



Document:User Manual

Project: Group Chat For Linphone (Agile DO-178)

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1 Introduction

This User Manual contains all information that is essential to give the user guidance and support on how to use the Linphone-Android application. It includes a description on system configuration, installation, using the system, troubleshooting, etc.

2 General Information

2.1 Project Details

System name and the names and/or affiliation of all stakeholders	
System name	Linphone-Android Group Chat
Stakeholder	Kobus Coetzee
Scrum master	Potego Mello
Client representative	Patience Mtsweni
UX developer	Lutfiyya Razak and Lerato Molokomme
Backend developer	Ephiphania Munava and Potego Mello
Crypto developer	Tsepo Ntsaba
CI / CD support	Patience Mtsweni

Table 1

2.2 System Overview

The system we are working on is called Linphone.

Linphone is an open source internet SIP phone or Voice Over IP phone(VoIP), compatible with the SIP protocol.

It allows for users to chat instantly or to make calls over the internetThe system we are working on is called Linphone by using the SIP protocol to one another.

Linphone has been developed for different platforms but this manual only focuses on Linphone for Android devices.

A new feature has been added to this application - the group chat functionality. This allows for 2 or more people to participate in what we call a group chat. Their communication will take place in the group chatroom.

2.3 System Configuration

2.3.1 Equipment

An Android phone is a smartphone that runs on Google's open-source Android operating system. There are a number of different manufacturers that make Android phones, namely HUAWEI, LG, ASUS, acer, Virgin mobile, Samsung, Motorola, Sony and many more.



Figure 1: Android Phones.

2.3.2 Network

The linphone application requires registration to a SIP provider before you can operate it. The provider ensures that you have a SIP address which is a Uniform Resource Identifier also known as a URI which is represented in the form `user@domain.tld`.

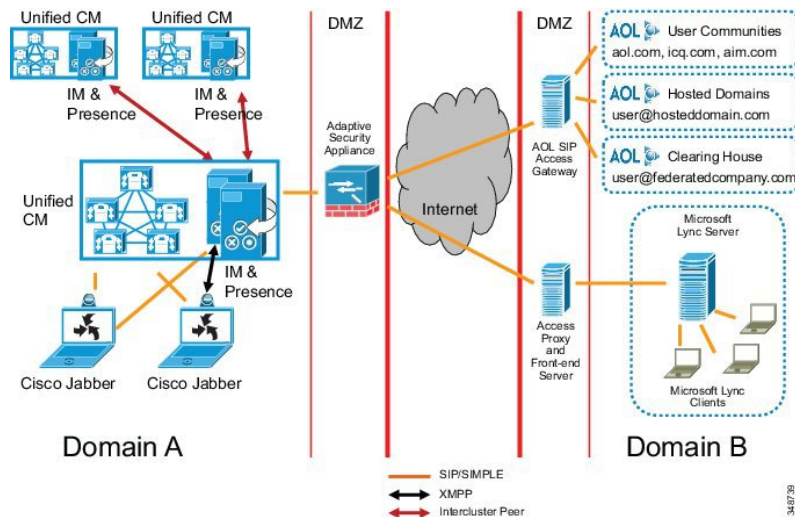


Figure 2: SIP Protocol.

Linphone.org hosts a free SIP service which allows users to make audio or video calls using SIP addresses under the domain `sip.linphone.org`.

When creating your sip address like `sip:baobab@sip.linphone.org` you simply use the form provided on <http://www.linphone.org/free-sip-service.html> and your friends can communicate with you by simply making use of the sip address.

2.4 Installation

- Turn on your Android Smartphone and click on the Google Play icon to launch Google Play.
- Tap the "Search" button in the upper right corner and type "Linphone"
- From the result list tap the result with the title "Linphone Video" to expand it

- Tap the "Install" button, Linphone for Android will be downloaded and the installation procedure will begin
- Confirm that you accept the Linphone application rights on the screen that will be appear on your Smartphone by tapping "Accept". When the file installation is done tap "Open".
- Press "Agree" when the License Agreement appears on your screen to finalize the install and start Linphone for Android.

2.5 Getting started

2.5.1 Registering on the network

To get started with the system, you need to install Linphone Application onto your android phone. To do this refer to section(2.4), and follow the results as shown there. Once you have Linphone installed, you should setup your sip account, which you will need to be able to use the system. For more details on what a SIP address is, refer to section (2.3.2).

- Click on the **settings** button on the bottom of the screen. Next click on **Account Setup Assistant**.



