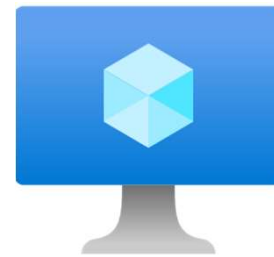


Azure Compute

Virtual Machine

- Virtual Machine (VM) – An instance Windows or Linux virtual computer
- On-demand
- Scalable
 - Scale up/down – increase or decrease the size of the VM
 - Scale out/in – increase or decrease the number of VM instances
- Usage-based pricing, deallocate to stop charges
- Windows VM charges – OS + virtual hardware
- Linux VM charges – virtual hardware



Azure Compute

Virtual Machine

Windows

Server 2008 R2 – current

Windows 7 – 11

Windows 10 & 11 multi-user

Linux

CentOS 6.x, 7.x, 8.x

Debian 8.x, 9.x, 10.x

Oracle Linux 6.x, 7.x, 8.x

Red Hat Enterprise Linux 6.x, 7.x, 8.x

openSUSE 15.x

Ubuntu 16.x, 18.x, 20.x



Azure Compute

Scale Set

- Manage multiple instances of a VM
- Redundancy and performance for distributed applications
- Auto-scale out or in based on schedule or resources load
- Resources accessible with an Azure load balancer or and Application Gateway



Web Servers in Azure

Application
Web Server
OS



Application
Web Server
OS



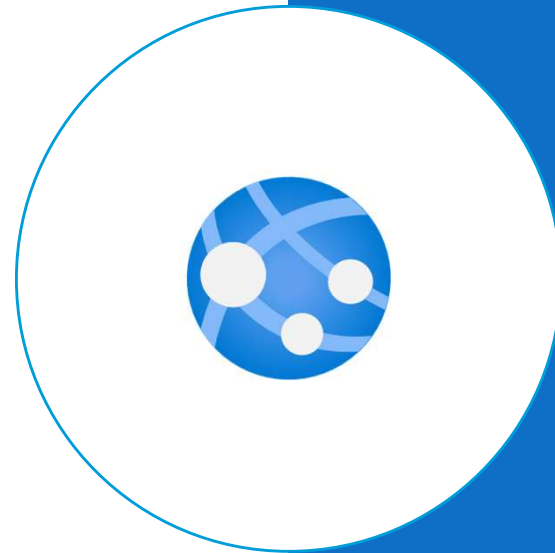
Application
Web Server
OS



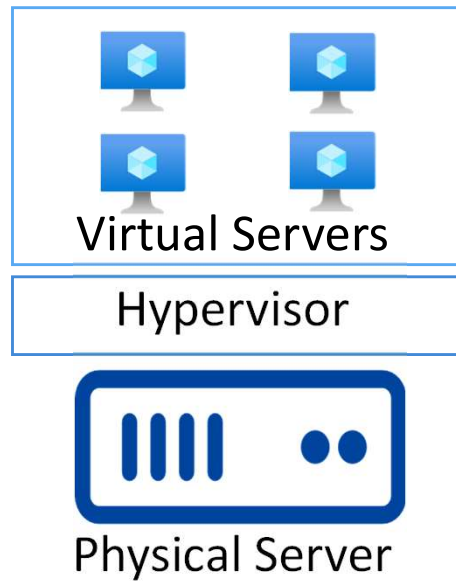
Azure Compute

App Service

- HTTP service used for hosting web apps
 - .NET
 - .NET Core
 - Java
 - Ruby
 - Node.js
 - PHP
 - Python
- Windows and Linux support
- Load balancing
- Autoscaling

