**Section 1: General Cloud Questions**

**1. What are the different types of services offered in the cloud?**

|  |  |  |
| --- | --- | --- |
| **IAAS VS PAAS VS SAAS** | | |
| **IAAS** | **PAAS** | **SAAS** |
| In infrastructure as a service, you get the raw hardware from your cloud provider as a service i.e you get a server which you can configure with your own will. | Platform as a Service, gives you a platform to publish without giving the access to the underlying software or OS. | You get software as a service in Azure, i.e no infrastructure, no platform, simple software that you can use without purchasing it. |
| For Example: Azure VM, Amazon EC2. | For example: Web Apps, Mobile Apps in Azure. | For example: when you launch a VM on Azure, you are not buying the OS, you are basically renting it for the time you will be running that instance. |

**2. What is cloud computing?**

**Explanation:** It is the use of servers on the internet to “store”, “manage” and “process” data. The difference is, instead of using your own servers, you are using someone else’s servers to do your task, paying them for the amount of time you use it for.

**3. What are the different cloud deployment models?**

**Explanation:** Following are the three cloud deployment models:

**Public Cloud:** The infrastructure is owned by your cloud provider and the server that you are using could be a multi-tenant system.

**Private Cloud:**The infrastructure is owned by you or your cloud provider gives you that service exclusively. For eg: Hosting your website on your servers, or hosting your website with the cloud provider on a dedicated server.

**Hybrid Cloud:**When you use both Public Cloud, Private Cloud together, it is called Hybrid Cloud. For Example: Using your in-house servers for confidential data, and the public cloud for hosting your company’s public facing website. This type of setup would

**8. What are Roles and why do we use them?**

**Explanation:**Roles are nothing servers in layman terms. These servers are managed, load balanced, Platform as a Service virtual machines that work together to achieve a common goal.

There are 3 types of roles in Microsoft Azure:

* Web Role
* Worker Role
* VM  Role

Let’s discuss each of these roles in detail:

* **Web Role –** A web role is basically used to deploy a website, using languages supported by the IIS platform like, PHP, .NET etc. It is configured and customized to run web applications.
* **Worker Role –**A worker role is more like an help to the Web role, it used to execute background processes unlike the Web Role which is used to deploy the website.
* **VM Role –**The VM role is used by a user to schedule tasks and other windows services. This role can be used to customize the machines on which the web and worker role is running.

**11. What are virtual machine scale sets in Azure?**

**Explanation:**Azure virtual machine scale sets let you create and manage a group of identical, load balanced VMs. The number of VM instances can automatically increase or decrease in response to demand or a defined schedule. Scale sets provide high availability to your applications, and allow you to centrally manage, configure, and update a large number of VMs.

**12. Are data disks supported within scale sets?**

**Explanation:**Yes. A scale set can define an attached data disk configuration that applies to all VMs in the set. Other options for storing data include:

* Azure files (SMB shared drives)
* OS drive
* Temp drive (local, not backed by Azure Storage)
* Azure data service (for example, Azure tables, Azure blobs)
* External data service (for example, remote database)

**13. What is an Availability Set?**

**Explanation:** An availability set is a logical grouping of VMs that allows Azure to understand how your application is built to provide redundancy and availability. It is recommended that two or more VMs are created within an availability set to provide for a highly available application and to meet the 99.95% Azure SLA. When a single VM is used with Azure Premium Storage, the Azure SLA applies for unplanned maintenance events.

**14. What are Fault Domains?**

**Explanation:** A fault domain is a logical group of underlying hardware that share a common power source and network switch, similar to a rack within an on-premise data-centers. As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these fault domains. This approach limits the impact of potential physical hardware failures, network outages, or power interruptions.

**15. What are Update Domains?**

**Explanation:** An update domain is a logical group of underlying hardware that can undergo maintenance or can be rebooted at the same time. As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these update domains. This approach ensures that at least one instance of your application always remains running as the Azure platform undergoes periodic maintenance. The order of update domains being rebooted may not proceed sequentially during planned maintenance, but only one update domain is rebooted at a time.

**16. What are Network Security Groups?**

**Explanation:**A network security group (NSG) contains a list of Access Control List (ACL) rules that allow or deny network traffic to subnets, NICs, or both. NSGs can be associated with either subnets or individual NICs connected to a subnet. When an NSG is associated with a subnet, the ACL rules apply to all the VMs in that subnet. In addition, traffic to an individual NIC can be restricted by associating an NSG directly to a NIC.

**17. Do scale sets work with Azure availability sets?**

**Explanation:**Yes. A scale set is an implicit availability set with 5 fault domains and 5 update domains. Scale sets of more than 100 VMs span multiple *placement groups*, which are equivalent to multiple availability sets. An availability set of VMs can exist in the same virtual network as a scale set of VMs. A common configuration is to put control node VMs (which often require unique configuration) in an availability set and put data nodes in the scale set.

**18. What is a break-fix issue?**

**Explanation:**Technical problems are called break-fix issue, it is an industry term which refers to “work involved in supporting a technology when it fails in the normal course of its function, which requires intervention by a support organization to be restored to working order”.

**19. Why is Azure Active Directory used?**

**Explanation:**Azure Active Directory is an Identity and Access Management system. It is used to grant access to your employees to specific products and services in your network. For example: Salesforce.com, twitter etc. Azure AD has some in-built support for applications in its gallery which can be added directly.

**20. What happens when you exhaust the maximum failed attempts for authenticating yourself via Azure AD?**

**Explanation:**We use a more sophisticated strategy to lock accounts. This is based on the IP address of the request and the passwords entered. The duration of the lockout also increases based on the likelihood that it is an attack.

**21. Where can I find a list of applications that are pre-integrated with Azure AD and their capabilities?**

**Explanation:**Azure AD has around 2600 pre-integrated applications. All pre-integrated applications support single sign-on (SSO). SSO let you use your organizational credentials to access your apps. Some of the applications also support automated provisioning and de-provisioning.

**22. How can I use applications with Azure AD that I’m using on-premises?**

**Explanation:**Azure AD gives you an easy and secure way to connect to the web applications you choose. You can access these applications in the same way you access your SaaS apps in Azure AD, no need for a VPN to change your network infrastructure.

**23. What is Azure Service Fabric?**

**Explanation:**Azure Service Fabric is a distributed systems platform that makes it easy to package, deploy, and manage scalable and reliable micro-services. Service Fabric also addresses the significant challenges in developing and managing cloud applications. Developers and administrators can avoid complex infrastructure problems and focus on implementing mission-critical, demanding workloads that are scalable, reliable, and manageable. Service Fabric represents the next-generation middleware platform for building and managing these enterprise-class, tier-1, cloud-scale applications.

**24. What is a VNet?**

**Explanation:**VNet is a representation of your own network in the cloud. It logically isolates your instances launched in the cloud, from the rest of your resources.

**25. What are the differences between Subscription Administrator and Directory Administrator?**

**Explanation:**By default, one is assigned the Subscription Administrator role when he/she signs up for Azure. A subscription admin can use either a Microsoft account or a work or school account from the directory that the Azure subscription is associated with. This role is authorized to manage services in the Azure portal. If others need to sign in and access services by using the same subscription, you can add them as co-admins.

Azure AD has a different set of admin roles to manage the directory and identity-related features. These admins will have access to various features in the Azure portal or the Azure classic portal. The admin’s role determines what they can do, like create or edit users, assign administrative roles to others, reset user passwords, manage user licenses, or manage domains.

**26. Are there any scale limitations for customers using managed disks?**

**Explanation:** Managed Disks eliminates the limits associated with storage accounts. However, the number of managed disks per subscription is limited to 2000 by default.

**27. What is the difference between Service Bus Queues and Storage Queues?**

**Explanation:**The Azure Storage Queue is simple and the developer experience is quite good. It uses the local Azure Storage Emulator and debugging is made quite easy. The tooling for Azure Storage Queues allows you to easily peek at the top 32 messages and if the messages are in XML or Json, you’re able to visualize their contents directly from Visual Studio Furthermore, these queues can be purged of their contents, which is especially useful during development and QA efforts.

The Azure Service Bus Queues are evolved and surrounded by many useful mechanisms that make it enterprise worthy! They are built into the Service Bus and are able to forward messages to other Queues and Topics. They have a built-in dead-letter queue and messages have a time to live that you control, hence messages don’t automatically disappear after 7 days.

Furthermore, Azure Service Bus Queues have the ability of deleting themselves after a configurable amount of idle time. This feature is very practical when you create Queues for each user, because if a user hasn’t interacted with a Queue for the past month, it automatically gets clean it up. Its also a great way to drive costs down. You shouldn’t have to pay for storage that you don’t need. These Queues are limited to a maximum of 80gb. Once you’ve reached this limit your application will start receiving exceptions.

**28. What is Azure Redis Cache?**

**Redis** is an open source (BSD licensed), in-memory data structure store, used as a database, **cache**and message broker. Azure Redis Cache is based on the popular open-source Redis cache. It gives you access to a secure, dedicated Redis cache, managed by Microsoft, and accessible from any application within Azure.  It supports data structures such as strings, hashes, lists, sets, sorted sets with range queries, bitmaps, hyperloglogs and geospatial indexes with radius queries.

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**29. Why doesn’t Azure Redis Cache have an MSDN class library reference like some of the other Azure services?**

**Explanation:**Microsoft Azure Redis Cache is based on the popular open source Redis Cache and can be accessed by a wide variety of Redis clients for many programming languages. Each client has its own API that makes calls to the Redis cache instance using Redis commands.

Because each client is different, there is not one centralized class reference on MSDN, and each client maintains its own reference documentation. In addition to the reference documentation, there are several tutorials showing how to get started with Azure Redis Cache using different languages and cache clients. To access these tutorials, see How to use Azure Redis Cache and click the desired language from the language switcher at the top of the article.

**30. What are Redis databases?**

**Explanation:**Redis Databases are just a logical separation of data within the same Redis instance. The cache memory is shared between all the databases and actual memory consumption of a given database depends on the keys/values stored in that database. For example, a C6 cache has 53 GB of memory. You can choose to put all 53 GB into one database or you can split it up between multiple databases.

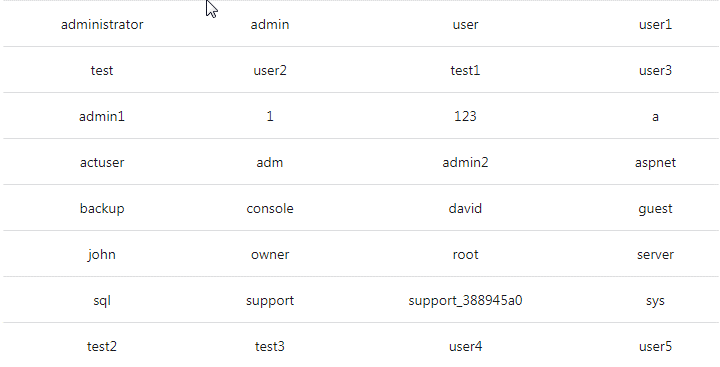
**31. Is it possible to add an existing VM to an availability set?**

**Explanation:** No. If you want your VM to be part of an availability set, you need to create the VM within the set. There currently no way to add a VM to an availability set after it has been created.

**32. What are the username requirements when creating a VM?**

**Explanation:** Usernames can be a maximum of 20 characters in length and cannot end in a period (“.”).

The following usernames are not allowed:

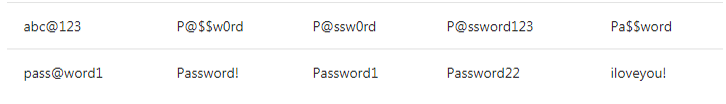
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**33. What are the password requirements when creating a VM?**

**Explanation:** Passwords must be 12 – 123 characters in length and meet 3 out of the following 4 complexity requirements:

* Have lower characters
* Have upper characters
* Have a digit
* Have a special character (Regex match [W\_])

The following passwords are not allowed:

****

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**34. How much storage can I use with a virtual machine?**

**Explanation:**Each data disk can be up to 1 TB. The number of data disks which you can use depends on the size of the virtual machine.

Azure Managed Disks are the new and recommended disk storage offerings for use with Azure Virtual Machines for persistent storage of data. You can use multiple Managed Disks with each Virtual Machine. Managed Disks offer two types of durable storage options: Premium and Standard Managed Disks.

Azure storage accounts can also provide storage for the operating system disk and any data disks. Each disk is a .vhd file stored as a page blob.

**35. How can one create a Virtual Machine in Powershell?**

# Define a credential object

$cred = Get-Credential

# Create a virtual machine configuration

$vmConfig = New-AzureRmVMConfig -VMName myVM -VMSize Standard\_DS2 |

` Set-AzureRmVMOperatingSystem -Windows -ComputerName myVM -Credential $cred |

` Set-AzureRmVMSourceImage -PublisherName MicrosoftWindowsServer -Offer WindowsServer `

-Skus 2016-Datacenter -Version latest | Add-AzureRmVMNetworkInterface -Id $nic.Id

**36. How to create a Network Security Group and a Network Security Group Rule?**

# Create an inbound network security group rule for port 3389

$nsgRuleRDP = New-AzureRmNetworkSecurityRuleConfig -Name myNetworkSecurityGroupRuleRDP -Protocol Tcp `

-Direction Inbound -Priority 1000 -SourceAddressPrefix \* -SourcePortRange \* -DestinationAddressPrefix \* `

-DestinationPortRange 3389 -Access Allow

# Create an inbound network security group rule for port 80

$nsgRuleWeb = New-AzureRmNetworkSecurityRuleConfig -Name myNetworkSecurityGroupRuleWWW -Protocol Tcp `

-Direction Inbound -Priority 1001 -SourceAddressPrefix \* -SourcePortRange \* -DestinationAddressPrefix \* `

-DestinationPortRange 80 -Access Allow

# Create a network security group

$nsg = New-AzureRmNetworkSecurityGroup -ResourceGroupName myResourceGroup -Location EastUS `

-Name myNetworkSecurityGroup -SecurityRules $nsgRuleRDP,$nsgRuleWeb

**37. How to create a new storage account and container using Power Shell?**

$storageName = "st" + (Get-Random)

New-AzureRmStorageAccount -ResourceGroupName "myResourceGroup" -AccountName $storageName -Location "West US" -SkuName "Standard\_LRS" -Kind Storage

$accountKey = (Get-AzureRmStorageAccountKey -ResourceGroupName myResourceGroup -Name $storageName).Value[0]

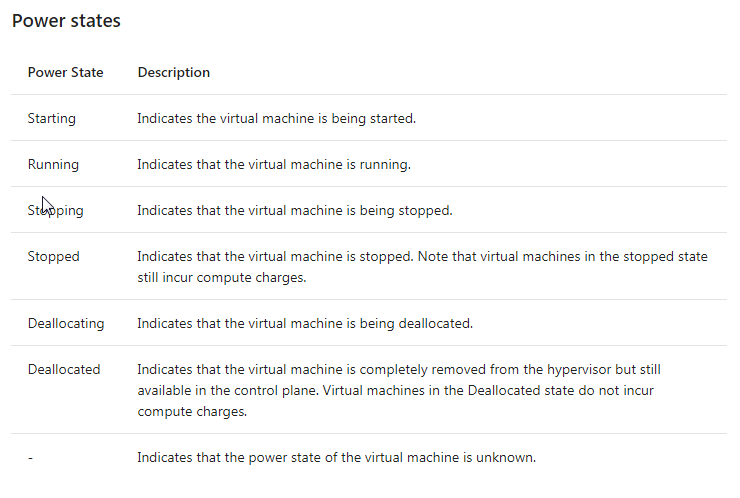
$context = New-AzureStorageContext -StorageAccountName $storageName -StorageAccountKey $accountKey

New-AzureStorageContainer -Name "templates" -Context $context -Permission Container

**38. How can one create a VM in Azure CLI?**

az vm create ` --resource-group myResourceGroup ` --name myVM --image win2016datacenter ` --admin-username azureuser ` --admin-password myPassword12

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**39. What are the various power states of a VM?**

**40. How can you retrieve the state of a particular VM?**

Get-AzureRmVM `

-ResourceGroupName myResourceGroup `

-Name myVM `

-Status | Select @{n="Status"; e={$\_.Statuses[1].Code}}

**41. How can you stop a VM using Power Shell?**

Stop-AzureRmVM -ResourceGroupName myResourceGroupVM -Name "myVM" -Force

**42. Why was my client disconnected from the cache?**

**Explanation:**The following are some common reason for a cache disconnect.

* Client-side causes
  + The client application was redeployed.
  + The client application performed a scaling operation.
  + In the case of Cloud Services or Web Apps, this may be due to auto-scaling.
  + The networking layer on the client side changed.
  + Transient errors occurred in the client or in the network nodes between the client and the server.
  + The bandwidth threshold limits were reached.
  + CPU bound operations took too long to complete.
* Server-side causes
  + On the standard cache offering, the Azure Redis Cache service initiated a fail-over from the primary node to the secondary node.
  + Azure was patching the instance where the cache was deployed
  + This can be for Redis server updates or general VM maintenance.

**43. What is Azure Search?**

**Explanation:**Azure Search is a cloud search-as-a-service solution that delegates server and infrastructure management to Microsoft, leaving you with a ready-to-use service that you can populate with your data and then use to add search to your web or mobile application. Azure Search allows you to easily add a robust search experience to your applications using a simple REST API or .NET SDK without managing search infrastructure or becoming an expert in search.

**44. My web app still uses an old Docker container image after I’ve updated the image on Docker Hub. Does Azure support continuous integration/deployment of custom containers?**

**Explanation:**Yes, it does. For private registries, you can update the container by stopping and then re-starting your web app. Alternatively, you can also change or add a dummy application setting to force an update of your container.

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**45. What are the expected values for the Startup File section when I configure the runtime stack?**

**Explanation:**For Node.Js, you specify the PM2 configuration file or your script file. For .NET Core, specify your compiled DLL name. For Ruby, you can specify the Ruby script that you want to initialize your app with.

**46. How are Azure Marketplace subscriptions priced?**

**Explanation:**

Pricing will vary based on product types. ISV software charges and Azure infrastructure costs are charged separately through your Azure subscription. Pricing models include:

**BYOL Model:** Bring-your-own-license. You obtain outside of the Azure Marketplace, the right to access or use the offering and are not charged Azure Marketplace fees for use of the offering in the Azure Marketplace.

**Free:**Free SKU. Customers are not charged Azure Marketplace fees for use of the offering.

**Free Software Trial:** Full-featured version of the offer that is promotionally free for a limited period of time. You will not be charged Azure Marketplace fees for use of the offering during a trial period. Upon expiration of the trial period, customers will automatically be charged based on standard rates for use of the offering.

**Usage-Based:**You are charged or billed based on the extent of your use of the offering. For Virtual Machines Images, you are charged an hourly Azure Marketplace fee. For Data Services, Developer services, and APIs, you are charged per unit of measurement as defined by the offering.

**Monthly Fee:**You are charged or billed a fixed monthly fee for a subscription to the offering (from the date of subscription start for that particular plan). The monthly fee is not prorated for mid-month cancellations or unused services.

**47. What is the difference between “price,” “software price,” and “total price” in the cost structure for Virtual Machine offers in the Azure Marketplace?**

**Explanation:**“Price” refers to the cost of the Azure Virtual Machine to run the software. “Software price” refers to the cost of the publisher software running on an Azure Virtual Machine. “Total price” refers to the combined total cost of the Azure Virtual Machine and the publisher software running on an Azure Virtual Machine.

**48. What are stateful and stateless microservices for Service Fabric?**

**Explanation:**Service Fabric enables you to build applications that consist of microservices. Stateless microservices (such as protocol gateways and web proxies) do not maintain a mutable state outside a request and its response from the service. Azure Cloud Services worker roles are an example of a stateless service. Stateful microservices (such as user accounts, databases, devices, shopping carts, and queues) maintain a mutable, authoritative state beyond the request and its response. Today’s Internet-scale applications consist of a combination of stateless and stateful microservices.

