



SUMMIT  
ONLINE

L A U O 1

# A newbie's guide to getting started with AWS

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# Agenda

Introduction to cloud computing

Considerations when moving to the cloud

Overview of AWS

Basic services and solutions

Getting started

# Introduction to cloud computing

What is cloud computing?



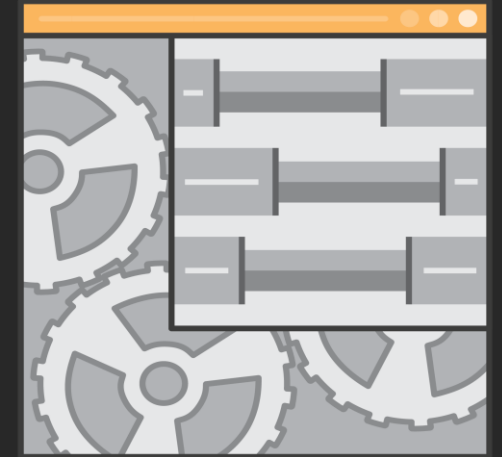
# What is Amazon Web Services (AWS)?



**Everything** you'd want to do in a traditional datacenter



**Provision** network, compute, storage, and database services in the cloud with the click of a button



Run applications – **reliably** and **securely**

# What sets AWS apart?



Experience

Building and managing cloud since 2006

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Service breadth and depth

175+ services to support any cloud workload

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Pace of innovation

History of rapid, customer-driven releases

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Global footprint

24 regions, 76 availability zones, 205+ edge locations

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Pricing philosophy

79 proactive price reductions to date

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Ecosystem

Thousands of consulting/system integrator & technology partners

# Customers move to the cloud for multiple reasons



Cost reduction



Agility and  
dev productivity



Innovation  
and digital  
transformation



Data centre  
consolidation



Colocation or  
outsourcing  
contract changes



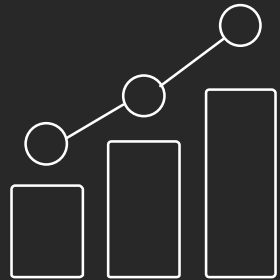
Acquisitions or  
divestitures



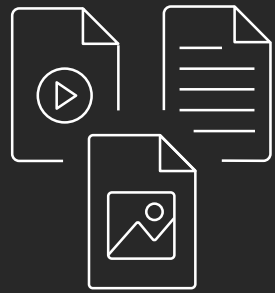
# Increase agility and developer productivity



Use existing staff for higher-value work

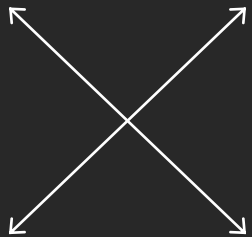


Create momentum to grow new skills and processes

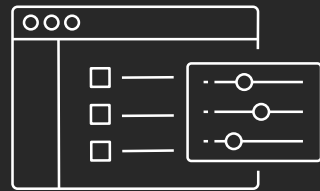


Invent and iterate with flexible resources

# Free up financial resources



Elastic vs. fixed  
capacity



Flexible purchasing  
models



No up-front  
capital



Continually  
optimise costs

# Elevate security



# Gain faster, deeper insights

Transform data into value, without compromising on security or governance



**Speed decision-making to support your business**

**Deepen customer relationships**

**Reduce business risk**

# Improve operational resilience

## Customer benchmarking insights

# of total monthly incidents



**43.4%**

reduction total  
monthly incidents

**94%**

reduction in  
unplanned downtime

Source: n = 500 AWS Customers. AWS Cloud Economics Benchmarking, August 2018.

