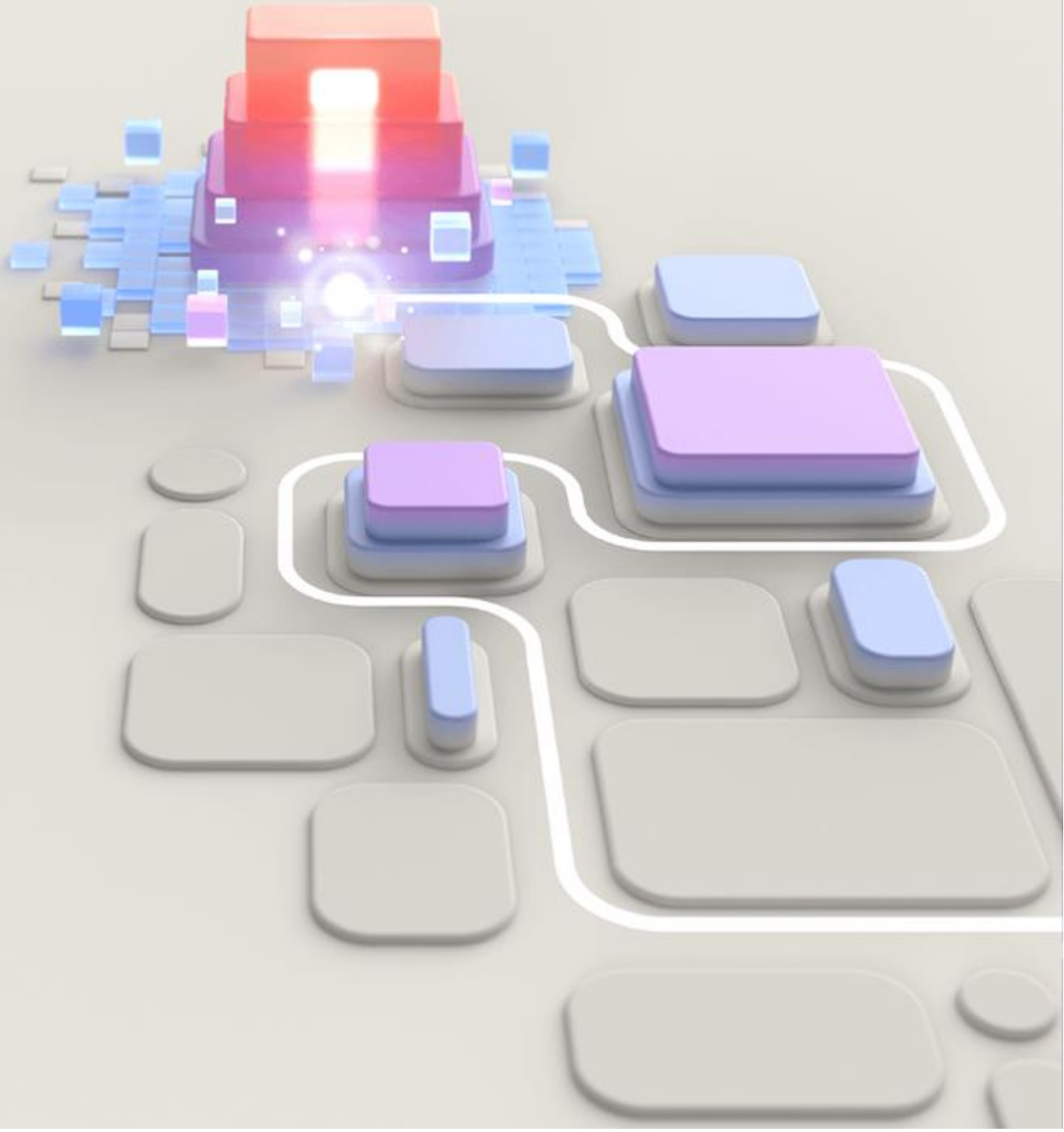
Microsoft

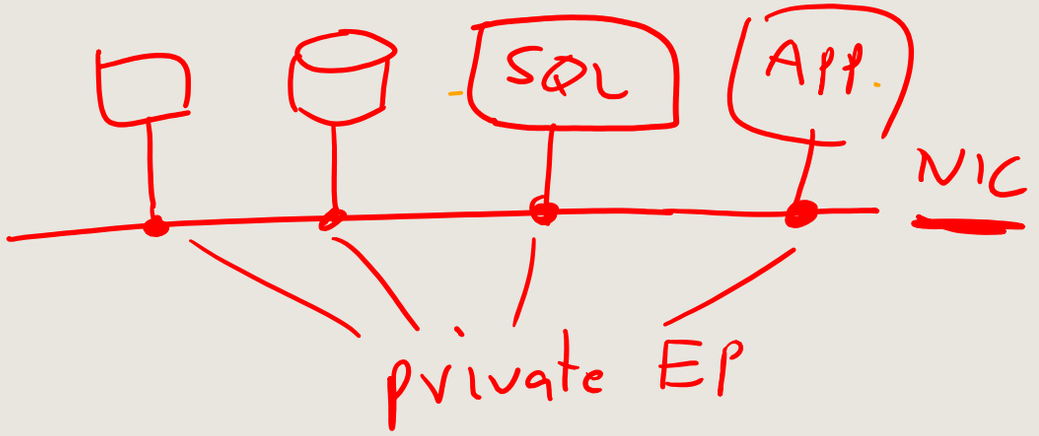
AZ-104

Administer Network Traffic



AZ-104 Agenda

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



Learning Objectives - Administer Network Traffic

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

Introduction to Azure Load Balancer

Learning Objectives – Introduction to Azure Load Balancer

- Choose a Load Balancer Solution
- Implement a Public Load Balancer
- Implement an Internal Load Balancer
- Determine Load Balancer SKUs
- Create Load Balancer Rules
- Demonstration – Configure a load balancer
- Learning Recap

