

# AWS Global Infrastructure



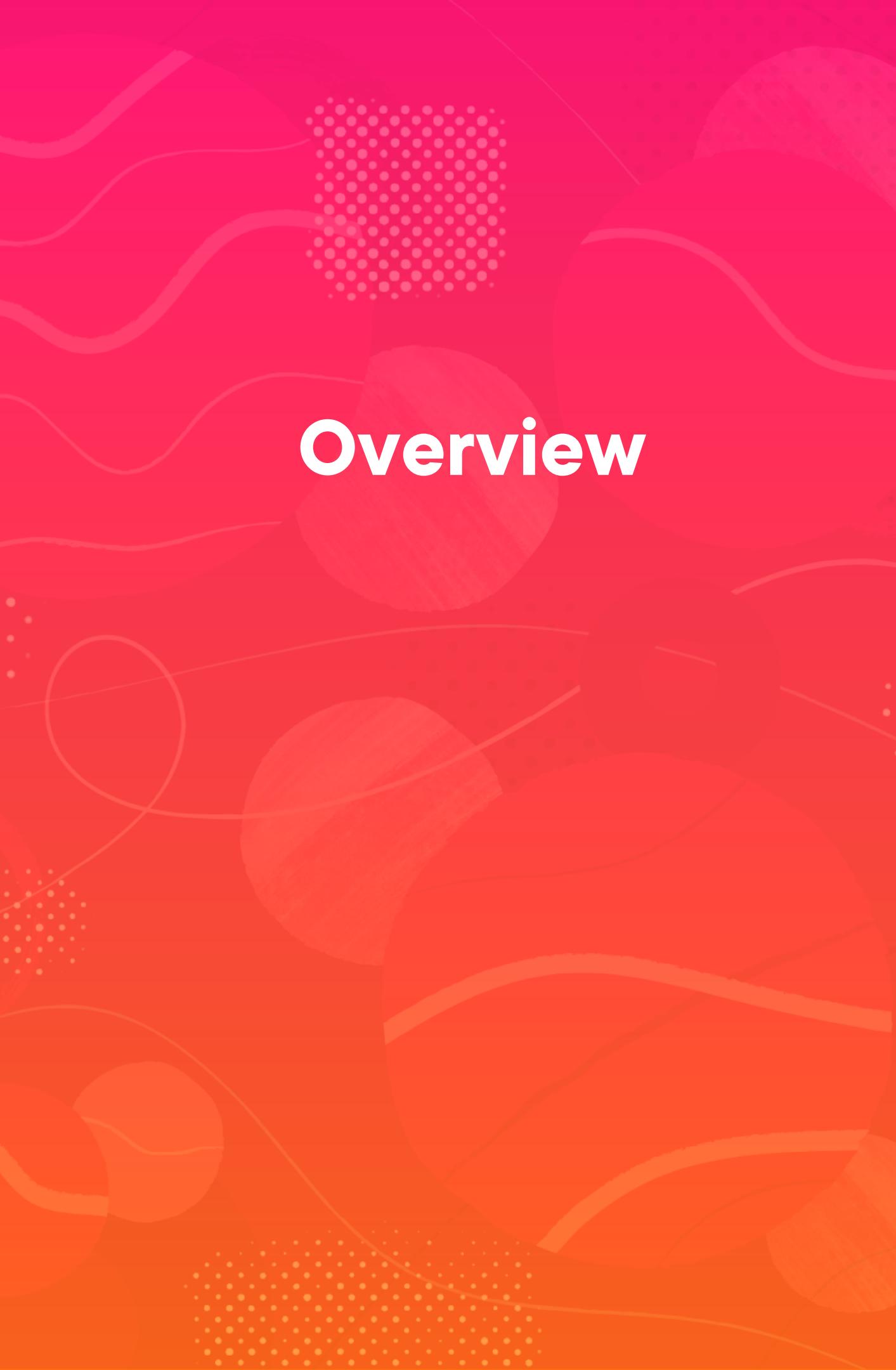
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Regions  
Availability Zones  
Local Zones  
Edge Locations

