Assignment 3:

Configuring a Virtual Network with Subnets and Azure Storage Setup

Introduction:

This assignment focuses on deploying and configuring a secure virtual network with two subnets in Microsoft Azure. The goal is to ensure that the virtual machines (VMs) deployed in different subnets can communicate with each other. Additionally, it involves setting up an Azure Storage Account, creating a blob container, and demonstrating file upload and download operations.

This guide provides a step-by-step explanation of both the scenario-based objectives and practical tasks required to complete the assignment, with details on the configuration and verification process.

Virtual Network Configuration

A Virtual Network (VNet) was created with the following details:

- **VNet Name:** `MyVirtualNetwork`
- **Address Space:** `10.0.0.0/16`
- **Region:** East US
- **Resource Group:** `RG.Ass3`

Subnet Configurations

Two subnets were created within the Virtual Network:

- **Subnet1:** `10.0.1.0/24`, named `Subnet1`
- **Subnet2:** `10.0.2.0/24`, named `Subnet2`

These subnets will host the virtual machines, enabling communication between them within the same virtual network.

VM Deployments

Two Virtual Machines (VMs) were deployed, one in each subnet:

- **VM1:**
  - **Name:** `vm01`
  - **Subnet:** `Subnet1`
  - **Private IP Address:** `10.0.1.4`

- **VM2:**
  - **Name:** `newvm02`
  - **Subnet:** `Subnet2`
  - **Private IP Address:** `10.0.2.5`

Communication Verification

In order to verify communication between the two VMs, an inbound rule was added to the Windows Defender Firewall on each VM, allowing **ICMPv4** (ping) traffic.

- **Ping Tests:**
  - Ping tests were conducted between **VM1** and **VM2** using their private IP addresses.
  - The tests were successful, confirming that the VMs in different subnets could communicate effectively.

Azure Storage Account Configuration

An Azure Storage Account was set up to demonstrate file management operations. The details of the storage account configuration are as follows:

- **Storage Account Name:** `storageass03t`
- **Region:** East US
- **Replication Type:** Locally Redundant Storage (LRS)

Blob Container Creation

A blob container was created within the storage account to store files:

- **Blob Container Name:** `newcontainer3`

File Upload/Download

A file transfer operation was successfully demonstrated:

- **File Uploaded:** `download (3) jjif`
- The file was uploaded to the blob container `newcontainer3` and subsequently downloaded to verify successful file transfer between local storage and the Azure blob container.

Conclusion

In this assignment, I configured a virtual network with two subnets, deployed VMs into each subnet, ensured communication between the VMs, and set up an Azure Storage Account. A blob container was created, and file upload/download operations were successfully tested, showcasing the fundamental aspects of Azure networking and storage solutions.

References

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