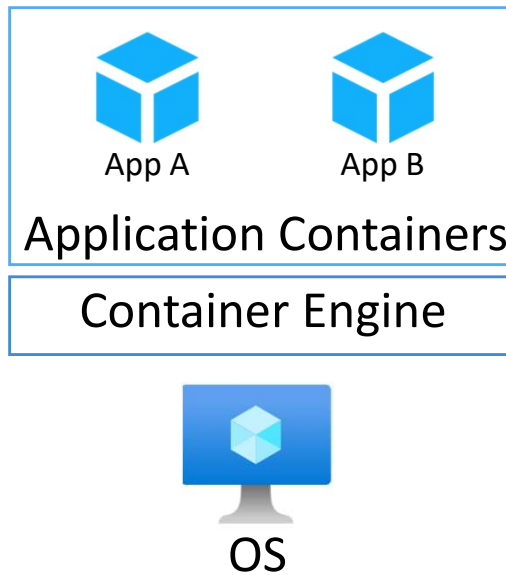


Containers



Containers

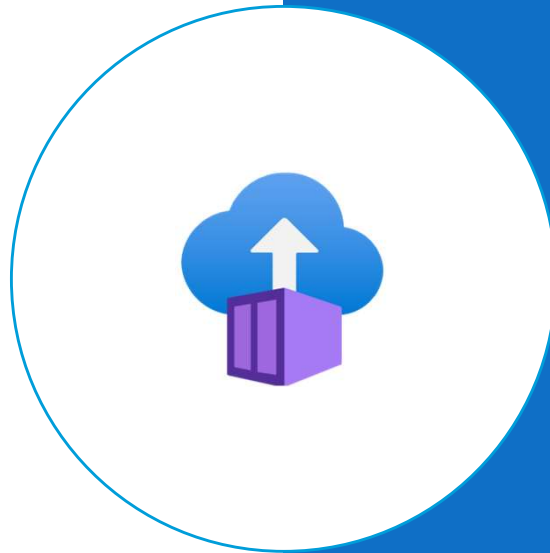
- Portable
- Lightweight
- Stateless



Azure Compute

Azure Container Instance (ACI)

- Environment to run an instance of an isolated container
 - Simple application
 - Automation
- Linux and Windows containers
- Persistent storage
- Virtual network deployment



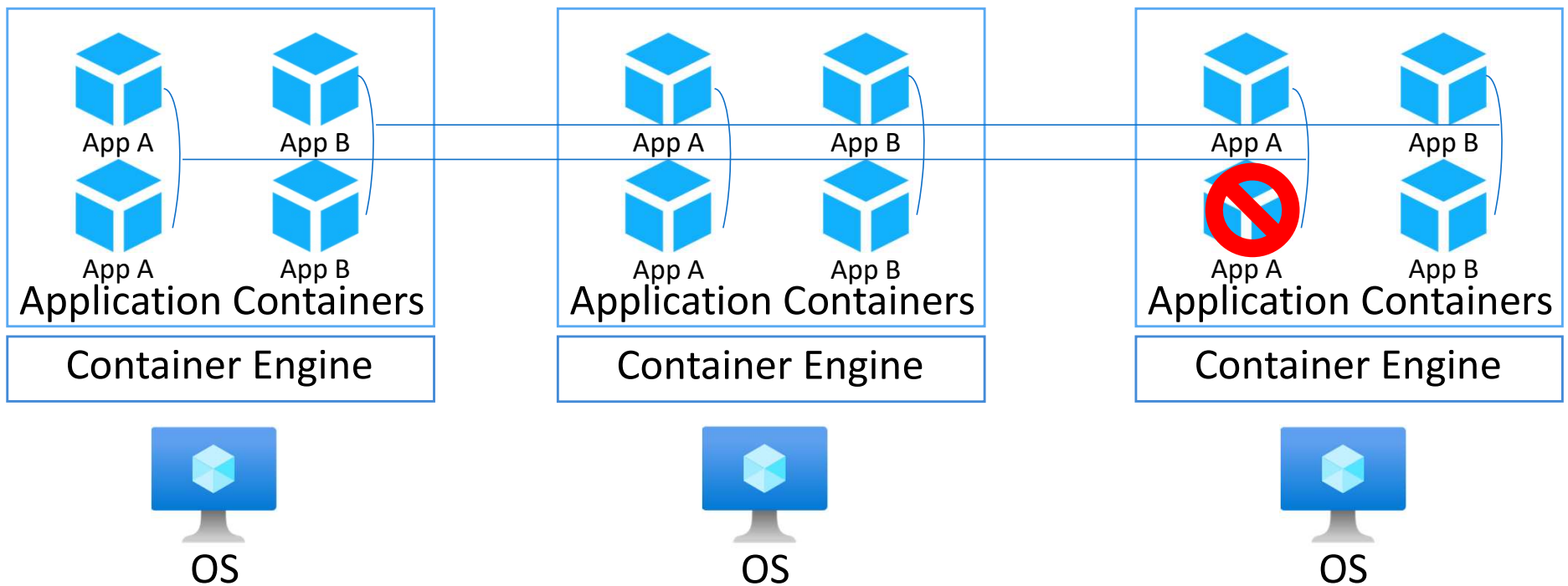
Azure Compute

Azure Container Registries (ACR)