Implement and manage virtual networking (15–20%): Configure name resolution and load balancing

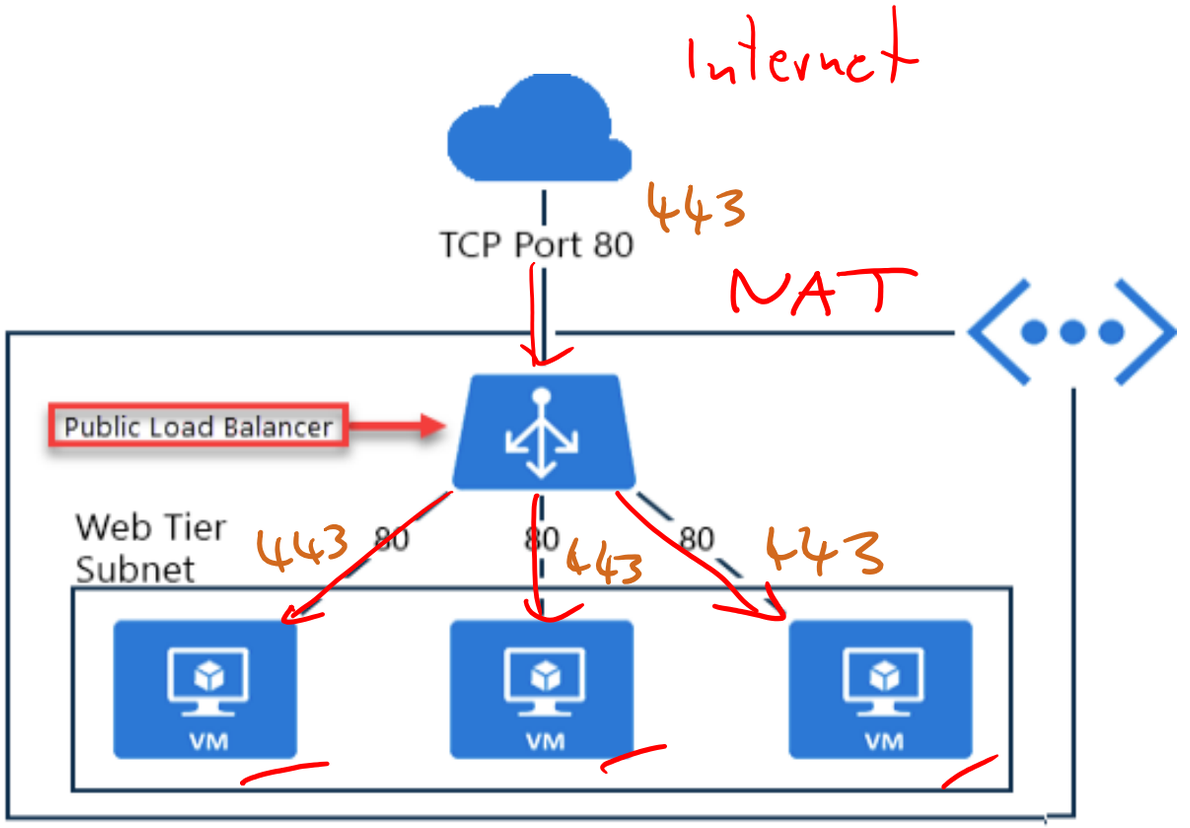
- Configure an internal or public load balancer
- Troubleshoot load balancing

