**Q #1) What’s the difference between SaaS, PaaS, and IaaS?**

**Answer:**

**#1)**[**SaaS**](https://www.softwaretestinghelp.com/saas-testing/)

Software as a Service is a thin-client model of software provisioning where the client, in this case, usually is simply a web browser providing the point of access to software running on the servers. SaaS is the most familiar form of cloud service for customers.

SaaS moves the task of managing software and its deployment to third-party services, meaning the vendor actually gets to manage all that.

Some examples of SaaS would include Office 365. [Salesforce](https://www.softwaretestinghelp.com/what-is-salesforce-testing/) is another very good example of SaaS and a lot of Google apps and storage solutions like Box and Dropbox are very good examples of Software as a Service.

**#2) PaaS**

Platform as a Service or PaaS actually provides an abstract of much of the work dealing with servers and gives clients an environment in which the operating system and the server software and the hardware and the network are managed and taken care of.

Platform as a Service, things like the servers, the service software, the hardware, everything is managed by the provider and we can focus on the business side of the scalability and we can focus on application development of our products or the service.

**#3) IaaS**

Infrastructure as a Service IaaS is moving down the stack even further. The fundamental building block of the cloud service include:

* IaaS is fully off highly automated scalable computing resources.
* IaaS is full of storage.
* IaaS is full of network capability.

IaaS clients have direct access to the cloud, more scalable. So is very similar to what you would do in your on-premises physical data center. But when we talk about IaaS, we get to do everything, but it’s stored in the cloud.

**Q #2) What are the instant types offered by Azure?**

**Answer: Based on what needs they perform, Azure provides various instant types:**

* General-purpose computers
* Optimized memory
* Optimized storage
* Optimized GPU
* Virtual machines
* High-performance compute virtual machines.

**Q #3) What are the deployment environments offered by Azure?**

**Answer: There are two main deployment environments:**

**a) Staging environment**

It provides a platform to validate changes to our application before it can be made live.

In the production environment and in the staging environment, the app can be identified using Azure’s Global Unique Identifier, also called the GUID URL. And it’s very similar to the production URL except that it has a custom name in front of it that identifies it as the staging environment.

**b) Production environment**

This is the live production environment that’s serving customers’ requests that are serving the customer content. It can be slightly different from the staging environment in a way that the URL that’s used to identify the production environment, that’s more of a DNS friendly name like the name of the actual\_service.cloudapp.net.

Refer to [Azure DevOps interview questions](https://www.softwaretestinghelp.com/devops-interview-questions/) to broaden your knowledge regarding Azure deployments.

**Q #4) What are the advantages of scaling in Azure?**

**Answer: Some of the advantages are:**

1. Maximum application performance
2. Based on demand scales up or down
3. Highly cost-effective schedules
4. Scaling to different times periods

**Q #5) How is Windows Active Directory and Azure Active Directory different?**

**Answer:**The below table explains the differences:

| **Windows Active Directory** | **Azure Active Directory** |
| --- | --- |
| It provides authentication and authorization to the applications not only to the applications, but also to file service to printers and a lot of other on-premises resources. | Azure active directory is not designed to manage web-based services, it was designed to support web-based services that use REST API interfaces for office 365salesforce.com.. |
| The actual active directory or the windows actual directory is a directory service that encourages working with complex interconnected and unique network resources in unison. | [Azure active directory](https://azure.microsoft.com/en-gb/services/active-directory/) is Microsoft's multitenant cloud-based directory and identity management service. |
| Has five layers to store user details, store data and and to provide the administration certifications. | Azure active directory integrates or compresses the five layers into just two layers. |
| Windows active directory works with on-premises servers like applications, file servers and printers, et cetera. | Azure active directory, it works on web-based services that use restful interfaces. |

**Q #6) Azure provides what kinds of queues?**

**Answer:**

**a) Storage queue**

It provides a simple REST-based interface, simple REST-based get put, and peak interface. It provides reliable, persistent messaging within and between the services and follows the pub sub-model or a pub-sub messaging infrastructure and it’s best suited for users that need to store more than 80 gigabytes of messages in the queue.

