Microsoft

AZ-104

Administer Network Traffic

AZ-104 Course Outline

12:30 - 13:30

01: Administer Identity
02: Administer Governance and Compliance
03: Administer Azure Resources
04: Administer Virtual Networking
05: Administer Intersite Connectivity
06: Administer Network Traffic Management
07: Administer Azure Storage
08: Administer Azure Virtual Machines
09: Administer PaaS Compute Options
10: Administer Data Protection
11: Administer Monitoring

LB
Storage Account
Files SMB
Blobs HTTP
(Container)
VMSS Scale Set
scale out
scale in

Learning Objectives - Administer Network Traffic

- Configure Azure Load Balancer
- Configure Application Gateway
- Configure Network Watcher
- Lab 06 – Implement Traffic Management

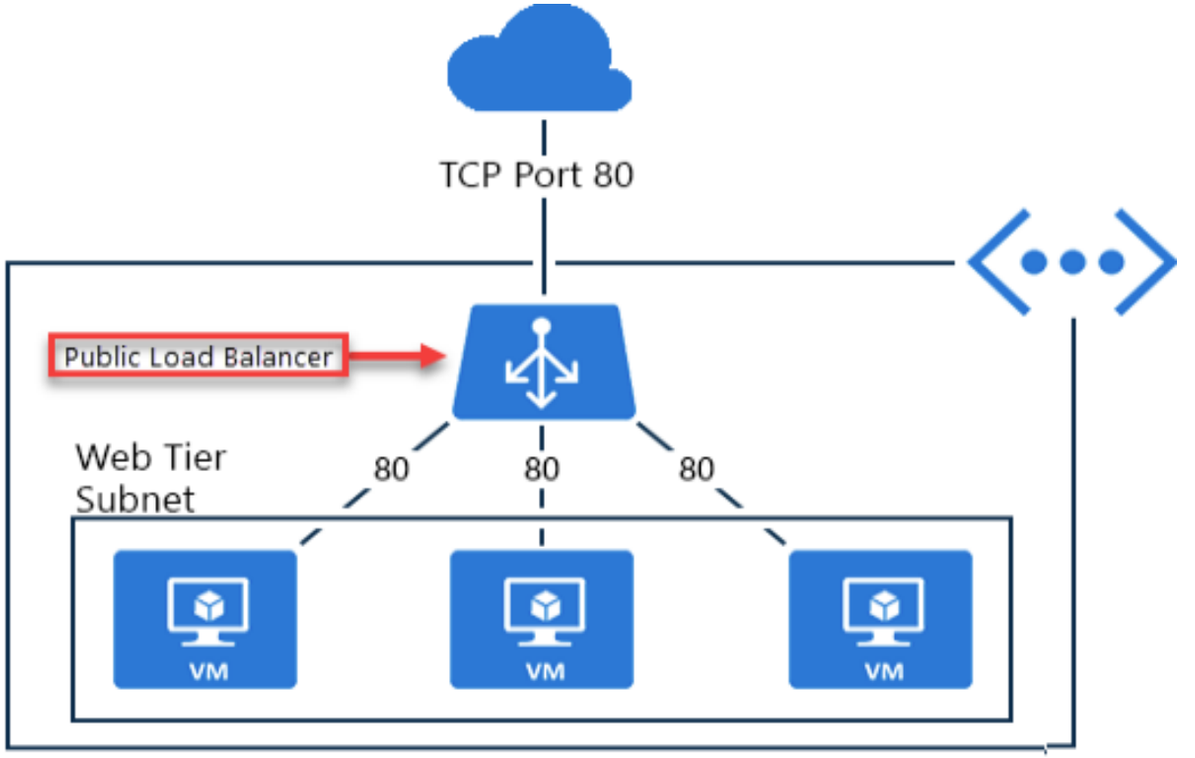
Configure Azure Load Balancer

Choose a Load Balancer Solution

Feature	Application Gateway	Front Door	Load Balancer	Traffic Manager
Usage	Optimize delivery from application server farms while increasing application security with web application firewall.	Scalable, security-enhanced delivery point for global, micro service-based web applications.	Balance inbound and outbound connections and requests to your applications or server endpoints.	Distribute traffic to services across global Azure regions, while providing high availability and responsiveness.
Protocols	HTTP, HTTPS, HTTP2	HTTP, HTTPS, HTTP2	TCP, UDP	Any
Private (regional)	Yes		Yes	
Global		Yes		Yes
Env	Azure, non-Azure cloud, on premises	Azure, non-Azure cloud, on premises	Azure	Azure, non-Azure cloud, on premises
Security	WAF	WAF, NSG	NSG	

Implement a Public Load Balancer

- Maps public IP addresses and port number of incoming traffic to the VM's private IP address and port number, and vice versa
- Apply load balancing rules to distribute traffic across VMs or services

