Scaling and High Availability

Overview

What you need to think about to be successful

Availability sets

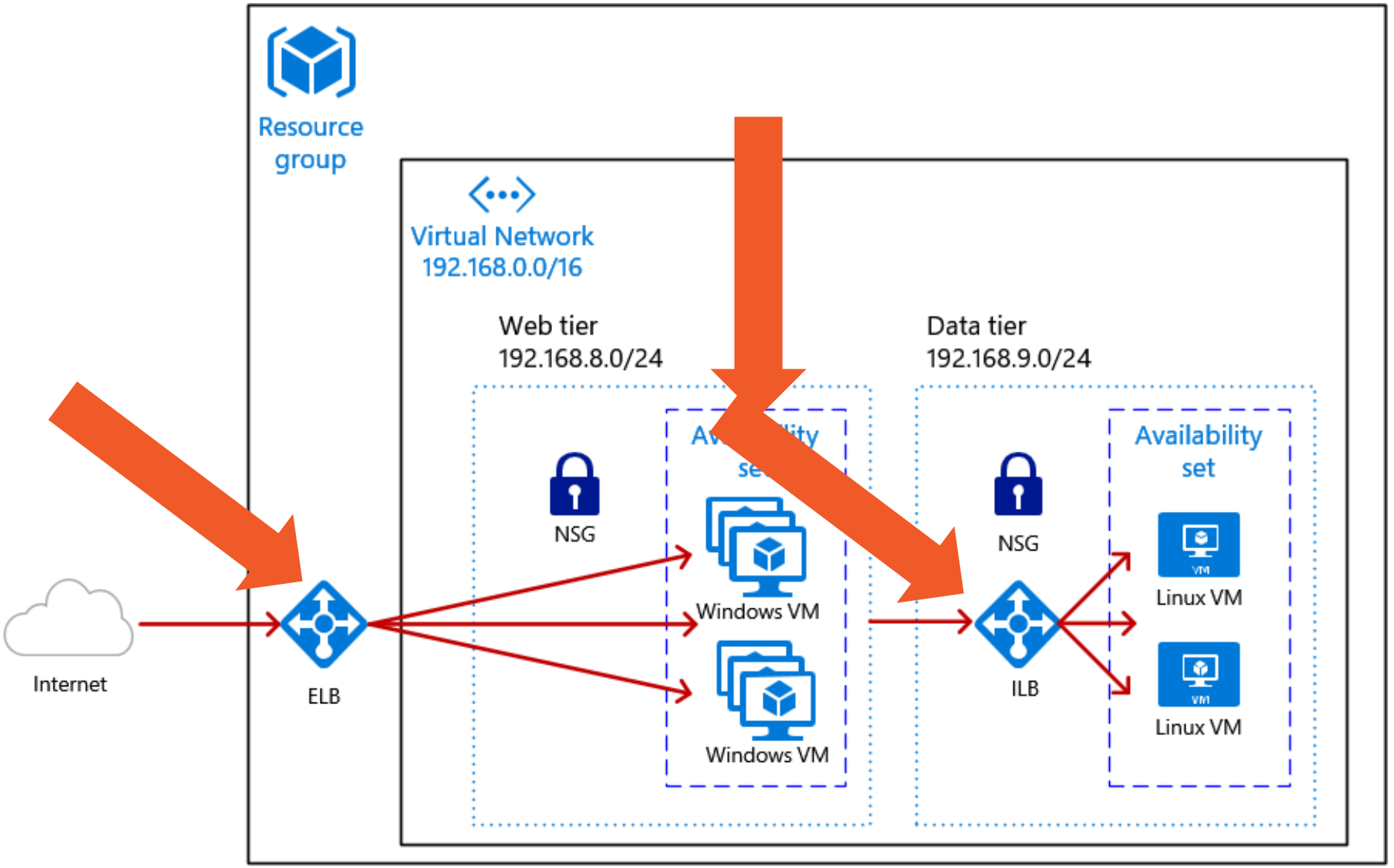
- Azure SLA

Scale Sets

Load balancers

- Internal
- External

Our Solution



Things to Keep in Mind Regarding Scaling and High Availability

Group related VMs into availability sets

Use separate storage accounts for each AS

Know that AS and SS both incur runtime charges

Combine a load balancer with availability sets

