

Microsoft Azure Fundamentals
Training Bootcamp

Azure Global Infrastructure. Regions, Geographies & Availability Zones

Azure Global Infrastructure Overview

- ❑ Azure Global Infrastructure's building blocks are:
 - ❑ Regions
 - ❑ Availability Zones
 - ❑ Geographies
 - ❑ Region pairs
- ❑ We will briefly touch on each of these components in order to understand what they are and what is the value they bring to the customer

Azure Regions

Azure Regions

- ❑ A region is a set of datacenters deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network
- ❑ When deploying resources in Azure we need to select:
 - ❑ Region
 - ❑ High Availability options

Instance details

Virtual machine name * ⓘ

Region * ⓘ (US) Central US ▼

Availability options ⓘ No infrastructure redundancy required ▼

What's inside an Azure Datacenter ?

☐ What's inside the “box” ?

- ☐ Servers
- ☐ Networking
- ☐ Storage
- ☐ Security
- ☐ Balancers
- ☐ Etc.



<https://news.microsoft.com/en-gb/2019/04/09/microsoft-has-doubled-size-of-uk-azure-regions-increasing-compute-capacity-by-more-than-1500-as-country-embraces-digital-transformation/>

Azure Cloud Global Infrastructure



Azure Cloud Global Infrastructure 2020

- ❑ Azure Cloud in numbers:
 - ❑ 55 Azure regions
 - ❑ Available in 140 countries
 - ❑ Up to 1.6 Pbps of bandwidth in a region
 - ❑ Two Azure Government Secret region locations undisclosed

- ❑ Azure Global Infrastructure - Locations:
<https://azure.microsoft.com/en-us/global-infrastructure/locations/>

Geographies in Azure Cloud

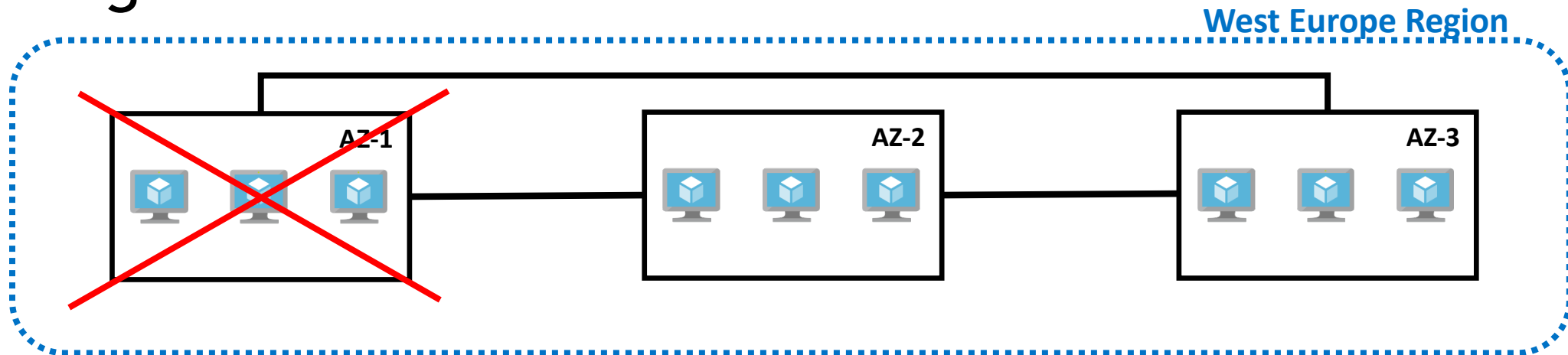
Geographies in Azure Cloud

- ❑ Azure Cloud regions are organized into geographies
- ❑ A geography is a discrete market, typically containing two or more regions, that preserves data residency and compliance boundaries
- ❑ Each region is part of a single geography and specific service availability, compliance and data residency apply
- ❑ Azure Global Infrastructure – Geographies:
<https://azure.microsoft.com/en-us/global-infrastructure/geographies/>