## AWS Global Infrastructure



## Overview

**Reviewing the elements of the AWS global infrastructure**

**Understanding the use of AWS Regions**

**Understanding Availability Zones within AWS Regions**

**Understanding the use of Local Zones**

**Reviewing the purpose of Edge Locations**

**Utilizing the AWS global infrastructure visualization**



# AWS Regions and Availability Zones

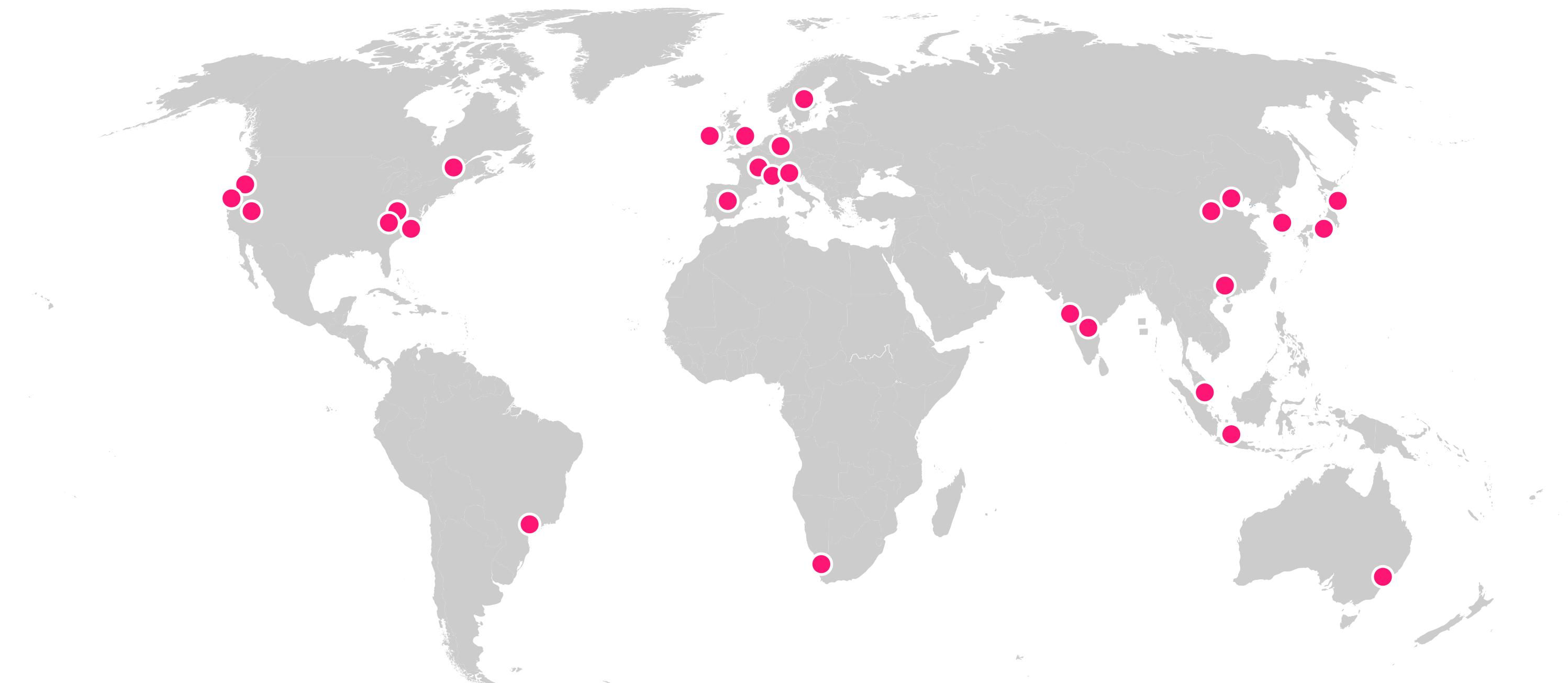
# AWS Regions

**Each region is in a specific geographic location**

**Each geographic location has a cluster of data centers**

**AWS currently has 30 launched regions**

# AWS Regions



# **Availability Zones**

**Consists of one or more data centers**

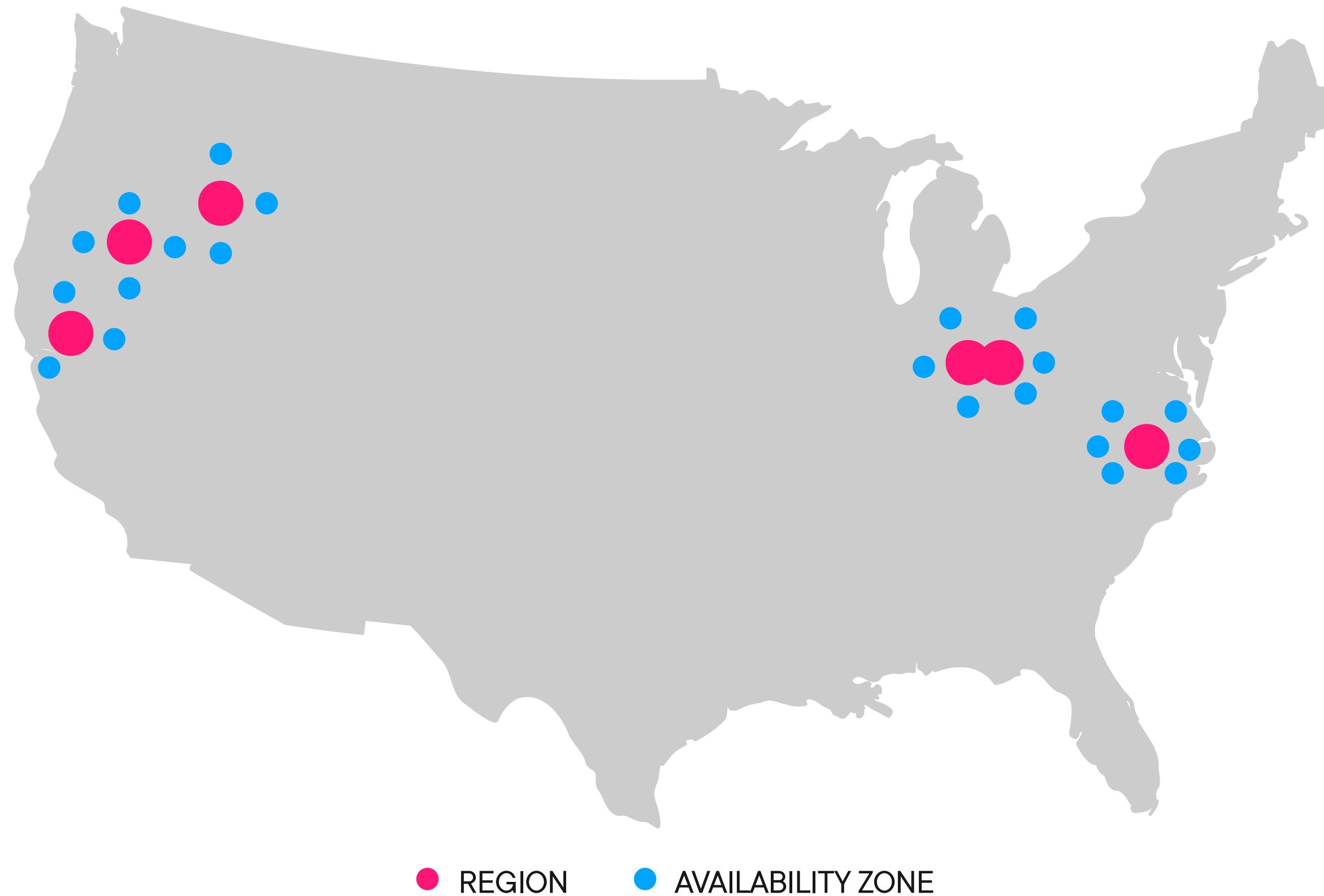
**Multiple availability zones are included with each AWS Region**

**Located within the geographic area of the AWS Region**

**Redundant power, networking, and connectivity**

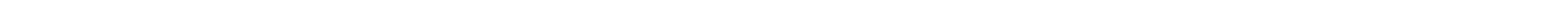
**There are currently 96 availability zones globally**

# United States AWS Regions



# Availability

**Extent to which an application is fulfilling its intended business purpose.**  
**Applications that are highly-available are built in a manner where a single failure won't lessen the application's ability to be fully operational.**



