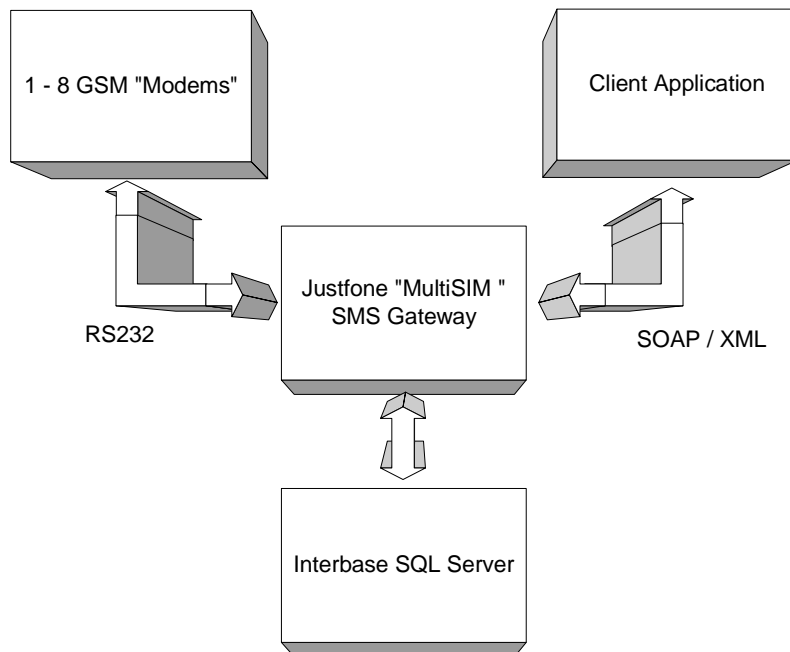


## System Overview

MultiSIM is designed to fill the gap between low volume local SMS despatch / receipt from a GSM handset or "Modem" and high volume full scale hosted or direct network connectivity. The software solution provides a bi-directional GSM interface for small to medium volume cross network messaging utilising a "GSM Modem Pool" via a simple common interface for managed receipt and despatch of SMS messages.



The MultiSIM Gateway software acts as the middle tier in a three-tier architecture managing and marshalling the message traffic between the Clients Application, GSM networks and the message database. The software can be installed on existing servers or on a dedicated 'BOX' the main requirements being Windows NT4 or 2000 Server operating system running Microsoft Internet Information Server, TCP/IP network access via HTTP and available serial ports for GSM connectivity.

## GSM Network Connectivity

The GSM network connectivity is facilitated by up to eight "GSM Modem" units connected to individual serial ports on the host system (suitable modems, multiport serial cards and SIM cards can be supplied by Justfone).

## Client Application Connectivity

In order to provide simple and rapid integration with Internet / Intranet based client applications using commonly available skills and tools, all client communications are via either SOAP or direct reading or posting of XML data packets over HTTP. (In all cases HTTP (Port 80) is used as the bearer reducing firewall configuration issues)

### Inbound Messages

Message delivery and routing to the client application is provided to predefined accounts by publishing the details of requested messages as XML in response to a client request. This request includes the details of the clients account (USERNAME and PASSWORD) and a trigger date FROM which messages should be listed.

Alternatively automated Inbound Message forwarding via PUSH eg. HTTP POST and email are also available

Inbound routing/sorting is accommodated via a range of techniques including GSM no, Keyword and Last in First

**Last Out First In** – As the name suggest this involves “looking up” the GSMNO of the inbound message in the despatched message (outbox) database and routing the message to the account that last sent a message to this user. (Subject to a pre defined time out period).

**Key Word** – Each inbound message account is allocated a keyword, allowing all incoming messages to be scanned and routed to the appropriate account based on the presence of these keywords within the text of the first word of the message (text preceding the first space).

See sample inbound message XML as follows:

### Incoming Message XML Data Example

```
<?xml version="1.0" ?>
<MESSAGELIST>
  <TEXTMESSAGE>
    <GSMNO>44773322112</GSMNO>
    <CONTENT>testing from jimmy</CONTENT>
    <WHENRECEIVED>20020222T22:36:0000</WHENRECEIVED>
  </TEXTMESSAGE>
  <TEXTMESSAGE>
    <GSMNO>447712345678</GSMNO>
    <CONTENT>here it comes</CONTENT>
    <WHENRECEIVED>20020123T21:21:0000</WHENRECEIVED>
  </TEXTMESSAGE>
</MESSAGELIST>
```

## Outbound Messages

Traffic cost optimisation and load balancing are accommodated by programmable routing to multiple modems with SIM cards registered on different networks.

A variety of outbound message types are supported including :

- Traditional text
- Long Text (concatenated)
- Nokia Picture and Logo
- EMS (all element types)
- Calendar Items (vCals)
- Contact Items (vCards)
- Ring Tone
- Binary

All message types can be submitted via HTTP post of XML data packets or via SOAP.

Example EMS message data packet

```
<?xml version="1.0" ?>
= <MESSAGELIST>
  = <EMSMESSAGE>
    <USERNAME>joe</USERNAME>
    <PASSWORD>secret101</PASSWORD>
    <GSMNO>44123456789</GSMNO>
    <TEXT>This is an EMS Message ! -- with an animation and a
      melody !!</TEXT>
  = <DATAELEMENTS>
    = <INFOELEMENT>
      <IETYPE>14</IETYPE>
      <POSINTEXT>20</POSINTEXT>
      <DATA>AAAAAAAAAAAAAAAAA5555555555555555
        AAAAAAAAAAAAAAAAAA5555555555555555AAAAA
        AAAAAAAAAA5555555555555555AAAAAAAAAA
        AAAAAA5555555555555555</DATA>
    </INFOELEMENT>
  = <INFOELEMENT>
    <IETYPE>12</IETYPE>
    <POSINTEXT>10</POSINTEXT>
    <DATA>424547494E3A494D454C4F44590D0A5645
      5253494F4E3A312E320D0A464F524D41543A434
      C415353312E300D0A4D454C4F44593A26623223
      6333569663322A3467336433562B23643172336
      43265323A6431562B663266332E0D0A454E443A
      494D454C4F44590D0A</DATA>
    </INFOELEMENT>
  </DATAELEMENTS>
</EMSMESSAGE>
</MESSAGELIST>
```

## Notes

- The database system is hosted on Borlands proven Interbase SQL platform ensuring performance reliability and scalability. A full set of data management tools are also provided.
- Sample Code for integration with HTML pages, ASP scripts, Visual Basic and Delphi Included.
- Automated system backup.
- Automated GSM hardware network failure detection and re-routing.
- Automated SMS or email notification of system status
- XML feed of current system status and performance statistics status for integration within client systems.