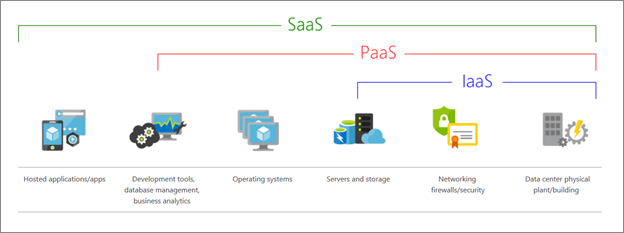
Cloud service model (Differences between categories of cloud services)



Shared Responsibilities for each cloud service model

Graphical user interface, application

Description automatically generated

Public, Private & Hybrid cloud (differences between types of cloud computing)

Timeline

Description automatically generated

Azure resources, resource group, subscription and management groups

One Microsoft account can have multiple Azure subscriptions. If your organization has many Azure subscriptions, you may need a way to efficiently manage access, policies, and compliance for those subscriptions. Management groups provide a governance scope above subscriptions. You organize subscriptions into management groups; the governance conditions you apply cascade by inheritance to all associated subscriptions.

Virtual machines vs Containers

VM – Single OS running as emulated computer. Virtualize the hardware. Complete control.

Container – Put application dependencies in a single container (instance) and deployed as a unit on container host. Virtualize OS. Portable and performance benefit.

Kubernetes – for managing containers including scaling demand and rollback.

Functions vs Logic Apps

Functions – write code for each activity as function (to complete each step)

Logic Apps – use a GUI to define the actions and how they relate to one another

Azure Virtual Network (Connecting Azure VM securely)

Diagram

Description automatically generated

Azure VPN Gateway

Deployed in Azure virtual network, enable following capabilities:

1. Connect on-premises data center to virtual network through site-to-site connection
2. Connect individual devices to virtual network through point-to-site connection
3. Connect virtual network to other virtual network through network-to-network connection

Can only deploy one VPN gateway in each virtual network but can connect to other virtual networks in different locations. Two types of VPN gateway: 1) Policy-based 2) Route-based. These types define how data is encrypted over the network. Both use pre-shared key as the only method for authentication.

Policy-based uses static routing, useful to connect legacy system.

Route-based is preferred way. It uses dynamic routing (also support static routing) via route tables.

Table

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Diagram

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High-availability configuration

Diagram

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Diagram

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We can deploy zone-redundant configuration to make it safe from zone level failure, Also, internet fails over to ensure high availability. This ensures we always have connections to the virtual network.

Azure ExpressRoute (Private connection from on-premises to Azure cloud services)

It allows connecting on-premises resources with Azure cloud, MS365 (with the help of connectivity providers). Connection don’t go over public network. Can be point-to-point or virtual cross connection.

Diagram

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ExpressRoute uses the Border Gateway Protocol or BGP writing protocol. BGP is used to exchange routes between on premises networks on resources running in azure. This protocol enables dynamic routing between your on-premises network and services running in the Microsoft Cloud.

Use ExpressRoute Circuit and traffic will travel over Microsoft networks.

Graphical user interface, diagram, application, Teams

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