

**Neda Libre Email Appliance  
Design and Implementation Notes  
Debian Qmail++ – A Family of Adopted LSIP Components**

**Draft Document – Reflects Work in Progress**

**Document Nu: PLPC-110504**

Mohsen Banan

<http://mohsen.banan.1.byname.net/ContactMe>

Version 0.2  
January 15, 2008

# Contents

<b>1</b>	<b>Overview</b>	<b>1</b>
1.1	This is a Draft Document . . . . .	1
1.2	Part of LSIP . . . . .	1
1.2.1	Realizations and Uses of Neda-LSIP . . . . .	1
1.2.2	About Neda Libre Appliances . . . . .	2
1.3	Neda-LSIP Approach and Policy . . . . .	2
1.4	About This Document . . . . .	2
<b>2</b>	<b>Email Facilities</b>	<b>5</b>
2.1	Big Picture Perspective . . . . .	5
2.2	Summary of Lower Layer LSIP Facilities . . . . .	9
2.3	Summary of Mail Layer LSIP Facilities . . . . .	9
2.4	Summary of Peer Layer LSIP Facilities . . . . .	9
2.5	MTA Facilities . . . . .	9
2.5.1	Incoming Mail Processing . . . . .	9
2.5.1.1	RBL . . . . .	9
2.5.2	Mail Queue Processing . . . . .	9
2.5.3	Outgoing Mail Processing . . . . .	9
2.5.4	MMA Qmail . . . . .	9
2.5.4.1	Model and Terminology – MMA Qmail . . . . .	9
2.5.4.2	Files Overview – MMA Qmail . . . . .	9
2.5.4.3	Hints – MMA Qmail . . . . .	9
2.5.4.4	Pointer and References – MMA Qmail . . . . .	9
2.5.5	MTA Anti-Spam Facilities . . . . .	10
2.6	Mail Submission and Injection . . . . .	10
2.6.1	Mail Submission Anti-Spam . . . . .	10
2.7	Mail Delivery . . . . .	10
2.7.1	Mail Delivery Anti-Spam: SpamAssassin . . . . .	11

2.7.2	Mail Delivery Anti-Virus: ClamAV	11
2.8	MailBox Management Facilities	11
2.9	MailBox Access Facilities	12
2.9.1	POP	12
2.9.2	IMAP	12
2.9.2.1	Model and Terminology – MMA IMAP	12
2.9.2.2	Files Overview – MMA IMAP	12
2.9.2.3	Hints – MMA IMAP	13
2.9.2.4	Pointer and References – MMA IMAP	14
2.9.3	WebMail	14
2.9.3.1	Squirrelmail	14
2.10	User Agent Facilities	15
2.10.1	Gnus	15
2.10.2	Mozilla	15
2.11	Mailing List Facilities	15
2.11.1	ezmlm	15
2.11.2	mhonarc	15
2.12	In Access Units	15
2.12.1	In Fax Access Unit - Mail	15
2.12.2	WhiteBerry: In EMSD Access Unit - Mail	15
2.13	Out Access Units	15
2.13.1	Mail - Out Access Unit	15
2.13.2	WhiteBerry: Mail - Out Access Unit	15
2.14	Mail Processing Tools	15
2.14.1	mess822	15
2.15	Mail Monitoring and Analysis	15
2.15.1	qmailanalog	15
<b>3</b>	<b>Peer and Lower Layer Facilities</b>	<b>17</b>
3.1	Related Peer Facilities	17
3.1.1	web	17
3.2	Lower Layer Facilities	17
<b>4</b>	<b>Large Site Deployment</b>	<b>19</b>
4.1	Introduction	19
4.1.1	General Policies & Procedures	19
4.1.2	Site Deployment Policies & Procedures	19

# List of Figures

4.1 MailMeAnywhere Site Deployment . . . . .	20
--	----



# List of Tables

# Chapter 1

## Overview

### 1.1 This is a Draft Document

It reflects work in progress. It is subject to frequent changes. Use at your own risk.

### 1.2 Part of LSIP

This document is part of Libre Services Integration Platform Neda-LSIP.

Neda-LSIP is a comprehensive set of tools and conventions for the transformation of software into services. Neda-LSIP is the key technological component of our realization of the concept of Libre Services, allowing practical and cost-effective aggregation of free software components into coherent services. Neda-LSIP is free software itself, available under the Affero GPL version 3 license. For complete details see the document titled, *Neda-LSIP Design and Implementation Notes* [6].