# Region and Availability Zone Naming

**us-east-2a**

— Area —      — Sub-area —      Number AZ

————— Region Name —————

————— Availability Zone Name —————

# AWS Regions

Region	Region Identifier	Region	Region Identifier	Region	Region Identifier
US East (Ohio)	us-east-2	Asia Pacific (Singapore)	ap-northeast-2	Europe (Stockholm)	eu-north-1
US East (N. Virginia)	us-east-1	Asia Pacific (Sydney)	ap-southeast-1	Europe (Zurich)	eu-central-2
US West (N. California)	us-west-1	Asia Pacific (Tokyo)	ap-southeast-2	Middle East (Bahrain)	me-south-1
US West (Oregon)	us-west-2	Canada (Central)	ca-central-1	Middle East (UAE)	me-central-1
Asia Pacific (Hong Kong)	ap-east-1	Europe (Frankfurt)	eu-central-1	South America (São Paulo)	sa-east-1
Asia Pacific (Hyderabad)	ap-south-2	Europe (Ireland)	eu-west-1	Africa (Cape Town)	af-south-1
Asia Pacific (Jakarta)	ap-southeast-3	Europe (London)	eu-west-2		
Asia Pacific (Mumbai)	ap-south-1	Europe (Milan)	eu-south-1		
Asia Pacific (Osaka)	ap-northeast-3	Europe (Paris)	eu-west-3		
Asia Pacific (Seoul)	ap-northeast-3	Europe (Spain)	eu-south-2		

*This list does not include all regions. Regions in China and those used by the US government have been left off the list.*

