

# Cloud Based Instant File Sharing System in Wireless College Campus Environment

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## Abstract

Clouds are high configured infrastructure delivering platform, software as service, helping customers to make subscription for their requirements under "pay as per you need" scheme. Due to its easy and simple service model, cloud computing is spreading globally. This system is based on the concept of web services which is implemented as an android mobile application that communicates with android and java client. A cost effective application is provided to the users in their daily life, with the proposed system. A better alternative is offered by the proposed system comparing to the existing methodologies in academic environment.

**Keywords—Cloud Computing, Web Services.**

## 1. Introduction

Cloud computing moves the processing efforts from the local devices to data centric facilities enabling the users to create and edit files online. The numbers of users accessing the cloud are rising day by day. Cloud Computing differs from the classic client-server model as it provides application that clients can execute and manage through their web browser.

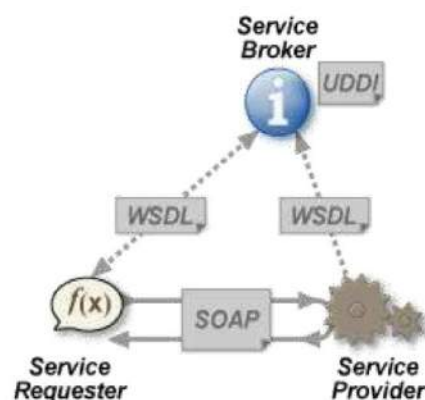


**Fig. 1: Representation of Cloud Computing**

Generally cloud is based on data centre's which are powerful

to handle large number of users. The phrase "software as a service" (SAAS) is sometimes used to describe application programs offered through cloud computing. Cloud can be used as a service for deploying Resource sharing in a network.

Web service is a software system that supports interoperable machine-to-machine interaction over a network. It is a software function provided at a network address over the web with the service always on. A Web service has an interface described in machine-processable format. Other systems interact with Web service in a manner prescribed by its description using SOAP(Simple Object Access Protocol) messages.. One of the most interesting features of a web service is that they are self describing. This means that once a web service is located we can ask it to describe itself and tell what operations it supports and how to invoke it, which is handled by the Web Service Description Language (WSDL). SOAP (Simple Object Access Protocol) specifies the format in which the requests are sent to the server and how the server should format the responses. There are two major classes in Web Services viz. REST-compliant Web services and Arbitrary Web Services.



**Fig 2: Web Service Architecture**

## 2. Literature Survey:

### 2.1. File Transfer Protocol (FTP):

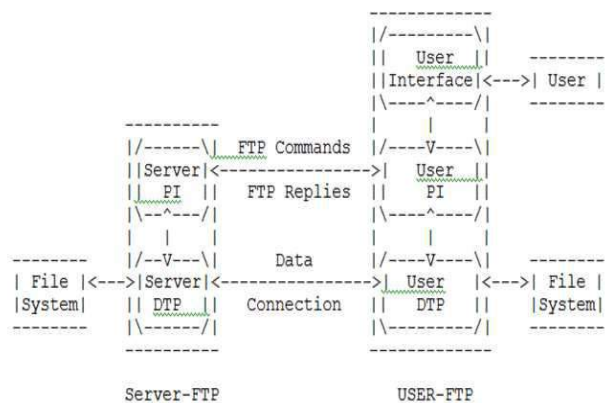


Fig 3: FTP Model

File Transfer Protocol (FTP) is a standard network protocol used for exchanging files over the Internet from one host to another. On a TCP-based network, such as the Internet, FTP can be used to transfer content from Server to user's browser and vice versa. FTP establishes two connections between the client and the server. One is the Data connection and the another one is Control connection. The users of FTP can authenticate themselves by using a clear-text sign-in protocol in which they are being provided with a username and password. The users can also log in anonymously, if the server is configured to allow it. FTP is secured very often with SSL/TLS ("FTPS") for hiding (encrypting) the username and password also for encrypting the content.

