

Reliability And Security Of Messaging Systems

Scalability, Redundancy, Resilience, Recovery

Document #PLPC-120058

Version 0.1

March 10, 2016

This Document is Available on-line at:

<http://mohsen.banan.1.bynome.net/PLPC/120058>

Mohsen BANAN

Email: <http://mohsen.1.banan.bynome.net/contact>

Part I

Mail System Reliability And Scalability

1 Reliability Considerations (No Noticable Impact)

Reliability Considerations (No Noticable Impact)

What Can Fail Without Any Noticable Impact

- Redundant Mail Servers
- Redundant Mail Access Servers
- Redundant DNS Servers

2 Reliability Considerations (Minor Noticable Impact)

Reliability Considerations (Minor Noticable Impact)

- Mail Box Storage

2.1 Mx Records Redundancy

Mx Records Redundancy

Internet Mail System Is Designed To Take Hits.

Hits Should Have Minimal Impact.

Part II

Scalability, Distribution And Recovery

3 By* 's Model Of Distribution Of Domains

By* 's Model Of Distribution Of Domains

Segmenting the roots of your mail domain lets you fundamentally divide the user base.

Part III

Class Activities

4 Accessing Your Accounts On ByStar Mail Server

4.1 Your Domains, Your Account+Passwd

- smtp.first.1.last.byname.net – imap.first.1.last.byname.net
- Your account is the first field in the /etc/passwd file that was emailed
- Your passwd was emailed to you

4.2 ByStar Mail Server Basic Tests

- ping smtp.first.1.last.byname.net
- From Your Bellevue College Account Send Messages To main@first.1.last.byname.net
- Submit Server Tests Against smtp.first.1.last.byname.net

5 Bash Scripting – MailBot and MailInjector Exercises

5.1 mailInjector.sh Evolution

- `cd /isit442`
- `mv mailInjector mailInjector.20160223`
- `cp -r -p /opt/public/osmt/bin/mailInjector .`

5.2 mailBot.sh Evolution

- Top-Down Design, Bottom-Up Implementation
- Managing Complexity, Cohesion, Consistency – mailInjector.sh
- Panel.org Omni-Available Features
- Iim Omni-Available Features
- Bashing – Procedural vs Functional Vs Object-Oriented

5.3 Offlineimap + notmuch

- Hit Your ByStar Imap Account With offlineimap
- run notmuch on your locally synched messages

Part IV

Assignments

6 Review Of Last Week's Assignments

- Work On Your Own Full Mail Processing Loop:
 - Use mailInjector.sh to send out a pdf attachment to your ByStar account.
 - Use offlineimap to automatically retrieve that message.
 - Use mailBot.sh to dissect the pdf message into its original pdf file.
 - Print out a command that would have printed that pdf file.
 - Make it such that all of the above can be automated repeatedly.

7 Next Set Of Assignments

Write a high level description of steps involved in:

- Transitioning From One Mail System To Another
 - Assume User Base of 500. 1000 Mailboxes.
 - 6 hour Window to implement the transition.
 - Old and New DNS is under your control. What will you do to old and new.
- Transitioning From On-Site Mail System To A Cloud Base Service

For each step specify details.

References