**49. What is the meaning of application partitions?**

**Explanation:**The application partitions are a part of the Active Directory system and having said so, they are directory partitions which are replicated to domain controllers. Usually, domain controllers that are included in the process of directory partitions hold a replica of that directory partition. The attributes and values of application partitions is that you can replicated them to any specific domain controller in a forest, meaning that it could lessen replication traffic. While the domain directory partitions transfer all their data to all of the domains, the application partitions can focus on only one in the domain area. This makes application partitions redundant and more available.

**50. What are special Azure Regions?**

**Explanation:**Azure has some special regions that you may wish to use when buildingyour applications for compliance or legal purposes. These special regions include:

* **US Gov Virginia** and **US Gov Iowa**
  + A physical and logical network-isolated instance of Azure for US government agencies and partners, operated by screened US persons. Includes additional compliance certifications such as [FedRAMP](https://www.microsoft.com/en-us/TrustCenter/Compliance/FedRAMP) and [DISA](https://www.microsoft.com/en-us/TrustCenter/Compliance/DISA).
* **China East** and **China North**
  + These regions are available through a unique partnership between Microsoft and 21Vianet, whereby Microsoft does not directly maintain the datacenters.
* **Germany Central** and **Germany Northeast**
  + These regions are available via a data trustee model whereby customer data remains in Germany under control of T-Systems, a Deutsche Telekom company, acting as the German data trustee.

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I hope you enjoyed these Azure Interview Questions. The topics that you learnt in this Azure Interview Questions blog are the most sought-after skill sets that recruiters look for in an Azure Professional. For a detailed study on Azure, you can refer our [***Azure Tutorial***](https://www.edureka.co/blog/microsoft-azure-tutorial).

[1. How is a private cloud different from the public cloud?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled1)

Private clouds are those that are built solely for an individual enterprise. They enable any particular firm to have applications in the cloud while tending to concerns concerning data security and control that is frequently ailing in a public cloud environment. It is otherwise called an internal cloud or enterprise cloud and dwells on the organization’s intranet or hosted data center where the data is protected. Public cloud is utilized as a service through the Internet by the users, while a private cloud, is implemented within specific limits like firewall settings and is overseen and checked by the users dealing with it in an organization.

[2. What do you know about the Azure App Service?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled2)

Azure App Service is a completely managed Platform as a Service (PaaS) offering for proficient developers that conveys a rich arrangement of abilities to the web, mobile and integration scenarios. They offer a very adaptable, universally accessible mobile application development platform for Enterprise Developers and System Integrators that conveys a rich set of capacities to mobile engineers.

[3. What is Azure Service Level Agreement (SLA)?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled3)

The SLA ensures that, when you send two or more role instances for each role, access to your cloud service will be maintained not less than 99.95 percent of the time. Furthermore, identification and re-correction activity will be started 99.9 percent of the time when the procedure of a role instance is not running.

[4. Where would you find a list of applications that are pre-integrated with an Azure AD and their capabilities?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled4)

The Azure AD consists of around 2600 pre-integrated applications. All pre-integrated applications support single sign-on (SSO). SSO lets you use your organizational credentials to access your apps. Some of the applications in Azure AD also support automated de-provisioning and provisioning.

[5. What is the Azure Redis Cache? How is it different from other Azure services?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled5)

Redis is an open source, BSD licensed in-memory data structure store, which is commonly used as a database, cache and message broker. Azure Redis Cache is also based on this. It gives you access to a secure, dedicated Redis cache, managed by Microsoft, and accessible from any application within Azure.  It supports data structures such as strings, hashes, lists, sets, and sorted sets with range queries, bitmaps, hyperlog logs and geospatial indexes with radius queries.

It is different from other Azure services as unlike some of the other available services; Azure Redis Cache does not have an MSDN class library reference. This is because each client has its API that makes calls to the Redis cache instance using Redis commands. That is why there is not one centralized class reference on MSDN, and each client maintains its reference documentation.

[6. How much storage can a user with a virtual machine use?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled6)

Each data disk on the VM can be up to 1 TB. However, the number of data disks, which you can use depends on the size of the virtual machine. Azure storage accounts can also provide storage for the operating system disk and any data disks where each disk is a .vhd file stored as a page blob.

Azure Managed Disks are the new and recommended disk storage offerings for use with Azure Virtual Machines for persistent storage of data. A user can use multiple Managed Disks with each VM. Managed Disks offer two types of durable storage options: Premium and Standard Managed Disks.

[7. What are the expected values for the Startup File section when a user configures the runtime stack?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled7)

For configuring with Node.Js, a user can specify the PM2 configuration file or your script file. In case of .NET Core, the user can specify their compiled DLL name. Moreover, in case of Ruby, one can specify the Ruby script that they want to initialize their app with.

[8. What do you mean by the stateful and stateless micro-services for Service Fabric?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled8)

Service Fabric enables the user to build applications that comprise micro services. Stateless micro-services (like protocol gateways and web proxies) don’t maintain a mutable state outside a request and its response from the service. Examples of a stateless service include Azure Cloud Services worker roles. Stateful micro-services (like user accounts, databases, devices, shopping carts, and queues) maintain a mutable, authoritative state beyond the request and its response, unlike Stateless Services. Today’s Internet-scale applications comprise a combination of stateless as well as stateful micro-services.

[9. Explain what is a VNet?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled9)

VNet is a representation of your network in the cloud. It logically isolates the instances launched in the cloud, from the rest of the resources of a user.

[10. Explain what is Auto-Scaling in Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled10)

Scaling by including extra instances is frequently referred to as scaling out. Windows Azure similarly supports scaling up by employing a bigger role instead of more role instances. By adding and expelling role instances to your Windows Azure application while it is running, you can adjust the execution of the application against its running costs. An auto-scaling solution simply diminishes the amount of manual work engaged in dynamically scaling an application.

[11. What is Microsoft Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled11)

The companies, which provide the cloud services to businesses, are called Cloud Providers, and one of them is Microsoft Azure. Microsoft Azure is an expanding cloud computing service created by Microsoft for testing, building, managing, and deploying applications and services via a global network of data centers managed by Microsoft. It is basically and widely used for accessing Microsoft’s infrastructure for the cloud by businesses.

[12. What is the Windows Azure portal?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled12)

The developers, who have a hosting account, can use a Windows Azure portal to submit applications to Windows Azure. A developer can easily access the Windows Azure portal through the Web browser, by signing in with a Windows Live ID to run an application.

[13. What are the roles, which are implemented in Windows Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled13)

Roles are simply servers in layman terms. They are managed and load balanced platforms like service virtual machines, which work together to achieve a common goal. There are three roles, which are implemented in Windows Azure:

* **Web Role:** It gives a web solution that is completely front-end. This is similar to an ASP.NET application. When it is enabled, Azure gives IIS and required services.
* **Worker Role:** It gives us solutions to all background service.  It can easily run long activities as well.
* **Virtual Machine Role:** The virtual machines execute the roles of both, web and worker. The Virtual Machine Roles gives the consumer the ability to modify the virtual machine on which the web and worker roles are running.

[14. What is the distinction between Windows Azure Service Bus Queues and Windows Azure Queues?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled14)

Azure Queues provides the user with a solid, diligent messaging between and within the services. It also highlights quite a straightforward rest-based get/peek/put interface. The Azure Storage Queues make use of the local Azure Storage Emulator and debugging is made quite easy. The tooling for Azure Storage Queues allows you to easily peek at the top 32 messages and if the messages are in XML or JSON, one can visualize their contents directly from Visual Studio. Moreover, these queues can be purged of their contents, which is especially useful during development and QA efforts.

On the other hand, Bus Queues are part of a more far-reaching Windows Azure messaging framework, which supports queuing. As a rule, Azure Service Bus Queues can delete themselves after a configurable amount of idle time. This feature is very practical when you create Queues for each user because if a user hasn’t interacted with a Queue for the past month, it automatically gets clean it up. It is also a great way to reduce costs. However, these Queues are limited to a maximum of 80 GB. Once the user has reached this limit, his or her application will start receiving exceptions.

[15. What is virtual machine scale sets in Windows Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/" \l "collapseUnfiled15)

Virtual machine scale sets are Azure compute resources, which can be used to deploy as well as manage a set of identical VMs. When all the VMs are configured in the same way, scale sets are automatically designed to support true auto-scale, and no pre-provisioning or prearrangement of VMs is required. That is why it is easier to build large-scale services, which target big compute, big data, and containerized workloads.

[1. What is the Azure Fabric?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled1)

The Azure fabric is the main core concept over here. It provides a service called the Azure Fabric Controller. It is called an operating system for the Azure. Because it handles or manages the following:

* All roles (computing) and resources.
* Deployment and activating services.
* Health monitoring for all services.
* Allocating, releasing of resources.
* Provisioning VM, terminating, etc.
* Updating patches for installed OS on Virtual Machine automatically.

In this case, it is generally better to have two instances of roles, and there is no need for the customer to worry about software updates for the user.

[2. What are the three main components of the Windows Azure Platform?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled2)

Windows Azure provides platform and infrastructure by providing accessible and cost-effective computing, storage, and networking resources on demand.

The Windows Azure has three main components in Azure, namely compute, storage and fabric.

**Windows Azure Compute**

Windows Azure provides a hosting environment for managed code. It provides a computation service through roles. Windows Azure supports three types of roles:

* Web roles used for web application programming and supported by IIS7.
* Worker roles are also used for background processing of web roles.
* Virtual Machine (VM) roles are generally used for migrating windows server applications to Windows Azure in an easy way.

**Windows Azure Storage**

 Windows Azure provides storage in the cloud. It provides four different types of storage services:

* Queues for messaging between web roles and worker roles.
* Tables for storing structural data.
* BLOBs (Binary Large Objects) to store text, files or large data.
* Windows Azure Drives (VHD) to mount a page blob. They can easily be downloaded and uploaded via blobs.

**Windows Azure AppFabric**

AppFabric provides infrastructure services for developing, deploying and managing Windows Azure application. It provides five services:

* Service bus
* Access
* Caching
* Integration
* Composite

[3. What do you understand by Hybrid Cloud? Explain its advantages.](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled3)

A hybrid cloud is a mixture of internal and external cloud services, a combination of a private cloud combined with the use of public cloud services. This type of cloud is most suitable when you want to keep the confidential data in your premise (private cloud) and consume the other services from a public cloud.

**Advantages of Hybrid Cloud:**

* **Scalability:** Usually the Private Cloud services will have a lesser scalability due to its security, cost and compliance whereas the Public Cloud has a high scalability and moving non-sensitive data from the private to the public will free up resources in the data centers in the Private Cloud and that increases a very high scalability for a Hybrid Cloud.
* **Cost-effectiveness:** Similarly the Public Cloud is very cost effective rather than Private Cloud, and here the Hybrid Cloud provides cost effectiveness with the data and other sensitive operations secured.
* **Security:** Since there is a Private Cloud used; the data and sensitive operations are secured highly in the Hybrid Cloud.
* **Flexibility:** We can easily move out of the non-sensitive data and manage large scalability using a Public Cloud service along with the Private Cloud. So with the availability of large scalability using Public Cloud and security using Private Cloud an enterprise has a vast opportunity in developing for new needs.

[4. Explain what is Diagnostics in Windows Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled4)

Windows Azure Diagnostics provides facility to store diagnostics data. Some diagnostics data is stored in a table, while some are stored in a blob. For collecting the data on diagnostics, the user must initialize the Windows Azure diagnostic monitor. The Windows Azure diagnostic monitor runs in Windows Azure as well as in the computer’s emulator and collects diagnostic data for a role instance.

[5. What is the method for creating a Queue in storage account?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled5)

The queue is a one-type of Azure Storage, where a user can store your data as storage. Blobs are stored in a container, Entity in table and Message in Queue.

Listed below are the key concepts in the queue.

* FIFO implementation
* Messages are added to end of the Queue and processed from the front
* Queues provides a good way of the Front end and Back end decoupling

[6. What are Storage keys?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled6)

Storage keys, which are also known as Access Keys, are used as an authentication mode for accessing the storage services account to manipulate information based on our requirements. In Windows Azure, the users have an option to provide a Primary Access Key and a Secondary Access Key, even though it is likely that they will use a single access key to authenticate their application to the storage.

[7. Why do we need storage keys?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled7)

If a user needs to change the application access key by regenerating the access key, it takes much time to take effect; this provides a downtime. To avoid such types of situations, a secondary access key is provided so that if the primary needs to be changed or regenerated, we can map the secondary temporarily to the storage and regenerate the primary.

[8. Explain the concept of the table in Windows Azure.](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled8)

A table is a type of Azure Storage, where one can store the data as memory storage. Blobs are stored in container and Entity in the table.

The key concepts in the table are explained below:

* Tables allow structure data storage
* There can be 0..n tables in a storage account
* Table store data as a collection of entities
* Entity have a primary key and properties as a key value pair

[9. Explain what is Federation in SQL Azure?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled9)

Federation is introduced in SQL Azure for scalability. It helps administrators by making repartitioning and redistributing of data easier and thus, helps with scaling data. It helps developers in the routing layer and the sharding of data. It helps in routing without application downtime. Federation does basic scaling of objects in a SQL Azure Database. Federations are the partitioned data. There can be multiple Federations within a database. Moreover, each Federation represents a different distribution scheme. We create a Federation with a different distribution scheme and requirement. Student and Grade’s tables of a School Database may have a different distribution requirement, so they are put into different Federations.

[10. What do you know about the SQL Azure firewall rules?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled10)

The firewall checks access to the originating IPs from which a user may try to access the database. To configure the firewall, we need to configure a range of acceptable IP addresses upon which we try to connect to the SQL Azure server using the Management Portal or with the SQL Server Management Studio. All access to SQL Azure is blocked by a firewall.

By default Database created in SQL Azure is blocked by the firewall for maximized security. SQL Azure firewall rules are provided to protect the data and to prevent access restrictions to the SQL Azure database.

[11. What is Windows Azure Traffic Manager?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled11)

The Traffic Manager allows users to control the distribution of user traffic of deployed Azure cloud services, Azure websites or any other endpoint. In this, the distribution of traffic includes Azure cloud services, Azure websites, and other endpoints. There are three different load-balancing methods provided by Azure. The Traffic Manager applies an intelligent routing policy engine to the Domain Name Service (DNS) queries on the domain names and then maps the DNS routes to the apt instances of the required applications.

[12. List the benefits of Traffic Manager.](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled12)

The Traffic Manager comes with many benefits for the user:

* **Increase Performance:** Can increase the performance of your application that includes faster page loading and better user experience. This applies to the serving of users with the hosted service closest to them.
* **High Availability:**You can use the Traffic Manager to improve application availability by enabling automatic customer traffic fail-over scenarios in the event of issues with one of your application instances.
* **No Downtime Required for Upgrade / Maintenance:** Once you have configured the Traffic Manager, you don’t need downtime for application maintenance, patch purgation or complete new package deployment.
* **Quick Setup:** It’s very easy to configure Azure Traffic Manager on Windows Azure portal. If you have already hosted your application on Windows Azure (a cloud service, Azure website), you can easily configure this Traffic Manager with a simple procedure (setting routing policy).

[13. What is an Availability Set?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled13)

An availability set is a logical grouping of VMs that allows Azure to understand how the application for a user is built to provide redundancy and availability. It is recommended that two or more VMs be created within an availability set to provide for a highly available application and to meet the 99.95% Azure SLA. When a single VM is used with Azure Premium Storage, the Azure SLA applies for unplanned maintenance events.

[14. Do scale sets work with Azure availability sets?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled14)

A scale set is an implicit availability set with five fault domains and five update domains. Scale sets of more than 100 VMs span multiple placement groups, which are equivalent to multiple availability sets. An availability set of VMs can exist in the same virtual network as a scale set of VMs. A common configuration is to put control node VMs (which often require unique configuration) in availability set and put data nodes in the scale set.

[15. Explain what a break-fix issue is?](https://www.onlineinterviewquestions.com/azure-interview-questions/page/2/" \l "collapseUnfiled15)

Technical problems in Azure are called break-fix issues. It is an industry term, which refers to “work involved in supporting a technology when it fails in the normal course of its function, which requires intervention by a support organization to be restored to working order.”

1. What is meant by Microsoft Azure and Azure diagnostic?

**Answer:**This is one of the most basic Azure cloud interview questions asked very often. Microsoft Azure is a cloud computing interface that is implemented by Microsoft so as to get benefited from the cloud computing.

Azure diagnostics is an API based system that collects the data to diagnose the application which is constantly running. It tunes with the verbose monitoring by enabling roles of the cloud services.

2. What is meant by cloud computing?

**Answer:** This is a basic question that finds its mention in most of the Microsoft Azure interview questions eBook. Cloud Computing is the high-level abstraction procedure that focuses on the business logic. This is a service delivered via the internet that aids you with the computing services without laying much importance on the infrastructural needs just like the electric supply.

3. What is the scalability of the cloud computing?

**Answer:** If the above question appears as the Azure cloud interview questions your most appropriate answer will be scaling is one of the advantages that are of two types;

* **Vertical scaling,** where the configuration yields to increase the existing capacity of the machine. Just like expanding the size of the RAM from 4GB to 32GB.
* **Horizontal Scaling,** an aspect where the physical aspect is increased like putting multiple machines at work instead of replacing the existing machine.

4. What are the advantages of cloud computing?

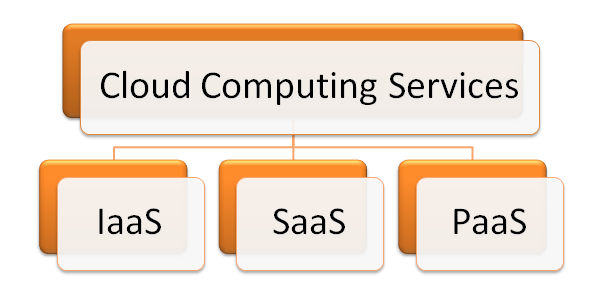
**Answer:** There are several advantages of cloud computing which are as follows;

* The versatility of the system can be altered if the business requires certain modification.
* They are highly available which increases its end users to get benefited by every inch.
* The system is capable of tolerating fault of a single part and overcomes it by remaining completely functional.
* The service allows you to pay only when the system is in use. You can easily reallocate the system when you use them and get saved from the charge.
* The system has brought into light the payment for the operation rather than the investment in the machines.

5. What is meant by PaaS, SaaS, and IaaS?

**Answer:**These are the basic terms while dealing with the cloud services and are commonly asked in an Azure interview:

* **PaaS stands for Platform as a Service** that enables you to get a platform to deliver without directly giving authorization to the OS software.
* **SaaS stands for Software as a Service** is devoid of platform infrastructure software that can be used without direct purchase.
* **IaaS stands for Infrastructure as a Service** which enables you to get the hardware from the provider as the desired service which can be configured by the user.

6. Explain the different deployment model of the cloud?

**Answer:** When asked as the Azure cloud interview question you should answer it in the following way. There are various deployment models for the cloud;

* **Private Cloud Deployment Model** is one where you own the infrastructure and the cloud provider enables you to get the service exclusively.
* **Public Cloud Deployment Model** is one where you get the multi-tenant infrastructure from the service provider exclusively.
* **Hybrid Cloud Deployment Model** is a set up of intermixed public and private data in which the confidential data will be served in-house and the public directed website is there to address the public.

7. What are the main functions of the Azure Cloud Service?

**Answer:** The main functions of the Azure Cloud Service are;

* It is designed to host the running application and at the same time manage the background running application.
* The application of web processing is termed as “web role” whereas the background processing is termed as the “worker role”.

8. State the purpose of the cloud configuration file?

**Answer:**There is a primary .csfg file available with each and every cloud service. The main purpose of this file is

* They hold the main copy of certificates.
* They have the storage of user-defined settings.
* There are a number of instances in any service project.

