



REDUNDANCY AND HIGH AVAILABILITY OPTIONS FOR SENDQUICK SMS GATEWAY

Prepared by

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REDUNDANCY AND HIGH AVAILABILITY OPTIONS

1. SENDQUICK APPLIANCE SMS GATEWAY

sendQuick is an appliance based SMS gateway which is plug-and-play for easy set-up and maintenance. It has various features to fulfill different SMS requirements for different organisations. In addition, sendQuick has open API (application programming interface) to facilitate easy sending and receiving of SMS messages. These APIs support sending and receiving of SMS via SMTP email and HTTP Post.

2. REDUNDANCY AND HIGH AVAILABILITY OPTIONS

When companies require a higher availability of the SMS service, sendQuick offer a few redundancy and high availability options. The first level of service availability is to provide redundancy in a form of using a fault tolerant server. The second level is to have multiple fault-tolerant servers forming a high available solution.

2.1 Redundancy and Fault Tolerant Environment

As a standard appliance, sendQuick only has a single (one) hard disk in the system. While most of the systems perform perfectly with a single disk, some companies may wish to enhance the reliability of the hardware (system) with a redundant hard disk in a fault tolerant environment. This involves deploying **sendQuick Entera on Sun** server option.

The Sun server (of various models) support from RAID1 to RAID5 for hard disk drive, allowing sendQuick Entera to have a fault tolerant system for continuous uptime for SMS sending and receiving. These hard disk can be in the form of hot-swap (hardware RAID) or non hot-swap (software RAID) models. The determinants are based on the different Sun server hardware deployed.

For entry level purpose, companies may deploy a RAID1 option (software RAID) which will provide a good service availability for the customer.

2.2 High Availability Environment

The high availability solution will involve installing and configuring 2 servers (with or without RAID mirror hard disk) that will be hot-standby for each other in a network setup which provides an active-active environment for the service. The details of the high availability (HA) set-up and function are documented below.

Hardware setup

- (a) 2 identical servers, with 2 network interface each.
- (b) The network interface will be connected to the switch, where both systems are connected.