It can provide logs for all the transactions executed against the user’s queue.

**b) Service bus queue**

It follows the pub sub-model or a pub-sub messaging infrastructure and it’s best suited for users that need to store over 80 gigabytes of messages in the queue. It can provide logs for all the transactions executed against the user’s queue. So that’s what we get with the storage queue. And on the other hand, service bus queue.

The service bus queues are built on top of broader messaging infrastructure and they are designed to integrate applications and applications components that can span multiple communication protocols. Azure data factory interview questions will also help you to have a solid grasp as far as queues are concerned.

**Q #7) What are the advantages of Azure Resource Manager?**

**Answer: The advantages of Azure Resource Manager are:**

* The resource manager helps us to manage the usage of the application resources. The insured resource manager is called ARM.
* The ARM helps deploy, manage, and monitor all the resources for an application, a solution, or a group.
* Users can be granted access to resources that they require within a resource manager.
* It helps retrieve groups billing resources. Which group is using more, which group is using less, and which group has contributed more to this month’s bill? Stuff like that. Those details can be obtained using [Azure Resource Manager](https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview)
* Provisioning resources is made much easier with the help of this resource manager.

**Q #8) How has integrated hybrid cloud been useful for Azure?**

**Answer: The integration of hybrid cloud has been useful for Azure in the following ways:**

* We get the best of both worlds since applications and data can be shared between the public and private clouds.
* Seamless on-premise infrastructure scalability.
* It boosts the productivity of the on-premises application.
* We get a greater efficiency with a combination of Azure services, DevOps processing tools for the application running on-premises.
* Users can take advantage of a constantly updated Azure service and other [AWS](https://aws.amazon.com/) marketplace applications for their on-premises environment.
* We are not worried about the deployment locations

**Q #9) In Azure SQL, what is federating?**

**Answer:**Microsoft provides the tools and technologies so we can scale out the database in the cloud and that’s what is called SQL or Federation in Azure SQL. The way we scale out the SQL database is by sharding the database. Shutting actually enables users to take advantage of the resources in the cloud.

**Q #10) What are the different types of storage offered by Azure?**

**Answer: The different types of storage offered are:**

* Azure Blob Storage
* Table Storage
* File Storage
* Queue Storage.

**a) Azure Blob Storage**

Blob Storage is optimized for storing a massive amount of unstructured data that can be in form of text or in form of binary data.

**b) Table Storage**

Table storage, on the other hand, is a NoSQL store for schema-less storage of secured data. Now this Azure Table Storage is a service that stores structured NoSQL data in the cloud. Because this table is schema-less, it’s very easy to save your data, it’s very easy to adapt your data as the need for your application grows.

**c) Azure Files Storage**

File Storage provides file-sharing capabilities accessible by the Server Messaging Block protocol and this can be accessed from the cloud and this can be accessed on-premises as well.

The data is protected by SMB3.0 and HTTPS protocols and the more important thing is Azure takes care of managing hardware and the operating system deployments for Azure File Storage.

**d) Queues Azure Queues**

The Azure Queue Storage provides message queuing for large workloads and it enables users to build flexible applications and separate the functions one from another so one failure doesn’t affect the other application which is running healthy. This pure storage ensures the application is scalable and less prone to individual component failures because they are decoupled separately.

**Q #11) What is Text Analysis API in Azure Machine Learning**

**Answer:**Text Analysis is actually a cloud-based analytics API, and it provides advanced natural language processing over the raw text. It has got main functions like sentiment analysis, key phrase analysis, language deduction, etc.

