

# **Distributed and Cloud Computing**

## **Tutorial 02**

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1. Write a short note on following roots of cloud computing.

### **1. Internet Technologies:**

Cloud computing relies heavily on the internet for delivering services, applications, and storage over a network. Advances in high-speed internet, web protocols (like HTTP/HTTPS), and web services (SOAP, REST) have made it possible to access computing resources anytime and anywhere, forming the backbone of cloud services.

### **2. Hardware:**

The development of powerful, cost-effective, and scalable hardware such as servers, storage devices, and networking equipment enables cloud providers to host large-scale infrastructure. Virtualization technologies allow multiple virtual machines to run on a single physical server, optimizing hardware usage.

### **3. Distributed Computing:**

Cloud computing evolved from distributed computing, where multiple computers work together to solve tasks. Distributed systems allow data and applications to be processed simultaneously across different locations, providing scalability, fault tolerance, and load balancing in cloud environments.

### **4. System Management:**

Efficient system management, including automation, monitoring, and orchestration tools, is critical for maintaining cloud infrastructure. Techniques such as resource provisioning, workload scheduling, and performance monitoring ensure reliability, availability, and efficient use of cloud resources.