

# Azure architectural components

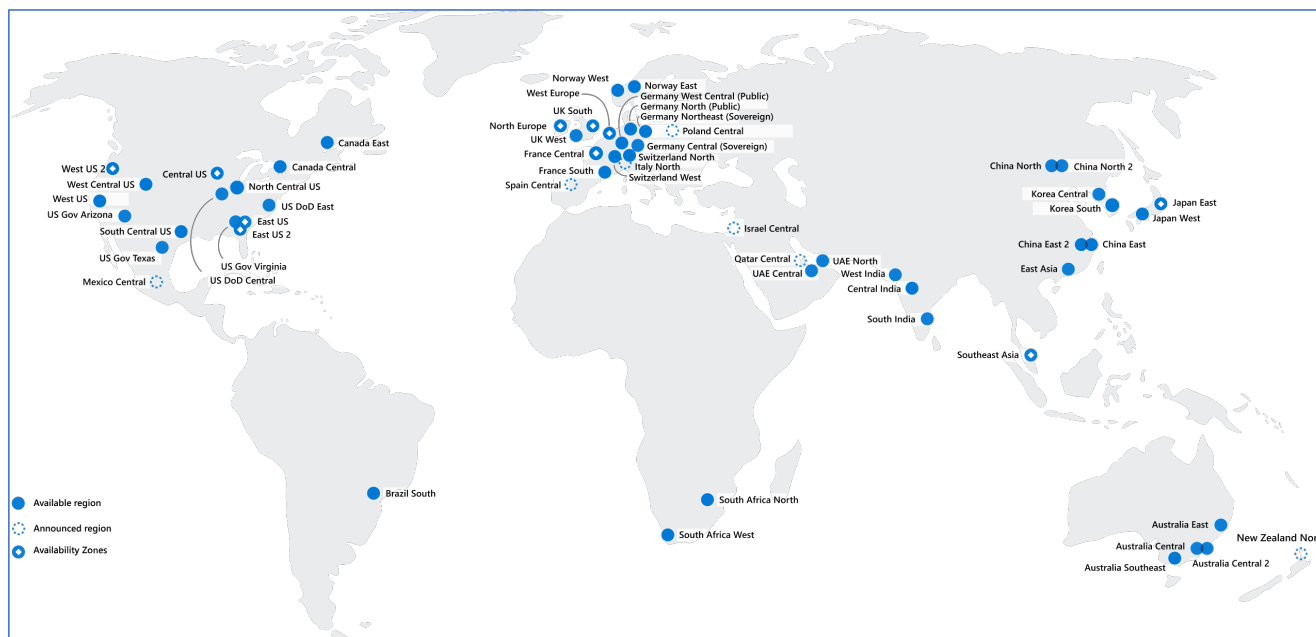


# Core Azure architectural components – Objective Domain

- Describe Azure regions, region pairs, and sovereign regions.
- Describe Availability Zones.
- Describe Azure datacenters.
- Describe Azure resources and Resource Groups.
- Describe subscriptions.
- Describe management groups.
- Describe the hierarchy of resource groups, subscriptions, and management groups.

# Regions

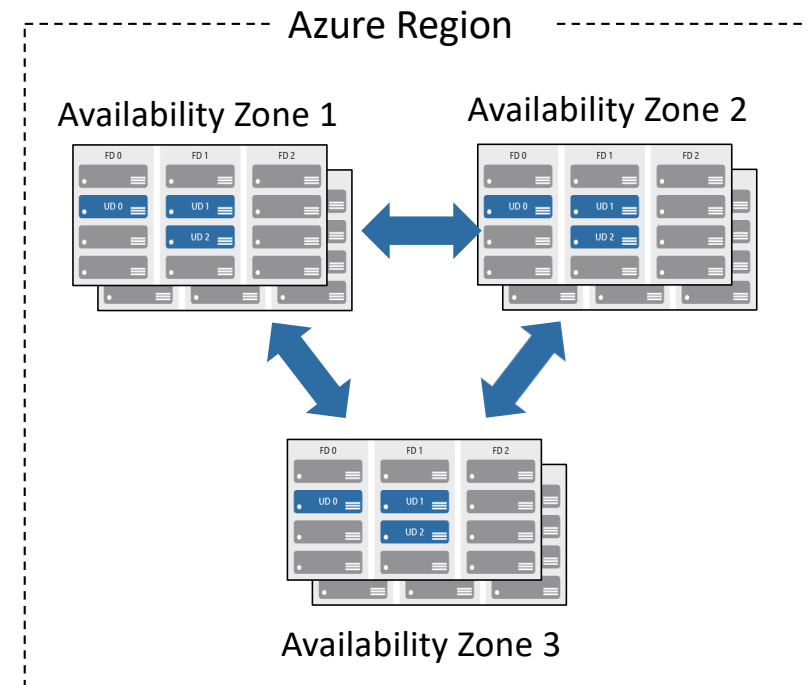
*Azure offers more global regions than any other cloud provider with 60+ regions representing over 140 countries*



- Regions are made up of one or more datacenters in close proximity.
- Provide flexibility and scale to reduce customer latency.
- Preserve data residency with a comprehensive compliance offering.

# Availability zones

- Provide protection against downtime due to datacenter failure.
- Physically separate datacenters within the same region.
- Each datacenter is equipped with independent power, cooling, and networking.
- Connected through private fiber-optic networks.



# Region Pairs

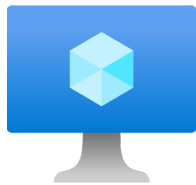
- At least 300 miles of separation between region pairs.
- Automatic replication for some services.
- Prioritized region recovery in the event of outage.
- Updates are rollout sequentially to minimize downtime.

