**1) Explain what is AWS?**

AWS stands for Amazon Web Service; it is a collection of remote computing services also known as cloud computing platform.  This new realm of cloud computing is also known as IaaS or Infrastructure as a Service.

**2) Mention what are the key components of AWS?**

The key components of AWS are

* **Route 53:** A DNS web service
* **Simple E-mail Service:** It allows sending e-mail using RESTFUL API call or via regular SMTP
* **Identity and Access Management:** It provides enhanced security and identity management for your AWS account
* **Simple Storage Device or (S3):** It is a storage device and the most widely used AWS service
* **Elastic Compute Cloud (EC2):** It provides on-demand computing resources for hosting applications. It is very useful in case of unpredictable workloads
* **Elastic Block Store (EBS):** It provides persistent storage volumes that attach to EC2 to allow you to persist data past the lifespan of a single EC2
* **CloudWatch:** To monitor AWS resources, It allows administrators to view and collect key Also, one can set a notification alarm in case of trouble.

**3) Explain what is S3?**

S3 stands for Simple Storage Service. You can use S3 interface to store and retrieve any amount of data, at any time and from anywhere on the web.  For S3, the payment model is “pay as you go”.

**4) Explain what is AMI?**

AMI stands for Amazon Machine Image.  It’s a template that provides the information (an operating system, an application server and applications) required to launch an instance, which is a copy of the AMI running as a virtual server in the cloud.  You can launch instances from as many different AMIs as you need.

**5) Mention what is the relation between an instance and AMI?**

From a single AMI, you can launch multiple types of instances.  An instance type defines the hardware of the host computer used for your instance. Each instance type provides different compute and memory capabilities.  Once you launch an instance, it looks like a traditional host, and we can interact with it as we would with any computer.

**6) What does an AMI include?**

An AMI includes the following things

* A template for the root volume for the instance
* Launch permissions decide which AWS accounts can avail the AMI to launch instances
* A block device mapping that determines the volumes to attach to the instance when it is launched

**7) How can you send request to Amazon S3?**

Amazon S3 is a REST service, you can send request by using the REST API or the AWS SDK wrapper libraries that wrap the underlying Amazon S3 REST API.

**8) Mention what is the difference between Amazon S3 and EC2?**

The difference between EC2 and Amazon S3 is that

|  |  |
| --- | --- |
| **EC2** | **S3** |
| * It is a cloud web service used for hosting your application | * It is a data storage system where any amount of data can be stored |
| * It is like a huge computer machine which can run either Linux or Windows and can handle application like PHP, Python, Apache or any databases | * It has a REST interface and uses secure HMAC-SHA1 authentication keys |

**9) How many buckets can you create in AWS by default?**

By default, you can create upto 100 buckets in each of your AWS accounts.

**10) Explain can you vertically scale an Amazon instance? How?**

Yes, you can vertically scale on Amazon instance. For that

* Spin up a new larger instance than the one you are currently running
* Pause that instance and detach the root webs volume from the server and discard
* Then stop your live instance and detach its root volume
* Note the unique device ID and attach that root volume to your new server
* And start it again

**11) Explain what is T2 instances?**

T2 instances are designed to provide moderate baseline performance and the capability to burst to higher performance as required by workload.

**12) In VPC with private and public subnets, database servers should ideally be launched into which subnet?**

With private and public subnets in VPC, database servers should ideally launch into private subnets.

**13) Mention what are the security best practices for Amazon EC2?**

For secure Amazon EC2 best practices, follow the following steps

* Use AWS identity and access management to control access to your AWS resources
* Restrict access by allowing only trusted hosts or networks to access ports on your instance
* Review the rules in your security groups regularly
* Only open up permissions that your require
* Disable password-based login, for instance, launched from your AMI

**14) Explain how the buffer is used in Amazon web services?**

The buffer is used to make the system more robust to manage traffic or load by synchronizing different component. Usually, components receive and process the requests in an unbalanced way, With the help of buffer, the components will be balanced and will work at the same speed to provide faster services.