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

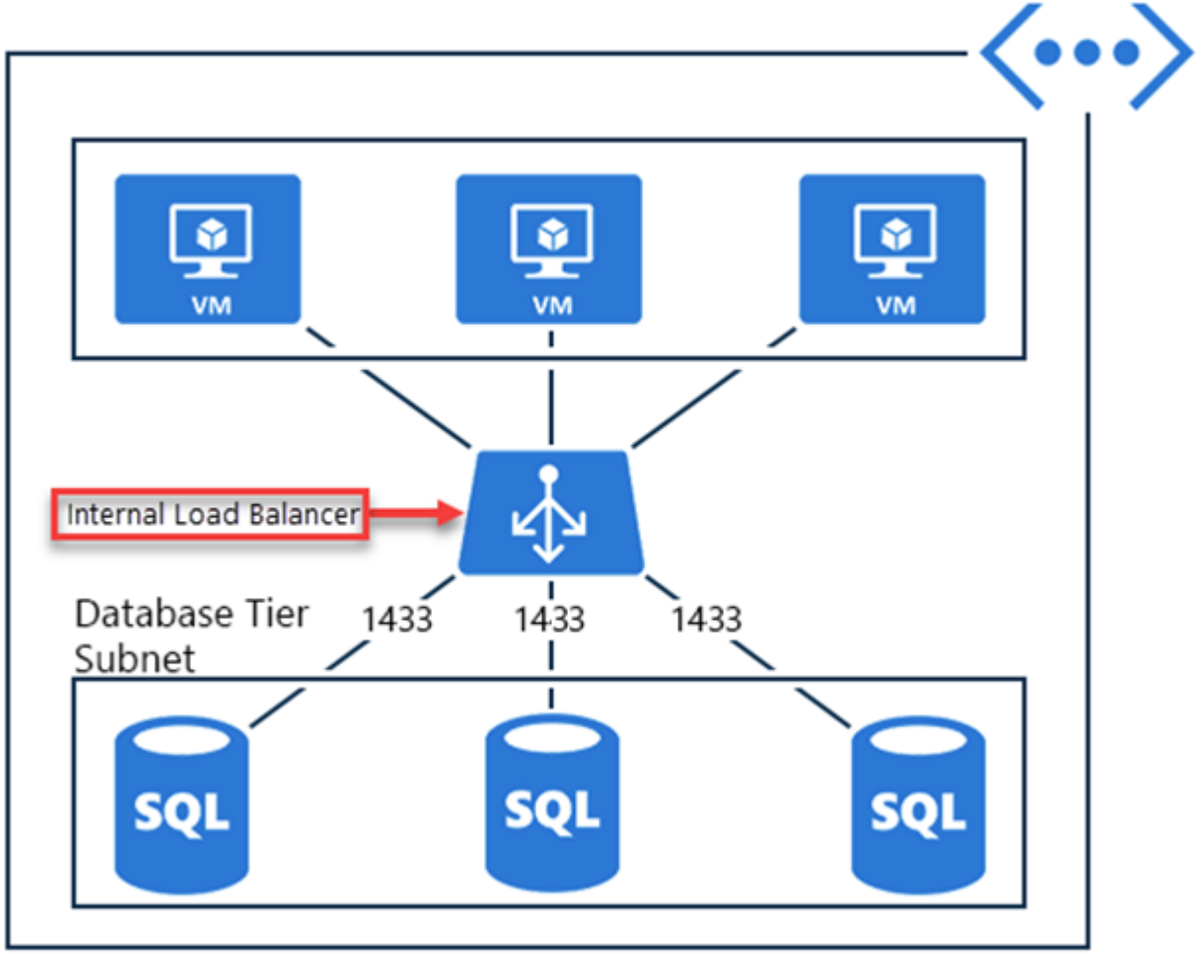


Implement an Internal Load Balancer

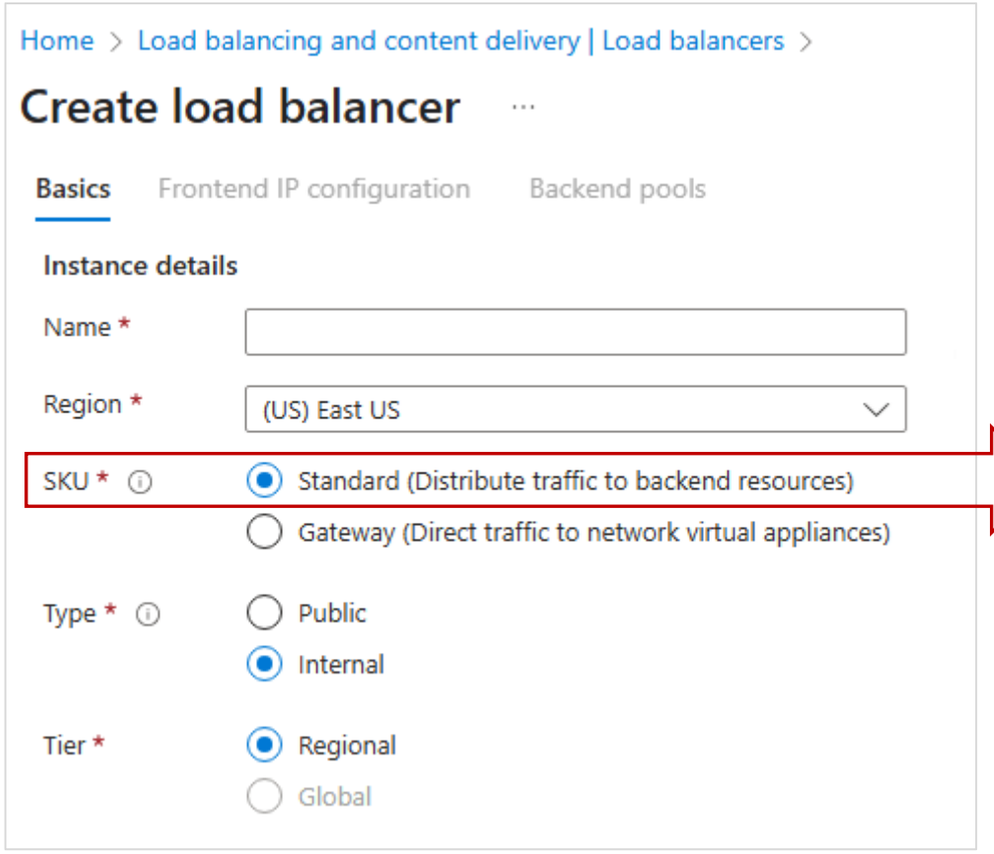
Directs traffic only to resources inside a virtual network or that use a VPN to access Azure infrastructure