Web Link: <https://aka.ms/PairedRegions>

Region		Region
North Central US		South Central US
East US		West US
West US 2		West Central US
US East 2		Central US
Canada Central		Canada East
North Europe		West Europe
UK West		UK South
Germany Central	↔	Germany Northeast
South East Asia		East Asia
East China		North China
Japan East		Japan West
Australia Southeast		Australia East
India South		India Central
Brazil South (Primary)		South Central US

# Azure Resources

- Azure **resources** are components like storage, virtual machines, and networks that are available to build cloud solutions.



Virtual Machines



Storage Accounts



Virtual Networks



App Services



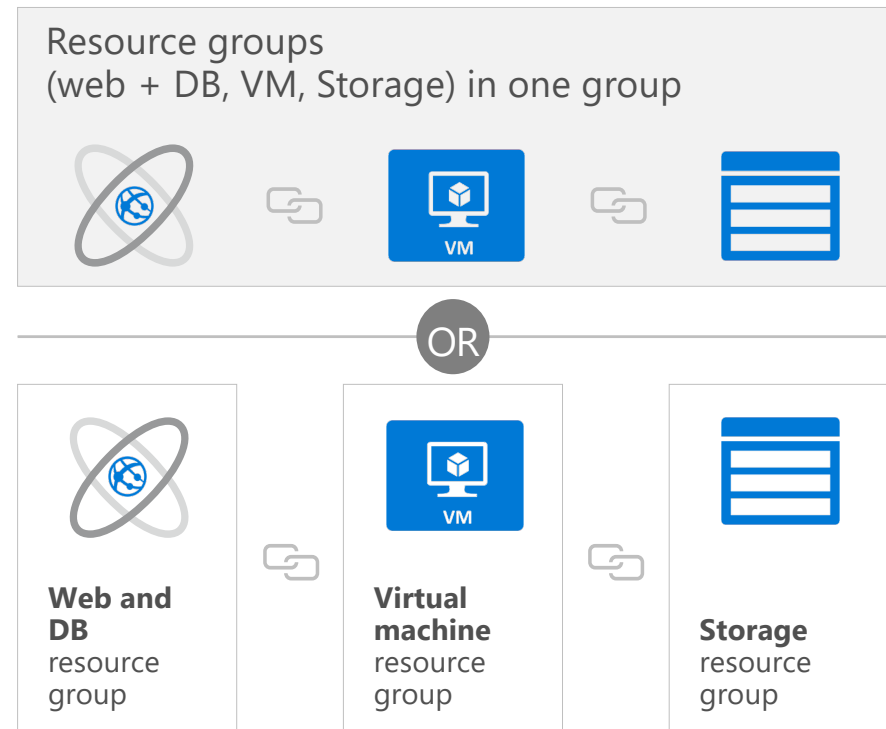
SQL Databases



Functions

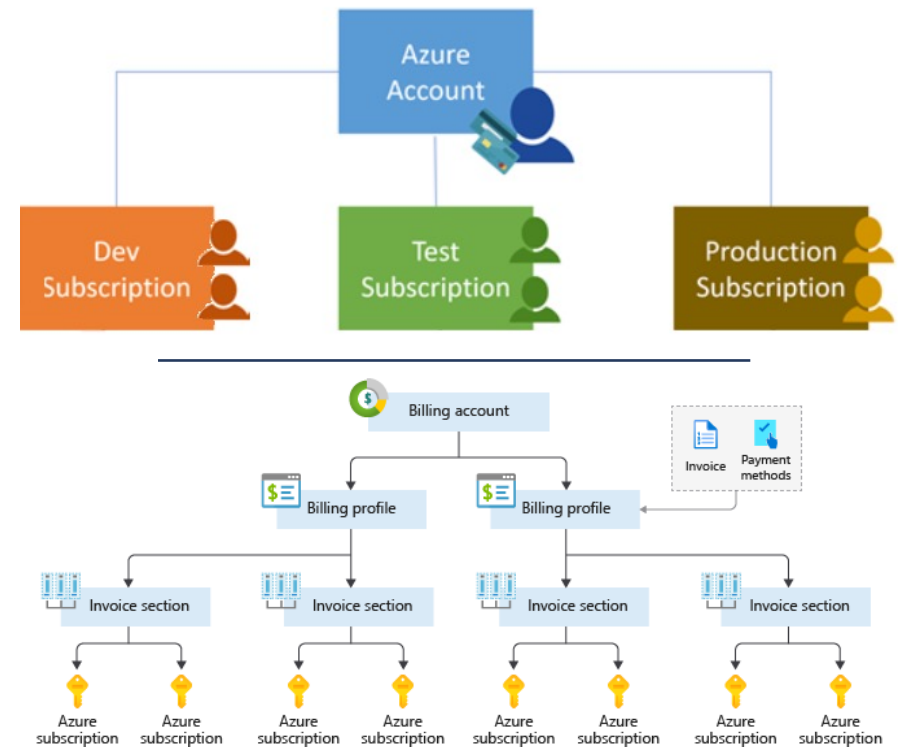
# Resource groups

- A **resource group** is a container to manage and aggregate resources in a single unit.
- Resources can exist in only one resource group.
- Resources can exist in different regions.
- Resources can be moved to different resource groups.
- Applications can utilize multiple resource groups.



# Azure Subscriptions

- An Azure subscription provides you with authenticated and authorized access to Azure accounts.
- Billing boundary: generate separate billing reports and invoices for each subscription.
- Access control boundary: manage and control access to the resources that users can provision with specific subscriptions.





# Management Groups

- Management groups can include multiple Azure subscriptions.
- Subscriptions inherit conditions applied to the management group.
- 10,000 management groups can be supported in a single directory.
- A management group tree can support up to six levels of depth.