**15) While connecting to your instance what are the possible connection issues one might face?**

The possible connection errors one might encounter while connecting instances are

* Connection timed out
* User key not recognized by the server
* Host key not found, permission denied
* Unprotected private key file
* Server refused our key or No supported authentication method available
* Error using MindTerm on Safari Browser
* Error using Mac OS X RDP Client

**What are the advantages of using cloud computing?**

The advantages of using cloud computing are

a) Data backup and storage of data

b) Powerful server capabilities

c) SaaS ( Software as a service)

d) Information technology sandboxing capabilities

e) Increase in productivity

f) Cost effective & Time saving

**2) Mention platforms which are used for large scale cloud computing?**

The platforms that are used for large scale cloud computing are

a) Apache Hadoop

b) MapReduce

**3) Explain different models for deployment in cloud computing?**

The different deployment models in cloud computing are

a) Private Cloud

b) Public Cloud

c) Community Cloud

d) Hybrid Cloud

**4) What is the difference in cloud computing and computing for mobiles?**

Mobile computing uses the same concept as cloud computing. Cloud computing becomes active with the data with the help of internet rather than individual device. It provides users with the data which they have to retrieve on demand. In mobile, the applications runs on the remote server and gives user the access for storage and manage.

**5) How user can gain from utility computing?**

Utility computing allows the user to pay only for what they are using. It is a plug-in managed by an organization which decides what type of services has to be deployed from the cloud.

Most organizations prefer hybrid strategy.

**6) For a transport in cloud how you can secure your data?**

To secure your data while transporting them from one place to another, check that there is no leak with the encryption key implemented with the data you are sending.

**7) What are the security aspects provided with cloud?**

a) Identity management: It authorizes the application services

b) Access control: permission has to be provided to the users so that they can control the access of another user who is entering into the cloud environment.

c) Authentication and Authorization: Allows only the authorized and authenticated user only to access the data and applications

**8) List out different layers which define cloud architecture?**

The different layers used by cloud architecture are

a) CLC or Cloud Controller

b) Walrus

c) Cluster Controller

d) SC or Storage Controller

e) NC or Node Controller

**9) What are system integrators in Cloud Computing?**

In Cloud Computing, systems integrator provides the strategy of the complicated process used to design a cloud platform. Integrator allows to create more accurate hybrid and private cloud network, as integrators have all the knowledge about the data center creation.

**10) What is “ EUCALYPTUS” stands for?**

“ EUCALYPTUS” stands for Elastic Utility Computing Architecture For Linking Your Programs To Useful Systems”

**11) Explain what is the use of “EUCALYPTUS” in cloud computing?**

“Eucalyptus” is an open source software infrastructure in cloud computing, which is used to implement clusters in cloud computing platform. It is used to build public, hybrid and private clouds. It has the ability to produce your own data center into a private cloud and allows you to use its functionality to many other organizations.

**12) What is the requirement of virtualization platform in implementing cloud?**

The requirement of virtualization platform in implementing cloud is to

a) Manage the service level policies

b) Cloud Operating System

c) Virtualization platforms helps to keep the backend level and user level concepts different from each other

**13) Before going for cloud computing platform what are the essential things to be**

**taken in concern by users?**

a) Compliance

b) Loss of data

c) Data storage

d) Business continuity

e) Uptime

f) Data integrity in cloud computing

**14) Mention some open source cloud computing platform databases?**

The open source cloud computing platform databases are

a) MongoDB

b) CouchDB

c) LucidDB

**15) What are the security laws which are implemented to secure data in a cloud ?**

The security laws which are implemented to secure data in cloud are

a) Processing: Control the data that is being processed correctly and completely in an application

b) File: It manages and control the data being manipulated in any of the file

c) Output reconciliation: It controls the data which has to be reconciled from input to output

d) Input Validation: Control the input data

e) Security and Backup: It provides security and backup it also controls the security breaches logs

**16) Mention the name of some large cloud providers and databases?**

a) Google bigtable

b) Amazon simpleDB

c) Cloud based SQL

**17) Explain the difference between cloud and traditional datacenters?**

a) The cost of the traditional data center is higher due to heating and hardware/software issues

b) Cloud gets scaled when the demand increases. Majority of the expenses are spent on the maintenance of the data centers, while that is not the case with cloud computing

**18) Explain what are the different modes of software as a service (SaaS)?**

a) Simple multi-tenancy : In this each user has independent resources and are different from other users, it is an efficient mode.

b) Fine grain multi-tenancy: In this type, the resources can be shared by many but the functionality remains the same.

**19) What is the use of API’s in cloud services?**

API’s ( Application Programming Interface) is very useful in cloud platforms

a) It eliminates the need to write the fully fledged programs

b) It provides the instructions to make communication between one or more applications

c) It allows easy creation of applications and link the cloud services with other systems

**20) What are the different data centers deployed for cloud computing?**

Cloud computing consists of different datacenters like

a) Containerized Datacenters

b) Low Density Datacenters

**21) In cloud computing what are the different layers?**

The different layers of cloud computing are:

a) SaaS: Software as a Service (SaaS), it provides users access directly to the cloud application without installing anything on the system.

b) IaaS: Infrastructure as a service, it provides the infrastructure in terms of hardware like memory, processor speed etc.

c) PaaS: Platform as a service, it provides cloud application platform for the developers

**22) How important is the platform as a service?**

Platform as a service or PAAS is an important layer in cloud computing. It provides application platform for providers. It is responsible for providing complete virtualization of the infrastructure layer and makes it work like a single server.

