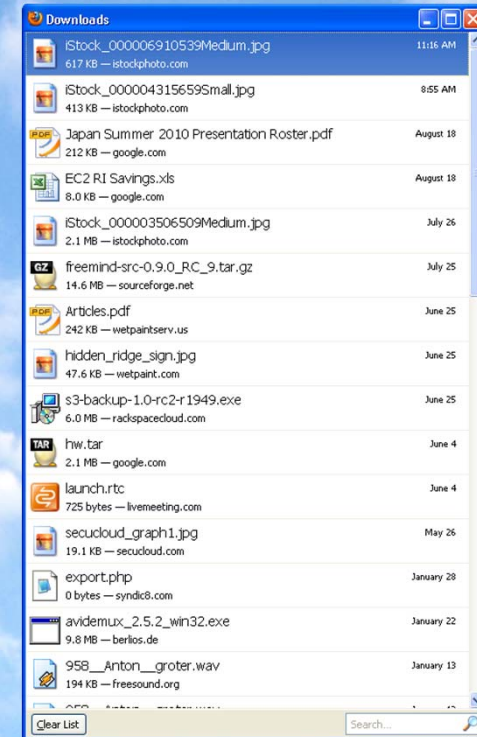
The main content area is divided into several sections:

- Navigation Tabs:** Amazon S3 (selected), Amazon EC2, Amazon Elastic MapReduce, Amazon CloudFront, and Amazon RDS.
- Buckets:** A list of buckets is visible, including "jb-mediawiki-1.1.1", "jb-moinmoin-1.1.1", "jbarr-backups-c", and "jbarr-jbarr-jbarr".
- Properties Dialog:** A modal window titled "Properties" is open, displaying details for a specific object:
 - Bucket:** jbarr-backups-code
 - Name:** amazing_game_code_jbarr_2010_08_27.zip
 - Size:** 495.2 kb
 - Last Modified:** Fri Aug 27 17:53:50 GMT-700 2010
 - Owner:** Me
 - ETag:** 7494ce9757c04b7de833c4cc497ec628
- Transfers:** A section for managing file transfers, including an "Upload" button.

The footer of the console contains copyright information: "© 2008 - 2009, Amazon Web Services LLC or its affiliates. All right reserved." and links for Feedback, Support, Privacy Policy, and Terms of Use. The browser's status bar at the bottom shows "Done".

Content / Download Hosting

- Why AWS is better:
 - Easy
 - Off-site
 - Cost-effective
 - World-scale
 - Highly reliable
 - Logging and metrics