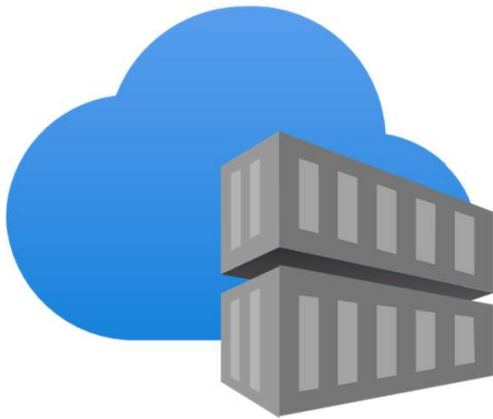
- Managed, private registry for Docker images
- Docker Registry 2.0
- Three tiers, Basic, Standard, and Premium
- Secure Access

Container Orchestration



Azure Compute

Azure Kubernetes Service (AKS)

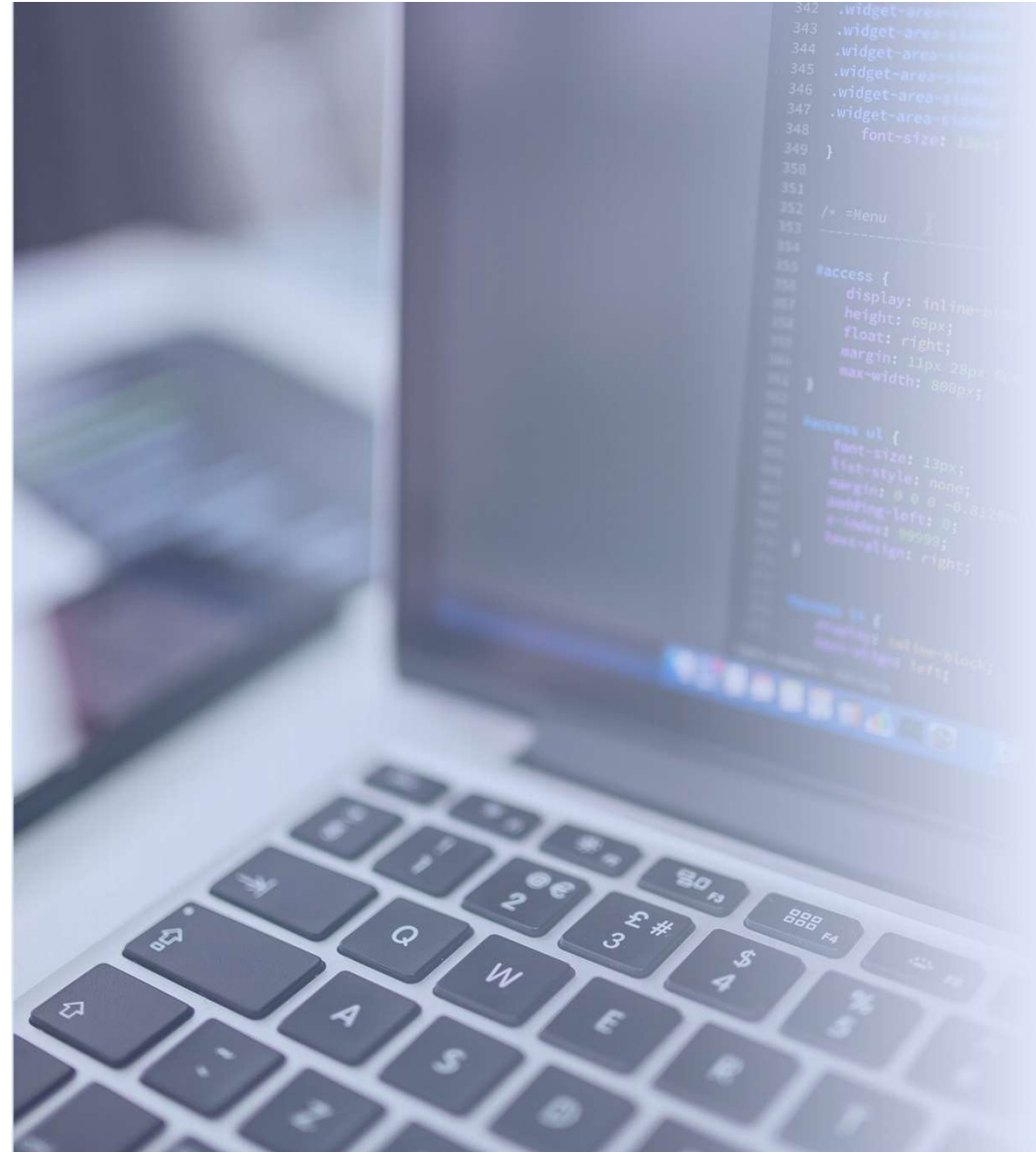


- Hosted Kubernetes service
- Orchestration service
 - Scaling
 - Upgrades
 - Storage access
 - Networking
 - Load balancing

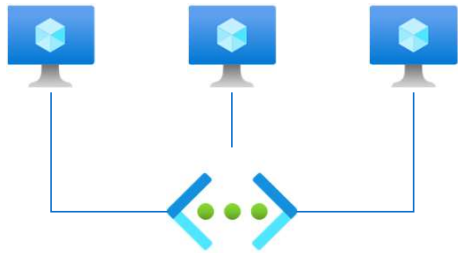
Azure Compute

Azure Virtual Desktop (AVD)

- Client desktops in Azure
- Supported OS:
 - Windows 10 & 11
 - Windows 10 & 11 multi-user
 - Windows Server
- Connection Management
- FSLogix profile management
- MSIX App Attach



