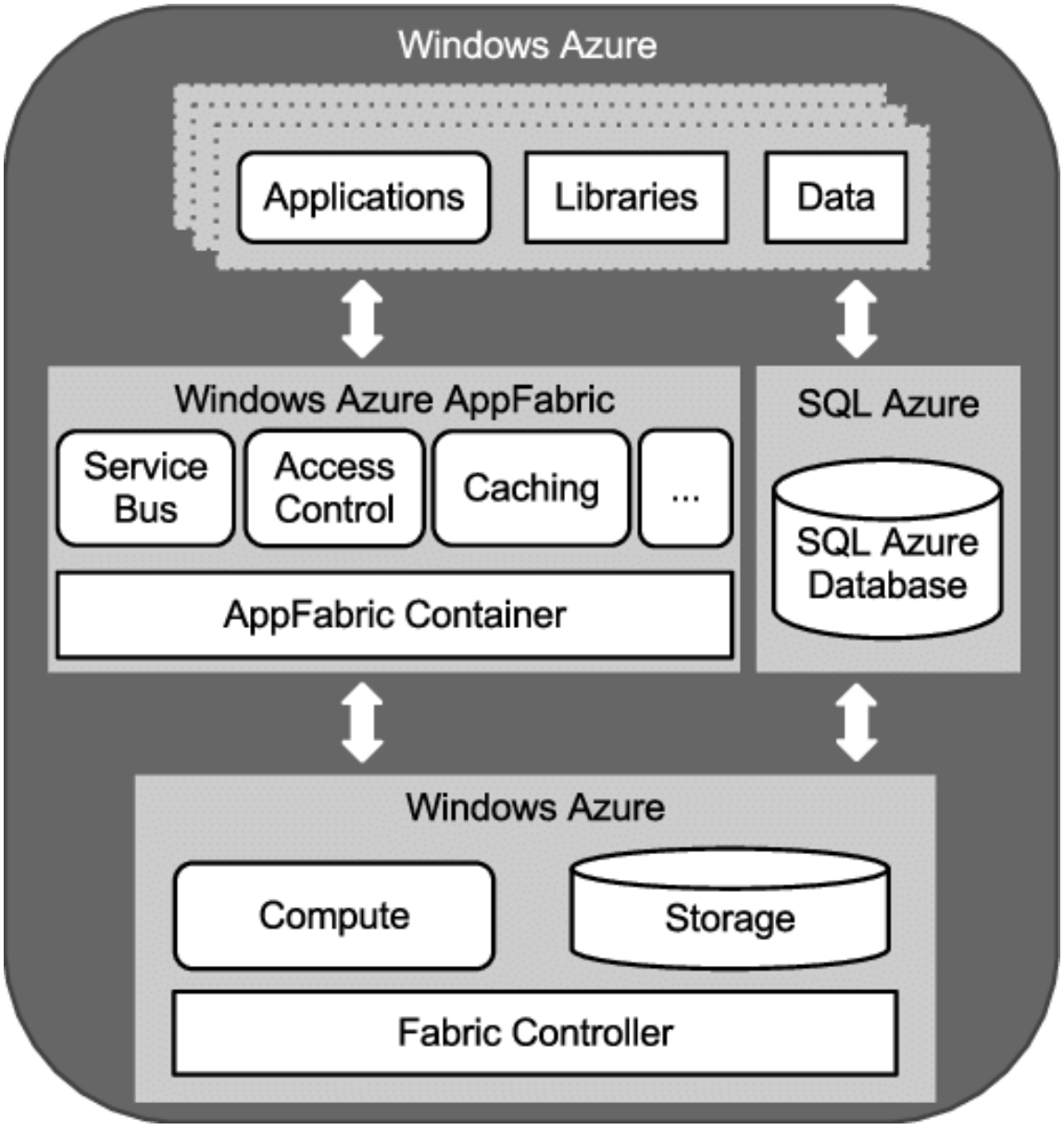
UNIT- 4

Windows Azure Platform-

Windows Azure Platform is a cloud hosting service run by Microsoft that enables you to store data, as well as build and connect apps. Everything is stored in a Microsoft data center - the only thing you have to manage is your application. The applications are hosted on cloud operating systems called Windows Azure.

