SmartMobile – over Internet (SMI)

Background

Most users who need to have remote access to any database, whether for their own personal or business matters, do it over the Internet. With the new generation mobile phone handsets and improvements in network technology, many people are now managing to access this data via their cellular phones or handhelds. The client-server connection is based on internet infrastructure and available via two main access network methods i.e. Wi-Fi and cellular Internet (GPRS). More recently, it has become possible to install a dedicated client on the handset to communicate with the relevant server, rather than accessing the Internet using a classic browser. This has contributed to the trend of building countless applications, mostly for smart phones, in order to improve the ease of use for the user. Some of the most best known web sites such as Hotmail, CNN, banks, newspapers etc. have developed and launched dedicated client applications. Many of these applications can be found on the AppStore or OviStore, and are replacing previous cellular generation (2-2.5G) applications which were mostly written in Java for mobile devices (J2ME).

The JAYBEE Solution

Until now, JAYBEE's messaging solution has been SMS-based. Each time a new call ticket was opened or an escalation message initiated, an SMS was sent by SmartButler® to the relevant handset. Communications from handsets to SmartButler® were returned via SMS. SMI takes this a step further by ensuring that the handset is continuously connected to SmartButler®, and bidirectional updates are sent as soon as there is a change to the status of a call. The SMI application has been designed with the intention of allowing current users of the SMS application, who are mostly using 2G and 2.5G handsets, to migrate to the new application. SMI will only operate on handsets that are able to run Java. It is necessary to test all handsets before using the application, to ensure that they are compatible with SMI.

Topology

As with any client-server solution, SMI requires a client (mobile handset with GPRS connectivity) and a server. In our case, the server is the SBServer PC which should be a server computer complying with the JAYBEE specifications, and running the server SQL version of SmartButler®. In the event that the hotel wishes to create a more secure operating environment for the application, it is recommended to request that the local cellular provider assigns a fixed public IP addresses in the same group range for all client handsets. Each handset should also have a data access capability with relevant data package operational. In all cases, a port forwarding rule should be created in the hotel's local firewall to allow HTTP requests arriving from client handsets running SMI to be routed to the SBServer PC.

Data Flow

The process is based on a pull rather than push process. When a user begins his shift, he should verify that the SmartMobile application is running on his handset. The handset's Java application sends an HTTP request on a cycle every 60 seconds to the hotel's public IP address. The firewall's rules will detect and authenticate the device's fixed and pre-identified IP address, and forward the message automatically to the SBServer. The SBServer will, launch our special common gateway interface (CGI) server module, which will retrieve the relevant dataset from the SQL server and send it back to the handset as an XML stream. The handset running SmartMobile will display the XML answer in a user-friendly grid format to the user. In the event that new tickets are received by the handset for the user, an alert will sound to draw the user's attention to the new calls. See figure 1 below.

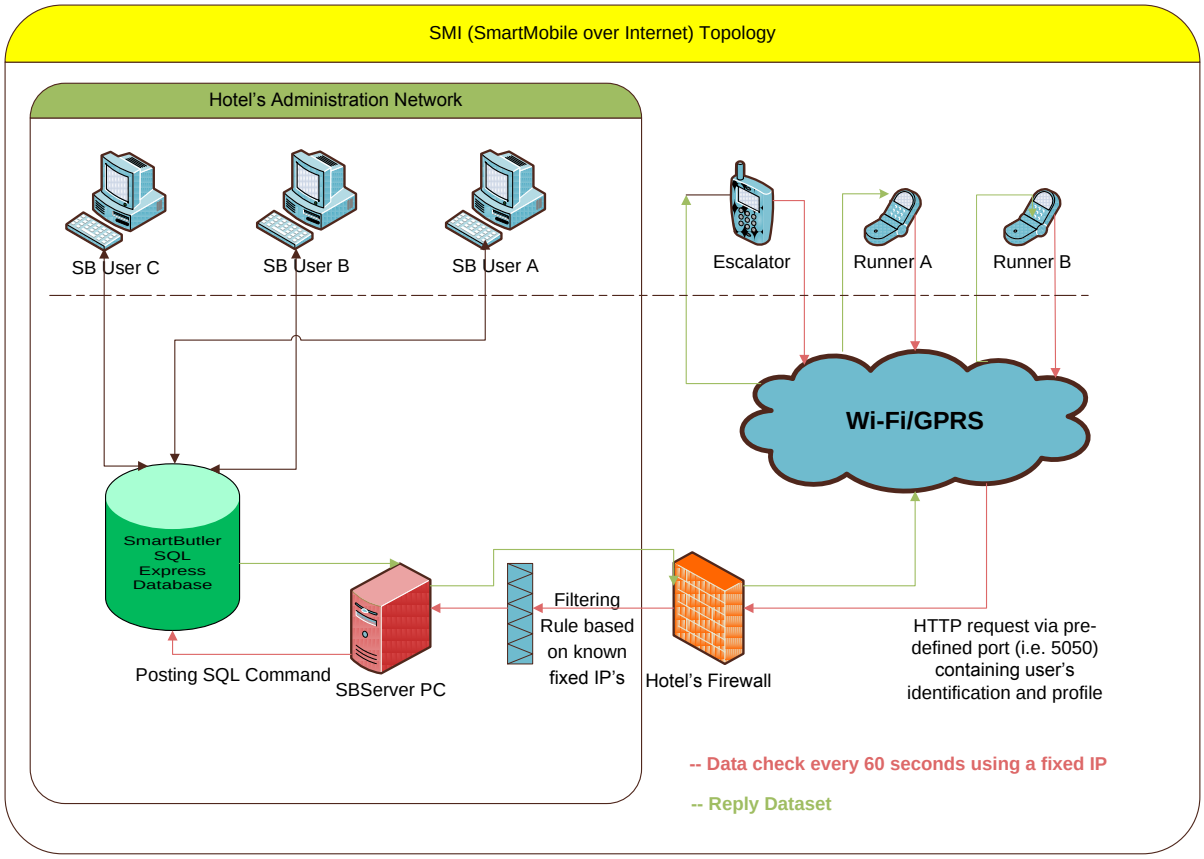

Figure 1

Client Device Specifications

The key requirements for client handsets required to run the SMI application include:

- Only devices that are able to run Java applications will be able to run the SMI application.
- The device should be running MIDP version 2 or higher.
- The handset and its cellular data package should be configured and activated to access the Internet via a direct access point using data as opposed to WAP.
- Each device should have an associated data package size of at least 80MB per month.

Key Advantages of SMI :

- All handsets are always synchronized with the server and each other at any moment in time.
- The data in each message is not limited to the usual restrictions in the number of characters which are associated with SMS messages.
- A substantial cost saving can be achieved by using a data package instead of SMS messaging costs.
- The receiving and sending of updates between the handset and SmartButler® can be done more quickly.
- On line information is available regarding the status of sent messages (whether they have been received or read) and the status of client handsets is available in SmartButler®.
- The display of open tickets on the mobile handset is always ordered by time left to deliver the service. This forces the user's attention to the most pressing calls.

- Once the application has been launched, no code signing is required. This prevents the need for constant user authorizations when messages are sent or received. The application remains active until it is shut down on the handset.
- The new application provides users with the ability to send remarks back to the system for recording in the call ticket details.
- The new application can coexist with JAYBEE's current messaging over SMS version.
- No need for cellular modem or a serial port in SBServer PC.