**Azure practical**

1. Created Azure VM and logged into the server using ssh

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Installed nginx and accessed on port 80 in browser with public ip

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1. Attached additional volume to vm1 and mounted on ubuntu to access the storage.

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1. I created a snapshot of the extra volume attached to VM1, then used that snapshot to create a new volume. I attached the new volume to another virtual machine (VM2) and was able to access the data originally created on VM1 from VM2.

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1. Created standard image from vm1 and created other vm from that image with custom script and Placement Group.

Concept: - **Generalized VM Image vs Specialized VM Image**

**Generalized VM Image**

* The image is made reusable — meaning when someone creates a new VM from this image, they still need to **set hostname, admin user, and maybe configure app-specific settings** on first boot.
* Example: You want to share this VM image across teams so they can create their own VMs with different hostnames and users, but with Java already installed.

**Specialized VM Image**

* capture the VM **as is** with application fully configured, hostname fixed, and admin user/password already set.
* Any VM created from this image will be an **exact clone** of the original, including hostname and user.
* Example: You want to restore or replicate the same application environment exactly as it was running, with no extra setup.

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1. **Availability set vs Proximity Placement Group (PPG)**

**Proximity Placement Group**

* **Purpose** -> Provides *low latency* by placing VMs as physically close as possible within the same Azure datacenter.
* **How it works** -> Ensures your VMs are deployed in the **same physical data center or hardware cluster**, reducing network latency.
* **Use Case** -> Latency-sensitive applications (e.g., high-frequency trading, real-time analytics, database + application tightly coupled).

**Availability set:-**

* **Purpose** -> Provides *high availability* for VMs within a region.
* **How it works**:
  + Azure spreads VMs across **fault domains** (different racks/power/network paths) and **update domains** (different groups for planned maintenance).
  + Ensures not all your VMs go down at the same time due to hardware failure or Azure updates.
* **Use Case**: Deploying multiple VMs running the same workload (like web servers, app servers) so that at least one remains available during failures or maintenance.