You can obtain Neda-LSIP by following the instructions below:

```
cvs -d ":pserver:anoncvs@cvs.bysource.org:/repl" checkout -d osmt public/osmt
```

Neda-LSIP is a series of self documenting scripts. The most current and complete documentation is embedded in the scripts.

This document is for the most part auto generated and includes much information that is extracted from the LSIP scripts directly.

This document provides structure and organization to the individual script information.

#### 1.2.1 Realizations and Uses of Neda-LSIP

Neda-LSIP is a platform it allows for good things to be built on top of it.

The 3 categories of things that use Neda-LSIP are:

- - Ready to run Software. To be installed by the user.
- - Pre-Configured Servers. Ready to be plugged in. See <http://store.neda.com>

- - Ready to use ByStar Internet Application Services.
- - As part of a Libre Service Engine.

### 1.2.2 About Neda Libre Appliances

Certain functional profiles (sub-sets of Neda-LSIP) are often desired as dedicated ready to run servers.

In that spirit, we have created the following Neda Libre Appliances.

- Neda Libre Email Appliance. See [7]
- Neda Libre Web Appliance.
- Neda Libre Intranet Office Appliance.
- Neda Libre Fax Appliance. See [5]

## 1.3 Neda-LSIP Approach and Policy

General Preference for std debian distribution packages. Bystar is layered on top of Debian/Ubuntu. qmail and all else is part of Debian/Ubuntu.

Versions – Stable and testing.

Goals

```

-----
    Highly Scalable
    -----

    Plug and Play
    -----

    Robust and Secure
    -----
  
```

Expandable

```

-----
    Best of Breed incorporation
  
```

## 1.4 About This Document

```

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<HTML>
<HEAD>
<TITLE></TITLE>
<META
NAME="generator" CONTENT="HTML::TextToHTML v2.23">
</HEAD>
<BODY>
<P>Neda Libre Email Appliance is based on Debian and qmail++ as a coherent family of adopted LSIP components.
  
```

<P>Neda Libre Appliances can be used as:

```

<UL>
<LI>Ready to run Software. To be installed by the user.
  
```

- Pre-Configured Servers. Ready to be plugged in. See <http://store.neda.com>
- Ready to use ByStar Internet Application Services.
- As part of a Libre Service Engine.



# Chapter 2

## Email Facilities

### 2.1 Big Picture Perspective

lpEmailHosts.sh

lcaQmailHosts.sh

**Extracted by lpEmailRoadmap.sh -i modelAndTerminology**

Description of lpEmailRoadmap.sh -- modelAndTerminology

Neda Libre Platform Email Subsystem

Based on Debian GNU/Linux qmail plus-plus

Overview

-----

Part of LSIP

-----

How To Obtain.

Goals

-----

Highly Scalable

-----

Plug and Play

-----

Robust and Secure

-----

## Expandable

-----  
 Best of Breed incorporation

Approach and Policy  
 -----

General Preference for std debian distribution packages.  
 Bystar is layered on top of Debian/Ubuntu.  
 qmail and all else is part of Debian/Ubuntu.

Versions -- Stable and testing.

Big Picture View  
 -----

lpEmailHosts.sh

lcaQmailHosts.sh

## MTA Facilities

-----

qmail 1.03 ++

MTA Anti-Spam Facilities  
 -----

- RLB
- qrlbcheck
- Reject at SMTP (Priority 2)
- spamGuard
- qconfirm

## Mail Submission and Injection

-----

SMTP Auth  
 -----

Mail Submission Anti-Spam  
 -----

## Mail Delivery

-----

Mail Delivery Anti-Spam

-----

MailBox Facilities

-----

MaildirToMbox

MailBox Remote Access

-----

POP

IMAP

WebMail - Squirrelmail

sqwebmail

User Agent Facilities

-----

Vacation

SpamAssasin

qsecretary

Gnus

Mozilla

Mailing List Facilities

-----

ezmlm

mhonarc

Mail Processing Facilities

-----

mess822

Mail Monitoring and Analysis

-----

qmailanalog

Related Peer Facilities

=====

web

Underlying Facilities

=====

daemontools

ucspi

tcpserver

djbdns

splogger

### **Extracted by lpEmailRoadmap.sh -i pointersAndReferences**

Description of lpEmailRoadmap.sh -- pointersAndReferences

See Life with Qmail

[http://sylvestre.ledru.info/howto/howto\\_qmail\\_vpopmail.php](http://sylvestre.ledru.info/howto/howto_qmail_vpopmail.php)

### **Extracted by lpEmailRoadmap.sh -i progsListLatex**

Description of lpEmailRoadmap.sh -- progsListLatex

maildrop mailbot reformmime reformail maildropfilter clamscan spamassassin

### **Extracted by lpEmailRoadmap.sh -i debPkgsListLatex**

Description of lpEmailRoadmap.sh -- debPkgsListLatex

qmail-src clamav spamassassin

### **Extracted by lpEmailRoadmap.sh -i howTos**

Description of lpEmailRoadmap.sh -- howTos

Fro Qmail See:

### **Extracted by lpEmailRoadmap.sh -i help**

Description of lpEmailRoadmap.sh -- help

lpEmailRoadmap.sh provides an overview of the bystar layer.

