Cloud-Powered Social Gaming
With Amazon Web Services
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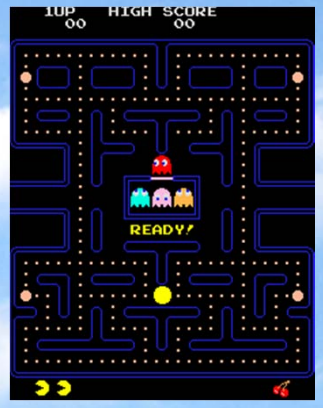
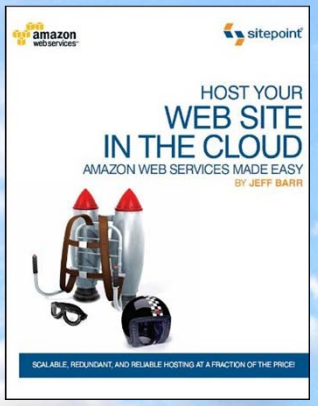
@jeffbarr

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)

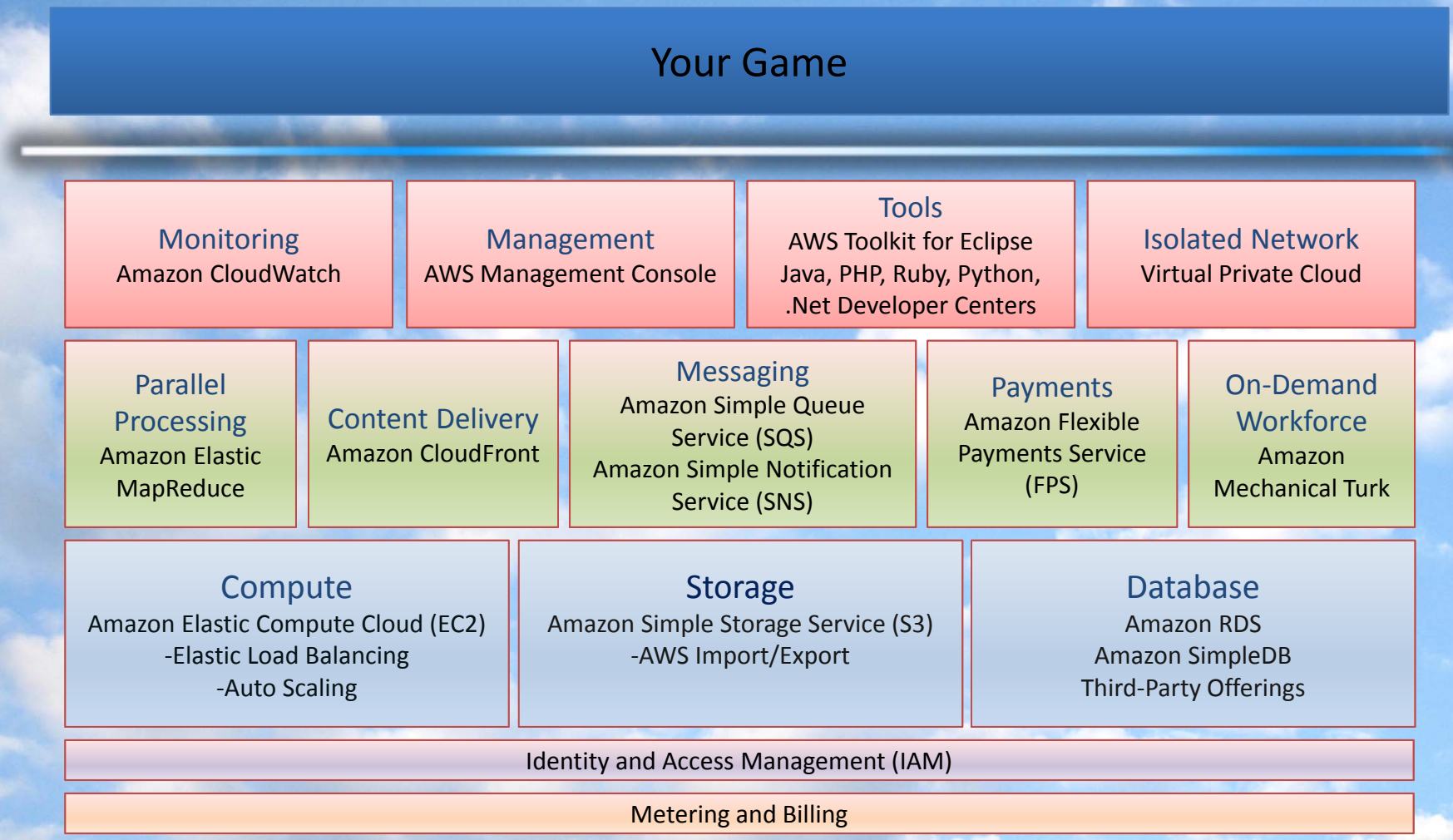




Goals

- 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

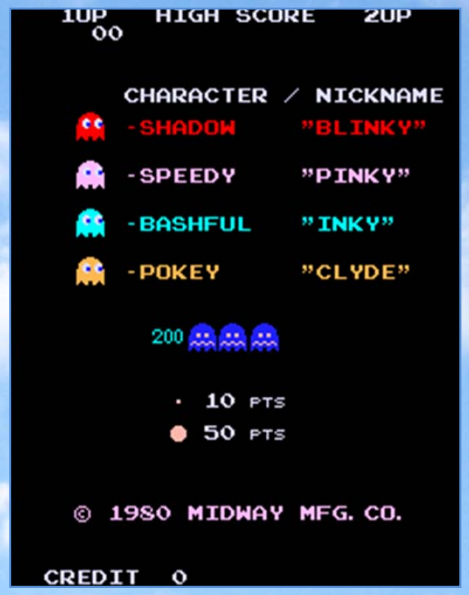


