

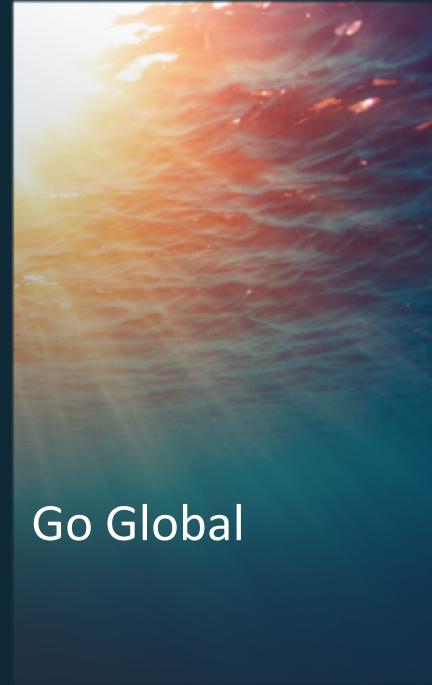


# Simply Use Storage!

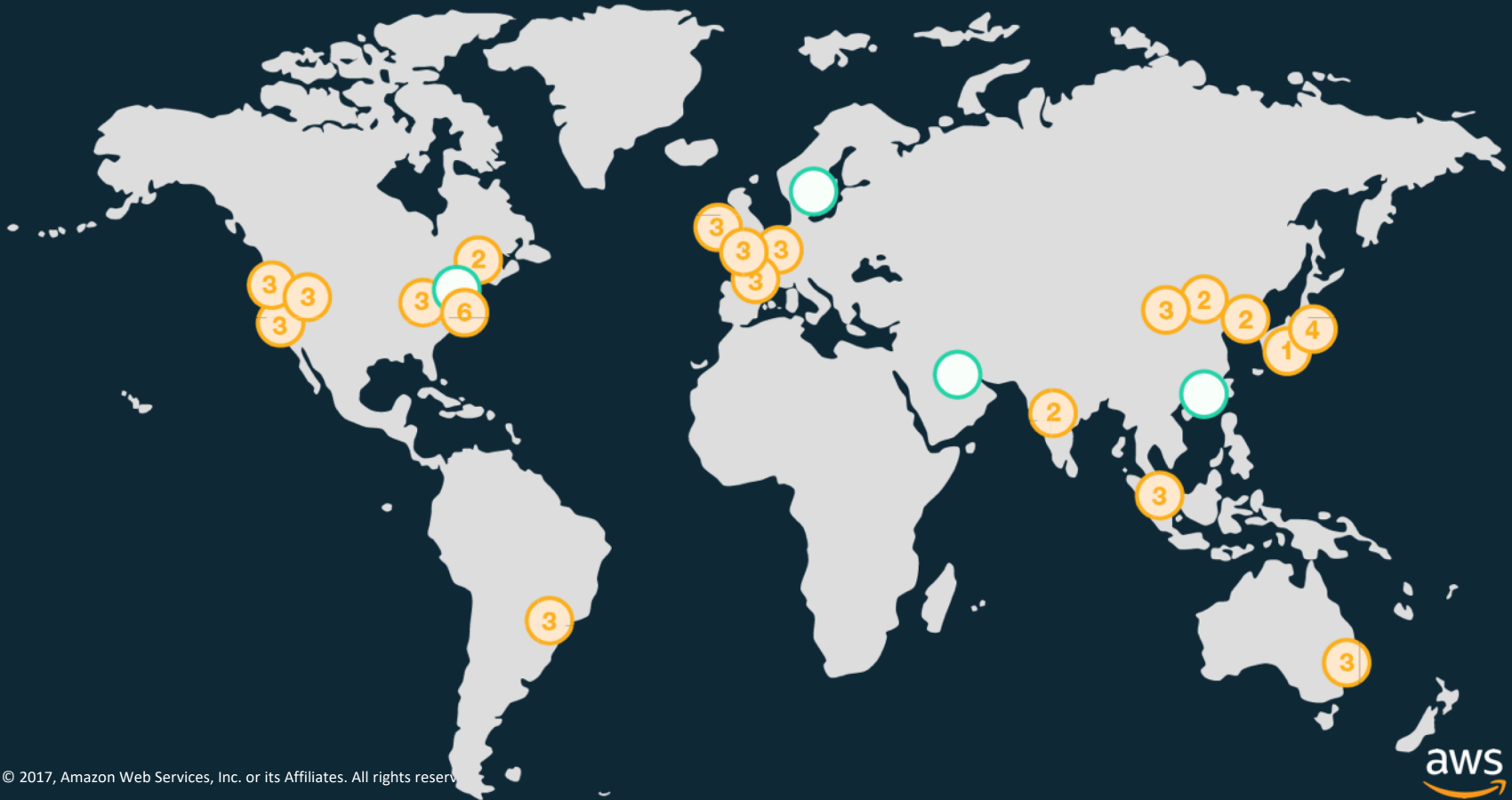
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# Why Cloud ?

