

# Secure Group Communication

Mishal Raj<sup>1</sup>, Prity Satbhaya<sup>2</sup>, Mrs.S.Brinda<sup>3</sup>

<sup>1</sup> Under Graduate Student, Department of Computer Science and Engineering, SRM University, Chennai, India

<sup>2</sup> Under Graduate Student, Department of Computer Science and Engineering, SRM University, Chennai, India

## ABSTRACT

*This project is aimed at developing an peer to peer chat system that is of importance for secured communication.*

*Peer-to-peer (P2P) networks have emerged over the past several years as new and effective ways for distributed resources to communicate and cooperate. "Peer-to-peer computing is the sharing of computer resources and services by direct exchange between systems. These resources and services include the exchange of information, processing cycles, cache storage, and disk storage for files." P2P networking has the potential to greatly expand the usefulness of the network - be it for sharing music and video, privately contracting for services or for coordinating the use of expensive scientific instruments and computers. Some of the networks, such as Napster and Gnutella are created in an ad hoc manner with little or no centralized control. Other P2P networks such as computational and data grids are being designed and implemented in a very structured manner. P2P networks are presenting new challenges to computer security and privacy in a number of ways.*

*Peer-to-peer computing is the sharing of computer resources and services by direct exchange between systems. These resources and services include the exchange of information, processing cycles, cache storage, and disk storage for files."*

**Keyword:** EXMPP, MySQL, Linux

---

## 1.Introduction

Chat systems has been around since even before the modern Internet came into existence. Today there are a variety of chat systems of varying complexity. Most of these chat systems require that a user creates an account to be used with the provided service. There has been a lot of research when it comes to networks, network communication and the use of Peer-To-Peer software has become increasingly popular. This report describes one possible way to implement a chat system using a Peer-To-Peer model instead of a client/server model without the need to sign up for the specified service to be able to use it.

In this report techniques for developing a Peer-To-Peer chat system is studied and an analysis is performed of difficulties and problems for developing such a system. For this report a Peer-To-Peer chat system application was developed, and its design is described. The design of this application uses one of several different possible Peer-To-Peer solutions and a few of the existing solutions for Peer-To-Peer communication such as Gnutella and Bit-torrent.

**SYSTEM MODULES:-** The module is the whole description of every particular option available in the Secure Group Communication.

## MAIN MENU

It consists of the login page to authenticate the user with a username and a password. User name and password is pre defined in database.

### LOGIN

If you click on login button a new window will open which will open a chat window to connect with all the other users.

