Azure Core Networking Services

☰ Chapter	Chapter 3
☰ Domain Coverage	
⚙ Page	59

Summary

Network Addression

- Devices on a network are assigned a network address, which identifies the device and enables routing to and from devices.

- Subnets create virtual networks to segregate devices within an address space.

- When you create a resource in Azure you specify the address segment in which it will reside allowing either static or dynamic address allocation.

Routing

- Routers move move network traffic between segments.

- Allow Private & Public networks to communicate.

Domain Name Service (DNS)

- Host-to-address resolution, allow applications to determine IP by hostname.

Virtual Private Network (VPN)

- Creates an encrypted tunnel between two private networks.

Load Balancer

- Distributes traffic to a group of servers or services, enabling load sharing.

ExpressRoute

- **Azure ExpressRoute**

  - Enables you to establish a secure VPN connection between your on-premises network and Azure through a third-party provider.

- **Azure ExpressRoute Direct** enables you to connect your on-premises network directly to the Microsoft global network.

Content Delivery Network (CDN)

- Places content near users, reduces latency and network traffic.

Exam Essentials

Describe core resources available in Azure

- **VNets**

  - You create VNets in Azure to segregate and organize hosts and services.

  - Each VNet is scoped to a single subscription and region but you can create multiple VNets.

- **Virtual Network Peering**
  - Enables you to connect VNets across regions.
- **Load-Balancing Services**
  - Allows you to balance traffic between multiple servers.
  - **Azure Application Gateway**
    - Used for regional load balancing of web applications.
  - **Azure Front Door**
    - Intended for globally distributed applications.
  - **Azure Traffic Manager**
    - Intended for regional or global DNS-based load balancing. not able to fail over as quickly as Front door.
    - https://azure.microsoft.com/en-us/services/traffic-manager/
- **Virtual Private Networks (VPNs)**
  - Allows you to establish a secure tunnel between two private networks.
  - **Azure VPN Gateway**
    - Use to establish VPN tunnels between Azure VNets and between Azure and on-premises networks.
    - Supports
      - Site-to-Site
        - https://docs.microsoft.com/en-us/azure/vpn-gateway/tutorial-site-to-site-portal
        - The **local network gateway** is a specific object that represents your on-premises location (the site) for routing purposes.
      - Multi-Site
      - Point-to-Site
      - VNet-to-Vnet
  - **Azure ExpressRoute**

- Provides VPN connectivity between your on-premise network and Azure with higher speeds using third-party network providers.
  - **Azure ExpressRoute Direct**
    - Even higher speeds that connects you directly to the Microsoft Network
- **Content Delivery Networks (CDNs)**
  - Enable you to place content where users are located, improving performance, minimizing network traffic, and reducing latency.

Additional Resources

https://docs.microsoft.com/en-us/learn/modules/azure-networking-fundamentals/azure-virtual-network-fundamentals