9. Which services are used to manage the resources in Azure?

**Answer:**When asked as Azure cloud interview questions, it should be answered that the Azure resource manager is the infrastructure that is involved in to manage deploys or deleting all the resources.

10. What do you mean by roles?

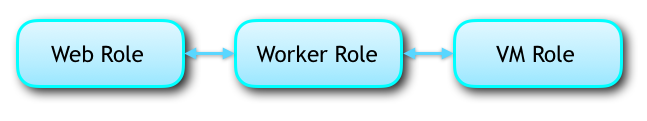
**Answer:** This is another basic yet important question asked as the Azure Interview Questions which should be answered in the following way:

Roles in cloud management are often termed to be nothing servers that are linked to managing and balancing the platform as service machine that collaborates works to attain the goal.

11. What are the different types of roles?

**Answer:**There are basically three different types of roles;

* **Web Role** that is used to deploy website by making use of language which is supported by the IIS platform customized to run the web application.
* **VM Role** is used to schedule the window services and task. It is done by the user through customization of the machine on which the worker’s role is running.
* **Worker Role** is to execute the process that runs in the background by deploying the website.



General Azure Interview Questions and Answers

So, you have gone through all the basic questions, now let’s take a step ahead and move to some general Azure interview questions. Interviewer generally asks these questions to check the knowledge of the candidate on various aspects.

12. What do you mean by a domain?

**Answer:** This is one of the common Azure Interview Questions that may be asked which should be answered as follows the interconnected and interlinked nodes that are often a measure undertaken by the organization is known as the domain. These relations are carried by only one point of the organization.

13. Explain the fault domain.

**Answer:**This is one of the common Azure interview questions which should be answered that it is a logical working domain in which the underlying hardware is sharing a common power source and switch network. This means that when VMs is created the Azure distributes the VM across the fault domain that limits the potential impact of hardware failure, power interruption or outages of the network.

14. Discuss Update Domain.

**Answer:** It is a logical group that undergoes maintenance by rebooting the system. The system automatically distributes the created VMs all across the updated domain that enables the user to run any one of the application while the Azure platform is undergoing maintenance. The update domain does not work sequentially to the manual rebooting.

15. Differentiate between the verbose and minimal monitoring.

**Answer:**Verbose monitoring collects metrics based on the performance that enables close analysis of data that fed during the processing of application whereas the minimal monitoring is a default configuration that makes the use of the performance counters gathered from the operating system of the host. Proceed to the more Azure cloud interview questions that are quite common.

16. What do you mean by a BLOB and what are their types?

**Answer:** BLOB is a Binary Large Object that is composed of any size and type of file. They are mainly of two types-the page and the block blob.

17. What is meant by the block blob and page BLOB?

**Answer:** Blob is a block that is having a specific block ID. Each block in this block BLOB comprises of the 4MB and maximum size of this BLOB limits to 200 GB. Whereas the Page blob contains pages in which data range is determined by the offsets. The maximum limit is 1TB where a single page is of the size 1TB.

18. Differentiate between the Windows Azure bus queues and Windows Azure queues?

**Answer:** Windows Azure queues take care of the storage infrastructure of Windows Azure. The features include the REST based Peek/Get/Put interface that enables the users to get persistent messaging in-between the services and reliability.

Bus queues are a broader aspect of the messaging infrastructure with publishing and subscribing the integrating patterns of remote web service.

19. What is meant by the DeadLetter queue?

**Answer:** Messages are transferred to the DeadLetter queue in the following situation;

* When the delivery count has exceeded for a message that is on a queue.
* When the expiry date of the message has crossed and the entire expired message is held in a queue.
* When there is an evaluation exception set by default and the subscription is enabled with dead letter filter.

20. Explain the Window Azure platform?

**Answer:** It is collectively a PaaS developed by the Microsoft programmed to run a deployment vehicle and a runtime for the data center to host the cloud computing. Let’s proceed to the next general Azure Interview Questions that may be asked.

21. How is the price of the Azure subscription placed?

**Answer:**The prices vary in accordance with the product type. The various pricing models are;

* **The free model** where our customers can avail the system exempted from the market fee.
* **The BYOL scheme** where the Azure is fetched the Azure with a fee that is not encircled around the limits of market price.
* **The trial of the free software** where the client gets the full version with an advanced feature for a limited period of time. With the expiration of the introductory period, you will be charged standard rates.
* **Usage Based Fee** that is billed in accordance with the service that you have taken. Like if you are subscribed for the virtual image then hourly fees may be charged.
* **Monthly bills** are activated if you sign a particular plan. The fee is not allocated for cancellation or mid-month unused service.

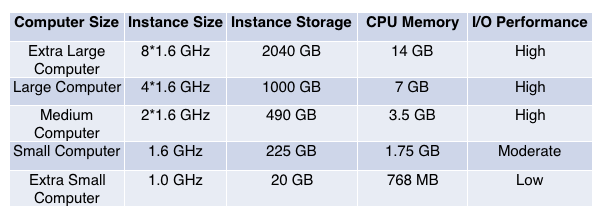
Azure Interview Questions and Answers for Experienced

If you are a cloud professional with some considerable experience on the Azure platform, you may come across some advanced Azure interview questions. So, let’s get prepared with some frequently asked Azure interview questions for experienced.

22. What are the sizes of the Azure VM?

**Answer:** It is another basic question that finds its place in the series of top Microsoft Azure interview questions. The Windows Azure is destined to balance a variety of sizes. Most of the VM sizes are:

* The extra large computer has 8\*1.6 GHz of Instance size, with instance storage of 2040 GB, CPU memory of 14 GB. The I/O performance is high.
* The large computer has 4\*1.6 GHz of Instance size, with instance storage of 1000 GB, CPU memory of 7 GB. The I/O performance is high.
* The medium computer has 2\*1.6 GHz of Instance size, with instance storage of 490 GB, CPU memory of 3.5 GB. The I/O performance is high.
* Small computer has 1.6 GHz of Instance size, with instance storage of 225 GB, CPU memory of 1.75 GB. The I/O performance is moderate.
* The extra small computer has 1.0 GHz of Instance size of 20 GB, with instance storage of 20 GB, CPU memory of 768MB. The I/O performance is low.



23. What is meant by table storage?

**Answer:** It is an interface that is capable of storing bulk amount of structured but non-relational data. It is a service of the NoSQL data store that takes authenticated calls from either outside or inside the Azure cloud. The table is a collaborated entity that in turn is a set of properties which is a paired up of name and value.

24. Differentiate between the repository and the powerhouse server?

**Answer:**Repository servers are those which are in lieu of the integrity, consistency, and uniformity whereas the powerhouse server governs the integration of different aspects of the database repository.

25. What is meant by the enterprise warehousing?

**Answer:**It is the phenomenon where the data is developed by the organization having access at a single point throughout the globe. The warehousing enables the server to get linked to a single point with the assistance of periodic handling.

Azure is the top second cloud player among the top three (AWS, Azure, and Google Cloud). Let’s have a comparison between three i.e. [AWS vs Azure vs Google](https://www.whizlabs.com/blog/aws-vs-azure-vs-google/)

26. What do you mean by lookup transformation?

**Answer:** Lookup transformation aids to determine source qualifier. It can be active or passive lookup transformation. The process is yield to get the access the relevant information or the data.

27. What is meant by the connected lookups?

**Answer:** In the unconnected lookup, the input is directly taken from the transformation that takes part in the flow of data. The connected data lookup is built as both a static and dynamic cache. This can be oriented via multiple ports that can give the output. It is defined by user defined entity.

28. What is meant by the unconnected lookups?

**Answer:**The answer to this Microsoft Azure interview question should be that in the unconnected lookups the input is taken by the LKP operation. Nature is dynamic having a single output port. User-defined values are disregarded in the unconnected lookups.

29. What is meant by the command task?

**Answer:** Command task is an operational window that sets off the flow of one or multiple command shell while the system is still running.

30. What are the PowerCenter commands that can be used in Informatica?

**Answer:**The languages for transformation that can be provided with some basic comment signifiers that are;

* Slashes (//)
* Dashes (–)

If these common signifiers are absent in the line the power integration service will ignore the text.

31. What is the difference between copy and shortcut?

**Answer:** The answer to this Microsoft Azure interview question will be copied is transferring an object from one to another folder that takes double space. There is no change that corresponds to the original object.

The shortcut is a dynamic link of the object that saves the space reflecting changes in the original object.

32. What do you mean by a service fabric in Azure?

**Answer:** This is one of the advanced Microsoft azure interview questionsthat should be answered by stating Service fabric is a middleware platform of the following generation that gives the more scalable outcome. It renders with the more managed and reliable enterprise.

33. What are the benefits of the traffic manager in Windows Azure?

**Answer:** Traffic manager is allocated to control the distribution of the user to deploy the cloud service. The benefit of the traffic manager constitutes;

* It makes the application to be available worldwide through automated traffic control machinery.
* The traffic managing service contributes to high performance by loading the page faster and convenient usage.
* There is no lag of time to maintain or upgrade the existing system. The system keeps running in the back while the system takes time for up gradation.
* The configuration is made easy through the Azure portal.

SQL Azure Interview Questions and Answers

While going for an Azure interview, it is common to come across database related questions i.e. SQL-based. So, let’s get prepared for that too. Just go through the following SQL Azure interview questions.

34. Discuss the different database types in SQL Azure?

**Answer:** This is one of the commonly askedSQL Azure interview questions that must be answered by stating that there are two major type of database in SQL Azure;

* **Web Edition –** It is having a limit of 5GB SQL that is related to the relational database. The basic advantage is that they can be self-maintained, tolerant to a fault and highly available.
* **Business-based Edition –** they support 50GB of T-SQL that is self-managed, tolerant to a fault and highly available. They are suited for the custom web applications or ISV application.

35. How is Azure Resource Manager beneficial over the classic services?

**Answer:** The benefits of the Azure Resource Manager that overshadows the benefit of the classic services are;

* The resources need not be managed, deployed or monitored one at a time. They are chain deployment activities throughout the lifecycle without the need for individual data handling.
* The data is also deployed at a consistent pace with the ARM service. It enables the user to use a declarative template that indicates the deployment.
* Since the role-based control is present in the management platform that provides you with the access to the resources that leads you to control.
* You can mark dependencies between the resources that enable you to get the correct order of deployment.
* The resources may be tagged and organized logically so that it is convenient to

36. Enlist the monitoring features that are present in the SharePoint 2010?

**Answer:**This is one of the SQL Azure interview questions that should be answered by stating that the SharePoint 2010 is a diagnostic logging that takes into the data that are a direct indication of the state of the system. Sometimes it also specifies some timer tasks that are performed to monitor the collected information. The features include;

* It collects the data on event log, timer service, and performance counter.
* They are involved with data that are search usage.
* They provide matrices that are yielding a collection of sites.

37. State the class that can be used to retrieve data?

**Answer:** The class that can be used to get data from more than one list is the SPSite Data Query that is able to query data that are present in more than one list all across the diverse web collections. It is featured to aggregate data without the external links and only through the SharePoint.

38. Compare the STS and SPS and state its important features?

**Answer:** **SPS** is the SharePoint Portal Service which manages the documents and has a search engine more efficient in penetrating the multiple sources of content.

**STS** stands for the SharePoint team management. As the name suggests they are better for the document management for a large organization and has a moderate search engine.

39. Explain MOSS?

**Answer:** The answer to this SQL Microsoft Azure interview question for experienced will be MOSS is abbreviated for Microsoft Office SharePoint Server that constitutes a complete version of the portal platform that yields the user to manage, share and even create the document.

40. What is the difference between a library and a list?

**Answer:** The library is an interface that yields one to manage and store a document that can be created using Excel, PowerPoint or Word. The list is the representation of the item in a tabulated format using column and rows. Lists are not used to make a document but can attach documents.

41. What do you mean by SAS?

**Answer:** This is one of the common SQL Azure interview questions that should be answered by stating that SAS is an abbreviation for Statistical analytical System which is a software suite performing analysis of multiple variables. It is in linked to the predictive analysis, data handling, advanced analytics or corporative intelligence. It produces a smooth interface that offers graphical and clicks based solution. It is user-friendly for the technical or the non-technical with advanced features.

42. State some features of SAS?

**Answer:**There is some interlinked feature of SAS which includes;

* It provides the user access to manage the resources just like that of the DBMS.
* It is leading with the leading analytical to carry out different business services and products.
* It enables easy visualization and interpretation with the use of graphs and its breaks the complex panels into simple plots.
* It is very efficient in delivering the business analysis which leads to manufacturing the products that can be distributed worldwide.

43. Describe the common architecture of SharePoint 2010?

**Answer:**There are three main architectural design of the SharePoint 2010 which includes;

* The enterprise farm which is uncommon as it completely is dedicated to the service and aids via the automated management with the feasible isolation of data.
* There is a single farm that is associated with multiple services whose potential advantages are management via individual service application which enables with a more complex targeting of sites to a particular application of service.
* Lastly, the single farms employed in single service are very common and at the same time easy to deploy. The application service is simple to be allocated with fullest resource utilization and management.

44. Describe the log analytics?

**Answer:**This question can be asked among the SQL Azure interview questions. The operational management service of the Log Analytics provides the entire requirement that runs the particular service. It manifests automation, security, log analytics and availability at a particular dashboard. It generates Power data source that enables the user to get the visuals of the raw data. It is introduced in three different tiers of prices that include free, premium and standard. You enjoy the convenience of searching the data at a single dashboard and export the results.

Advanced Azure Interview Questions and Answers

In the series of Azure interview questions, here we bring some advanced Azure interview questions for you with the detailed answers. Preparing through these questions will prepare you to crack the tough to tough interview.

43. State what will you do in case of a drive failure?

**Answer:**This is one of the another Microsoft Azure interview questions for experienced that should be answered in the following manner. When there is an instance that the drive has failed the following step should be performed;

* The first is that the drive should be not mounted enabling the object storage to function without fail.
* The second scenario is replacing the drive in which the desired step will be remounting, formatting the drive.

44. State what should be done in case of a service failure?

**Answer:**In the case of the service failure the following steps need to be performed;

* Ensure that the object s services have stopped running which will enable the object services to withstand the failure.
* To complete the last lap of work pending you can allow the system object storage remain functional by making the machined to again get back to online. Once they are started, the online replication will instantly activate with the missing updated files.
* If you are incapable to replace drive then do remove the drive and let the system stay not mounted.

45. Give a clear overview of API in Azure?

**Answer:**The Test Analytics in API is a web service that is built with the Azure learning. It is an effective tool to analyze the unstructured data like the extraction of the key phrase. It runs with the binomial scoring unit that is either 0 or 1 where 1 corresponds to a positive and 0 corresponds to a negative viewpoint. The advantage is that it does not need any assistance with designing and training which imply that the data is in the hands of directly the user. Proceed to find more Microsoft Azure interview questions for experienced.

Microsoft Azure certifications have their own recognition in the Cloud industry. Let’s find out their place among the [Top 5 Cloud Certifications](https://www.whizlabs.com/blog/5-best-cloud-certifications-in-2018/)!

46. Explain how does a character analytics API function?

**Answer:**The working of the character analytics of API does not account for the characterization of words like good or bad. It uses the advanced feature through which the processing of natural language is mediated.

47. Differentiate between the PROC SUMMARY and PROC MEANS?

**Answer:** This is one of the stars marked questions found inthe list of top Microsoft Azure interview questions and answers pdf.

**PROC MEANS** refers to the subgroup statist created in the persistence of the BY statement that will be involved. The data here is sorted beforehand with the assistance of BY variables.

**PROC SUMMARY**is the aid of statistics giving all varieties of information running simultaneously and is produced for every subgroup automatically. The information in the outlet is not created.

50. If the client gets disconnected from cache with the services state the probable cause?

**Answer:** If the client gets disconnected the causal factor can be distributed into two categories;

The cause on the operator side;

* There might be a failure in the transfer of the standard cache from one node to the other.
* While the service was processing and dispatching the cache got deployed.
* There was a server update or an automated VM maintenance.

The fault on the client side;

* The application of the client accidentally got redeployed.
* The application on the client side got auto-scaling.
* The layer of the network on the client side altered.
* There was a transient error on the network node.
* The bound operation took more time.
* The upper limit of the bandwidth was reached.

##### **Q1) What is Azure Cloud Service?**

**Ans:** By creating a cloud service, you can deploy a multi-tier web application in Azure, defining multiple roles to distribute processing and allow flexible scaling of your application. A cloud service consists of one or more web roles and/or worker roles, each with its own application files and configuration. Azure Websites and Virtual Machines also enable web applications on Azure. The main advantage of cloud services is the ability to support more complex multi-tier architectures

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**Ans:**Three components are required in order to deploy an application as a cloud service in Azure:

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**Related Page:**[**Azure Automation - Benefits And Special Features**](https://mindmajix.com/azure-automation)

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**Ans:**Azure Diagnostics is the API that enables you to collect diagnostic data from applications running in Azure. Azure Diagnostics must be enabled for cloud service roles in order for verbose monitoring to be turned on.

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**Ans:**The Azure Compute SLA guarantees that, when you deploy two or more role instances for every role, access to your cloud service will be maintained at least 99.95 per cent of the time. Also, detection and corrective action will be initiated 99.9 per cent of the time when a role instance’s process is not running.

##### **Q19) What is Cloud Computing?**

**Ans:**Cloud computing is the use of computing resources (hardware and software) that are delivered  
as a service over a network (typically the Internet).

##### **Q20) What are the Service Model in Cloud Computing?**

**Ans:**Cloud computing providers offer their services according to three fundamental models: Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models.  
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Examples of SaaS include Google Apps, Microsoft Office 365, and Onlive. Source from:

<span style="color: #0000ff;">HTTP://EN.WIKIPEDIA.ORG/WIKI/CLOUD\_COMPUTING</span>

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**Ans:**There are 4 types of deployment models used in the cloud:

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**Ans:**All three roles (web, worker, VM) are essentially Windows Server 2008. Web and Worker roles are nearly identical: With Web and Worker roles, the OS and related patches are taken care for you; you build your app’s components without having to manage a VM

##### **Q24) What is the difference between the Windows Azure Platform and Windows Azure?**

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##### **Ans:**

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2. Storage
3. AppFabric

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**Ans:**In the Windows Azure cloud fabric is nothing but a combination of many virtualized instances which run the client application

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**Ans:**TWO. And if we do so, the role would have external connectivity at least 99.95% of the time.

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* SQL Azure
* Azure Table

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**Ans:**Public cloud is used as a service via the Internet by the users, whereas a private cloud, as the name conveys is deployed within certain boundaries like firewall settings and is completely managed and monitored by the users working on it in an organization.

###### **Q35) How to design applications to handle connection failure in Windows Azure?**

**Ans:**The Transient Fault Handling Application Block supports various standard ways of generating the retry delay time interval, including fixed interval, incremental interval (the interval increases by a standard amount), and exponential back-off (the interval doubles with some random variation).  
static RetryPolicy policy = new RetryPolicy(5, TimeSpan.FromSeconds(2), TimeSpan.FromSeconds(2)); policy.ExecuteAction(() => { try { string federationCmdText = @”USE FEDERATION Customer\_Federation(ShardId =” + shardId + “) WITH RESET, FILTERING=ON”; customerEntity.Connection.Open(); customerEntity.ExecuteStoreCommand(federationCmdText); } catch (Exception e) { customerEntity.Connection.Close(); SqlConnection.ClearAllPools(); } });

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<span style="color: #0000ff;">HTTP://WWW.WINDOWSAZURE.COM/EN-US/DEVELOP/NET/COMMON-TASKS/DIAGNOSTICS/</span>

###### **Q37) What is Blob?**

**Ans:**BLOB stands for Binary Large Object. Blob is a file of any type and size.  
The Azure Blob Storage offers two types of blobs –

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URL format: Blobs are addressable using the following URL format:

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**Ans:**Block blobs are comprised of blocks, each of which is identified by a block ID.  
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Windows Azure Queues, which are part of the Windows Azure storage infrastructure, feature a simple REST-based Get/Put/Peek interface, providing reliable, persistent messaging within and between services.  
Service Bus Queues are part of a broader Windows Azure messaging infrastructure dead-letters queuing as well as publish/subscribe, Web service remoting, and integration patterns.