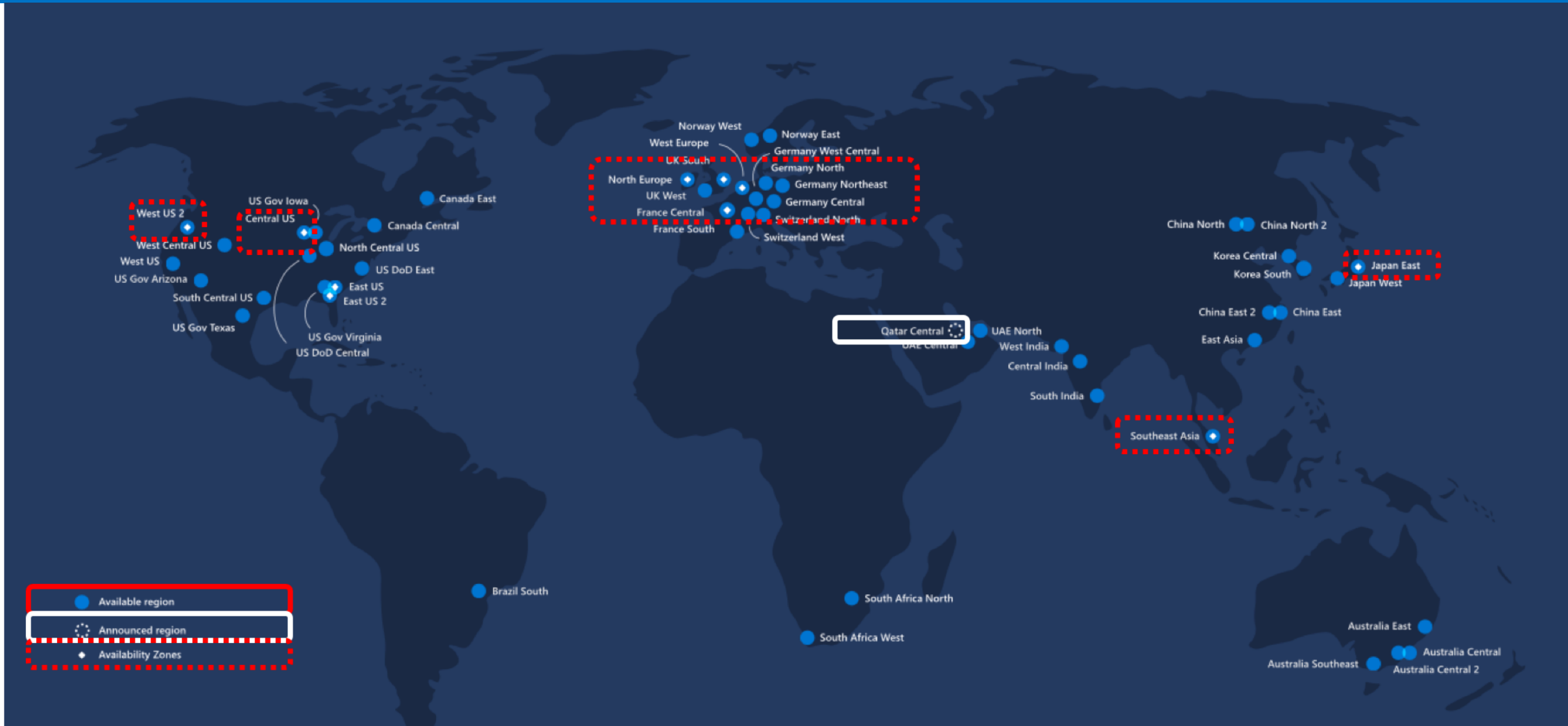
Azure Availability Zones

Azure Availability Zones

- ❑ When deploying highly available, mission-critical apps, it's a good idea to use Azure Availability Zones
- ❑ Availability Zones are physically separate datacenters within an Azure region, with independent power, network and cooling



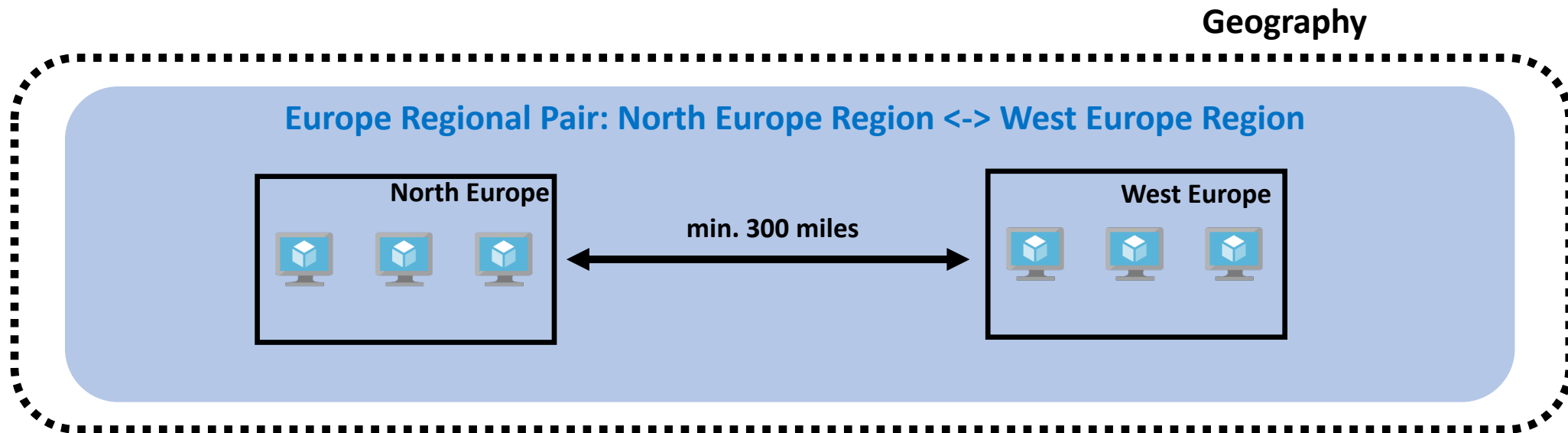
Azure Availability Zones – 10 Regions offer AZs



Azure Region Pairs

Region Pairs in Azure

- ❑ What if an entire Azure Region goes down ?
- ❑ Azure Region Pairs can help in this case, providing business continuity and disaster recovery (in the cloud)



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Thank you