

# Enterprise-Contact-SYNC

## Contact sync application for Enterprise

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**Abstract** — This paper aims to upgrade the original manual contact storage system with a new application (contact-sync) which assures integrity, confidentiality and security of data. This will ensure easy accessibility and retrieval of the contacts as will take care of the redundancy and duplication of the contacts. This is reduce the job of the employees to forward the numbers and other contact details of the customers as now everyone needed will have a direct access to the entire database thus reducing the in between links involved and ensuring a smooth and hurdle free work environment. ContactSync is an enterprise level application where a company need not hand over contact card to every employee. Contact of the company will be maintained by Contact-sync application. Access control mechanism is handled by admin assigned by company. Contact-sync will solve the problem of maintaining paper contact cards and exchanging them among employees of the company. Also changes in any contact details if notified by any authorised employee will be synchronised to all employees having access to the same.

**Index Terms:** Contact sync, carddav protocol, Imap protocol, Smtip

### I. INTRODUCTION

"Contact-Sync" allows you to quickly and easily sync or move contacts between any pair of devices or contact accounts. This application can be used in a number of creative ways. For instance, you can merge your corporate Exchange contacts into your personal local address book or vice versa. Or perhaps you want to sync your Yahoo CardDAV contacts with iCloud. Or perhaps you want to see your Facebook photos in your iCloud contacts on the web. As long as you already have a pair of contact accounts setup on your device, it doesn't matter if it's an Exchange, iCloud, CardDAV, Local, Facebook, Google, Yahoo, AOL, or Hotmail account, "Contact-Sync" can sync it. Sync or move any pair of iPhone/Android contact accounts including Exchange, iCloud, CardDAV, Local, Facebook, Google, Yahoo, AOL, & Hotmail.

Accessibility:  
Contact card may contain various details like name, address, phone number etc. It will stored in a centralised location on ContactSync server. Any authorised person having access to particular contact will be able to view contact details of that contact on his/her mobile, gmail etc .

Also if administrator revokes permission of particular person to view or access contact of particular contact that person may no longer view the contact details of revoked person .

One can select only the required fields of a contact need not completely select all the fields to sync simply by selective apply sync in the setting option or move to a group of contacts only using the "filter by group" setting . "Contact-Sync" automatically syncs/moves contacts in the background 24/7.

ContactSync is an "enterprise level" application where a company need not give contact card to every employee. Contact of the company will be maintained by Contact-sync application. Access control mechanism is handled by admin assigned by company . Contact-sync will solve the problem of maintaining paper contact cards and exchanging them among employees of the company. Also changes in any contact details if notified by any authorised employee will be synchronised to all employees having access to the same.

Contact card may contain various details like name, address, phone number etc. It will stored in a centralised location on ContactSync server. Any authorised person having access to particular contact will be able to view contact details of that contact on his/her mobile, gmail etc.

Also if administrator revokes permission of particular person to view or access contact of particular contact that person may no longer view the contact details of revoked person.

### II. LITERATURE SURVEY

Mobile phones which use Android or any other related operating systems, equipped with richer applications than traditional ones, enable users to focus and use more things on phones . As a result, personal information stored on mobile phones becomes more and more. To keep information safe backup is the means which is well recognized. However, users could move their contacts to the system and easily show these information if necessary. Activations, game scores and so on help the users in the terms of application settings. More often in recent days, the desired information is lost due to updates done to the mobile phones. For synchronisation , ASIM is scheme to enhance the security of personal information on Android. Android operating system consists of several layers: the Linux

kernel, the Android runtime, the C/C++ libraries, the applications and its framework.

Concrete realization method of ASIMS is as follows:

1) Defining column names for the SQLite database  
SQLite developed by Dr. Richard Hipp in 2000 is a database engine. In the world, it is the most widely identified SQL database engine. Other than Android, SQLite can be used in the Apple iPhone, Symbian phones, Mozilla Firefox, Skype, PHP, MacOS X, Solaris, other places.

The column names are defined as blow:

APPLICATION\_ID This column allows the application to distinguish different applications settings and enable the application to prevent malwares from modifying, or deleting other applications' settings. APPLICATION\_NAME This column will be displayed in the user interface to offer users convenience to recognize each application.

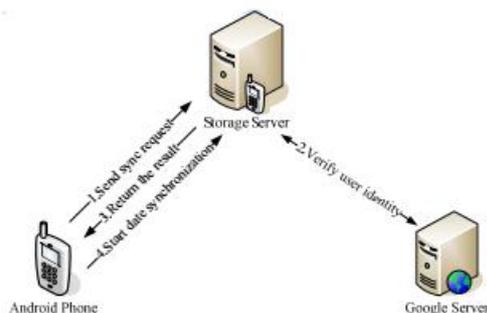
CREATED\_DATE This column records the first time an application's setting being stored in the database.

MODIFIED\_DATE This column stores the last time this record being modified.