# Considerations when moving to the cloud

# Considerations when moving to the cloud

- Leadership alignment
- Breadth and depth
- Modernisation
- Data at scale
- Machine learning
- Breaking through barriers








Source: Andy Jassy's re:Invent 2019 keynote









# AWS overview



## TECHNICAL & BUSINESS SUPPORT

-  Support
-  Professional Services
-  Partner Ecosystem
-  Training & Certification
-  Solutions Architects
-  Account Management
-  Security & Pricing Reports






## HYBRID ARCHITECTURES

-  Integrated Networking
-  Direct Connect
-  Identity Federation
-  Integrated App Deployments
-  Data Backups
-  Integrated Resource Management






## MARKETPLACE

-  Business Apps
-  Business Intelligence
-  DevOps Tools
-  Security
-  Networking
-  Databases
-  Storage






## ANALYTICS

-  Data Warehouse
-  Hadoop/Spark
-  Real-time Streaming Data
-  Machine Learning
-  Elastic Search







## APP SERVICES

-  Queuing & Notifications
-  Workflow
-  Search
-  Email
-  Transcoding





## MOBILE SERVICES

-  API Gateway
-  Identity
-  Sync
-  Mobile Analytics
-  Push Notifications

## DEVELOPMENT & OPERATIONS

-  One-click App Deployment
-  DevOps Resource Management
-  Application Lifecycle Management
-  Containers
-  Triggers
-  Resource Templates

## ENTERPRISE APPS

-  Virtual Desktops
-  Sharing & Collaboration
-  Corporate Email
-  Backup

## SECURITY & COMPLIANCE

-  Identity Management
-  Access Control
-  Key Management & Storage
-  Monitoring & Logs
-  Configuration Compliance
-  Resource & Usage Auditing

## CORE SERVICES

-  Compute  
VMs, Auto-scaling & Load Balancing
-  Storage  
Object, Block, & Archival
-  CDN
-  Databases  
Relational, NoSQL, Caching
-  Networking  
VPC, DX, DNS

## INFRASTRUCTURE

-  Regions
-  Availability Zones
-  Points of Presence

# Customer obsessed

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90%

of roadmap originates with customer requests  
and are designed to meet specific needs

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# Global platform

## AWS global network

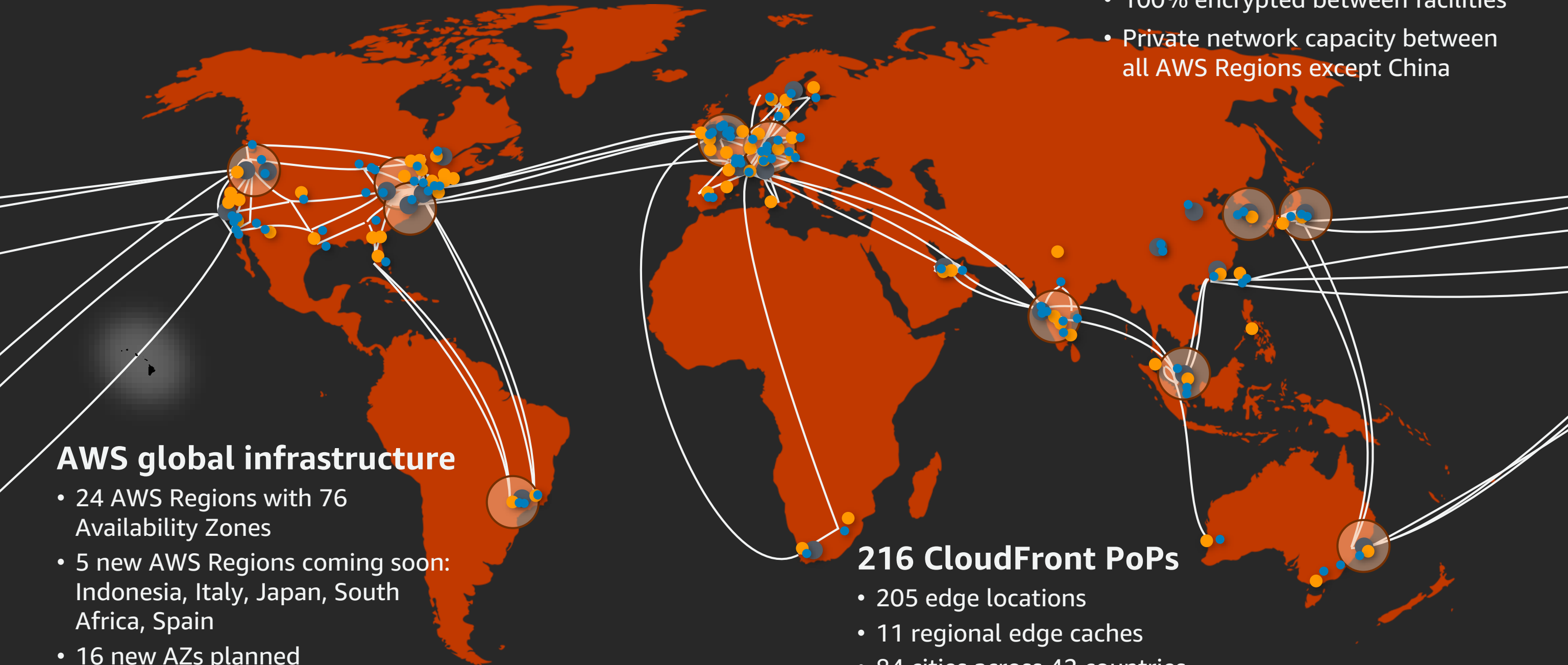
- Redundant 100 GbE network
- 100% encrypted between facilities
- Private network capacity between all AWS Regions except China