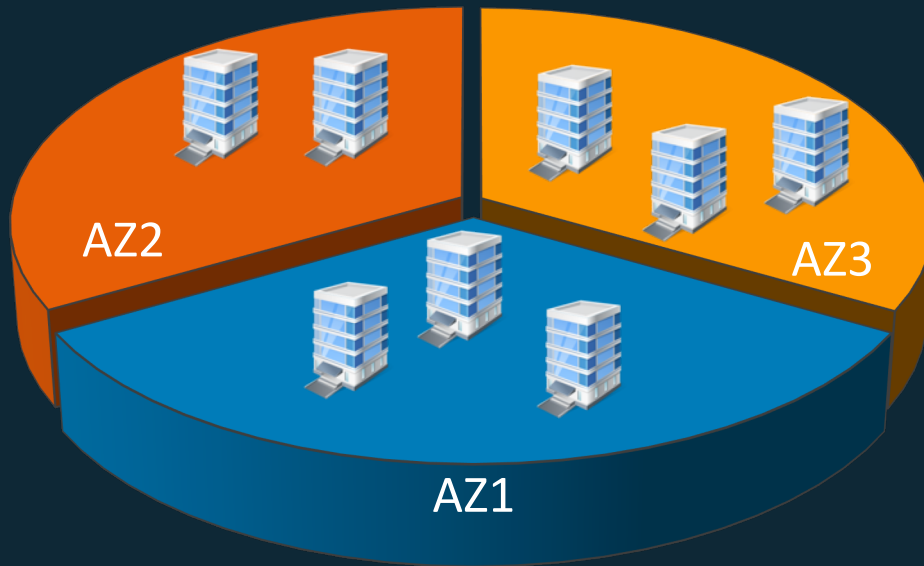


# 55 AZs, 18 Regions, Millions of hosts, Exabytes of data



# The AWS Durability Model: What is 99.999999999%?

## A Single AWS “Region”



- ▮ Availability Zones separated in power, network, flood-plane
- ▮ Objects striped/coded across AZ's
- ▮ Data integrity checks
- ▮ Tolerant of concurrent failures
  - Disks, nodes, racks
  - Networks, WAN providers
  - Datacenters



