Qu 1 Explain the concept of app Security in Cloud environment

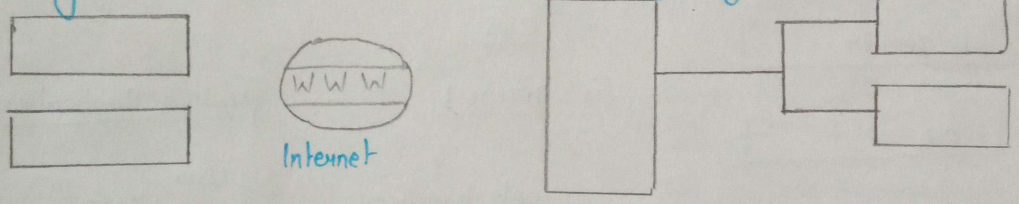
i) Application Security in cloud environment refer to the measures and security procedure use ~~of~~ at Application level to prevent of theft of data or code within the application from unwanted / unauthorized access vulnerabilities in a cloud computing environments.

ii) Implementation can be done in form of H/w, S/w procedure

It cover the entire lifecycle including requirements Analysis, design, implementation testing.

Types of Application Security include :-

- Authentication
- Encryption
- Authorization
- Logging



Application | Application Security | Application service

Qu 2 Discuss the importance of security architecture design in cloud environments.

A cloud security Architecture is ~~dil~~ defined by a security layer design and structure of platform tools S/w infrastructure and best practice that exists within a cloud security solution.

Key Reasons why security Architecture design is important.

- Security at each level
- Centralized Management
- Appropriate storage for deployment
- Robust design
- Scalability and elasticity
- Alerts and Notification

Ques 3 Explain the concept of software as a Service (SaaS) security

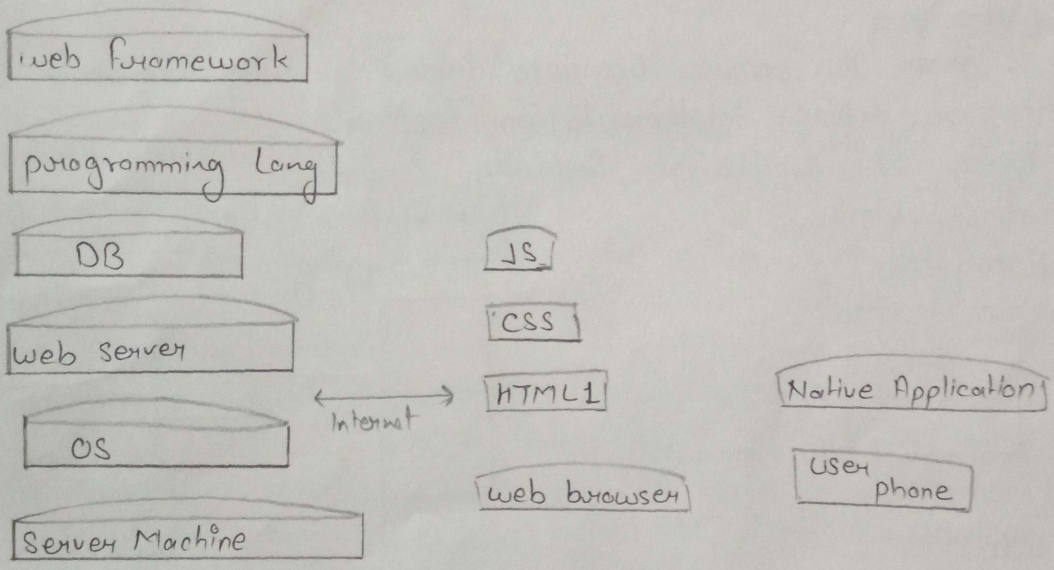
The set of best practice and policies implements by S/w as a service provide to ensure the privacy and security of the customer data is referred to as Saas security.

