**Azure Networking Concepts Quiz**

**1. Which of the following is the primary purpose of an Azure Virtual Network (VNet)?**

a) To manage external traffic to a public-facing web application.

b) To connect multiple Azure regions together seamlessly.

c) To provide a private, isolated network for your Azure resources to communicate with each other.

d) To create a VPN connection to an on-premises datacenter.

2. **You need to segment a VNet into smaller subnets. What is the most common reason for doing this?**

a) To reduce the cost of the VNet.

b) To increase the overall IP address space of the VNet.

c) To enable a VNet to span multiple Azure regions.

d) To apply different Network Security Groups (NSGs) to each subnet.

3. **What is the purpose of a Network Security Group (NSG) in Azure?**

a) To control inbound and outbound network traffic to a VNet.

b) To manage DNS resolution for a private endpoint.

c) To filter network traffic to and from Azure resources in a VNet.

d) To encrypt all data passing between two virtual machines.

4. **When an NSG is associated with both a subnet and a virtual machine’s network interface (NIC), which rule takes precedence for inbound traffic?**

a) The NSG rules on the subnet take precedence.

b) The NSG rules on the NIC take precedence.

c) Both NSGs are evaluated, and a "Deny" rule on either NSG takes precedence over an "Allow" rule.

d) The NSG with the highest priority rule takes precedence.

5. **What is the primary difference between a public Azure DNS zone and a private Azure DNS zone?**

a) A public DNS zone supports more record types than a private DNS zone.

b) A private DNS zone can only be linked to a single VNet, while a public zone can be linked to multiple.

c) A public DNS zone manages DNS records for public domain names, while a private DNS zone resolves records for resources within a VNet.

d) A public DNS zone is free, but a private DNS zone incurs a cost per query.

6. **You have a virtual machine and a private endpoint in an Azure VNet. You want to ensure the VM can resolve the private endpoint’s FQDN to its private IP address. Which Azure DNS service should you use?**

a) Public Azure DNS

b) Azure Active Directory DNS

c) Private Azure DNS

d) On-premises DNS server

7. **What is the purpose of an Application Security Group (ASG) in Azure?**

a) To define a logical grouping of virtual machines that share a common security policy.

b) To apply a policy that automatically encrypts all disks attached to a group of virtual machines.

c) To provide a private IP address range for a specific application.

d) To route traffic from a public IP to a specific virtual machine.

8. **You have two virtual machines, VM-A and VM-B, in the same subnet. You want to apply different NSG rules to each VM. What is the most efficient way to achieve this?**

a) Create a single NSG with two rules, one for each VM's IP address.

b) Create two separate NSGs and associate one with each VM’s NIC.

c) Create two separate subnets, place one VM in each, and apply a different NSG to each subnet.

d) Create a new VNet for each VM and apply a unique NSG to each VNet.

9. **What is the default behavior of an NSG when there are no inbound or outbound rules explicitly defined?**

a) All inbound and outbound traffic is denied by default.

b) All inbound traffic is denied, but all outbound traffic is allowed.

c) All inbound traffic is allowed, but all outbound traffic is denied.

d) All inbound and outbound traffic is allowed by default.

10. **You are setting up a hybrid network with Azure. What is the main benefit of using VNet peering instead of a VPN Gateway for connecting two VNets in the same region?**

a) VNet peering is more secure because all traffic is encrypted by default.

b) VNet peering provides higher bandwidth and lower latency for VNet-to-VNet communication.

c) VNet peering allows traffic to be routed via an on-premises network.

d) VNet peering allows you to connect a VNet to an on-premises network.

11. **You have a web server and a database server in separate subnets within the same VNet. You want to allow only the web server to access the database server on a specific port. How would you configure this using NSGs?**

a) Create an inbound rule on the database server’s NSG that allows traffic from the web server’s subnet and denies all other inbound traffic.

b) Create an inbound rule on the database server’s NSG that allows traffic from the web server's IP address on the specified port.

c) Create an Application Security Group (ASG) for the web servers, and then create an inbound rule on the database server's NSG that allows traffic from that ASG on the specified port.

d) Create an outbound rule on the web server’s NSG that allows traffic to the database server on the specified port.

12. **Which of the following statements about Azure DNS private zones is true?**

a) They can resolve public domain names that are hosted on Azure DNS.

b) They require a separate DNS server to be deployed within the VNet.

c) They provide a reliable and secure DNS service for VNet resources without exposing the DNS records to the internet.

d) They are automatically created when you deploy a virtual network.

13. **What is the purpose of the dns\_servers property in an Azure VNet configuration?**

a) It specifies the DNS servers that the VNet uses to resolve domain names.

b) It defines the default public DNS servers for the VNet.

c) It automatically creates a private DNS zone for the VNet.

d) It routes all DNS queries to an Azure DNS public zone.

14**. You have a legacy application hosted on a virtual machine in an Azure VNet. This application requires access to a specific database on an on-premises network. What component would you use to establish a secure connection between the VNet and the on-premises network?**

a) VNet Peering

b) A Load Balancer

c) A VPN Gateway

d) An Application Security Group (ASG)

15. **What is the purpose of an IP address space in an Azure Virtual Network?**

a) It defines the range of public IP addresses that can be used by resources in the VNet.

b) It is a non-routable IP address range used for internal network traffic.

c) It is a collection of public IP addresses used for a load balancer.

d) It defines a private, contiguous range of IP addresses for the VNet.

16. **When creating a VNet, which of the following is a key consideration for IP address space selection?**

a) Using a publicly routable IP address range to simplify internet access.

b) Using an IP address range that is already in use by a connected on-premises network to ensure seamless routing.

c) Using an IP address range that is large enough to accommodate future growth.

d) Using a single /32 IP address space for maximum security.

17. **Which type of record is used in Azure DNS to map a domain name to an IPv4 address?**

a) CNAME record

b) MX record

c) A record

d) AAAA record

18**. Which of the following is NOT a purpose of an Application Security Group (ASG)?**

a) To group VMs with similar functions.

b) To define a security policy based on workloads instead of explicit IP addresses.

c) To act as a stateful firewall for application traffic.

d) To simplify network security rules by using logical groupings.

19. **You have an NSG with two inbound rules: Rule 100 with a "Deny" action for source IP 1.2.3.4 and Rule 200 with an "Allow" action for the same source IP. Which rule will be applied?**

a) Rule 100 will be applied, and traffic will be denied.

b) Rule 200 will be applied, and traffic will be allowed.

c) Neither rule will be applied, and a default rule will take over.

d) The rules will conflict, and no traffic will be processed.

20**. What is the primary benefit of using a private Azure DNS zone over an on-premises DNS server for VNet name resolution?**

a) It is a less expensive option for DNS resolution.

b) It automatically updates DNS records for all resources within the VNet.

c) It provides a publicly accessible DNS endpoint for resources within the VNet.

d) It supports a wider range of DNS record types than on-premises solutions.

21. **You are designing a VNet for a new application. You anticipate significant growth and need to ensure you have enough IP addresses. What is the best practice for planning your VNet and subnets?**

a) Create a large VNet with a single, large subnet to simplify management.

b) Create a VNet with multiple small subnets and re-address them as needed.

c) Use a small VNet and add new VNets as they are needed.

d) Create a large VNet address space and segment it into smaller, appropriately sized subnets.

22. **What is a common use case for an Application Security Group (ASG)?**

a) To apply a specific security policy to a set of virtual machines that are part of an N-tier application.

b) To manage all the public IP addresses in a VNet.

c) To create a VPN connection between a VNet and an on-premises network.

d) To define a custom route for traffic within a VNet.

23. **In a public DNS zone, what is the role of an NS record?**

a) It maps a hostname to a public IP address.

b) It specifies the mail servers for the domain.

c) It identifies the authoritative name servers for a domain.

d) It provides an alias for another domain name.

24. **You have a private DNS zone for corp.contoso.com. You want to allow resources in a new VNet to resolve hostnames in this zone. What must you do?**

a) Create a new private DNS zone for the new VNet.

b) Create a new A record for each resource in the new VNet.

c) Create a virtual network link between the new VNet and the corp.contoso.com private DNS zone.

d) Configure the new VNet to use the Azure-provided DNS servers.

25. **What is the main benefit of using a private DNS zone for a private endpoint service?**

a) It provides public access to the private endpoint.

b) It allows the private endpoint to be resolved by a public DNS server.

c) It ensures that the FQDN of the private endpoint resolves to its private IP address within the VNet.

d) It adds an extra layer of encryption to the traffic to the private endpoint.

1. c) To provide a private, isolated network for your Azure resources to communicate with each other.

2. d) To apply different Network Security Groups (NSGs) to each subnet.

3. c) To filter network traffic to and from Azure resources in a VNet.

4. c) Both NSGs are evaluated, and a "Deny" rule on either NSG takes precedence over an "Allow" rule.

5. c) A public DNS zone manages DNS records for public domain names, while a private DNS zone resolves records for resources within a VNet.

6. c) Private Azure DNS

7. a) To define a logical grouping of virtual machines that share a common security policy.

8. b) Create two separate NSGs and associate one with each VM’s NIC.

9. b) All inbound traffic is denied, but all outbound traffic is allowed.

10. b) VNet peering provides higher bandwidth and lower latency for VNet-to-VNet communication.

11. c) Create an Application Security Group (ASG) for the web servers, and then create an inbound rule on the database server's NSG that allows traffic from that ASG on the specified port.

12. c) They provide a reliable and secure DNS service for VNet resources without exposing the DNS records to the internet.

13. a) It specifies the DNS servers that the VNet uses to resolve domain names.

14. c) A VPN Gateway

15. d) It defines a private, contiguous range of IP addresses for the VNet.

16. c) Using an IP address space that is large enough to accommodate future growth.

17. c) A record

18. c) To act as a stateful firewall for application traffic.

19. a) Rule 100 will be applied, and traffic will be denied.

20. b) It automatically updates DNS records for all resources within the VNet.

21. d) Create a large VNet address space and segment it into smaller, appropriately sized subnets.

22. a) To apply a specific security policy to a set of virtual machines that are part of an N-tier application.

23. c) It identifies the authoritative name servers for a domain.

24. c) Create a virtual network link between the new VNet and the corp.contoso.com private DNS zone.

25. c) It ensures that the FQDN of the private endpoint resolves to its private IP address within the VNet.