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

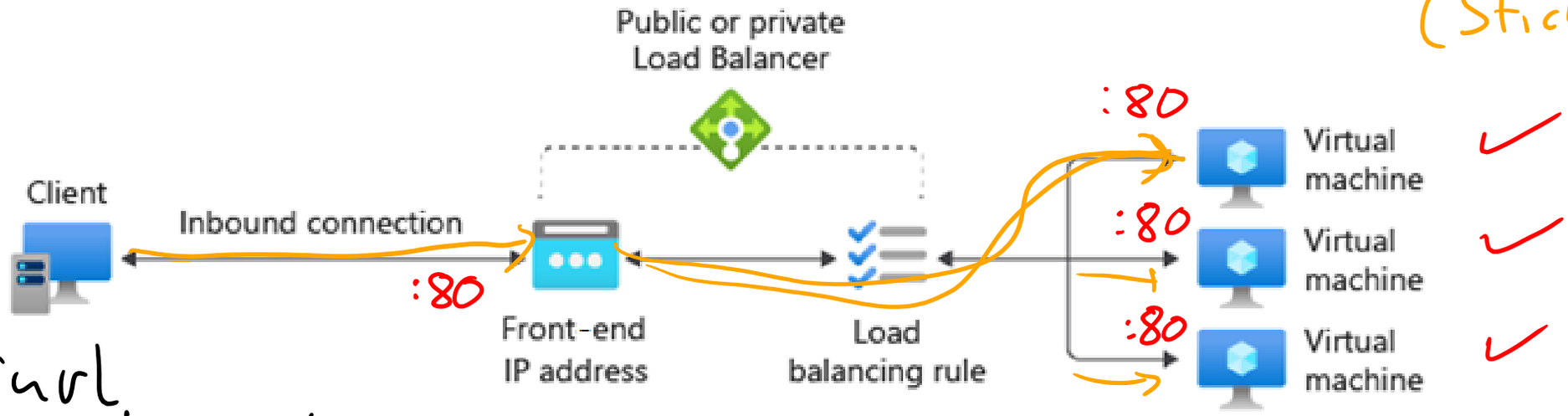


Determine Load Balancer SKU



Feature	Standard Load Balancer
Scenario	High performance, ultra-low latency, and high resiliency
Type	Internal or public
Backend type	IP based or NIC based
Multiple frontends	Inbound and outbound
Health probes	TCP, HTTP, HTTPS
SLA	99.99%

Create load balancer rules

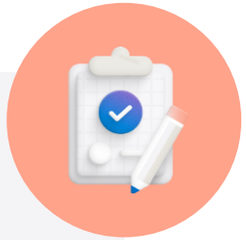


Maps a frontend IP and port combination to a set of backend pool and port combination

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 – Introduction to Azure Load Balancer



Reference modules

- Introduction to Azure Load Balancer
- Load balance non-HTTP(S) traffic in Azure

Check your knowledge questions and additional study

Introduction to Azure Application Gateway

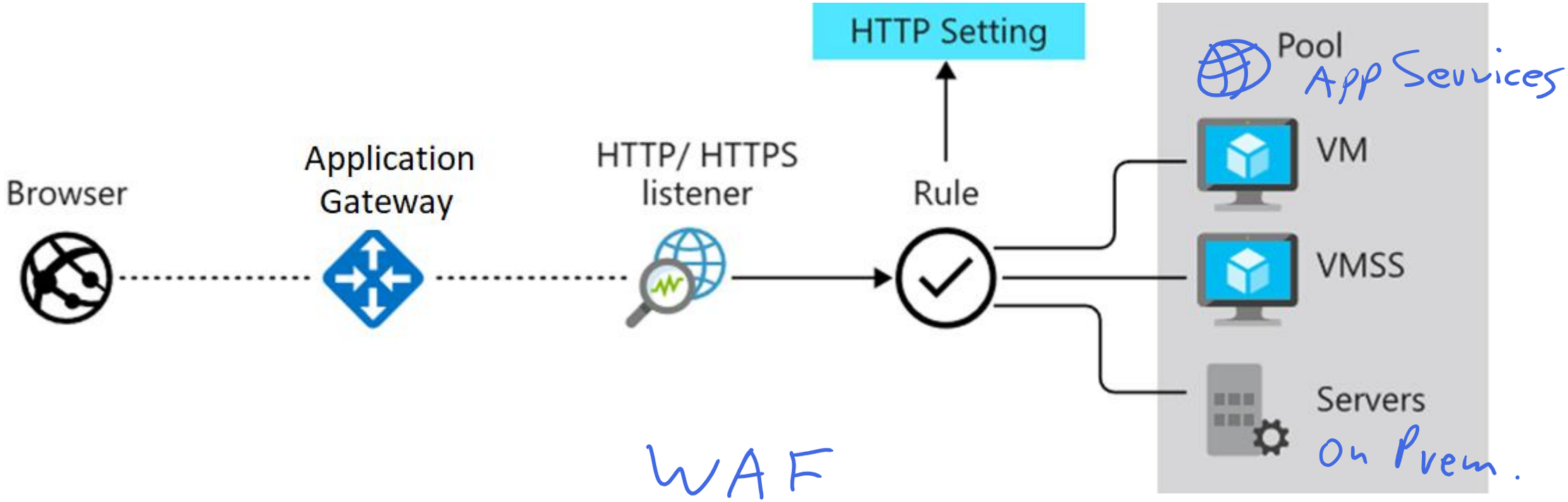
Learning Objectives – Introduction to Azure Application Gateway

- Implement Application Gateway
- Determine Application Gateway Routing
- Demonstration – Configure an Application Gateway
- Setup Application Gateway Components
- Learning Recap

Implement and manage virtual networking (15–20%): Configure name resolution and load balancing