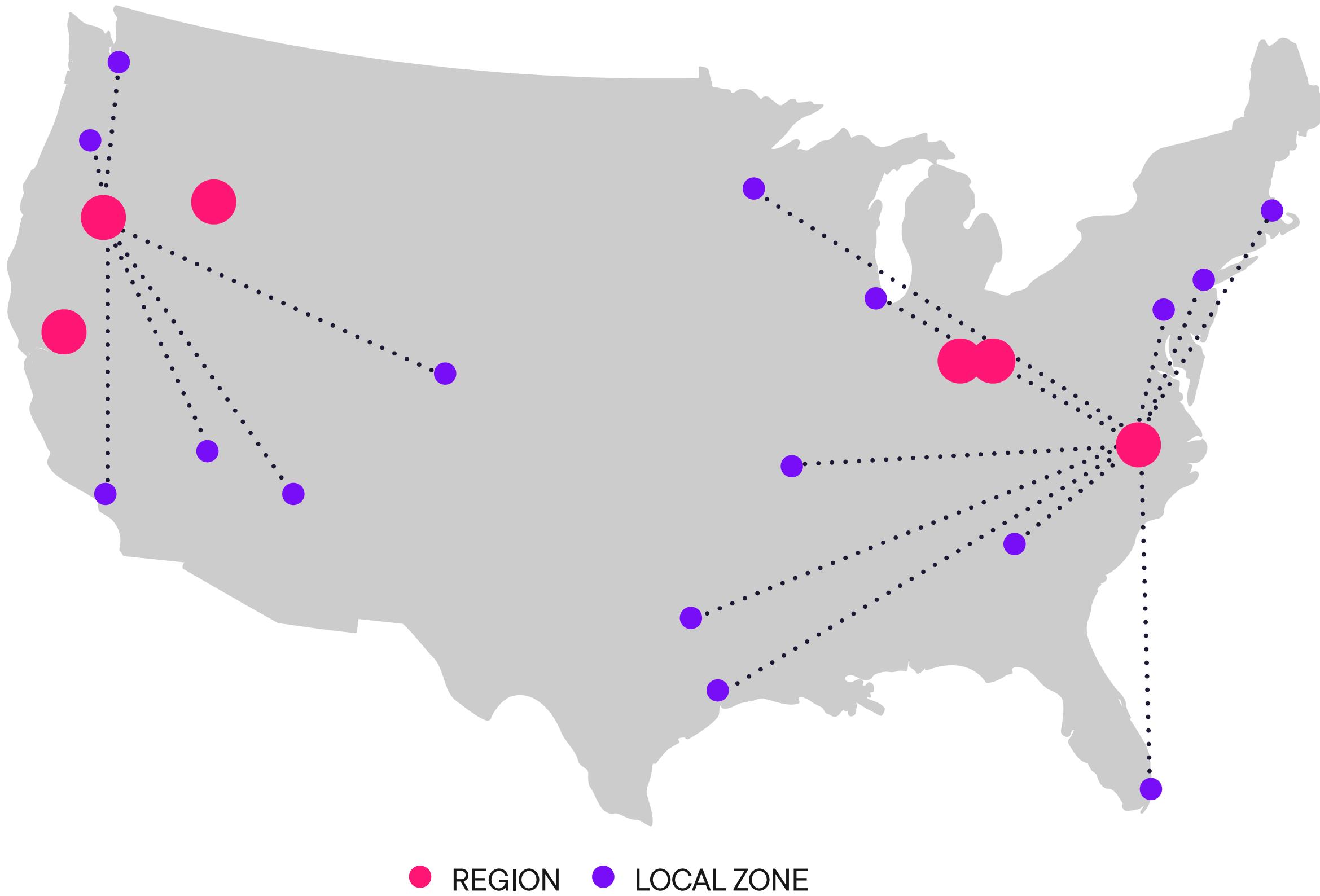


# **Local and Wavelength Zones**

# Local Zones

**AWS Local Zones place compute, storage, database, and other select AWS services closer to end-users. Each AWS Local Zone location is an extension of an AWS Region. AWS Local Zones provide a high-bandwidth, secure connection between local workloads and those running in the AWS Region, allowing you to seamlessly connect to the full range of in-region services through the same APIs and tool sets.**

# United States AWS Local Zones



# **Wavelength Zones**

**Wavelength Zones are AWS infrastructure deployments that embed AWS compute and storage services within communications service providers' (CSP) 5G networks, so application traffic from 5G devices reach application servers running in Wavelength Zones without leaving the telecommunications network.**



# AWS Edge Locations

# Points of Presence

Points of presence are elements of AWS global infrastructure that exist outside of AWS regions. These elements are located in or near populated areas, and specific AWS services use them to deliver content to end users as quickly as possible. Within the overall points of presence, there are two types of infrastructure: **edge locations** and **regional edge caches**.

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**At the time of this course recording,  
there were over 410 points of  
presence globally within the AWS  
global infrastructure with over 400  
edge locations and 13 regional  
edge caches.**

# Edge Locations

**Used as nodes of a global content delivery network (CDN)**

**Utilized by Amazon CloudFront and Amazon Route 53**

**Located globally at over 400 different locations**

**Allows AWS to serve content from locations closest to users**



# Visualizing AWS Global Infrastructure

## Demo

**Reviewing the method of accessing the AWS global infrastructure site**

**Reviewing regions and availability zones within the site**

**Reviewing edge locations within the site**



# Scenarios

# Scenario 1



**Jane's company is looking to transition to AWS**

**They are starting with a few workloads**

**It is a requirement to store backup data in multiple geographic areas**

**Which element of AWS global infrastructure will best suit this need?**

## Scenario 2



**Tim's company serves content through their site to users around the globe**

**They are looking to optimize performance to users around the world**

**They want to leverage a Content Delivery Network (CDN)**

**Which element of the AWS global infrastructure will be used in this case?**

## Scenario 3



**Ellen's company is transitioning one of their legacy applications to AWS**

**This application requires uptime of at least 99.5%**

**They want to be sure any issues at a single data center don't cause an outage**

**Which element of the AWS global infrastructure supports this need?**



# Summary

## **Summary**

- Reviewed the elements of AWS global infrastructure**
- Understood the use of AWS Regions**
- Understood Availability Zones within AWS Regions**
- Understood the use of Local Zones**
- Reviewed the purpose of Edge Locations**
- Utilized the AWS global infrastructure visualization**

# Scenario 1



**Jane's company is looking to transition to AWS**

**They are starting with a few workloads**

**It is a requirement to store backup data in multiple geographic areas**

**Which element of AWS global infrastructure will best suit this need?**

**Solution:** AWS Region

## Scenario 2



**Tim's company serves content through their site to users around the globe**

**They are looking to optimize performance to users around the world**

**They want to leverage a Content Delivery Network (CDN)**

**Which element of the AWS global infrastructure will be used in this case?**

**Solution:** AWS Edge Location

## Scenario 3



**Ellen's company is transitioning one of their legacy applications to AWS**

**This application requires uptime of at least 99.5%**

**They want to be sure any issues at a single data center don't cause an outage**

**Which element of the AWS global infrastructure supports this need?**

**Solution:** AWS Availability Zone (AZ)