# The AWS Platform

## Account Support

Support

Managed Services

Professional Services

Partner Ecosystem

Training & Certification

Solution Architects

Account Management

Security & Pricing Reports

Technical Acct. Management

## Marketplace

Business Applications

DevOps Tools

Business Intelligence

Security

Networking

Database & Storage

SaaS Subscriptions

Operating Systems

## Mgmt. Tools

Monitoring

Auditing

Service Catalog

Server Management

Configuration Tracking

Optimization

Resource Templates

Automation

## Analytics

Query Large Data Sets

Elasticsearch

Business Analytics

Hadoop/Spark

Real-time Data Streaming

Orchestration Workflows

Managed Search

Managed ETL

## Dev Tools

Private Git Repositories

Continuous Delivery

Build, Test, and Debug

Deployment

## AI

Deep L. Camera

Transcribe Translate

Managed Models

Video

Voice & Text Chatbots

Machine Learning

Text-to-Speech. NLP

Image Analysis

## IoT

Defender

Management

Analytics

Rules Engine

Local Compute and Sync

Device Shadows

Device Gateway

Registry

## Mobile

Build, Test, Monitor Apps

Push Notifications

Build, Deploy, Manage APIs

Device Testing

Identity

## Enterprise Applications

Document Sharing

Email & Calendaring

Hosted Desktops

Application Streaming

Backup

## Media

Store/Convert

Live

VR

VR/AR

## Game Development

3D Game Engine

Multi-player Backends

## Migration

Application Discovery

Application Migration

Data Migration

Database Migration

Server Migration

## Hybrid

Data Integration

Integrated Networking

Identity Federation

Resource Management

VMware on AWS

Devices & Edge Systems

## Application Services

Transcoding

Step Functions

Messaging

## Security

Identity & Access

Key Storage & Management

Active Directory

DDoS Protection

Application Analysis

Certificate Management

Web App. Firewall

Threat detection

## Database

Aurora

MySQL

PostgreSQL

Oracle

SQL Server

MariaDB

Data Warehousing

NoSQL

Graph

## Storage

Object Storage

Archive

Exabyte-scale Data Transport

Block Storage

Managed File Storage

Select

## Compute

Virtual Machines

Simple Servers

Web Applications

Auto Scaling

Batch

Containers

Event-driven Computing

Bare-Metal

## Networking

Isolated Resources

Dedicated Connections

Global CDN

Load Balancing

Scalable DNS

## Infrastructure

Regions

Availability Zones

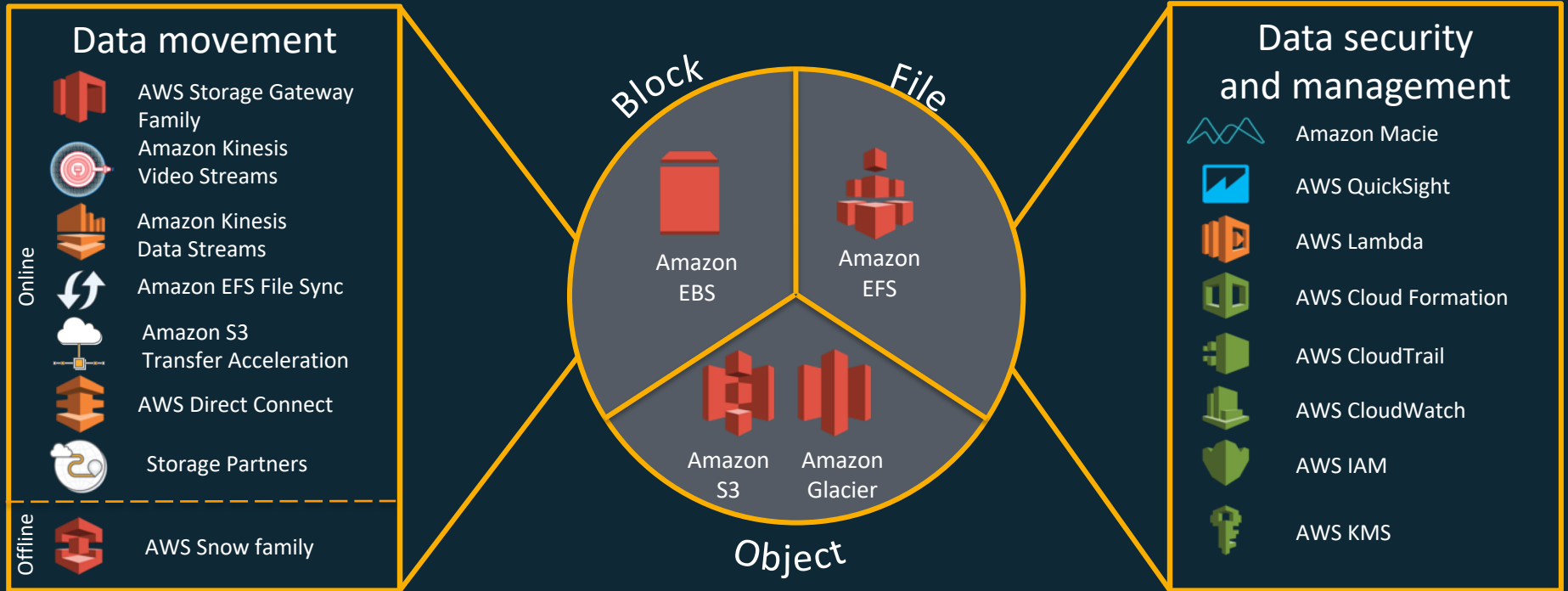
Points of Presence

AWS

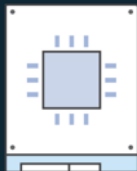
# Compliance: Virtually Every Regulatory Agency