**23) What is a cloud service?**

Cloud service is used to build cloud applications using the server in a network through internet. It provides the facility of using the cloud application without installing it on the computer. It also reduces the maintenance and support of the application which are developed using cloud service.

**24) List down the three basic clouds in cloud computing?**

a) Professional cloud

b) Personal cloud

c) Performance cloud

**25) As a infrastructure as a service what are the resources that are provided by it?**

IAAS ( Infrastructure As A Service) provides virtual and physical resources that are used to build a cloud. It deals with the complexities of deploying and maintaining of the services provided by this layer. Here the infrastructure is the servers, storage and other hardware systems.

**26) What are the business benefits involved in cloud architecture?**

The benefits involved in cloud architecture is

a) Zero infrastructure investment

b) Just in time infrastructure

c) More efficient resource utilization

**27) What are the characteristics of cloud architecture that separates it from traditional one?**

The characteristics that makes cloud architecture above traditional architecture is

a) According to the demand cloud architecture provides the hardware requirement

b) Cloud architecture is capable of scaling the resource on demand

c) Cloud architecture is capable of managing and handling dynamic workloads without failure

**28) Mention what is the difference between elasticity and scalability in cloud computing?**

Scalability is a characteristics of cloud computing through which increasing workload can be handled by increasing in proportion the amount of resource capacity.  Whereas, elasticity, is being one of the characteristics that  highlights the concept of commissioning and decommissioning of a large amount of resource capacity.

**29) Mention the services that are provided by Window Azure Operating System?**

Window Azure provides three core services which are given as

a) Compute

b) Storage

c) Management

**30) In cloud architecture what are the different components that are required?**

a) Cloud Ingress

b) Processor Speed

c) Cloud storage services

d) Cloud provided services

e) Intra-cloud communications

**31) In cloud architecture what are the different phases involved?**

a) Launch Phase

b) Monitor Phase

c) Shutdown Phase

d) Cleanup Phase

**32) List down the basic characteristics of cloud computing?**

a) Elasticity and Scalability

b) Self-service provisioning and automatic de-provisioning

c) Standardized interfaces

d) Billing self service based usage model

**33) In cloud architecture what are the building blocks?**

a) Reference architecture

b) Technical architecture

c) Deployment operation architecture

**34)** **Mention in what ways cloud architecture provide automation and performance transparency?**

To provide the performance transparency and automation there are many tools used by cloud architecture. It allows to manage the cloud architecture and monitor reports. It also allows them to share the application using the cloud architecture. Automation is the key component of cloud architecture which helps to improve the degree of quality.

**35) In cloud computing explain the role of performance cloud?**

Performance cloud is useful in transferring maximum amount of data instantly. It is used by the professionals who work on high performance computing research.

**36)** **Explain hybrid and community cloud?**

Hybrid cloud: It consists of multiple service providers. It is a combination of public and private cloud features. It is used by the company when they require both private and public clouds both.

Community Cloud: This model is quite expensive and is used when the organizations having common goals and requirements, and are ready to share the benefits of the cloud service.

**37) In cloud what are the optimizing strategies?**

To overcome the maintenance cost and to optimize the resources ,there is a concept of three data center in cloud which provides recovery and back-up in case of disaster or system failure and keeps all the data safe and intact.

**38) What is Amazon SQS?**

To communicate between different connectors Amazon SQS message is used, between various components of AMAZON, it acts as a communicator.

**39)** **How buffer is used to Amazon web services?**

In order to make system more efficient against the burst of traffic or load, buffer is used. It synchronizes different component . The component always receives and processes the request in an unbalanced way. The balance between different components are managed by buffer, and makes them work at the same speed to provide faster services.

**40)** **Mention what is Hypervisor in cloud computing and their types?**

Hypervisor is a Virtual Machine Monitor which manages resources for virtual machines. There are mainly two types of hypervisors

Type 1: The guest Vm runs directly over the host hardware, eg Xen, VmWare ESXI

Type 2: The guest Vm runs over hardware through a host OS, eg Kvm, oracle virtualbox