

Availability sets

- An availability set is a logical grouping of VMs within a datacenter that allows Azure to understand how your application is built to provide for redundancy and availability
- An availability set is composed of two additional groupings that protect against hardware failures and allow updates to safely be applied - fault domains (FDs) and update domains (UDs)
 - **Fault domains** - A fault domain is a logical group of underlying hardware that share a common power source and network switch, similar to a rack within an on-premises datacentre
 - **Update domains** - An update domain is a logical group of underlying hardware that can undergo maintenance or be rebooted at the same time.
 - **Managed Disk fault domains** - For VMs using Azure Managed Disks, VMs are aligned with managed disk fault domains when using a managed availability set. This alignment ensures that all the managed disks attached to a VM are within the same managed disk fault domain

Availability zones

- An Availability Zone is a physically separate zone within an Azure region.
- There are three Availability Zones per supported Azure region.
- Each Availability Zone has a distinct power source, network, and cooling, and is separate from the other Availability Zones within the Azure region

Storage availability

- Azure Managed Disks
 - Locally redundant storage (LRS)
- Storage account based disks
 - Locally redundant storage (LRS)
 - Zone redundant storage (ZRS)
 - Geo-redundant storage (GRS)
 - Read-access geo-redundant storage (RA-GRS)