AWS / Cloud Benefits

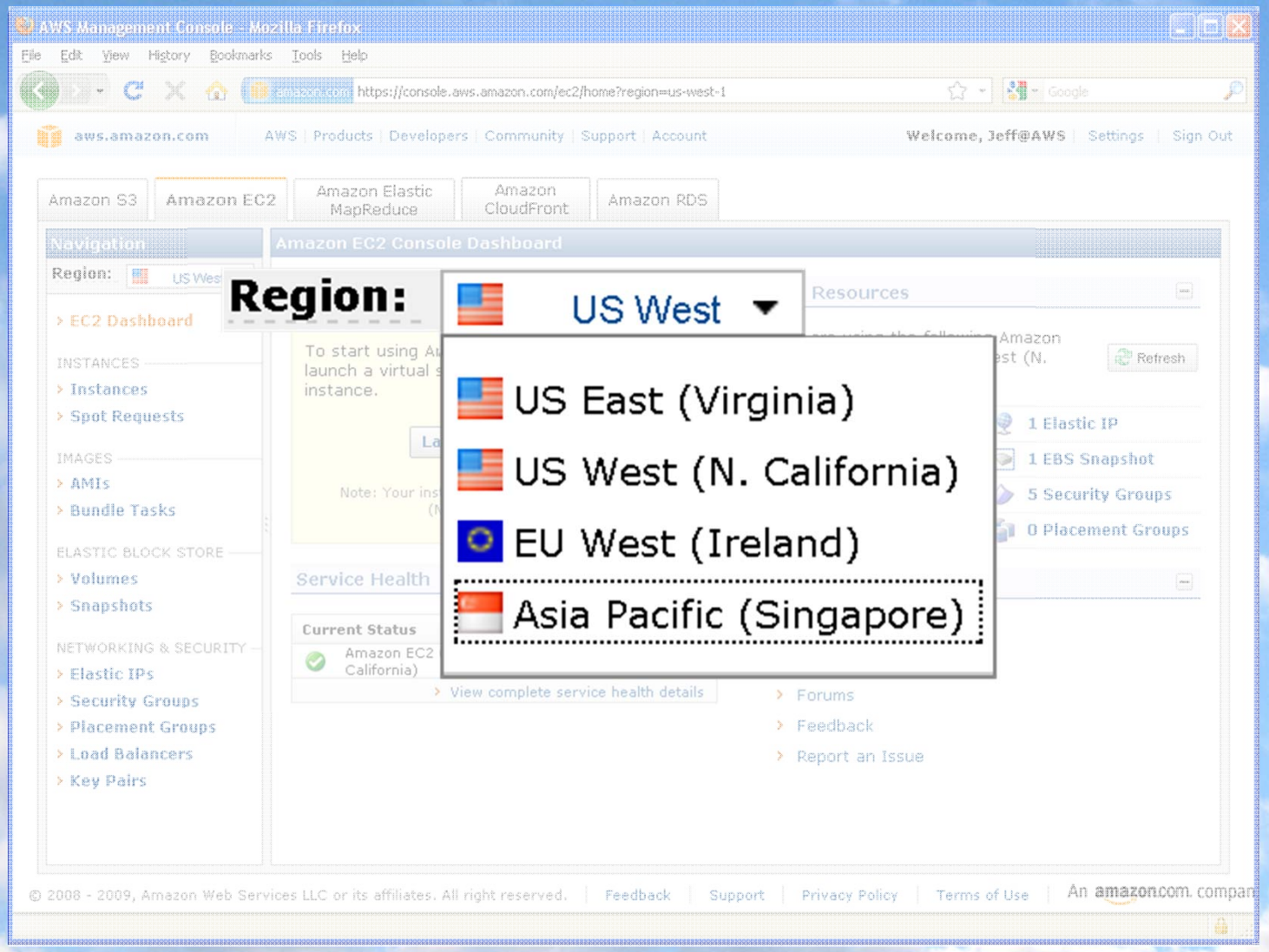
- **Sophisticated Platform**
  Leverage many man-years of work that has already been done.
- **Focus on your Game**
  Use your unique skills to build a better product. Don't waste resources on low-level system-building activities.
- **Reduced Time to Market**
  Use powerful services to create a great 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



