

Lab Exercise: Azure Load Balancing and VPN Gateway Configuration

Objective:

This lab is aimed at exploring Azure's load balancing capabilities and VPN gateway configurations. Participants will gain hands-on experience with configuring Azure Load Balancer and Application Gateway, understanding load balancing algorithms, and setting up VPN Gateways for secure, scalable, and highly available applications.

Expected Outcome:

- Understanding of Load Balancer algorithms and components, and the ability to create and configure Public and Internal Load Balancers.
- Proficiency in deploying Standard Load Balancers with Availability Zone support for high availability.
- Skills in creating and managing VPN Gateways, including Site-to-Site VPN connections.
- Experience with configuring and managing Application Gateways to support high traffic volumes and ensure application scalability and availability.

Prerequisites:

- An active Microsoft Azure account.
- Familiarity with Azure networking concepts and basic knowledge of VPNs.

Lab Exercise Details:

Part 1: Azure Load Balancer

- **Task 1.1:** Explore Load Balancer algorithms (e.g., round-robin, hash-based) and components (front-end IP configuration, backend pool, health probes, load balancing rules).
- **Task 1.2:** Create a Public Load Balancer and an Internal Load Balancer. Demonstrate how each type is used within Azure.
- **Task 1.3:** Deploy a Standard Load Balancer configured with Availability Zones for enhanced availability and fault tolerance.

Part 2: VPN Gateway and Connections

- **Task 2.1:** Create a VPN Gateway in Azure. Document the steps and configurations required.
- **Task 2.2:** Establish a Site-to-Site VPN Connection between your Azure network and a simulated on-premises network.

- **Task 2.3:** Explore Gateway Configuration Settings, adjusting parameters to optimize performance and security.

Part 3: Azure Application Gateway

- **Task 3.1:** Create an Application Gateway. Describe the process and the specific settings used.
- **Task 3.2:** Configure the Application Gateway to support high traffic volumes. Test its performance under simulated load.
- **Task 3.3:** Implement Autoscaling and Zone-redundant Application Gateway configurations to ensure application resilience and availability across multiple zones.

Submission Guidelines:

- Compile a detailed report documenting the completion of each task. Include screenshots, configuration details, and any scripts or commands used.
- Reflect on the role of each component in the Azure networking ecosystem, discussing how they contribute to building scalable, secure, and highly available applications.
- Discuss any challenges encountered during the lab and how they were resolved.
- Submit your report through the designated platform or via email to the instructor, adhering to any specified formatting or content requirements.