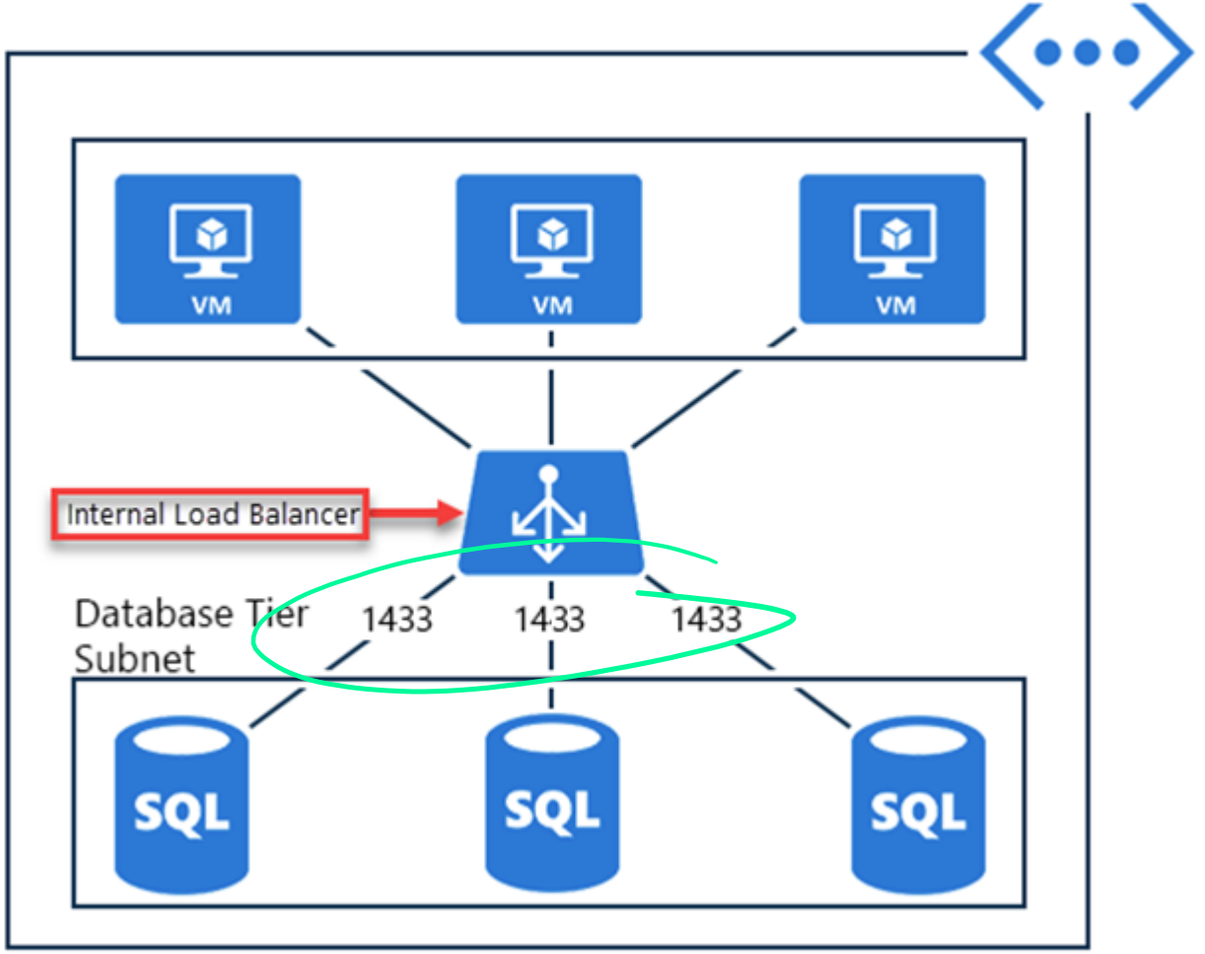


Implement an Internal Load Balancer

Directs traffic only to resources inside a virtual network or that use a VPN to access Azure infrastructure

Frontend IP addresses and virtual networks are never directly exposed to an internet endpoint

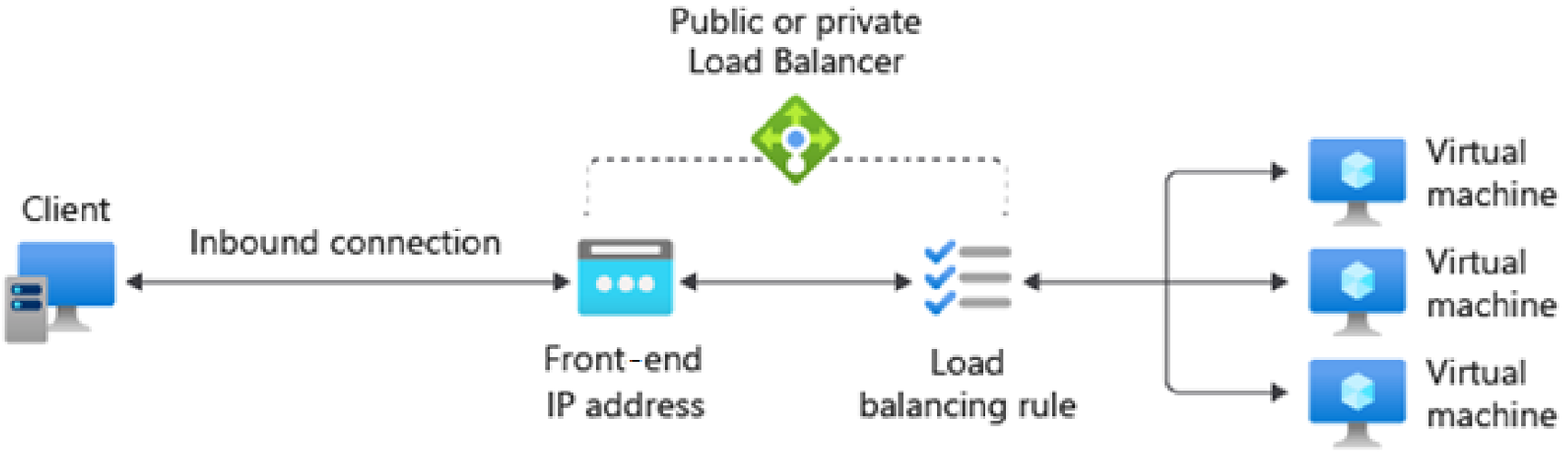
Enables load balancing within a virtual network, for cross-premises virtual networks, for multi-tier applications, and for line-of-business applications