## AWS global infrastructure

- 24 AWS Regions with 76 Availability Zones
- 5 new AWS Regions coming soon: Indonesia, Italy, Japan, South Africa, Spain
- 16 new AZs planned

## 216 CloudFront PoPs

- 205 edge locations
- 11 regional edge caches
- 84 cities across 42 countries



# Expansive ecosystem



Thousands of the world's largest technology and consulting companies

48+ global premier consulting partners

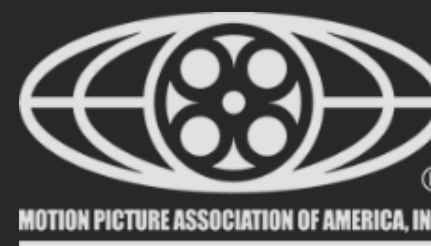
12+ Enterprise-focused competencies



4,200+ products available for 1-click deployment across 35 distinct product categories

Customers run over 143M hours of software per month

# Critical certifications and compliance programs



# Basic services and solutions

# Amazon EC2

Virtual servers in the cloud



Physical servers in  
AWS global Regions

EC2 instances

Guest 1

Guest 2

Guest  $n$

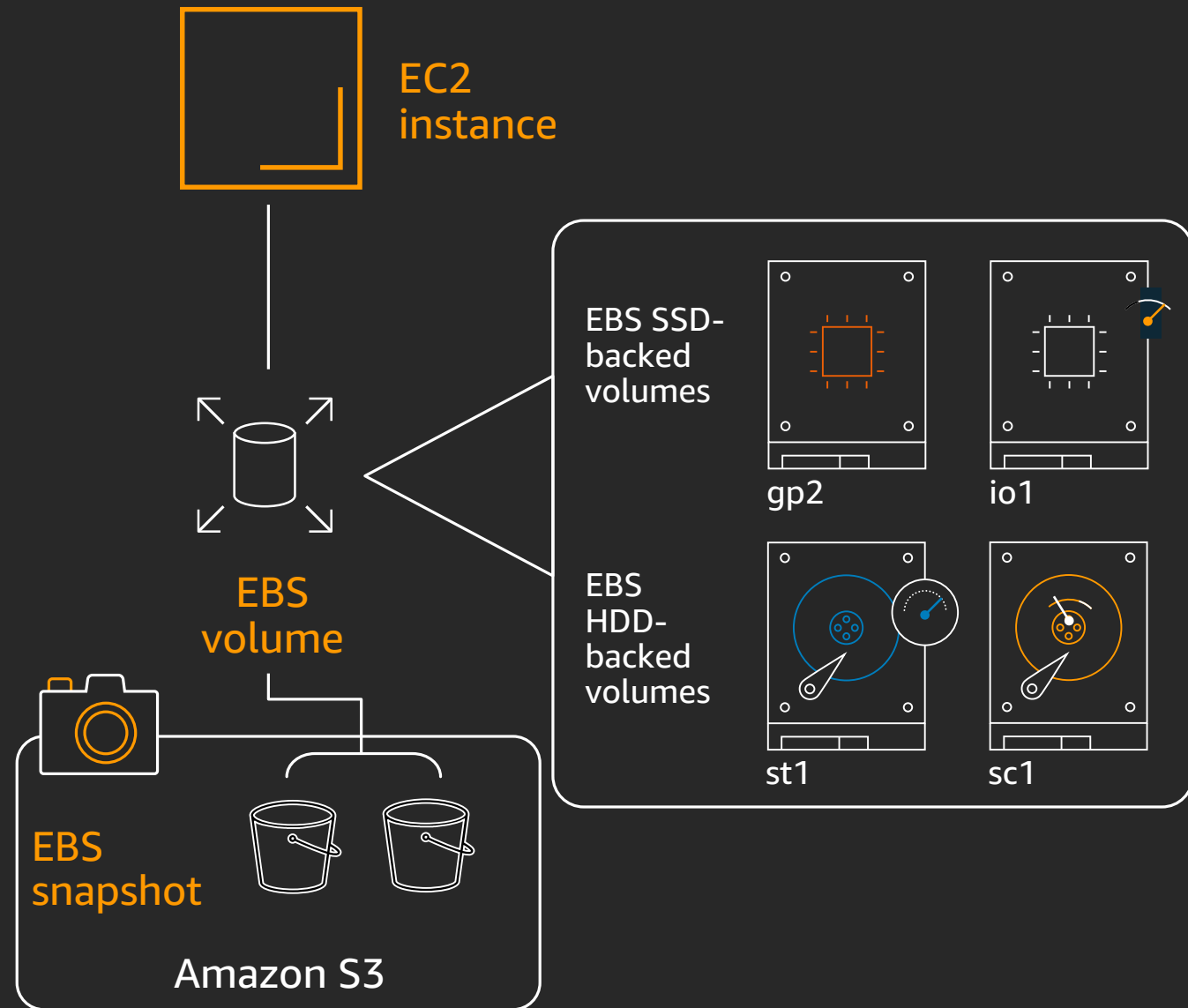
Hypervisor

Host server





# Amazon Elastic Block Store (Amazon EBS)



Block storage as a service

Create, attach, modify through an API

Select storage and compute based on your workload

Detach and attach between instances

Choice of magnetic and SSD-based volume types

Supports snapshots: Point-in-time backup of modified volume blocks