- Configure an internal or public load balancer

Implement Application Gateway



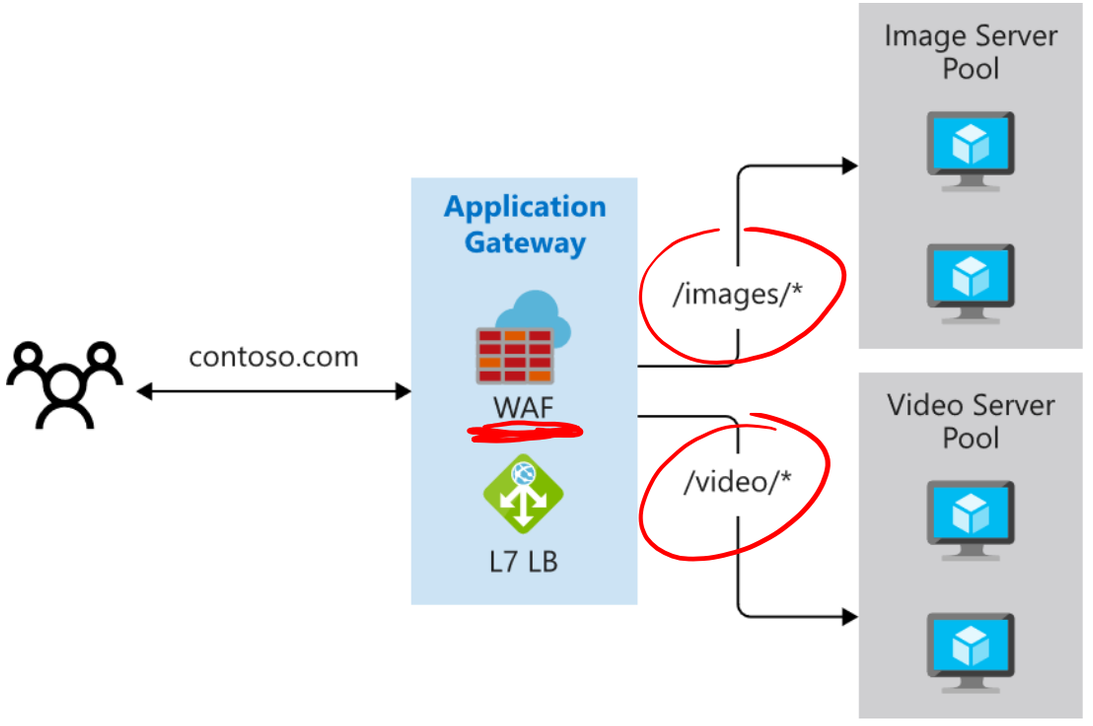
Manages web app requests

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

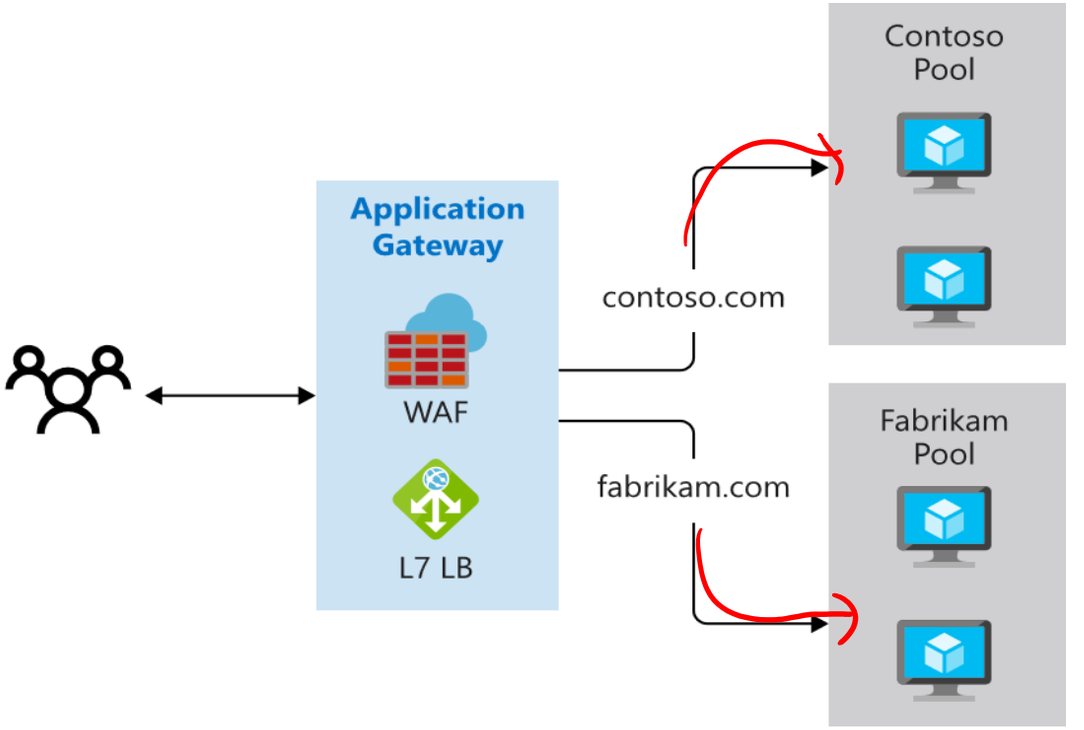
The web servers can be Azure virtual machines, Azure virtual machine scale sets, Azure App Service, and even on-premises servers

Determine Application Gateway Routing

Path-based routing

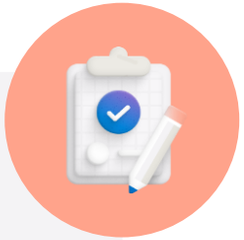


Multiple-site routing



Learning Recap – Introduction to Azure Application Gateway

Check your knowledge questions and additional study



Reference modules

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

Introduction to Network Watcher

Configure Network Watcher Introduction

- Describe Network Watcher Features
- Review IP Flow Verify Diagnostics
- Review Next Hop Diagnostics
- Visualize the Network Topology
- Learning Recap