Determine Load Balancer SKUs

Feature	Basic SKU	Standard SKU
Backend pool size	300 IP configurations, single availability set	Up to 5000 instances
Health probes	TCP, HTTP	TCP, HTTP, HTTPS
Availability zones	Not available	Zone-redundant and zonal frontends for inbound and outbound traffic
Multiple frontends	Inbound only	Inbound and outbound
Secure by default	By default, open to the internet	Closed to inbound connections unless opened by NSGs
SLA	Not available	99.99%

Create load balancer rules

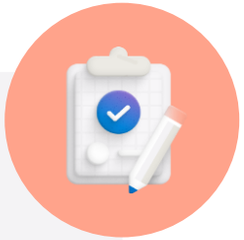


Maps a frontend IP and port combination to a set of backend pool and port combination

Rules can be combined with NAT rules

A NAT rule is explicitly attached to a VM (or network interface) to complete the path to the target

Learning Recap – Configure Azure Load Balancer

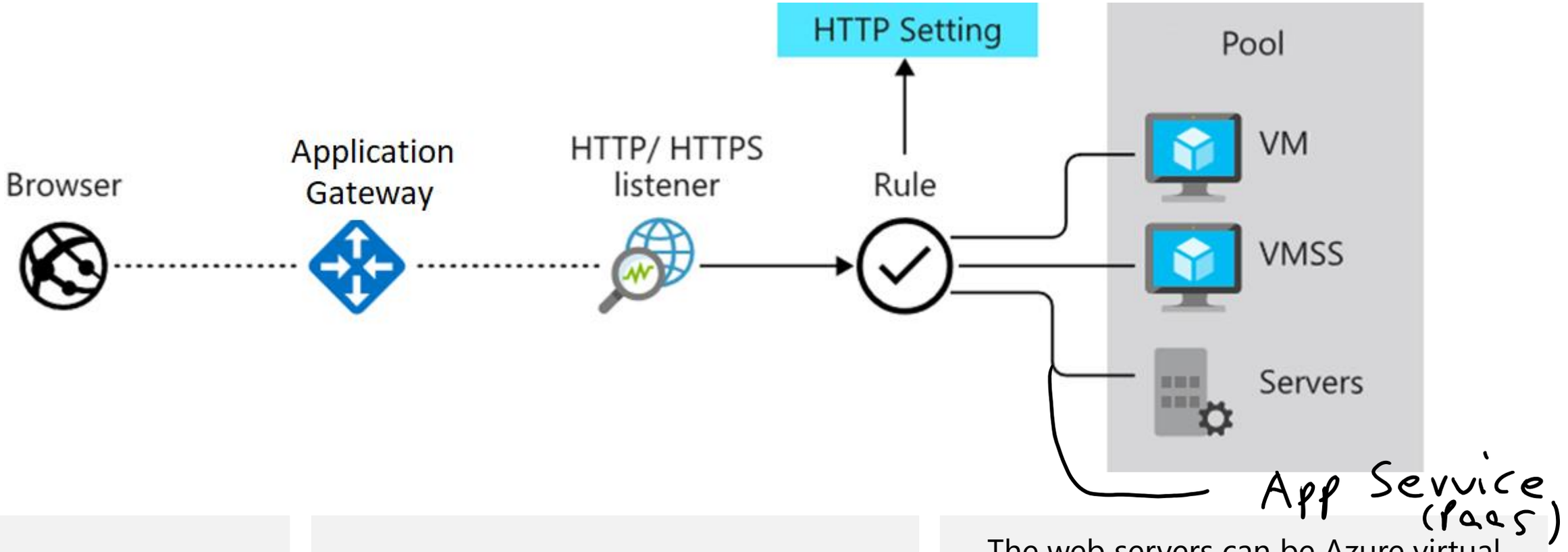


Check your knowledge questions and additional study

- Improve application scalability and resiliency by using Azure Load Balancer
- Load balance non-HTTP(S) traffic in Azure
- Introduction to Azure Load Balancer