## **2.2 Summary of Lower Layer LSIP Facilities**

## **2.3 Summary of Mail Layer LSIP Facilities**

## **2.4 Summary of Peer Layer LSIP Facilities**

## **2.5 MTA Facilities**

qmail 1.03 ++

### **2.5.1 Incoming Mail Processing**

#### **2.5.1.1 RBL**

### **2.5.2 Mail Queue Processing**

### **2.5.3 Outgoing Mail Processing**

### **2.5.4 MMA Qmail**

#### **2.5.4.1 Model and Terminology – MMA Qmail**

**Extracted by mmaQmailRoadmap.sh -i modelAndTerminology**

Description of modelAndTerminology -- modelAndTerminology

#### **2.5.4.2 Files Overview – MMA Qmail**

**Extracted by mmaQmailRoadmap.sh -i help**

Description of help -- help

#### **2.5.4.3 Hints – MMA Qmail**

**Extracted by mmaQmailRoadmap.sh -i howTos**

Description of howTos -- howTos

#### **2.5.4.4 Pointer and References – MMA Qmail**

**Extracted by mmaQmailRoadmap.sh -i pointersAndReferences**

Description of pointersAndReferences -- pointersAndReferences

## 2.5.5 MTA Anti-Spam Facilities

- RLB - qrlbcheck - Reject at SMTP (Priority 2) - spamGuard
- qconfirm

## 2.6 Mail Submission and Injection

SMTP Auth

### 2.6.1 Mail Submission Anti-Spam

## 2.7 Mail Delivery

Extracted by `mmaQmailAddr.sh -i help`

Description of help -- help

Account Processing:

=====

```
vis_acct{Manipulate}:      -p acctName
do_acct{Manipulate}:      -s qmailAcctsList_
                          -s qmailAcct_
```

```
** Manipulate an account entry as locDeliveryAcct
   in /var/qmail/users/
```

Address Processing:

=====

```
vis_addr{Manipulate}:     -p acctName -p localPart -p mbox,forward,progs
                          -p FQMA -p mbox,forward,progs
do_addr{Manipulate}:     -s qmailAddrList_
                          -s qmailAddr_
```

```
** Manipulate an addr by editing the dotQmailFile
```

Account/Address Processing:

=====

```
do_acctAddr{Manipulate}:  -s qmailAcctsList_
                          -s qmailAcct_
```

```
** Manipulate an account entry as locDeliveryAcct
   in /var/qmail/users/
   and manipulate addresses associated with the account.
```

Account VirDom Manipulate:

=====

```
vis_virDom{Manipulate}:    -p acctName -p domainPart
```

```
do_acctAdrsVirDom{Manipulate}:
                        -s qmailAcctsList_
                        -s qmailAcct_
```

\*\* Manipulate a virtual domain

Address ControlFile Show:

=====

```
vis_addrCtlFileShow :    -p acctName -p localPart
                        -p FQMA
```

```
do_addrCtlFileShow :    -p acctName -s qmailAddr_
```

\*\* Show the dotQmailFile for an address

Account Addresses FQMA Show:

=====

```
vis_addrsFqmaShow:      -p acctName
```

```
do_acctAdrsFqmaShow:   -s qmailAcctsList_
                        -s qmailAcct_
                        -s qmailAddrList_
```

\*\* Show all addresses corresponding to  
an account in FQMA format.

### 2.7.1 Mail Delivery Anti-Spam: SpamAssassin

### 2.7.2 Mail Delivery Anti-Virus: ClamAV

## 2.8 MailBox Management Facilities

MaildirToMbox

Vacation

Autoresponder

qsecretary

## 2.9 MailBox Access Facilities

### 2.9.1 POP

### 2.9.2 IMAP

Our Choice of IMAP server is courier.

