

# Unit-5

## PART-1

### Common Standards in Cloud Computing

- 1 Chapter Overview
- 2 The Open Cloud Consortium
- 3 The Distributed Management Task Force
  - 3.1 Open Virtualization Format
- 4 Standards for Application Developers
  - 4.1 Browsers (Ajax)
  - 4.2 Data (XML, JSON)
  - 4.3 Solution Stacks (LAMP and LAPP)
- 5 Standards for Messaging
  - 5.1 Simple Message Transfer Protocol (SMTP)
  - 5.2 Post Office Protocol (POP)
  - 5.3 Internet Messaging Access Protocol (IMAP)
  - 5.4 Syndication (Atom, Atom Publishing Protocol, and RSS)
  - 5.5 Communications (HTTP, SIMPLE, and XMPP)
- 6 Standards for Security
  - 6.1 Security (SAML OAuth, OpenID, SSL/TLS)

### 1 Chapter Overview

The Open Cloud Consortium (OCC) and the Distributed Management Task Force (DMTF) as examples of cloud-related working groups. Discuss the most common standards currently used in cloud environments.

### 2 The Open Cloud Consortium

- purpose of the Open Cloud Consortium is to support the development of standards for cloud computing and to develop a framework for interoperability among various clouds.
- different working groups
  - Working Group on Standards and Interoperability for Clouds focuses on developing standards for interoperating clouds
  - Working Group on Wide Area Clouds and the Impact of Network Protocols on Clouds
  - Working Group on Information Sharing, Security, and Clouds has a primary focus on standards and standards-based architectures for sharing information between clouds
  - Open Cloud Test-bed Working Group that manages and operates the Open Cloud Test-bed

### 3 The Distributed Management Task Force

- Enables more effective management of millions of IT systems worldwide by bringing the IT industry together to collaborate on the development, validation and promotion of systems management standards.
- 160 member companies and organizations, and more than 4,000 active participants crossing 43 countries. The DMTF board of directors is led by 16 innovative, industry-leading technology companies.
- The DMTF started the Virtualization Management Initiative (VMAN), enabling IT managers to deploy preinstalled, preconfigured solutions across heterogeneous computing networks and to manage those applications through their entire life cycle.

## Unit-5

### VMAN

- With the technologies available to IT managers through the VMAN Initiative, companies now have a standardized approach to
  1. Deploy virtual computer systems
  2. Discover and take inventory of virtual computer systems
  3. Manage the life cycle of virtual computer systems
  4. Add/change/delete virtual resources
  5. Monitor virtual systems for health and performance

### 3.1 Open Virtualization Format

A fairly new standard that has emerged within the VMAN Initiative which

- simplifies interoperability, security, and virtual machine life-cycle management by describing an open, secure, portable, efficient, and extensible format for the packaging and distribution of one or more virtual appliances.

### 4 Standards for Application Developers

- Purpose of application development standards is to ensure uniform, consistent, high-quality software solutions.
- discuss application standards that are commonly used across the Internet in browsers, for transferring data, sending messages, and securing data.

### 4.1 Browsers (Ajax)

- Ajax, or its predecessor AJAX (Asynchronous JavaScript and XML), is a group of interrelated web development techniques used to create interactive web applications or rich Internet applications. Using Ajax, web applications can retrieve data from the server asynchronously, without interfering with the display and behavior of the browser page currently being displayed to the user.

### ICEfaces: Ajax Application Framework

- ICEfaces is an integrated Ajax application framework that enables Java EE application developers to easily create and deploy thin-client rich Internet applications in pure Java.
- To run ICEfaces applications, users need to download and install the following products:

Java 2 Platform, Standard Edition	Ant	Tomcat
ICEfaces	Web browser (if you don't already have one installed).	

### 4.2 Data (XML, JSON)

- Various XML-based protocols exist to represent data structures for data interchange purposes. JSON which represents data structures in simple text formatted specifically for data interchange in an uncompressed form. Both XML and JSON lack mechanisms for representing large binary data types such as images.
- JavaScript Object Notation (JSON): Its main application is in Ajax web application programming, where it serves as an alternative to the XML format.

