

UNIT - II: Deployment Models, Service Models, & Technological Drivers

Syllabus: Cloud Deployment Models, Cloud Service Models, Technological Drivers: SOA and Cloud, Multicore Technology, Web 2.0 and Web 3.0, Pervasive Computing, Operating System, Application Environment.

Multiple Choice Questions (MCQs)

1. Which cloud deployment model is provisioned for exclusive use by a specific organization comprising multiple consumers, and may be owned, managed, and operated by the organization or a third party?
 - a) Public Cloud
 - b) Private Cloud
 - c) Hybrid Cloud
 - d) Community Cloud
 - **Answer:** b) Private Cloud
2. A cloud environment shared by several organizations with common concerns (e.g., shared mission, security requirements, and compliance policies) is a:
 - a) Public Cloud
 - b) Hybrid Cloud
 - c) Community Cloud
 - d) Private Cloud
 - **Answer:** c) Community Cloud
3. Which cloud service model provides the consumer with the capability to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider?
 - a) Infrastructure as a Service (IaaS)
 - b) Software as a Service (SaaS)
 - c) Platform as a Service (PaaS)
 - d) Data as a Service (DaaS)
 - **Answer:** c) Platform as a Service (PaaS)
4. Google Workspace and Microsoft 365, where end-users run applications directly via web browsers without managing code or servers, are examples of:
 - a) IaaS

b) PaaS

c) SaaS

d) DBaaS

○ **Answer:** c) SaaS

5. How does Service-Oriented Architecture (SOA) support Cloud Computing?

a) By physically separating multicore CPUs

b) By providing a set of loosely coupled, reusable services that communicate over standard web protocols

c) By eliminating the need for an operating system

d) By focusing purely on client-side Web 1.0 applications

○ **Answer:** b) By providing a set of loosely coupled, reusable services that communicate over standard web protocols

6. Which technological driver allows cloud data center servers to execute multiple processing threads concurrently on a single physical chip, maximizing density?

a) Web 2.0

b) Multicore Technology

c) Pervasive Computing

d) Application Environment

○ **Answer:** b) Multicore Technology

7. Which generation of the Web introduced user-generated content, usability, and interoperability for end-users, serving as a catalyst for early SaaS cloud systems?

a) Web 1.0

b) Web 2.0

c) Web 3.0

d) Semantic Web

○ **Answer:** b) Web 2.0

8. What is a defining characteristic of Web 3.0 in cloud application environments?

a) Static HTML text layouts

b) Centralized database dominance with no user interaction

- c) Decentralization, semantic web features, and machine-to-machine data processing
 - d) Disabling all transport layer access control
 - o **Answer:** c) Decentralization, semantic web features, and machine-to-machine data processing
9. The computing model where information processing is integrated into everyday objects and environments is called:
- a) Centralized Grid Computing
 - b) Pervasive Computing
 - c) Monolithic Architecture
 - d) Isolated Computing
 - o **Answer:** b) Pervasive Computing
10. Why must a cloud-native Operating System differ from a traditional desktop OS?
- a) It must natively support high multi-tenancy, rapid resource isolation, and virtualization extensions
 - b) It cannot interact with network sockets
 - c) It must run exclusively on single-core processors
 - d) It avoids interaction with any application environments
 - o **Answer:** a) It must natively support high multi-tenancy, rapid resource isolation, and virtualization extensions

Fill in the Blanks

1. The four standard cloud _____ are Public, Private, Hybrid, and Community.
 - o **Answer:** Deployment Models
2. When a company uses a combination of on-premise private infrastructure and scalable public cloud servers, it is employing a _____ cloud model.
 - o **Answer:** Hybrid
3. In the _____ cloud service model, the consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications.
 - o **Answer:** Infrastructure as a Service (IaaS)

4. _____ serves as a core architectural driver for the cloud by enabling interoperable applications via standard, reusable service interfaces.
 - **Answer:** Service-Oriented Architecture (or SOA)
5. Physical limits on CPU clock speeds forced data centers to adopt _____ Technology to handle dense parallel virtualization workloads.
 - **Answer:** Multicore
6. Interactive social media platforms, blogs, and wikis that run on the cloud are products of the _____ era.
 - **Answer:** Web 2.0
7. The semantic web and blockchain-based cloud interactions are primary characteristics of _____.
 - **Answer:** Web 3.0
8. _____ Computing describes an environment where ubiquitous, connected smart devices continuously feed data back to centralized cloud nodes.
 - **Answer:** Pervasive
9. In a cloud center, the host _____ must abstract hardware layers to host guest environments safely.
 - **Answer:** Operating System
10. The _____ provides the specific APIs, execution runtimes, and libraries needed for a cloud-allocated application to execute seamlessly across servers.
 - **Answer:** Application Environment