**1) Azure VM Families and Use Cases**

**General Purpose**

D-Series: Balanced CPU and memory; good for web servers, small databases.

B-Series: Cost-effective burstable VMs; ideal for development and testing environments.

**Compute Optimized**

F-Series: High CPU-to-memory ratio; best for compute-heavy applications like gaming or batch processing.

**Memory Optimized**

E-Series: High memory capacity; suitable for large databases and in-memory analytics.

M-Series: Extremely high memory; used for enterprise applications needing significant RAM.

**Storage Optimized**

L-Series: High disk throughput; ideal for big data workloads and data warehousing.

**GPU**

N-Series: Designed for graphics-intensive applications, machine learning, and HPC tasks.

**High Performance Computing**

H-Series: Optimized for large-scale computations and simulations.

**Confidential Computing**

DC-Series: Provides hardware-based security for sensitive data in use.

**2) Installation Steps for Nginx on Ubuntu**

**Update Package Index**: Open a terminal and run:

sudo apt update

**Install Nginx**: To install Nginx, run:

sudo apt install nginx

**Start Nginx**: After installation, start the Nginx service:

sudo systemctl start nginx

**Enable Nginx to Start at Boot**: To ensure Nginx starts automatically on boot, run:

sudo systemctl enable nginx

**Check Nginx Status**: Verify that Nginx is running:

sudo systemctl status nginx

**Configure Firewall (if needed)** : If you are using UFW, allow HTTP and HTTPS traffic: sudo ufw allow 'Nginx Full'

**Test Nginx Installation**: Open a web browser and navigate to your server's IP address (e.g., http://your\_server\_ip). You should see the Nginx welcome page.

**3) Snap short of OS Disk**

**1. Log in to Azure Portal:**

- Go to <https://portal.azure.com> and sign in.

**2. Navigate to Virtual Machines:**

- Click on \*\*"Virtual Machines"\*\* in the left sidebar.

**3. Select the VM:**

- Click on the name of the VM whose OS disk you want to snapshot.

**4. Go to Disks:**

- In the VM pane, select \*\*"Disks"\*\* from the left menu.

**5. Select the OS Disk:**

- Click on the OS disk name (e.g., `myVM\_OsDisk\_1`).

**6. Create Snapshot:**

- Click on \*\*"Create snapshot"\*\* in the disk pane.

**7. Fill in Snapshot Details:**

- Enter a \*\*name\*\* for the snapshot.

- Choose a \*\*resource group\*\* (existing or new).

- Select \*\*snapshot type\*\* (full or incremental).

**8. Review and Create:**

- Click \*\*"Create"\*\* to start the snapshot process.

**9. Check Snapshot Status:**

- Navigate to \*\*"Snapshots"\*\* in the Azure Portal to view your newly created snapshot.

**4- Difference between Nginx and Apache2 webserver.**

**Nginx:**

**Performance**: Handles many requests at once efficiently, making it great for high traffic.

**Architecture**: Uses an event-driven model, which allows it to manage multiple connections with low resource usage.

**Static Content**: Very fast at serving static files (like images and CSS).

**Configuration**: Uses a simpler, less verbose configuration style.

**Apache:**

**Flexibility**: Highly customizable with many modules that can be added to extend its features.

**Architecture**: Uses a process-based model, which can use more resources under heavy load since each request can start a new process.

**Static and Dynamic Content**: Good at serving both static and dynamic content, but may be slower than Nginx for static files.

**Configuration**: Configuration can be more complex and detailed, but it offers great control.

**Summary:**

**Use Nginx** : if you need speed and can handle a lot of traffic.

**Use Apache** : if you need flexibility and customization for various web applications.

5-Find what are the various way to enter the Azure vms

6-Learn what is Custom script in Azure vm and its use case

**7) Configure a static Website in nginx webserver**

Select VM family and create VM

Take remote from putty for Linux

Login

Basic updates and upgrade

#sudo apt install net-tools

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After that Clone project from GitHub in “HOME Directory”

sudo git clone https://github.com/username/repository.git

Go to this Path in to Ubuntu /var/www/html$ and move All files here.

Move command sudo mv \* /var/www/html$ ( “\*” use when you should move all files in a directory)

After that restart Nginx command (sudo systemctl restart nginx)

For delete folder (Directory with content) sudo rm -r dir