



IT'S A JUNGLE OUT THERE

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# AMAZON WEB SERVICES (AWS) OVERVIEW



**“IF YOU NEVER WANT TO BE  
CRITICIZED, FOR GOODNESS’  
SAKE DON’T DO ANYTHING  
NEW.”**

**Jeff Bezos**

## WHAT IS “CLOUD” COMPUTING?

- ▶ The on-demand delivery of IT resources and applications via the Internet with pay-as-you-go pricing.
- ▶ Six advantages of cloud computing:
  1. Trade capital expense for variable expense
  2. Benefit from massive economies of scale
  3. Stop guessing capacity
  4. Increase speed and agility
  5. Stop spending \$ running and maintaining data centers
  6. Go global
- ▶ Bottom line: Provision what you need, pay as you go, and let someone else worry about the infrastructure.

SCALABLE > ON-DEMAND > LOW-COST

# TYPES OF CLOUD COMPUTING

### ► Infrastructure as a Service (IaaS):



contains the basic building blocks for cloud IT and typically provide access to networking features, computers (virtual or on dedicated hardware), and data storage space.

### ► Platform as a Service (PaaS):



remove the need for organizations to manage the underlying infrastructure (usually hardware and operating systems) and allow you to focus on the deployment and management of your applications.

### ► Software as a Service (SaaS):



provides you with a completed product that is run and managed by the service provider. In most cases, people referring to Software as a Service are referring to end-user applications. With a SaaS offering you do not have to think about how the service is maintained or how the underlying infrastructure is managed; you only need to think about how you will use that particular piece software.

# TYPES OF CLOUD COMPUTING DEPLOYMENT MODELS

### ▶ CLOUD:



A cloud-based application is fully deployed in the cloud and all parts of the application run in the cloud.

### ▶ HYBRID:



A hybrid deployment is a way to connect infrastructure and applications between cloud-based resources and existing resources that are not located in the cloud (i.e. existing on-premises infrastructure).

### ▶ ON-PREMISES:



Deploying resources on-premises, using virtualization and resource management tools, is sometimes called "private cloud".

WHAT DOES THE MARKET LOOK LIKE?

