

Mobile Application Runner For Cloud And Home Automation

Bharadwaj Turlapati

Abstract: The term Cloud has been established quite well in the industry, People are now leveraging the uses of cloud infrastructure and are quite satisfied with the uses of cloud. On the other hand mobile technology and mobile applications have taken by storm in the recent world. This paper discusses various uses of the dimensionality of the cloud and integrating into mobile. Mobile – full cloud stack sync is the next big thing in the industry.

Index Terms: Cloud, CSRF, Home Automation, Remote cloud service, Eavesdropping, masquerading, Internet of things application store.

1 INTRODUCTION

THIS paper discusses about creating a full scale hostile environment and use the full services of cloud onto mobile. According to survey done by qtz.com about 98% of people are using mobiles and out of them 49% are using smart phones and this rate is increasing steadily. Till now cloud services are only used by Pcs .Mobiles also used Cloud only for backing up data such as images and Files. The use of cloud is to provide computing as a service and clearly backing up data is not the only thing that is computing there are many dimensions to what computing is, Computing provided by cloud to mobile intern has many dimensions. This paper discusses about few such dimensions and implementation procedures of these dimensions on to mobiles. Making them Mobile Cloud/s. Mobile Cloud for Home automation, Cloud AppStore/(Application Store) as a virtual App Runner are two which is discussed in this paper on a broader scale, there are many more computing forms cloud can provide.

2 CLOUD APPLICATION STORE

2.1 Survey

Mobiles in this age are not just a tool of communication, they have become centers of moving data with enhanced communication media. According to mashable.com, a general smart phone has 25 applications installed in them, with many of the devices removing their SD card support from mobile phones, it is difficult to manage the storage of huge number of photos and Applications at the same time

2.2 Proposed Solution

The problem space is now a conflict of storage between the application storage and the data storage in a mobile phone .Instead of moving the data such as pictures, music files, and other documents back and forth from the mobile to a personal computer the applications which are running on the device are moved to cloud.

2.3 Accessing the Applications Remotely

The concept of the Remote desktop service is now enabled on the mobile to access a remote desktop connection on the app cloud. App cloud runs the applications onto the cloud. This is reflected back on the mobile using terminal services.

2.4 Implementation of Remote Cloud Service (RCS)

A client side terminal service is installed onto the mobile device which is an application, this application acts as a Remote Mobile Portal (RMP) which connects to the server listening at a certain TCP Port. The server is capable to execute only mobile applications. The client is tagged with a unique session ID which is given on the fly by a Session manager on the session. Once login in to the server, Mobile user can run any application he wants remotely from his Mobile phone.

2.5 ADVANTAGES

This kind of mobile-cloud application architecture has the following uses

1. This decreases the application space on the end user.
2. No Need for backup from mobile.

2.6 CHALLENGES

The challenges faced by this kind of system are

1. Delay in the response time of the image while viewing the screen.
2. Security related issues with cloud infrastructure.
3. Session Management

2.6.1 DELAY IN THE RESPONSE TIME OF THE IMAGE.

This is solved in two ways.

1. At higher internet speed this is a normal behavior and that concerned.
2. At lower internet speeds this is a concern, the solutions for the lower internet speeds are:
 - 2.1 Using a CDN which resides closed to the network.
 - 2.2 Reducing the quality of the image rendered.

2.6.2 SECURITY RELATED ISSUES

1. All the cloud security controls are applied in order to maintain reliability in the transition.
2. Masquerading is prevented by CSRF (Cross site request forgery) protection.
3. Eavesdropping is prevented by encrypted channel based communication.

3 MOBILE CLOUD FOR HOME AUTOMATION

The second dimensionality in leveraging the uses of cloud on the mobile, is by home automation application. Home Automation is a process of automation appliance at home via a device which is not connected /coupled with the appliance. Home automation is a part of a buzz word in the Industry Internet Of things (IOT). Internet of things as referred in Wikipedia: "The interconnection of uniquely identifiable

- *Bharadwaj Turlapati is currently pursuing bachelor's degree in computer science and engineering in GITAM School of Technology, Hyderabad, PH--+918374431011,E-mail: tbj.name@gmail.com*

embedded computing devices within existing internet infrastructure. “

3.1 IMPLEMENTATION

The cloud application store is an application runner in the cloud and is used to run applications from a device. This device is called as the root node for Home automation. Once the application is launched it is internally connected to the mongo back end service provided by any MBASS (Mobile Backend as service). Mongo DB is a JSON like object which stores keys and value pairs. This internally then has key and value pairs which is then implemented as an electrical equipment and the status of the system.