**Q #12) What are the advantages of Azure Queue Storage?**

**Answer: The advantages of Azure Queue Storage are:**

* Provides rich client libraries for Java, Android, C, HP, Ruby, and lots of other services getting added during every new release from Azure.
* The main advantage again is it enables users to build flexible apps and separate the functions for bigger durability.
* Introduction of queues into our application. It ensures our user’s applications are scalable and less prone to individual component failures, meaning one component failing is not going to take the whole application down. If one component fails, it’s just that component that stays failed. The rest are healthy and the rest are going to function.
* It also helps us to monitor the queues and ensure the servers aren’t overwhelmed by sudden traffic bursts. How much do I have in the queue? Kind of determines the traffic for my application and if the queue is more I can always go and auto-scale my environment and the queue is less.

**Q #13) What are the two kinds of Azure web service roles now?**

**Answer:**A service role is a set of managed and load-balanced virtual machines that work to perform some tasks and based on what it’s going to run on top of it, is it going to run a web service or is it going to run worker service defines what kind of roles that get attached or that grows on this virtual machine?

We have two types of web roles and server roles.

**#1) Web role:**They support IIS [Internet Information Service](https://www.iis.net/) and they support ASP. Net, PHP, Windows, Communication Foundation, and so on. Web roles automatically deploy and host applications through the user’s IIS i.e. Internet Information Service.

**#2) Worker roles:**Worker roles are roles that run applications and service levels tasks that rarely require IIS. Actually, the differentiating factor IIS in worker roles is not installed by default.

The worker roles are mainly used to perform supporting background process along with web roles and do tasks automatically compressing or uploading the images, running scripts and doing some changes in the database, getting new messages from the queue and processing a lot more the work, the applications or the work that does not require IIS.

**Q #14) What is Azure Service Fabric?**

**Answer:**

Azure Service Fabric simplifies the packaging, deployment, and management of reliable and scalable containers and microservices. It’s categorized as a distributed system platform.

The cloud-native application development and management challenges are addressed by [Azure Service Fabric](https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-overview). This has currently enabled developers and administrators to avoid complex infrastructure problems and focus on implementing mission-critical and demanding workloads that can be scaled and that can be managed through the console or from a single place.

**Q #15) The advantages of Service Fabric**

**Answer: Below are the advantages of Service Fabric:**

* They can produce applications with a faster time to market because they took away all the worry about the infrastructure from us. They don’t have to design infrastructure. All that is simply the application and the application lifecycle.
* It supports Windows; it supports Linux. Not only that, it supports servers on-premises and in the cloud.
* With Service Fabric, we can scale up our environment to even a thousand machines in just a single command, or if there is an immediate need for thousand machines, we can immediately scale them up to 1000 machines. That’s possible with Service Fabric.

**Q #16) How to handle this situation in Azure?**

**If the customer is running a hybrid environment meaning having some of the applications in on-premises and running some of the applications from the cloud and for some reason when classifying the application that goes to the cloud and that stays on-premises, they have decided to keep the database in house. How do we go about suggesting a solution for this customer?**

**Answer:**The solution is using a VPN solution through VNET based point-to-site.

All the front-end applications will be in the cloud and they’ll be hosted in a VNET from the VNET they’ll be connecting to the database through and point to site VPN. The traffic and the writings and the leads are not coming through the internet but through a point-to-site VPN link that’s connecting the Azure VNET and on-premises environment.

This model or this approach or this solution is best suited for scenarios where there are only a limited number of resource that need to be connected between on-premises and the cloud.

**Q #17) What is the purpose of Azure Traffic Manager?**

**Answer:**This is a traffic load balancer that allows the end-users to provide increased responsiveness and uptime by optimizing traffic allocation across the Azure provided worldwide when we run the same application in different regions. **Some of the advantages of using Azure Traffic Manager are:**

* It provides multiple automatic failover options.
* It also helps with reduced downtime.
* It also helps with the distribution of user traffic across multiple locations. Ensuring that one location is not overloaded.
* It helps with users knowing where our customers are getting connected from.