We Considered the below mentioned alternatives:

```
cyrus      = Cyrus IMAP server
uw         = University of Washington's IMAP server
courier    = Courier IMAP server
dovcod
```

#### 2.9.2.1 Model and Terminology – MMA IMAP

**Extracted by `mmaImapRoadmap.sh -i modelAndTerminology`**

Description of `modelAndTerminology -- modelAndTerminology`

```
Terminology and Model:
=====
```

Objects Overview:

```
-----
```

mmaGnats Object Processors and Containers:

```
-----
```

```
mmaGnatsServerHosts.sh
```

#### 2.9.2.2 Files Overview – MMA IMAP

**Extracted by `mmaImapRoadmap.sh -i help`**

Description of `help -- help`

DESCRIPTION

```
mmaGnats (MailMeAnywhere QMAIL) is a set of consistent
policies built on the QMAIL as a CAPABILITY and on
(OSMT) Open Services Management Tools.
```

```
mmaGnats Commands, each contain a set of related functions
which allow you to accomplish specific tasks. Specifically:
```

COMMAND	TYPE	USED BY
mmaGnats.sh	action.sh	any
mmaGnatsLib.sh	library.sh	root/any
mmaGnatsBinsPrep.sh	action.sh	root
mmaGnatsServerHosts.sh	subjectAction.sh	root/any
mmaGnatsAdmin.sh	action.sh	root/any

At A Glance

-----

Basic qmail

-----

```

mmaGnats.sh          -- This File. General Orientation and Information

mmaGnatsLib.sh       -- To be included in all mmaGnats scripts.
                       General configuration parameters and
                       general useful functions go here

mmaGnatsBinsPrep.sh  -- Prepare binary files for qmail/ezmlm
                       -- for relevant pltfoms and versions

mmaGnatsBinsInstall.sh -- Install mmaGnats binaries on opRunHostName

mmaGnatsServerHosts.sh -- For subject host, configure qmail

mmaGnatsAdmin.sh     -- Start, stop and addNewAccounts

mmaGnatsUserConfig.sh -- Setup Per user environment parameters.
```

### 2.9.2.3 Hints – MMA IMAP

#### Extracted by mmaImapRoadmap.sh -i howTos

Description of howTos -- howTos

A) How Do I setup a null client from scratch?  
Follow (A-1), and then:

3) Specify basic null client paramters (smarthost, domain, ...)  
In ../siteControl/nedaPlus/mmaGnatsListItems.main

add an entry for your host. Then:

```
mmaGnatsHosts.sh -s bisp0003 -a configure
```

4) Verify and Monitor installation

```
mmaGnatsAdmin.sh -i fullReport
```

5) Sendout a test message.

```
mmaGnatsUserConfig.sh -i mailTest
```

6) Allow users to customize their desired parameters.

```
mmaGnatsUserConfig.sh
```

#### **2.9.2.4 Pointer and References – MMA IMAP**

##### **Extracted by mmaImapRoadmap.sh -i pointersAndReferences**

Description of pointersAndReferences -- pointersAndReferences

cgi-bin is: /usr/lib/cgi-bin/gnatsweb.pl

Gnats web conf params are in: /etc/gnatsweb/

Web config is in: + /usr/doc/gnatsweb/CUSTOMIZE.vars.gz

### **2.9.3 WebMail**

#### **2.9.3.1 Squirrelmail**

sqwebmail

## **2.10 User Agent Facilities**

### **2.10.1 Gnus**

### **2.10.2 Mozilla**

## **2.11 Mailing List Facilities**

### **2.11.1 ezmlm**

### **2.11.2 mhonarc**

## **2.12 In Access Units**

### **2.12.1 In Fax Access Unit - Mail**

See [\[5\]](#) for details.

### **2.12.2 WhiteBerry: In EMSD Access Unit - Mail**

See [\[1\]](#), [\[2\]](#), [\[3\]](#), [\[4\]](#) for details.

## **2.13 Out Access Units**

### **2.13.1 Mail - Out Access Unit**

See [\[5\]](#) for details.

### **2.13.2 WhiteBerry: Mail - Out Access Unit**

See [\[1\]](#), [\[2\]](#), [\[3\]](#), [\[4\]](#) for details.