SETTINGS This column stores the settings of an application. It must be limited to a proper size to prevent some applications storing too large data into the database, which would slow down the whole application.

## 2) Implementing the Content Provider

Implementing the application involves extending the ContentProvider class and the database is created by overriding onCreate() and then the query, insert, update, delete, and getType methods are used. A query method requires the set of columns it needs to return. The record is inserted into the database using the insert method in a content provider and



Fig(1)The synchronization operation

Source:[1]

the newly created record is pointed by the URI which is then returned. The update method is responsible for updating a record and then returns the number of rows updated in the process. The delete method is responsible for deleting a record and then returns the number of rows deleted in the process.

We must check the application id in the query, insert, update and delete method to prevent malware destroying the database. Last but not least, register

the content provider in the AndroidManifest.xml file and define this ContentProvider in the android.provider package.

## 3) Enhancing the uninstallation system

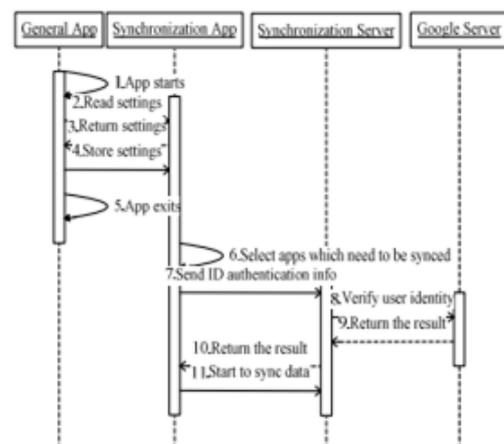
When a user delete an application, the settings of this application will remain in the database. As a result, the database would become bigger and bigger, slower and slower. To avoid this, we can adding a new feature which will prompt users to delete the record associated with the application which is being uninstalled to the uninstallation system.

## 4) Adding the synchronization feature

We can use Google account to authenticate users. When the application is synchronizing the data to the Internet, the application sends a synchronization request to the storage server first. Then the storage server transfers the user's identification to Google server to verify whether the user is legitimate. After this, the storage server return the verification result to the application. According to the result, the application choose whether or not to synchronize. Figure1 shows how this works.

## 5) Developing the UI (user interface)

Users could select which application to sync. The Sequence Diagram is as below (Figure 2):



Fig(2).The Sequence diagram of ASIMS.

Source:[1]

## III. LITERATURE SURVEY

In this era of internet, network environment is becoming more and more complex. The mobile environment cannot maintain and establish successful outcomes with real-time networking, and it cannot transfer huge files. To control the traffic created by these problems, a new synchronization of data helps to organize and deal with the system. It makes synchronization effective and communication easier and also maintaining data across multiple terminals. The mobile application of "address synchronization Assistant" is recommended by this

method, and makes synchronization simple. Mobile phones which use Android or any other related operating systems, equipped with applications which are not the traditional ones, enable users to focus and use more things on phones. Finally, there is an increase in the personal information stored. For keeping the information safe the backup is the means which is well recognized. However, users could move their contacts to the system and easily show these information if necessary. Application settings such as activations, game scores and so on are also important to users. More often in recent days, the desired information is lost due to updates done to the mobile phones. It is urgent to propose a better application settings integration and management scheme. As every other currently existing operating system, Android offers several security mechanisms to render it a fairly secure system. user ids, file access, permissions. These are basically three mechanisms which provide security in android phones.

Card Dav one of protocol for contact sync. vCard Extensions to WebDAV (CardDAV) is an address book client/server protocol is developed such that users can access and share contact data on a server. The CardDAV protocol has been standardized by the IETF and published as RFC 6352. The new version of vCard (vCard 4) has been published by the IETF as RFC 6350, and the XML Representation of vCard (xCard) as RFC 6351. CardDAV-Sync is a CardDAV client for Android to synchronize contacts. Generation of sync adapter it creates seamlessly with the default contacts app. To sync your Google contacts using devices like iPhone, iPad, iPod touch, Mac, etc, we recommend using CardDAV, which is an Internet open standard. When you use Google contacts using CardDAV, you'll be able to edit, add, and remove contacts from your device and keep them in sync everywhere you use them.

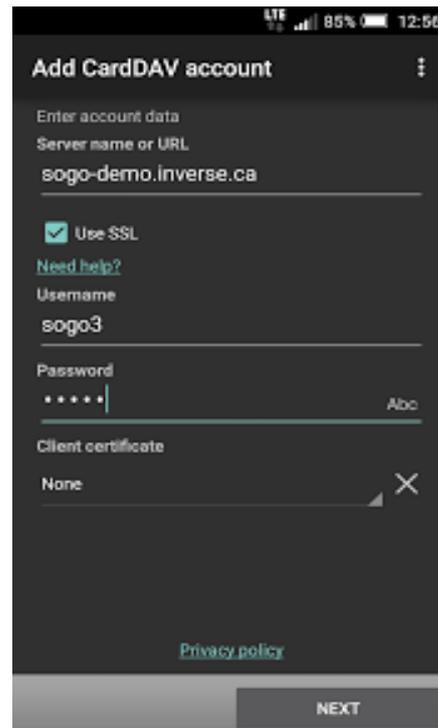


Fig (3) Card dav for android client  
Source:Google

IMAP Protocol- another protocol for contact sync.  
Working of IMAP for contact sync