Layers of Saas security

Infrastructure (server)

Internet

Application (Client)



Infrastructure (server)

Client

Key Principles of Saas Security

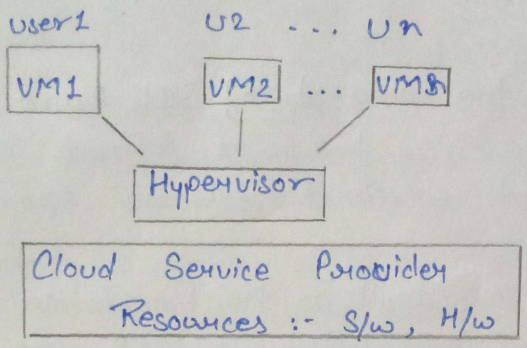
- Access Management
- Network Ctrl
- Reliability

- VM Management
- Data Protection

Q.4 How is VM security ensured in cloud environments

Virtualised Security

It describe security solution that are s/w based and created to operate in virtualization IT environment



Implementation of VM Security

- Service Providers Security :- The system virtualisation h/w should not be Accessiable to unauthorised person.
- Hypervisor Security :- Hypervisor code integrity is protected via a technology called Hypersafe.
- VM Security :- Administrator must setup a program that prevent virtual M. from consuming additional Resources without Permission.

Essential Steps to secure a VM

→ keep connection secure and Private
→ Separate Management API to secure the Network
→ Protect the hosted element by isolating them.

Benefit

- Cost effectiveness
- Operational Efficiency.
- Regulatory Compliance
- flexibility

#

VM Attacks

Hyper Jack :- Hacker get ctrl over the Hyper-visor

Virtualised Root kit :- They operate as a malware that execute as a hypervisor ctrolling one or many VM.

Dos Attacks :-

Ques 5 Explain the concept of SQL Azure

SQL Azure also known as Azure SQL Database is a cloud based relational database service provided by microsoft azure.

It is how built on the foundation of Microsoft SQL server and offer a scalable secure, and fully managed database platform for running SQL-based Application in the cloud.

Key aspect of SQL Azure

i) Cloud based :- SQL Azure is a cloud based service which means that the database is hosted and managed in the cloud rather than on permises.

It eliminate the need for own physical database infrastructure.

ii) Relational Database :- It's a relational database service based on the same engine as microsoft SQL, server. It support standard SQL query language.

iii) Scalability SQL Azure provide elastic scalability, allowing you to scale the database resource up or down based on your needs.

iv) Managed Service :- As a fully managed service SQL Azure handles routine database management tasks such as patching / upgrade and backup automatically.

v) Integration with Azure Ecosystem : SQL Azure seamlessly integrate with other Azure service and tools. It can be easily integrated with Azure App Service, Azure function, Azure Logic App. and other components of Azure eco system.

vi) Global Availability : SQL Azure is available in multiple Azure regions world wide, allowing you to deploy your databases closer to your user or comply with Data residency requirement

vii) High Availability and Durability :- It ensure high availability and data durability through automatic backup / replication and failour Mechanism.

Que6 Discuss the architecture and core concept of Google App Engine

Google App Engine (GAE) is a platform as a service (Paas) offering from Google cloud that allows developer to build and deploy scalable web Application and service easily.

Architecture

Frontend :- GAE application are served by the App Engine frontend, which receives and load balance incoming requests.

Application Server :- It provisions and scale up or down the number of instance based on the Application traffic

Data Storage :- App Engine provide various option for data storage, including Google Cloud a scalable object storage service.

Task Queue :- App Engine allow you to offload task to be executed asynchronously using task queue. This helps in handling back around processing or deferred work.

Service and APIs :- App Engine integrate with various Google cloud service and APIs, such as Google cloud Publ Sub, Google cloud AI and more to enhance application flexibility.

Core Concept

App Engine Standard and App Engine Flexible :

App Engine Standard :- It provide a fully managed runtime environment with autoscaling and automatic patch management. It support several programming language.

App Engine Flexible :- It provide more flexible runtime environment, allowing you to use custom runtime image or Docker container. If offer more ctrl and Customization options but require additional configuration

Deployment :- App engine handles the deployment process, including versioning, traffic splitting and scaling.

Logging and Monitoring :- App Engine provide built in logging and Monitoring capabilities. You can view logs, monitor, resources usage; etc setup alerts and gain insight of Application performance.

Que 7 What is the Windows Azure Platform Appliance.

Microsoft Windows Azure platform appliances were designed to provide a consistent Azure experience while allowing service providers to deliver cloud services to their customers without relying on Microsoft's data centers. These appliances included a combination of Microsoft s/w, such as windows Azure, SQL Azure and System Center, along with h/w components from microsoft's partner.