# Purpose-built databases

*Relational*

*Key-value*

*Document*

*In-Memory*

*Graph*

*Time-Series*

*Ledger*



Amazon  
Aurora



Amazon  
RDS



Amazon  
DynamoDB



Amazon  
DocumentDB



Amazon  
ElastiCache



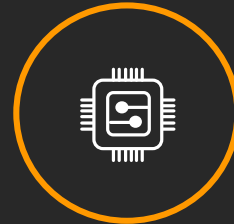
Amazon  
Neptune



Amazon  
Timestream



Amazon  
QLDB



# Amazon S3



# Durable, available, exabyte-scalable

## Secure, compliant, auditable

# High performance

## Low-cost storage and analytics

# Broad network integration

# Amazon WorkSpaces



Fully managed, secure Linux or Windows  
desktops on AWS

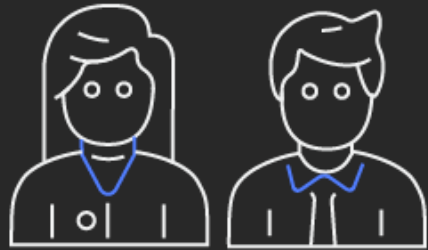
# AppStream 2.0



Deliver desktop applications to any computer

# Getting started

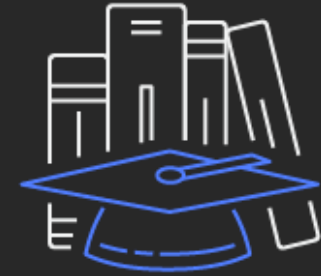
# Next steps



Reach out to your  
AWS account team



Engage Cloud Economics  
for a business case



Build skills  
through training



Check our whitepapers,  
guides, and videos



Engage AWS partners  
for assistance



# AWS Quick Starts

Automated, gold-standard deployments in the AWS Cloud

