

Project: Cloud Infrastructure Deployment (Azure)

Role: Junior Systems Administrator

Goal: Deploy a secure, scalable Windows Server environment in a virtualised cloud network.

1. The Business Scenario

A small business needs a cloud-based server to host an internal application. My task was to architect and deploy the base infrastructure, ensuring proper resource organisation and network isolation.

2. Technical Architecture & Tools

- **Platform:** Microsoft Azure
- **Operating System:** Windows Server 2022 DataCenter Azure Edition (Gen2)
- **Networking:** Azure Virtual Network (VNet) with Default Subnet (10.0.0.0/24)
- **Storage:** Standard SSD Managed Disk
- **Governance:** Resource Groups for lifecycle management

3. Implementation Steps

Step A: Resource Governance

I initiated the project by creating a Resource Group. This allows for logical grouping, making it easier to monitor costs and delete all related project assets at once when they are no longer needed. I learnt that Resource groups are essential for the "Least Privilege" security model.

Step B: Virtual Networking The Backbone

I deployed a Virtual Network (VNet) to provide a private environment for the server. The VNet ensures that the server can communicate securely and is isolated from the public internet unless otherwise configured.

Configuration: 10.0.0.0/16 address space.

Subnet: Default 10.0.0.0/24.

Step C: Compute Deployment

I provisioned a Windows Server 2022 VM. I used a Standard SSD for a balance of cost-efficiency and performance. After that, I attached the VM to the previously created VNet and assigned a Public IP to allow for remote management (RDP).

4. Key Achievements & Skills Gained

- **Cloud Governance:** Applied naming conventions (e.g., rg-mvelah) to maintain professional standards.
- **Infrastructure as a Service (IaaS):** Gained hands-on experience spinning up compute resources in a live cloud environment.
- **Network Security:** Understand the relationship between VNets, Subnets, and Public IP addressing.

NB I have attached a screenshot of all VM settings below

The screenshot shows the Azure portal interface for a virtual machine named 'vm1-velah'. The 'Properties' tab is selected, displaying detailed configuration information across several sections:

- General:** Computer name: vm1-velah, Operating system: Windows (Windows Server 2022 Datacenter Azure Edition), VM generation: V2, VM architecture: x64, Agent status: Ready, Agent version: 2.7.0.185.1149, Hibernation: Disabled, Host group: -, Processor placement group: -, Calibration status: N/A, Capacity reservation group: -, Disk controller type: SCSI.
- Networking:** Public IP address: 20.11.18.84 (Network interface vm1-velahNIC.v1), 1 associated public IP; Private IP address (IPv4): 172.17.0.4; Private IP address (IPv6): -; Virtual network/Subnet: test-subnet; DNS name: test-vm1-velah.
- Size:** Standard B1s, vCPUs: 1, RAM: 1 GB.
- Source Image Details:** Source image publisher: MicrosoftWindowsServer, Version: Windows Server 2022 Datacenter, Source image plan: 2022-datacenter-secure-edition.
- Disk:** Disk: vm1-velahDisk_1_20ae02bcb4f1bbd8e5a250d0d1, Encryption at host: Enabled, Azure disk encryption: Not enabled, Ephemeral OS disk: N/A, Data disks: 0.
- Auto shutdown:** Auto shutdown: Not enabled, Scheduled shutdown: -.