Windows Azure Architecture-



Core Azure architectural components include Azure regions, Azure Availability Zones, resource groups, and the Azure Resource Manager.

The four major subject areas include:

- Cloud concepts.
- Core Azure services.
- Security, privacy, compliance, and trust.
- Azure pricing and support.

AppFabric-

AppFabric is a set of middleware technologies for Windows Server, released by Microsoft. It consists of two main feature areas: AppFabric Hosting and AppFabric Caching. The Windows Azure platform component that contains Service Bus is known as Windows Azure AppFabric. Despite its name, this component currently shares no technologies with Windows Server AppFabric. Microsoft says that this will change, however. In particular, both AppFabric Caching Services and AppFabric Hosting Services will find their way into Windows Azure AppFabric in the not-too-distant future. Once this happens, application developers will be able to use the same application infrastructure both on premises with Windows Server and in the cloud with Windows Azure.

CDN-

A content delivery network (CDN) refers to a geographically distributed group of servers which work together to provide fast delivery of Internet content.

A CDN allows for the quick transfer of assets needed for loading Internet content including HTML pages, javascript files, stylesheets, images, and videos. The popularity of CDN services continues to grow, and today the majority of web traffic is served through CDNs, including traffic from major sites like Facebook, Netflix, and Amazon.

Benefits of CDN-

1. **Improving website load times** - By distributing content closer to website visitors by using a nearby CDN server (among other optimizations), visitors experience faster page loading times. As visitors are more inclined to click away from a slow-loading site, a CDN can reduce bounce rates and increase the amount of time that people spend on the site. In other words, a faster a website means more visitors will stay and stick around longer.

2. **Reducing bandwidth costs** - Bandwidth consumption costs for website hosting is a primary expense for websites. Through caching and other optimizations, CDNs are able to reduce the amount of data an origin server must provide, thus reducing hosting costs for website owners.

3. **Increasing content availability and redundancy** - Large amounts of traffic or hardware failures can interrupt normal website function.

4. **Improving website security** - A CDN may improve security by providing DDoS mitigation, improvements to security certificates, and other optimizations.

SQL Azure-

Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring without user involvement. With Azure SQL Database, you can create a highly available and high-performance data storage layer for the applications and solutions in Azure. SQL Database can be the right choice for a variety of modern cloud applications because it enables you to process both relational data and non-relational structures, such as graphs, JSON, spatial, and XML.

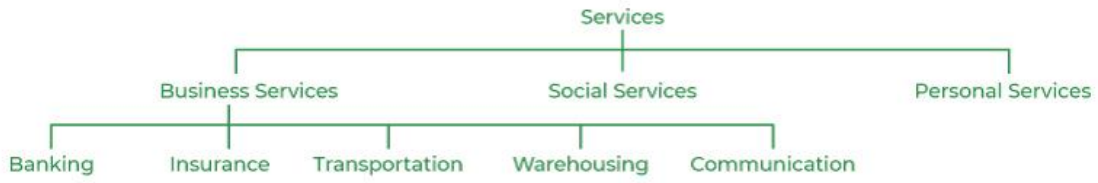
Azure SQL Database is based on the latest stable version of the Microsoft SQL Server database engine.

Windows Live-

Windows Live was the collective brand name for a set of services and software products from Microsoft; part of their software plus services platform. In April 2013, the website was closed down. A majority of these services are Web applications, accessible from a browser, but there are also client-side binary applications that require installation. There are three ways in which Windows Live services are offered: Windows Essentials applications, web services, and mobile services.[1]

Microsoft said that Windows Live "is a way to extend the Windows user experience"

Types of Services-



Business Services-

The services used by business organizations to conduct activities are known as business services. The business services assist the business but do not deliver a tangible commodity. For example, transportation services do not give a tangible result, but transport goods, inventory, raw materials, etc., from one place to another.