Consider Scale Sets for bigger compute jobs

Premium storage supports single-instance SLA

Availability Sets

Azure Maintenance Events

Planned

The Azure team gives you advance notification

Unplanned

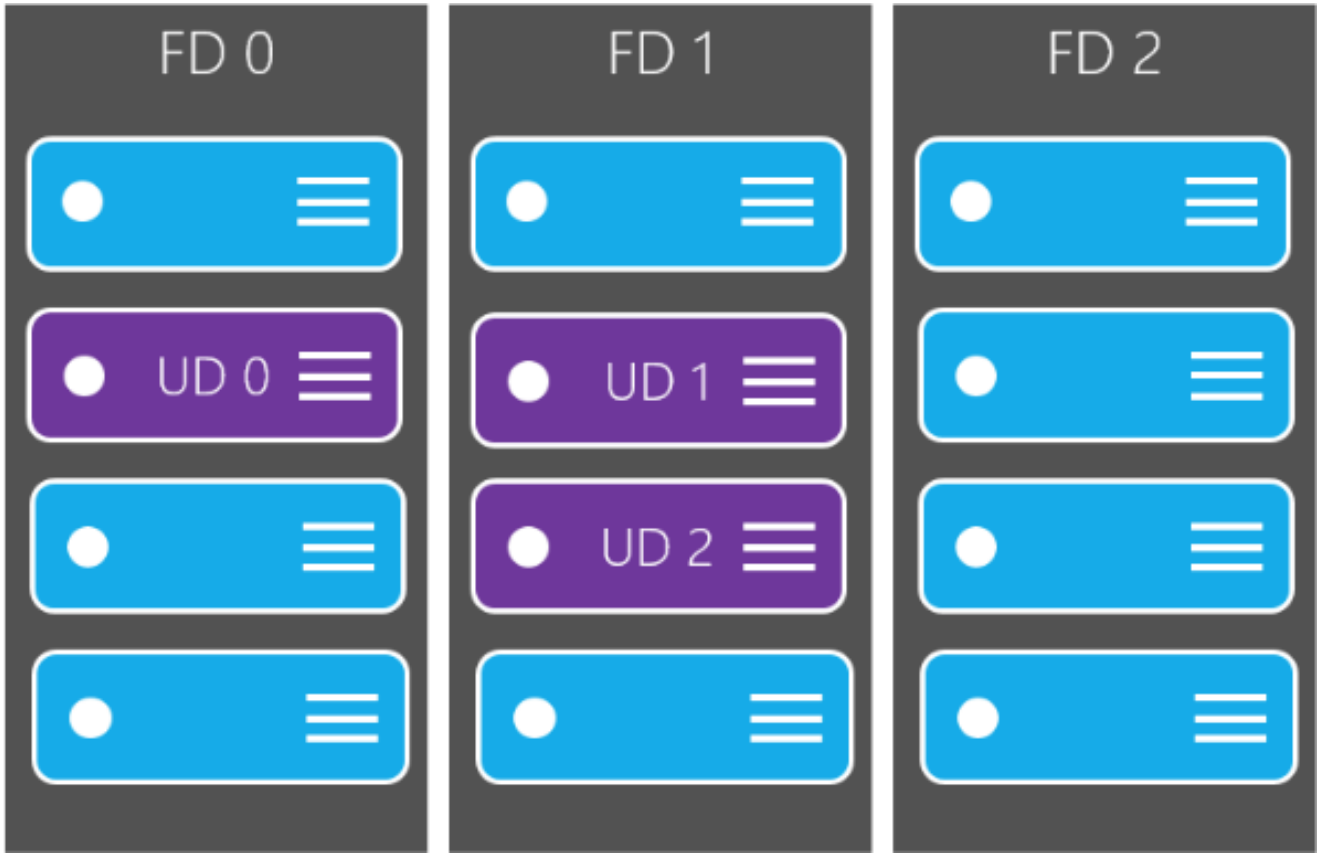
Rack- or datacenter-level failures

Fault and Update Domains

99.95% SLA

Fault domains are VMs that share the same power source and switch

3 fault domains available



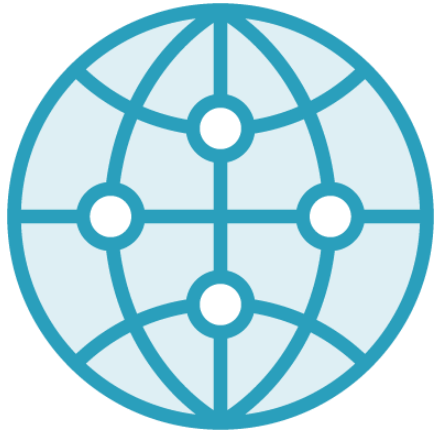
Update domains are VMs that share the same hardware host