**Q #18) How can this situation be handled with Azure?**

**There are a group of servers connected together within a virtual network and now we need to move them or create a separation between them. How do you go about achieving this?**

**Answer:**The best way we can do it is to create a new virtual network and move all the VMs in that subnet to the new virtual network. This feature is not possible with a lot of other cloud service providers like AWS and a lot of other providers.

Now in those environments, we might need to shut down. We might need to stop the VM, create a new VM based on the image, and it’s a hefty process.

But in Azure, I can simply move the VMs from one subnet to another virtual network without the need for any additional security, like the network security group. I can simply isolate them if I need to by creating a simple new virtual network and moving the servers to the new virtual network.

**Q #19) What are public, private, and hybrid clouds?**

**Answer: Below are the different cloud offerings in the market; public, private, and hybrid.**

**a) Public Cloud**

The public cloud is the most common way of deploying cloud computing applications and it has resources like servers, storage, and is owned and operated by third-party cloud service providers like Microsoft Azure. Microsoft Azure is a very good example of a public cloud. Every component that the user is using is running only on Azure.

**b) Private cloud**

A private cloud can be physically located at our organization’s on-site data center, or it can be hosted by a third-party service provider. The private cloud services and infrastructure are always maintained on a private network and they are maintained on hardware and software that are dedicated solely for one organization or solely for your organization.

**c) Hybrid cloud**

A hybrid cloud is the best of both worlds, so it combines the features of both public and private clouds, and some of the user components are being run on Azure and others within the on-premises data center. They kind of share the resources.

**Q #20) What kind of storage is best suited to handle unstructured data?**

**Answer: Block storage** is well-suited because block storage is designed to support unstructured data. It places the data into different tiers based on how often they are accessed.

**Q #21) What is the process involved in setting up Azure Virtual Machine?**

**Answer:**In this Azure interview questions and answers tutorial, we outline the steps involved in setting up Azure Virtual Machine as

1. The first step is to log into Azure.
2. The second one is to create a resource or a resource manager. Within the resource manager, you would select the resource.
3. Pick the operating system. Do you want Windows or Linux?
4. Enter the relevant information, relevant information like the name of the instance of the VM that we’re going to launch and the password, the URL that goes with it, etc.
5. Select the size of the virtual machine, different sizes, different types available for the kind of application, and for the intensity of the application that will run on top of it.
6. Review everything

**Q #22) How would you deal with this scenario?**

**You’re asked to make sure your virtual machines can interact securely with each other to have good security. What would you do?**

**Answer:**The correct and the best answer for this would be using the virtual network in Azure, which enables us to communicate with the Internet securely, which enables us to communicate with on-premises data centers in a secure fashion.

**Q #23) What are the advantages of using a virtual network?**

**Answer:**The advantages of using a virtual network are

* Users can create their own private network.
* Users can pick their own private IP ranges.
* Users can create their own subnet.
* Users can create their own routing between those two subnets.

**Q #24) Choose the correct option for the scenario below**

**How do you ensure that every time a user logs in, they are not asked to reenter the password as part of authentication? You don’t want your users to reenter the password every time they log in to a different application?**

**Choices:**

* A) To enable Microsoft Account authentication
* B) Deploy Express Route
* C) Set up a domain controller in VM, set up VPN between premises Data Center and Azure, and implement integrated Windows authentication
* D) Configured AD sync to use single sign-on

**The Correct Answer is D: Configured AD sync to use single sign-on**

When we configure the AD to use single sign-on, then it’s not going to ask for the username and password every time we access an application because we have logged in and that login is going to stay active for like 24 hours or so, depending on how you configure it and within that time you can access a lot of other applications and it’s not going to ask for the username and password.

**Why the rest are wrong answers:**

**A: To enable Microsoft Account authentication –**It’s not going to fix because with that the user will still need to reenter the username and password.

**B: Deploy Express Route –**It’s not going to fix either because Express Route is a network-level service that connects on-premises to the cloud. So that has got nothing to do with promoting or not prompting for passwords.

