**Azure fundamental assignment 2**

1. **What is serverless computing?**

**Serverless** means we focus on code and the cloud managed service takes care of all that is needed to scale our code to serve millions of requests.

We pay for requests and NOT servers/infrastructure.

We pay for

No of requests

Duration of requests

Memory consumed

Ex: Azure Functions, Logic apps

1. **Explain Azure subscriptions, management groups and resources.**

An **Azure subscription** links to an Azure account, which in turn is an identity in Azure Active Directory (AD). Hence, a subscription is an agreement between an organization and Microsoft to use resources, for which charges are either paid on a per-license basis or a cloud-based, resource-consumption basis.

**Azure management groups** provide a level of scope above subscriptions. You organize subscriptions into containers called "management groups" and apply your governance conditions to the management groups. All subscriptions within a management group automatically inherit the conditions applied to the management group.

**Azure Resource** - A manageable item that is available through Azure. Virtual machines, storage accounts, web apps, databases, and virtual networks are examples of resources. Resource groups, subscriptions, management groups, and tags are also examples of resources.

1. **Explain Azure regions, availability zones, and region pairs.**

**Azure Region** - Specific geographical location to host your resources.

**Azure Availability Zones** -Azure *availability zones* are physically separate locations within each Azure region that are tolerant to local failures.

An **Azure Region Pair** is a relationship between 2 Azure Regions within the same geographic region for disaster recovery purposes. If one of the regions were to experience a disaster or failure, then the services in that region will automatically failover to that regions secondary region in the pair.

1. **Explain Azure Resource Manager, Azure subscription and management group.**

**Azure Resource Manager** is the deployment and management service for Azure. It provides a management layer that enables you to create, update, and delete resources in your Azure account. You use management features, like access control, locks, and tags, to secure and organize your resources after deployment.

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**Azure Management groups** are containers that help you manage access, policy, and compliance across multiple subscriptions. Create these containers to build an effective and efficient hierarchy that can be used with Azure Policy and Azure Role Based Access Controls.

1. **Provide overview of Azure Compute Services.**

Azure compute is an on-demand computing service for running cloud-based applications. It provides computing resources such as disks, processors, memory, networking, and operating systems. The resources are available on-demand and can typically be made available in minutes or even seconds. You pay only for the resources you use, and only for as long as you're using them.

* Azure Virtual Machines

Virtual machines are software emulations of physical computers. They include a virtual processor, memory, storage, and networking resources. VMs host an operating system, and you can install and run software just like a physical computer.

* Azure Container Instances

Azure compute resources that you can use to deploy and manage containers. Containers are lightweight, virtualized application environments. They're designed to be quickly created, scaled out, and stopped dynamically. You can run multiple instances of a containerized application on a single host machine.

* Azure App Service

With [Azure App Service](https://azure.microsoft.com/services/app-service), you can quickly build, deploy, and scale enterprise-grade web, mobile, and API apps running on any platform. You can meet rigorous performance, scalability, security, and compliance requirements while using a fully managed platform to perform infrastructure maintenance. App Service is a platform as a service (PaaS) offering.

* Azure Functions (or serverless computing)

[Functions](https://azure.microsoft.com/services/functions) are ideal when you're concerned only about the code running your service and not the underlying platform or infrastructure. They're commonly used when you need to perform work in response to an event (often via a REST request), timer, or message from another Azure service, and when that work can be completed quickly, within seconds or less.

1. **What is an Azure virtual machine and when to opt for an Azure virtual machine?**

Virtual machines are software emulations of physical computers. They include a virtual processor, memory, storage, and networking resources. VMs host an operating system, and you can install and run software just like a physical computer. When using a remote desktop client, you can use and control the VM as if you were sitting in front of it.

Use VMs when we need control over OS OR we want to run/install custom software’s.

We handle Availability, Scalability, Load Balancing, Software’s, OS updates/patches etc.