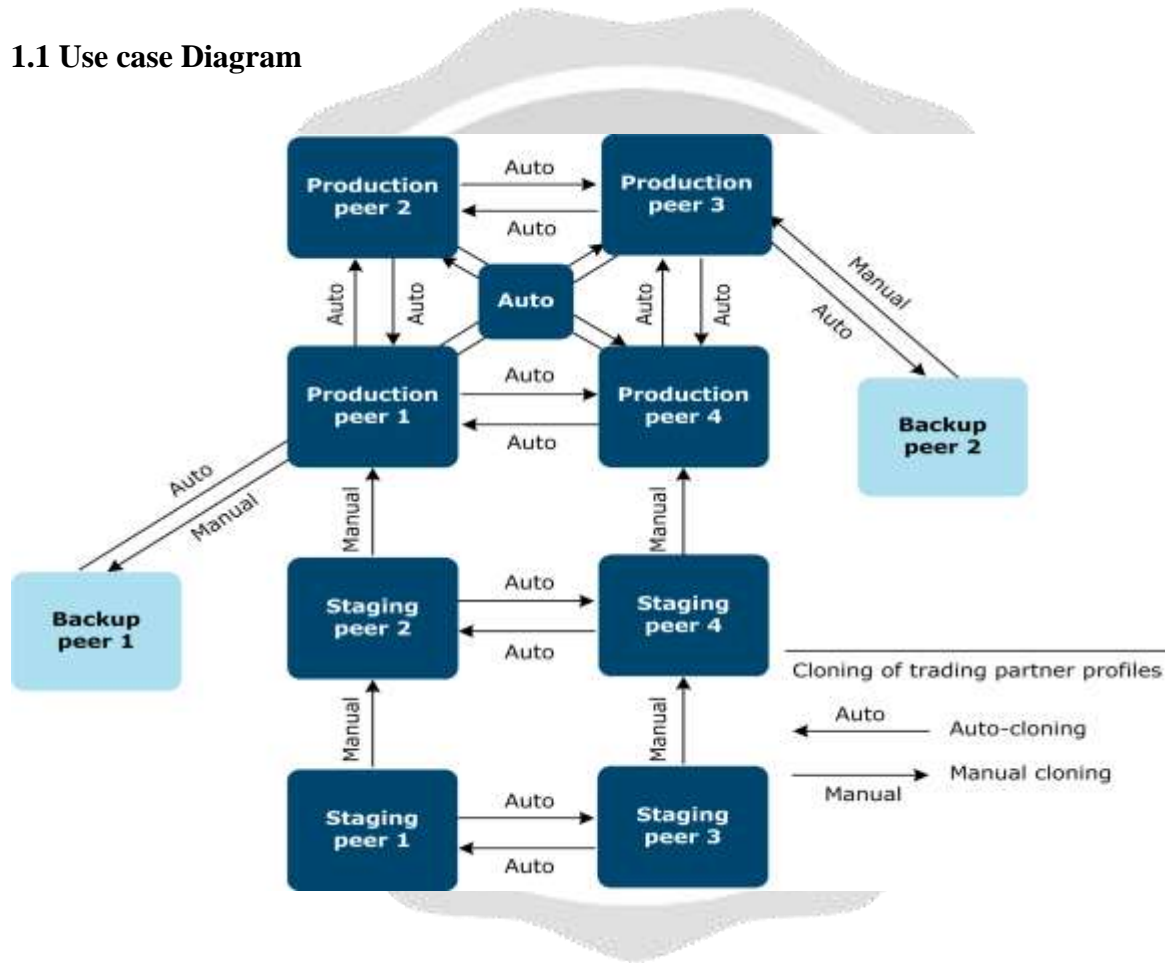
### LOGOUT

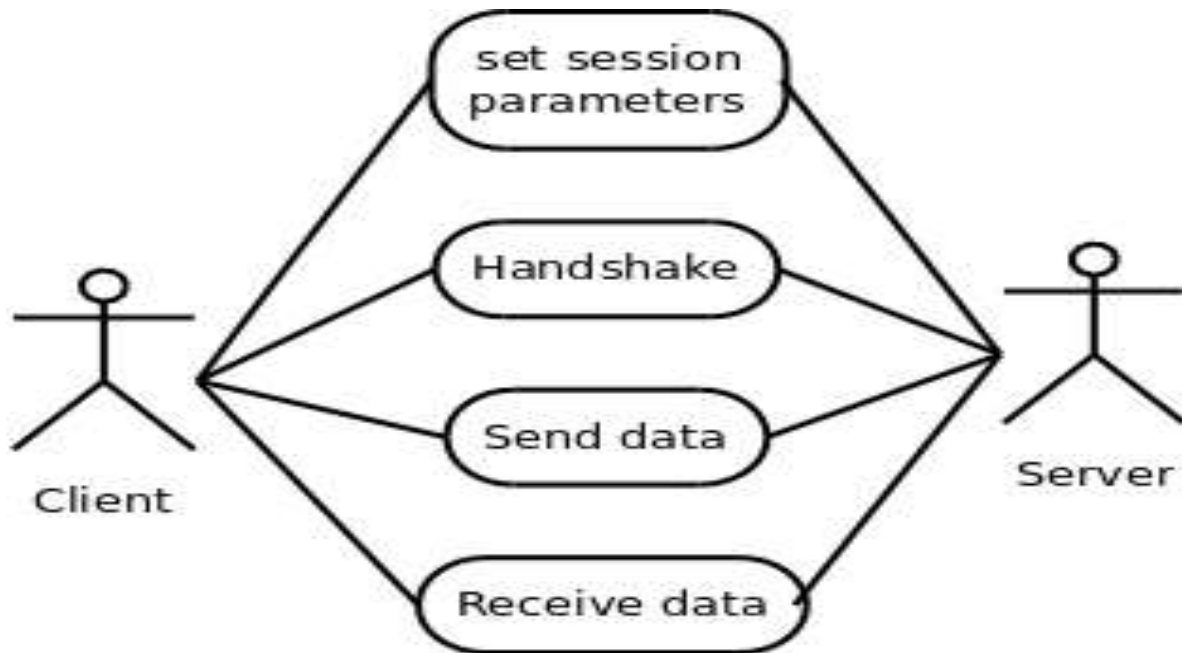
You will logout of your portal, and you have to log in again if you want to join again.