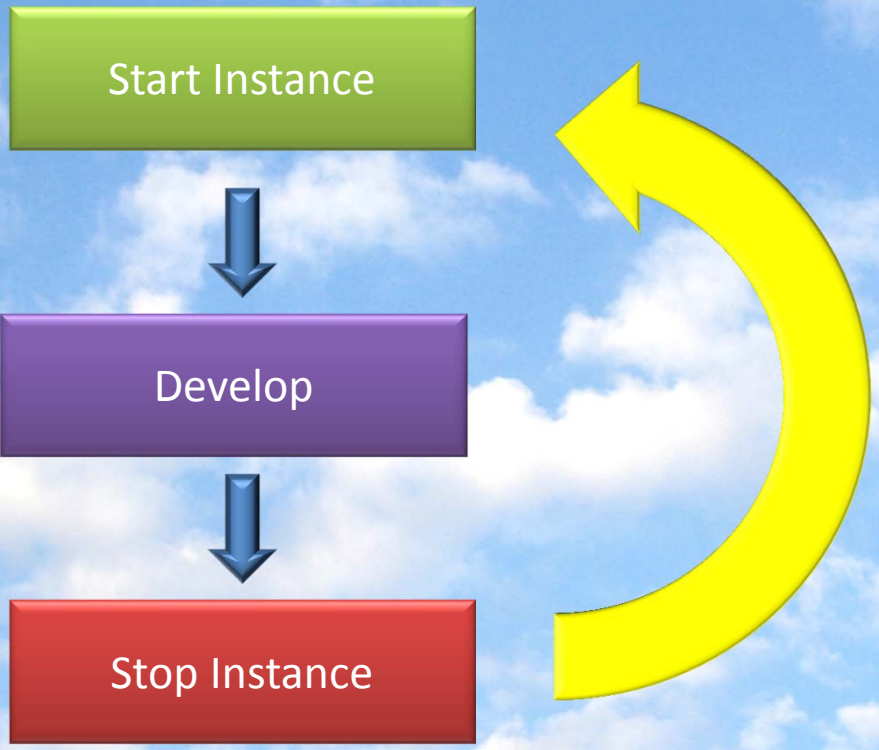
AWS Management Console



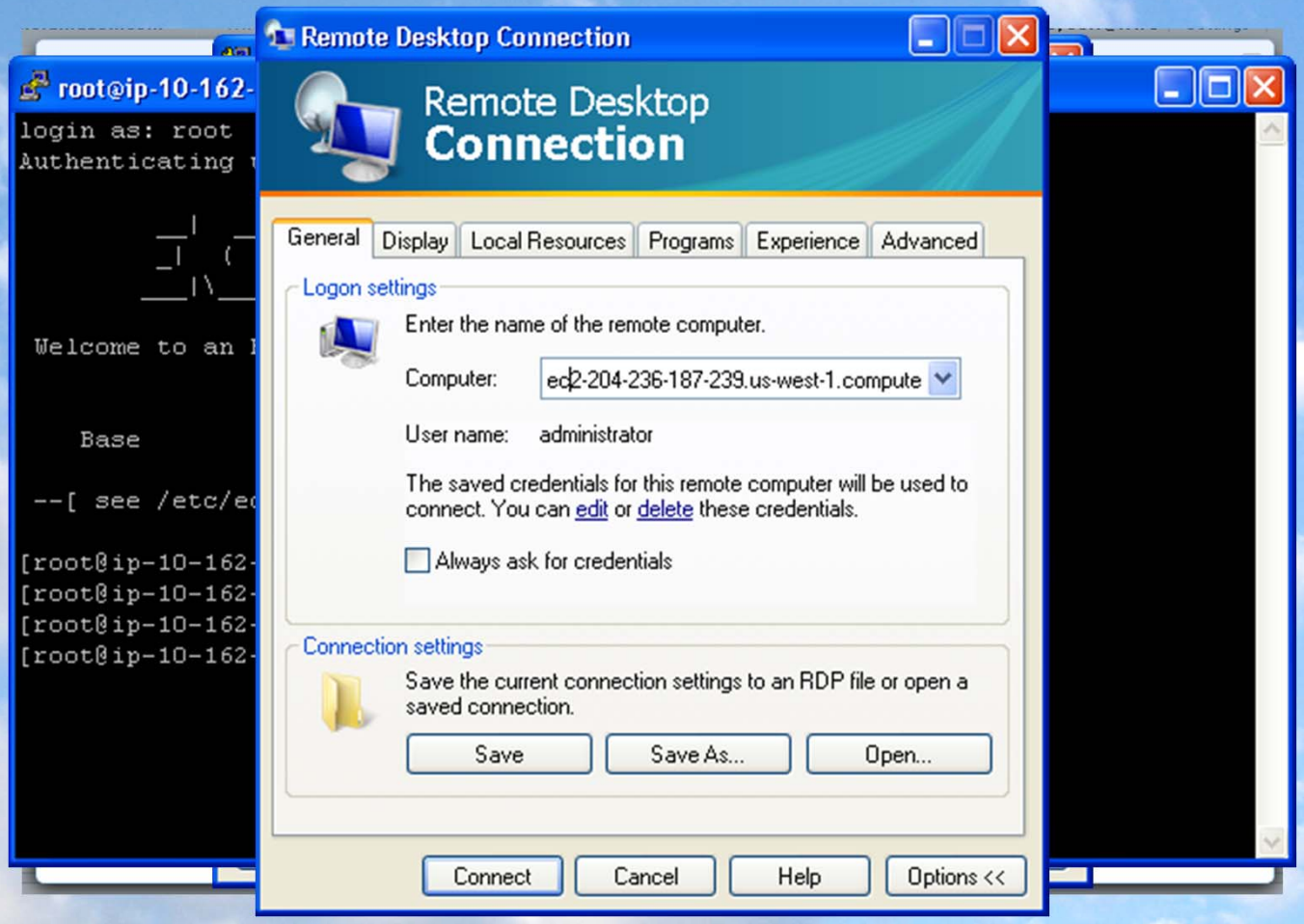
Software Development - 1

- 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

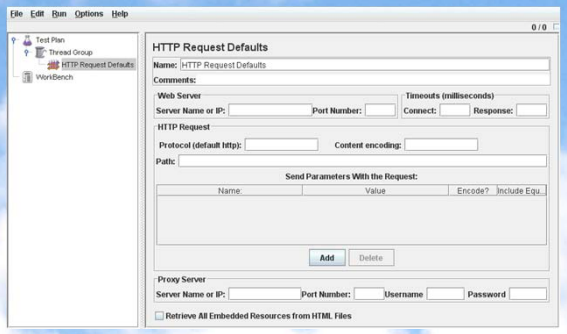


Load Testing

- 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:



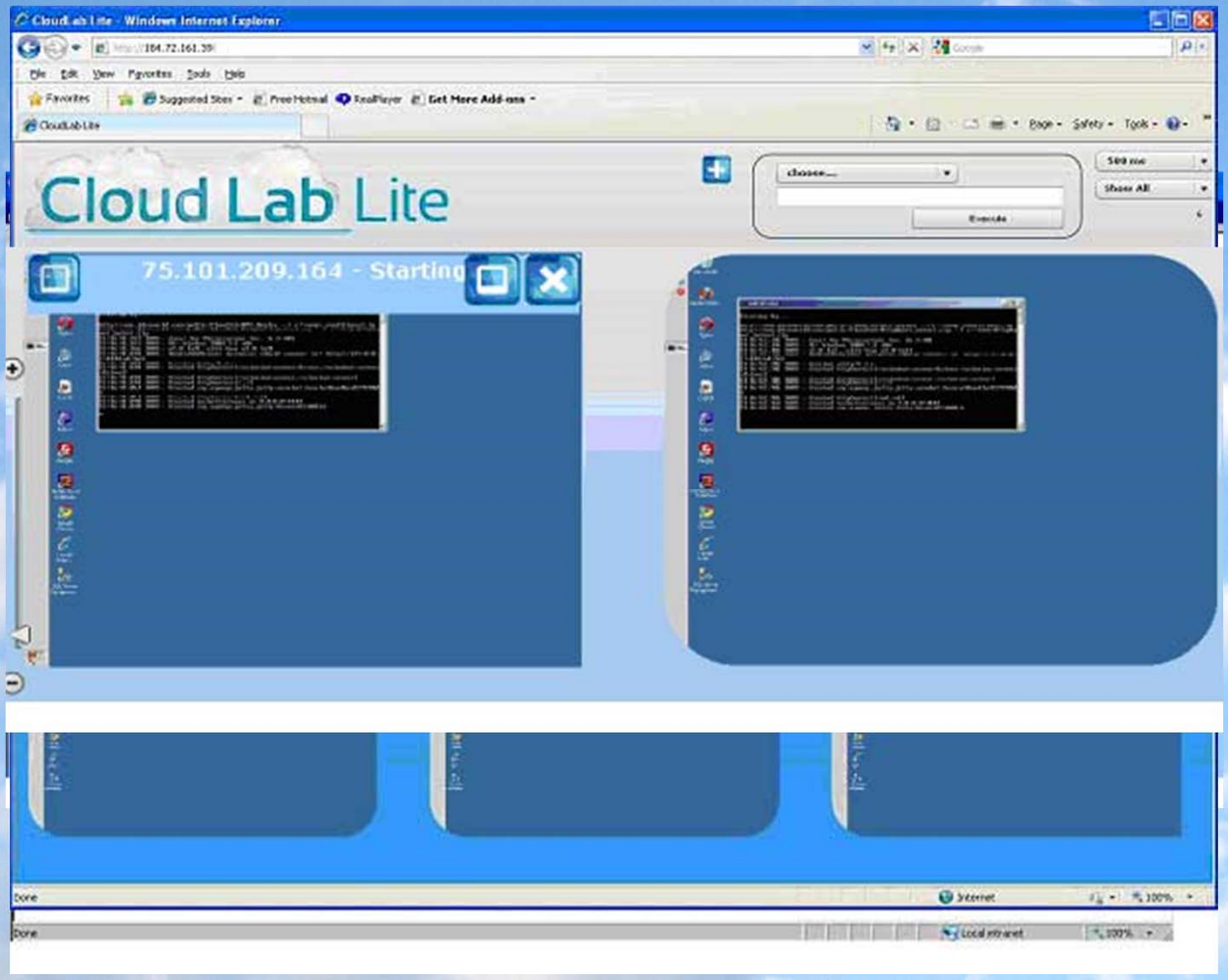
- Commercial Testing Services (cloud-powered):
  - BrowserMob
  - SOASTA
  - CapCal

