

Windows Azure Question-Answer Part I- Azure Fundamentals



KRUNAL TRIVEDI
MCT, MCT INDIA REGIONAL LEAD
TRAINER, WRITER, SPEAKER
www.techtrainingpoint.com

WINDOWS AZURE QUESTION-ANSWER

Windows Azure Fundamentals

WHAT IS WINDOWS AZURE?

- Windows Azure is a Microsoft's Cloud Computing strategy.
- Windows Azure allows you to create any compute or data storage operations by provisioning or scaling any resources on demand and pay-as-you-go basis.
- Azure platform is a collection of services that allows you to host existing workloads and use managed service instead of workload.
- Workload is an abstraction of the actual work that your instance or a set of instances are going to perform.
- Running a web server or web server farm are all valid workloads.

WHAT ARE COMMONLY AVAILABLE SERVICES IN WINDOWS AZURE?

- Physical Infrastructure Services: Virtual Machines and Virtual Networks.
- Communication Infrastructure: Service Bus, Queue.
- Data Streaming and Storage: BLOB and Azure File Services , Document DB , Tables
- Web Hosting: FTP, Source Control Providers, Web Deploy Protocol.
- Mobile Connectivity: Fully Managed back-end service solution for client devices.
- Web Sites: Platform for your web applications with many features to reduce friction of deployment.
- Virtual Machines: Compute on demand for your application workloads with a high degree of compatibility with existing virtualization workloads
- Database as a Service : SQL Server and other RDBMS

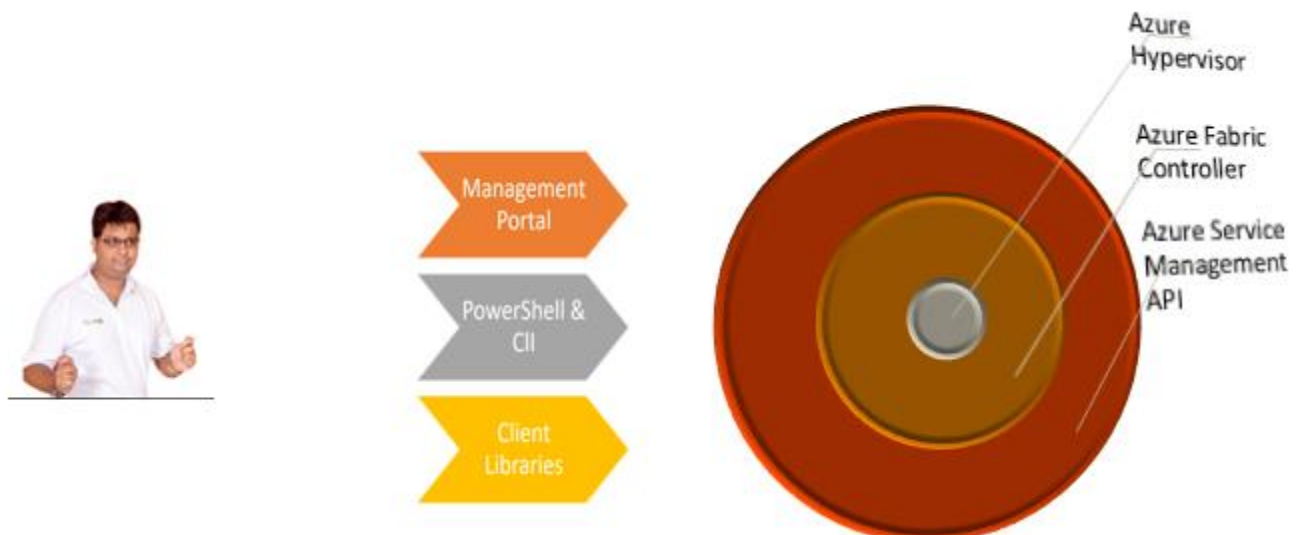
HOW ONE CAN INTERACT WITH WINDOWS AZURE?

There are 3 options available to interact with Windows Azure.

- Azure Service Management Portal / New Preview Portal (Azure Resource Management Portal)
- PowerShell
- Client Libraries

Service Management REST API: Which is a web service that receives requests to create, change or configure services and passes the request to the **Microsoft Azure Fabric Controller**.

Azure Fabric Controller: It makes decisions based on the request send by **Service Management REST API** and utilizes the Azure Hypervisor to create new virtual machines.