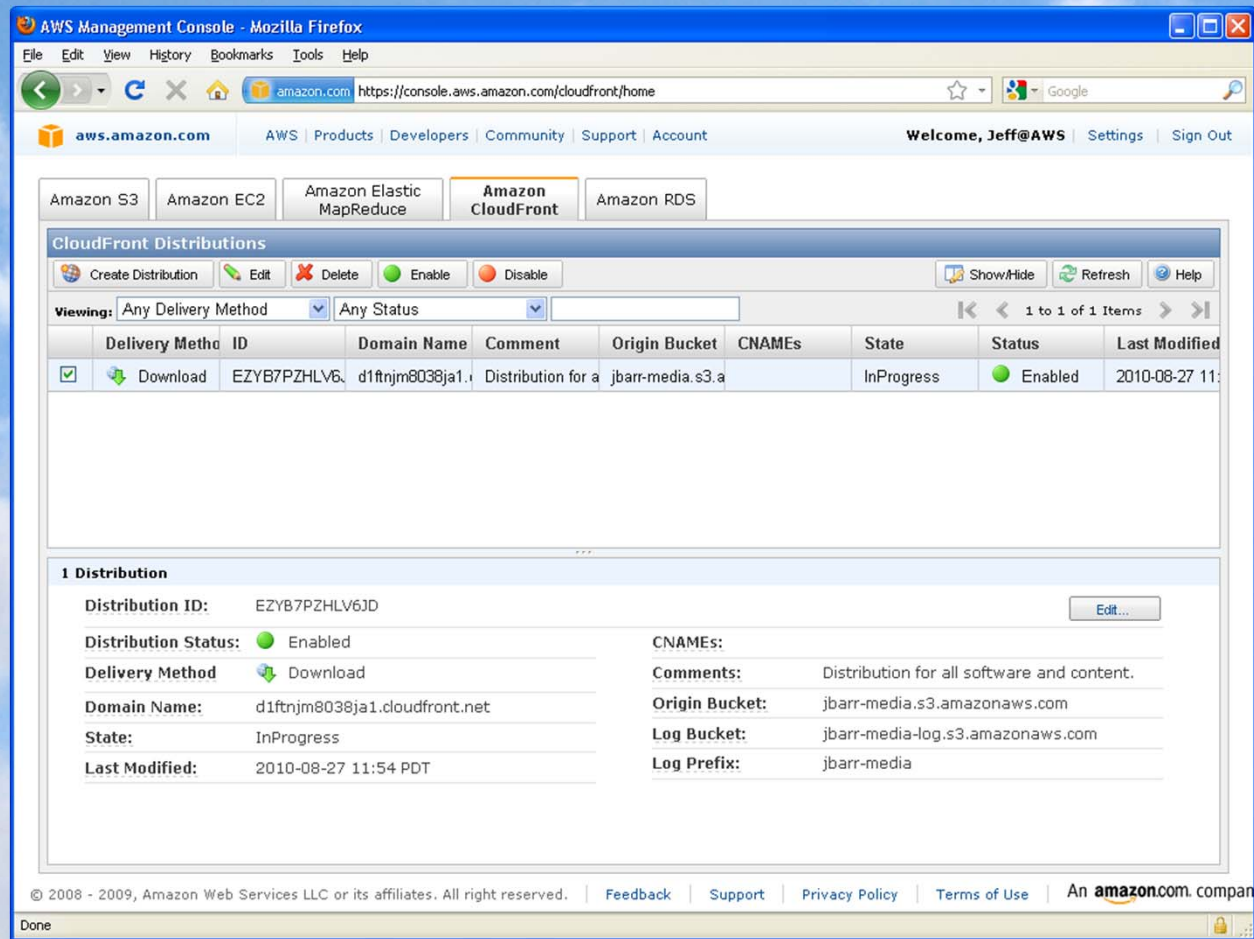


Content/Download Hosting

- Create storage bucket (S3)
- Upload content
- Set permissions
- Create CloudFront distribution
- Enable logging
- Get distribution URL
- Distribute content
- Analyze log files



Content/Download Hosting



The screenshot displays the AWS Management Console interface for CloudFront Distributions. The browser window title is "AWS Management Console - Mozilla Firefox" and the address bar shows "https://console.aws.amazon.com/cloudfront/home". The navigation bar includes "aws.amazon.com" and "Welcome, Jeff@AWS". The main content area shows a list of CloudFront Distributions with the following table:

	Delivery Method	ID	Domain Name	Comment	Origin Bucket	CNAMEs	State	Status	Last Modified
<input checked="" type="checkbox"/>	Download	EZYB7PZHLV6J	d1ftnjm8038ja1.cloudfront.net	Distribution for all software and content.	jbarr-media.s3.amazonaws.com		InProgress	Enabled	2010-08-27 11:54 PDT

Below the table, the details for the selected distribution are shown:

1 Distribution

- Distribution ID:** EZYB7PZHLV6J
- Distribution Status:** Enabled
- Delivery Method:** Download
- Domain Name:** d1ftnjm8038ja1.cloudfront.net
- State:** InProgress
- Last Modified:** 2010-08-27 11:54 PDT
- CNAMEs:**
- Comments:** Distribution for all software and content.
- Origin Bucket:** jbarr-media.s3.amazonaws.com
- Log Bucket:** jbarr-media-log.s3.amazonaws.com
- Log Prefix:** jbarr-media

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Content/Download Hosting

[https://s3.amazonaws.com/jbarr-media/
East+Meets+West+Virtual+Goods+%2B+Social+Media.mp3](https://s3.amazonaws.com/jbarr-media/East+Meets+West+Virtual+Goods+%2B+Social+Media.mp3)



<https://s3.amazonaws.com/jbarr-media/>

[East+Meets+West+Virtual+Goods+%2B+Social+Media.mp3](#)



<http://d1ftnjm8038ja1.cloudfront.net/>

[East+Meets+West+Virtual+Goods+%2B+Social+Media.mp3](#)



<http://d1ftnjm8038ja1.cloudfront.net/East+Meets+West+Virtual+Goods+%2B+Social+Media.mp3>

