**Azure fundamental assignment 3**

1. **What is Azure App Service and when to opt for Azure App Service?**

Azure App Service is **an HTTP-based service for hosting web applications, REST APIs, and mobile back ends**. You can develop in your favorite language, be it . NET, . NET Core, Java, Ruby, Node.

We need to opt for App Service in below scenarios

Fully managed platform for building, deploying and scaling your **web apps**

Also supports **REST APIs, and mobile back ends** Natively supports .NET, .NET Core, Node.js, Java, Python and PHP

Choose App Service plan: defines a set of compute resources for a web app

**Features**:

Automated Deployment and management

Auto Scaling

Built in Load Balancing

1. **Differentiate Azure Container Instances and Azure Kubernetes Service**

|  |  |  |
| --- | --- | --- |
|  | **ACI** | **AKS** |
| **Description** | Run containers without managing servers. | Orchestrate and manage multiple container images and applications. |
| **Deployment** | For event-driven applications, quickly deploy from your container development pipelines, run data processing, and build jobs. | Uses clusters and pods to scale and deploy applications. |
| **Web Apps (Monolithic)** | Yes | Yes |
| **N-Tier Apps (Services)** | Yes | Yes |
| **Cloud-Native (Microservices)** | Yes | Yes, recommended for Linux containers |
| **Batch/Jobs (Background tasks)** | Yes | Yes |
| **Use cases** | * Dev/Test scenarios * Task automation * CI/CD agents * Small/scale batch processing * Simple web apps | * Containers and application configuration portability * Enables you to select the number of hosts, size, and orchestrator tools * Transfer container workloads to the cloud without changing your current management practices. |
| **Major Difference** | You should use AKS if you need full container orchestration, such as service discovery across multiple containers, automatic scaling, and coordinated application upgrades. | |

1. **What is the Azure function? Explain in brief.**

Azure Functions (from Microsoft Azure) is a cloud-based serverless service that **allows running event-triggered code in a scalable way without providing or managing infrastructure**. It enables the capability to run a script or piece of code in response to a variety of events and doesn't need to run continuously.

You don't worry about servers or scaling or availability

You only worry about your code

You pay for what you use

Number of requests

Duration of requests

Memory consumed

Supports C#, Python, JavaScript, Typescript and Java

1. **What is Azure Virtual Desktop?**

Azure Virtual Desktop is a desktop and app virtualization service that runs on the cloud.

Azure Virtual Desktop, formerly known as Windows Virtual Desktop, is a Microsoft Azure-based system for virtualizing its Windows operating systems, providing virtualized desktops and applications securely in the cloud. It is aimed at enterprise customers rather than at individual users.

1. **What is Azure virtual networking? Explain in detail.**

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation.

Azure virtual network enables Azure resources to securely communicate with each other, the internet, and on-premises networks. Key scenarios that you can accomplish with a virtual network include - communication of Azure resources with the internet, communication between Azure resources, communication with on-premises resources, filtering network traffic, routing network traffic, and integration with Azure services.

Your own isolated network in Azure

Network traffic within a Virtual Network is isolated (not visible) from all other Azure Virtual Networks

Each Virtual Network is created in a Region

You control all the traffic coming in and going outside a Virtual Network

(Best Practice) Create all your Azure resources (compute, storage, databases etc) within a Virtual Network

Secure resources from unauthorized access AND

Enable secure communication between your cloud resources

1. **Explain Azure VPN gateway.**

A VPN gateway is a specific type of virtual network gateway that is used to send encrypted traffic between an Azure virtual network and an on-premises location over the public Internet. You can also use a VPN gateway to send encrypted traffic between Azure virtual networks over the Microsoft network. Each virtual network can have only one VPN gateway. However, you can create multiple connections to the same VPN gateway. When you create multiple connections to the same VPN gateway, all VPN tunnels share the available gateway bandwidth.