Azure Networking

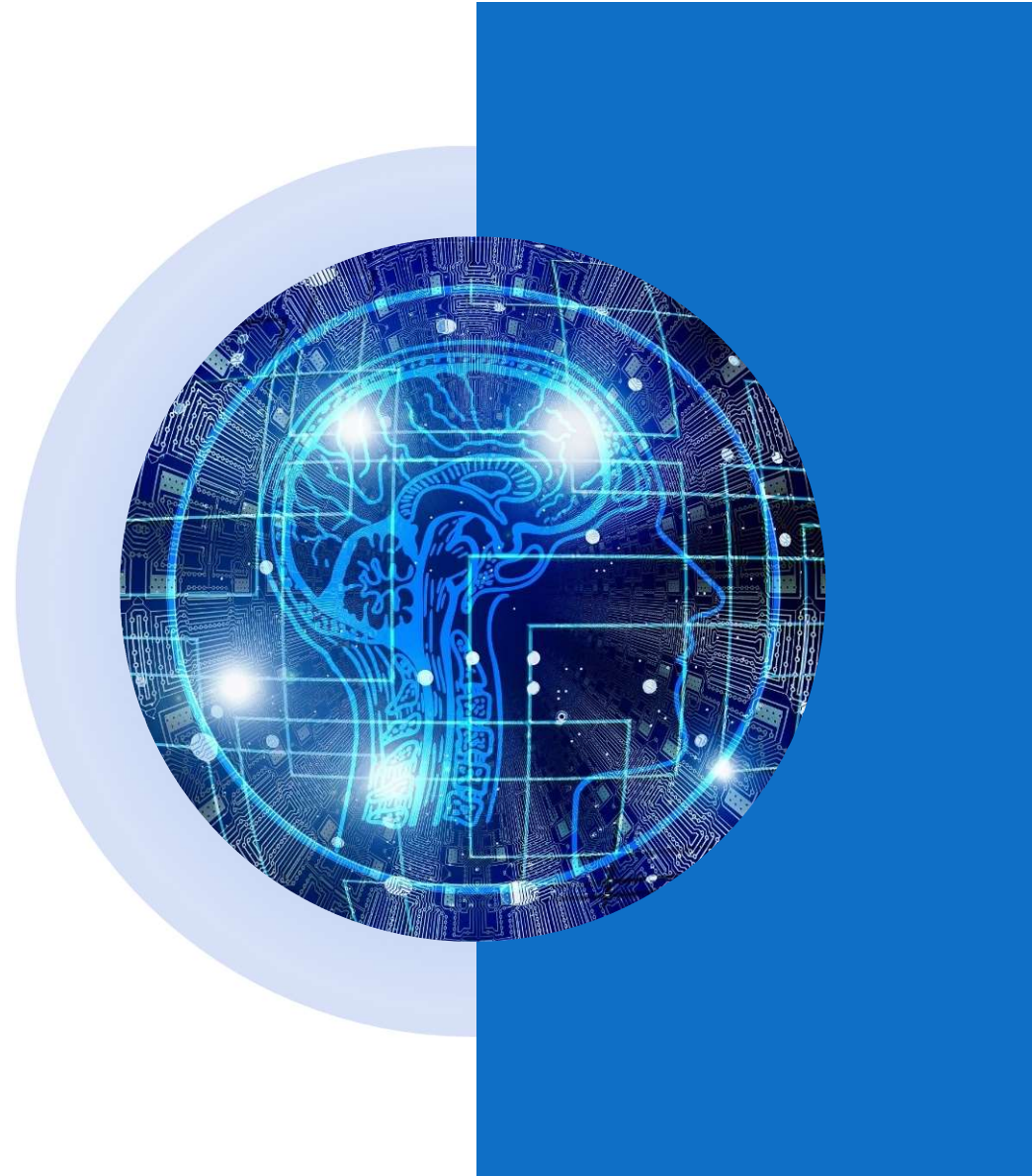


Virtual Network

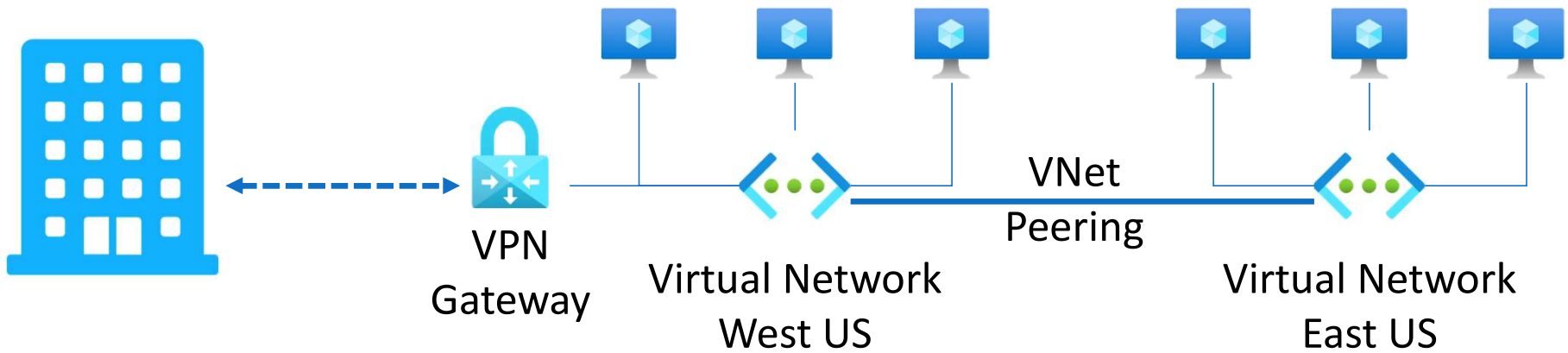
Azure Networking

Virtual Network

- Connect Azure resources over a private network
- Supports IPv4 and IPv6
- Network Isolation
- Network Routing
 - Route Tables
 - Border Gateway Protocol (BGP)
- Traffic Filtering
 - Network Security Groups