<span style="color: #0000ff;">HTTP://WCFPRO.WORDPRESS.COM/2010/12/06/COMMUNICATION-IN-WINDOWS-AZURE/<br />HTTP://MSDN.MICROSOFT.COM/EN-US/LIBRARY/WINDOWSAZURE/HH767287.ASPX</span>

###### **Q40) What is DeadLetter queue?**

**Ans:**

1. Messages are placed on the dead-letter sub-queue by the messaging system in the following scenarios.
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3. When the max delivery count for a message is exceeded on a queue or subscription.
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###### **Q41) What are instance sizes of Azure?**

**Ans:**

Windows Azure will handle the load balancing for all of the instances that are created. The VM sizes are as follows:  
Compute Instance Size CPU Memory Instance Storage I/O Performance  
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###### **Q42) What is table storage in Windows Azure?**

**Ans:**

The [Windows Azure](https://azure.microsoft.com/en-in/) Table storage service stores large amounts of structured data.  
The service is a NoSQL datastore which accepts authenticated calls from inside and outside the Windows Azure cloud.  
Windows Azure tables are ideal for storing structured, non-relational data  
**Table:** A table is a collection of entities. Tables don’t enforce a schema on entities, which means a single table can contain entities that have different sets of properties. An account can contain many tables  
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<span style="color: #0000ff;">HTTP://MSDN.MICROSOFT.COM/EN-US/LIBRARY/WINDOWSAZURE/HH508997.ASPX</span>

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The main difference between the two is that an instance of a web role runs IIS, while an instance of a worker role does not. Both are managed in the same way, however, and it’s common for an application to use both.For example, a web role instance might accept requests from users, then pass them to a worker role instance for processing.

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The Windows Azure Fabric Controller is a resource provisioning and management layer that manages the hardware, and provides resource allocation, deployment/upgrade, and management for cloud services on the Windows Azure platform.

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**Answer :**

Scaling by adding additional instances is often referred to as scaling out. Windows Azure also supports scaling up by using larger role instances instead of more role instances.

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**Answer :**

Virtual Machine (VM) roles, now in Beta, enable you to deploy a custom Windows Server 2008 R2 (Enterprise or Standard) image to Windows Azure. You can use the VM role when your application requires a large number of server OS customizations and cannot be automated. The VM Role gives you full control over your application environment and lets you migrate existing applications to the cloud.

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**Answer :**

php, node.js, java

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**Answer :**

PaaS (Platform as a Service)

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1. **Question 48. What Is Azure Service Level Agreement (sla) ?**

**Answer :**

The Azure Compute SLA guarantees that, when you deploy two or more role instances for every role, access to your cloud service will be maintained at least 99.95 percent of the time. Also, detection and corrective action will be initiated 99.9 percent of the time when a role instance’s process is not running.

**1. What is Azure Cloud Service?**

Cloud service can convey a multiple web application in Azure, characterizing a number of parts to disseminate handling and permit adaptable scaling of your application. A cloud service comprises of a minimum of one web pars as well as specialist parts, each with its own particular application documents and design.The fundamental favourable position of cloud service is the capacity to help more complex multi-level structures.

**2. Differences between Microsoft Azure and AWS?**

|  |  |  |
| --- | --- | --- |
| Features | Microsoft Azure | Amazon Web Services (AWS) |
| Analytics | Azure Stream Analytics | Amazon Kinesis |
| Backup Options | Azure Backup | Amazon Glacier |
| Compliance | Azure Trust Center | AWS CLoudHSM |
| Content Delivery Network (CDN ) | Azure CDN | Amazon CloudFront |
| Data Orchestration | Azure Data Factory | AWS Data Pipeline |
| Hybrid Cloud Storage | StorSimple | AWS Storage Gateway |
| Monitoring | Azure Operational Insights | Amazon CloudTrail |
| NoSQL Database Options | Azure DocumentDB | Amazon Dynamo DB |

**3. What are the roles implemented in Windows Azure?**

There are three roles in Windows Azure.

* Web Role
* Worker Role
* Virtual Machine Role

**Web Role :** It gives a web solution that is front-end. This is like an ASP.NET application. While under facilitating Azure gives IIS and required services.

**Worker Role :**  It gives a solutions of background service.  It can run long activities.

**Virtual Machine Role :**  The roles of both web and worker are executed on virtual machines. The Virtual Machine Roles gives the client the capacity to modify the virtual machine on which the web and worker roles are running.

**Watch this What is Cloud Computing video**

**4. What are the three principle segments of Windows Azure Platform?**

Windows Azure has three principle segments in Azure: Compute,Storage and Fabric.

**A. Windows Azure Compute**

Windows Azure gives a code that can be managed by the hosting environment. It gives calculation benefit through parts. Windows Azure backs 3 types of roles:

* Web roles utilized for web application programming and upheld by IIS7.
* Worker roles utilized for foundation handling of web roles.
* Virtual Machine (VM) roles utilized for moving windows server applications to Windows Azure in a simple way.

**B. Windows Azure Storage**

It gives 4 types of storage services:

* Queues for informing between web parts and worker roles.
* Tables for storing structural data.
* BLOBs (Binary Large Objects) to store content, records or vast information.
* Windows Azure Drives (VHD) to mount a page blob. These can be transferred and downloaded by means of blobs.

**C. Windows Azure AppFabric**

AppFabric provides 5 services:

* Service bus
* Access
* Caching
* Integration
* Composite

**5. Windows Azure AppFabric**

Windows Azure Diagnostics empowers you to gather diagnostic data from an application running in Windows Azure.  diagnostic data is used for capacity planning, and evaluating.

**6. What is the distinction between Windows Azure Queues and Windows Azure Service Bus Queues?**

Azure Queues gives a solid, diligent messaging between and within the services. it also highlights a very straight forward rest- based get/put/peek interface

Bus Queues are a part of a more extensive Windows Azure messaging framework that supports queuing.

**7. What is table storage in Windows Azure?**

The Windows Azure Table storage service stores a lot of organized information. Windows Azure tables are perfect for putting away organized, non-relational data

**Table:** A table is a collection of entities.Tables don’t uphold a blueprint on elements, which implies a solitary table can contain substances that have distinctive arrangements of properties. A record can contain numerous tables

**Entity:** An entity is an arrangement of properties, like a database row. An entity can be upto 1MB in size.

**Properties:** A property is a name-value pair. Every entity can incorporate up to 252 properties to store data. Every entity likewise has 3 system properties that determine a segment key, a row key, and a timestamp.

**8. What is AutoScaling in Azure?**

Scaling by including extra instances is frequently referred to as scaling out. Windows Azure likewise supports scaling up by utilizing bigger role rather than more role instances.By adding and expelling role instances to your Windows Azure application while it is running, you can adjust the execution of the application against its running costs.

An autoscaling solution reduces the amount of manual work engaged in dynamically scaling an application.

**9. What are the Features of Windows Azure?**

Windows Azure runs and stores the information on Microsoft datacenters.

The main Features are :

1. Websites enable the designers to assemble the sites utilizing ASP.NET, PHP, etc and send these websites utilizing FTP, Git and etc
2. QL Database, formally known as Azure database makes, broadens and scales the application into the cloud utilizing Microsoft SQL Server.
3. This is Microsoft’s platform as a service that supports the Multi-level applications and automated deployment.

**10. What are the differences between an public cloud and a private cloud?**

Private clouds are those that are constructed solely for an individual enterprise. They enable the firm to have applications in the cloud while tending to concerns with respect to data security and control that is frequently ailing in an public cloud environment. It is otherwise called an internal cloud or enterprise cloud and dwells on the organization’s intranet or hosted data center where the data is protected.

**11. What is table storage in Windows Azure?**

It is a NoSQL datastore which acknowledges verified calls from inside and outside the Windows Azure cloud. Windows Azure tables are perfect for putting away organized, non-relational data

**Table:** A table is an accumulation of elements. Tables don’t implement a pattern on elements, which implies a solitary table can contain substances that have distinctive arrangements of properties. A record can contain numerous tables.

**12. What is Windows Azure Portal?**

Windows Azure Portal:To run an application, a designer gets to the Windows Azure portal through his Web program, by  logging in with a Windows Live ID. The User at that point picks whether to create a host account for running applications, a storage account for storing data or both.

Once the designer has a host account, He can utilize a Windows Azure portal to submit applications to Windows Azure.

**13. Explain Azure Fabric?**

The Azure Fabric is the principle core concept. It gives a service called the Azure Fabric Controller. It is called as OS for the Azure. Since it handles/oversees:

* All roles (processing) and resources.
* Sending and activating services.
* Monitoring the health for all services.
* Releasing and allocating of resources.
* Provisioning VM, terminating etc.
* Patches gets updated for installed OS on VM in the most automated form.

**14. What do you comprehend about Hybrid Cloud?**

A Hybrid cloud is a blend of internal and external cloud services, a mix of a private cloud joined with the utilization of public cloud services. This kind of cloud is most appropriate when you need to keep the classified information at your vicinity (private cloud) and consume alternate services from a public cloud.

**15. What is a Storage keys?**

Storage keys or Access Keys are utilized as a validation mode for accessing to the storage services account to control data based on our prerequisites. In Windows Azure we have an alternative to give a Primary Access Key and a Secondary Access Key, despite the fact that we will utilize a solitary access key to confirm our application to the storage. The primary reason to give the secondary access key is to avoid downtime to the application.

**16. What is Windows Azure Traffic Manager?**

It enables Users to control the distribution of user traffic of installed Azure cloud services.There are 3 distinctive load balancing strategies provided by Azure. The  Manager who works on traffic  apply’s a  routing policy to the Domain Name Service (DNS) questions on your domain names and maps the DNS courses to the apt instances of your applications.

**17. What is Federation in SQL Azure?**

Organization in SQL Azure is introduced for scalability. federation helps both managers and developers to scale information. It helps managers by making repartitioning and redistributing of information simpler. It enables developers in the layer of routing and sharing of information. It helps in routing without application downtime.

**18. What is SQL Azure Database?**

SQL Azure database is just an approach to get associated with Cloud Services where we can store our database into Cloud. Microsoft Azure is the most ideal approach to utilize PAAS where we can have different databases on a similar Account.

Microsoft SQL Azure has a similar component of SQL Server, i.e. high accessibility, versatility and security in the core.

Microsoft Azure SQL Database has an element, it makes backups automatically of each active database. Consistently a backup is taken and geo-repeated to empower the 1-hour recuperation point objective (RPO) for Geo-Restore.

**19. What are the different Storage's in Windows Azure?**

**BLOB :** BLOBs offer a component for storing a lot of content or binary data, for example, pictures, sound and visual documents. It can scale up to 200 terabytes and can be acquired by utilizing REST APIs

**Table :** Tables represents storage areas across machines for information that is in the form of properties on the cloud.

**Line :** The sole target of a Queue is to empower communication amongst Web and Worker Role instances. They help in storing messages that may accessed to by a customer.

**20. What is the concept of the table in Windows Azure?**

A table is one kind of Azure Storage, where you can store your information away. Blobs are put away in compartment and Entity in a table.

Following are the key concepts in a table.

* Tables allow structure data storage .
* There can be 0..n tables in a storage account.
* Table store information as an accumulation of elements .
* An element has an essential key and properties as a key-value pair.

**21. What is TFS build system in Azure?**

A Build is the solution of an output. In Azure projects, you get the record with a .cspkg extension that implies a Cloud Service Package is utilized for the deploymment of your cloud administrations.

Build Servers –  In general terms a build server goes about as the machine where you put your deployment packages.

To utilize Team Foundation Build, you should have no less than one build machine. This machine can be a physical machine or a virtual machine.

Build Controllers –  Manufacture Controllers are the component in the build system that accepts the build requests from any task inside the group project. Each build controller is dedicated to a solitary team project collection. So there is a balanced relationship between a team project and a build controller.

Build Agents –  Build Agents are components in the build system that accomplishes more processor-concentrated work.

**22. What is the Azure App Service?**

Azure App Service is a completely managed Platform as a Service (PaaS) offering for proficient developers that conveys a rich arrangement of abilities to web, mobile and integration scenarios. Mobile Apps in Azure App Service offer a very adaptable, universally accessible mobile application development platform for Enterprise Developers and System Integrators that conveys a rich set of capacities to mobile engineers.

**23. What is profiling in Azure?**

Profiling is only a procedure of measuring the performance analysis of an application. It is normally done to guarantee that the application is sufficiently steady and can maintain overwhelming traffic.

Visual Studio gives us different tools to do it by gathering the performance information from the application that likewise helps in the troubleshooting issues.

Once the profiling wizard is run, it sets up the execution session and collects the data of the sample

The profiling reports helps in:

* Deciding the longest running strategies inside the application.
* Measure the execution time of every strategy in the call stack.
* Assess memory allocation.

**24. What is Cmdlet in Azure?**

A cmdlet is a lightweight command that is utilized as a part of the Microsoft PowerShell environment. The cmdlets are summoned by the Windows PowerShell to automate the scripts which are in the command line. The Windows PowerShell runtime additionally invokes them automatically through Windows PowerShell APIs.

**25. What is Windows Azure Scheduler?**

Windows Azure Scheduler enable you to invoke activities –, for example, calling HTTP/S endpoints or presenting a message on a storage queue on any schedule. With Scheduler, you make jobs in the cloud that dependably call services both inside and outside of Windows Azure and execute those jobs on demand, on a routinely repeating schedule, or assign them for a future date.

**26. How can you create a HDInsight Cluster in Azure?**

To make an Azure HDInsight Cluster, open the Azure portal and then click on New, Data Services,then HDInsight.

Hadoop is the default and native execution of Apache Hadoop.

HBase is an Apache open-source NoSQL database based on Hadoop that gives random access and solid consistency for a lot of unstructured data.

Storm is a distributed, fault tolerant, open-source computation system that enables you to process data in real time.

**27. What is Text Analytics API in Azure Machine?**

Content Analytics API is a part of content examination web administrations worked with Azure Machine Learning. The API can be utilized to analyze unstructured content for tasks, like, sentiment analysis and key phrase extraction.

The API restores a numeric score between 0 and 1. Scores near 1 show positive sentiment, while scores near 0 demonstrate negative sentiment.

The upside of this API is that another new model need not be planned and prepared, the user just needs to bring the data and call the service to get the sentiment results.

**28. What is Migration Assistant tool in Azure Websites?**

Migration Assistant tool will examine your IIS installation and recognize which sites can be migrated to the cloud, featuring any components which can’t be migrated or are unsupported on the platform.

Once broke down this tool will likewise create sites and databases provided under given Azure membership.

**29. What is the distinction between Public Cloud and Private Cloud?**

Public cloud is utilized as a service through Internet by the users, while a private cloud, as the name passes on is deployed within specific limits like firewall settings and is totally overseen and checked by the users dealing with it in an organization.

**30. What is Azure Service Level Agreement (SLA)?**

The SLA ensures that, when you send two or more role instances for each role, access to your cloud service will be maintained not less than 99.95 percent of the time. Additionally, identification and recorrection activity will be started 99.9 percent of the time when a role instance’s procedure isn’t running.

**1. What is the difference between Strong Artificial Intelligence & Weak Artificial Intelligence?**

|  |  |
| --- | --- |
| **Weak AI** | **Strong AI** |
| Narrow application, scope is very limited | Widely applied, scope is vast |
| Good at specific tasks | Incredible human- level intelligence |
| Uses supervised and unsupervised learning | Uses clustering and association to process data. |
| Eg. Siri, Alexa | Ex. Advanced Robotics |

**2. What is Artificial Intelligence?**

[Artificial Intelligence](https://intellipaat.com/blog/what-is-artificial-intelligence/) is a field of computer science wherein the cognitive functions of human brain is studied and tried to be replicated on a machine/system. Artificial Intelligence is today widely used for various applications like computer vision, speech recognition, decision-making, perception, reasoning, cognitive capabilities and so on.

Check out this video on Artificial Intelligence Tutorial

Learn for free ! Subscribe to our youtube Channel.

**3. List some applications of AI.**

* Natural language processing
* Chat bots
* Sentiment analysis
* Sales Prediction
* Self-driving cars
* Facial expression recognition
* Image tagging

**4. List the programming languages in AI.**

* Python
* R
* Lisp
* Prolog
* Java

**5. What is Tower of Hanoi?**

Tower of Hanoi is a mathematical puzzle which shows how recursion might be utilized as a device in building up an algorithm to take care of a specific problem. Using decision tree and Breath first search algorithm(BFS) we can solve Tower of Hanoi using AI.

**6. What is Turing test?**

The Turing test is a method to test the machine’s ability to match the human level intelligence. A machine is used to challenge the human intelligence that when it passes the test, it is considered as intelligent. Yet a machine could be viewed as intelligent without sufficiently knowing about people to mimic a human.

**7. What is an expert system & characteristics of expert system?**

An artificial intelligence program that has expert-level knowledge about a specific area and knows how to utilize its information to react appropriately. These systems have expertise to substitute a human expert. Their characteristics include –

* High performance
* Adequate response time
* Reliability
* Understandable

**8. List the advantages of Expert system.**

* Consistency
* Memory
* Diligence
* Logic
* Multiple expertise
* Ability to reason
* Fast response
* Unbiased in nature

**9. What is A\* algorithm search method?**

A\* is a computer algorithm that is extensively used for the purpose of finding the path or traversing a graph in order to find the most optimal route between the various points called as the nodes.

Go through the [Artificial Intelligence training](https://intellipaat.com/r-programming-certification-training/#course-preview) to get clear understanding of Artificial Intelligence.

**10. What is Breadth-First Search Algorithm?**

Start with the root node, then proceed through neighboring nodes. Further, moves towards next level of nodes. Till the arrangement is found, produces one tree at any given moment. As this pursuit can be executed utilizing FIFO(First in First Out) data structure. This strategy gives the shortest path to the solution.

**11. What is Depth-First Search Algorithm?**

Depth first search is based on LIFO (Last In First Out). A recursion is implemented with LIFO stack data structure. Thus, the nodes were different order than in BFS. The path is stored in each iteration from root to leaf node in linear with space requirement.

**12. What is Bidirectional Search Algorithm?**

The search begins forward from the beginning state and in reverse from objective state. The search meets to identify a common state. The initial state way is linked with the objective state in reverse way. Each search is done just up to half of the aggregate way.

**13. What is Iterative Deepening Depth-First Search Algorithm?**

The repetitive search process of level 1, level 2 happens in this search. The search process continues till the solution is found. Nodes are generated till a single node is created. Stack of nodes are saved. The search ends once the solution is found.

**14. What is Uniform Cost Search Algorithm?**

The uniform cost search performs sorting in increasing cost of the path to a node. It expands the least cost node. It is identical to BFS if each iteration has same cost. It investigates ways in the expanding order of cost.

**15. How Game theory and AI related?**

AI system uses game theory for enhancement, it requires more than one participant which narrows the field quite a bit. The two fundamental roles:

* Participant Design: Game theory is used to enhance the decision of a participant to get maximum utility.
* Mechanism Design: Inverse game theory, designs a game for a group of intelligent participants. Ex. Auctions.

**16. Explain Alpha-beta pruning.**

A search algorithm that tries to reduce the number of nodes that are searched by the minimax algorithm in the search tree. It can be applied to ‘n’ depth, prunes entire subtrees and leaves.

**17. What is fuzzy logic?**

Fuzzy logic is the subset of AI, it is a way of encoding human learning for artificial processing. It is a form of many-valued logic. It is represented as IF-THEN rules.