Configure Azure Application Gateway

Implement Application Gateway



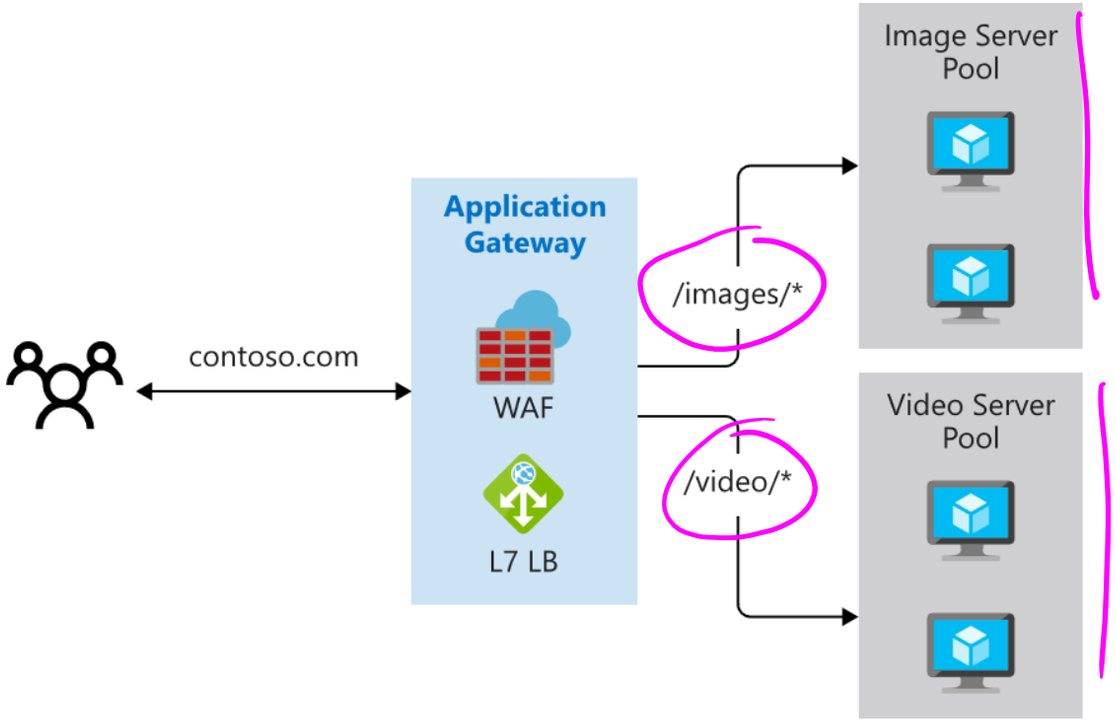
Manages web app requests

Routes traffic to a pool of web servers based on the URL of a request

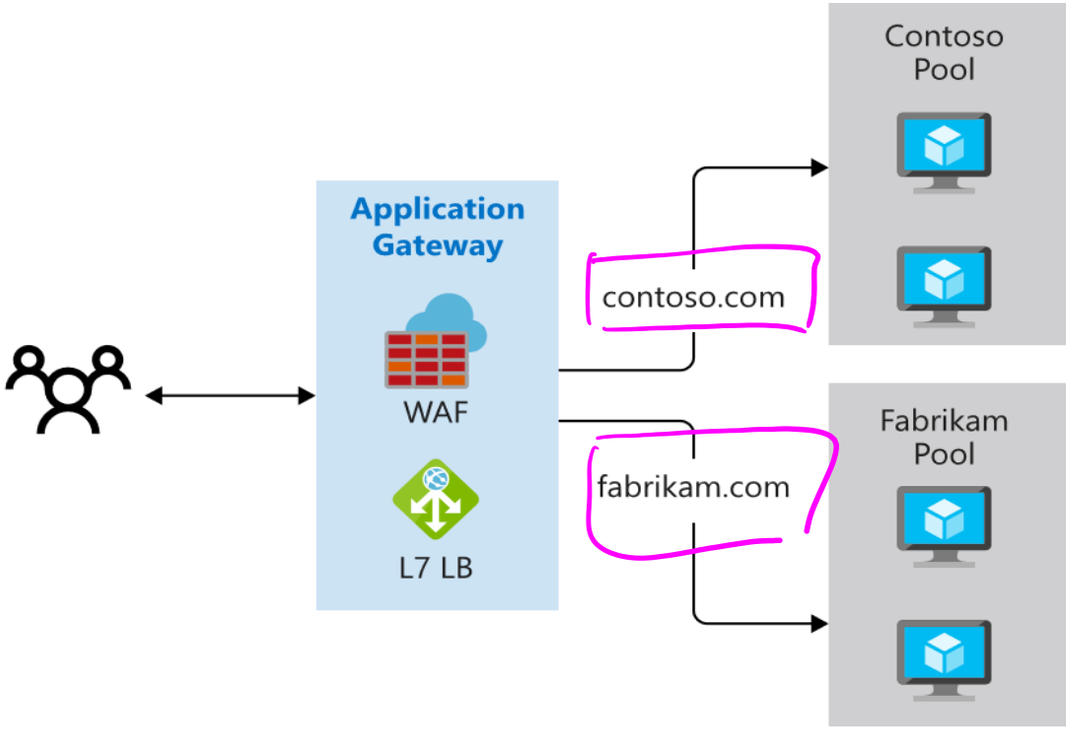
The web servers can be Azure virtual machines, Azure virtual machine scale sets, Azure App Service, and even on-premises servers