### SUBMIT

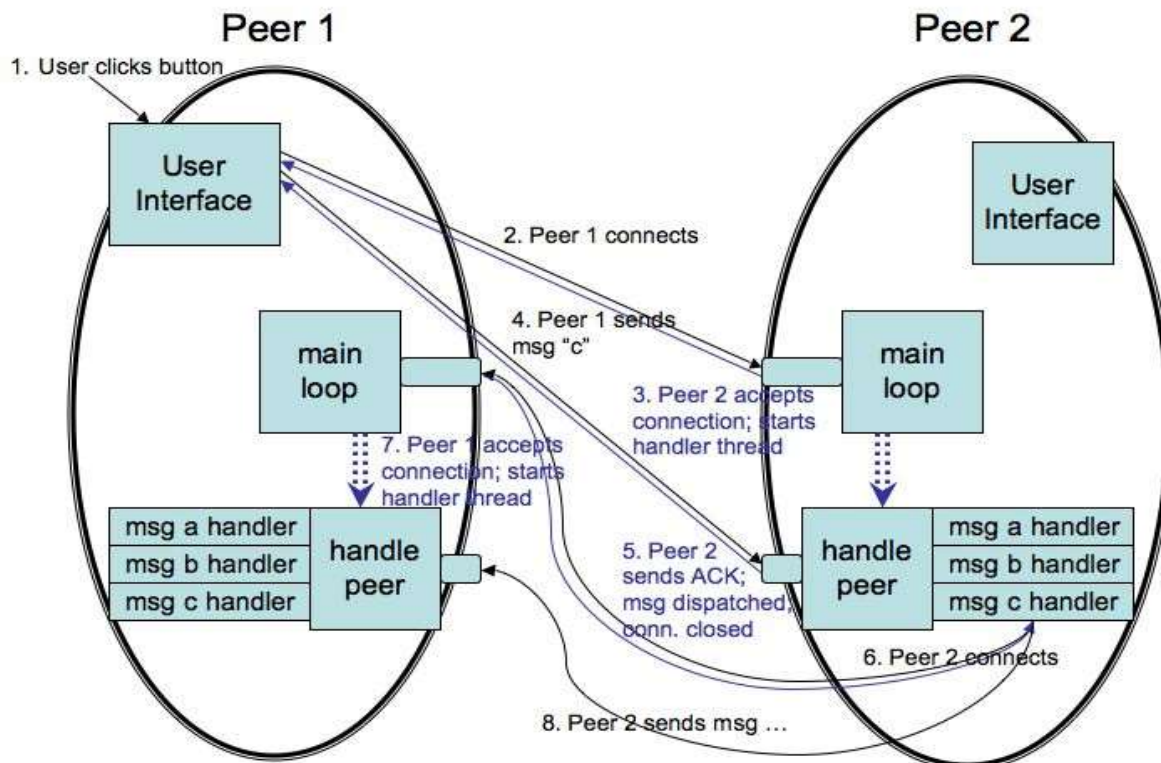
It is a button which you have to click after typing to send your message and others will see the same.