**18. List the application of Fuzzy logic.**

* Facial pattern recognition
* Air conditioners, washing machines, vacuum cleaners
* Antiskid braking systems, transmission systems
* Control of subway systems and unmanned helicopters
* Weather forecasting systems
* Project risk assessment
* Medical diagnosis and treatment plans
* Stock trading

**19. What is Partial order planning?**

A problem has to be solved in a sequential approach to attain some goal, the partial-order plan specifies all actions that need to be taken, but specifies an ordering of the actions only when required.

**20. What is FOPL?**

First-order Predicate logic is collection of formal systems, where each statement is divided into a subject and a predicate. The predicate refers to only one subject and it can either modify or define the properties of the subject.

**21. What is the difference between inductive, deductive and abductive machine learning?**

|  |  |  |
| --- | --- | --- |
| **Inductive machine learning** | **Deductive machine learning** | **Abductive machine learning** |
| Learns from the set of instances to draw conclusion | Derives conclusion and then improves conclusion based on previous decision | It is a deep learning technique where conclusions are derived based on various instances. |
| Statistical machine learning such as KNN (K-nearest neighbor) or SVM (Support Vector Machine) | Machine learning algorithm to deductive reasoning using a decision tree. | Deep neural network is used in abductive learning. |
| A ⋀ B ⊢ A → B (Induction) | A ⋀ (A → B) ⊢ B (Deduction) | B ⋀ (A → B) ⊢ A (Abduction) |

**22. List the different Algorithm techniques in Machine Learning.**

* Supervised Learning
* Unsupervised Learning
* Semi-supervised Learning
* Reinforcement Learning
* Transduction
* Learning to Learn

**23. What is Deep learning?**

Deep learning is a subset of machine learning which is used to create an artificial multi-layer neural network. They have self-learning capability based on previous instances and provides high accuracy.

**24. Differentiate between supervised, unsupervised and reinforcement learning.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Supervised learning** | **Unsupervised learning** | **Reinforcement learning** |
| Definition | Training set has both predictors and predictions. | Training set has only predictors in the data set. | They can establish state-of-art results on any task. |
| Algorithm | Linear and logistic regression, Support vector machine, Naive Bayes | K-Means, Clustering algorithm, Dimensionality reduction algorithms | Q-Learning, State-Action-Reward-State-Action (SARSA), Deep Q Network (DQN) |
| Uses | Image recognition, speech recognition, forecasting | Pre-process the data, pre-train supervised learning algorithms. | Warehouses, Inventory management, delivery management, Power system, Financial systems. |

**25. Differentiate parametric and non-parametric models**

|  |  |  |
| --- | --- | --- |
|  | **Parametric model** | **Non-parametric model** |
| Definition | Finite number of parameters to predict new data | Unbounded number of parameters |
| Algorithm | Logistic Regression, Linear Discriminant Analysis, Perceptron, Naive Bayes | k-Nearest Neighbors, Decision Trees like CART and C4.5, Support Vector Machines |
| Benefits | Simple, Fast, Less data. | Flexibility, Power, Performance |
| Limitations | Constrained, Limited complexity, Poor fit | More data, slower, over fitting |

**26. Name few Machine Learning algorithms you know.**

* Logistic regression
* Linear regression
* Decision Trees
* Support vector machines
* Naive Bayes etc.

Learn more about Machine Learning algorithms in [Artificial Intelligence tutorial.](https://intellipaat.com/tutorial/artificial-intelligence-tutorial/)

**27. What is Naive Bayes?**

Naive Bayes machine learning algorithm is a powerful algorithm for predictive modeling. It is a set of algorithms with common principle based on Bayes Theorem. The fundamental Naive Bayes assumption is that each feature makes independent and equal contribution to the outcome

**28. What is Perceptron in Machine Learning?**

Perceptron is an algorithm which is able to simulate the ability of the brain to understand and discard, it is for supervised classification of the input into one of several possible non-binary outputs.

**29. List the extraction techniques used for dimensionality reduction.**

* Independent Component Analysis
* Principal Component Analysis
* Kernel Based Principal Component Analysis

**30. Is kNN different from kmeans clustering?**

|  |  |
| --- | --- |
| **kNN** | **kmeans** |
| Supervised | Unsupervised |
| Classification algorithms | Clustering algorithms |
| Minimal training model | Exhaustive training model |
| Used in classification and regression of known data | Used in Population demographics, Market segmentation, Social media trends, Anomaly detection. |

**31. What is ensemble learning?**

Ensemble learning is a computational technique in which classifiers or experts are strategically formed and combined. It is used to improve the classification, prediction, function approximation etc of a model.

**32. List the steps involved in Machine learning**

* Data collection
* Data preparation
* Choosing an appropriate model
* Training the data set
* Evaluation
* Parameter tuning
* Predictions

**33. What is hash table?**

A hash table is a data structure that is used to produce an associative array which are mostly used for database indexing.

**34. What is regularization in Machine learning?**

Regularization comes to picture when the model is either overfit or underfit. It is basically used to minimize the error in the dataset. A new piece of information is fit in the data set to avoid fitting issues.

**35. What are the components of relational evaluation techniques?**

* Data Acquisition
* Ground Truth Acquisition
* Cross Validation Technique
* Query Type
* Scoring Metric
* Significance Test

These are described in more detail on [AI community](https://intellipaat.com/community/).

**36. What is model accuracy and model performance?**

Model accuracy is just a subset of model performance. Model accuracy is based on model performance of algorithm, model performance is based on the datasets we feed as input to the algorithm.

**37. Define F1 score.**

It is the weighted average of precision and recall. It considers both false positive and false negative into account. It is used to measure the model’s performance.

**38. List the applications of Machine learning.**

* Image, speech, face detection
* Bioinformatics
* Market segmentation
* Manufacturing and Inventory management
* Fraud detection etc.

**39. How do you select important variables in the dataset?**

1. Lasso Regression method.
2. Random Forest, plot variable importance chart.
3. Linear regression.

**40. What is a recommendation system?**

A recognition system is an information filtering system that is used to predict user preference based on choice patterns followed by the user while browsing/using the system.

**41. What methods are used for reducing dimensionality?**

Dimensionality reduction is the process of reducing the number of random variables. You can reduce dimensionality by missing values ratio, low variance filter, high correlation filter, random forest, PCA etc.

**42. List different methods for Sequential Supervised Learning**

* Sliding-window methods
* Recurrent sliding windows,
* Hidden Markov models
* Maximum entropy Markov models
* Conditional random fields
* Graph transformer networks

**43. What are the advantages of neural networks?**

* Requires less formal statistical training
* Ability to detect nonlinear relationship between variables
* Detects all possible interaction between predictor variables.
* Availability of multiple training algorithm

**44. What is Bias variance trade-off?**

Bias error is used to measure how much on an average the predicted values vary from the actual value. In case a high bias error occurs, we have an under-performing model.

Variance is used to measure how are the prediction made on same observation different from each other. A high variance model will over-fit the dataset and perform badly on any observation.

**45. What is Tensorflow?**

TensorFlow is an open source machine learning library. It is fast, flexible and a low-level toolkit for doing complex algorithm and offers the users customizability to build experimental learning architectures and to work on them to produce desired outputs.

**46. How to install Tensorflow?**

Tensorflow : installation Guide

CPU : pip install tensorflow-cpu

GPU : pip install tensorflow-gpu

**47. What are the tensorflow objects?**

1. Constants
2. Variables
3. Placeholder
4. Graph
5. Session

**48. What is cost function?**

Cost function is a scalar functions which Quantifies the error factor of the Neural Network. Lower the cost function better the Neural network. Eg: MNIST Data set to classify the image, input image is digit 2 and the Neural network wrongly predicts it to be 3

**49. List different activation neurons or functions.**

1. Linear Neuron
2. Binary Threshold Neuron
3. Stochastic Binary Neuron
4. Sigmoid Neuron
5. Tanh function
6. Rectified Linear Unit (ReLU)

**50. What are the Hyper parameters of ANN?**

* **Learning Rate :** Learning rate is how fast the network learns new beliefs.
* **Momentum :** Parameter which helps to come out of local minima and smoothen the jumps while gradient decent.
* **Epoch :** Epoch is the complete once forward and backward propagation to correct its weights. As epoch increases loss or error decreases as it learns better and better.

**51. What is vanishing gradient?**

As we add more and more hidden layers, back propagation becomes less and less useful in passing information to the lower layers. In effect, as information is passed back, the gradients begin to vanish and become small relative to the weights of the networks.

**52. What are dropouts?**

Dropout is a simple way to prevent a Neural network from overfitting. Dropping out some of the units in neural network. In Reproduction nature produces offspring’s by combining distinct genes rather than strengthening co-adapting them.

**53. Define LSTM.**

Long Short Term Memory – are explicitly designed to address the long term dependency problem, by maintaining a state what to remember and what to forget.

**54. List the key components of LSTM.**

Gates (forget, Memory, update & Read)

tanh(x) (values between -1 to 1)

Sigmoid(x) (values between 0 to 1)

**55. List the variants of RNN.**

* LSTM: Long Short Term Memory
* GRU: Gated Recurrent Unit
* End to End Network
* Memory Network

**56. What is Autoencoder, name few applications.**

Auto encoder is basically used to learn a compressed form of given data. Few applications include-

1. Data denoising
2. Dimensionality reduction
3. Image reconstruction
4. Image colorization

**57. What are the components of GAN and how do you deploy it?**

**Components of GAN –**

* Generator
* Discriminator

**Deployment steps –**

* Train the model
* Validate & Finalize the model
* Save the model
* Load the saved model for next prediction.

**58. What are the steps involved in gradient descent algorithm?**

Gradient descent is an optimization algorithm that is used to find the coefficients of parameters that is used to reduce the cost function to minimum.

Step 1 : Allocate the weights(x,y) with random values and calculate Error (SSE)

Step 2 : Calculate the gradient i.e. variation in SSE when the weights (x,y) are changed by a very small value. This helps us move the values of x & y in the direction in which SSE is minimized.

Step 3 : Adjust the weights with the gradients to move towards the optimal values where SSE is minimized

Step 4: Use the new weights for prediction and to calculate the new SSE

Step 5 : Repeat steps 2 and 3 till further adjustments to weights doesn’t significantly reduce the Error

**59. What do you understand by Session in tensorflow?**

**Syntax – Class Session**

It is a class for running TensorFlow operations. The environment is encapsulated in the session object wherein the operation objects are executed and Tensor objects are evaluated.

# Build a graph.

x = tf.constant(2.0)

y = tf.constant(5.0)

z = x \* y

# Launch the graph in a session.

sess = tf.Session()

# Evaluate the tensor `z`.

print(sess.run(z))

**60. What do you mean by Tensorflow Cluster?**

TensorFlow “cluster” is a set of “tasks” that participate in the distributed execution of a TensorFlow graph. Each task is associated with a TensorFlow “server”, which contains a “master” that can be used to create sessions, and a “worker” that executes operations in the graph. A cluster can also be divided into one or more “jobs”, where each job contains one or more tasks.

**61. How to run TensorFlow on Hadoop?**

To use HDFS with TensorFlow, we need to change the file paths to read and write data to an HDFS path. For example:

filename\_queue = tf.train.string\_input\_producer([

“hdfs://namenode:8020/path/to/file1.csv”,

“hdfs://namenode:8020/path/to/file2.csv”,

])

**62. What are Intermediate tensors and do sessions have lifetime?**

The intermediate tensors that are created as part of a call to Session.run() will be freed at or before the end of the call. Sessions can own resources, few classes like tf.Variable, tf.QueueBase, and tf.ReaderBase and they use a significant amount of memory. These resources (and the associated memory) are released when the session is closed, by calling tf.Session.close.

**63. What is the lifetime of a variable?**

When you first run the tf.Variable.initializer operation for that variable in a session it is started. It is destroyed when that tf.Session.close.

**1. What are the advantages and disadvantages of hacking?**

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| It can be used to foil security attacks | It creates massive security issues |
| To plug the bugs and loopholes | Get unauthorized system access |
| It helps to prevent data theft | Stealing private information |
| Hacking prevents malicious attacks | Violating privacy regulations |

**2. What is the difference between Asymmetric and Symmetric encryption?**

|  |  |
| --- | --- |
| **Asymmetric encryption** | **Symmetric encryption** |
| Asymmetric encryption uses different keys for encryption and decryption. | Symmetric encryption uses the same key for both encryption and decryption. |
| Asymmetric on the other hand is more secure but slow. Hence, a hybrid approach should be preferred. | Symmetric is usually much faster but the key needs to be transferred over an unencrypted channel. |

**3. How can you avoid ARP poisoning?**

ARP poisoning is a type of network attack that can be resolved through these techniques:

Using Packet filtering: Packet filters can filter out & block packets with clashing source address data.

Keeping away from trust relationship: Organizations ought to develop a protocol that depends on trust relationship as little as they can.

Utilize ARP spoofing software: Some programs assess and certify information before it is transmitted and blocks any information that is spoofed.

**4. What do you understand by footprinting in ethical hacking? What are the techniques utilized for foot printing?**

Footprinting is nothing but accumulating and revealing as much as data about the target network before gaining access into any network.

**Open Source Footprinting :** It will search for the contact data of administrators that will be utilized for guessing password in Social Engineering

**Network Enumeration :** The hacker attempts to distinguish the domain names and the network blocks of the target network

**Scanning :** After the network is known, the second step is to spy the active IP addresses on the network. For distinguishing active IP addresses (ICMP) Internet Control Message Protocol is a functioning IP addresses

**Stack Fingerprinting :** the final stage of foot printing step can be performed, once the hosts and port have been mapped by examining the network, this is called Stack fingerprinting.

**5. What do you mean by DOS (Denial of administration) assault? Explain. What are the regular types of DOS assault?**

Denial of Service, is a malicious attack on network that is executed by flooding the system with useless traffic. Despite the fact that DOS does not cause any data breach or security breach, it can cost the site proprietor a lot of cash and time.

* Buffer Overflow Attacks
* SYN Attack
* Teardrop Attack
* Smurf Attack
* Viruses

**6. What is Pharming and Defacement?**

**Pharming :** In this strategy the attacker compromises the DNS (Domain Name System) servers or on the user PC with the goal that traffic is directed towards malicious site

**Defacement :** In this strategy the attacker replaces the firm’s site with an alternate page. It contains the hacker’s name, images and may even incorporate messages and background music.

**7. What is Cowpatty?**

Cowpattyis implemented on an offline dictionary attack against WPA/WPA2 networks utilizing PSK-based verification (e.g. WPA-Personal). Cowpatty can execute an enhanced attack if a recomputed PMK document is accessible for the SSID that is being assessed.

**8. What is Network Enumeration?**

Network Enumeration is the revelation of hosts/gadgets on a network, they tend to utilize obvious disclosure protocols, for example, ICMP and SNMP to gather data, they may likewise check different ports on remote hosts for looking for surely known services trying to further recognize the function of a remote host.

Want to learn more check out this [Ethical Hacking Tutorial.](https://intellipaat.com/tutorial/ethical-hacking-cyber-security-tutorial/)

**9. Distinguish between phishing and spoofing?**

Phishing and spoofing are totally different beneath the surface. One downloads malware to your PC or network, and the other part tricks you into surrendering sensitive monetary data to a cyber-crook. Phishing is a technique for recovery, while spoofing is a method for delivery.

**10. Why is Python utilized for hacking?**

Most broadly utilized scripting language for Hackers is Python. Python has some very critical highlights that make it especially valuable for hacking, most importantly, it has some pre-assembled libraries that give some intense functionality.

**11. What can an ethical hacker do?**

An ethical hacker is a computer system and networking master who systematically endeavours to infiltrate a PC framework or network for the benefit of its owners to find security vulnerabilities that a malicious hacker could potentially exploit.

**12. What is network sniffing?**

System sniffing includes utilizing sniffer tools that empower real- time monitoring and analysis of data streaming over PC systems. Sniffers can be utilized for various purposes, regardless of whether it’s to steal data or manage systems.

Network sniffing is utilized for ethical and unethical purposes. System administrators utilize these as system monitoring and analysis tool to analyse and avoid network related issues, for example, traffic bottlenecks. Cyber criminals utilize these devices for untrustworthy purposes, for example, character usurpation, email, delicate information hijacking etc.

**13. What is the difference between encryption and hashing?**

|  |  |
| --- | --- |
| **Encryption** | **Hashing** |
| Encryption is reversible | Hashing is irreversible |
| Encryption ensures confidentiality | Hashing ensures Integrity |

**14. What is CIA Triangle?**

* Confidentiality : Keeping the information secret.
* Integrity : Keeping the information unaltered.
* Availability : Information is available to the authorised parties at all times.

Go through this [Ethical Hacker Training](https://intellipaat.com/ceh-ethical-hacking-certification-course/) to learn more about RPA.

**15. What is the difference between VA and PT?**

|  |  |
| --- | --- |
| **Vulnerability Assessment** | **Penetration testing** |
| Vulnerability Assessment is an approach used to find flaws in an application/network | It is the practice of finding exploitable vulnerabilities like a real attacker will do |
| It is like travelling on the surface | It is digging for gold. |

**16. What is a firewall?**

A firewall could be a device that allows/blocks traffic as per outlined set of rules. These are placed on the boundary of trusted and untrusted networks.

**17. What is data leakage? How will you detect and prevent it?**

Data leak is nothing but data knowledge getting out of the organization in an unauthorized manner. Data will get leaked through numerous ways in which – emails, prints, laptops obtaining lost, unauthorized transfer of data to public portals, removable drives, pictures etc. There are varied controls which may be placed to make sure that the info doesn’t get leaked, many controls will be limiting upload on web websites, following an internal encryption answer, limiting the emails to the interior network, restriction on printing confidential data etc.

**18. What are the hacking stages? Explain each stage.**

Hacking, or targeting on a machine, should have the following 5 phases :

**Surveillance :** This is the principal stage where the hacker endeavours to gather as much data as possible about the target

**Scanning :** This stage includes exploiting the data accumulated amid Surveillance stage and utilizing it to inspect the casualty. The hacker can utilize computerized devices amid the scanning stage which can incorporate port scanners, mappers and vulnerability scanners.

**Getting access :** This is where the real hacking happens. The hacker attempts to exploit data found amid the surveillance and Scanning stage to get access.

**Access Maintenance :** Once access is gained, hackers need to keep that access for future exploitation and assaults by securing their exclusive access with backdoors, rootkits and Trojans.

**Covering tracks :** Once hackers have possessed the capacity to pick up and maintain access, they cover their tracks and to keep away from getting detected. This likewise enables them to proceed with the utilization of the hacked framework and keep themselves away from legitimate activities.

**19. What are the tools used for ethical hacking?**

There are several moral hacking tools out there within the marketing for different purposes, they are:

* NMAP – NMAP stands for Network plotter. It’s associate degree open source tool that’s used wide for network discovery and security auditing.
* Metasploit – Metasploit is one amongst the most powerful exploit tool to conduct basic penetration tests.
* Burp Suit – Burp Suite could be a widespread platform that’s widely used for playing security testing of internet applications.
* Angry IP Scanner – Angry information processing scanner could be a light-weight, cross-platform information processing address and port scanner.
* Cain & Abel – Cain & Abel is a password recovery tool for Microsoft operational Systems.
* Ettercap – Ettercap stands for local area network Capture. It is used for Man-in-the-Middle attack using a network security tool.

**20. What is MAC Flooding?**

MAC Flooding is a kind of a technique wherever the protection of given network switch is compromised. In MAC flooding the hacker floods the switch with sizable amounts of frames, than what a switch can handle. This makes switch behaving as a hub and transmits all packetsto all the ports existing. Taking the advantage of this the attacker can attempt to send his packet within the network to steal the sensitive information.