## Unit-5

### 4.3 Solution Stacks (LAMP and LAPP)

- LAMP is a popular open source solution commonly used to run dynamic web sites and servers. The acronym derives from the fact that it includes Linux, Apache, MySQL, and PHP (or Perl or Python) and is considered by many to be the platform of choice for development and deployment of high performance web applications which require a solid and reliable foundation. the LAMP combination has become popular because of its open source nature, low cost, and the wide distribution of its components
- Linux, Apache, PostgreSQL, and PHP (or Perl or Python)

### 5 Standards for Messaging

#### 5.1 Simple Message Transfer Protocol (SMTP)

Usually used for either sending a message from a workstation to a mail server or for communications between mail servers. It needs clients to have a constant connection to the host to receive SMTP messages.

#### 5.2 Post Office Protocol (POP)

– POP is a lightweight protocol whose single purpose is to download messages from a server. This allows a server to store messages until a client connects and requests them. Once the client connects, POP servers begin to download the messages and subsequently delete them from the server

#### 5.3 Internet Messaging Access Protocol (IMAP)

– It allows messages to be kept on the server but viewed and manipulated (usually via a browser) as though they were stored locally.

#### 5.4 Syndication (Atom, Atom Publishing Protocol, and RSS)

– Content syndication provides citizens convenient access to new content and headlines from government via RSS (Really Simple Syndication) and other online syndication standards.

- RSS
- Atom and Atom Publishing Protocol (APP)
- Web Services (REST)
- SOAP

#### 5.5 Communications (HTTP, SIMPLE, and XMPP)

- HTTP is a request/response communications standard based on a client/ server model.
- SIMPLE, the Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions, is an instant messaging (IM) and presence protocol suite based on Session Initiation Protocol
- Extensible Messaging and Presence Protocol (XMPP) is also an open, XML-based protocol originally aimed at near-real-time, extensible instant messaging and presence information

### 6 Standards for Security

- 7.6.1 Security (SAML OAuth, OpenID, SSL/TLS)
  - Security Assertion Markup Language (SAML)
  - Open Authentication (OAuth)
  - OpenID
  - SSL/TLS

## Unit-5

### PART-2

#### Chapter 9 Mobile Internet Devices and the Cloud

1. Chapter Overview
2. What Is a Smartphone?
3. Mobile Operating Systems for Smartphone

a. iPhone.	b. Google (Android).	c. Blackberry.
d. Windows Mobile.	e. Ubuntu Mobile Internet Device (MID).	

4. Mobile Platform Virtualization.
  - a. KVM.
  - b. VMware.
5. Collaboration Applications for Mobile Platforms
6. Future Trends

#### What Is a Smartphone?

It is a mobile device that offers advanced capabilities beyond those offered by a typical mobile phone. Modern versions come with PC-like functionality.

#### Mobile Operating Systems for Smartphones

Write about the unique features each of these with respect to their Hardware and software architecture and end user capabilities.

1. iPhone.	2. Google (Android).	3. Blackberry.
4. Windows Mobile.	5. Ubuntu Mobile Internet Device (MID).	

#### Mobile Platform Virtualization

Two examples of virtualization software being used on smart phones are

- **KVM**

- Kernel-based Virtual Machine (KVM) is open source software that is a full virtualization solution for Linux on x86 hardware containing virtualization extensions (Intel VT or AMD-V)
- KVM performance can offer near-native speed

- **VMware**

- VMware Mobile Virtualization Platform (MVP) is a thin layer of software that is embedded on a mobile phone to separate the applications and data from the underlying hardware.
- It is optimized to run efficiently on low-power, low-memory mobile phones.
- MVP is planned to enable handset vendors to bring phones to market faster and make them easier to manage

#### Collaboration Applications for Mobile Platforms

- Collaboration technologies based on mobile phones have unique advantages over laptops and desktop systems because they are lightweight and can fit into pockets or purses.
- They are truly mobile and can be connected all the time, which means you can take your desktop with you: Collaboration software on mobile hand-held devices provides the ability to be productive wherever you are.
- In this new era of mobile computing, the next generation of collaboration technologies on mobile phones is being developed to enable consumers to collaborate anytime, anywhere, using just their mobile phones.

- **Recent developments include, such as**

## **Unit-5**

- Cisco WebEx collaboration software, which currently has over 60% of the web collaboration conferencing software market, being ported over to the phone ;
- IBM Lotus Notes Traveler being extended to support a range of S60-based Nokia mobile phones built on the S60 third edition of the Symbian operating system and providing a major alternative to Windows Mobile device support;
- Unison Technologies recently announcing its free unified communications software offering in a direct challenge to industry giants Microsoft and Google.