### 1.1 Use case Diagram

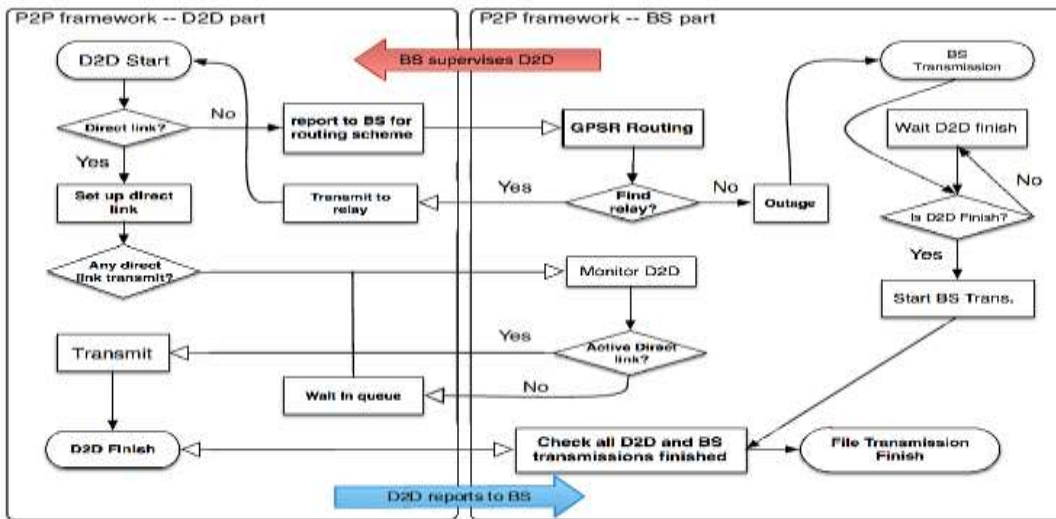




### 1.2 System Architecture



### 1.3 Flow Chart



#### Existing system:

In the existing paper work related to chat systems they required that a user creates an account to be used with the provided service. In a client/server model the user needs to create an account each time it needs to communicate. Creating a simple chat system using a client/server model is very easy, and can be done in less than a day if the programmer is used to network programming. All that is needed is a server application which can supply the location of a specific user to a client requesting that user and a client application that will connect to a given location for a user.

#### Issues in Existing System:

In the existing paper work related to chat systems they required that a user creates an account to be used with the provided service. In a client/server model the user needs to create an account each time it needs to communicate thus it is inconvenient.

**Proposed System:** To automate the existing chat systems of creating an account to communicate, secure group communication by using peer to peer networking is used. This method hence reduces effort and provides efficiency.

**System Requirements:** The system requirement for this project are :-

#### Software Requirement

##### Languages used:

Java is used and this software works on Linux based operating system.

##### Database:

MySQL is used as a database for storing usernames and passwords.

##### Operating system support:

Possible wide-spread distribution of the application was desirable, so a very important requirement was that the application should work with and perform well on a range of systems. It is able to run on Windows, Linux/UNIX, Mac and even Android 4, so it is absolutely possible to use an application written in Erlang on a wide range of systems.

##### Protocols:

EXMPP was considered but rejected as the protocol for use to deliver messages between two clients. Of course not only chat messages need to be passed between nodes. So to keep things simple and in order to provide reliable transfer of all messages the protocol used for network communication is TCP. It has a library called gen tcp which implements a number of important functions for TCP communication.

## Hardware Requirements

Computer Network  
Main Server machine

## SUMMARY

Despite the apparent need to make Gnutella more secure for users, the feeling among its open-source developers seems to be one of indifference. What 'state-sponsored' hacking there has been on Gnutella is relatively small, with the network retaining most of its functionality. Also, the pursuit of Gnutella users by the MPAA or RIAA has been limited to relatively high-profile cases of people either sharing enormous numbers of files or sharing clearly pirated copies of copyrighted (and perhaps then unreleased) content. The average Gnutella user sharing and downloading a handful of files has for the moment little to fear from the large lobby groups and their blackmailed ISPs. If the day arrives that file -sharing becomes impossible due to a deluge of false content, or hijacked queries, or when users receive immediate cease-and-desist emails the moment their Gnutella clients blink on, then perhaps Gnutella developers, some of whom have commercial interests in the survival of the network, will start to pay security serious attention. For the moment, most developers seem content with improving Gnutella to the point of competing with currently more successful networks like Kazaa, which enjoys an order of magnitude greater usage statistics than Gnutella. Finally, it needs to be noted that many of the issues discussed in this document are specific to Gnutella, Kazaa and other very loosely formed networks. Other P2P networks, including the Grid are designed with much more emphasis on security and will in all probability have few, and certainly different, issues.

## ACKNOWLEDGEMENT

It is a pleasure to acknowledge “Computer Science Department”, for giving the opportunity and allowing to do our project in the labs. We sincerely convey our gratitude to our project guide Mrs. S Brinda whose continuous support and encouragement helped to complete the project. We are also thankful to all the faculty and supporting staff who provided us with adequate data information and help in spite of their hectic schedule.

## REFERENCES

- [1]. [www.wikipedia.com](http://www.wikipedia.com)
- [2]. <http://csharp.net-informations.com>
- [3]. <http://msdn.microsoft.com>
- [4]. <http://net-informations.com>
- [5]. Notes on c# BY Herbert Scildht
- [6]. The Complete Guide to C# Programming by Er.V.K.Jain
- [7]. C# Programming by E. Balgurusamy

## BIOGRAPHY

Mishal Raj	Under graduate Student,Computer Science and Engineering at SRM University Ramapuram Chennai(TN)
Prity Satbhaya	Under graduate Student,Computer Science and Engineering at SRM University Ramapuram Chennai(TN)