

Mail Informer - Selective Incoming E-mail Instant Phone Notification System

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ABSTRACT

Article describes functionality of phone notification system called “Mail Informer”. The system can instantly call on registered user’s phone to inform about each event of incoming E-mail message from the selected E-mail addresses (user’s personal whitelist).

During last years more and more mobile operators and ISPs are providing the service of redirection of E-mail messages to mobile phone by SMS or some delivery notifications about incoming E-mail by SMS (about 40-50 companies are providing such services within CIS countries [1]).

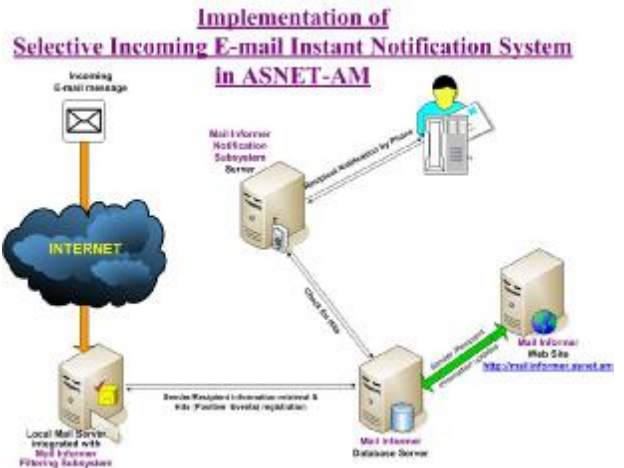
Such service is being provided either by company itself (via «e-mail-sms» gateway) or via transit of user’s E-mails to a special mailbox of other service provider.

But effectiveness of such services are limited due to the massive spam flows, that continue to grow from day to day. Recent analyst estimates indicate that about 90 percent of the total emails is unsolicited email (also known as junk email) or “spam” (according to Kaspersky Laboratory).

Today there are a large number of solutions designed to help eliminate the spam problem. These solutions use different techniques and none of the methods used is 100% effective. So much of the spam anyway gets to users' inboxes and in case of some redirections or notifications, mentioned above can be annoying to get on the mobile phone.

It is clear though, that each user has it’s own current E-mail “infrastructure”, which includes E-mail addresses of people with whom he regularly exchanges E-mail messages. I each user could form a kind of personal whitelist of E-mail addresses, which are important for him at this moment, and make a special filter based on that personal whitelist, to detect and inform the user about each event of incoming E-mail message from the selected E-mail addresses, this can be a very effective solution to instantly notify user by phone about incoming E-mail message he waits for [2].

The concept described above was implemented in the “Mail Informer” notification system, which was realized by the Institute for Informatics and Automation Problems of NAS RA and is currently being provided among network services within the Academic Scientific Network of Armenia (ASNET-AM).



“Mail Informer” system can be used for notification of recipient by phone about received E-mails from the user’s pre-defined personal whitelist. Upon the receipt of the appropriate message the system instantly initiates a phone call to the telephone number (either fixed or mobile) provided by the registered user and informs him about the event of incoming E-mail message from the selected E-mail addresses (user’s personal whitelist). Other messages (including possible spam) are being as usual delivered to the user’s mailbox without any notifications.

The system is operating only with the ‘from-to’ addresses of the E-mail message and does not touch or analyze the message content, which guarantees the confidentiality of E-mail exchange. Moreover even that ‘from-to’ addresses are being obtained not from the from the message header, but from the mail server logfile, where the fact of delivery is recorded. So, the access to the E-mail messages themselves remain protected by username/password as usual.

“Mail Informer” system consists of two different functional hardware/software modules:

- Filtering Subsystem
- Notification Subsystem

Filtering Subsystem is being integrated with the organisation’s mailserver and consists of two components:

- user registration part
- filtering part

User registration part is implemented as a Web page [<http://mailinformer.asnet.am>] and enables user to register in the system, to enter the system, to provide there the notification phone number as well a to manage the personal whitelist of the incoming (From:) E-mail addresses. The personal whitelist is a realtime list, that is kept directly in the MySQL database and that is the same database from which

the second filtering part is performing the checks for incoming messages.

Implementation of the “**Mail Informer**” notification system in ASNET-AM was as follows. ASNET-AM mail server is based on the Sendmail package (under Linux operating system). Sendmail is logging every fact of mail delivery in its logfile (via Linux Syslog service) together with the date of the delivery. Thus the Sendmail’s logfile contains all the information required for the analysis of incoming messages, i.e. E-mail address of Sender, E-mail address of Receptient and the Date of delivery.

Filtering part is implemented as a daemon process that is continuously looking for the additions in the Sendmail’s logfile and compares the delivered messages to match the addresses of Sender/Receptient of the registered users’. Upon the detection of the fact of delivery of the required message filtering part is adding the appropriate information in the database, specifying the date. This information is used by the Notification Subsystem to make a phone call and inform a user about the event of incoming E-mail message from one of his selected E-mail addresses.

Notification Subsystem is implemeneted by means of voice server on the basis of Pentium-IV station with Intel-Dialogic (USA) multichannel voice card installed, for connection to the PSTN.

REFERENCES

1. <http://www.rumails.ru/info>
2. А.Нанасян, А.Петросян, В.Саакян «Концепция селективной системы оперативного оповещения о входящих электронных письмах». CSIT-2007.Ереван, 2007г.