Service - Computing Example

In an exam, they may give you a service name and ask which computing model it belongs to.

Below are some very common examples of what they generally ask for.

**IaaS**

1. Azure Virtual Machine
2. Azure Storage accounts

**PaaS**

1. Azure App Service
2. Azure SQL Databases
3. Azure Cosmos DB
4. Azure Synapse Analytics

**SaaS**

1. Outlook email
2. Calendar
3. Office 365

**\*\*\*\* Remember below points \*\*\*\***

**SaaS Computing Model**

* Note: All aspects of a Software-as-a-Service solution, including as installation, disaster recovery, and high availability, are typically handled by the service provider. All you have to do now is configure the solution.
* SaaS - your only responsibility is to configure the solution

**IaaS Computing Model**

* Please remember, you can control "Operating System" only in IaaS computing model.
* IaaS - if you need to install some software, prerequisite applications or services

**PaaS Computing Model**

* Minimize the administrative effort

Important Terms

Please make sure you understand and remember below important terms.

**Low Latency**

* Latency is the amount of time the user must wait to receive their result.
* Low Latency means - Users should be able to quickly access the application over the Internet.

**Scalability**- Your app in the cloud can scale (vertically or horizontally) so that Even when demand grows, the application infrastructure must work as expected.

**Fault tolerance** - Even in the case of a failure, the application infrastructure must be available.

**Disaster Recovery**– A cloud service that can be recovered after a failure occurs

**Azure Marketplace** - This is a "create a resource" in a portal. If you remember, we discussed that you can browse and choose various Azure resources.

**Azure Site Recovery tool**is not in syllabus but sometimes question comes on this.

* This tool is used for disaster recovery purposes.

Private vs Public vs Hybrid

**Private**

* One of the main reason company use **Private cloud is to control all security aspects for their infrastructure.**
* A private cloud represents an on-premises data center, so you can deploy physical servers in your own infrastructure.

**Public**

* It is important to remember for exam that**,**Public Cloud does not require the company to invest in any capital expenditure but only invest on operational expenses
* Shared hardware resources between multiple tenants

**Hybrid**

* In order to work in a hybrid cloud model, you must deploy resources to Azure public cloud.
* Example could be like you have Azure web app that queries an on-premises Microsoft SQL server is an example of a Hybrid cloud.

**OpEx vs CapEx**

* Operational expenditure (OpEx) expenses are represented by monthly payments in your company.

Paying for software licenses on a monthly basis is an example of operational expenditure (OpEx) expenses.

**Region Pair**: Each Azure region is always paired with another region within the same geography

**Resource Group**is an important topic from exam perspective.

Please read below points carefully.

* It is not required to deploy the resources in a resource group to the same location. The resource might be located elsewhere than the resource group.
* The resources in a resource group don’t inherit the tags. (tags will be covered in Governance module later)
* RBAC permissions are inherited by the resources within the resource group. (RBAC topic will be covered in Governance module later)
* Resource Group provides management layer for creating, updating, and deleting resources in your Azure account
* A resource group can contains resources and not subscriptions.
* Resource in one resource group access a resource in another resource group
* By deleting the resource group, it would delete all of the resources within the resource group.
* Azure resource can only be deployed in one resource group. We can’t deploy resource in 2 or more resource group.
* Resource groups in itself are free resources in Azure.
* Resource groups can’t be nested

**Subscription**

* You can use one single Microsoft account to manage multiple subscriptions
* It is not possible to merge subscriptions
* A subscription may have several account administrators.
* You can move resources like Azure virtual machines to different subscriptions

**Availability Zones**

* These are separate physical locations within each region that are tolerant to local failures
* Data is not replicated automatically across Availability Zones.
* Not all Azure regions support availability zones.
  + In Azure, there are two types of regions: recommended regions and alternative regions. Availability zones are only supported in recommended regions.
* You can deploy either Windows or Linux virtual machines in availability zones.

**Virtual Machine**

* Even if you stop the virtual machine, you will continue to pay for the storage costs associated with the machine.

**App Service**

* Using app service, you can host a web application on the Azure platform
* The right App Service Plan will allow you to scale your web application automatically.

**Azure Batch**(Not in syllabus though)

* Runs high-performance computing workloads in parallel

**Container app service**

* You can use container App service both via the portal and the Azure CLI

**Azure Application Insights** (Not in syllabus though)

* Be able to provide a monitoring solution for web applications

**Azure Virtual Desktop (Windows Virtual Desktop)**

* How many simultaneous user connections? It depends on the hardware configuration of the session host. It is not fixed.
* Multiple operating systems (OS) are supported, not only Windows 10 OS. You can run virtual desktops in Azure Virtual Desktop using Windows 7, Windows 10, and Windows Server 2012 R2, 2016, 2019 operating systems.
* With Windows Virtual Desktop, you may run both desktop and app virtualization.

**Serverless computing –**whendemand is unpredictable, spike in usage

**Azure Logic Apps**

* Be able to design and run workflows in Azure
* Example: you can sends email notifications automatically based on a rule.