Microsoft Azure Fundamentals

Lesson 05 - Creating and Configuring Virtual Networks

simplilearn

What's in It for Me

- Getting started with virtual networks
- Creating a virtual network
- Getting started with Azure Load Balancer

Getting Started with Virtual Networks

- What are virtual networks?
- Determine the need for virtual networks
- Virtual network capabilities

What are Virtual Networks?

- Logical network boundary
- Provided as a managed service:
  - Automatic routing
  - Built-in DNS name resolution
  - Support for customization
- Private IP address space
- Divided into one or more IP subnets

Determine the Need for Virtual Networks

- Cloud-only deployments:
  - Azure virtual machines
  - Azure cloud services
  - Azure Web apps
- Cross-premises deployments:
  - Direct communication from on-premises systems to Azure virtual machines
- Deployments without virtual network dependency:
  - Azure SQL Database
  - Azure Active Directory

Virtual Network Capabilities

- IP address allocation:
    - Dynamic (default) — support for static IP address assignments
- Traffic routing:
    - User defined routes and forced tunneling
- Traffic filtering:
    - Network Security Groups
- Load balancing:
    - Internal load balancer
- DNS name resolution:
    - Built-in (default) — support for custom (customer-owned) DNS
- Virtual network connectivity:
    - Point-to-site VPN, Site-to-site VPN, Microsoft Azure ExpressRoute
    - VNet-to-VNet

Creating a Virtual Network

- Virtual network components
- Demonstration: Creating a virtual network
- Azure networking components

Virtual Network Components

- Private IP address space:
  - Standard IP address ranges (RFC 1918):
    - 10.x.x.x
    - 172.16.x.x – 172.31.x.x
    - 192.168.x.x
  - Avoid overlap with on-premises and other Azure virtual networks
- IP Subnets:
  - The smallest supported size is /29
  - Use them to separate groups of virtual machines:
    - Security (Network Security Groups)
    - Individual tiers of multi-tier applications
- Name resolution:
  - Azure DNS
  - Custom DNS

Demonstration: Creating a Virtual Network

In this demonstration, you will learn how to create an Azure virtual network.