Global	United States		
 <b>CSA</b> Cloud Security Alliance Controls	 <b>CJIS</b> Criminal Justice Information Services	 <b>ITAR</b> International Arms Regulations	 <b>MTCS Tier 3 [Singapore]</b> Multi-Tier Cloud Security Standard
 <b>ISO 9001</b> Global Quality Standard	 <b>DoD SRG</b> DoD Data Processing	 <b>MPAA</b> Protected Media Content	 <b>My Number Act [Japan]</b> Personal Information Protection
 <b>ISO 27001</b> Security Management Controls	 <b>FedRAMP</b> Government Data Standards	 <b>NIST</b> National Institute of Standards and Technology	<b>Europe</b>
 <b>ISO 27017</b> Cloud Specific Controls	 <b>FERPA</b> Educational Privacy Act	 <b>SEC Rule 17a-4(f)</b> Financial Data Standards	 <b>C5 [Germany]</b> Operational Security Attestation
 <b>ISO 27018</b> Personal Data Protection	 <b>FFIEC</b> Financial Institutions Regulation	 <b>VPAT/Section 508</b> Accountability Standards	 <b>Cyber Essentials Plus [UK]</b> Cyber Threat Protection
 <b>PCI DSS Level 1</b> Payment Card Standards	 <b>FIPS</b> Government Security Standards	<b>Asia Pacific</b>	
 <b>SOC 1</b> Audit Controls Report	 <b>FISMA</b> Federal Information Security Management	 <b>FISC [Japan]</b> Financial Industry Information Systems	 <b>G-Cloud [UK]</b> UK Government Standards
 <b>SOC 2</b> Security, Availability, & Confidentiality Report	 <b>GxP</b> Quality Guidelines and Regulations	 <b>IRAP [Australia]</b> Australian Security Standards	 <b>IT-Grundschutz [Germany]</b> Baseline Protection Methodology
 <b>SOC 3</b> General Controls Report	 <b>HIPAA</b> Protected Health Information	 <b>K-ISMS [Korea]</b> Korean Information Security	

# AWS Cloud Storage



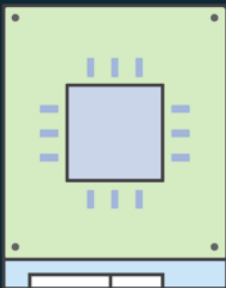
# Amazon EBS Volume Types



SSD



HDD



**gp2**

General Purpose  
SSD



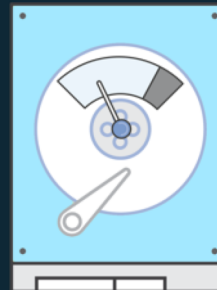
**io1**

Provisioned IOPS  
SSD



**st1**

Throughput Optimized  
HDD



**sc1**

Cold  
HDD

# Amazon EBS Volume Types & Performance

## io1 (SSD)

Critical & I/O intensive databases requiring 99.9% consistent performance

16 TB max size

32,000 max IOPS

500 MB/s max throughput

\$0.125 / GB-month  
\$0.065 / provisioned IOPS

99.9% IOPS  
performance consistency

## gp2 (SSD)

IOPS performance for most workloads with predictable baseline & burst

16 TB max size

10,000 max IOPS

160 MB/s max throughput

\$0.10 / GB-month

99.0% IOPS  
performance consistency

## st1 (HDD)

Big data & analytics workloads requiring consistent high throughput (EMR, Hadoop, Kafka)

16 TB max size

500 IOPS

500 MB/s max throughput (burst)

\$0.045 / GB-month

99.0% throughput  
performance consistency

## sc1 (HDD)

Colder volumes requiring fewer scans (Colder log processing workloads, Splunk)

16 TB max size

250 IOPS

250 MB/s max throughput (burst)

\$0.025 / GB-month

99.0% throughput  
performance consistency

# Amazon S3 & Glacier



## S3

- Internet Scale Storage
- Lower price per GB per month
- Pay as you go

## Glacier

- Optimized for Archival
- Lower price than S3

S3 today hosts trillions of Objects, Exabytes of capacity,  
and designed for **99.999999999%** durability

