

SMS Application Development using Open Source

SMS - Short Messaging Service has changed the life of the common man, leave alone the benefits of a mobile phone, in staying connected and doing transactions while on the move. SMS integration with e-Governance applications has taken a big leap in reaching the masses renaming SMS as Smart Management Service.



SRINIVASA SUBBA RAO
Principal Systems Analyst,
NIC AP
ssrakella@nic.in



J.V. RADHAKRISHNA
Technical Director,
NIC AP
jvrk@nic.in

SMS is a powerful personal communication channel. Wherever there is a need or benefit for sharing information, SMS can play a significant role. Specifically, government organisations can leverage the platform for collecting information from, and staying in touch with, various field organisations.

Particularly, in rural areas where the penetration of internet and other IT facilities are very low, SMS could be a very useful tool for public sector as well as for the government departments in implementing their eGovernance applications using mobile technology.

Open Source and Free SMS Gateway Software

An SMS gateway has a lot of responsibilities in an SMS messaging system. So, SMS gateway software can be very complex and complex software is usually expensive.

Fortunately, there are open source SMS gateway software packages that can be downloaded free of charge over the web. One high-quality free SMS gateway software package is Kannel, which is written in the C programming language. Kannel can handle connections to SMSCs, mobile phones and GSM/GPRS modems. It has an HTTP / HTTPS interface for the sending and receiving of SMS messages. More information about Kannel can be found on its web site <http://www.kannel.org/>.

How is it made possible?

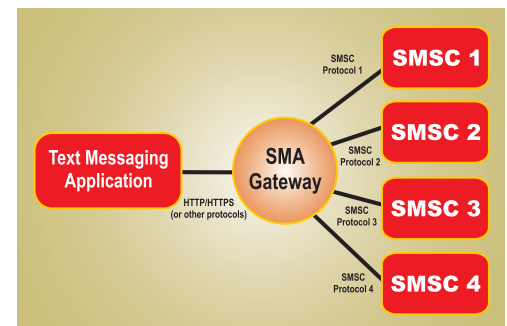
All this is made possible with the Open Source Technology viz., Linux,

Kannel SMS Gateway, Java/JSP, PostgreSQL.

What is a GPRS Modem?

A GPRS modem is a GSM modem that additionally supports the GPRS technology for data transmission. GPRS stands for General Packet Radio Service. It is a packet-switched technology that is an extension of GSM. GSM is a circuit-switched technology. A key advantage of GPRS over GSM is that GPRS has a higher data transmission speed. GPRS can be used as the bearer of SMS. If SMS over GPRS is used, an SMS transmission speed of about 30 SMS messages per minute may be achieved.

This is much faster than using the



ordinary SMS over GSM, whose SMS transmission speed is about 6 to 10 SMS messages per minute.

Working of SMS Gateway

A GPRS modem is needed to send and receive SMS over GPRS. Note that some wireless carriers do not support the sending and receiving of SMS over GPRS. If we need to send or receive MMS messages, a GPRS modem is typically needed. The SMS gateway acts as a relay between the two SMSCs. It translates one SMSC protocol to another one. This way can be used by two different wireless carriers to interconnect their SMSCs for



NIC, Hyderabad SMS Team with the J&K Police at Jammu

Excerpt of the letter from **Dr. R.S.Praveen Kumar** IPS, Joint Commissioner of Police(Special Branch) Andhra Pradesh



Introducing SMS based CUG transformed the way we communicate among ourselves and our interface with the citizens.

It is believed that SMS messaging services are going to play a major role in many walks of life and strengthening citizen service delivery by implementing many more applications through mobiles, in the days to come.

purposes such as enabling the exchange of inter-operator SMS messages. The use of an SMS gateway can greatly shorten the SMS text messaging application's development time. To connect to an SMS gateway, you can use an SMSC protocol such as SMPP and CIMD. Some SMS gateways support an HTTP / HTTPS interface. HTTP / HTTPS are easier to use than SMSC protocols. The drawback is that there may be fewer SMS features to use. For example, an SMS gateway may not support the sending of picture messages through the HTTP / HTTPS interface. SMS text messaging application connects to SMSCs through an SMS gateway.

Success in AP

In this direction, Andhra Pradesh has achieved another feather in its IT cap, by developing Open Source Technology based SMS applications and implemented successfully for APNPDCL with complaint status system, Warangal, Anantapur District Collectorate with Civil supplies Dept.'s Complaint and auto forwarding system and for Prajavani - a Public Grievance Status System, AP High Court with Case Status System, Hyderabad and Cyberabad Police with Complaint receiving and forwarding system, Tracking of Stolen Vehicles as a Closed user group System, Hyderabad Passport Office with Passport Application Status and auto answering the applicants with Verification objection

details system and so on. In the case of Hyderabad and Cyberabad Police Commissionarate, an SMS based Complaint receiving and forwarding system, which is a very useful G2C and G2G Application, has been implemented with the objective that the System supplements the existing Dial 100 facility for lodging complaints regarding Women harassment, Crime, Terror, Traffic related problems etc. In addition, this allows the department in Sending SMS to CUG groups/individual official for further monitoring. It supports a Web based Work Flow System with full reporting capabilities. SMS Message length greater than 160 characters can be sent in a single message. Also, using an Excel worksheet, the official can send the SMS. All the SMS are stored in database and retrieved as and when required. Persons sending Hoax messages can be easily tracked and prosecuted. Police will alert the Officials through this application by selecting group members. This is Operational since 2008.

This application has won several laurels and had a quick replication in 2 more states viz., Kerala and Jammu & Kashmir and is made operational since 2009. These SMS applications have become part and parcel of the Police Department's day to day activities, since implemented.

Edited by **Dr V.V. Venkata Ramana**, Technical Director, v3r@nic.in