# Gartner Magic Quadrant for IaaS Worldwide



As of May 2015

# WHAT IS ALL THIS SH....STUFF!?!

AWS

Services

Edit

Jason Sypniewski

N. Virginia

Support

Amazon Web Services

Compute

EC2

Virtual Servers in the Cloud

EC2 Container Service

Run and Manage Docker Containers

Elastic Beanstalk

Run and Manage Web Apps

Lambda

Run Code in Response to Events

Storage & Content Delivery

S3

Scalable Storage in the Cloud

CloudFront

Global Content Delivery Network

Elastic File System

Fully Managed File System for EC2

Glacier

Archive Storage in the Cloud

Import/Export Snowball

Large Scale Data Transport

Storage Gateway

Hybrid Storage Integration

Database

RDS

Managed Relational Database Service

DynamoDB

Managed NoSQL Database

ElastiCache

In-Memory Cache

Redshift

Fast, Simple, Cost-Effective Data Warehousing

DMS

Managed Database Migration Service

Networking

VPC

Isolated Cloud Resources

Developer Tools

CodeCommit

Store Code in Private Git Repositories

CodeDeploy

Automate Code Deployments

CodePipeline

Release Software using Continuous Delivery

Management Tools

CloudWatch

Monitor Resources and Applications

CloudFormation

Create and Manage Resources with Templates

CloudTrail

Track User Activity and API Usage

Config

Track Resource Inventory and Changes

OpsWorks

Automate Operations with Chef

Service Catalog

Create and Use Standardized Products

Trusted Advisor

Optimize Performance and Security

Security & Identity

Identity & Access Management

Manage User Access and Encryption Keys

Directory Service

Host and Manage Active Directory

Inspector

Analyze Application Security

WAF

Filter Malicious Web Traffic

Certificate Manager

Provision, Manage, and Deploy SSL/TLS Certificates

Analytics

EMR

Managed Hadoop Framework

Internet of Things

AWS IoT

Connect Devices to the Cloud

Game Development

GameLift

Deploy and Scale Session-based Multiplayer Games

Mobile Services

Mobile Hub

Build, Test, and Monitor Mobile Apps

Cognito

User Identity and App Data Synchronization

Device Farm

Test Android, FireOS, and iOS Apps on Real Devices in the Cloud

Mobile Analytics

Collect, View and Export App Analytics

SNS

Push Notification Service

Application Services

API Gateway

Build, Deploy and Manage APIs

AppStream

Low Latency Application Streaming

CloudSearch

Managed Search Service

Elastic Transcoder

Easy-to-Use Scalable Media Transcoding

SES

Email Sending and Receiving Service

SQS

Message Queue Service

SWF

Workflow Service for Coordinating Application Components

Enterprise Applications

WorkSpaces

Resource Groups

A resource group is a collection of resources that share one or more tags. Create a group for each project, application, or environment in your account.

Create a Group

Tag Editor

Additional Resources

Getting Started

Read our documentation or view our training to learn more about AWS.

AWS Console Mobile App

View your resources on the go with our AWS Console mobile app, available from Amazon Appstore, Google Play, or iTunes.

AWS Marketplace

Find and buy software, launch with 1-Click and pay by the hour.

AWS re:Invent Announcements

Explore the next generation of AWS cloud capabilities. See what's new

Service Health

All services operating normally.

Updated: Feb 15 2016 21:06:00 GMT-0500

Service Health Dashboard

AWS Management Console



# BROAD & DEEP CORE CLOUD INFRASTRUCTURE SERVICES



## Compute

- Virtual Servers
- Containers
- 1-Click Web App Deployment
- Event-Driven Compute Functions
- Auto Scaling
- Load Balancing



## Storage & Content Delivery

- Object Storage
- CDN
- Block Storage
- File System Storage
- Archive Storage
- Data Transport
- Integrated Storage



## Database

- Relational
- Database Migration
- NoSQL
- Caching
- Data Warehouse



## Networking

- Virtual Private Cloud
- Direct Connections
- Load Balancing
- DNS



BREAKING IT DOWN

# RICH PLATFORM SERVICES



## Analytics

Hadoop  
Data Pipelines  
Elasticsearch  
Streaming Data  
Machine Learning  
Business Intelligence  
Data Warehouse



## Enterprise Applications

Desktop Virtualization  
Email & Calendaring  
Document Sharing & Feedback



## Mobile Services

Mobile Development  
API Management  
Identity  
App Testing  
Mobile Analytics  
Development  
Notifications







## Internet of Things

IoT Platform  
Device SDK  
Registry  
Device Shadows  
Rules Engine

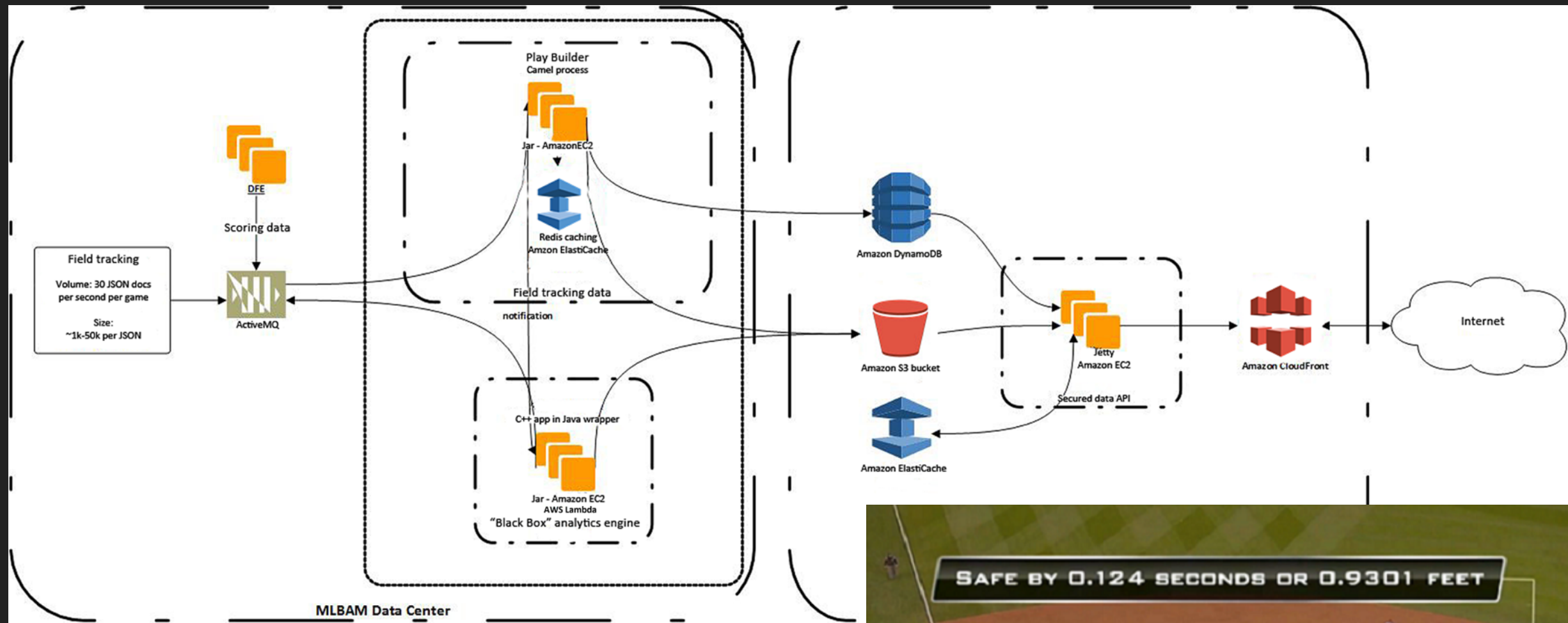
*DATA SCIENCE > MANAGE THE ENTERPRISE > PLATFORM EXTENSION*