CloudTest® by SOASTA

BrowserMob

CapCal CAPACITY CALIBRATION

Load Testing - CapCal



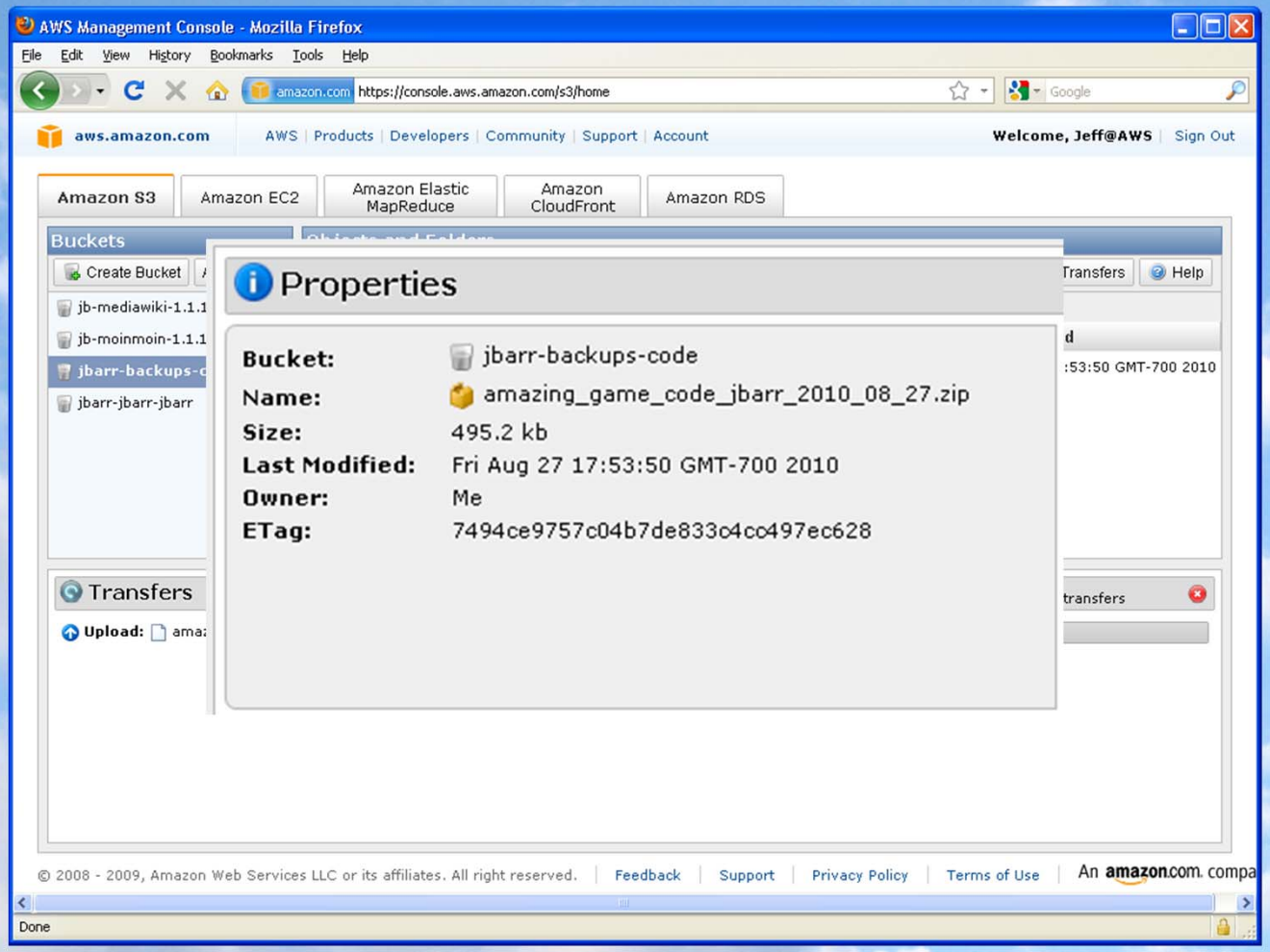
Backup

- 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


AWS Management Console - Mozilla Firefox
File Edit View History Bookmarks Tools Help
https://console.aws.amazon.com/s3/home
aws.amazon.com
AWS | Products | Developers | Community | Support | Account
Welcome, Jeff@AWS | Sign Out
Amazon S3
Amazon EC2
Amazon Elastic MapReduce
Amazon CloudFront
Amazon RDS
Buckets
Create Bucket
jb-mediawiki-1.1.1
jb-moinmoin-1.1.1
jbarr-backups-c
jbarr-jbarr-jbarr
Properties
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Size: 495.2 kb
Last Modified: Fri Aug 27 17:53:50 GMT-700 2010
Owner: Me
ETag: 7494ce9757c04b7de833c4cc497ec628
Transfers
Help
:53:50 GMT-700 2010
Upload:
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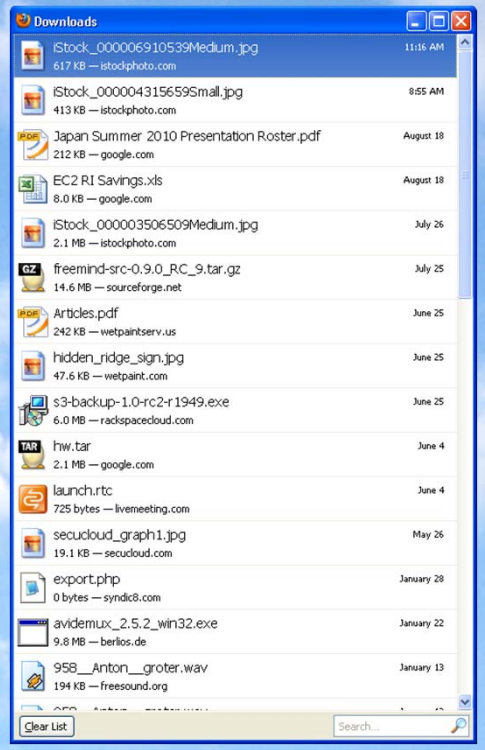
Content / Download Hosting