# Amazon Object Storage Classes



## S3 Standard



## S3 Standard - Infrequent Access



## S3 One Zone - Infrequent Access



## Glacier

Active data  
Instant access  
Min 3 AZs  
**\$0.023**

30 day min duration  
Instant access  
Min 3 AZs  
**\$0.0125**

30 day min duration  
Instant access  
Min 1 AZ  
**\$0.01**

Archive data  
Minutes to Hours  
Min 3 AZs  
**\$0.004**

Automated Lifecycle Policies

# Storage Partner Solutions

## Primary Storage

Solutions that leverage file, block, object, and streamed data formats as an extension to on-premises storage



## Backup and Recovery

Solutions that leverage Amazon S3 for durable data backup



## Archive

Solutions that leverage Amazon Glacier for durable and cost-effective long-term data backup



## BCDR

Solutions that utilize AWS to enable recovery strategies focused on RTO and RPO requirements





# Move Data to AWS Cloud

## Networks

### AWS Direct Connect



A private connection between your data center, office, or colocation environment and AWS

### Amazon S3 Transfer Acceleration



Up to 300% faster transfers into and out of S3. Ideal when working with long geographic distances

### Amazon EFS File Sync



Up to 5x faster file transfers than open source tools. Ideal for migrating data into EFS or moving between cloud file systems

### Amazon Kinesis Firehose



Capture, transform, & load streaming data into S3 for use with Amazon business intelligence and analytics tools

## Shipping

### AWS Snow family



Secure, physical transport appliances that move up to Exabytes of data into and out of AWS

## Hybrid

### APN competency partners



Integrations between 3<sup>rd</sup> party vendors and AWS services. Ideal for leveraging existing software licenses and skills

### AWS Storage Gateways



Hybrid storage that seamlessly connects on-premises applications to AWS storage. Ideal for backup, DR, bursting, tiering or migration

# AWS Snow Family



AWS Snowball

Petabyte-scale  
data migration



AWS Snowball Edge

Compute and storage  
for hybrid/edge  
workloads



AWS Snowmobile

Exabyte-scale  
data migration

# Snowball - Petabyte scale data transport

Ruggedized  
case  
"8.5G Impact"



E-ink shipping label



80 TB

10G network

Rain & dust  
resistant



Tamper-resistant  
case & electronics

All data encrypted  
end-to-end

# Snowmobile from Space

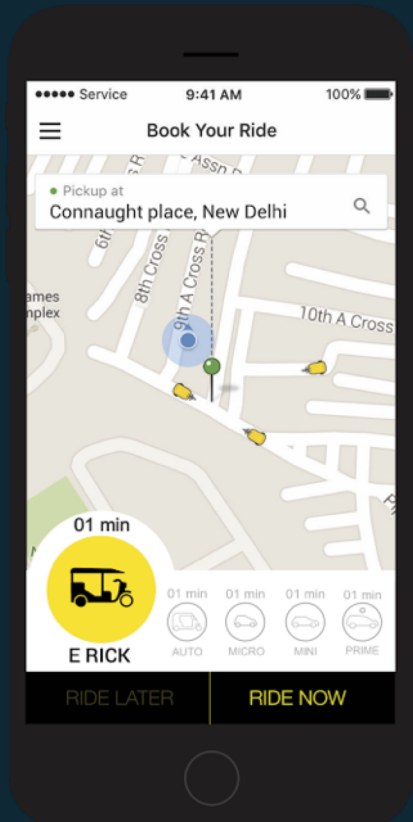


Picture taken by DigitalGlobe's WorldView-3 satellite <http://blog.digitalglobe.com/industry/digitalglobe-moves-to-the-cloud-with-aws-snowmobile/>

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- Founded in Jan 2011
- India's most popular transportation app
- Presence in 110+ cities
- Over 800k vehicles and 900k+ driver-partners on the app !
- Average 3 min ETAs across the country
- Used by over a Million customers everyday !
- All-in on AWS from Day-1



# OLA Platform

100's of API with Millions of Requests/Min



Micro-services



Geo Aware



Real time streaming

Polyglot Persistence



redis

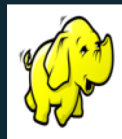


Multiple Data Stores

Petabyte scale analytics



Deep-Learning



Hadoop ecosystem

24/7 Deployments



Container Based



Chef Based



Bug Bounty

Enabled by AWS



Multi-Region- EC2,ELB,VPC



Backend Services- ElastiCache, RDS



Analytics Services-Spot,S3,EMR



Opsworks and Enterprise Support

# Thank You!