**Azure fundamental assignment 2**

1. What is serverless computing?
2. Explain Azure subscriptions, management groups and resources.
3. Explain Azure regions, availability zones, and region pairs.
4. Explain Azure Resource Manager, Azure subscription and management group.
5. Provide overview of Azure Compute Services.
6. What is an Azure virtual machine and when to opt for an Azure virtual machine?

Answers:

1. Serverless computing is basically executing the task without any physical server on the premises. That means tasks are executed on the cloud. The user need not to be worried about the infrastructure before performing the task on the cloud because all the servers on the cloud are scalable as per the task execution. A company opting for cloud computing makes the organisation as a serverless organisation. Cloud computing is the most cost efficient way to manage the backend tasks and processing heavy tasks as per pay as you go model. Just pay for what you use.

2. **Azure Subscription**: Subcription in azure has multiple resources from multiple locations and every subscription will have certain limits to create or to use resources. One can have multiple subscriptions to manage budget against organization/project.

**Azure Management Groups**: Management group has subscriptions, resource groups and resources. So all the settings of the management group will be applied to the subscriptions and resources under the same management group. Organization can have multiple management groups. An Azure resource cannot be contained within a management group. It can only hold subscriptions or other management groups.

**Azure Resources**: Any service instance we create in Azure is referred to as an azure resource. For example, a virtual machine, an Azure SQL database, and a storage account, to name a few.

3. **Azure regions**: Azure regions are the datacenters which are connected with high speed internet with very low latency. Azure region can have 1 or more datacenteres. We can deploy our applications and data to any Azure region of our preference. To provide cross-region resiliency, we can even deploy across multiple regions.

**Azure Availability zones**: Availability zone is the separate location within Azure datacenter with independent power and networking. All regions do not have availability zones. To provide resiliency, regions that feature Availability Zones have at least 3 different zones. When one of the Availability Zones fails for any reason, the remaining two Availability Zones continue to provide our apps and data. With these availability zones we get 99.99% of uptime.

**Azure region pairs**: A regional pair is comprised of two regions that are located in the same geographical area. For example if India has one or more azure regions or datacenters then it is called region pair. Each datacenter has separate power supply and separate network connectivity.

4. **Azure Resource Manager**: It is a deployment and management service in azure which helps user to manage all resources in the azure account. I helps to deploy, monitor and manage all the resources as a single group instead of handling the individually. I helps to apply tags to the resources to organize them in our subscription.

**Azure subscription**: We have different types of azure subscriptions like free, pay-as-you-go and free trail. This acts as the single bill for all the services used on the single account. The free account is a subscription that offers you full access to Azure resources as well as a $200 credit toward paid products.

**Azure management group**: Azure Management Groups are logical containers that enable Azure Administrators to manage multiple access, policy, and compliance across so many Azure Subscriptions. You may utilise management groups to create an Azure Subscription tree that you can use with other Azure services like Azure Policy and Azure Role Based Access Control. Policy, access control, and compliance may all be organised with Azure Management Groups across different subscriptions. For resource management, Azure Management Groups can be stacked up to six levels deep.

5. Azure computing service is the more demanding service for deploying clouds applications. It provides resources like networking, storage disk, processors, memory and operating systems. All these resources are available in fraction of minutes to use them. We just pay for the resources for what we use. Some of the most prominent services like Azure Virtual Machines, Azure Container Instances, Azure App Service.

6. Azure virtual machine is one of the service that Azure cloud offers to its users to perform tasks like development and testing of web applications and to deploy applications on to the cloud. Azure virtual machine is highly scalable and flexible with out use of buying any other physical components. Oraganization can opt for Azure VM when they need for extention of computing services. Azure VM helps to collect diagnostics data that can be used to monitor the health of our application and helps to takes neccessary action against our application deployed on the cloud.