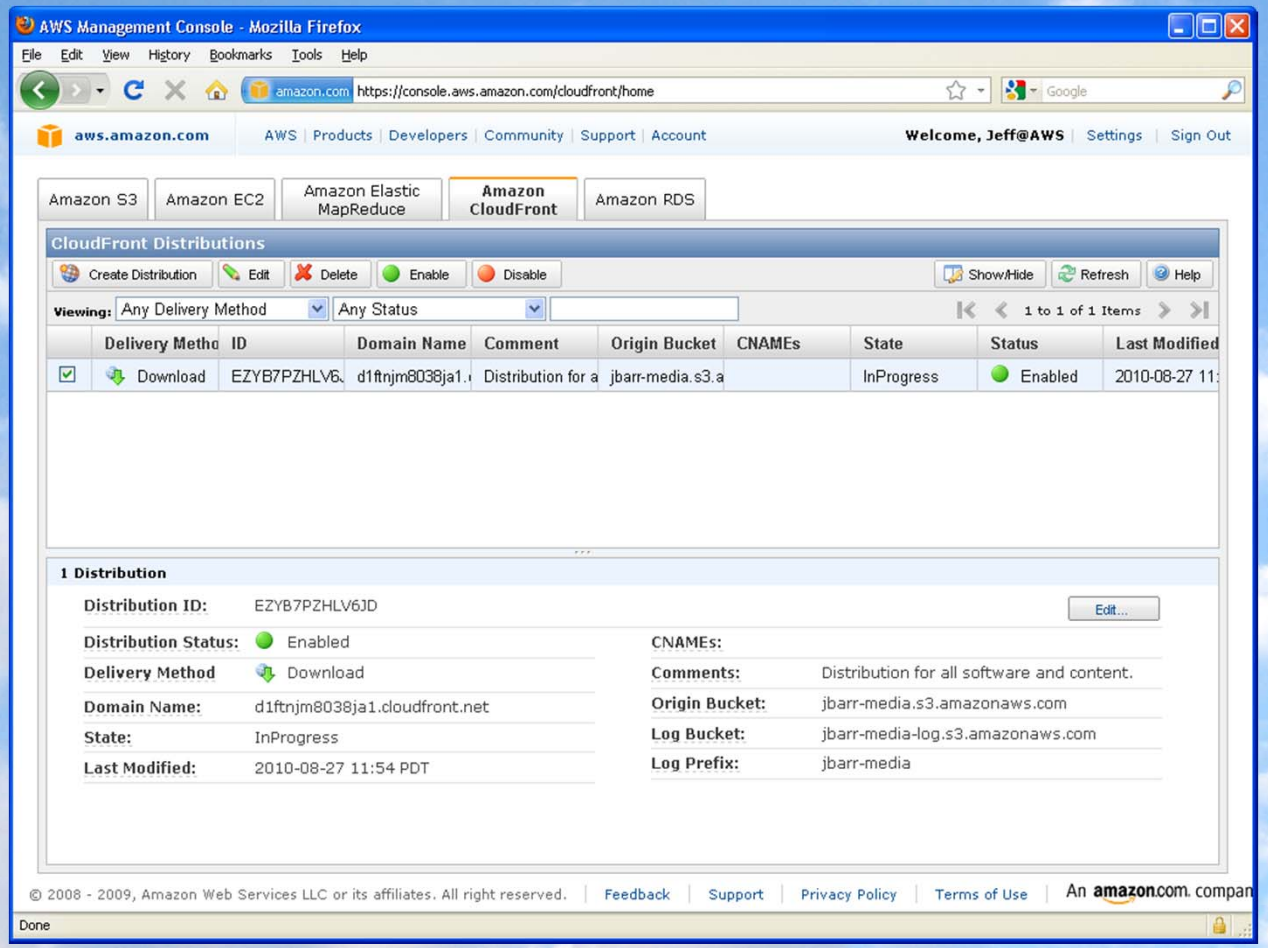
- Why AWS is better:
  - Easy
  - Off-site
  - Cost-effective
  - World-scale
  - Highly reliable
  - Logging and metrics



