

3.21 Design & implementation of an efficient SMS server

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ABSTRACT

Short Message Service (SMS) is one of the most popular services provided by the telecommunication companies all over the world. Due to the low cost and efficiency of this service compared to the traditional ways of sending messages, companies now a days use this technology heavily to send business messages to their customers and employers. The main objective of this in this research is to implement a SMS server using open source software with minimum resources.

Basically a SMS server consists of two main features. It can be used for sending messages and the other is it can be used for receiving messages and store them in a database. Apart from these two features the proposed server consists of many other features such as categorization of receiving messages according to the type, restricting number of messages sending for the administrator, prevent the user to login to the server in the administrator defined hours, create template messages, allow only to login to the server through authorized client machines be (IP address) and etc.

In order to achieve a higher level of security, we have stored the encrypted password together with the usernames for validating the users' login to the server. These data is retrieved through SQL commands using 'data decryption' methods.

The main function of this server is sending and receiving messages using a GSM modem. The initial step was to configure the GSM modem to connect it to the server machine through a USB port. A connection should be established with the SIM card, since the functionality of the modem is handled completely by the SIM card. After a connection is established, SMS can be sent and received from the SIM card using the 'AT' commands (Hayes commands) technology.

Sending messages and receiving messages are stored in the outbox table and inbox table of the database respectively. The box messages are then classified according to the type. CSV file uploading technology was used to insert data to the database, since it is more convenient to the user. Using this method messages are stored in a queue table and then send one by one automatically in a user desired time. When sending a message, server checks whether the recipient number is restricted or in the correct format.

This server was built on Apache Tomcat web server and the web pages are created using JSP technology. MySQL database server, JDK 1.5 and Rational Rose S/W were used in the development of the database.

The server was built using only one modem; however, this can be developed to support several modems to increase the efficiency when sending messages for millions of customers using the Queue. However the server developed is efficient and can be used in any company or organization in a robust manner.