Figure 3: Home Screen

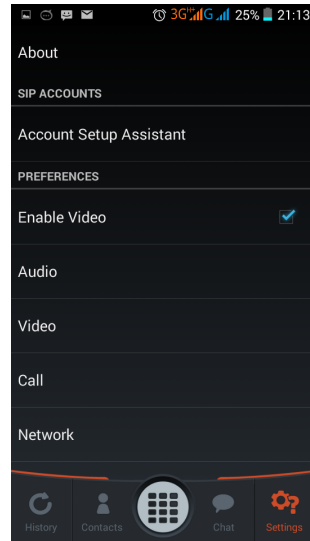


Figure 4: Settings Screen

- Click on **Let's go**. Next, click on **Create account on linphone.org** then click **Create**.
- Otherwise, if you already have a SIP or linphone.org account, click on their options and click **Apply**.

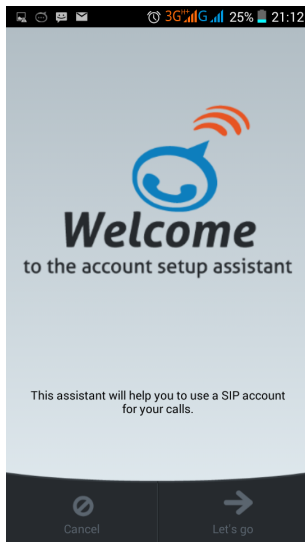


Figure 5: Account Setup Screen

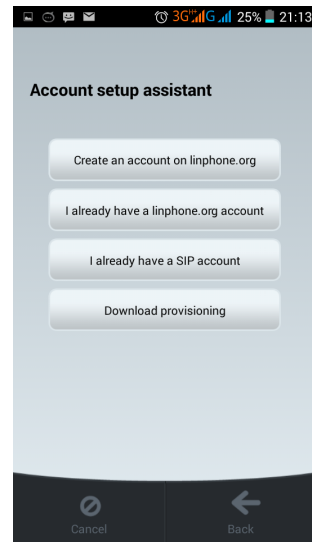


Figure 6: Options Screen

2.6 Using the system

After successful installation and setup (sip account) of the linphone application, you should then see the following screen:



Figure 7: Main Screen.

To make call via VoIP (Voice over Internet Protocol), type in (where it's written "Number or address") the sip address or the phone number of the person you would like to contact and press the dial button like screen two:

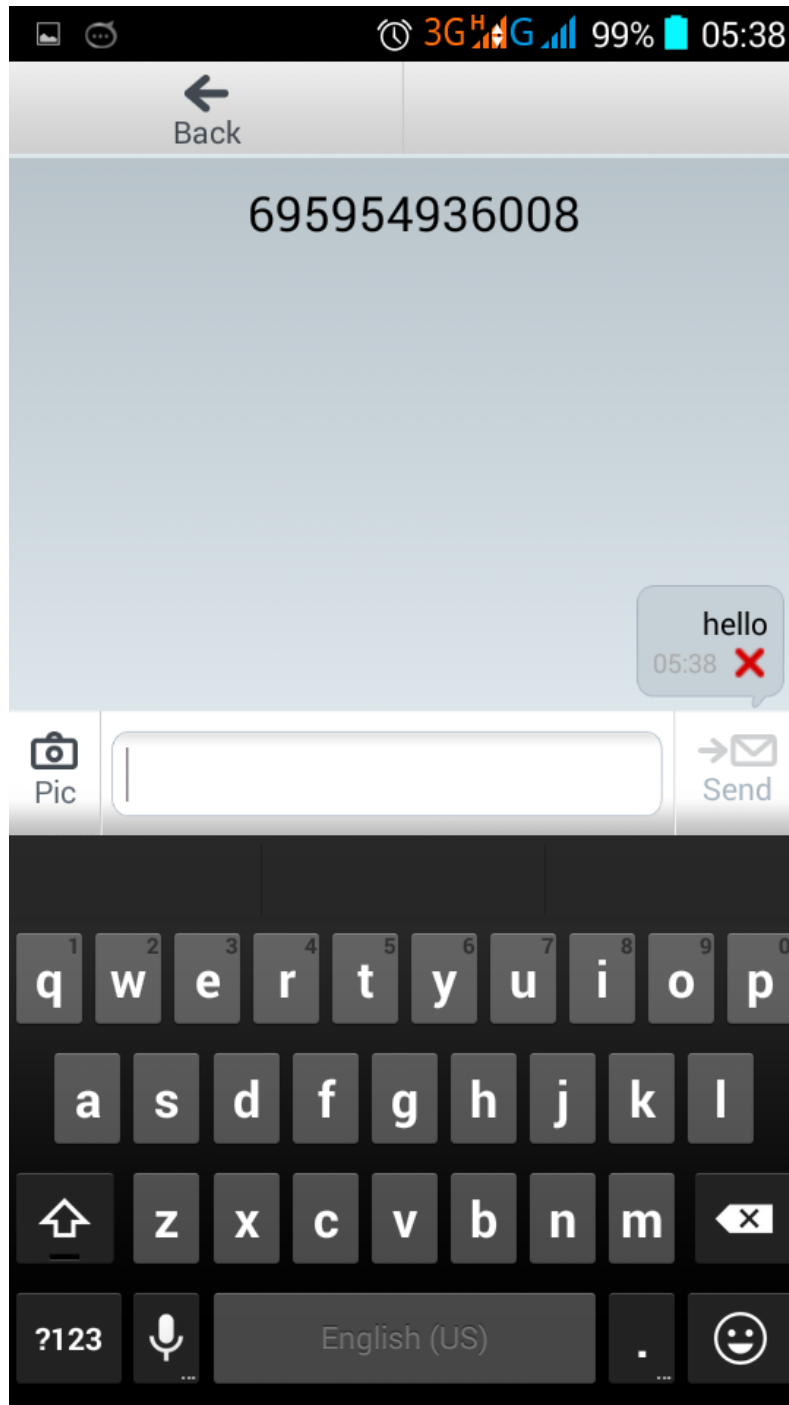


Figure 8: Screen two.

To start chatting just click on the chat button in the menu at bottom of the screen. It will take you to the following screen:

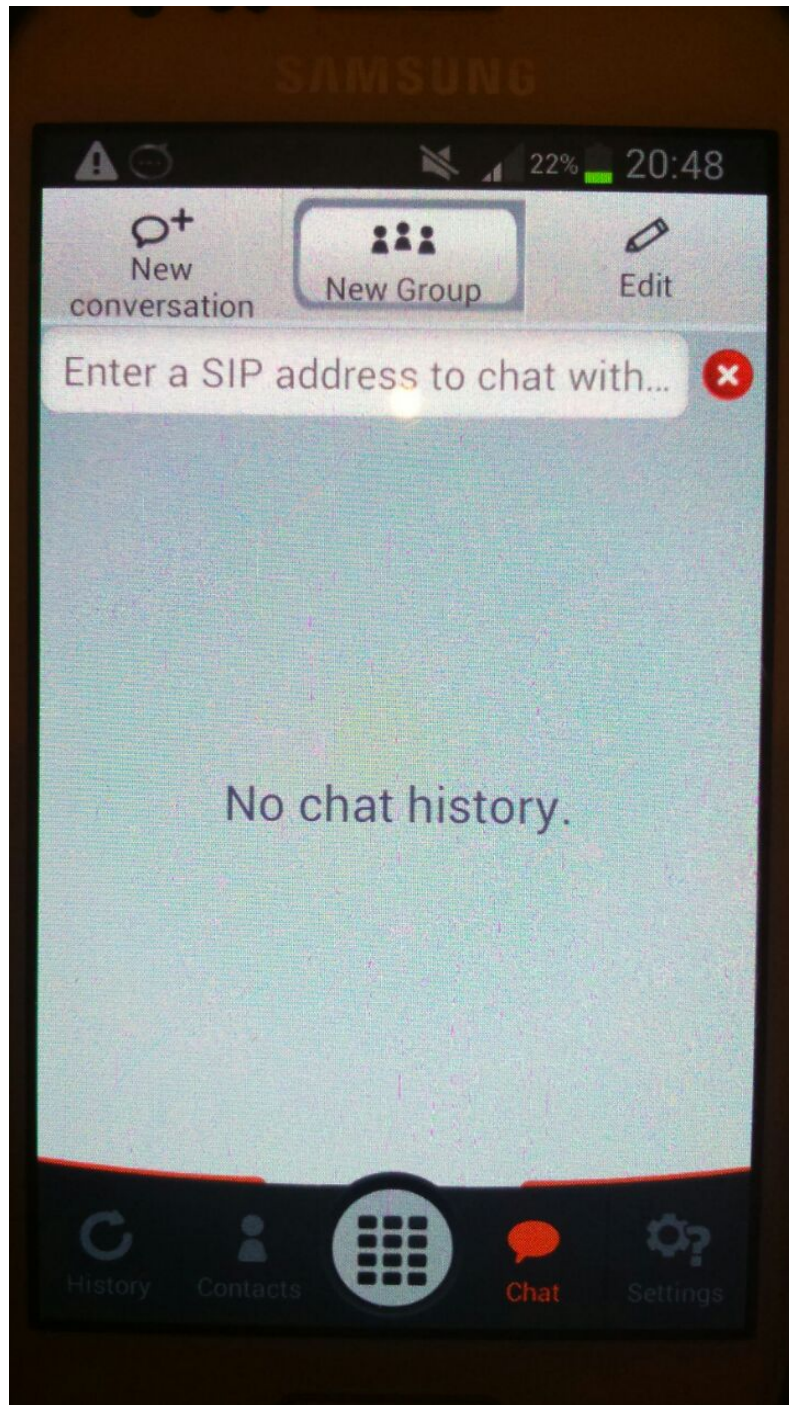


Figure 9: Screen three.