1. Sign into and open your online email server which uses IMAP to connect to email client.
2. By navigating through the list of contacts, the email client receives the addresses.
3. Select "Export" and choose a file type for saving the contact list. If you use Outlook, place .csv as the file name. In Mac computer email client, it is stored as vcard.
4. Download and put the file to a desired location.
5. Open your email client and find the command called "Import Contacts." The exact verbiage varies can vary.
6. Choose the file you saved in Step 4 to import to the program.

#### CARDDAV PROTOCOL FEATURES :

- Communications and Collaboration.
- Enterprise Applications
- Backup, Sync, and Restore of Contacts.
- Social Address Book.
- Social Engagement Around Television.

Capabilities and Functionality

Carddav Contacts Server delivers the following capabilities:

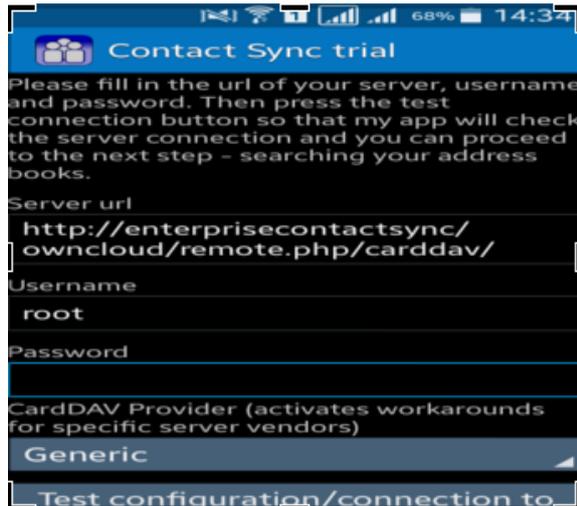
- Easy to use Contact organization and categorization.



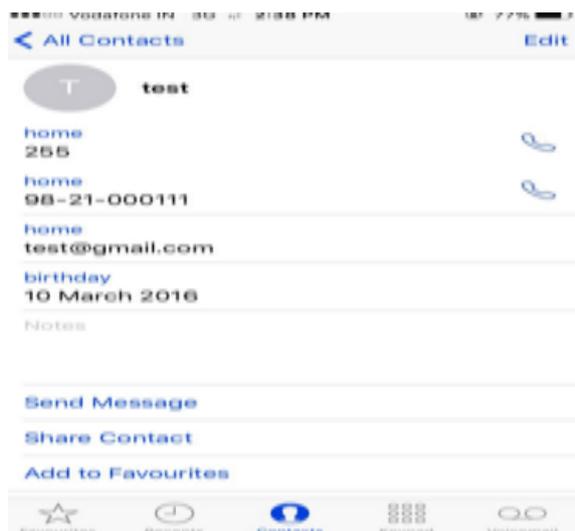
that person may no longer view the contact details of revoked person.

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## V IMPLEMENTATION

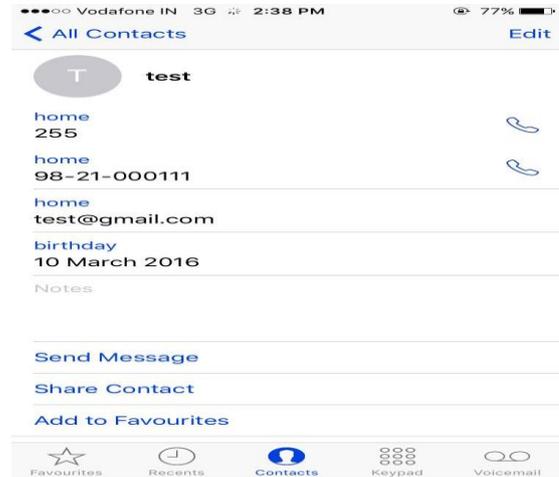


- Clients can use any android contact sync applications like 'Contact Sync Trail' with appropriate login credentials to sync their contacts.
- Apple clients can use their login credentials to sync their contacts on IOS platform.



- The above image is the example of how u can add contacts in “Enterprise Contact Sync”

- The above screen depicts how one can edit contacts on the local phone and will appear on the server as is centrally synced and will be seen on all the authorized users which have the required permissions.



## VI CONCLUSION

Thus , we successfully implemented our carddav protocol for contact synchronisation. Enterprises need to allow users to easily communicate with one another and provide contact integration within their applications. It needs to provide address books to their subscribers along with contact backup for their devices and contact-centric sticky services. The Carddav Contacts Server is a scalable, secure, and robust solution that can provide the backbone for such services.

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