3.2 EXAMPLE

```
{
  {"Light": "TRUE"},
  {"Solar Heater": "TRUE"},
  {"Alarm": "FALSE"}
}
```

3.3 WORKING

At the first instance the application reads the mongo db stored in the cloud and get the settings of the home. Then the user is allowed to edit the setting using a form And set the status of devices at his/her home. Once the settings are set the changes are made in the DB. Once the changes are made. The router has a default configuration of that database and is given only read permissions, so as to avoid potential hacking. The router reads the configuration and then sets the status of the home thus achieving home automation.

4 SURVEY

4.1 Cloud in general

According to a survey one in three internet users in the present day who are under the age limit of 12 and people who are older engaged in cloud computing in 2014. Internet users especially below 25 embrace this internet facility, which allows data storage and retrieval services from cloud. 35 percent of internet users are already embracing the facility of cloud computing in pcs. Internet users under the age of 45 more often use the cloud services than any other age group 38% men and 32% women use cloud services.

4.2 Cloud for Data Storage

About 90% of the internet users are leveraging the cloud for photo storage. The cloud is also frequently used to upload and download text files, spread sheets and presentations. 64% percent of the internet users use cloud for purposes like Music, videos or e-books and uploaded and the usage is less compared to others.

4.3 Cloud for Application storage

Application storage is a name that is given to B-C apps. Examples of this are google play store and apple app store

4.3.1 Statistics of google play store

The total number of applications in google play store are: 1,300,000

4.3.2 Statistics of Apple app store

The total number of applications in Apple app store are: 1,200,000

4.3.3 Statistics of Windows Phone store

The total number of applications in Windows Phone store are: 300,000

4.3.4 Statistics of Amazon App store

The total number of applications in Amazon App store are: 240,000

4.3.5 Statistics of BlackBerry World

The total number of applications in BlackBerry World are: 130,000

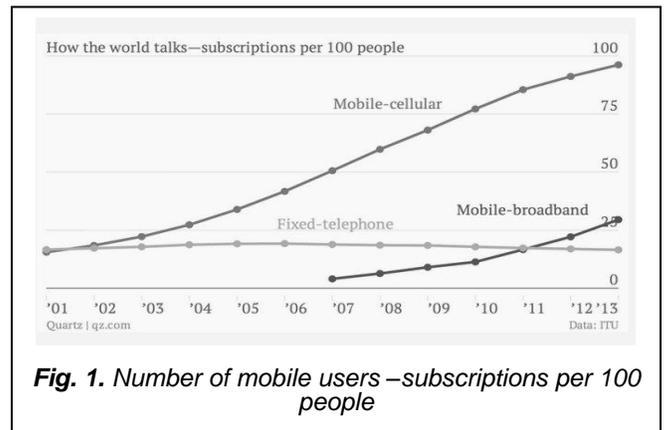


Fig. 1. Number of mobile users –subscriptions per 100 people

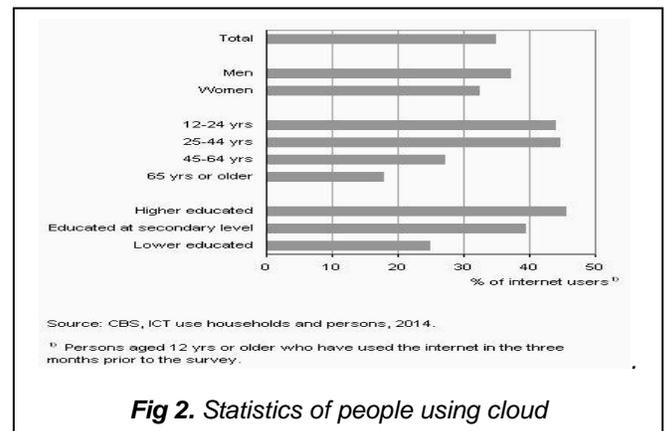


Fig 2. Statistics of people using cloud

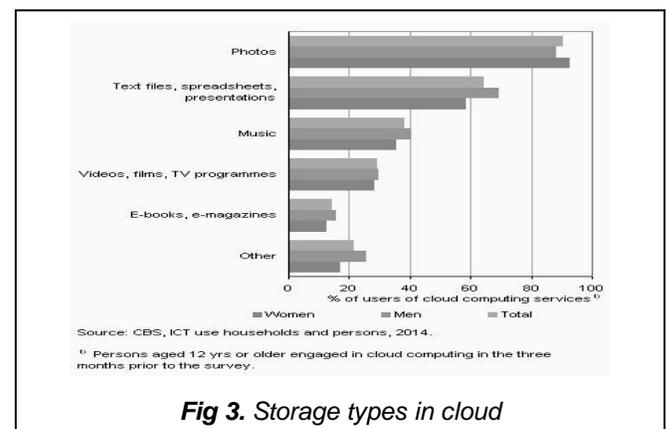


Fig 3. Storage types in cloud

5 CONCLUSION

I hereby conclude that leveraging the full capabilities of the cloud onto Mobiles can make significant changes in the use of technology as some of the above cited example applications of Home automation and Mobile Cloud application store.

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