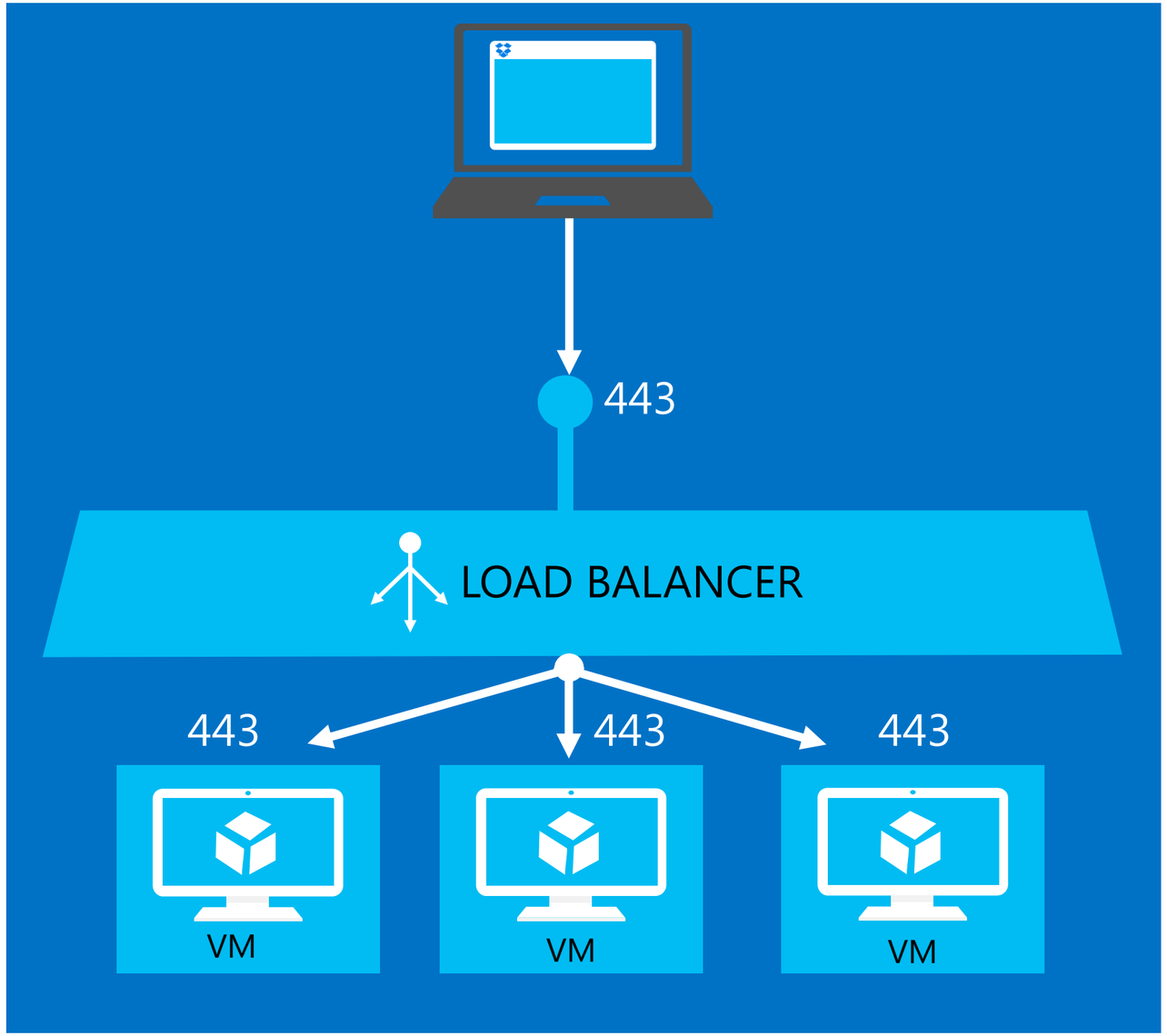
Azure Networking Components

- Load balancers:
  - Azure Load Balancer:
    - Internal and external
    - Protocol layer
  - Application Gateway:
    - Application layer
  - Azure Traffic Manager:
    - DNS-based load balancing (across multiple Azure regions)
- Public IP addresses
- Network interface cards

Getting Started with Azure Load Balancer

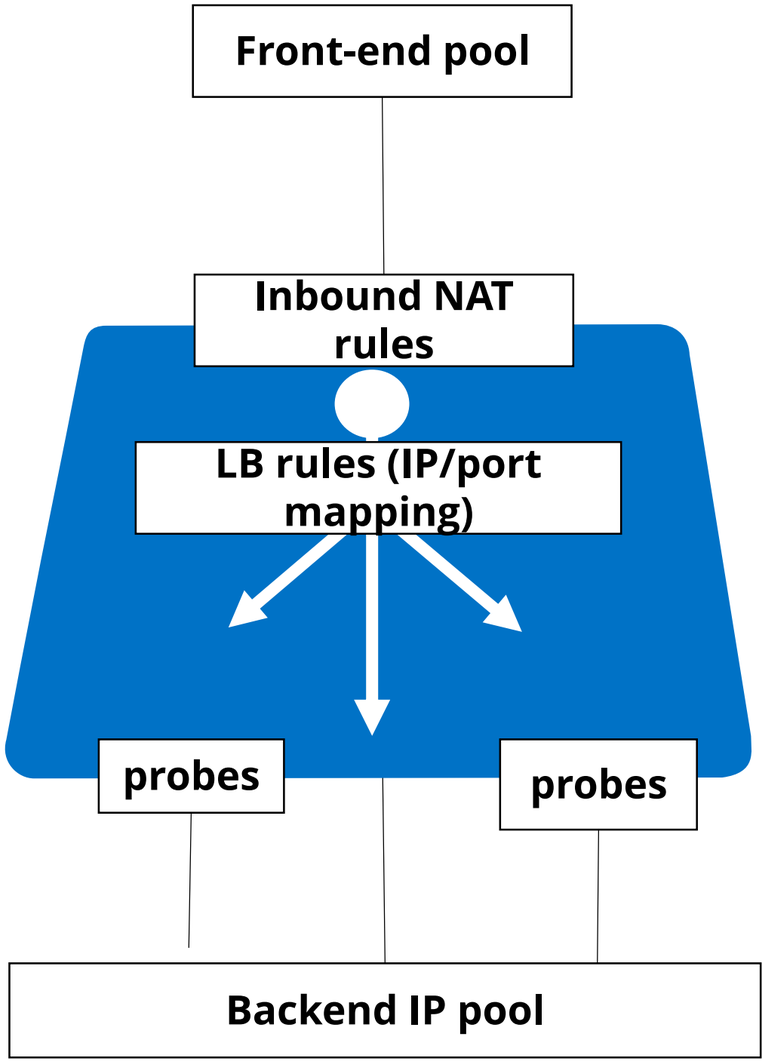
- Overview of Azure Load Balancer
- Creating an Azure load balancer
- Demonstration: Creating an Azure load balancer

Overview of Azure Load Balancer



Creating an Azure Load Balancer

- Assign front-end IP
- Configure a backend pool
- Create load-balancing rules:
  - Name
  - Protocol
  - Port
  - Backend port
  - Backend pool
  - Probe
  - Session persistence
  - Idle timeout
  - Floating IP
- Create Inbound NAT rules:
  - If needed



Demonstration: Creating an Azure Load Balancer

In this demonstration, you will see how to create an Azure load balancer.

Key Takeaways

- Microsoft Azure virtual networks are a critical component to many Azure deployments.
- An Azure virtual network constitutes a logical boundary defined by a private IP address space that you designate.
- The Azure platform relies on Dynamic Host Configuration Protocol (DHCP) for allocating IP addresses to virtual machines that are connected to a virtual network.
- A point-to-site VPN that connects individual computers to an Azure virtual network via a Secure Socket Tunneling Protocol (SSTP) tunnel over the Internet.
- Azure Load Balancer provides functionality equivalent to typical hardware and software load balancers by eliminating single points of failure.

This concludes “Creating and Configuring Virtual Networks.”

Next Lesson is “Cloud Storage”

THANK YOU