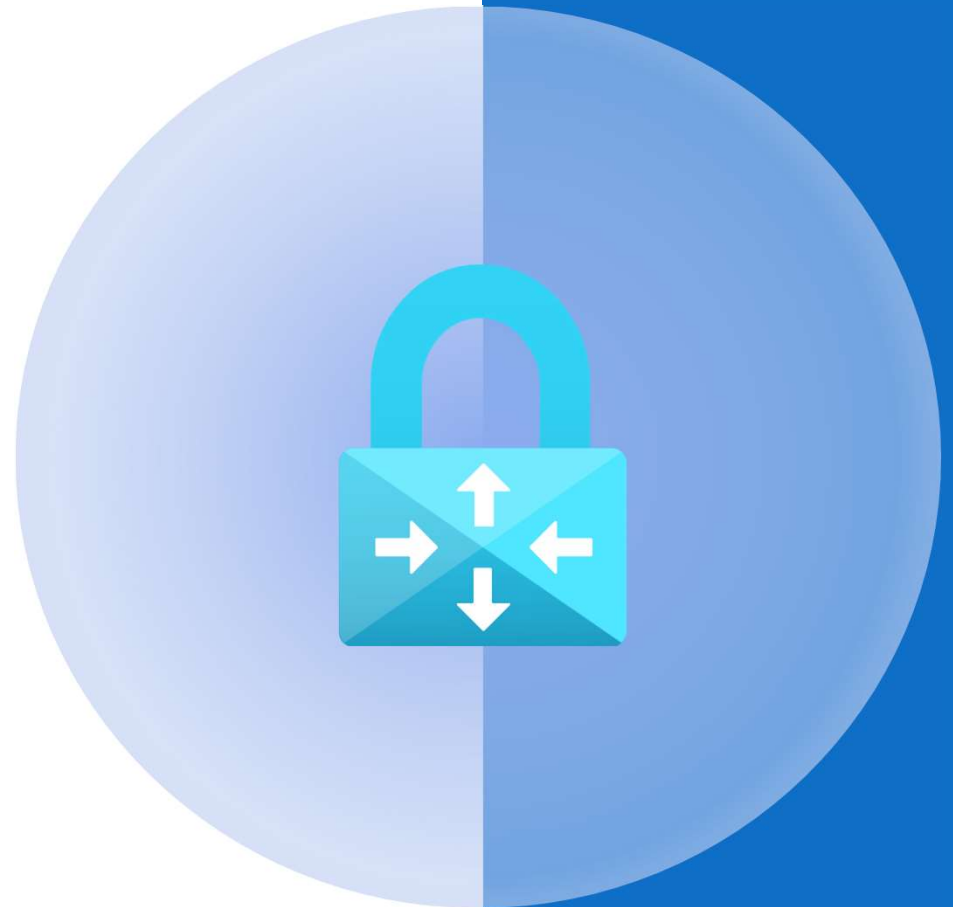
VPN Gateway



Azure Networking

VPN Gateway

- Enables connectivity for:
 - Point-to-site
 - Site-to-site
 - VNet-to-VNet



Azure Networking

VPN Gateway SKUs

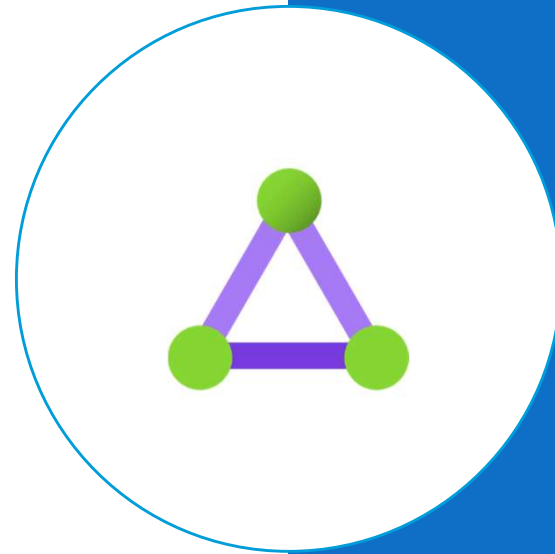
SKU	S2S, Net2Net Tunnels	Aggregate Throughput Benchmark	BGP Support
Gen1 Basic	10	100 Mbps	No
Gen1 VpnGw1/AZ	30	650 Mbps	Yes
Gen1 VpnGw2/AZ	30	1 Gbps	Yes
Gen1 VpnGw3/AZ	30	1.25 Gbps	Yes
Gen2 VpnGw2/AZ	30	1.25 Gbps	Yes
Gen2 VpnGw3/AZ	30	2.5 Gbps	Yes
Gen2 VpnGw4/AZ	100	5 Gbps	Yes
Gen2 VpnGw5/AZ	100	10 Gbps	Yes

