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BC-isit442 Class Overview And Structure

Document #PLPC-120048
Version 0.1
January 05, 2016

This Document is Available on-line at:
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Part I

Introductions

1 Class Information

Class Information

- Class Portal: <http://mohsen.banan.1.byname.net/teaching/bc-isit442>
- We May Also Use Canvas Occasionally
- For now mohsen.banan@bellevuecollege.edu is the best way to reach me

2 About Me

About Me

An Engineer, Not A Teacher

Occasionally I Teach

Google “Mohsen Banan”

3 About You

About You

It is a small class.

To teach you well, I need to get to know you.

Part II

Relevant Concepts Review

4 Relevant Concepts Review

Relevant Concepts Review

- Unix/Linux Command Line

- Virtualization
- OSI
- Messaging
- Wireshark

Part III

Class Structure And Class Overview

5 Class Structure

5.1 Theory: Model, Terminology, Protocols

About half

5.2 Practice: Hands-On

About half

6 Class Overview

6.1 Basic Model for email (Inter-personal Message Handling System (MHS))

Figure 1 is taken from X.400 reference model.

The basic model for email (Inter-personal Message Handling System (MHS)) mimics the postal service.

6.2 Some Basic MHS (email) Terminology Review

Some Basic MHS (email) Terminology Review

Since we are going to use email as the example through out, let's quickly review some basic terms.

- Message Handling System (MHS) – interpersonal, non-intrusive, either deliver or bounce
- Message Transfer Agent (MTA), Message Transfer System (MTS) – Examples: Sendmail, qmail, exim, MS-Exchange, ...
- Mail User Agent (MUA) – Examples: MS-Outlook, pine, Gnome's Evolution, Emacs' Gnus, ...
- WebMail – A Web Based MUA
- Message Delivery – email is put in your mailbox or pushed to MUA

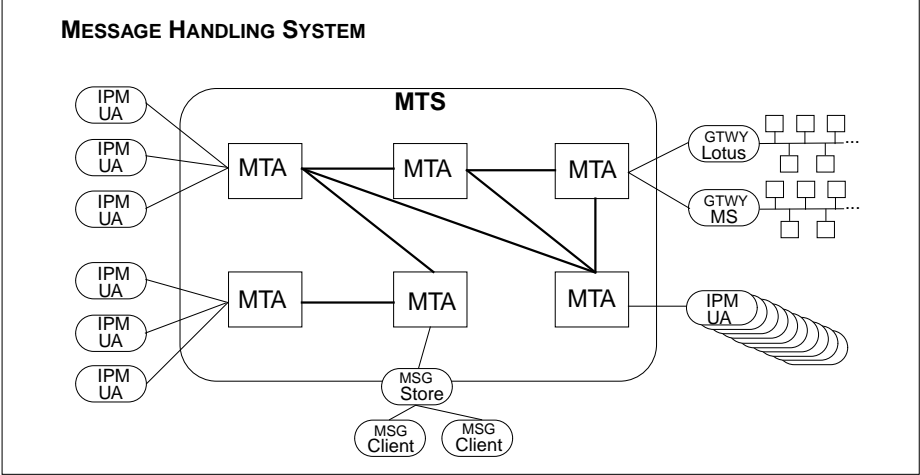


Figure 1: mhsModel

- Message Submission – Sending email
- Message Retrieval – Example: imap

6.3 MTA Comparisons – qmail is our choice of ultimate MTA

- qmail vs Sendmail vs Exchange vs Postfix vs Exim http://shearer.org/MTA_Comparison
- Linux Modules and Protocol Layers
- qmail – <http://cr.yip.to/qmail.html>

6.4 The ByStar Mail Server Configuration – Hosted And In-House

Figure ?? shows ...

6.5 The Right qmail Autonomous Client Configuration

Figure ?? shows ...