**21. Explain how you can stop your website getting hacked?**

By adapting following methodology you’ll be able to stop your web site from obtaining hacked

* Using Firewall : Firewall may be accustomed drop traffic from suspicious information processing address if attack may be an easy DOS
* Encrypting the Cookies : Cookie or Session poisoning may be prevented by encrypting the content of the cookies, associating cookies with the consumer information processing address and temporal arrangement out the cookies once it slow
* Validating and confirmative user input : This approach is prepared to stop the type tempering by confirmative and verifying the user input before processing it
* Header Sanitizing and validation : This technique is beneficial against cross website scripting or XSS, this method includes verifying and sanitizing headers, parameters passed via the address, type parameters and hidden values to cut back XSS attacks.

**22. What is Burp Suite? What are the tools does it contain?**

Burp Suite is an integrated platform used for attacking net applications. It contains all the tools a hacker would need for attacking any application. a number of these functionalities are

* Proxy
* Spider
* Scanner
* Intruder
* Repeater
* Decoder
* Comparer
* Sequencer

**23. What is SQL injection and its types?**

If the application doesn’t sanitize the user input then the SQL injection happens. Thus a malicious hacker would inject SQL question to gain unauthorized access and execute administration operations on the database. SQL injections may be classified as follows:

* Error-based SQL injection
* Blind SQL injection
* Time-based SQL injection

**24. What's a denial of service (DOS) attack and what are the common forms?**

DOS attacks involve flooding servers, systems or networks with traffic to cause over-consumption of victim resources. This makes it troublesome or not possible for legitimate users to access or use targeted sites.

Common DOS attacks include:

* Buffer overflow attacks
* ICMP flood
* SYN flood
* Teardrop attack
* Smurf attack

**25. Which programming language is used for hacking?**

It’s best, actually, to master all 5 of Python, C/C++, Java, Perl, and LISP. Besides being the foremost vital hacking languages, they represent  totally different approaches to programming, and each of it can educate you in valuable ways.

**26. What is meant by spoofing attack?**

A spoofing attack is when a malicious party impersonates another device or user on a network so as to launch attacks against network hosts, steal data, unfold malware or bypass access controls. Different Spoofing attacks are deployed by malicious parties to achieve this.

**27. What are the different types of spoofing?**

* ARP Spoofing Attack.
* DNS Spoofing Attack.
* IP Spoofing Attack.

**28. What is active and passive reconnaissance?**

Passive reconnaissance is nothing but to gain info regarding targeted computers and networks while not actively participating with the systems. In active reconnaissance, in distinction, the attacker engages with the target system, usually conducting a port scan to find any open ports.

**29. Differentiate Between a MAC and an IP Address?**

All networks across devices are assigned a number which is unique, which is termed as MAC or Machine Access Control address. This address may be a personal mail box on the net. The network router identifies it. the amount may be modified anytime.All devices get their distinctive information processing address so they can be located easily  on a given laptop and network. Whoever is aware of your distinctive information processing address will contact you through it.

**30. What is SSL and why is it not enough when it comes to encryption?**

SSL is identity verification, not hard encryption. it’s designed to be able to prove that the person you’re engaging on the other side is who they say they are. SSL and TLS are each used by almost everyone  online, however because of this it is a huge target and is mainly attacked through its implementation (The Heartbleed bug for example) and its far-famed methodology.

## Q: Why did you choose a career in cloud computing?

A: These types of Azure interview questions require a thoughtful, honest response. By thinking through your answer ahead of time, you’ll be ready to say something your interviewer will approve of. Show that you care about the field and that you have a passion for cloud computing and the problems it can solve.

## Q: Why did you choose Microsoft Azure and not AWS?

A: Your response to this question is based on your own background and experience. Maybe you come from a developer background so Azure appealed to you. Maybe your first cloud computing role just happened to be with Azure. As with the question above, the key here is to be ready to give an intelligent answer to the question.

## Q: How does Microsoft Azure compare to AWS?

A: This might be a matter of opinion for you, so answer as you see fit. In general, people say Azure is a better choice because it’s a Microsoft product, making it easier for organizations already using Windows Server, SQL Server, and Exchange to move to the cloud. In addition, because of Microsoft’s deep knowledge of developer tools, Azure offers multiple app deployment options for developers which makes it stand out against AWS.

## Q: How did you learn Azure?

A: Did you learn Azure through a[certification](https://www.simplilearn.com/architecting-microsoft-azure-solutions-certification-training-course)? Through on-the-job experience? A little of each? However you learned it, make sure to demonstrate to the interviewer that you have practical experience (if you’re new to the field) and that you are continuing to learn.

## Q: Tell me about a problem you solved at your prior job.

A: This is something to spend some time on when you’re preparing responses to possible Azure interview questions. As a cloud architect, you need to show that you are a good listener and problem solver, as well as a good communicator. Yes, you need to know the technology, but cloud computing does not usually involve sitting isolated in a cubicle. You’ll have stakeholders to listen to, problems to solve, and options to present. When you answer questions like these, try to convey that you are a team player and good communicator, in addition to being a really good Azure architect!

## Q: What are the different storage options with Azure?

A: Should your interview start to get technical, there are countless questions you might be asked. You can’t predict them. We can’t predict them. So we’ve brainstormed some possible Azure interview questions and answers for you to study, prepare for and practice. Do this, and you’ll walk into your interview with much more confidence! Now, onto the different storage options with Azure. These options include a blog, table, and queue options. Be prepared to expand on the benefits of each as well.

## Q: What is the benefit of the Azure CDN?

A: The Content Delivery Network (or CDN) in Azure offers the same benefits as other CDNs: it can be used to reduce load times and bandwidth as well as speed up responsiveness.

## Q: What is Azure Virtual Network?

A: Azure Virtual Network enables Azure resources like Virtual Machines to securely communicate with each other, with the Internet and with on-site networks. It lets you implement multiple virtual networks, as well as filter or even route network traffic, and to connect virtual networks to each other.

## Q: What are Azure Virtual Machines used for?

A: Speaking of virtual, Azure Virtual Machines are used in the same way any virtual machines are used: to add computing power without adding hardware. Azure supports Windows Server (of course), Linux, SAP, Oracle, IBM and SQL Server.

## Q: What is Azure Cloud Service?

A: Azure Cloud Service lets you deploy a multi-tier web application in Azure, with multiple roles to distribute processing and enable flexible scaling of your application. It lets you support more complex multi-tier architectures.

## Q: What is Azure Active Directory?

A: Azure Active Directory is an Identity and Access Management system, similar to other active directories. It lets you grant employee access to specific products and services within your network.

## Q: What is PowerShell and how is it used?

A: Windows PowerShell has been around for a long time. It can be used to automate tedious tasks. Azure PowerShell is used to manage and administer Azure resources from the command line, as well as to build automation scripts for use with the resource manager.

## Q: Explain HDInsight.

A: Azure HDInsight is a cloud service that makes it easy, fast and cost-effective to process massive amounts of data using open-source frameworks like Hadoop, Spark, Hive, LLAP, Kafka, Storm and R. HDInsight can enable a broad range of scenarios, including ETL, data warehousing, and Machine Learning, to name a few.

## Q: How do you stay current on Microsoft Azure?

A: Technology is rapidly changing, especially in the cloud computing space, and Microsoft regular makes updates to Azure. How do you stay on top of it all? Your interviewer will want to know that if you’re hired for the job, you’ll stay current. If you’ve earned a[certification](https://www.simplilearn.com/architecting-microsoft-azure-solutions-certification-training-course), definitely mention that. But also look into forums, user groups and other resources for staying current, and be ready to talk about them when answering Azure interview questions.

Q1).What is a cloud environment?

Cloud environment is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and provided with least management effort or provider interaction. This cloud model promotes availability.

Q2).Why we need Cloud?

On-demand – Resources should be always available when you need them, and you have control over turning them on or off to ensure there’s no lack of resource or wastage happen.

Scalable – You ought to be able to scale (increase or decrease the resource) once necessary. The cloud providers should have enough capacity to meet customer’s needs.

Multi-tenant – generally you’ll be sharing a similar resource (e.g.hardware) with another tenant.

But after all, this is often clear to the client. Cloud supplier shall accountable the safety side, guaranteeing that one tenant won’t be able to access other’s knowledge.

Self-service computation and storage resource – connected processes including: asking, resource provisioning, and deployment should be self-service and automated, involving much less manual processing. If a machine wherever our service is hosted fails, the cloud supplier ought to be able to failover our service right away.

Reliability – Cloud supplier ought to be able to give client responsibility service, committing to uptimes of their service.

Utility-based subscription – you may pay the cloud supplier as a utility-based subscription, rather like paying your electricity bill – with none direct investment.

Q3).What are the categories of services provided in the Cloud?

IAAS – Infrastructure as a Service

IaaS offers you a server within the cloud (virtual machine) that you simply have complete management over.

With Associate in Nursing Azure VM, you’re to blame for managing everything from the software package on up to the appliance you’re running.

PAAS – Platform as a Service

An Azure Cloud Service consists of 2 components: your application files (source code, DLLs, etc.) and a configuration file.

Together, these 2 parts can spin up a mix of net Roles and employee Roles to execute your application.

With Cloud Services, Azure handles all of the tedious software package details for you, therefore you’ll be able to specialise in what matters – building a top-quality application for your users.

SAAS – Software as a Service

Software as a Service applications are built and hosted through 3rd party vendors who typically charge for a certain level of service – $30/month for X projects and Y users.

Q4).What is Web Role and Worker Role?

A Web Role is associate Azure VM that’s pre-configured as an internet server (running IIS) and can mechanically have your application loaded thereon by the time the server fully spins up.

This will produce the general public terminus for your application – typically an internet site, however it might even be associate API or one thing similar.

Worker Roles run aboard your internet Roles and square measure to blame for performing arts computing functions to support your application.

Typically, the net Role can settle for some form of user input associated queue an action for the employee Role to method at a later time.

This allows the net Roles to be additional responsive and to fire-and-forget tasks to be processed later.

IAAS

VIRTUAL MACHINES

Q5).What are Resource Groups?

A resource cluster contains the resources needed to with success deploy a VM in Azure.

It is a instrumentality that holds connected resources for associate degree Azure answer.

In Azure, you logically cluster connected resources like storage accounts, virtual networks, and virtual machines (VMs) to deploy, manage, and maintain them as one entity.

Q6).What is a Virtual Machine?

An Azure VM offers you the pliability of virtualization while not having to shop for and maintain the physical hardware that runs it. However, you continue to ought to maintain the VM by playing tasks, like configuring, patching, and putting in the computer code that runs thereon.

Q7).Describe the architecture of Azure VM / What are the related resources for Azure VM and which of them are optional for VM?

Resource Groups, Virtual Network, Network Security Group, Public IP, NIC, VM, Storage Accounts, Diagnostic Logs Account, Temp Drive.

Q8).What is purpose of Temp Drive in VM?

Temp Drive is used for Paging in Azure. It is a temporary drive and we should not use it for storage.

Q9).How does Azure charge for using VMs?

Azure charges an hourly price based on the VM’s size and operating system. For partial hours, Azure charges just for the minutes used. Storage is priced and charged separately.

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Q10).Can you name some scenarios where VMs are preferred?

Development And check – Azure VMs provide a fast and straightforward thanks to produce a laptop with specific configurations needed to code and check an application.

Applications within the cloud – as a result of demand for your application will fluctuate, it would create economic sense to run it on a VM in Azure. You get hold of further VMs after you would like them and shut them down after you don’t.

Extended datacenter – Virtual machines in AN Azure virtual network will simply be connected to your organization’s network.

With Unmanaged disks, you create your own storage account and specify that storage account when you create the disk.

Q11).What are the types of Disk used by VMs?

* Operating system disk
* Temporary disk
* Data disk

Q12).How are Virtual Hard Disks stored in Azure and what type of storage is recommended for VHDs?

The VHDs used in Azure are .vhd files stored as page blobs in a standard or premium storage account in Azure.

* Standard HDD disks
* Standard SSD disks
* Premium SSD disks
* Ultra Premium disks

Q13).Name some roles & features not supported in Azure VM?

* Dynamic Host Configuration Protocol Server
* Hyper-V (Hyper-V role is supported in Azure Ev3, and Dv3 series VMs only)
* BitLocker Drive Encryption (on the operating system hard disk, may be used on data disks)
* Network Load Balancing
* Wireless LAN Service

Q14).What are Managed disks and Unmanaged disks in Azure and which is recommended by Microsoft?

* Unmanaged disks

With Unmanaged disks, you create your own storage account and specify that storage account when you create the disk.

* Managed disks (RECOMMENDED)

Managed Disks handles the storage account creation/management within the background for you, and ensures that you just don’t need to worry regarding the measurability limits of the storage account.

Q15).How I can save cost on Unmanaged standard disks? / What is TRIM command used for?

Using the TRIM command, we can specify Azure to charge only for the space the Storage actually occupies rather than the allocated space. TRIM notifies the drive that certain sectors that previously were allocated are no longer needed by the app and can be purged.

Q16).What is the difference between Stopped and Deallocated?

Ans.Stopped means VM is shut down but still you need to pay for ip and other resources. Deallocated means resources occupied by VM are released and you do not have to pay for them.

Q17).What is a Content Delivery Network / CDN?

A content delivery network (CDN) is a distributed network of servers that can efficiently deliver web content to users. CDNs store cached content nervy servers in point-of-presence (POP) locations that ar near to finish users, to minimize latency.

Q18).What is Azure SQL?

Azure SQL Database is a relational database-as-a-service (DBaaS) based on the latest stable version of Microsoft SQL Server Database Engine.

Q19).What is a DTU?

A [Database Transaction Unit] is a blended measure of CPU, memory, and data I/O and transaction log I/O in a ratio determined by an OLTP benchmark workload designed to be typical of real-world OLTP workloads.

Q20).What is REDDIS CACHE?

Open Source service, used as a cache to improve the performance and scalability of systems that rely heavily on backend data-stores.

Q21).What is COSMOS DB?

Microsoft’s globally distributed, multi-model database. Azure Cosmos sound unit allows you to elastically and severally scale turnout and storage across any range of Azure’s geographic regions. No database schema or index management, always on with low cost of ownership and money back guarantees.

Q22).What is CORS?

CORS (Cross Origin Resource Sharing) is an HTTP feature that enables a web application running under one domain to access resources in another domain.

AZURE AD

Q23).What is Azure AD?

Azure Active Directory (Azure AD) is Microsoft’s multi-tenant, cloud-based directory, and identity management service that combines core directory services, application access management, and identity protection into a single solution.

Q24).What is O365 Groups?

Office 365 Groups is a service that works with the Office 365 tools you use already so you can collaborate with your teammates when writing documents, creating spreadsheets, working on project plans, scheduling meetings, or sending email.

[*Become an Microsoft Azure Expert with Certification in 25hours*](https://www.gangboard.com/microsoft/windows-azure-training?utm_source=GB_blog)

Q25).What is AAD Connect?

Sync tool between Azure AD and On Prem AD.

Q26).What is Graph API?

All Microsoft Services are brought under one API Service and made available through 1 API. This is Graph API. The main advantage is you do not need to re-authenticate for each and every service separately.

Q27).What is B2B and B2C?

Azure AD business-to-business (B2B) collaboration capabilities enable any organization using Azure AD to work safely and securely with users from any other organization.

Azure AD business-to-customer (B2C) is an identity management service that enables you to customize and control how customers sign up, sign in, and manage their profiles when using your applications.

WEB AND MOBILE SERVICES

Q28).What is an App Service?

It is a service for hosting web applications, REST APIs, and mobile back ends. You can develop in your favourite language. You procure the Azure calculate resources you utilize.

Q29).What is Azure Function?

Azure Functions is the serverless computing service hosted on the Microsoft Azure public cloud.

Q30).What is Webhook?

A webhook is simply an addressable HTTP endpoint that allows external applications to communicate with your system. You could implement webhooks employing a form of Azure services like Azure Functions, an internet app running associate API.

Q31).What is Web Job?

WebJobs is a feature of Azure App Service that enables you to run a program or script in the same context as a web app, API app, or mobile app. There is no additional cost to use WebJobs.

Q32).What is Logic App?

Logic Apps helps you build solutions that integrate apps, data, systems, and services across enterprises or organizations by automating tasks and business processes as workflows.

Q33).What is CRON expression?

String of characters used to provide the schedule for a service to run in repeat.

Q34).What are Microservices?

Microservice applications are composed of small, independently versioned, and scalable customer-focused services that communicate with each other over standard protocols with well-defined interfaces.

Q35).What is a Data Center?

A data center (or datacenter) may be a facility composed of networked computers and storage that companies or alternative organizations use to prepare, process, store and distribute giant amounts of knowledge.

Q36).What are the various subscription architectures in Azure?

* Free
* MSDN
* Enterprise
* Pay As You Go

Q37).What is BYOL?

Bring your own license

Q38).What is Azure Data Lake?

Microsoft Azure knowledge Lake may be a extremely ascendible public cloud service that enables developers, scientists, business professionals and other Microsoft customers to gain insight from large, complex data sets. As with most knowledge lake offerings, the service is composed of two parts: data storage and data analytics.

Q39).What is Azure Data Factory?

The Azure knowledge plant (ADF) may be a service designed to permit developers to integrate disparate knowledge sources. It is a platform somewhat like SSIS within the cloud to manage the information you’ve got each on-prem and within the cloud.

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Q40).What is Azure Kubernetes Services?

Azure Kubernetes Service (AKS) may be a managed instrumentality orchestration service, based on the open source Kubernetes system, which is available on the Microsoft Azure public cloud. An organization will use AKS to deploy, scale and manage Docker containers and container-based applications across a cluster of container hosts

Q41).What is Docker in Azure?

Docker for Azure is put in with Associate in Nursing Azure model that configures laborer in swarm mode, running on VMs backed by a custom virtual hard drive (VHD). There ar 2 ways that you’ll be able to deploy laborer for Azure. Use the Azure Portal or Azure CLI, both have the configuration options.

Q42).What is Azure Dev ops?

Azure DevOps provides tools to support software development teams.

Q43).What tools and capabilities Azure Dev Ops provide?

Azure Pipelines

CI/CD works with all languages, platforms, and clouds. Connect to dirty dogHub or any Git repository and deploy unceasingly.

Azure Boards

Powerful work following with Kanban boards, backlogs, team dashboards, and custom reporting.

Azure Artifacts

Maven, npm, and NuGet package feeds from public and personal sources.

Azure Repos

Unlimited cloud-hosted private Git repos for your project. Collaborative pull requests, advanced file management, and more.

Azure Test Plans

All in one planned and exploratory testing solution.

Q44).What is Azure Dev Test Labs?

Azure DevTest Labs may be a service that helps developers and testers quickly produce environments in Azure whereas minimizing waste and dominant price. You can check the newest version of your application by quickly provisioning Windows and UNIX operating system environments victimisation reusable templates and artifacts

Q45).What is Azure IoT?

The Azure Internet of Things (IoT) is a collection of Microsoft-managed cloud services that connect, monitor, and control billions of IoT assets. In simpler terms, an IoT solution is made up of one or more IoT devices and one or more back-end services running in the cloud that communicate with each other.

Q46).What is Azure IoT Edge?

The edge of the IoT is wherever the action is. It includes a good array of sensors, actuators, and devices—those system end-points that move with and communicate period knowledge from sensible product and services.

Q47).What is Azure Block Chain Workbench?

Azure Blockchain work table may be a assortment of Azure services and capabilities designed to assist you produce and deploy blockchain applications to share business processes and knowledge with alternative organizations

Q48).What is Azure Data Bricks?

Apache Spark-based analytics platform. Azure Databricks contains the entire ASCII text file Apache Spark cluster technologies and capabilities.

Q49).What is Azure Cognitive Service?

Azure psychological feature Services ar genus Apis, SDKs, and services available to help developers build intelligent applications without having direct AI or data science skills or knowledge. The goal of Azure psychological feature Services is to assist developers produce applications which will see, hear, speak, understand, and even begin to reason.

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Q50).What is Machine Learning?

Azure Machine Learning service is a cloud service that you can use to develop and deploy machine learning models. Using Azure Machine Learning service, you’ll be able to track your models as you build, train, deploy, and manage them, all at the broad scale that the cloud provides.