Now click on the "new conversation" button at the top left position which will then lead you to the your contact list where you have to select the contact you would like to chat with like in the following:

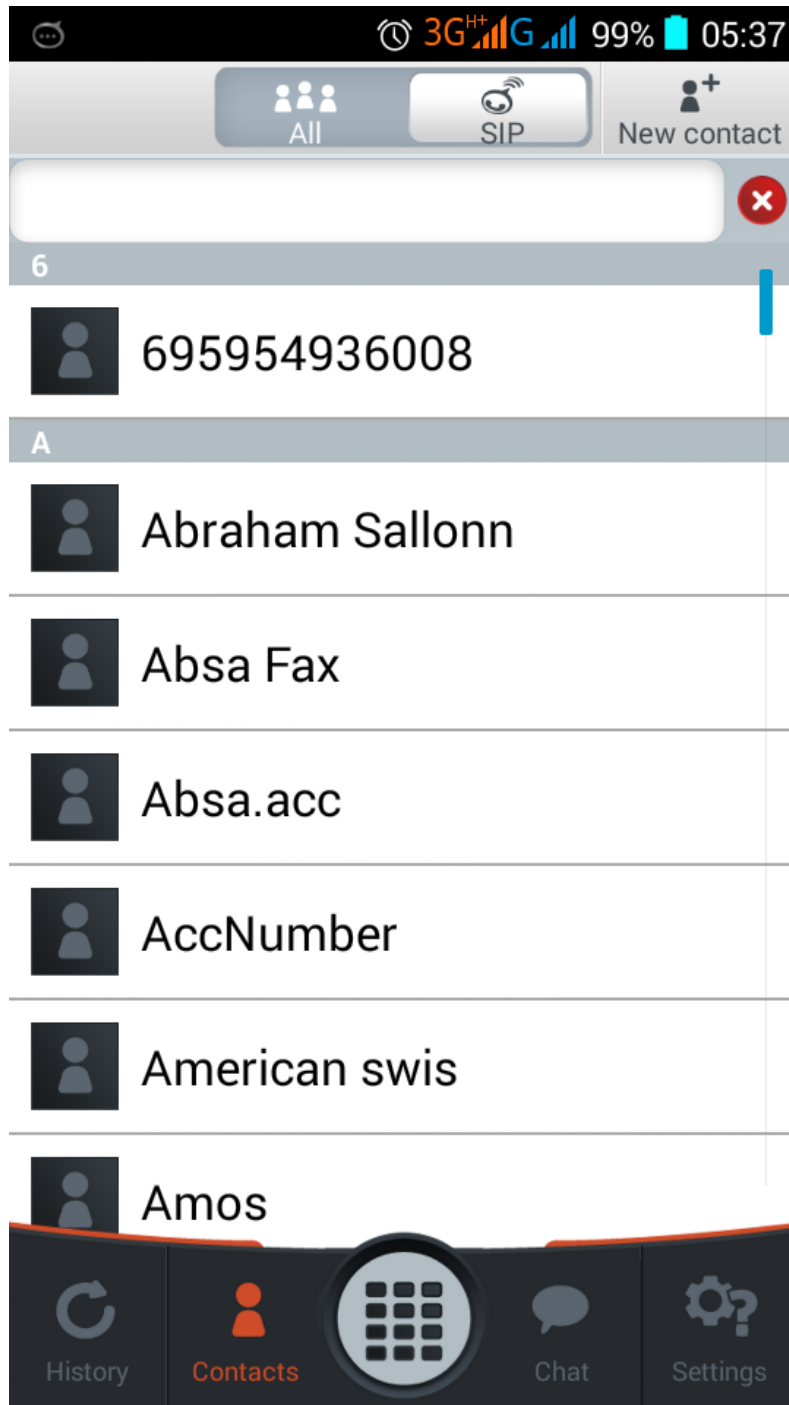


Figure 10: Contact List.

Selecting a contact to chat with should now take you to the chatroom which is the place where messages are exchanged. Look at the following:

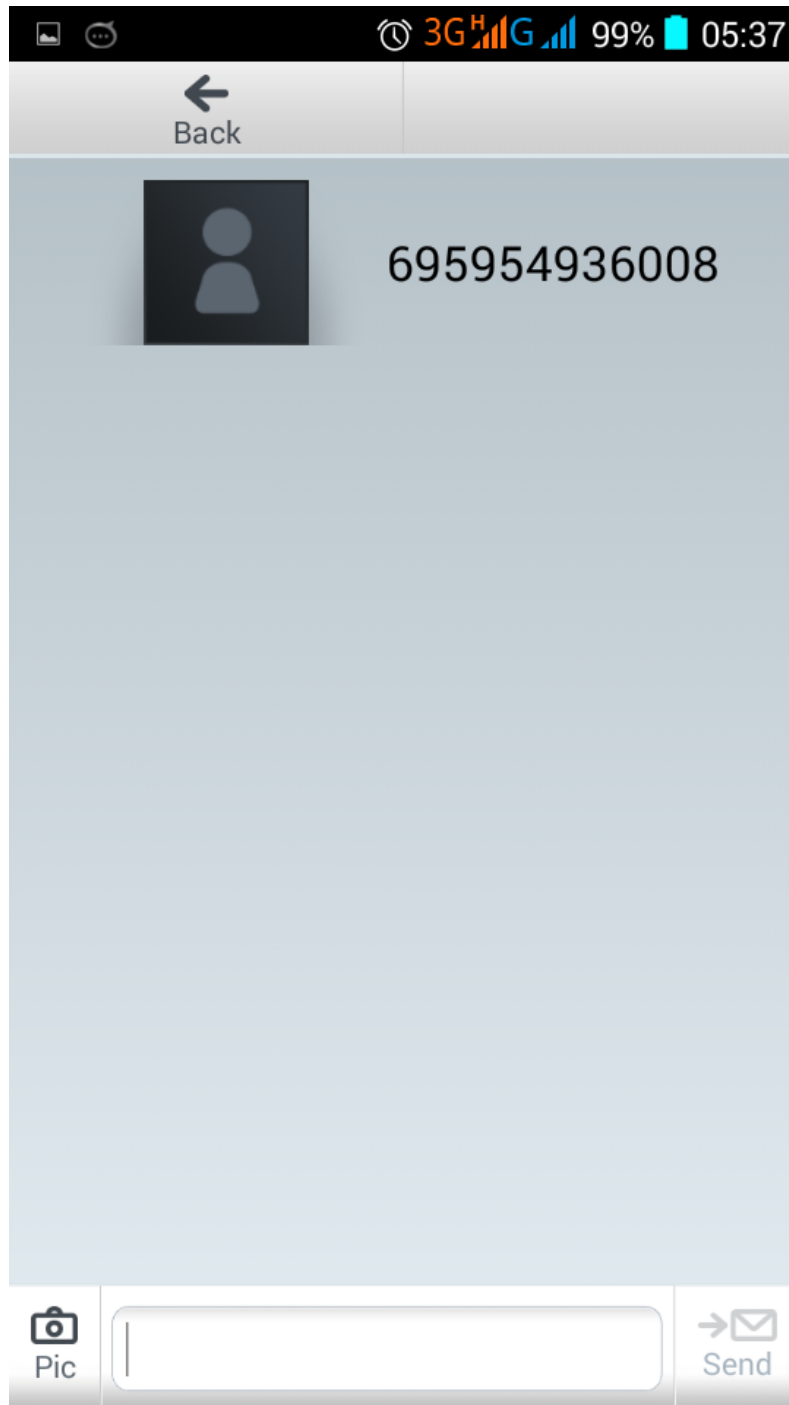


Figure 11: Chatroom.

There is a small text box at the bottom of the chatroom that can be used to compose your messages and then when ready, you can click on the send button next to it to send the message to your peer. Like this:

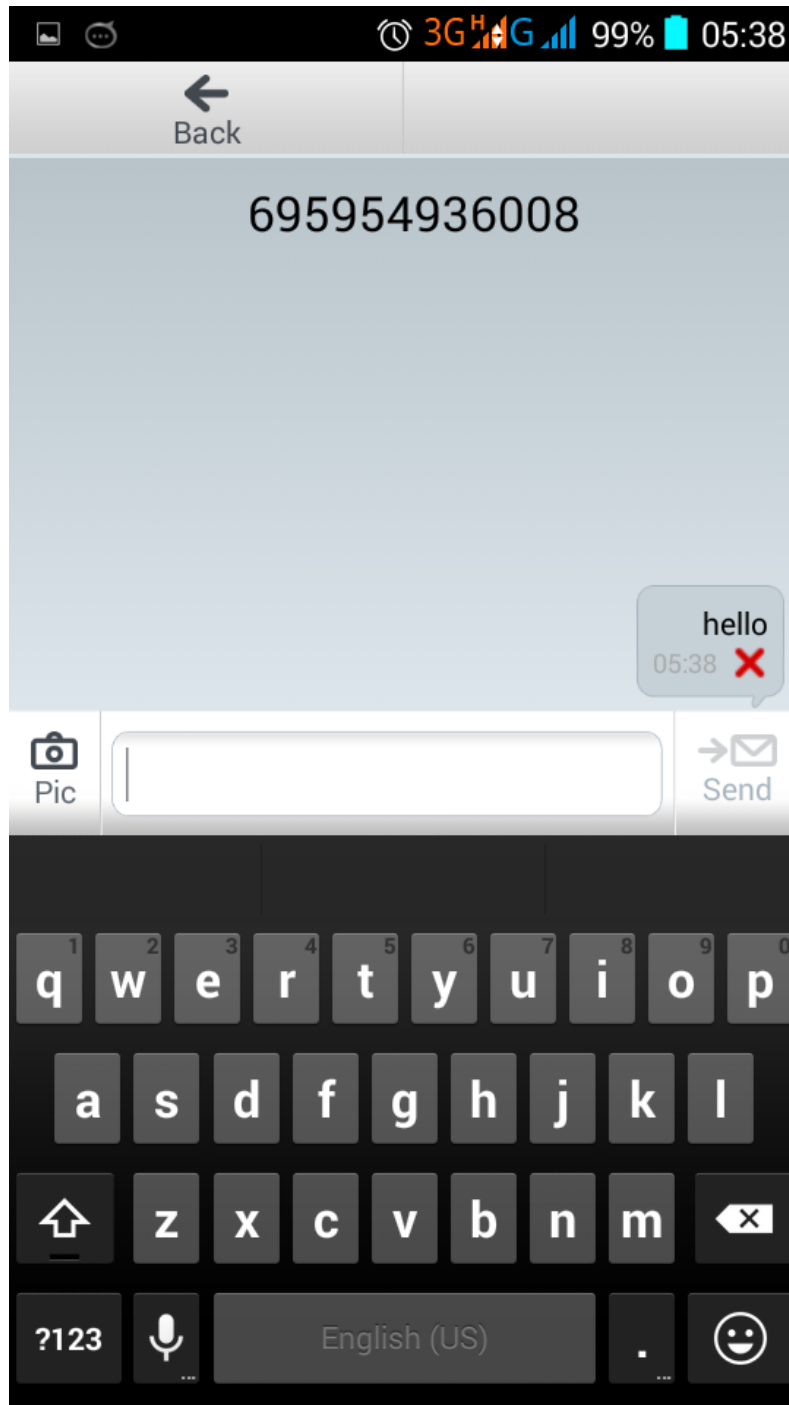


Figure 12: Chatroom 2.

To add new contacts via linphone just go back to the main screen and click on the contacts button. This will take you to the Contact list screen. At the to right position of that screen click on the new contact button and you will be led to the following screen:

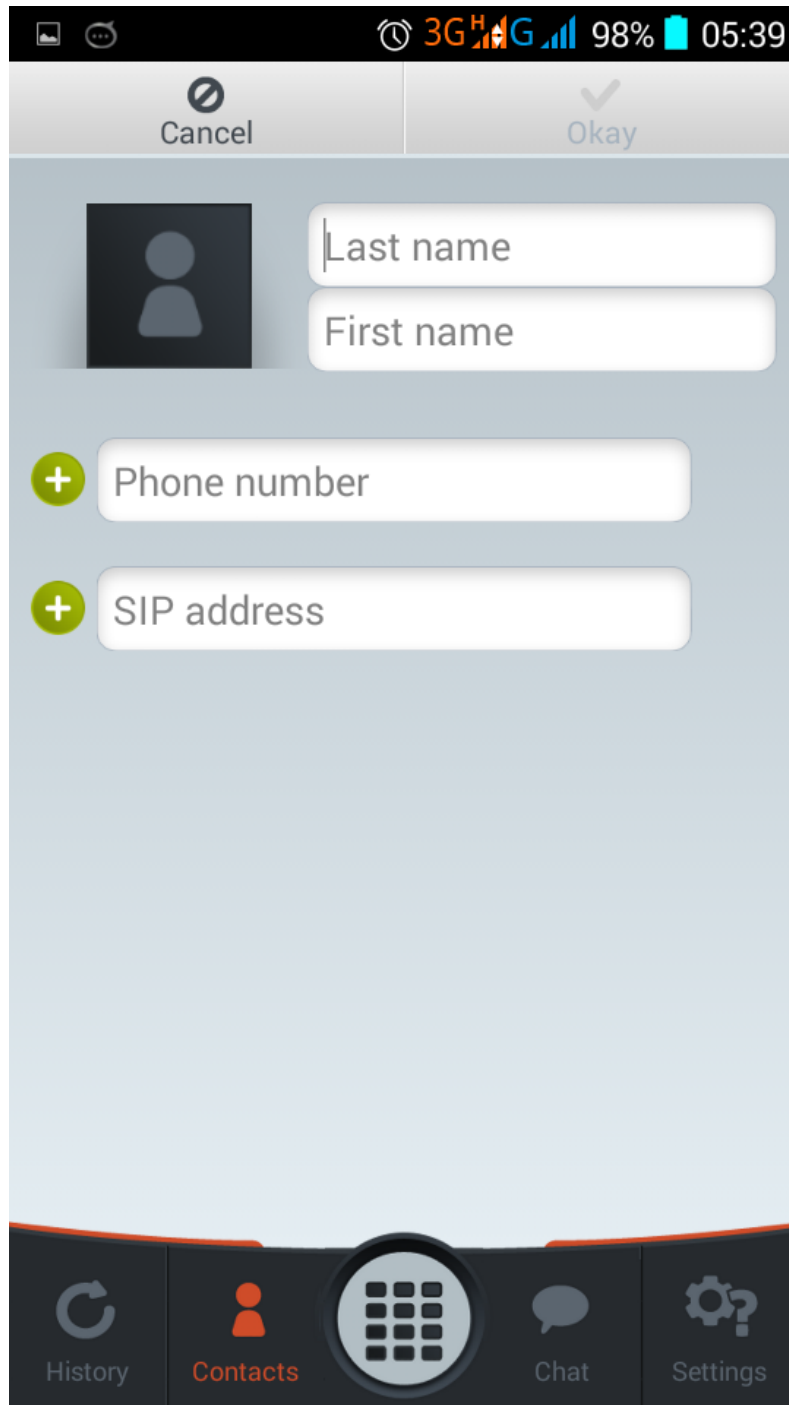


Figure 13: Create New Contact.

Now you can fill in the details required in the form and then click on Okay to save the new contact. Like so:

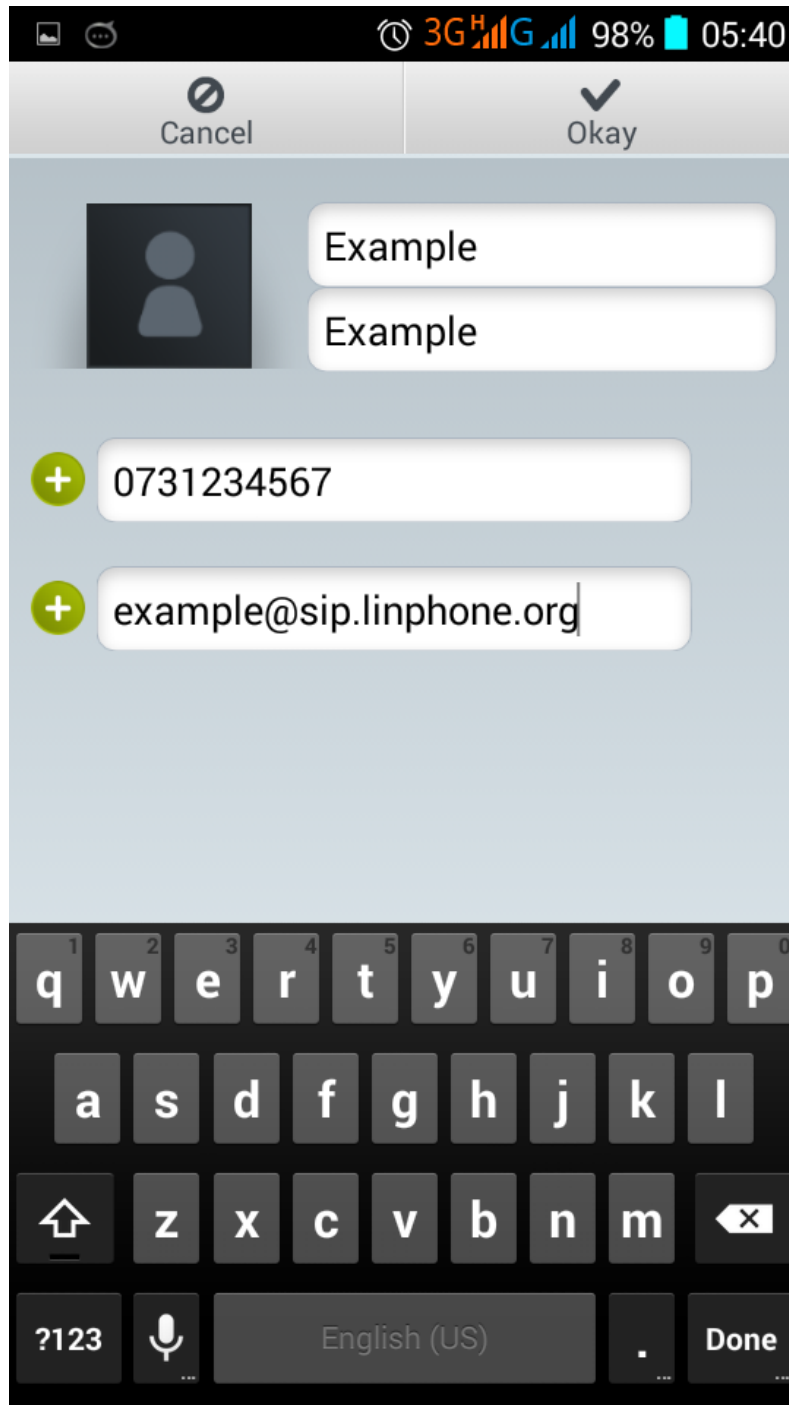


Figure 14: Create New Contact with details.