Determine Application Gateway Routing

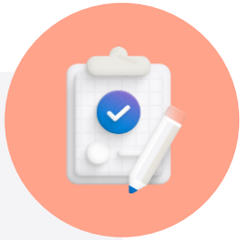
Path-based routing



Multiple-site routing



Learning Recap – Configure Azure Application Gateway



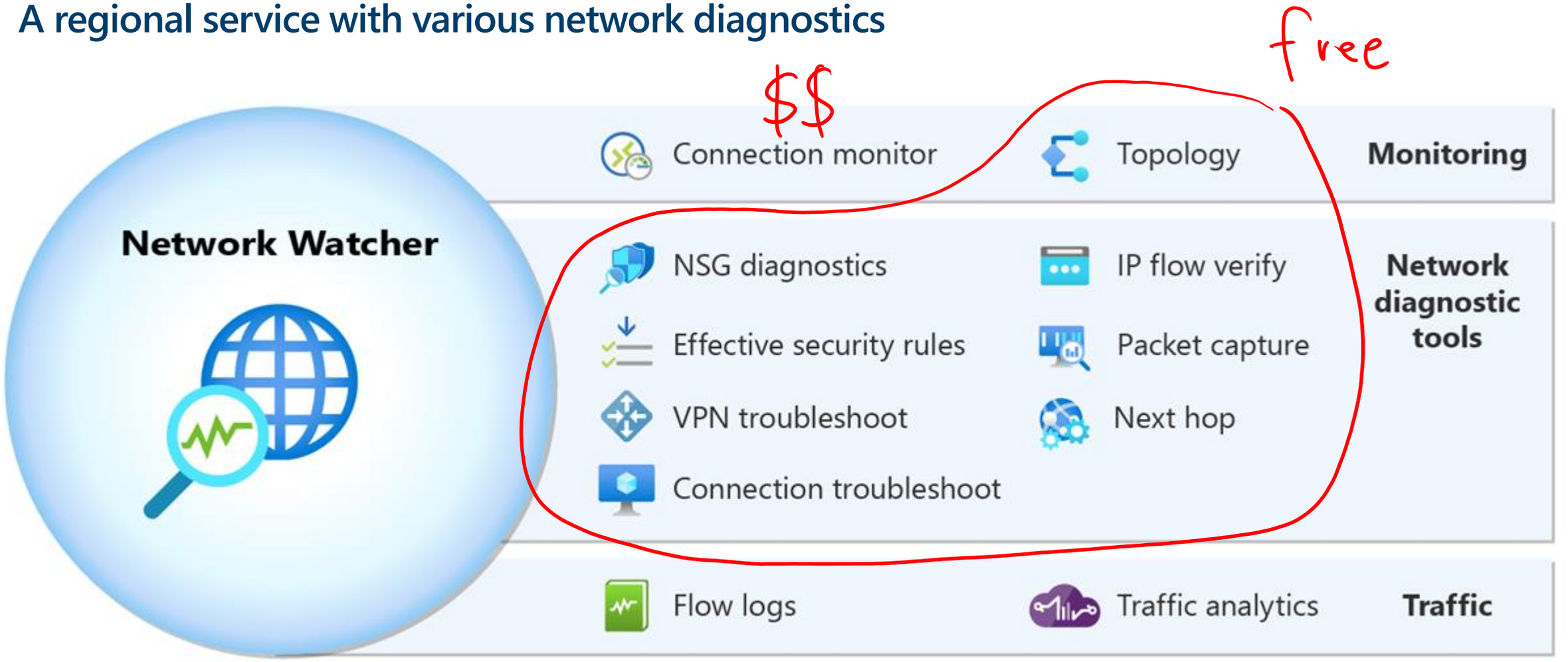
Check your knowledge questions and additional study

- Introduction to Azure Application Gateway
- Load balance your web service traffic with Application Gateway
- Load balance HTTP(S) traffic in Azure
- Encrypt network traffic end to end with Azure Application Gateway