**C: Set up a domain controller in VM, set up VPN between premises Data Center and Azure, and implement integrated Windows authentication –**You can use the same username and password for on-premises and the cloud, but this setup, the VPN, and the AD controller set up, it’s not going to stop you asking for repeated passwords.

This is all about using the same password on-premises and in the cloud.

**Q #25) Choose the correct option for the scenario below**

**What would be the appropriate service to use so as to ensure that the VMs are still available during migration to Azure?**

**Choices:**

* A) Traffic Manager Traffic manager
* B) Update domains
* C) Express route and cloud services

**The Correct Answer is C: Express route and cloud services**

Express route is the right answer because the express route it’s an extension of the on-premises and cloud environment.

**Why the rest are wrong answers?**

**A: Traffic Manager –**Traffic manager is literally a DNS service.

**B: Update domains –**It again has to do with the traffic manager updating the URL, so the traffic manager gets updated and then start sending a request to that particular URL. It’s going to take some downtime because when we update the URL they will have to be populated to all different places and it takes time. So, within that time any user trying to access it’s going to fail.

**Q #26) Choose the correct option for the scenario below**

**As an Admin, how do you validate the deployment changes that are made by the development team with minimum downtime?**

**Choices:**

* A) Create a new linked resource
* B) Create a staging environment for the site
* C) Enable remote debugging on the website
* D) Create a new website

**The Correct Answer is B: Create a staging environment for the site –**when we have staging environments, anything that we run on production can be run in a staging environment and any failures that would happen in production if we simply run it in production can be captured when we run the application in the staging environment.

**Why the rest are wrong answers:**

**A: Create a new linked resource?**

Why would you want to create a new website just to validate the changes? And doing remote debugging is not going to help because debugging only captures logs of the changes happening. It does not do anything to validate the changes.

**C: Enable remote debugging on the website**

Doing remote debugging will not help because debugging only captures logs of the changes happening. It does not do anything to validate the changes.

**D: Create a new website**

Well, why would you want to create a new website just to validate the changes?

**Q #27) Choose the correct option for the scenario below?**

**Your standard tier application uses the Azure website standard tier and is also used worldwide. The eCommerce website loads slowly since it has many images.**

**Choices:**

* A) Configure Block Storage with Custom Domain
* B) Auto Scaling to increase instances during heavy loads
* C) Setup Azure CDN to cache all applications Web Endpoints responses
* D) Setup Azure CDN to cache content and site pictures stored in Blob Storage

**The Correct Answer is D: Setup Azure CDN to cache content and site pictures stored in Blob Storage –**Redesign the application to store the pictures, high quality, lazy loading, or slow loading pictures because of the high quality and the bigger size.

Store them in CDN and let the content be stored in Azure Blob Storage. That’s the right way of designing the application and if we do it, this application is going to run faster or the application is going to respond faster to the users.

**Why the rest are wrong answers?**

**A: Configure Block Storage with Custom Domain.**

This application has pictures, but the pictures only pictures are not all that the application has. Thus, configuring Block Storage might not help. This could be a very interactive website that can’t be run from Blob Storage.

**B: Auto Scaling to increase instances during heavy loads.**

Now it’s the picture that’s causing issues for the website. It’s not the CPU, or it’s not the memory unavailable.

**C: Setup Azure CDN to cache all applications Web Endpoints responses**

That’s not the best way to use CDN to capture all responses from the application’s web endpoint. The proper design for CDN would be to cache the frequently used ones. In other words, cache the static content which are photos, videos, logos, and pictures, and a lot more static content that never changes.

**Conclusion**

In this tutorial, we have looked at the top Azure interview questions, i.e. normal, situational, scenario, and options-based kind of questions. You are now one step closer to cracking the Azure interview.

We appreciate the time and effort that you put in learning new technologies and we are very glad that we could help you with such tutorials.