Q51).What is Azure Bot Service?

Azure larva Service is Microsoft’s computer science (AI) chatbot offered as a service on the Azure cloud service marketplace. Azure larva Service offers the flexibility to feature intelligent agents that ar capable of spoken language while not having to commit the resources to develop one’s own AI.

Q52).What is InTune?

It is a element of Microsoft’s Enterprise quality + Security (EMS) providing, a mobile device management and application management platform. Microsoft’s Intune app is meant to integrate with alternative elements of the EMS platform, including Azure Active Directory and Azure Information Protection.

Q53).What is Azure Genomics?

Microsoft genetic science simplifies however you method, store, and share large volumes of genomics data. Through the ability of cloud computing and Microsoft Azure, you can more easily collaborate with the scientific community to exchange important data insights on genomic medicine.

Q54).What is HDInsight?

Azure HD Insight may be a Hadoop service providing hosted in Azure that permits clusters of managed hadoop instances. Azure HDInsight deploys and provisions Apache Hadoop clusters within the cloud, providing a package framework designed to manage, analyze, and report on massive knowledge with high dependability and convenience

[*Enroll Now!*](https://www.gangboard.com/microsoft/windows-azure-training?utm_source=GB_blog)

Q55) What port number user to take RDP in Virtual Machine.

Answer : port RDP -3389. http – 80

Q56) Where do you add Azure VM in load balancer.

Answers:

need to add the VM servers in to Backed Pool which have the Private IP address.

Q57) how to connect on premise virtual machine to Azure online.

need to download “MicrosoftAzureSiteRecoveryUnifiedSetup” and their associated “VaultCredentials” key from Azure Site and recovery and those need to install on any one of the On premise virtual machine which have internet connected then late we need to create replication for both the on-premise and Azure.

Q58) what is the difference between virtual machine and Virtual machine scale set.

in  VM scale set VM and Load balancer will be created automatically and the Virtual machine will be increased or decreased based on the usage of the application but in Virtual Machine we need to create manually.

Q59) what is Backend Pool in Load balancer ?

The backend pool will have the virtula machine which is connected with private IP address along with Availability set enabled to provide services will be connected over public IP address of the Load balancer.

Q60) What is cloud computing ?

Distributed computing is fundamentally an extraordinary dimension of deliberation over the foundation that can assist you with focusing more on your business rationale without agonizing over facilitating or framework needs. This is the general term utilized for conveying the facilitated administrations over the web. In distributed computing the figuring assets are giving “as an administration”. Much the same as Electricity, you pay to power supplier and get the power at your home and for this you don’t have to make any framewor

Q61) Cloud computing benefits?

* Scalability
* Agility
* High Availability
* Pay as you go
* Moving from Capex to Opex
* Fault Tolerance
* High Response Time
* HighBandwidth Low
* Latency

**Scalability**

It tends to be named as a capacity of the application to deal with developing measure of work without corrupting the execution. Essentially framework can develop unbounded dependent on interest.

**Scalability is of 2 types –**

1. Vertical or Scale Up – In this kind of scaling design we increment the limit of the current equipment or machine. For instance, on the off chance that you are having a work area of 4GB RAM and tomorrow you increment the RAM of your machine to 16GB then this is nothing but the vertical scaling.
2. Level or Scale Out – In this sort of scaling setup we increment the tally of machines without expanding the limit. For instance, on the off chance that you have a server of 8GB RAM and tomorrow you put another server of same RAM, etc. When you do even scaling basically you increment the processing power in parallel so you show signs of improvement execution. This is level

**Agility**

The framework is anything but difficult to develop as business changes. This characterizes a degree to which your application can be advanced/changed/altered relying upon the business or necessity changes.

**High Availability**

Essentially this characterizes how much your application is accessible for its end clients. Clients or clients will dependably anticipate zero downtime of the application. High availability implies your application can withstand underneath normal types of downtime scenarios –

* Hardware failures
* Application updates
* Configuration changes
* OS update restarts
* Heavy load restarPay as you go

This is the most worthwhile advantage of cloud. With cloud you pay just for what you use. In the event that you are not in the need of assets, you can free them/de-designate them and you are not charged for it. The charging is totally “per minute” charging giving you all the more saving money on expense.

**Moving from Capex to Opex**

This represents moving from “Capital Expenditure to Operational Expenditure”. Organizations today don’t wish to contribute on equipment as equipment is changing at quick pace. Along these lines, rather than contributing on equipment cost which may wind up out of date after certain time length they are progressively intrigued and willing to pay operational expense on month to month, yearly premise. This is only the Capex to Opex. As Microsoft Azure being “Pay as you go” show it turns out to be anything but difficult to move from Capex to Opex.

Fault Tolerance

It is the capacity of the framework to keep working in full limit and completely practical in case of disappointment of a portion of its parts. This just methods, on the off chance that I have a web application and communicating with database, at that point if the database isn’t open/down still my web application will be accessible for clients.

Microsoft Azure applies different replication and redundancy techniques to make azure hosted services and applications as fault tolerant.

Q62) Types of cloud deployment models?

The summary of these terminologies is as follows –

1. IaaS – Infrastructure as a Service – a lot of infrastructure level capabilities, for example, an operating framework, organize availability, and so on that are conveyed as pay for use services and can be utilized to have

Example, Azure VM, VNET..

1. PaaS –Platform as a Service – is about abstracting designers from the hidden infrastructure to enable applications to rapidly be made. This is specifically for designers who are eager to Build applications without stressing over management of facilitating condition at al

Ex, Azure Cloud services, Azure Web Apps, Storage, SQL Azure Database etc.

1. SaaS – Software as a Service – applications that are conveyed utilizing an administration conveyance demonstrate where associations can basically Consume and utilize the application. Regularly, an association would pay for the utilization of the application

Example, Office 365, Gmail, Saleforce.com, SharePoint online, CRM online and so on.

Q63) What is Public, Private and Hybrid cloud execution as for Azure?

Public Cloud example –

You are running a use of Hospital Management framework on Azure Web Apps or Cloud administration web jobs and supporting backend database you are utilizing is SQL Azure Database. In this precedent as all parts of whole framework [web application and database] are running on Azure itself this turn into your open cloud execution.

Private Cloud example –

You are running a use of Hospital Management framework on VM in your server farm inside your association premises and supporting backend database you are utilizing is SQL server introduced on VM in on premises server farm. In this model as all segments of whole framework [web application and database] are running on premises itself this turn into your private cloud execution.

Hybrid Cloud example –

You are running a use of Hospital Management framework on Azure Web Apps or Cloud administration web jobs and supporting backend database you are utilizing is SQL server introduced on VM present inside on premises server farm. In this precedent as a portion of the segments are running on Azure and few are running on premises this ends up Hybrid cloud usage.

Q64) What is Azure Resource Manager (ARM) and what are advantages of ARM over Classic services (Cloud Services)?

Azure Resource Manager (ARM) is the arrangement philosophy/system to convey your Azure parts in Azure (IaaS and PaaS segments). It acts like holder of numerous resources anyway it can length crosswise over locales and administrations. It is format driven, decisive and idempotent in nature

You can send, oversee, and screen the majority of the resources for your answer as a gathering, instead of taking care of these resources independently. You can over and over send your answer all through the improvement lifecycle and have certainty your resources are conveyed in a reliable state. You can utilize decisive layouts to characterize your organization. You can characterize the conditions between resources so they are conveyed in the right request.

You can apply get to control to all administrations in your resource gather since Role-Based Access Control (RBAC) is locally incorporated into the administration stage. You can apply labels to resources to sensibly sort out the majority of the resources in your membership.

Q65) Explain about the Log Analytics (Operational Management Suite)?

Log Analytics (OMS) (in the past known by “Operational Insights”) in Azure cook all prerequisites in a single administration and deals with Log Analytics, Automation, Availability and Security at one single spot. It gives single dashboard which gives all subtleties of Logs, IIS Logs, Storage and other Infrastructure Log and Capacity arranging subtleties.

Log Analytics likewise stretch out itself to On Premise foundation, Amazon (AWS) remaining task at hand and Open Stack adjacent to conventional Windows and Linux virtual framework in Azure. Log Analytics additionally empowers you to create Power BI information source from which you can manufacture Power BI visuals for your information. Log Analytics influences OMS which additionally gives you Security and Threat Management related information with every vital detail like Login Information, IP Addresses and so on. It is paid administrations and accompanies 3 distinctive valuing level as Free, Standard and Premium.

It causes you to look Logs over your framework from a solitary dashboard and furthermore enables you to send out the outcomes too. Thus this ends up one single point/dashboard for every one of your logs of all your framework independent whether it is Windows or Linux or On reason or Azure facilitated.

[*Get Microsoft Azure 100% Practical Training!*](https://www.gangboard.com/microsoft/windows-azure-training?utm_source=GB_blog)

Q66) How to accomplish zero downtime in cloud administration arrangements amid upgrades and all hardware failures?

Keep running something like 2 occasions of every job inside a cloud administration. When we have at least 2 occurrences running for a job in cloud administration then naturally the sending gets appropriated crosswise over various blame and redesign spaces and accomplishes nearly or close to zero downtime.

Fault Domain –

Fault domain is a physical unit of disappointment. In basic structure when your VM is associated with power supply and in the event that control supply is down, at that point your VM can not be operational. So VM itself associated with power supply is a Fault domain.

Upgrade Domain –

It is an intelligent unit of collection the job occasions and it doesn’t exist physically. When we have 2 cases of job running then consequently every one of the sending or occasions are treated as various upgrade domain. So when an upgrade of visitor OS, host OS or application refresh should be performed then just a single upgrade domain based cases is refreshed while upgrade domain 2 based example continue serving the client’s solicitations. When upgrade of first occasion is finished at that point second upgrade domain based occurrence gets refreshed, etc

Q67) What are the various ways by which an on premises VM can be migrated to Azure?

For movement of on premises VM, we have to comprehend what is the virtualization stage utilized for hosting the VM. Different virtualization systems are HyperV, VMWare and so forth. For making VM on Azure requires VHD document just and that can be gotten from HyperV specifically. On the off chance that VM is facilitated on virtualization stage other than HyperV then we have to initially change over the current VM circles into vhd organization and afterward can be transferred to Azure stockpiling. When the circle documents are available on Azure, VM can be provisioned.

The capacity queue does not give ensure about FIFO nature. The request in which messages are added to queue may not get got in a similar request. Then again, Service Bus Queue gives FIFO requesting ensure if “Message Sessions” are utilized. On the off chance that messages are included with SessionID and collector gets the messages with same SessionID then a partiality is made and the request in which messages were included, message will be gotten also.

Q68) An application front end is hosted on Azure however because of security reasons client need database to be hosted on-premises inside his place of business. What are the distinctive approaches to deal with this connectivity situation in Azure?

Taking a gander at the necessity of associating single on premises DB machine to Azure facilitated application, Azure VNET based “Point to Site” can be considered as right decision in this situation for Azure to on premises availability. Point to Site is perfect decision for building up VPN network between on premises assets and Azure assets where number of assets to be associated is constrained

Q69) What are the other VNET options for accomplishing connectivity with on premise and azure resources?

Site to Site and express route are different choices for accomplishing cross premises network. Site to site to explicitly utilize when you have huge number of assets to be associated.

Now and again, Site to Site or Point to Site availability may present system inactivity as VPN made by these highlights take a shot at open foundation (Internet) as it were. To defeat on this circumstance “Express Route” alternative can be taken which offers devoted Leased Line put together offering to defeat with respect to inertness issue.

1. What are the three main components of Windows Azure Platform?  
i. Compute  
ii. Storage  
iii. AppFabric

2. What are the Service Model in Cloud Computing?  
Cloud computing providers offer their services according to three fundamental models: Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models.  
Examples of IaaS include: Amazon CloudFormation (and underlying services such as Amazon EC2), Rackspace Cloud, Terremark, Windows Azure Virtual Machines, Google Compute Engine. and Joyent.  
Examples of PaaS include: Amazon Elastic Beanstalk, Cloud Foundry, Heroku, Force.com, EngineYard, Mendix, Google App Engine, Windows Azure Compute and OrangeScape.  
Examples of SaaS include: Google Apps, Microsoft Office 365, and Onlive.

Microsoft Azure Interview Questions  
3. How many types of deployment models are used in cloud?  
There are 4 types of deployment models used in cloud:  
1. Public cloud  
2. Private cloud  
3. Community cloud  
4. Hybrid cloud

4. What is Windows Azure Platform?  
A collective name of Microsoft’s Platform as a Service (PaaS) offering which provides a programming platform, a deployment vehicle, and a runtime environment of cloud computing hosted in Microsoft datacenters.

5. What are the roles available in Windows Azure?  
All three roles (web, worker, VM) are essentially Windows Server 2008. Web and Worker roles are nearly identical: With Web and Worker roles, the OS and related patches are taken care for you; you build your app’s components without having to manage a VM

6. What is difference between Windows Azure Platform and Windows Azure?  
The former is Microsoft’s PaaS offering including Windows Azure, SQL Azure, and Appfabric; while the latter is part of the offering and the Microsoft’s cloud OS.

7. What are the three types of roles in Compute component in Windows Azure?  
► WEB  
► Worker  
► VM

8. What is Windows Azure compute emulator?  
The compute emulator is a local emulator of Windows Azure that you can use to build and test your application before deploying it to Windows Azure.

9. What is fabric?  
In the Windows Azure cloud fabric is nothing but a combination of many virtualized instances which run client application

10. How many instances of a Role should be deployed to satisfy Azure SLA (service level agreement) ? And what’s the benefit of Azure SLA?  
TWO. And if we do so, the role would have external connectivity at least 99.95% of the time.

11. What are the options to manage session state in Windows Azure?  
► Windows Azure Caching  
► SQL Azure  
► Azure Table

12. What is cspack?  
It is a command-line tool that generates a service package file (.cspkg) and prepares an application for deployment, either to Windows Azure or to the compute emulator.

13. What is csrun?  
It is a command-line tool that deploys a packaged application to the Windows Azure compute emulator and manages the running service.

14. What is guest OS?  
It is the operating system that runs on the virtual machine that hosts an instance of a role.

15. What is guest OS?  
It is the operating system that runs on the virtual machine that hosts an instance of a role.

16. How to programmatically scale out Azure Worker Role instances?  
Using AutoScaling Application Block

17. what is web role in Windows Azure?  
Web roles in Windows Azure are special purpose, and provide a dedicated Internet Information Services (IIS) web-server used for hosting front-end web applications. You can quickly and easily deploy web applications to Web Roles and then scale your Compute capabilities up or down to meet demand.

18. What is the difference between Public Cloud and Private Cloud?  
Public cloud is used as a service via Internet by the users, whereas a private cloud, as the name conveys is deployed within certain boundaries like firewall settings and is completely managed and monitored by the users working on it in an organization.

19. What are the three types of roles in Compute component in Windows Azure?  
Web, Worker and VM.  
Web and worker roles are essentially same except that web roles have IIS enabled on them.

20. What is windows Azure Diagnostics?  
Windows Azure Diagnostics enables you to collect diagnostic data from an application running in Windows Azure. You can use diagnostic data for debugging and troubleshooting, measuring performance, monitoring resource usage, traffic analysis and capacity planning, and auditing.

21. What is Blob?  
BLOB stands for Binary Large Object. Blob is file of any type and size.  
The Azure Blob Storage offers two types of blobs –  
1. Block Blob  
2. Page Blob  
URL format: Blobs are addressable using the following URL format:  
http://.blob.aaa.windows.net//

22. What is the difference between Block Blob vs Page Blob?  
Block blobs are comprised of blocks, each of which is identified by a block ID.  
You create or modify a block blob by uploading a set of blocks and committing them by their block IDs.  
If you are uploading a block blob that is no more than 64 MB in size, you can also upload it in its entirety with a single Put Blob operation. -Each block can be a maximum of 4 MB in size. The maximum size for a block blob in version 2009-09-19 is 200 GB, or up to 50,000 blocks.  
Page blobs are a collection of pages. A page is a range of data that is identified by its offset from the start of the blob. To create a page blob, you initialize the page blob by calling Put Blob and specifying its maximum size.  
-The maximum size for a page blob is 1 TB. A page written to a page blob may be up to 1 TB in size.  
what to use block blobs for: streaming video. “The application must provide random read/write access” which is supported by Page Blobs

23. What is the difference between Windows Azure Queues and Windows Azure Service Bus Queues?  
Windows Azure supports two types of queue mechanisms: Windows Azure Queues and Service Bus Queues .  
Windows Azure Queues , which are part of the Windows Azure storage infrastructure, feature a simple REST-based Get/Put/Peek interface, providing reliable, persistent messaging within and between services.  
Service Bus Queues are part of a broader Windows Azure messaging infrastructure that supports queuing as well as publish/subscribe, Web service remoting, and integration patterns.

24. What is DeadLetter queue?  
Messages are placed on the deadletter sub-queue by the messaging system in the following scenarios.  
► When a message expires and deadlettering for expired messages is set to true in a queue or subscription.  
► When the max delivery count for a message is exceeded on a queue or subscription.  
► When a filter evaluation exception occurs in a subscription and deadlettering is enabled on filter evaluation exceptions.

25. What are instance sizes of Azure?  
Windows Azure will handle the load balancing for all of the instances that are created. The VM sizes are as follows:  
Compute Instance Size CPU Memory Instance Storage I/O Performance  
► Extra Small 1.0 Ghz 768 MB 20 GB Low  
► Small 1.6 GHz 1.75 GB 225 GB Moderate  
► Medium 2 x 1.6 GHz 3.5 GB 490 GB High  
► Large 4 x 1.6 GHz 7 GB 1,000 GB High  
► Extra large 8 x 1.6 GHz 14 GB 2,040 GB High

26. What is table storoage in Windows Azure?  
The Windows Azure Table storage service stores large amounts of structured data.  
The service is a NoSQL datastore which accepts authenticated calls from inside and outside the Windows Azure cloud.  
Windows Azure tables are ideal for storing structured, non-relational data  
Table: A table is a collection of entities. Tables don’t enforce a schema on entities, which means a single table can contain entities that have different sets of properties. An account can contain many tables  
Entity: An entity is a set of properties, similar to a database row. An entity can be up to 1MB in size.  
Properties: A property is a name-value pair. Each entity can include up to 252 properties to store data. Each entity also has 3 system properties that specify a partition key, a row key, and a timestamp.  
Entities with the same partition key can be queried more quickly, and inserted/updated in atomic operations. An entity’s row key is its unique identifier within a partition.

27. Difference between Web and Worker Roles in Windows Azure?  
The main difference between the two is that an instance of a web role runs IIS, while an instance of a worker role does not. Both are managed in the same way, however, and it’s common for an application to use both.For example, a web role instance might accept requests from users, then pass them to a worker role instance for processing.

28. What is Azure Fabric Controller?  
The Windows Azure Fabric Controller is a resource provisioning and management layer that manages the hardware, and provides resource allocation, deployment/upgrade, and management for cloud services on the Windows Azure platform.

29. What is AutoScaling?  
Scaling by adding additional instances is often referred to as scaling out. Windows Azure also supports scaling up by using larger role instances instead of more role instances.  
By adding and removing role instances to your Windows Azure application while it is running, you can balance the performance of the application against its running costs.  
An autoscaling solution reduces the amount of manual work involved in dynamically scaling an application.

30. what is VM role in Windows Azure?  
Virtual Machine (VM) roles, now in Beta, enable you to deploy a custom Windows Server 2008 R2 (Enterprise or Standard) image to Windows Azure. You can use the VM role when your application requires a large number of server OS customizations and cannot be automated. The VM Role gives you full control over your application environment and lets you migrate existing applications to the cloud.