Monitor and maintain Azure resources (15–20%): Monitor resources in Azure

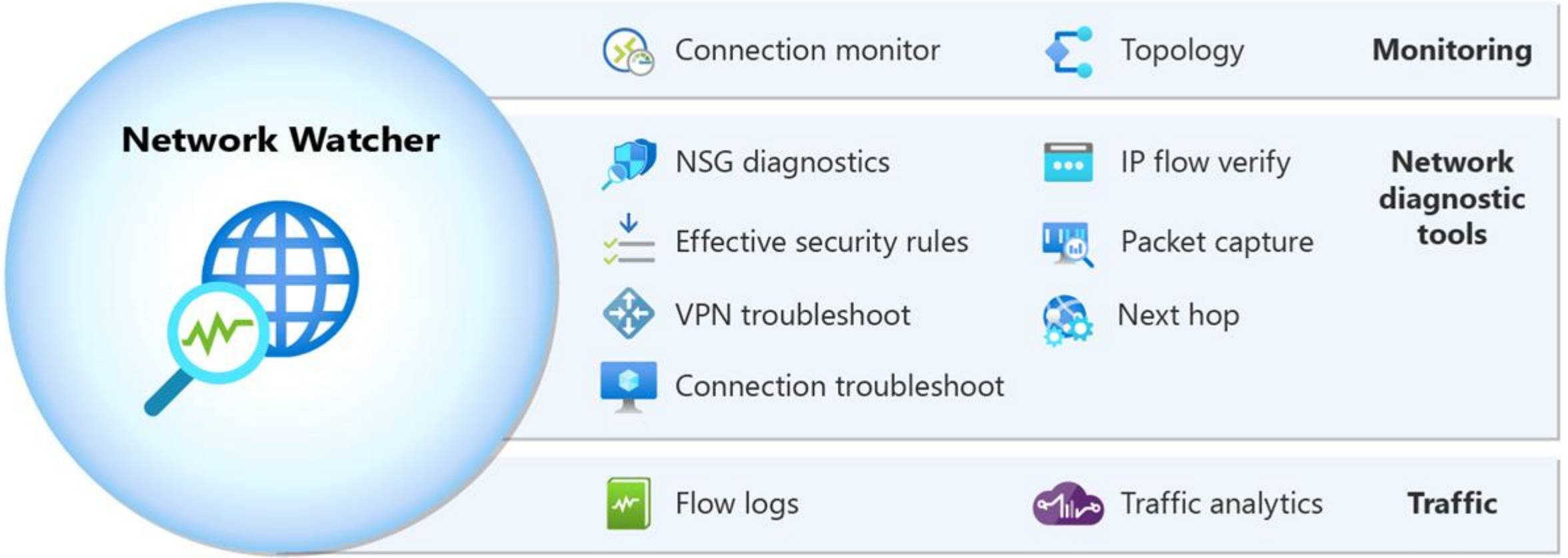
- Use Azure Network Watcher

Implement and manage virtual networking (15–20%): Configure and manage virtual networks in Azure

