



**BIT 461**

## **CLOUD COMPUTING**

### **UNIT-I**

**The Evolution of Cloud Computing:** Hardware Evolution. Internet Software Evolution. Establishing a Common Protocol for the Internet. Evolution of Ipv6 . Finding a Common Method to Communicate Using the Internet Protocol. Building a Common Interface to the Internet .

**Cloud Formations:** From One Computer to a Grid of Many. Server Virtualization .Parallel Processing. Vector Processing. Symmetric Multiprocessing Systems. Massively Parallel Processing Systems

### **UNIT-II**

**Web Services and the Cloud:** Communication-as-a-Service (CaaS). Infrastructure-as-a-Service (IaaS) . Monitoring-as-a-Service (MaaS) . Platform-as-a-Service (PaaS) . Software-as-a-Service (SaaS)

**Building Cloud Networks:** The Evolution from the MSP Model to Cloud. Computing and Software-as-a-Service . The Cloud Data Center .Collaboration i . Service-Oriented Architectures as a Step Toward Cloud Computing. Basic Approach to a Data Center-Based SOA

The Role of Open Source Software in Data Centers. Where Open Source Software Is Used

**Case studies:** Amazon web services. Google App Engine.

### **UNIT-III**

**Virtualization:** Introduction. Types and Technologies. Accomplishing virtualization. importance of virtualization in Cloud computing.

**Case studies:** Xen Virtual machine monitors- Xen API. VMware - VMware products - VMware Features. Microsoft Virtual Server - Features of Microsoft Virtual Server

### **UNIT-IV**

Federation in the Cloud, Presence in the Cloud I Privacy and Its Relation to Cloud-Based Information System.

Cloud Security Challenges I Software-as-a-Service Security I Security-as-a-Service - the New MSSP.

## **UNIT-V**

**Common Standards in Cloud Computing:** The Open Cloud Consortium, The Distributed Management Task Force, Standards for Application Developers I Standards for Messaging .Internet Messaging Access Protocol (IMAP) I Standards for Security . Examples of End-User Access to Cloud Computing

**Mobile Internet Devices and the Cloud:** Mobile Operating Systems for Smart phones Mobile Platform Virtualization I Collaboration Applications for Mobile Platforms

### **Suggested Reading:**

- 1) John W. Rittinghouse, "Cloud Computing: Implementation, Management, and Security ",. James F. Ransome, CRC Press 2009.
- 2) Virtualization Specialist level complete certification kit - Study guide from [www. theartof service.org](http://www.theartofservice.org)
- 3) William von Hagen, "Professional Xen Virtualization", Wrox Publications, January, 2008.:
- 4) Chris Wolf, Erick M. Halter, "virtualization: From the Desktop to the Enterprise", APress 2005.
- 5) David Marshall, Wade A. Reynolds, "Advanced Server Virtualization: VMware and Microsoft Platform in the Virtual Data Center", Auerbach Publications, 2006.