Configure Network Watcher

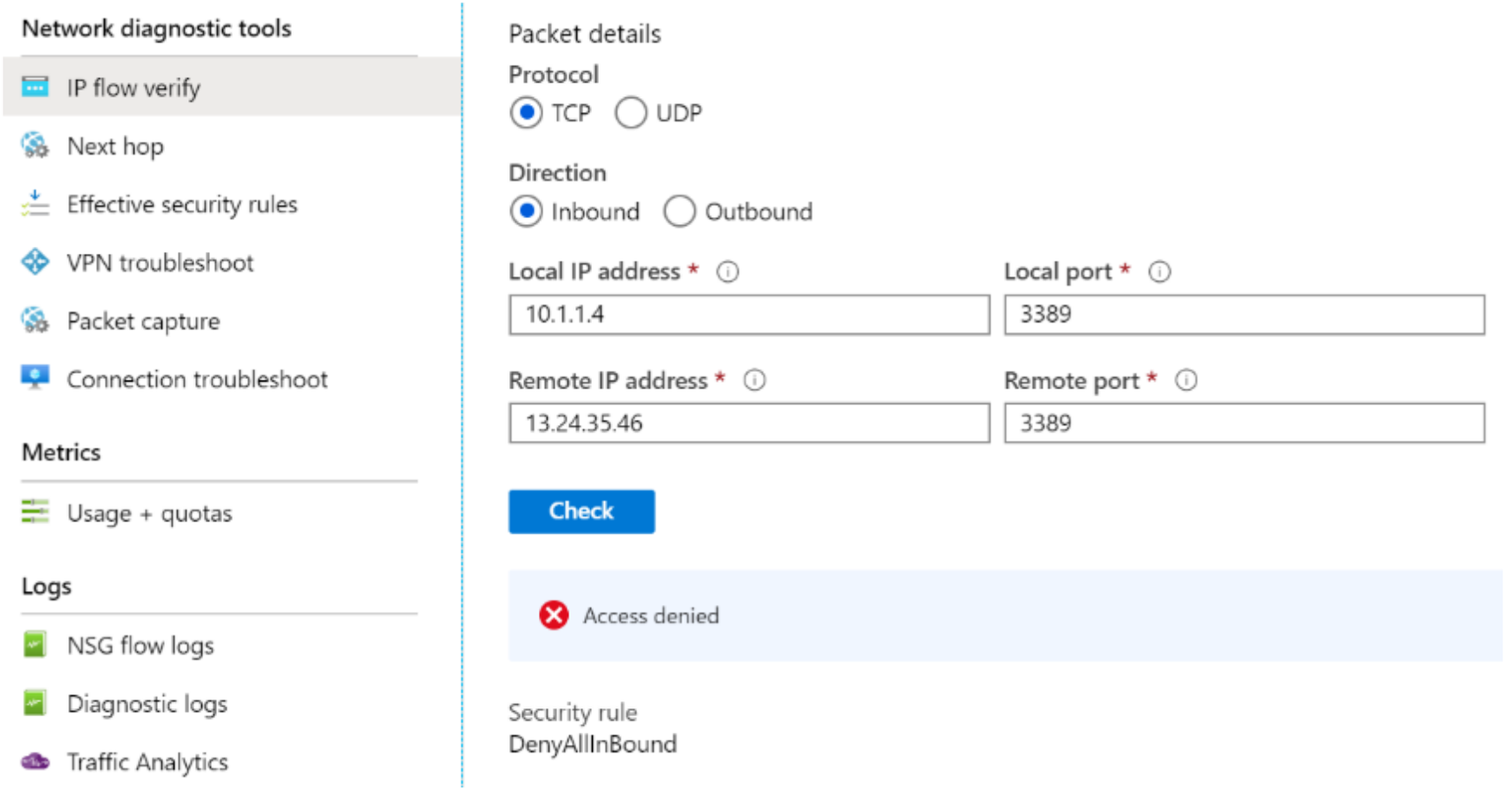
Describe Network Watcher Features

A regional service with various network diagnostics



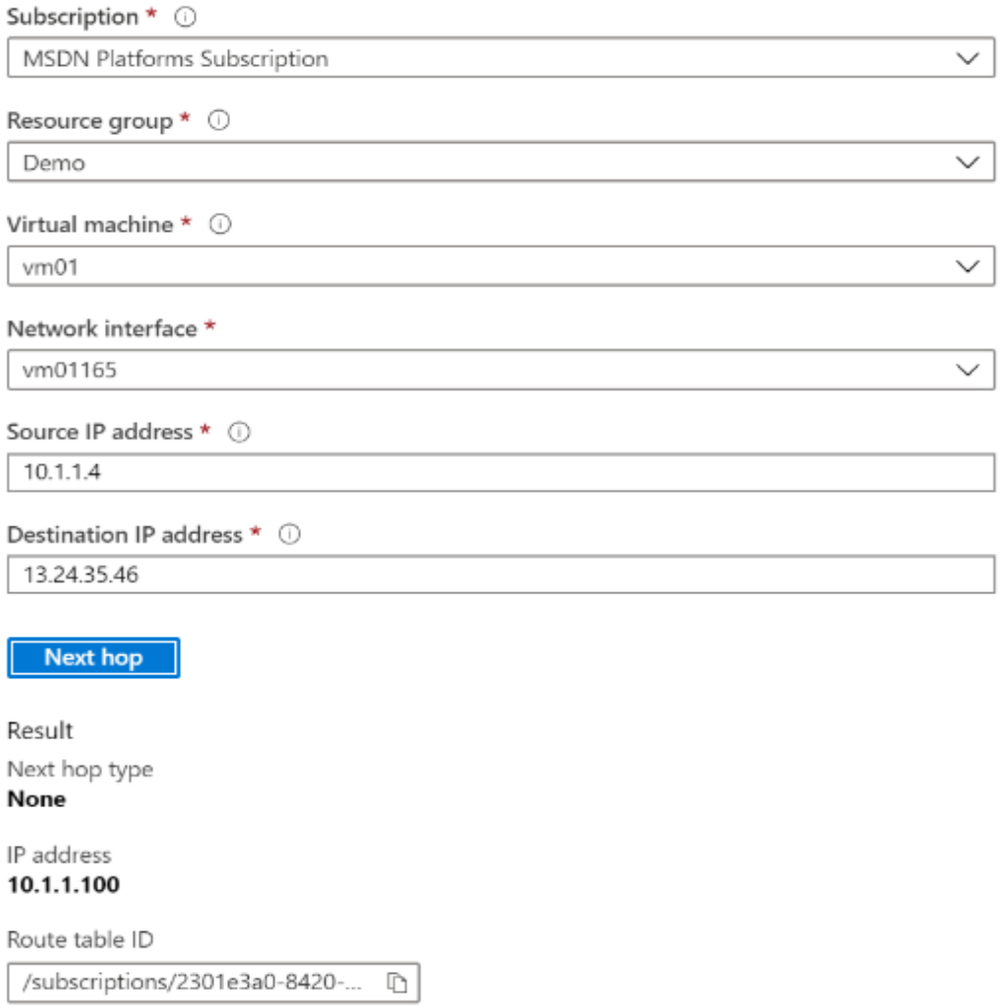
Review IP Flow Verify Diagnostics

Checks if a packet is allowed or denied to or from a virtual machine

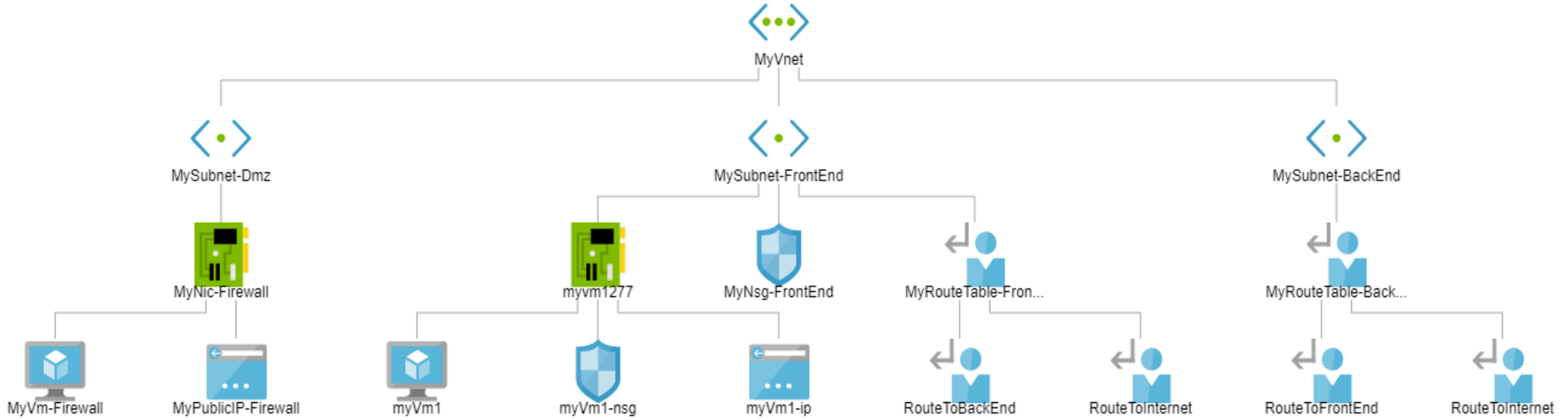


Review Next Hop Diagnostics

Helps with determining whether traffic is being directed to the intended destination by showing the next hop



Visualize the Network Topology

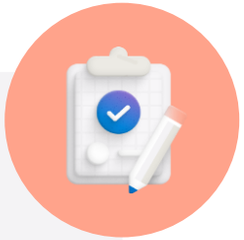


Provides a visual representation of your networking elements

View all the resources in a virtual network, resource to resource associations, and relationships between the resources