In Fig 3, the control connection is initiated by the user protocol interpreter. The control connection then follows the TELNET protocol. The standard FTP commands are generated by the user-PI and transmitted to the server process via the control connection at the initiation of the user. FTP uses two different ports for its operation, it uses port 21 for the control connection and port 20 for the data connection. Several FTP commands are used for copying files using FTP viz. Open, User, Pass, Get, Put etc.

### 2.2 Location awareness:

This delivers information about the devices' physical location to another user or application. The term 'Location Awareness' is frequently used in reference to mobile devices and cameras. Also location awareness can be referred to websites that requests a users zip code to deliver targeted information. The term can also be applied in navigation, getting the real time location and positioning support with global, local or regional scope. Many times the term is applied to traffic, logistics, leisure and business applications. Location

awareness is a growing trend in hardware and software. A device's location is usually determined by one of the three methods : by GPS satellites, by device's media access control(MAC) or by cellular tower triangulation. Being a growing trend in hardware and software, it involves few of the

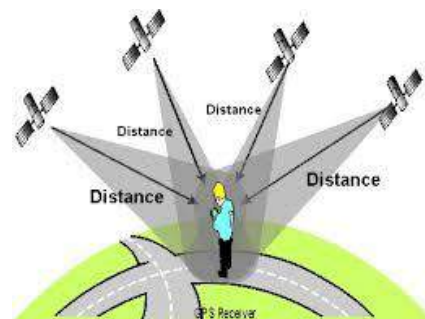


Fig 4: GPS scenario

current applications:

1. Camera memory cards that automatically tag the location of the picture.
2. GPS systems in vehicles.
3. Healthcare device management.
4. Application programs (apps) in smartphones.

In these days the social networking is very important for the people, friends and family that communicates with each other and want to know about each other like sharing photos, locations etc. devices like GPS is needed as it is a mobile device that can be carried easily and can be used to determine a person's current location (See Fig 4).

## 3. Proposed System:

This is a system aiming to enable college member with mobile phone to share files with other members with an Android Phone. We design the protocol for the members to use Wi-Fi and FTP protocol to share files when the mobile phone user and the PC user are both inside the home environment. Here the home environment is used to illustrate College Campus. In this we can also do simulative performance evaluation of a mobile peer-to-peer file-sharing system, instant messaging, and notifications in wireless multi-homed network systems. The availability of unlicensed spectrum coupled with the increasing popularity of wireless communication has given rise to a diverse range of wireless technologies that compete for spectrum. The user of the system can be a Principal, HOD, Staff and students who can share documents and files on the basis of peer to peer communication or one-to-many communication

The system defines a way of sharing files and messages in both indoor and outdoor environment. As a illustration let say that the staff wants to share a assignment sheet to the students. The staff simply needs to login to the system browse the file to share and select the group category and share. The assignments gets dropped in to the students account and the students immediately receives an alert that staff has shared assignment. The student then logs in and can view the

assignment. No need to print the physical copy and share it to the students in hand.

### 3.1 System Architecture:

The architecture consists of a college information communication cloud which is the core part of the system. All the user information such as usernames, passwords, shared files, messages etc. are stored on the cloud and are accessible to users whenever needed.

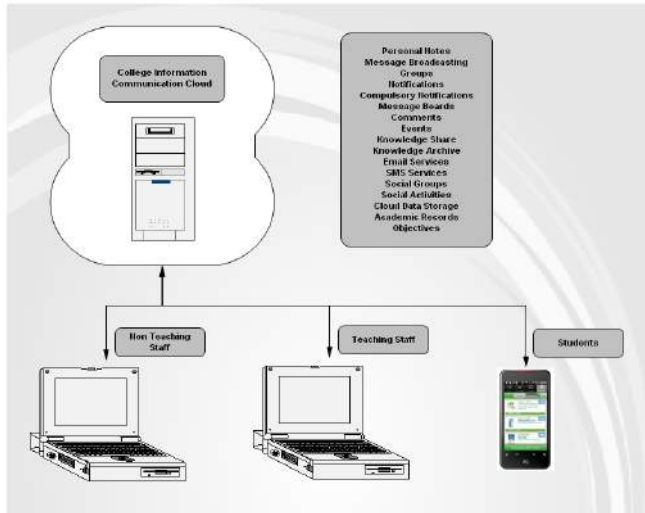


Fig 5: System Architecture

The system is consisting of following key components:

#### 3.1.1 Storage Server:

Storage Server is another essential part of the designed system. When the PC inside home environment is offline, the Storage Server will receive the sharing files on the behalf of the PC and store them temporarily until it pushes the sharing files to the PC when the PC comes online. After it forwards the sharing files to the PC, the Storage Server will delete the files for other sessions.

#### 3.1.2 Software:

The client software for mobile phone and the client software for PC should have the same functions. Both of them should act as SIP clients. Users use them to complete the registration at first time accessing to the system and after that users use them to log in/out the system. Users should use the client software to fill in necessary information, such as account name, password, and then the client software initiates registration and coordinates with Sharing Server to accomplish the registration.

#### 3.1.3 Features:

The proposed system provides various features including :

- Manage notes
- Messaging
- Groups
- Message Broadcasting
- General Notifications
- Message Boards
- Event Management
- Knowledge Share
- Email Services
- SMS Services
- Cloud Data Storage
- Academic Records & Information
- Chat Services

and many more...

#### 3.1.4 Implementation Details:

##### 3.1.4.1 Modules:

SMS:

- The system provides a feature of intra messaging, where a member can send message to a particular group from a particular department or a class.
- Students can also send messages to other students.

Create groups:

- Numerous groups can be created by the staff on the basis of department, branch, class etc.
- Every new user added can be assigned to some group.

Assign Tasks:

- Tasks can be assigned to the staffs and can be managed by the HOD.
- Various tasks can be assigned by teachers to students related to their projects and assignments.

Manage notifications:

- Important notices or circulars can be sent to students via the notification feature.

Email:

- Information can be transferred to students and staffs by using the email system .
- The service is used free of cost.

Staff-student communication:

- The staff-student bond can be improved by sharing information by both the users with the help of Staff-student communication feature.
- This feature has maximum priority as communication is the base service of this system.

Monitor student group:

- Progress of the respective class or group can be monitored by the staff.
- This will help them to schedule their work and assign tasks.

Event creation:

- Information regarding tech-fest in college or other cultural events can be circulated among the students.

Group wise broadcasting:

- Notes and notifications can be broadcasted only to particular group.
- For example: class teacher can send a notice only to its class students

Request for Join/Leave:

- Any student or staff can join a particular group.
- Staffs and students can even leave a particular group.

#### 4. Conclusion & Future Scope:

Many facilities like SMS, Notifications, Email, to-do lists etc. are provided by this system which has a very friendly interactive communication. Compared with the existing works, the system takes full advantage of the ubiquitous WLAN infrastructure to achieve better accuracy in indoor locationing. High security, data storage and authentication is provided by the system very efficiently. Furthermore, the system gives users a unified user experience because all the established personal-meaningful locations can be displayed on the Google Maps UI, regardless of the location types. Cloud based communication system can be implemented in various departments such as healthcare, corporate world, political and social world. Currently, we are developing a new software version by incorporating the social-assisted operating model to boost the usability of our reminder application. At the same time, we will try to lower the power consumption of executing the reminder application. As described it is a viable solution to use the built-in accelerometer of the mobile device to detect the movement of users, so the application will do location sensing only when the user is moving.

Finally, after the new version is completed, we will evaluate the usability of our system through the questionnaire on the users. It plays an important role in educational institutions by providing a platform for the students and staff for efficient and effective interaction it is cost effective as communication is done using WIFI technology.

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