5-20 update domains available

Place VMs of each app tier into their own availability sets

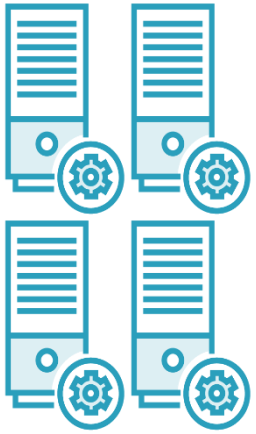
Scale Sets

Virtual Machine Scale Sets



Platform-independent PaaS

Azure App Service is known for elastic autoscaling



Method for:

Deploying and managing Azure VMs as a set

Scalable compute platform

Integrated with:

Azure Load Balancer

Azure Autoscale

Scale Set Use Cases

Hyperscale workloads

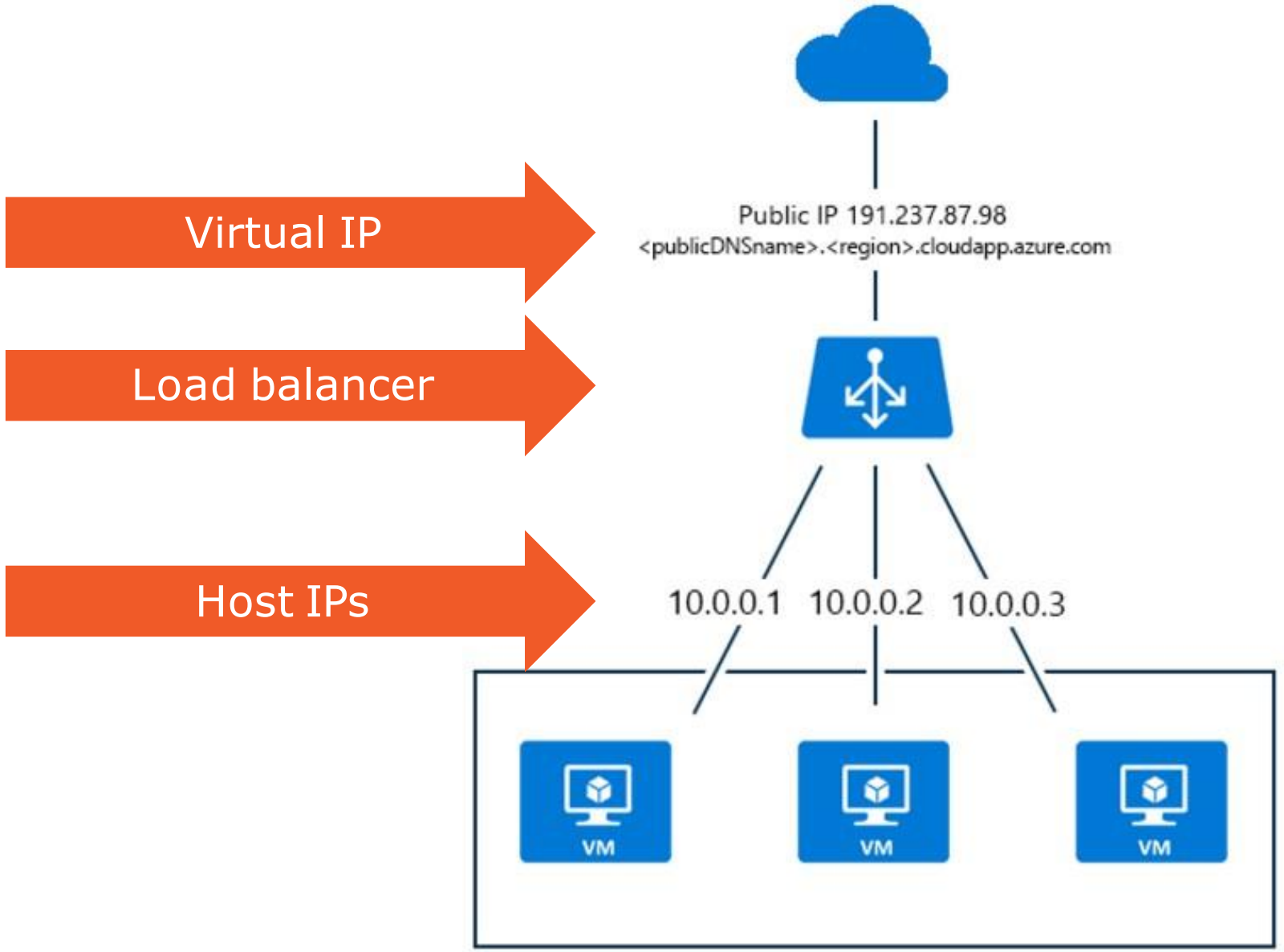
Stateless web front ends

Container orchestration

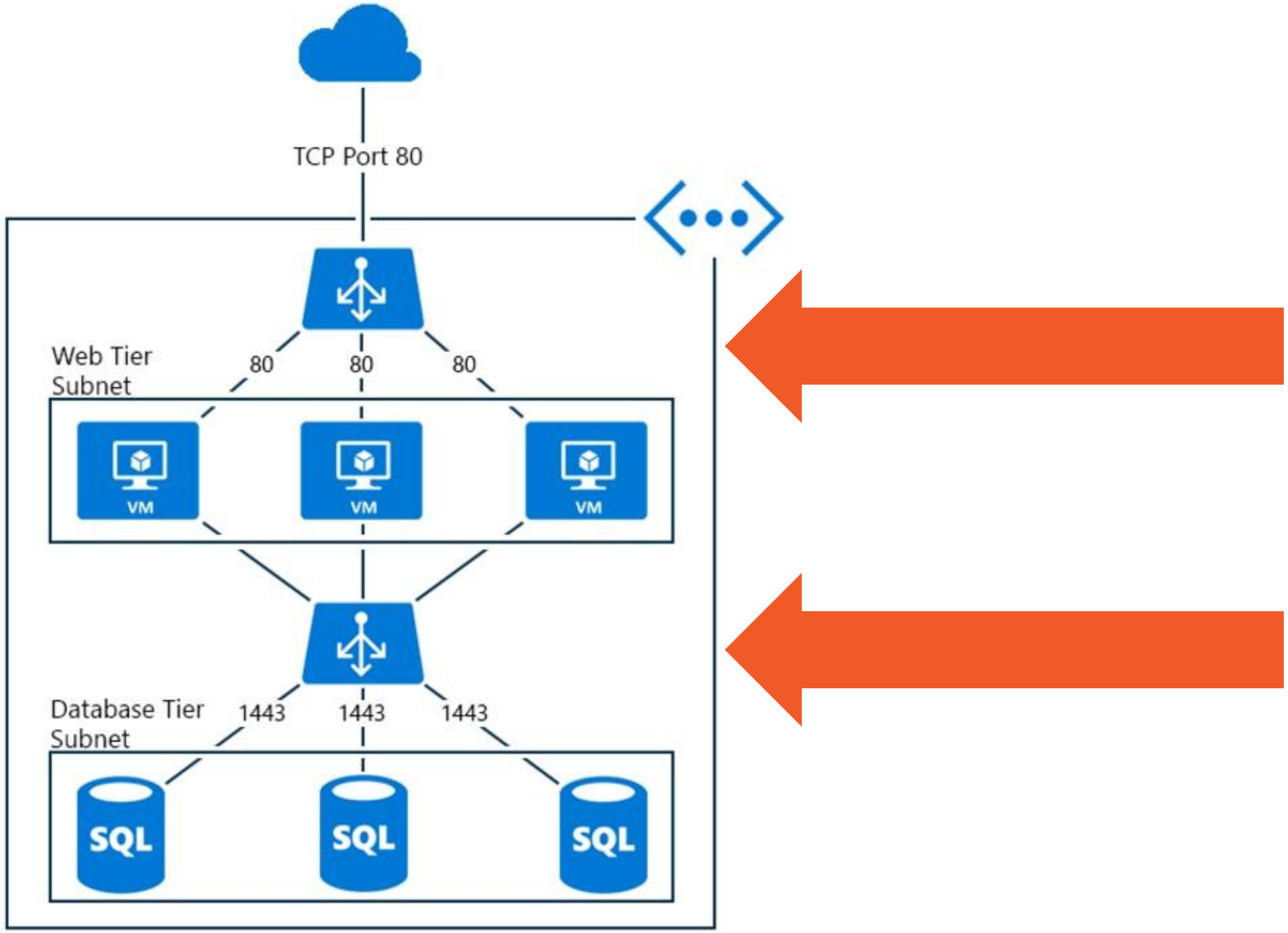
Microservices clusters

Load Balancers

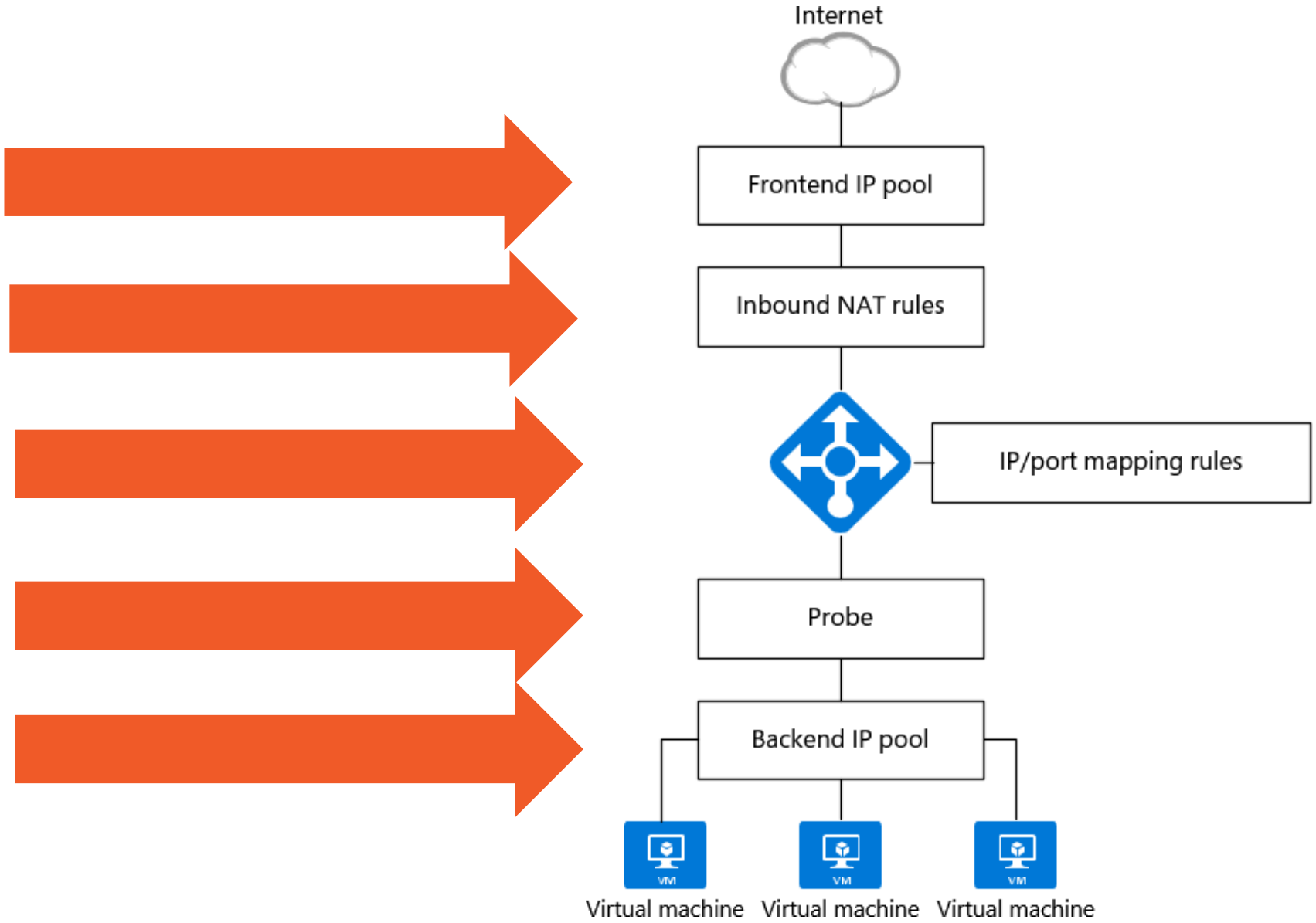
Azure External Load Balancer



Azure Internal Load Balancer