- Basic – recommended for test, labs and proof of concept
- AZ – SKUs with AZ support high availability with Availability Zones

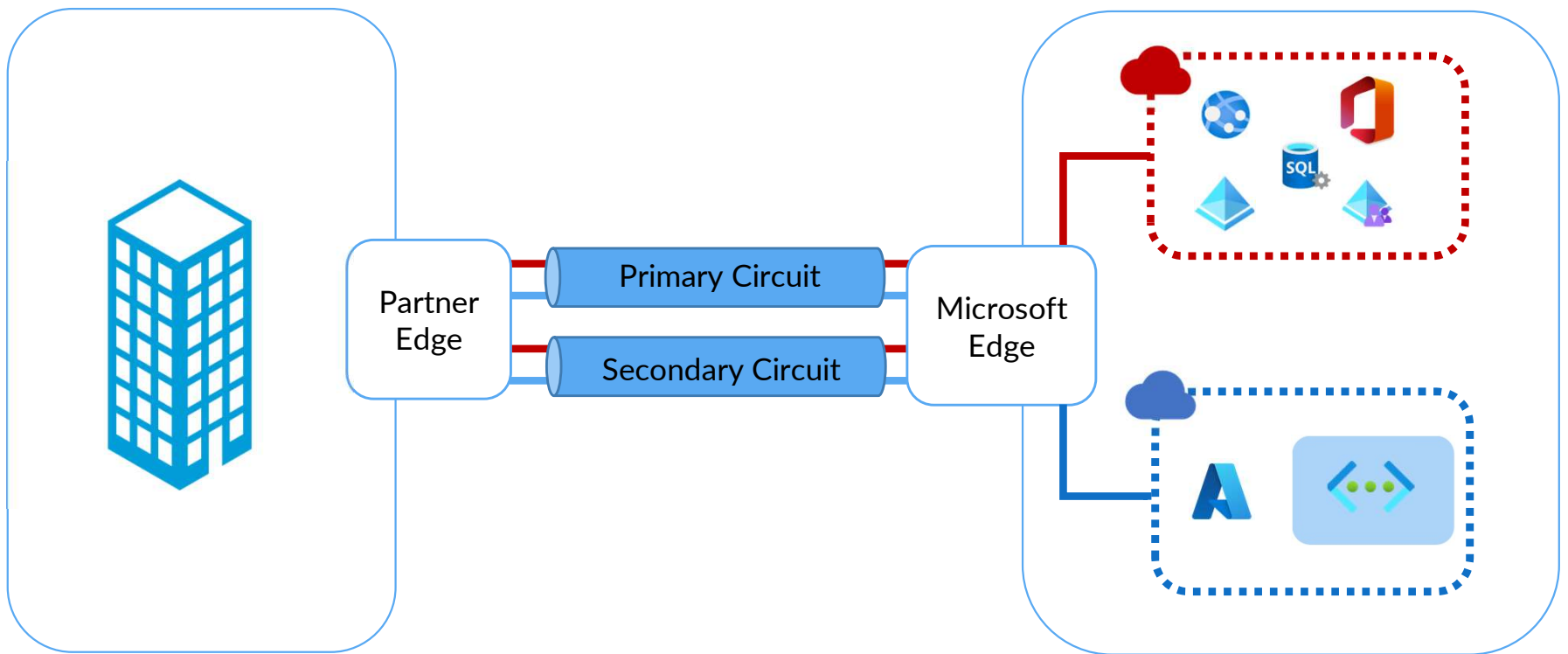
Azure Networking

ExpressRoute

- Connect on-premises networks with the Microsoft cloud over a private connection
- Reliable
- Dedicated bandwidth
- Consistent latency



ExpressRoute



Azure Networking

ExpressRoute

- Layer 3 connectivity
- Redundancy
- Cloud Services Connectivity
 - Microsoft Office 365*
 - Microsoft Dynamics
 - Azure Compute Services
 - Azure Cloud Services

*Office 365 was created to be securely and reliably accessed from the internet, it is not recommended for ExpressRoute under most scenarios