Quick Starts are built by AWS solutions architects and partners to help you deploy popular technologies on AWS, based on AWS best practices for security and high availability. These accelerators reduce hundreds of manual procedures into just a few steps, so you can build your production environment quickly and start using it immediately.

Each Quick Start includes AWS CloudFormation templates that automate the deployment and a guide that discusses the architecture and provides step-by-step deployment instructions.

## SEE ALSO

For patterns, tech  
building Quick St  
AWS Cloud DevO  
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### ▼ Filter by use case

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- ☐ Blockchain
- ☐ Business productivity
- ☐ Communications
- ☐ Contact center
- ☐ Containers & microservices
- ☐ Data lakes

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Sort by:

#### DEVOPS

UPDATED

Quick Start



#### SECURITY, IDENTITY, COMPLIANCE

UPDATED

Quick Start



#### IBM | CONTAINERS & MICROSERVICES

Quick Start



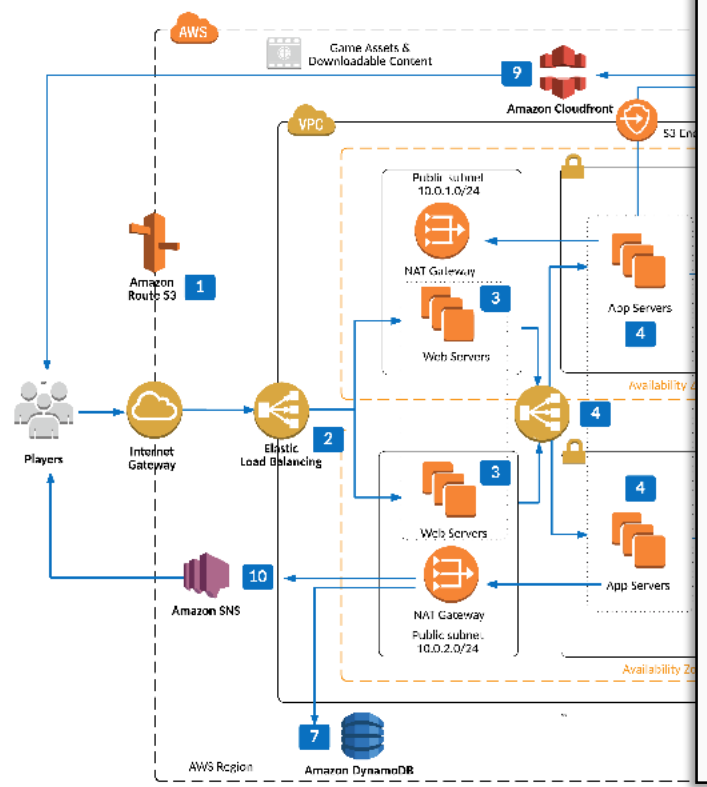
# Reference architectures

Any workload – and guidance along the way

## AWS Industrial Predictive Maintenance Machine Learning Model Reference Architecture

Create a Predictive Maintenance (PdM) Machine Learning (ML) model using AWS IoT, Amazon SageMaker, and Amazon Kinesis.

