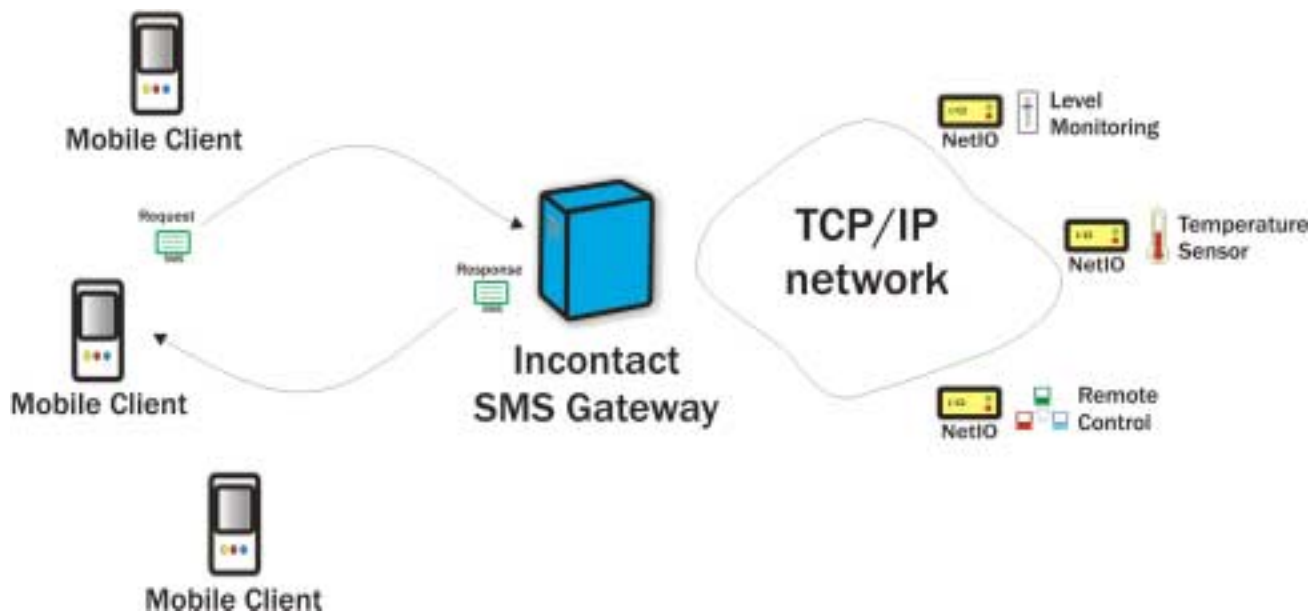


Intensecomp Pte Ltd
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SMS Remote Control System – Using InContact™ SMS and NetIO™.



Background Information

InContact SMS Gateway™ – A server based software application that provides ability to send and receive SMS messages through GSM network. This application extends capability of SMS by incorporating two-way communication and control functions. It always adds wireless communication capabilities into existing communication backbone systems. Usage of SMS has grown tremendously over the past few years and adding SMS capabilities into your existing system is the obvious step in going forward. With InContact SMS Gateway, you could create all sorts of SMS usage and applications.

NetIO™ – A device capable of sensing digital signal and monitors analogue values. It also has built-in temperature sensor for monitoring purposes. Communicates through standard TCP/IP network protocol means it can be extended in any Ethernet networks and connectable to any Intranet and the Internet. Remote controlling features allows NetIO to turn on or off a device or equipments such as air-conditioning systems and building automation systems. It is also capable of monitoring a room temperature and adjusts the air-conditioning system automatically. Viola, here you get a full-scale building automation system at a fraction of cost and half the setup time.

SMS Remote Control System

Using SMS to control remote device is possible by combining the features available in InContact SMS Gateway and NetIO devices. The concept behind this system is to combine the mobility features in SMS to control devices remotely through TCP/IP network.

The basic requirement of this system is to be able to act based on given command in a SMS. It should then determine if the originating command is authorized to give the command in the first place. Unauthorized command is forbidden and thus the system should be able to track these illegal users.

Here is an example of a SMS remote control system. A SMS contains instructions to turn on an air-con system will be entered by user in his or her mobile phone. The system should recognize the mobile phone number and command entered. It will act accordingly based on given command. Reply SMS is sent out by the system to confirm after executes the command successfully.

Another example will be in building management. For example, if a temperature of a monitoring room such as computer server room, research lab rises above allowed level, the SMS Remote Control system should be able to inform the maintenance personnel to carry out the necessary action. Monitoring could be also in the area of failure of machines and the system will automatically send out SMS to inform based on status of alarm recorded.

How to implement

Implementation of this SMS Remote Control system is simple. It requires minimum hardware to set ups as more efforts should be placed in the software that controls the system. What we are trying to implement here is a complex yet affordable SCADA (Supervisory Control and Data Acquisition) systems. A SCADA system is a remote control and monitoring system used in the area of plant automation, industrial devices monitoring and many others.

Assume our implementation here is a building and we need to manage the building air-conditioning system. The requirement is to be able to monitor room temperatures in the building and indicate alarm when room temperature rises, turn on/off lights in various rooms and set room temperatures by controlling the air-con system.

What we need here is a PC server to host InContact SMS Gateway and a GSM modem. InContact SMS has configurable parameters and programmable features to program task specific actions. These actions will be translated and send to NetIOs installed in various rooms. Connect NetIO's digital output pins to turn on/off lights. Digital inputs available are used to monitor on/off devices such as fire-alarm sensor and other. Use the on-board temperature sensor to monitor room temperature.

Connect all installed NetIOs to the building Ethernet network. NetIO has built-in support for TCP/IP network. Host software should be able to use NetIO library functions to monitor signal status connected to NetIOs. Combine this software with InContact SMS built-in library

InContact SMS ActiveX Control



functions to transfer signal status information to SMS format and send it to respective recipients. Here you have a basic SMS Remote Control System.

To further extend SMS Remote Control System, create keywords or commands recognized by InContactSMS Gateway and attach actions to these commands. For example, “Turn On Light 1” is a command to turn on all lights in room one. Create intuitive commands so as not to burden user by memorizing complicated commands. Simple and easy to remember commands will make your system more friendly.

Advanced SMS Remote Control System

To add more functionality to the SMS Remote Control System, create a database using MySQL or other SQL based database server and stores transaction information for reporting and auditing purposes. The information recorded could then be analyzed for further improvement to the system and management of the controlled system as a whole.

Since NetIO is based on TCP/IP network, it is possible to make the whole system controllable from the Internet. Add a web server on the InContact SMS Gateway server to display controllable points in button forms. Simple example will be use on button to represent a light of a room, clicking on the button will turn on the light and vice versa.