AZ-700 Designing and Implementing Azure Networking Solutions
(3 Days)

This course teaches Network Engineers how to design, implement, and maintain Azure networking solutions. This course covers the process of designing, implementing, and managing core Azure networking infrastructure, Hybrid Networking connections, load balancing traffic, network routing, private access to Azure services, network security and monitoring. Learn how to design and implement a secure, reliable, network infrastructure in Azure and how to establish hybrid connectivity, routing, private access to Azure services, and monitoring in Azure.

Skills Gained

After completing this course, students will be able to:
- Design, implement and manage hybrid network connections
- Design and implement core Azure networking infrastructure
- Design and implement routing and load balancing in Azure
- Secure and monitor networks
- Design and implement private access to Azure Services

Who Can Benefit

This course is for Network Engineers looking to specialize in Azure networking solutions. An Azure Network engineer designs and implements core Azure networking infrastructure, hybrid networking connections, load balance traffic, network routing, private access to Azure services, network security and monitoring. The azure network engineer will manage networking solutions for optimal performance, resiliency, scale, and security.

Prerequisites

Successful Azure Network Engineers start this role with experience in enterprise networking, on-premises or cloud infrastructure and network security.
- Understanding of on-premises virtualization technologies, including: VMs, virtual networking, and virtual hard disks.
- Understanding of network configurations, including TCP/IP, Domain Name System (DNS), virtual private networks (VPNs), firewalls, and encryption technologies.
- Understanding of software defined networking.
- Understanding hybrid network connectivity methods, such as VPN.
- Understanding resilience and disaster recovery, including high availability and restore operations.

Course Outline

Module 1: Introduction to Azure Virtual Networks
- Explore Azure Virtual Networks
- Configure public IP services
- Design name resolution for your Virtual Network
- Enable Cross-VNet connectivity with peering
- Implement virtual network traffic routing
- Configure internet access with Azure Virtual NAT
  Lab : Exercise: design and implement a Virtual Network in Azure
  Lab : Exercise: configure DNS settings in Azure
  Lab : Exercise: connect two Azure Virtual Networks using global virtual network peering

Module 2: Design and Implement Hybrid Networking
- Design and implement Azure VPN Gateway
- Connect networks with Site-to-site VPN connections
- Connect devices to networks with Point-to-site VPN connections
- Connect remote resources by using Azure Virtual WANs
- Create a network virtual appliance (NVA) in a virtual hub
  Lab : Exercise: create and configure a virtual network gateway
  Lab : Exercise: create a Virtual WAN by using Azure Portal

Module 3: Design and implement Azure ExpressRoute
- Explore Azure ExpressRoute
- Design an ExpressRoute deployment
- Configure peering for an ExpressRoute deployment
- Connect an ExpressRoute circuit to a VNet
- Connect geographically dispersed networks with ExpressRoute global reach
- Improve data path performance between networks with ExpressRoute FastPath
- Troubleshoot ExpressRoute connection issues
  Lab : Exercise: configure an ExpressRoute gateway
  Lab : Exercise: provision an ExpressRoute circuit

Module 4: load balancing non-HTTP(S) traffic in Azure
- Explore load balancing
- Design and implement Azure load balancer using the Azure portal
- Explore Azure Traffic Manager
  Lab : Exercise: create and configure an Azure load balancer
  Lab : Exercise: create a Traffic Manager profile using the Azure portal

Module 5: Load balancing HTTP(S) traffic in Azure
- Design Azure application gateway
- Configure Azure application gateway
- Design and configure Azure front door
  Lab : Exercise: deploy Azure application gateway
  Lab : Exercise: create a front door for a highly available web application

Module 6: Design and implement network security
- Secure your virtual networks in the Azure portal
- Deploy Azure DDoS Protection by using the Azure portal
- Deploy Network Security Groups by using the Azure portal
- Design and implement Azure Firewall
- Working with Azure Firewall Manager
- Implement a Web Application Firewall on Azure Front Door
  Lab : Exercise: configure DDoS Protection on a virtual network using the Azure portal
  Lab : Exercise: deploy and configure Azure Firewall using the Azure portal
  Lab : Exercise: secure your virtual hub using Azure Firewall Manager

Module 7: Design and implement private access to Azure Services
- Explain virtual network service endpoints
- Define Private Link Service and private endpoint
- Integrate Private Link with DNS
- Integrate your App Service with Azure virtual networks
  Lab : Exercise: restrict network access to PaaS resources with virtual network service endpoints
  Lab : Exercise: create an Azure private endpoint using Azure PowerShell

Module 8: Design and implement network monitoring
- Monitor your networks with Azure Monitor
- Monitor your networks with Azure Network Watcher
  Lab : Exercise: Monitor a load balancer resource by using Azure Monitor