## Asynchronous Online Gaming Highly Available, Scalable & Elastic to Support Millions of Players



AWS Reference Architectures

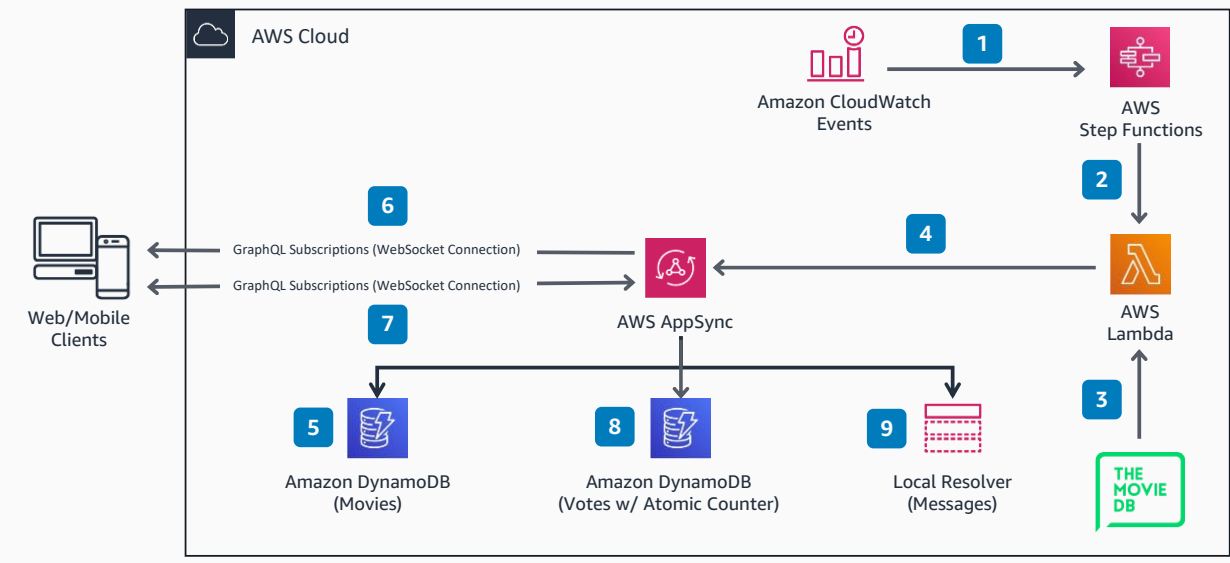
## Amazon Alexa Skill for Airlines Alexa Skill for Booking and Managing Air Travel

NLX used Amazon Web Services (AWS) to implement an Alexa Skill for airlines that enables travelers to check in, book seat upgrades, check their flight status, and more, all done seamlessly via voice. The implementation includes...

- 1 A traveler enables the airline's **Alexa Skill** in their **Amazon Alexa App**. During their first interaction with the skill, **Alexa** prompts the customer to authenticate and pushes an authentication card to the **Amazon Alexa App**.
- 2 The authentication flow is built as a serverless website deployed using **Amazon S3**, **Amazon API Gateway**, and...

## Serverless Web App Real-Time Data Broadcasting AWS AppSync Real-Time Reference Architecture

Create a movie voting application using AWS AppSync, AWS Lambda, AWS Step Functions, and Amazon DynamoDB. Leverage back-end and client facing real-time broadcasting with managed GraphQL subscriptions over WebSockets.



- 1 Amazon CloudWatch Events initiate a workflow in AWS Step Functions every 60 seconds.
- 2 AWS Step Functions trigger AWS Lambda every 10 seconds.
- 3 Lambda calls The Movie DB API to retrieve metadata for a single random movie from the most popular movies list.
- 4 Lambda updates the Movie table, zeroes current votes, and upvotes the leaderboard in the Votes table via GraphQL mutations to AppSync.
- 5 AppSync updates the Movie table with the single current movie retrieved from Lambda.
- 6 All connected clients subscribed to the back-end mutation see the same current movie poster and synopsis on screen (broadcast).
- 7 Clients vote on the current movie during a 10 second window, and can send and receive chat messages in a public chatroom.
- 8 Lambda updates the leaderboard and client's movie votes via AppSync mutations.
- 9 The public chatroom displays current messages on a pub/sub channel via Local Resolver. Messages are not persisted on back-end storage, only new messages are displayed.

<https://github.com/aws-samples/appsync-refarch-realtime>



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AWS Reference Architecture



In summary

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# Thank you!

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