Content/Download Hosting

Expand All Services | Collapse All Services Printer Friendly Version

										Totals
Amazon CloudFront										
View/Edit Service										
United States										
	\$0.150 per GB - first 10 TB / month data transfer out				5.957 GB					0.89
	\$0.010 per 10,000 GET Requests				222,857 Requests					0.22
										1.11
Europe										
	\$0.150 per GB - first 10 TB / month data transfer out				2.676 GB					0.40
	\$0.012 per 10,000 GET Requests				98,403 Requests					0.12
										0.52
Japan										
	\$0.201 per GB - first 10 TB / month data transfer out (includes consumption tax).				7.570 GB					1.52
	\$0.013 per 10,000 GET Requests (includes consumption tax).				1,471,102 Requests					1.91
										3.43
Hong Kong and Singapore										
	\$0.190 per GB - first 10 TB / month data transfer out				0.760 GB					0.14
	\$0.012 per 10,000 GET Requests				46,438 Requests					0.06
										0.20
										5.26
Download Usage Report >>										
Jun 2010	23680	20456	1211	1146	31367	3600540	34402	36353	613687	710403
May 2010	75529	64676	3792	3551	54357	6393844	60381	64478	1099499	1283998
Totals						10866460	100917	107573	1785636	2083372

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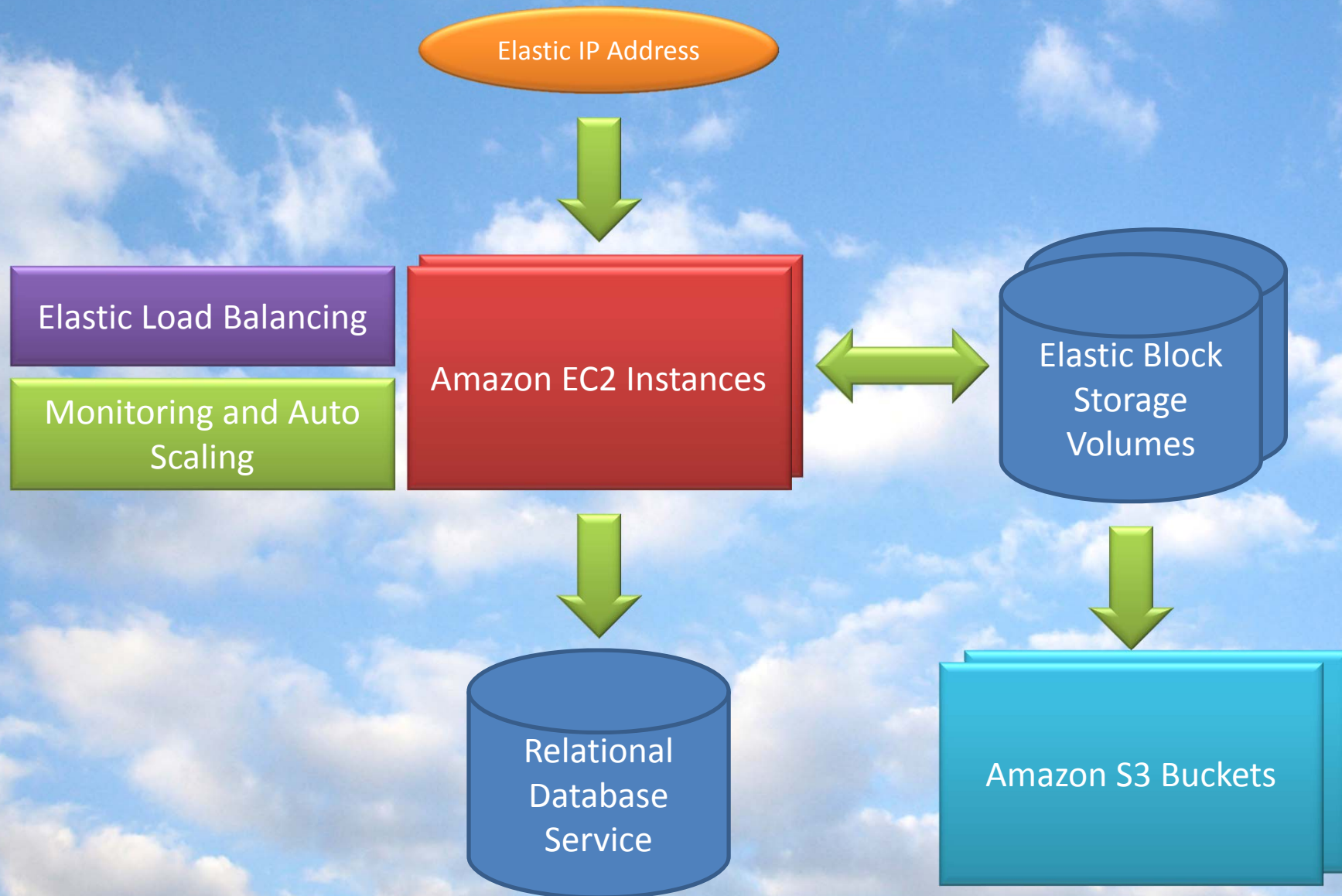
```

Game Logic Hosting

- Why AWS is better:
 - Migrate existing applications or architect for cloud
 - Your choice
 - Existing code will run just fine
 - Cloud-native applications will run even better
 - Cloud-native applications can take advantage of a rich array of services
 - Processing
 - Storage
 - Database
 - Networking



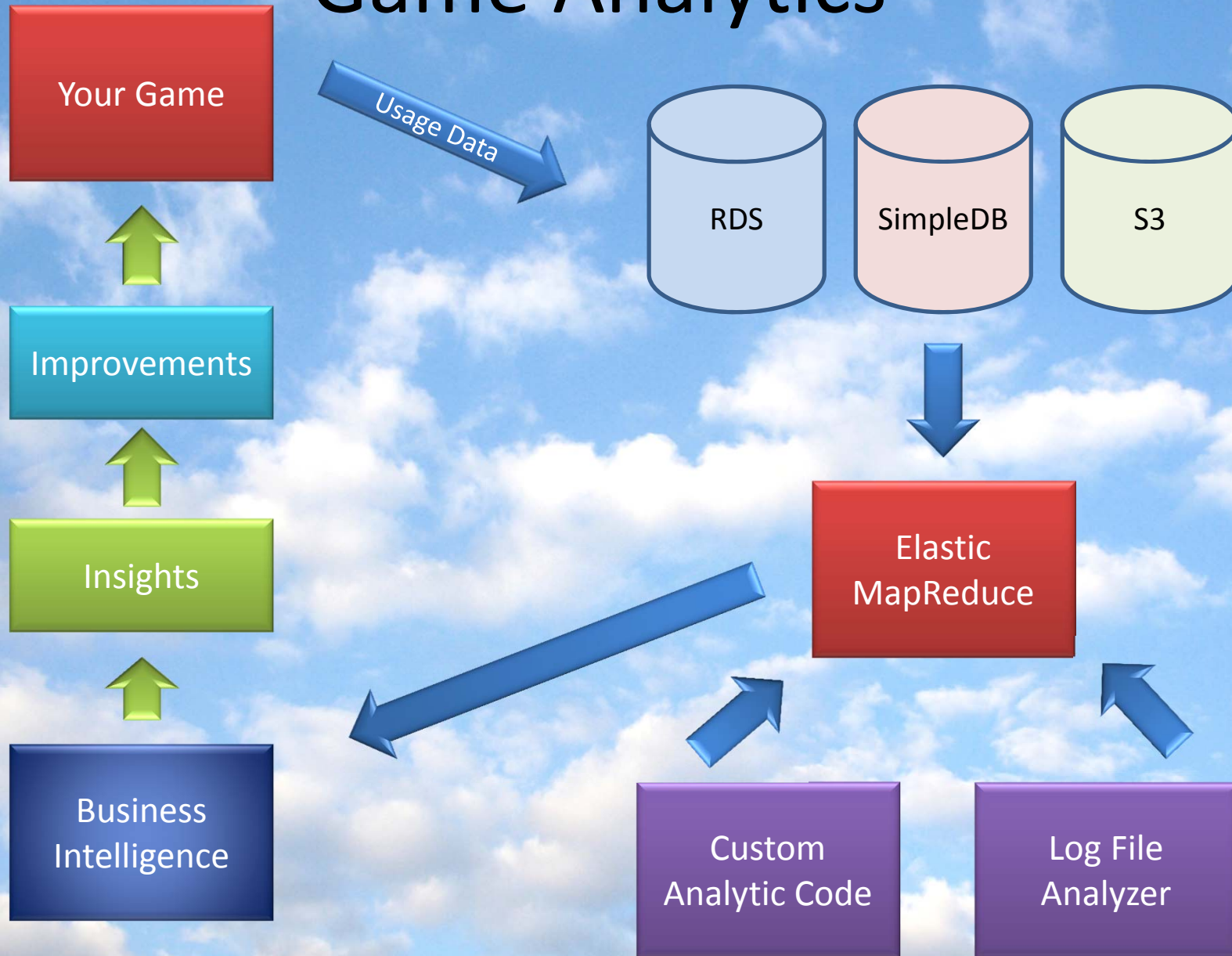
Game Logic Hosting



Game Analytics

- Why AWS is better:
 - Cost-effective
 - Scalable and good for bursts of processing
 - Large-scale storage and processing
 - Parallel processing:
 - Hadoop / Elastic MapReduce
 - Third-party processing and storage applications
 - Vertica column-oriented database
 - Business Intelligence (BI) tools

Game Analytics



And That's All!

- Thanks for listening, and please feel free to follow up.

–Jeff Barr

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Image Sources

- Pac-Man:
 - Wikipedia (<http://en.wikipedia.org/wiki/Pac-Man>)