Part IV

Assignments And Grading

7 Assignment

7.1 Main Quarter Assignments

1. Build A Secure And Flexible Mail Responder
2. MTA Logs Analysis
3. Mail Heartbeat – Failure Alert

7.2 This Week's Assignment

1. Personal Statement (Due Thursday 1/5/2017)
2. Completion Of Emacs Tutorial (Due Tuesday 1/10/2017)

8 Grading

1. Main Quarter Assignments
2. Weekly Assignments
3. Occasional Quizzes

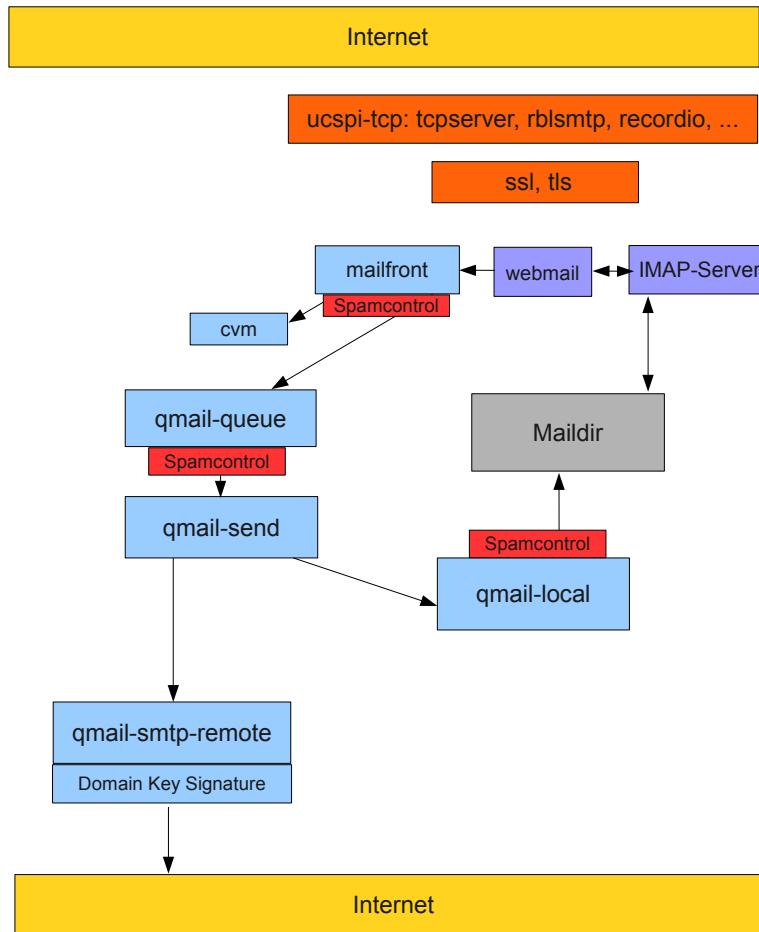


Figure 2: qmail-bystar-wellknown-sa

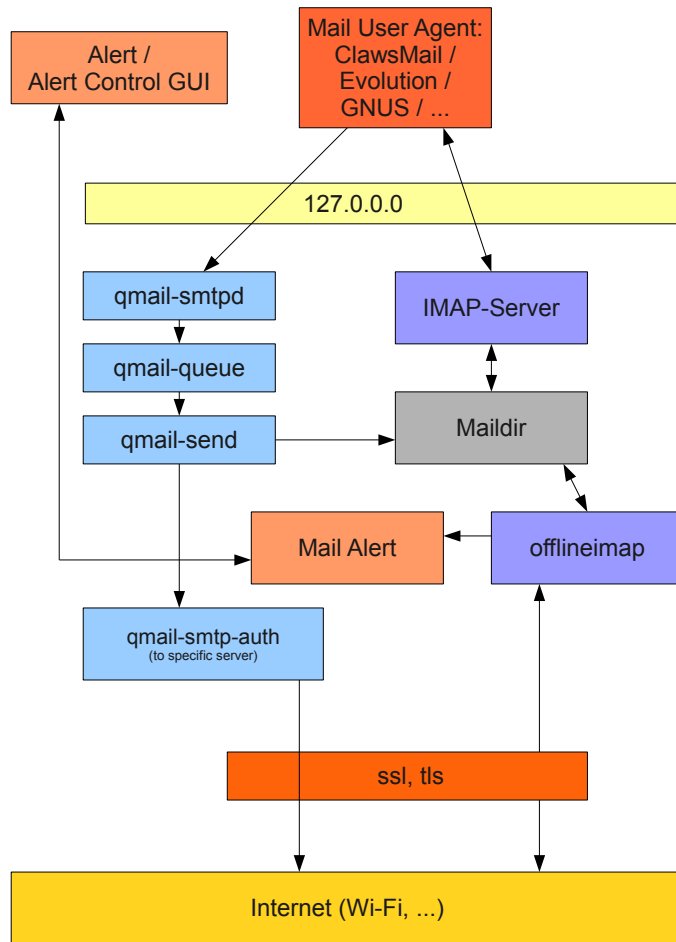


Figure 3: qmail-bystar-wellknown-ua

Part V

Class Activities

9 Virtualization

10 Obtaining Your VM Player and Your VM Images

10.1 About Virtual Machines Players And Virtual Machines Images

1. Virtualization Host Machine
2. VM Players
3. VM Images
4. Virtualization Guest Machines

10.2 Virtualization Technology Choices

- VMware – Proprietary – Hypervisor Types: 1 and 2
- KVM – Libre-Halaal – Hypervisor Types: 1
- VirtualBox – Libre-Halaal – Hypervisor Types: 2
- Microsoft Stuff – Proprietary – Hypervisor Types: 2

Corporate America's Choice: VMware

10.3 Obtaining Your VM Player/s

- VMware WorkStation 11 (Licensed Software, order it through your manager)
- VMware Player (free of charge download for non-commercial use)

Order and Instalation Instructions at:

<http://by-star.net/obtainingTmcpVMs>

10.4 Obtaining Your VM Image

Development VM Images Are Kept In ByStar Intranet

Download Instructions Are At:

<http://by-star.net/obtainingTmcpVMs>

11 Starting Your VM – Configurations and Logging In

11.1 Preparing Your VM

The VM Image That You Downloaded Is In OVF Format.

OVF Is Well Suited For Transfer Of VM Images – But Not For Running.

You First Need To Convert It To vmx format:

- In Your VM Player Software
- “Open A Virtual Machine” which specifies the OVF Image

11.2 Configuring Your VM

Before Running Your VM, It Is Good Idea To Verify That You Have Good (Optimum) Configurations For Your VM:

- Select Your VM Image
- Edit Virtual Machine Settings
- Memory (4 GB) – if you can afford it
- Processors (More Than 1 less than 4) – if you can afford it
- Network Adapter (NAT) – Always At ByStar

12 Emacs

12.1 What Is Emacs?

- Emacs is far more than just an editor. Viewing Emacs as an Editor Centered User Environment is only the beginning of recognizing its power.
- Emacs Competes With Best Of Breed IDEs.
- Emacs Competes With Outlook
- A Full Lisp Engine Plus Tons Of Apps
- Emacs Is About Full Integration

12.2 What Is Blee?

- Blee (ByStar Libre Emacs Environment) Is A Layer Over Emacs That Integrates It With Autonomous ByStar Services.

12.3 Obtaining And Installing Emacs?

References