## **2.14 Mail Processing Tools**

### **2.14.1 mess822**

## **2.15 Mail Monitoring and Analysis**

### **2.15.1 qmailanalog**



## **Chapter 3**

# **Peer and Lower Layer Facilities**

### **3.1 Related Peer Facilities**

#### **3.1.1 web**

### **3.2 Lower Layer Facilities**

daemontools ucspi tcpsrvr djbdns splogger



# Chapter 4

## Large Site Deployment

### 4.1 Introduction

#### 4.1.1 General Policies & Procedures

#### 4.1.2 Site Deployment Policies & Procedures

The abbreviations that are used in Figure 4.1

**EMR-IN:** Edge Mail Router - Inbound  
MB provide the description.

**EMR-OUT:** Edge Mail Router - Outbound  
MB provide the description.

**SMR-DS:** Site Mail Router - Delivery Server  
MB provide the description.

**SMR-DS-LIST:** Site Mail Router - Delivery Server - List  
MB provide the description.

**SMR-SS:** Site Mail Router - Submit Server  
MB provide the description.

**SMR-SA:** Site Mail Router - Submission Agent  
MB provide the description.

**MBAS:** Mail Box Access Server  
MB provide the description.

**FDS:** Final Delivery Server  
MB provide the description.

**MUA:** Mail User Agent  
MB provide the description.

**MRUA:** Mail Retrieval User Agent  
MB provide the description.

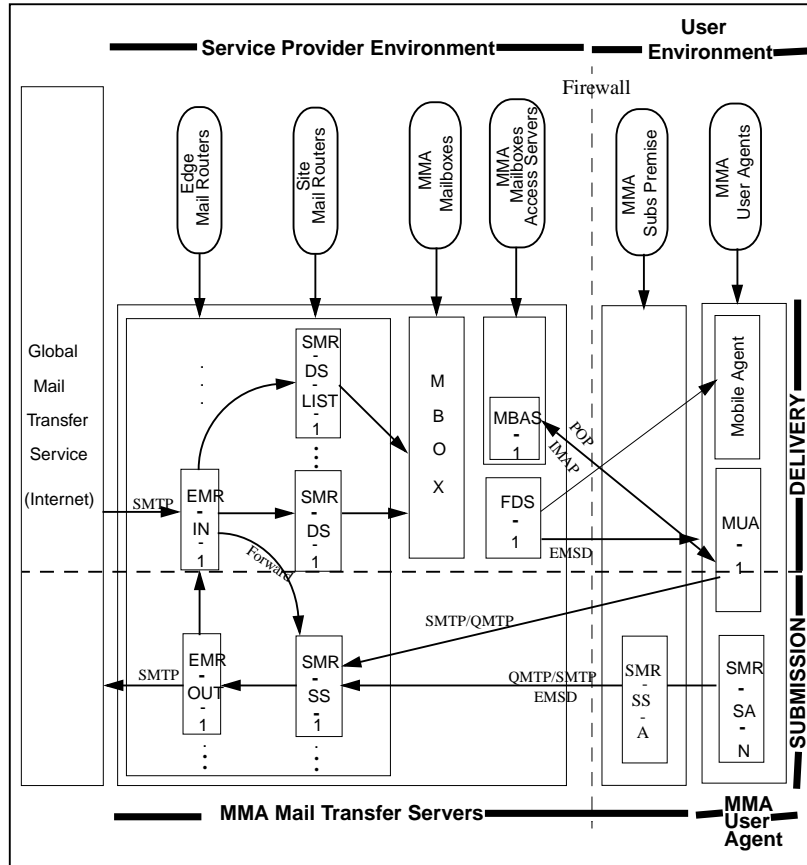


Figure 4.1: MailMeAnywhere Site Deployment

**MSUA:** Mail Submission User Agent  
MB provide the description.



# Bibliography

- [1] " Mohsen BANAN ". " emsd-sa-source design and implementation notes ". Permanent Libre Published Content "110304", Libre Content, """. <http://www.neda.com/PLPC/110304>.
- [2] " Mohsen BANAN ". " neda's implementation of emsd-ua – source ". Permanent Libre Published Content "110305", Libre Content, """. <http://www.neda.com/PLPC/110305>.
- [3] " Mohsen BANAN ". " pine-emsd ua design and implementation notes ". Permanent Libre Published Content "110306", Libre Content, """. <http://www.neda.com/PLPC/110306>.
- [4] " Mohsen BANAN ". " neda's implementation of esro – source ". Permanent Libre Published Content "110303", Libre Content, "January" 1999. <http://www.neda.com/PLPC/110303>.
- [5] " Mohsen BANAN ". " neda libre fax appliance design and implementation notes debian hylafax-plus-plus – a family of adopted Isip components ". Permanent Libre Published Content "110505", Libre Content, "May" 2003. <http://www.neda.com/PLPC/110505>.
- [6] " Mohsen BANAN ". " Isip design and implementation notes ". Permanent Libre Published Content "110501", Libre Content, "December" 2007. <http://www.neda.com/PLPC/110501>.
- [7] " Mohsen BANAN ". " neda libre email appliance design and implementation notes debian qmail++ – a family of adopted Isip components ". Permanent Libre Published Content "110504", Libre Content, "January" 2008. <http://www.neda.com/PLPC/110504>.