

Designing and Implementing Microsoft Azure Networking Solutions

The Designing and Implementing Microsoft Azure Networking Solutions training prepares network engineers to design, implement, and maintain modern networking solutions in the Microsoft Azure cloud. Participants learn the principles of building secure, scalable, and highly available network infrastructure, including virtual network configuration, hybrid connectivity, routing, load balancing, security, and monitoring.

During the course, participants learn how to design and implement reliable network connections, private access to Azure services, and mechanisms that ensure the security and high performance of cloud environments.



Training recipients

The training is intended for individuals responsible for planning, deploying, and maintaining network infrastructure in the Microsoft Azure environment, particularly for:

- network engineers who want to specialize in cloud solutions,
- system and IT infrastructure administrators,
- security and connectivity specialists,
- individuals aiming to gain competencies for the Microsoft Certified: Azure Network Engineer Associate role.



Benefits

- Designing and deploying hybrid network connections – you will learn how to integrate on-premises networks with the Azure cloud using VPN Gateway, ExpressRoute, and Virtual WAN.

- Implementing Azure network infrastructure – you will learn how to create and configure virtual networks, routing, and public and private access points.
- Load balancing and traffic optimization – you will learn how to use Azure Load Balancer, Application Gateway, and Azure Front Door to ensure application performance and reliability.
- Securing the network – you will learn best practices for implementing security services such as Azure Firewall, Network Security Groups, DDoS Protection, and Web Application Firewall.
- Monitoring and maintaining the network – you will learn how to monitor the health and performance of the infrastructure using Azure Monitor and Network Watcher.



Training program

1: Introduction to Azure virtual networks

- Be acquainted with Azure virtual platforms
- Configure public IP services
- Design name recognition for your own virtual network
- Initiate connection between virtual networks using parallel communication
- Implement traffic routing in virtual network
- Configure Internet access using Azure Virtual NAT service

2: Design and implement hybrid network

- Design and implement Azure VPN Gateway
- Link networks with site-to-site VPN connections
- Connect devices to network with the use of point-location VPN connections
- Link remote resources with the use of virtual WAN Azure platform networks
- Create Network Virtual Appliance (NVA) in virtual concentrator

3: Design and implement Azure ExpressRoute

- Be acquainted with Azure ExpressRoute service
- Design ExpressRoute implementation
- Configure parallel communication for ExpressRoute service implementation
- Connect ExpressRoute service circuit to virtual network
- Link geographical distributed networks with global range of ExpressRoute service
- Improve performance of data path between networks with the use of ExpressRoute FastPath service
- Troubleshooting ExpressRoute connection

4: Balancing overload traffic different than HTTP(S) on Azure platform

- Be acquainted with overload balancing
- Design and implement Azure platform overload balancing system with the use of Azure portal
- Get to know Azure traffic Manager

5: Balancing overload of HTTP(S) traffic on Azure platform

- Design Azure application gateway
- Configure Azure platform application gateway

- Design and configure Azure front door
- 6: Design and implement network securities
- Secure your own virtual networks on Azure portal
 - Implement Azure DDoS Protection service using Azure portal
 - Implementing network security groups using Azure portal
 - Design and implement Azure Firewall
 - Working with Azure Firewall Manager
 - Implement Web application on Azure Front Door platform
- 7: Design and implement private access to Azure services
- Define usługę Private Link service and private end-point
 - Explain virtual network end-points
 - Integrate Private Link with DNS
 - Integrate App Service with Azure platform virtual networks
- 8: Design and implement network monitoring
- Monitor your own networks using Azure Monitor
 - Monitor your own network with the use of Azure Network Watcher



Expected preparation of the participant

- Understanding local virtualization technologies including: virtual machines, virtual networks and virtual hard disks.
- Understanding network configuration, including TCP/IP, Domain Name System (DNS), Virtual Private Network (VPN), firewalls and coding technology.
- Understanding software-defined networks.
- Understanding hybrid network connectivity methods, such as VPN.
- Understanding resilience and Disaster Recovery including high availability operations and restoring.
- To increase the comfort of work and training's effectiveness we suggest using an additional monitor. The lack of additional monitor does not exclude participation in the training, however, it significantly influences the comfort of work during classes.



Training Includes

- manual in electronic form available on the platform:
- <https://learn.microsoft.com/pl-pl/training/>
- access to Altkom Akademia's student portal

Training method:

- theory

- demos
- individual laboratories
- 70% theory
- 30% practice



Language

- **Training:** English
- **Materials:** English

Examination method

Become Microsoft Certified: https://arch-center.azureedge.net/Credentials/Certification-Poster_en-us.pdf

On-line exam. Record at: <https://home.pearsonvue.com/Clients/Microsoft.aspx>

Duration

3 days / 21 hours

Examination description

Microsoft Certified: Azure Network Engineer Associate

Exam URL: <https://docs.microsoft.com/en-us/learn/certifications/exams/AZ-700>

Become Microsoft Certified: https://arch-center.azureedge.net/Credentials/Certification-Poster_en-us.pdf