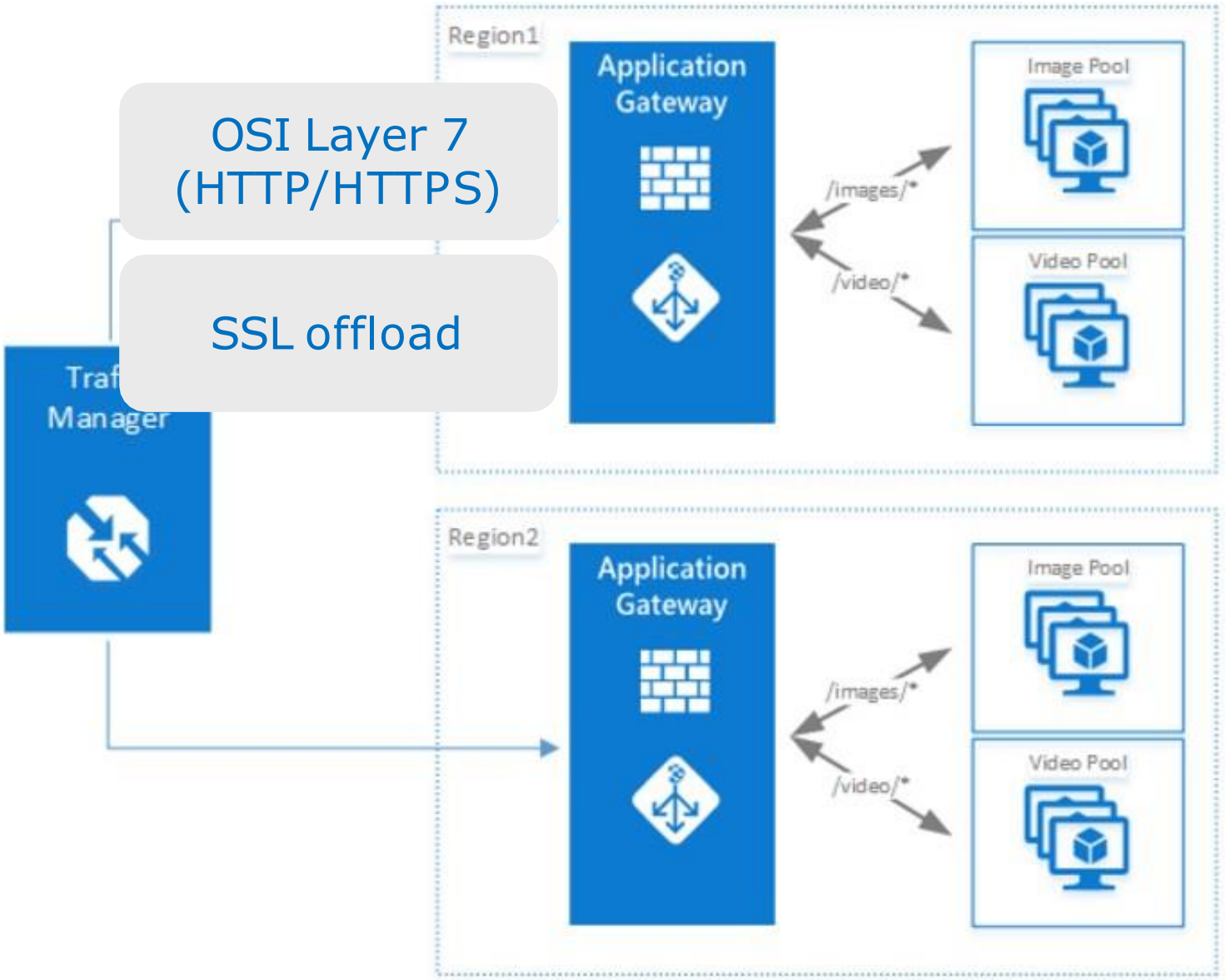
Azure Load Balancer Resources



Other Load Balancing Options

DNS

Geo-distributed services



OSI Layer 7 (HTTP/HTTPS)

SSL offload

Azure LBs work at OSI Layer 4 (TCP/UDP)

Uses 5-tuple hash algorithm

Demo

1

Stick to the portal

Create 1set for web servers

Another set for database servers

View properties to show FD, UD

Demo

2

Show portal

Examine instances using Resource Explorer

Show Quickstart Template:

Show visualizer

Show launch in azure button

Put jumpbox on same virtual network and show how you can connect to the instances

Demo

3

Deploy external load balancer

- port 80 for VMs
- random port mapping to 3389

Deploy internal load balancer

- port TCP 3306