- Troubleshoot network connectivity

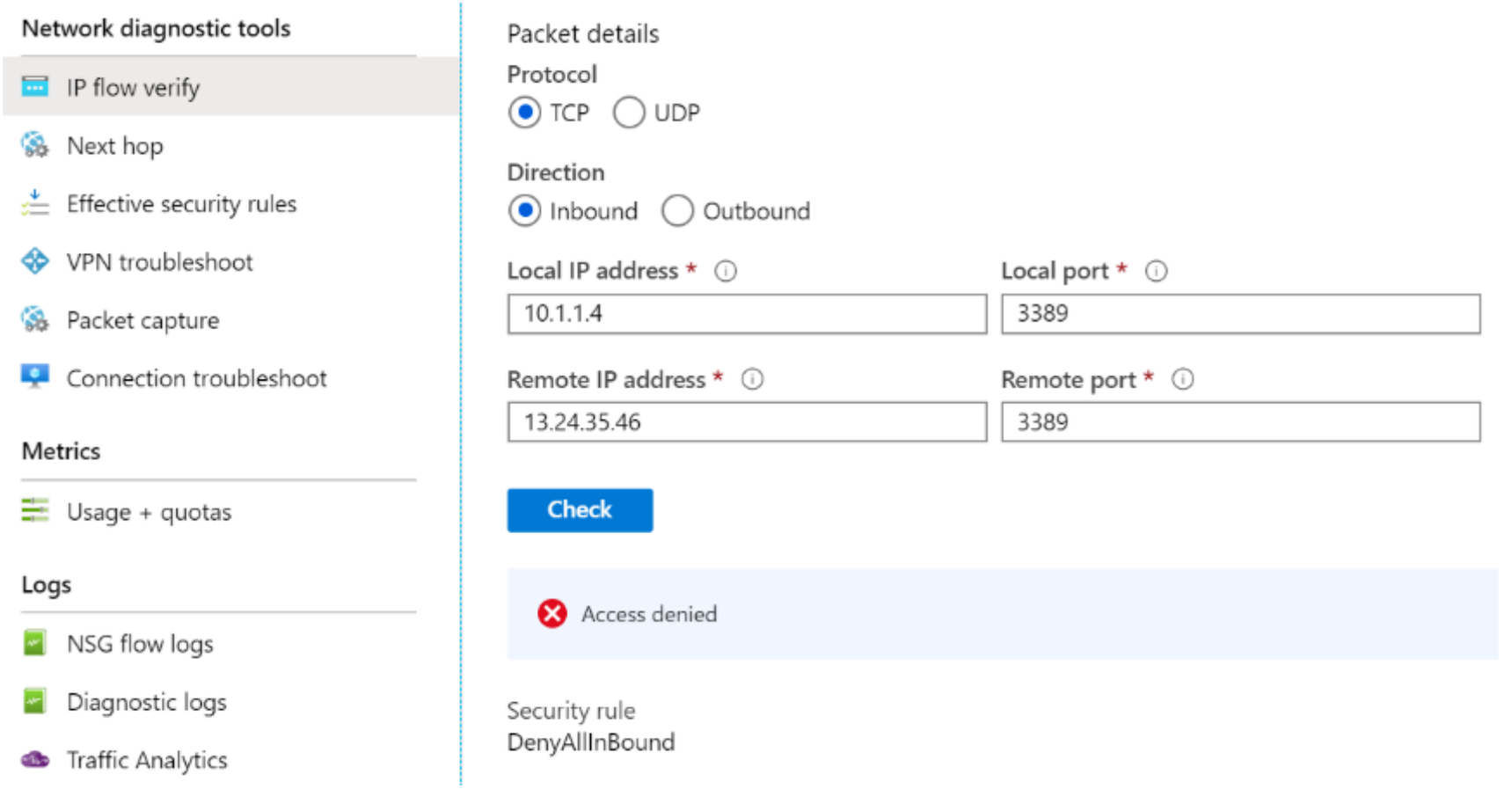
Describe Network Watcher Features

A regional service with various network diagnostics



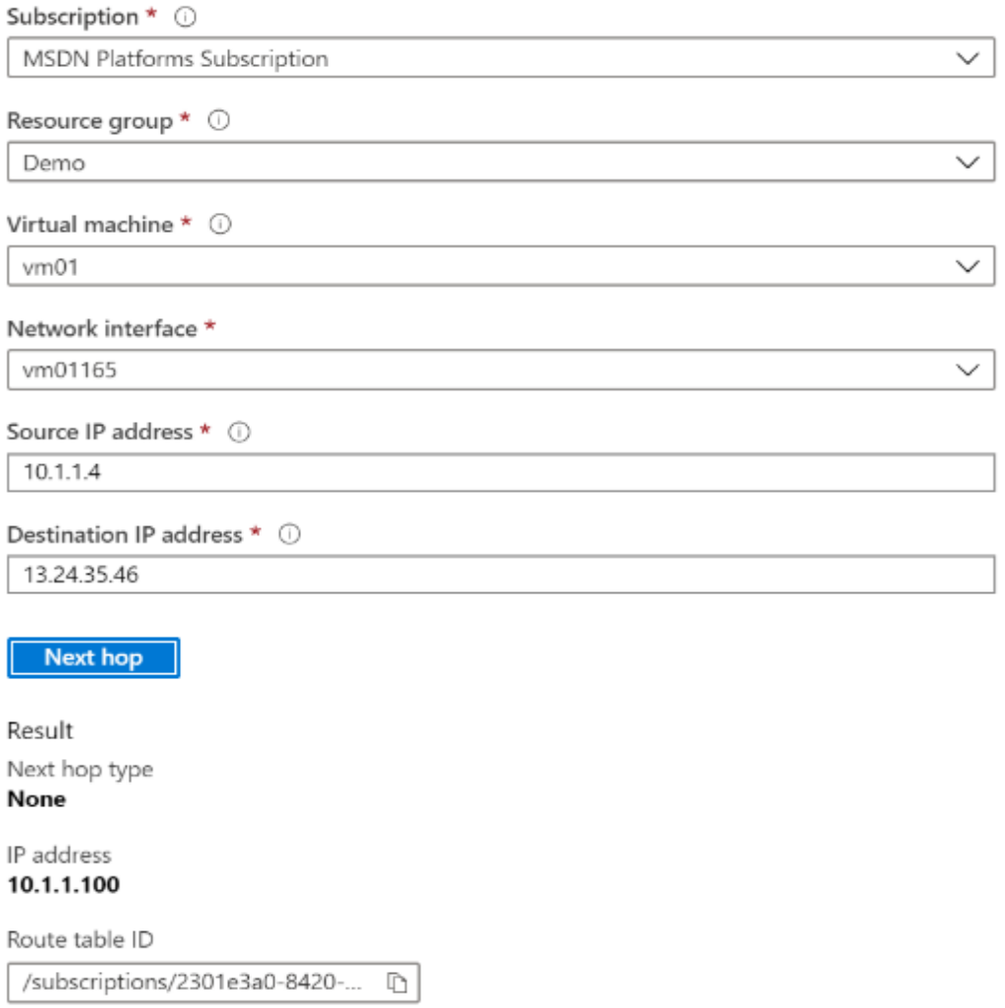
Review IP Flow Verify Diagnostics

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

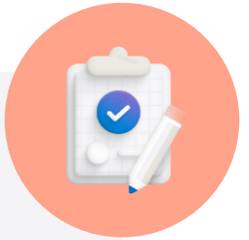
Provides a visual representation of your networking elements