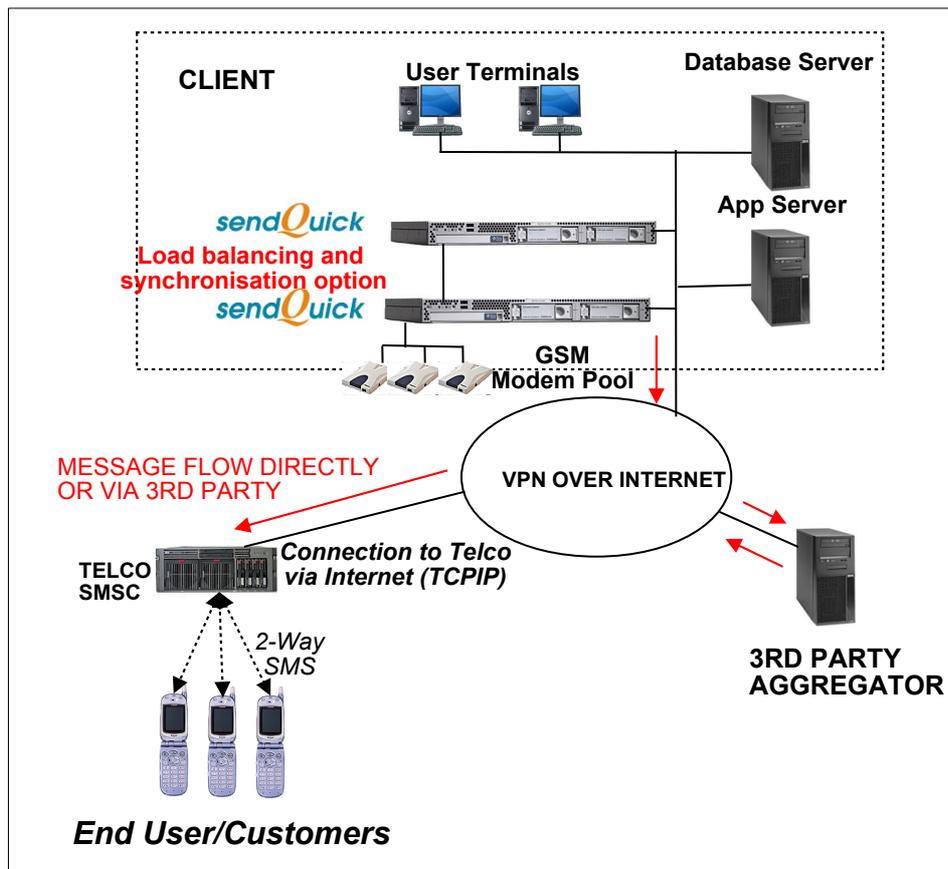
System Flow and Redundancy Solution

- (a) The 2 servers are designated as Primary and Secondary servers. The 2 servers are identical (in terms of hardware configuration, software and applications) and will backup each other

- constantly.
- (b) Once the primary server is down, the secondary server will activate its network setting accordingly to replace the primary system.
- (c) Whatever the setting in the primary server, it will automatically be replicated in the secondary server. This includes the database, user records, messages logs and all relevant information.
- (d) When the secondary server takes over the IP address, it will automatically send a SMS to the administrator to inform him/her of this event. There will be an interface to let the administrator to set the hand phone number for notification.
- (d) The system has a web configurable load balancing structure allowing messages to be processed by the secondary server if primary server load exceeds a certain number of messages in the message queue.

Redundancy System Operations

- (a) The two systems has dual LAN connection. This provides a NIC redundancy for the systems.
- (b) They are connected to the LAN on different sites but in the same network. Only the primary server IP is being used at any time.
- (c) The two systems will have constant checking on each other that both servers are alive, always. If secondary server has problem, primary server will alert (email and SMS) to the administrator.
- (d) If the primary server fail, the secondary server will 'assume' the primary server IP and configuration. It will then act as primary server and alert (via email and SMS) the administrator. The secondary server will copy the database file from primary server constantly, to ensure timely update on both systems.



High Available System Illustration

3. SOLUTION OPTIONS

The customer has three (3) possible solutions for redundancy and high available systems, depending on budget and requirements. The three options are explained below.

3.1 Fault Tolerant RAID System (No High Availability)

The most economical solution, this involves using the sendQuick Entera on a RAID hardware (RAID1 or RAID5) to provide a fault tolerant environment for the SMS gateway. This is usually deployed using sendQuick Entera on Sun* server. The **advantage of this system is cost** and availability. However, if the server fail (due to other reasons than hard disk), the sendQuick system will fail.

3.2 High Availability System without RAID Disk System

This is a second option which use two (2) of the standard sendQuick appliance (sendQuick Alert Plus or sendQuick Entera – on standard box) which can support HA (with add-on HA module) but does not feature RAID hard disk drive. This is an economical HA solution but the lack of RAID hard disk may undermine the availability of the servers as most common failures are due to hard disk issue.

3.3 High Availability System with Fault Tolerant RAID System

This involves deploying two (2) RAID disk system acting in a HA environment. This solution provides a dual layer protection to the customer: against disk failure and server failure. This is also the most complete HA solution as it provides protection for both the common failure components, providing a very high service availability for SMS service. Customer can have a choice to upgrade the hardware (Sun)* to support hot-swap RAID1 or servers with redundant power supply.

This is a more expensive solution but also the most popular among customers requiring HA solution.

4. SUMMARY

The customer has a few options depending on the requirement, budget and types of service availability that they are comfortable with. This document serves to provide an insight on how sendQuick SMS server is deployed in various environment.

** TalariaX has a working arrangement with Sun Microsystem. All reference will be made on Sun server. However, this does not exclude sendQuick from running in other X86 compatible servers from other companies like IBM, HP, DELL or others. Examples on deployment in non-Sun servers are available and they work perfectly in these systems.*