

Azure is a cloud computing platform from Microsoft. Initially it was called Windows Azure. Later renamed to Microsoft Azure. It is an ever expanding set of services to help you build solutions to meet your business goals.

Virtual machines running in the cloud for you to host and run your software.

Storage services to store all sorts of data - relational, non-relational etc.

Software development and deployment services.

Networking and Data analysis services.

Artificial Intelligence, Machine learning, Internet of Things etc.

1.Data Security

2.Availability

Azure Data Centers

Azure global infrastructure terms:-

Datacenters-an Azure data center is a unique physical building that contains many many physical servers with it's own power, cooling and networking infrastructure.

These data centers are located all over the globe.

There are over 160+ Azure datacenters worldwide.

The exact location of these datacenters is not published by Microsoft for obvious security reasons.

=====Geographies

An Azure geography is an area of the world that contains at least one Azure region.

Similarly United States and United Kingdom are geographies.

India

United States

United Kingdom

Canada

Africa

Australia

Europe

Asia Pacific

Azure Government

Austria

Brazil

China

France

Germany

Greece

Israel

Italy

Japan

Korea

Mexico

New Zealand

Norway

Poland

Qatar

Spain

Switzerland

Taiwan

United Arab Emirates

Why are Azure Geographies important

Regulated data like financial, health care or credit data may not be allowed to leave the country. Legally your organisation is required to store such data in the same country where the operations are being carried out. So, if you select a geography like India for example, Azure ensures your data is not stored outside of India. Similarly if you select United States, the data stays inside the states. You have complete control on which geographies you want your data and applications to be deployed. You can be assured, Microsoft will not store customer data outside the geography you specify, except for certain non-regional services.

Regions

an Azure Region is a set of Datacenters that are connected through a dedicated low-latency network.

Region Pairs

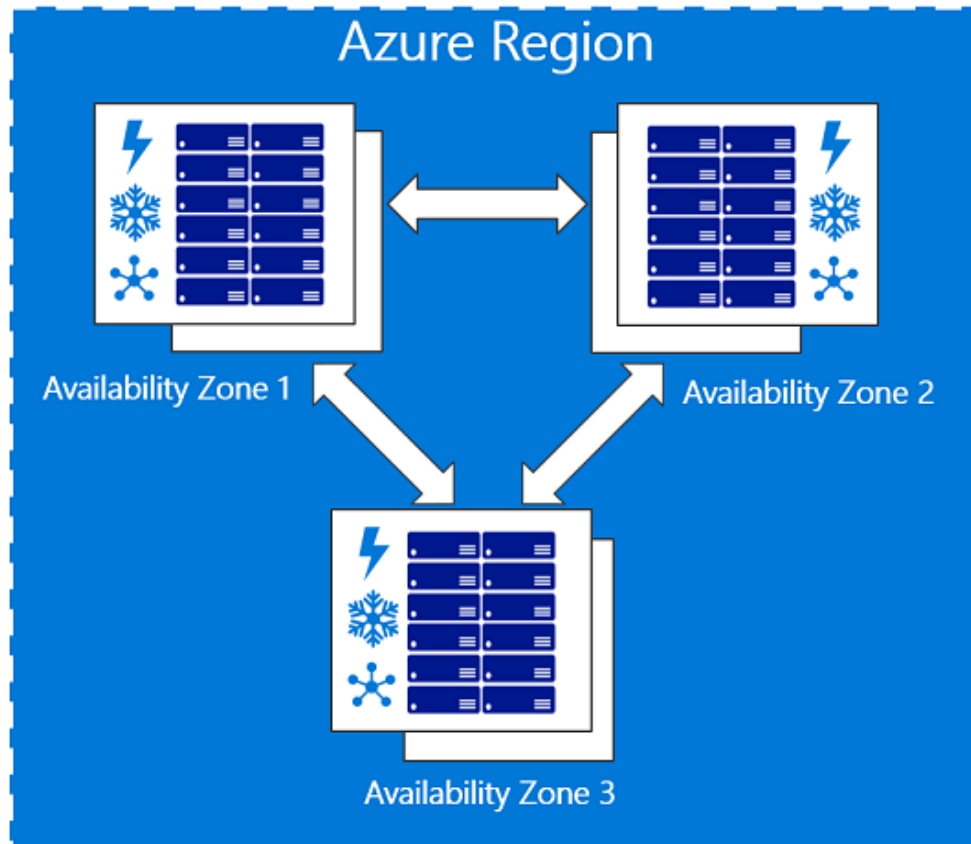
a regional pair consists of two regions within the same geography.

Availability Zones

An Azure Availability Zone is a unique physical location within an Azure region. Each Availability Zone is made up of one or more datacenters with independent power, cooling, and networking.

Azure fault domain and update domain

An Availability Zone is a combination of a fault domain and an update domain.



What is Azure Availability Set?

A logical arrangement for separating the capabilities of different virtual machines is called an Availability Set.

Azure ensures that the virtual machines included in an availability set are distributed among many network switches, storage systems, actual servers, and compute racks.

Only certain Virtual Machines are affected if there is a software or hardware breakdown, while the rest of the service continues to function. Setting up availability sets is crucial for creating trustworthy cloud services.

Update Domains and Fault Domains in an Availability Set

A data center's servers are separated into several physical and logical groupings.

The logical grouping is known as the Update Domain, while the physical grouping is known as the Fault Domain.