The Network Watcher instance in the same region as the virtual network

Learning Recap – Configure Network Watcher

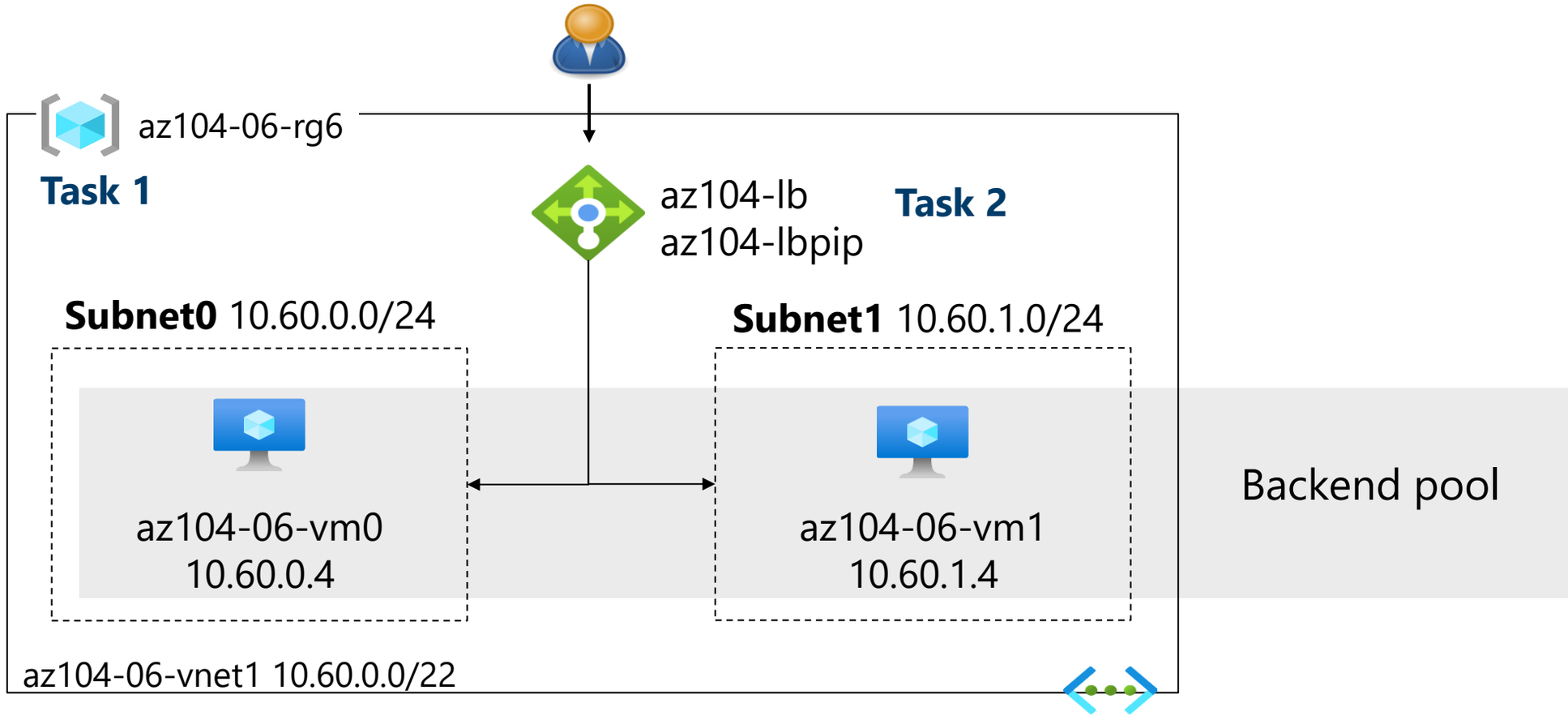


Check your knowledge questions and additional study

- Introduction to Azure Network Watcher
- Monitor and troubleshoot your end-to-end Azure network infrastructure by using network monitoring tools
- Analyze your Azure infrastructure by using Azure Monitor logs

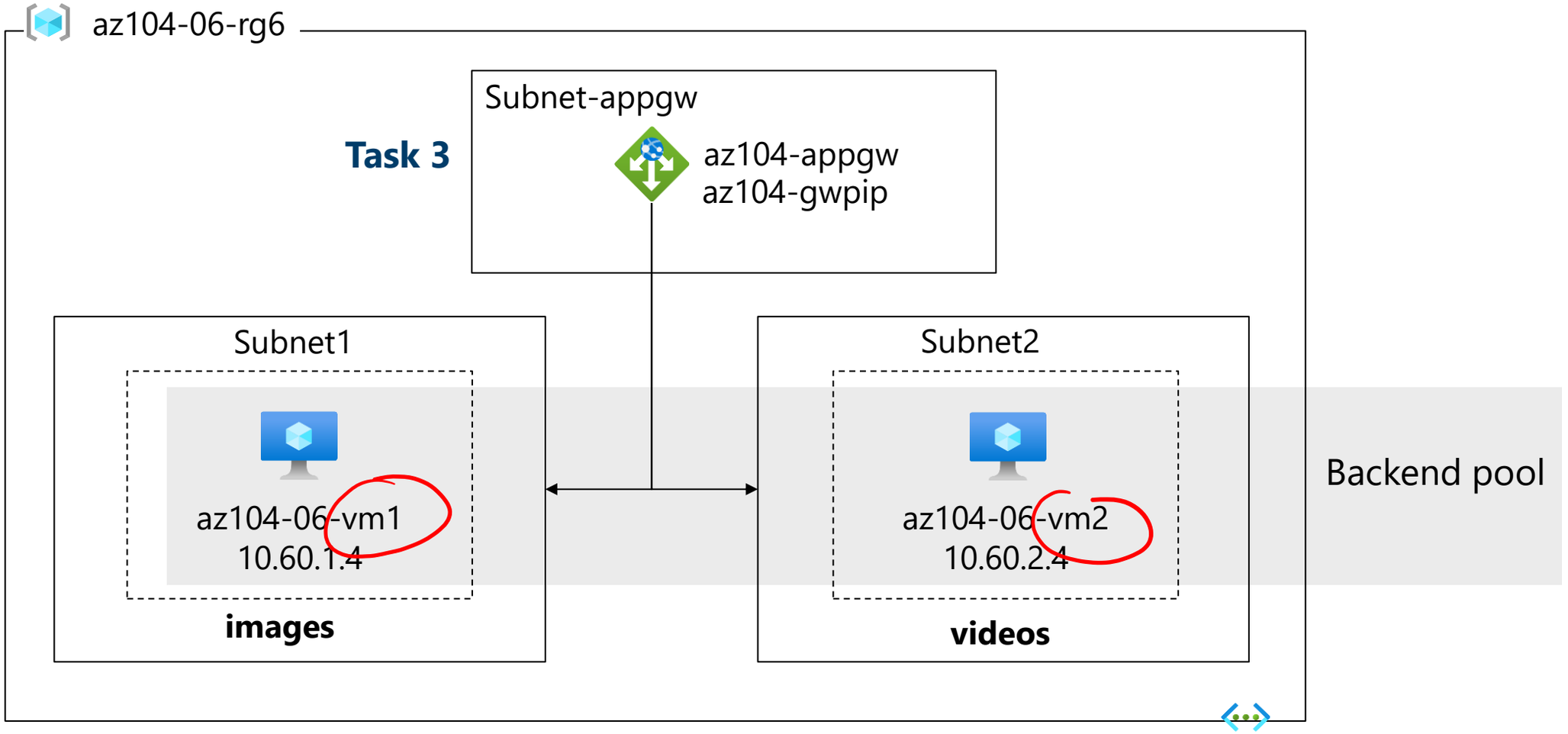
Lab – Implement Traffic Management

Lab 06 – Architecture Diagram (Load Balancer)



Next slide for an application gateway

Lab 06 – Architecture Diagram (Application Gateway)



End of presentation