WHAT IS AZURE SDK?

- Azure SDKs create an Azure Development for you in your visual studio.
- It gives you project templates, command-line tools, property dialogs, client libraries for creating and managing different types of Azure resources.
- When you install Azure SDKs in your visual studio you will get Storage Emulator, Quick-Start Examples, and Azure Storage Client Libraries and Azure Tools for Visual Studio.

WHAT IS AZURE FABRIC CONTROLLER?

- Microsoft hosts, create and manage services and computes in datacenter.
- These datacenters are globally available and managed by Microsoft.
- Inside a datacenter, Microsoft has plotted servers which are connected by switches.
- Fabric controller receives a request to create or manage resources on clouds and analyses the process and makes decisions.
- It works as a kernel of Azure systems and pass commands to the Virtual Machine and physical servers.

- It takes care of everything including new hardware installations, modification on server OS etc.
- You can synonym Fabric as an Azure Framework which consists of servers, connections, switches, load-balancers.
- Fabric Controller's primary objective is to satisfy user requests and policies as well as to optimize and simplify deployment.
- In Microsoft datacenters there are number of Fabric Controller instances running in various racks.
- When a new applications is published to the Azure, Fabric Controller reads associated XML files and make settings accordingly.

WHAT IS RED DOG FRONT END [RDFE]?

- Azure Fabric Controller get commands from RDFE.
- The RDFE acts as kind of router for request and traffic to and from the load balancer and Fabric Controller.
- When you log in to Azure portal and ask for a new service say for example "Web Role" instance, the portal send this request first to RDFE.
- The RDFE asks the Fabric Controller for the same, based on the parameters you set and your location, proximity etc.
- The Fabric Controller scans the available nodes in the racks and looks for two nodes that do not share a Fault Domain.
- This could be two racks next to each other as Fabric Controller considers network proximity and available connectivity as Factors in optimizing performance.
- Azure is unlikely to pick nodes in two different facilities unless necessary or specified.
- Once Fabric Controller found its nodes, then puts the role-defining files at the host.
- The host OS creates the requested Virtual machines and three virtual Hard Drives, a stock VHD (D :) for the OS Image, a resource VHD(C :) for user temporary files (next available drive letter) and a Role VHD for role specific files.
- The load balancers do nothing until the instance receives its first external HTTP Communication.
- Only then is the instance routed to an external endpoint and live to network.

WHAT ARE DIFFERENT FLAVOURS OF WINDOWS AZURE?

- Windows Azure comes with 3 main flavors or you can say three different ways how we can consume services offered by Windows Azure.

- PaaS : Platform as a Service
- SaaS : Software as a Service
- IaaS : Infrastructure as a Service

WHAT IS PLATFORM-AS-A-SERVICE OFFERING BY MICROSOFT AZURE?

Platform-as-a-Service offers higher level of functionality that are delivered as consumable services for developers to build applications.

PaaS is about abstracting developers from the underlying infrastructure to enable applications to quickly be composed.

In PaaS offering developer has to manage application and data only while Runtime, Middleware, OS, Virtualization Technology, Servers, Storage and Networking would be taken care by Microsoft Azure.

PaaS is about building and developing application.

Azure Web Apps, Mobile Services, Logic Apps, Web API, Web Role and Worker Role falls under PaaS offerings.

WHAT IS INFRASTRUCTURE-AS-A-SERVICE OFFERING IN CLOUD?

- Infrastructure-as-a-Service is a set of infrastructure level capabilities such as an Operating System, Networking features etc.
- It is about Virtual Machines and Networking.
- In Contrast to PaaS offerings, IaaS is about power and control while developing application and hosting it on the cloud.
- In IaaS, it is developer's task to manage Applications, Data, Runtime, Middleware and Operating System. As a result a developer can restart IIS or install new patches or some third party software in hosting environments [Virtual Machine] on demand , frequently and without depending on Microsoft while Microsoft will manage Virtualization, Servers,Storage,Networking,Load Balancers etc.

WHAT IS SOFTWARE-AS-A-SERVICE OFFERING BY MS AZURE?

- Software-as-a-Service provide applications using service delivery model where one can simply consume it.
- Here, organization / or an individual has to pay for the use of the application or applications could be monetized through ad revenue.
- SaaS offering is all about consuming applications.
- Microsoft's SaaS includes Office 365, Microsoft OneDrive as well as Visual Studio Online.