Your call logs can be found by going back to the main screen and then clicking on the History button at the bottom left screen menu. The log for outgoing and incoming calls are shown here:

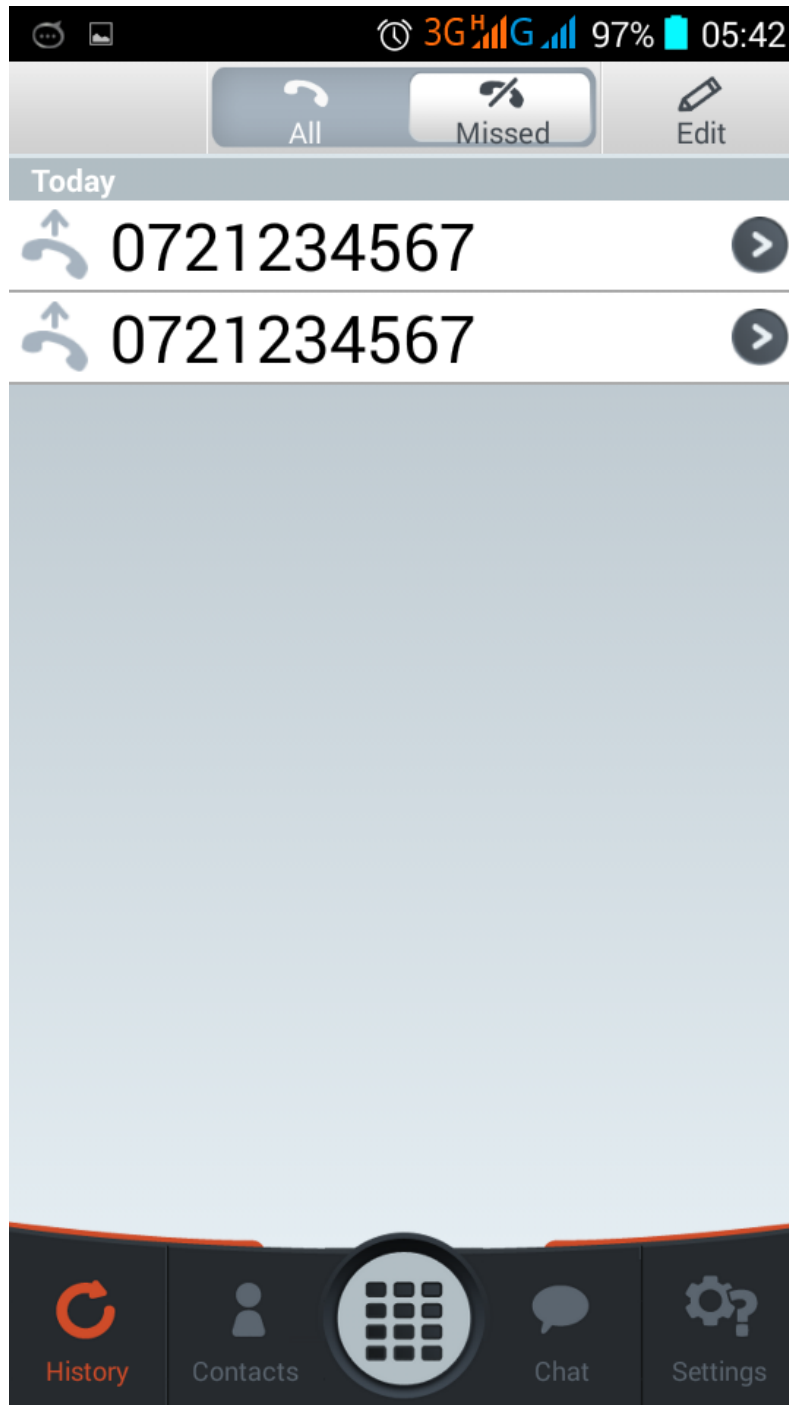


Figure 15: Call Log History.

2.7 System Configuration

Troubleshooting, FAQ and Problems

Connection problems

I try to phone to my friend `jsip:toto@example.com`, but nothing happens, no ring, nothing at all. You must verify that linphone uses the network interface that connects you to the internet (or to the network where calls should go).

Use the property box, section Network, to select the correct network interface. In other case, the person you are contacting may be not reachable at the moment...

Audio problems

Linphone seems to connect to the remote sip url, it rings, but when the callee answers, nothing happens and we can't hear each other.

Most people get problems because they don't choose the correct network interface in the property box, section network.

In other cases, it will fail.

First rise up playback and recording level.

If the voice is sometimes cutted, you can modify parameter `RTP_jitter` compensation in the property box to greater values to avoid this. But it increases the delay transmission.

FAQ How do I use Linphone Calling?

Linphone Calling lets you call your friends and family using Linphone for free, even if they're in another country. Currently, Linphone Calling is available on Android.

Linphone Calling uses your phone's Internet connection rather than your cellular plan's voice minutes. Data charges may apply. Please note: you can't access 10111 and other emergency service numbers through Linphone. You must make alternative communication arrangements to make emergency calls.

Bugs reporting and suggestions

First go to linphone's home page at <http://www.linphone.org> to check if you have the latest version of linphone.