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



Content/Download Hosting

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

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

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

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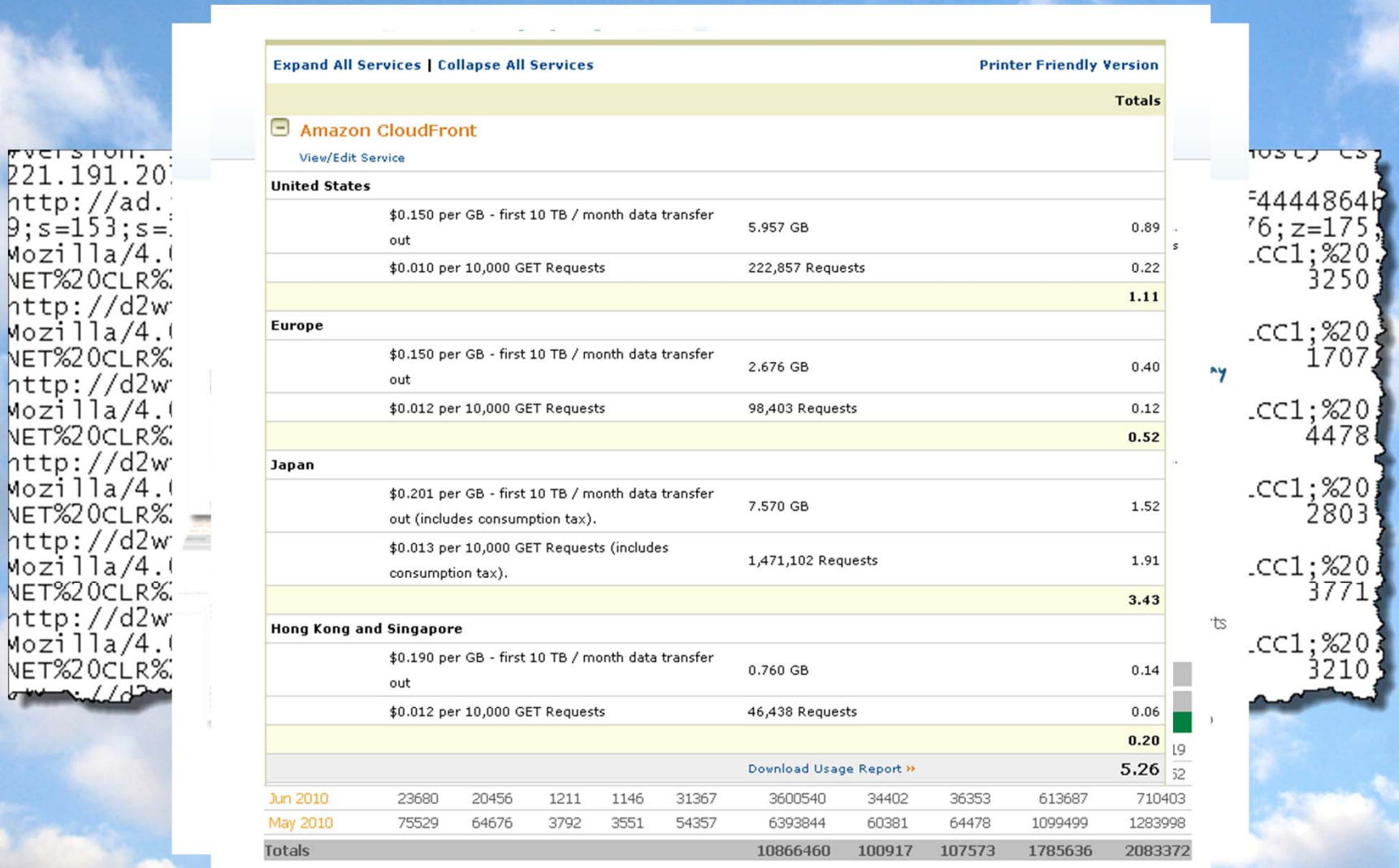
Content/Download Hosting



Expand All Services | Collapse All Services — Printer Friendly Version

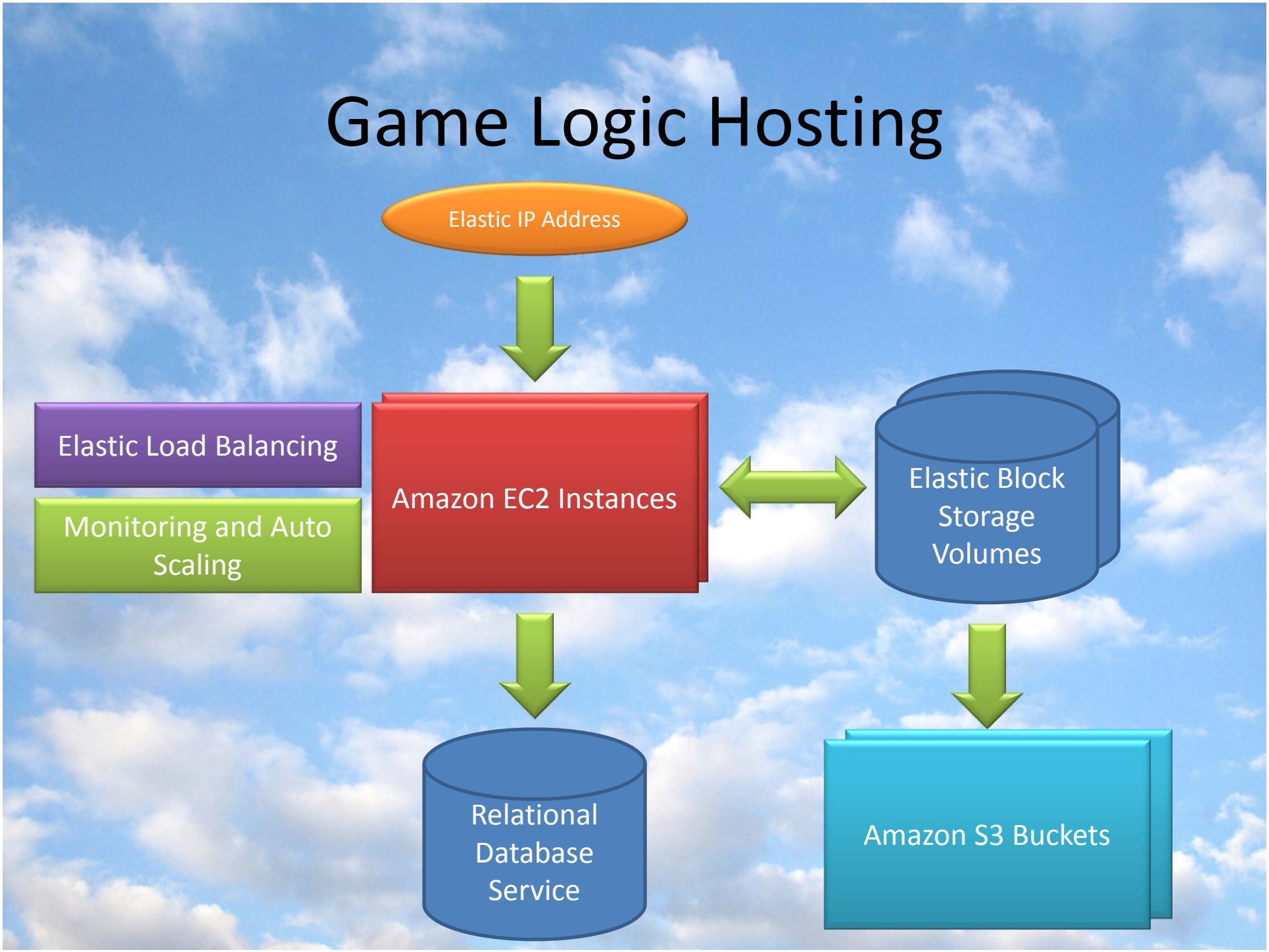
			Totals
Amazon CloudFront			
View/Edit Service			
United States			
	$0.150 per GB - first 10 TB / month data transfer out	5.957 GB	0.89
	$0.010 per 10,000 GET Requests	222,857 Requests	0.22
			1.11
Europe			
	$0.150 per GB - first 10 TB / month data transfer out	2.676 GB	0.40
	$0.012 per 10,000 GET Requests	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
		Download Usage Report »	5.26

