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Cloud Computing V2

IBM Cloud regions and availability zones

IBM Cloud: Choice of regions and availability zones

IBM Cloud Region

A *region* is a geographically and physically separate group of one or more availability zones with independent electrical and network infrastructures that are isolated from other regions. Regions remove shared single points of failure with other regions and ensure low inter-zone latency within the region.
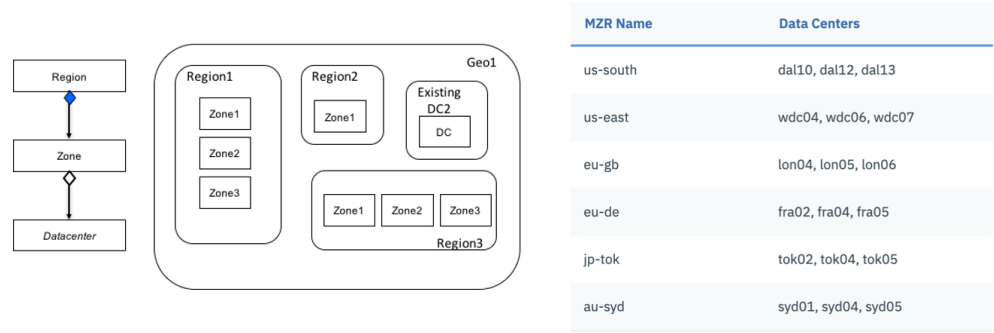
Regions across the world enable customers to support compliance with regulations, laws, and governance relating to data storage (at rest and in transit) and to locate applications based on market and business needs.

A major advantage over the current IBM Cloud data center infrastructure is that most regions across the globe are composed of multiple zones, which empower customers to implement applications and consume IBM Cloud services that are deployed across multiple zones to take advantage of the additional resiliency and high availability that are provided by the redundant infrastructure.

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- Replicate data across zones.

- Fail over between zones without interruption.

- Provide full business continuity.

IBM Cloud Availability Zone

An availability zone is a logically and physically isolated location within an IBM Cloud region with independent power, cooling, and network infrastructures that are isolated from other zones to strengthen fault tolerance by avoiding single points of failure between zones while also ensuring high bandwidth and low inter-zone latency within a region.

MZR Name	Data Centers
us-south	dal10, dal12, dal13
us-east	wdc04, wdc06, wdc07
eu-gb	lon04, lon05, lon06
eu-de	fra02, fra04, fra05
jp-tok	tok02, tok04, tok05
au-syd	syd01, syd04, syd05

IBM Cloud: Multi-Availability Zones

A *Multi-Zone Region (MZR)* has three or more zones that provide high availability and resiliency:

- Typically 3+ data centers within ~10 km of distance of each other with low latency between data centers

Typically 3+ data centers within ~10 km of distance of each other with low latency between data centers.

MZRs enable highly available workloads:

English ∨

- Geographical isolation of zones provides fault isolation to avoid natural disasters that might impact one zone only.

- Independent electrical and mechanical network components for each zone ensure high availability by having redundant resources across zones. Avoids single-point-of-hardware failures.

- Low latency and high bandwidth across zones (within a region) enables distributed services across zones to communicate efficiently.

- Regional services like Elastic Load Balancing and Auto-Scaling increase fault tolerance.

- Cross-region services, such as IBM Cloud Object Storage, keep instances across regions

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