Social Services-

The services provided by an individual or a group of individuals voluntarily for the accomplishment of some social goals are known as social services. For example, educational facilities or services provided by NGOs to poor children.

Personal Services-

The services that give different customers' a different experience are known as personal services. These types of services are inconsistent in nature and differ based on the service provider, customers' demands, preferences, etc. For example, restaurants, hotels, tourism, etc.

Consulting-

Cloud consulting is a go-to service for organizations looking to establish a robust cloud infrastructure or improve their existing cloud environments.

Configuration-

Cloud configuration is the process of setting hardware and software details for elements of a cloud environment to ensure that they can interoperate and communicate.

Cloud Application Customization-

For the flourishing demands for cloud computing, we provide enterprises with different types of cloud operation and maintenance management services including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Dedicated cloud application solutions can be created according to the different needs of each business customer.

Technical Features-

◆ Cloud Customization Service
◆ Interfacing with third-party cloud service platforms (Public Cloud)
◆ Cloud printing technology
◆ Smart networking technology
◆ Cloud wireless network application technology: Such as cloud data transmission application, digital image and multimedia transmission etc.
◆ Cross-device control technology application

NMS-

A network management system (NMS) is an application or set of applications that lets network administrators manage a network's independent components inside a bigger network management framework. NMS may be used to monitor both software and hardware components in a network. It usually records data from a network's remote points to carry out central reporting to a system administrator.

The key benefit to NMS is that it permits users to monitor or manage their entire business operations using a central computer,

Vendors-

An organization that sells computing infrastructure, software as a service (SaaS) or storage.

Cloud Monitoring -

Cloud monitoring is a method of observing, reviewing, and managing the workflow in a cloud-based infrastructure. As businesses scale up the infrastructure, it becomes essential for system administrators and devops teams to maintain visibility to their digital assets' performance. Cloud management platforms and technologies confirm the availability and performance of servers, applications, and infrastructure. This will allow us to continuously evaluate resource levels, server response times, and speed to predict possible vulnerability to future issues. Cloud monitoring tools help to monitor the cloud-based resources and give the ability to prevent minor issues from turning into significant problems.

Life Cycle Management cloud services-

To create such a cloud platform it takes a long number of steps and dedicated time. The steps involved or the lifecycle of cloud computing solutions.

Step 1: Define the Purpose
The first and foremost step is to define the purpose for which you want to create a cloud. For this, you have first to understand your business requirement and what type of application you want to run on the cloud. After

this, you have to decide whether you want your cloud to be public, private, or hybrid.

Step 2: Define the Hardware

Deciding what type of hardware you will need is the most thought after the process. One needs to be very precise in making the decision. For this, you will have to choose the compute service that will provide the right support when you resize your compute capacity to maintain your application running.

Step 3: Define the Storage

Every application needs a good amount of storage where it's data can be stored safely. For any application storage type that should be chosen carefully for this one should choose the storage service where they can back up and archive their data over the internet.

Step 4: Define the Network

Networking is the key that will deliver your data to the end-users. So, the network must be configured sincerely and should be flawless so that intruders can not break into the network. One should define the network that securely delivers data, videos, and applications with low latency and high transfer speed.

Step 5: Define the Security

Security is a key aspect of any application. Set up your security service which enables services for user authentication or limiting access to a certain set of users on your resources.

Step 6: Define the Management Process and Tools

The developer should have complete control over there resource and to configure these you should define some management tools which monitor your cloud environment, resources used, and the customer application running on it.

Step 7: Testing the Process

Testing is yet another important thing in the life cycle of deploying any application. All the faults can figure out only through the testing process involved in it. During testing, you should verify your application using various developer tools where you build, test, and deploy your code quickly.

Step 8: Analytics

Finally, analyze and visualize data using analytics service where you can start querying data instantly and get results then and there only. Once analyzing is done complete, your application becomes ready you deploying.