31. Apart from .Net framework, Name other three language/framework that can be used to develop Windows Azure applications?  
php, node.js, java

32. How would you categorize Windows Azure? (IaaS/PaaS/SaaS)  
PaaS (Platform as a Service)

33. Do you see training as useful for Microsoft Azure users?  
Training is certainly useful for Microsoft Azure users!  
As we’ve mentioned previously, the services in the Azure platform move fast. There is always something to learn.

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37. What were the latest updates to SQL Azure service?  
Latest SQL Azure updates include multiple servers per subscription, SQL Azure co administrator support, creating Firewall rules for servers with IP detect.

38. How do you improve the performance of a SQL Azure Database?  
We can tune a SQL Azure database using information available from execution plan and statistics of a query. We could use SQL Azure’s Dynamic Management views to monitor and manage SQL Azure database.  
Also, SQL Azure performance is affected by network latency and bandwidth. Considering this, code near application topology gives the best performance.

###### **Briefly explain the services offered in the cloud?**

IAAS – Infrastructure as a service, and a server that you can configure on your will. Example – Azure Virtual Machine, Amazon EC2

PAAS – Platform as a service, Gives the platform to publish without allowing access to the underlying software or operating system. Example: Mobile Application in Azure, Web Apps.

SAAS – Software as a service, there is no infrastructure, no platform, only a simple software which can be used without purchase. Example: Launch of VM on Azure.

###### **2. Explain the deployment models?**

Public Cloud – The cloud provider owns the infrastructure and the server could be a multi-tenant system.

Private Cloud – The user and the cloud provider own the infrastructure.

Hybrid Cloud – When both the Public Cloud and Private Cloud are used together, it is called a Hybrid Cloud.

###### **3. What do you mean by cloud computing?**

Instead of using your own servers to “store”, “manage”, and “process” data, you use someone else’s servers and pay a certain amount for the time you use it. This use of servers on the internet is called cloud computing.

###### **4. What is Microsoft Azure and what is its purpose?**

Microsoft Azure is a cloud provider and is used to access Microsoft’s infrastructure for the cloud.

###### **5. Name and explain the service that is used to manage resources in Azure?**

Azure Resource manager is used to manage the resources in Azure.It handles the infrastructures that involve many Azure services.

It is used to manage, deploy and delete the resources using a JSON script.

###### **6. List three web applications that can be deployed with Azure?**

\* ASP.NET

\* PHP

\* WCF

###### **7. Explain what are Roles?**

Roles are nothing but servers in simple terms. These are load balanced and managed.

They also act as a platform for Service virtual machines that work together to achieve the common goal.

###### **8. List the types of roles and explain their uses?**

\* Web Role – This role is used to deploy a website using the languages that support the IIS platform like PHP, .Net and many others. It is customized and configured to run the web applications.

\* Worker Role – This role is more like a help to the web role and is used to execute the background processes.

\* Virtual Machine Role – This role is used by a user in order to schedule tasks and other windows.

###### **9. Explain the virtual machine scale sets in Azure?**

They are the Azure compute resources that are used to deploy and manage a set of identical virtual Machines.

###### **10. Explain Availability set?**

It is a logical grouping of Virtual Machines that allow Azure to know and understand the application’s development in order to provide viability and redundancy.

###### **11. Explain Break-fix issue?**

The Break-fix issue is an industry term that refers to “work involved in supporting a technology and when the technology fails in an absolutely normal course of its functioning, it will require intervention by a support organization to restore the working order”. In short, it can be referred to as a technical problem.

###### **12. Define Network Security Groups?**

The NSGs contains a list of ACLs (Access Control List) rules that either allow or deny the network traffic to subnet, NICs or both. They can be associated with either NICs or subnets or both.

When associated with a subnet, the Access control rules apply to all the Virtual Machines in the subnet and when associated with the NIC, traffic to the individual NIC can be restricted.

###### **13. Explain VNet?**

It is basically a representation of your network in the cloud. It logically isolates all the instances you launched on the cloud from all your other resources.

###### **14. Why do we use Azure Active Directory?**

It is an identity and access management system that is used to grant access to the employees and to the specific products and services in the network.

###### **15. Can you explain Azure Service Fabric?**

It is a distributed system platform, which makes it easy to pack, deploy and manage the micro services.

It represents the future generation platform to develop and manage the tier-1, enterprise-class, cloud-scale applications and more.

###### **16. Define the Azure Redis Cache?**

Redis is a BSD licensed open source, in-memory data structure store and is used as a cache, a database and message broker.

The Azure Redis is based on an open-source Redis cache. This allows you to access the dedicated Redis cache which is managed by Microsoft and can be accessed by any application in Azure.

The data structures like hashes, sets, strings, queries, hyperloglogs and geospatial indexes with radius queries and many others are supported by the Azure Redis Cache.

###### **17. Explain Redis Databases?**

They are nothing but a logical separation of data within the same Redis instance.

The databases share the cache memory among them and the actual memory consumption depends on the keys/values that are stored in the database.

###### **18. Can you explain the Username and Password requirements when creating a Virtual Machine?**

Username Requirements – The Username’s length can be of maximum 20 characters and can’t end in a period (“.”).

Password Requirements –The password must be a minimum of 12 characters and a maximum of 123 characters in length.

It should satisfy at least 3 conditions out of the 4 given below:

\* Must contain Lowercase characters

\* Must contain Uppercase characters

\* Must contain a digit

\* Must contain a special character

**What is the advantage to move to cloud?**

**Flexibility :** We can restructure of our Environment is needed and you can create the an number of services based on our requirements.

**Pay As you GO :** PAY as you go option is good , Only pay for the services you used in a months or Day/Hrs. basis.

**Hybrid Capability:** We can integrate our on-premises Environment to azure using Site recovery or other Microsoft tool which will help us to extent our data center to azure .

**Securing you Data :** We can use the azure encryption ,Security center, key vault etc. application for securing the data which is resides in azure.

**Scale on Demand :** We can scale up the IAAS PASS SAAS services as per our demands.

**Example:** If customer ask he need 10 servers with in 1 day how we can process or is it possible , Yes it is possible using Windows azure and not even one day we can give it with 1-2 Hours Using the cloud services. If we need to in on-premises it might take 3-4 months to process and configure the server.

**Integrative Data Solution:** We can integrate the Data solution with azure like SQL server, Bigdata, Visual studio Etc.

**Backup :** We can directly take the backup in azure storage accounts with minimal charges and no need to buy additional hardware (backup tape HDD, File server etc.).

**Disaster Recovery:** We can use the Recovery Vault which known as Site recovery vault in azure to do Disaster recovery in azure without any problem.

**What is storage account?**

Azure Storage is massively scalable, so you can store and process hundreds of terabytes of data to support the big data scenarios required by scientific, financial analysis, and media applications.

* **Difference between LRS And ZRS storage Account?**
* **Locally redundant storage (LRS).**Locally redundant storage maintains three copies of your data. LRS is replicated three times within a single data center in a single region. LRS protects your data from normal hardware failures, but not from the failure of a single data center.
* **Zone-redundant storage (ZRS).**Zone-redundant storage maintains three copies of your data. ZRS is replicated three times across two to three facilities, either within a single region or across two regions, providing higher durability than LRS. ZRS ensures that your data is durable within a single region.
* [Create and Manage the Azure storage accounts](https://azure4you.com/2017/06/27/create-manage-azure-storage-account/)

**What is file  storage ?**

File storage offers shared storage for applications using the standard SMB 2.1 or SMB 3.0 protocol. Microsoft Azure virtual machines and cloud services can share file data across application components via mounted shares, and on-premises applications can access file data in a share via the File storage API.

**Pre-requisite of  create and  WebApps?**

* Azure Subscription.
* Storage account
* SQL Database Connection
* SSL certificate
* Network security Group configuration.
* Custom DNS
* Data source
* Deployments Credentials if you are using the FTP.
* Deployments Option like Visual Studio Onedrive ,local git etc
* We should know the application version(.net4.5,4.3 python 32bit etc ) while migrating or creating the webapps

**What is CDN?**

The Microsoft Azure Content Delivery Network (CDN) offers developers a global solution for delivering high-bandwidth content that is hosted in Azure or any other location. Using the CDN, you can cache publicly available objects loaded from Azure blob storage, a web application, virtual machine, application folder, or other HTTP/HTTPS location. The CDN cache can be held at strategic locations to provide maximum bandwidth for delivering content to users. The CDN is typically used for delivering static content such as images, style sheets, documents, files, client-side scripts, and HTML pages.

**How you plan Disaster Recovery if I have 10 Vms running on Hyper-V on-Prem and VMware Environment?**

* We will Set up Azure environment for migration.
* we will Prepare the configuration server
* we will Prepare for automatic discovery and push installation
* we will create a Recovery Services vault
* we will Select the protection goal and start protecting servers.
* we will Set up the source environment
* Run Site Recovery Unified Setup
* we have to setup the target server.
* Set up replication settings
* Plan capacity
* Prepare VMs for replication
* we will enable the Enable replication
* we will run a test failover

**How to migrate the on-premises server to azure using site recovery ?**

* Please follow the step by step setup below  to migrate on-premises to azure .
* I always refer below azure documents  as they are updated one.
* [Step 1: Choose your protection goals](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-1-choose-your-protection-goals)
* [Step 2: Set up the source environment](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-2-set-up-the-source-environment)
* [Step 3: Set up the target environment](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-3-set-up-the-target-environment)
* [Step 4: Set up replication settings](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-4-set-up-replication-settings)
* [Step 5: Capacity planning](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-5-capacity-planning)
* [Step 6: Enable replication](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-6-enable-replication)
* [Step 7: Run a test failover](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#step-7-run-a-test-failover)
* [Failover](https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-hyper-v-site-to-azure#failover)

**How to configure the Backup for Azure Vms and on-Prem Vms?**

1. [Configure the vault](https://docs.microsoft.com/en-us/azure/backup/backup-try-azure-backup-in-10-mins#configure-the-vault)
2. [Install and register the agent](https://docs.microsoft.com/en-us/azure/backup/backup-try-azure-backup-in-10-mins#install-and-register-the-agent)
3. [Back up your files and folders](https://docs.microsoft.com/en-us/azure/backup/backup-try-azure-backup-in-10-mins#back-up-your-files-and-folders)

**Backing up Azure virtual machines**

1. [Discover and Register Azure virtual machines](https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look#discover-and-register-azure-virtual-machines)
2. [Install the VM Agent on the virtual machine](https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look#install-the-vm-agent-on-the-virtual-machine)
3. [Create the backup policy](https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look#create-the-backup-policy)
4. [Initial backup](https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look#initial-backup)

**How to migrate the File servers to Azure?**

* Create Azure file storage account as per user requirements
* Under storage account, create the file storage and need to assign the storage quota
* Create the file share and directories as per customer requirement
* Upload on premise data to Azure file share directory
* Configure shared access signatures(SAS) via the REST API or the client libraries.
* Generate tokens with specific permission as required by the client
* Install the storage explorer to migrate the data from on premise to azure file server
* Install and configure the Azure copy client On- premise server to migrate the data to the azure storage account
* Configure Azure file share access and signature for storage account to access the file server
* Initiate data migration process
* Upload and download files to and from On-premise file share sever

**How many types of storage account azure have?**

**Premier Storage Account:** Microsoft Azure Premium Storage delivers high-performance, low-latency disk support for virtual machines (VMs) running I/O-intensive workloads. VM disks that use Premium Storage store data on solid state drives (SSDs). You can migrate your application’s VM disks to Azure Premium Storage to take advantage of the speed and performance of these disks.

**Azure Storage** is the cloud storage solution for modern applications that rely on durability, availability, and scalability to meet the needs of their customers.

**Difference Between ASR and ARM?**

|  |  |
| --- | --- |
| ***ASM*** | ***ARM*** |
|  |  |
| *This is an old portal which provides Cloud service for Iaas Workload and few specific Paas Workload* | *They are new portal provides service for all Workload of IaaS and PaaS* |
| *Access over the Url: https://manage.windowsazure.com which  termed as V1 portal.* | *Access over the Url: https://portal.azure.com which  termed as V2 portal  having Blade design Portal View* |
| *Azure Service Manager are XML driven REST API* | *Azure Service Manager are JSON driven REST API* |
| *Had a concept of Affinity Group which has been deprecated* | *They have container concept called Resource Group which is logical set of correlated cloud resources which can span multiple region and services* |
| *Private Azure Portal can be built using Windows Azure Pack* | *Private Azure Portal can be built using  Azure Stack* |
| *Removal or Deletion is not easy as Azure Resource Manager* | *Removal of resource is easier by deleting the resource group (RSG) which will help to delete all the resource present in the RSG* |
| *Deployment can be performed using PowerShell script* | *Deployment can be performed using ARM templates which provide simple orchestration and rollback function. They have their own PowerShell Module* |
| *Features and function are not available* | *Role Based Access Control Feature is Present* |
| *Features and function are not available* | *Resource from the resource group can be moved between within the same region* |
| *Features and function are not available* | *Resource Tagging which is name-pair value assigned to resource group which can have up to 15 tags per resources* |
| *Features and function are not available* | *Massive and Parallel Deployment of VM’s possible with Asynchronous Operations* |
| *Features and function are not available* | *We can have custom policy created to restrict the operation that can be performed* |
| *Features and function are not available* | *Azure Resource Explorer  – https://resources.azure.com/ which helps for more understanding on resources and for deployment* |
| *Features and function are not available* | *Resource Locks provides the policy to enforce lock level that prevent from accident deletion* |

**How to migrate the On-Prem servers to azure?**

**Pre-requisite to create the VM.**

* Click the **New** button found on the upper left-hand corner of the Azure portal.
* Select **Compute** from the **New** blade, select **Windows Server 2016 Datacenter** from the **Compute** blade, and then click the **Create**
* Fill out the virtual machine **Basics** The user name and password entered here is used to log in to the virtual machine. For **Resource group**, create a new one. A resource group is a logical container into which Azure resources are created and collectively managed. When complete, click **OK**.
* Choose a size for the VM and click **Select**.
* On the settings blade, select **Yes** under **Use managed disks**, keep the defaults for the rest of the settings, and click **OK**.
* On the summary page, click **Ok** to start the virtual machine deployment.
* To monitor deployment status, click the virtual machine. The VM can be found on the Azure portal dashboard, or by selecting **Virtual Machines**from the left-hand menu. When the VM has been created, the status changes from **Deploying** to **Running**.

**How to deploy the Custom image?**

1. In the [Azure portal](http://portal.azure.com/), **Connect**to the virtual machine. For instructions, see [How to sign in to a virtual machine running Windows Server](https://docs.microsoft.com/en-us/azure/virtual-machines/windows/classic/connect-logon).
2. Open a Command Prompt window as an administrator.
3. Change the directory to %windir%\system32\sysprep, and then run sysprep.exe.
4. The **System Preparation Tool**dialog box appears. Do the following:
   * In **System Cleanup Action**, select **Enter System Out-of-Box Experience (OOBE)**and make sure that **Generalize** is checked. For more information about using Sysprep, see [How to Use Sysprep: An Introduction](http://technet.microsoft.com/library/bb457073.aspx).
   * In **Shutdown Options**, select **Shutdown**.
   * Click **OK**.
5. Sysprep shuts down the virtual machine, which changes the status of the virtual machine in the Azure classic portal to **Stopped**.
6. In the Azure portal, click **Virtual Machines (classic)**and select the virtual machine you want to capture. The **VM images (classic)** group is listed under **Compute** when you view **More services**.
7. On the command bar, click **Capture**.

The **Capture the Virtual Machine** dialog box appears.

1. In **Image name**, type a name for the new image. In **Image label**, type a label for the new image.
2. Click **I’ve run Sysprep on the virtual machine**. This checkbox refers to the actions with Sysprep in steps 3-5. An image *must*be generalized by running Sysprep before you add a Windows Server image to your set of custom images.
3. Once the capture completes, the new image becomes available in the **Marketplace**, in the **Compute**, **VM images (classic)**

**What azure VPN and how many types of Azure VPN we can configure in azure?**

**Site to Site VPN :**

A Site-to-Site (S2S) VPN gateway connection is a connection over IPsec/IKE (IKEv1 or IKEv2) VPN tunnel. This type of connection requires a VPN device located on-premises that has a public IP address assigned to it and is not located behind a NAT. S2S connections can be used for cross-premises and hybrid configurations

**Point to Site VPN:**A Point-to-Site (P2S) configuration lets you create a secure connection from an individual client computer to a virtual network. P2S is a VPN connection over SSTP (Secure Socket Tunneling Protocol). Point-to-Site connections are useful when you want to connect to your VNet from a remote location, such as from home or a conference, or when you only have a few clients that need to connect to a virtual network. P2S connections do not require a VPN device or a public-facing IP address. You establish the VPN connection from the client computer.

**Vnet to Vnet :**Connecting a virtual network to another virtual network (VNet-to-VNet) is similar to connecting a VNet to an on-premises site location. Both connectivity types use a VPN gateway to provide a secure tunnel using IPsec/IKE. You can even combine VNet-to-VNet communication with multi-site connection configurations. This lets you establish network topologies that combine cross-premises connectivity with inter-virtual network connectivity.

[Azure Virtual network setup and configuration](https://azure4you.com/2017/07/06/azure-virtual-networks-vnets/)

[Azure Site to site VPN Configuration Step-step](https://azure4you.com/2017/07/14/connect-to-you-on-premises-network-from-azure-site-to-site-vpn-arm/)

**What is express route?**

ExpressRoute is a direct, dedicated connection from your WAN (not over the public Internet) to Microsoft Services, including Azure. Site-to-Site VPN traffic travels encrypted over the public Internet. Being able to configure Site-to-Site VPN and ExpressRoute connections for the same virtual network has several advantages.

You can configure a Site-to-Site VPN as a secure failover path for ExpressRoute, or use Site-to-Site VPNs to connect to sites that are not part of your network, but that are connected through ExpressRoute. Notice that this configuration requires two virtual network gateways for the same virtual network, one using the gateway type ‘Vpn’, and the other using the gateway type ‘ExpressRoute’.

1. How you can troubleshoot if VM is not working?
2. We can reset the VM configuration.
3. If user has forget the password of the VM local account how we can change?

Ans:- you can found the answer here i have provide the information in details:  [Windows Azure VM troubleshootings](https://azure4you.com/2017/07/27/troubleshooting-azure-vm/)

Is it possible to host the VM in another region and connect to different region?

Yes, We need to setup the interconnectivity while creation the  **V-net to V-net  connection** between both the region than only we can connect.

How to Assign Static IP address in azure Vms?

Please follow the below blog to assign the static IP address.

[Assign Static IP address to azure Vms.](https://azure4you.com/2017/07/19/assign-static-in-azure-vm/)

[Azure interview question](https://azure4you.com/wp-content/uploads/2017/07/azure-interview-question.docx)

**What is traffic Manager and how to configure it ?**

* Azure Traffic Manager allows us to control the distribution of user traffic for service endpoints which resides in different datacenters.
* Service endpoints supported by Traffic Manager including Azure VMs, Web Apps, and cloud services. We can also use Traffic Manager with external, non-Azure endpoints

Use below link to get more detail on azure traffic manager.[Configuration and setup the traffic Manager](https://azure4you.com/2017/07/24/azure-traffic-manager/)

**What is Azure DNS Server and how to configure it ?**

* Azure DNS or DNS is responsible for translating (or resolving) a website or service name to its IP address.
* Azure DNS is a hosting service for DNS domains, providing name resolution using Microsoft Azure infrastructure.
* Hosting your domains in Azure, We can manage our DNS records using the same credentials, APIs, tools, and billing as we are using for other Azure services.

More Details Please follow below links:

[Azure DNS serve setup and configuration](https://azure4you.com/2017/07/05/azure-dns-setup/)

[Azure DNS Records and limitation](https://azure4you.com/2017/07/05/azure-dns-records-and-limitations/)

**Note: References and answers have been taken from Microsoft Azure Documents. Requesting  the viewers to please refer microsoft azure documents or contact me if  in depth knowledge is required.**