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

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

Learning Recap – Introduction to Network Watcher

Check your knowledge questions and additional study

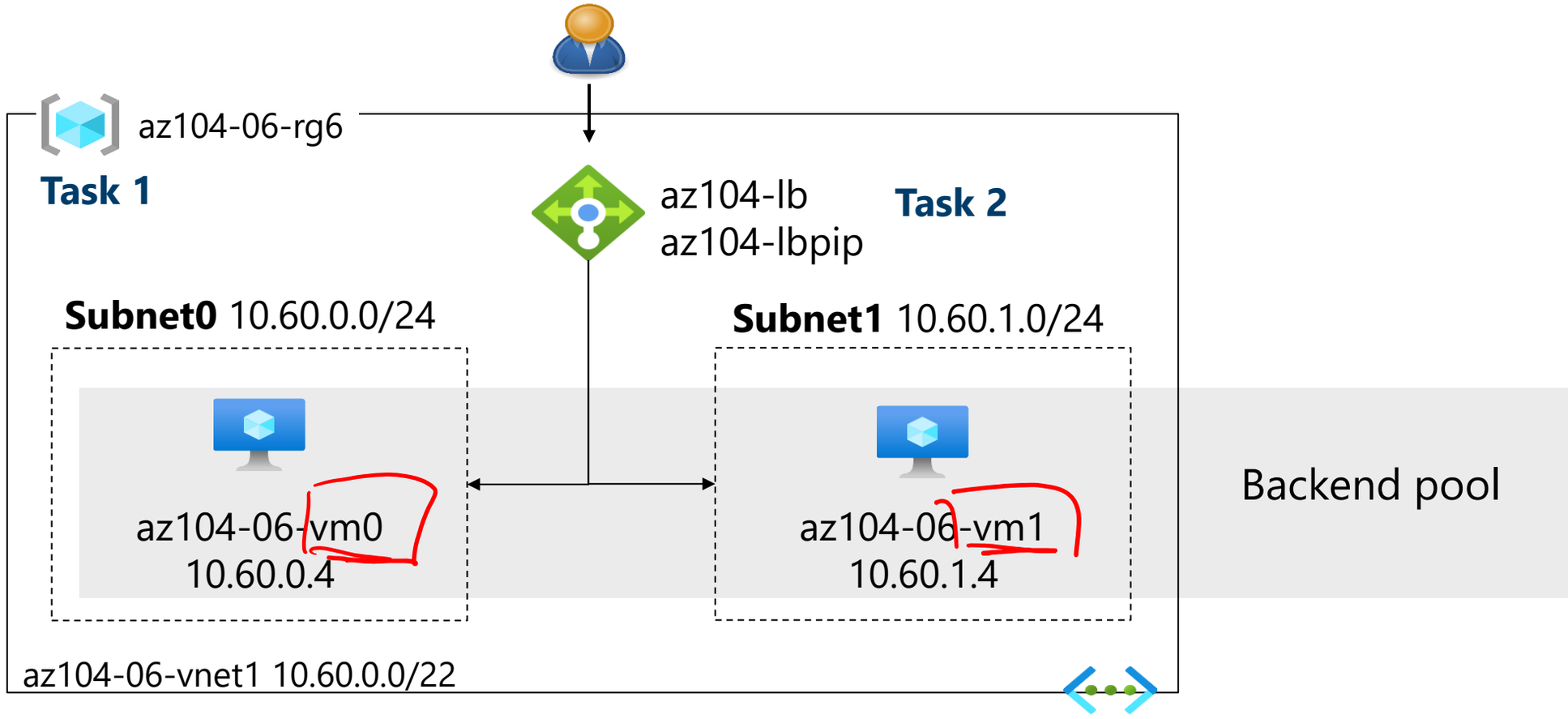


Reference modules

- Introduction to Azure Network Watcher
- Monitor and troubleshoot your end-to-end Azure network infrastructure by using network monitoring tools
- Troubleshoot connectivity issues with virtual machines in Microsoft Azure

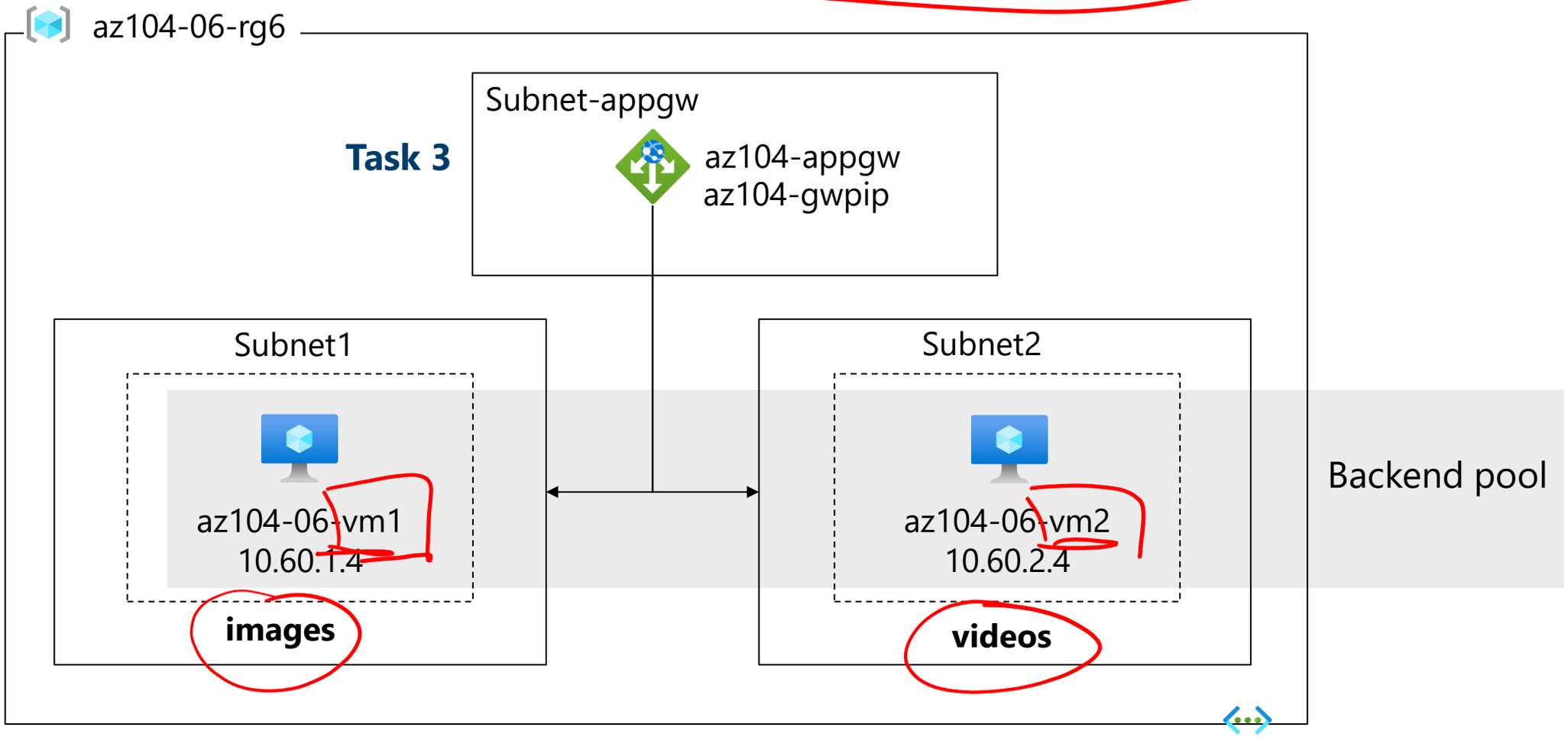
Lab – Implement Traffic Management

Lab 06 – Architecture Diagram (Load Balancer)



Next slide for an application gateway

Lab 06 – Architecture Diagram (Application Gateway)



End of presentation