INCREASE PRODUCTIVITY AND EFFICIENCY

 Developer Tools	 Management Tools	 Security & Identity	 Application Services
Source Code Management	Monitoring & Logs	Access Control	API Management
Code Deployment	Resource Templates	SSL/TLS Certificates	App Streaming
Continuous Delivery	Usage & Resource Auditing	Key Storage & Management	Search
	Dev/Ops Resource Management	Identity Management	Transcoding
	Service Catalog	Security Assessment	Email
	Performance Optimization	Web Application Firewall	Notifications
			Queueing
			Workflow

## EXAMPLE OF AWS DEPLOYMENT

# CASE STUDY: MLB ADVANCED MEDIA – STATCAST



"...MLBAM anticipates that an average of 7 TB of data will be generated per game. With 2,430 games in a season, that's about 17 petabytes of data each season."

<https://aws.amazon.com/solutions/case-studies/major-league-baseball-mlbam/>



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# AMAZON SDK FOR PYTHON

## ▶ Boto3

- ▶ makes it easy to integrate your Python application, library, or script with AWS services including Amazon S3, Amazon EC2, Amazon DynamoDB, and more.
- ▶ <https://github.com/boto/boto3>

BUT WAIT....THERE'S MORE

# AMAZON LUMBERYARD lumberyard<sup>beta</sup>

- ▶ A free, cross-platform AAA game engine deeply integrated with AWS and Twitch – with full source code provided.
- ▶ Available today in beta for developers building PC and console games. Mobile and VR platforms coming soon.



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# RESOURCES

- ▶ Instructional Videos and Labs:

- ▶ [https://aws.amazon.com/training/intro\\_series/](https://aws.amazon.com/training/intro_series/)

- ▶ Classes and Workshops:

- ▶ <https://aws.amazon.com/training/course-descriptions/>


- ▶ AWS Certifications:

- ▶ <https://aws.amazon.com/certification/>

- ▶ YouTube Tutorial Series:

- ▶ <https://www.youtube.com/user/awstutorialseries>



A black and white photograph of a massive concrete dam. The dam's face is composed of large, rectangular concrete panels, creating a grid-like pattern. At the top of the dam, a narrow walkway with a metal railing runs along the edge. A small figure of a person stands on this walkway, providing a sense of scale to the enormous structure. The sky is a uniform, dark grey.

**“DON’T JUMP. IT’S NOT  
THAT COMPLICATED. JUST  
GIVE AMAZON YOUR  
CREDIT CARD NUMBER,  
SIGN IN, AND THEN GO  
UPDATE YOUR SKILLS ON  
LINKEDIN.”**