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

Game Logic Hosting

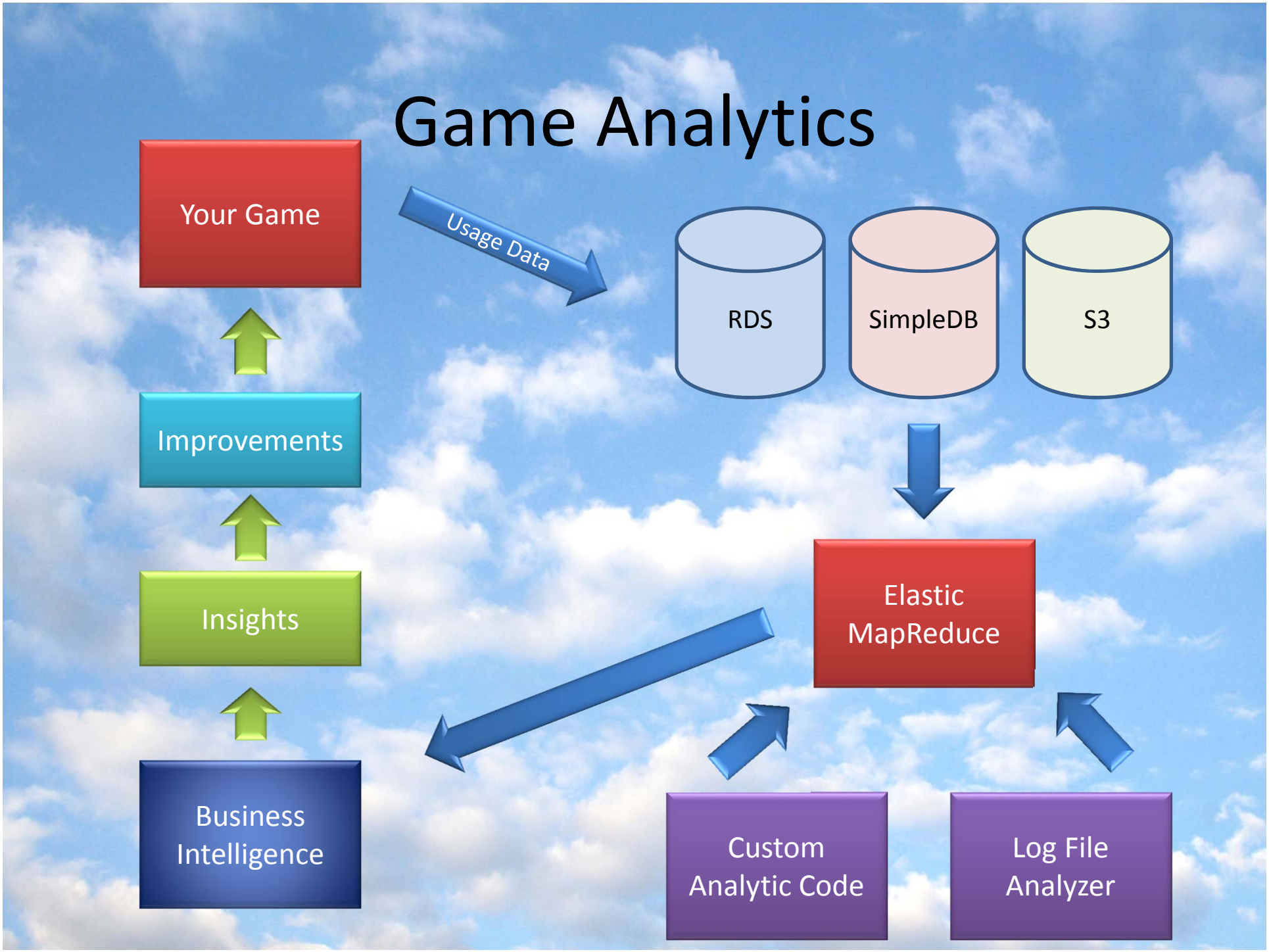
- Why AWS is better:
  - Migrate existing applications or architect for cloud
    - Your choice
    - Existing code will run just fine
    - Cloud-native applications will run even better
  - Cloud-native applications can take advantage of a rich array of services
    - Processing
    - Storage
    - 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
Your Game
Usage Data
RDS
SimpleDB
S3
Improvements
Insights
Elastic MapReduce
Business Intelligence
Custom Analytic Code
Log File Analyzer

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)