

DXC Technologies- Google Cloud Platform

Assignment-3

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Question1: Explain SaaS service model with an example? And mention SaaS model features

Answer 1:

SaaS (Software as a Service):

This cloud computing solution involves the deployment of software over the internet to various businesses who pay via subscription or a pay-per-use model. It is a valuable tool for CRM and for applications that need a lot of web or mobile access – such as mobile sales management software. SaaS is managed from a central location so businesses don't have to worry about maintaining it themselves, and is ideal for short-term projects.

SaaS model features are as follows:

- Multi-tenancy model
- Automated provisioning
- Single Sign On
- Subscription based billing
- High availability
- Elastic Infrastructure
- Data Security
- Application Security
- Rate limiting/QoS
- Audit

Question 2: Explain various SaaS products and services ?

Answer 2:

SaaS product is an internet software that all users have access to. Many of your favourite internet platforms are SaaS – Google Apps, DropBox, or Canva.

One of the most famous SaaS service provider is Google. Google provides various softwares for users to use without thinking about any maintenance or infrastructure. These products include :

- Gmail

- Google photos
- Drive etc.

Question 3: Explain SaaS model pros & Cons ?

Answer 3:

Pros of SaaS

- Lower Capital Expenditure (CAPEX)
- Accessibility
- Scalability
- Saved Maintenance costs
- Ease of Deployment

Cons of SaaS

- Control Issues
- Connectivity Issues
- Security Issues
- Service Level Agreement (SLA) Issues

Question 4: What is PaaS model & explain with an example?

Answer 4:

PaaS (Platform as a Service) provides you computing platforms which typically includes operating system, programming language execution environment, database, web server etc. Examples: AWS Elastic Beanstalk, Windows Azure, Heroku, Force.com, Google App Engine, Apache Stratos

A PaaS vendor provides hardware and software tools over the internet, and people use these tools to develop applications. PaaS users tend to be developers.

PaaS is primarily used by developers who are building software or applications. A PaaS solution provides the platform for developers to create unique, customizable software. This means developers don't need to start from scratch when creating applications, saving them a lot of time (and money) on writing extensive code. It is a popular choice for businesses who want to create unique applications without spending a fortune or taking on all the responsibility.

A good example of PaaS is AWS Elastic Beanstalk. Amazon Web Services (AWS) offers over 100 cloud computing services such as EC2, RDS, and S3. Most of these services can be used as IaaS, and most companies who use AWS will pick and choose the services they need.

Question 5: Explain centralised & decentralised cloud model ?

Answer 5:

The primary difference between centralized and decentralized communication networks has to do with the question of who has control over the network itself. In a centralized system, a singular authority or administrator retains total control over all aspects of the network. This authority is typically exerted through a central server that manages all data and permissions. A centralized network also locates all major processing power in this primary server.

Decentralized networks are organized in a much more distributed fashion. Each node within the network functions as a separate authority with independent decision-making power regarding how it interacts with other systems. These networks also distribute processing power and workload functions among connected servers.

Question 6: Explain what is the impact of virtualization ?

Answer 6:

When you bring virtual resources into the data center, it can have a wide-ranging effect on the network infrastructure. Most of the impact will be on the physical plant and the enterprise capacity to accommodate the new virtual machines.

The advantages of virtualization are clear. By encapsulating and abstracting applications from the physical hardware, you create virtual machines (VMs) that are easier to manage, are portable, and can be implemented on physical hardware in seconds. VMs make better use of shared data center resources and give IT managers complete control of server functions through a software overlay. More importantly, virtualization provides the elasticity needed to scale the infrastructure up or down, adding more VMs and cloud resources as needed to meet changing demands.

Question 7: Explain hybrid cloud & use cases ?

Answer 7:

Hybrid cloud is a solution that combines a private cloud with one or more public cloud services, with proprietary software enabling communication between each distinct service. A hybrid cloud strategy provides businesses with greater flexibility by moving workloads between cloud solutions as needs and costs fluctuate.

They are powerful because they give businesses greater control over their private data. An organization can store sensitive data on a private cloud or local data center and simultaneously leverage the robust computational resources of a managed public cloud. A hybrid cloud relies on a single plane of management, unlike a multi-cloud strategy wherein admins must manage each cloud environment separately.

The most common use case of hybrid cloud is:

Cloud bursting:

Many organizations are also interested in using a hybrid cloud for "cloud bursting." That is, they want to run their applications in a private cloud until demand for resources reaches a certain level, at which point they would fail over to a public cloud service.

Question 8: Mention major differences between IaaS PaaS & SaaS models ?

Answer 8:

The main differences between IaaS, PaaS and SaaS models can be best summarised by using the following image:

