Web Scale Computing

Mike Culver
Amazon Web Services
Agenda

- Web Scale Computing overview
- Focus on two services
  - Amazon S3
  - Amazon EC2
Ideas Cost Money

\[ a + bc \]
But How Much Money?

Our favorite numbers: 0.10, 0.15, and 0.20
A set of APIs and business models which give developers access to Amazon technology and content

- **Data As a Service**
  - Amazon E-Commerce Service
  - Amazon Historical Pricing

- **Infrastructure As a Service**
  - Amazon Simple Queue Service
  - Amazon Simple Storage Service
  - Amazon Elastic Compute Cloud

- **Search As a Service**
  - Alexa Web Information Service
  - Alexa Top Sites
  - Alexa Site Thumbnail
  - Alexa Web Search Platform

- **People As a Service**
  - Amazon Mechanical Turk
Amazon Simple Storage Service
Amazon S3 is... Simple

- Web service interface (REST or SOAP)
- Private and public storage
- Each object up to 5GB in size (larger possible via chunking)
- Highly Resilient: RAID at datacenter level
- ~1TB ingestion / day per user
- Cheap
  - No set-up fee, No monthly minimum
  - Storage: $0.15 per GB/Month
  - $0.20/GB to transfer data (FREE to EC2 / SQS)
Amazon S3 Objects Stored

- 800,000,000 (July 2006)
- 5,000,000,000 (April 2007)
An Interactive Look
Amazon Elastic Compute Cloud
Amazon EC2 Is...

- Resizable compute capacity in the cloud.
  - Obtain and boot new server instances in minutes
  - Quickly scale capacity, up or down, as your computing requirements change
- Full root access to a blank Linux machine
- Simple Web service management interface
- Changes the economics of computing:
  - Pay only for capacity that you actually use
  - $a + bc$ becomes just $bc$
What Does it Cost?

- No start-up, monthly, or fixed costs
- $0.10 per wall-clock hour
- $0.20 per GB transferred across Net
- No cost to transfer data between Amazon S3 and Amazon EC2
Amazon EC2 Profile

- 1.7 GHz x86 processor
- 1.7 GB of RAM
- 160 GB disk
- 250 Mb/second network
- Your own fully-controllable firewall
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