University of Dar es Salaam

Computing Centre

Technical Management of ICT Infrastructure (TM ICTI)

Module 3: Corporate Mail System Management

Module Outline

1. Introduction to Mail System
2. Building a corporate Mail System
3. Managing a Corporate Mail System

Module Objectives

1. Effective management of mail System
2. Reduce costs
3. Security Awareness

Introduction to a corporate email system

E-Mail System

1. Is method of exchanging digital messages
2. Is based on a store-and-forward model
3. Is the most used internet application in the world

Introduction to a corporate email system

E-Mail System Components

1. Domain Name - IP mapping
2. Mailboxes for the actual storage of emails
3. Authentication Sub-system
4. MRA –Mail Retrieval Agent
5. MTA –Mail Transfer Agent
6. MDA –Mail Delivery Agent
7. MUA –Mail User Agent

Introduction to a corporate email system

Similarities with postal system

	POSTAL SYSTEM	EMAIL SYSTEM
1	Sender writes a letter on paper Encloses paper in an envelope Writes recipient address on envelope Sends letter to nearest post office	Sender uses MUA to create email in appropriate format and post it to MTA
2	Post office accepts letter Checks if letter is allowed to be sent (appropriate stamp) Places it in a queue ready to be sent	MTA receives email from MUA and verifies if it has permission to send email via that MTA, if so places it in a queue otherwise discards it

Introduction to a corporate email system

Similarities with postal system

	POSTAL SYSTEM	EMAIL SYSTEM
3	Post officer gets letter from queue Checks recipient address Queries postal book to know which post office does the recipient address belongs to	MTA retrieves email from queue, looks at domain name and queries DNS for MX (Mail Exchange) i.e. IP address of where to deliver email (receiving MTA)
4	Post officer takes letter using official means to receivers postal office	MTA sends email to receivers MTA using SMTP (Simple Mail Transport Protocol)

Introduction to a corporate email system

Similarities with postal system

	POSTAL SYSTEM	EMAIL SYSTEM
5	Recipients local post office accepts letter Checks to see if recipient has a mailbox within the post office	Recipient MTA accepts email and checks address to verify if it holds recipients mailbox locally
6	Recipient post officer places letter into recipients physical mail box	MTA passes letter to MDA, of which the MDA stores email in recipients mailbox in appropriate format

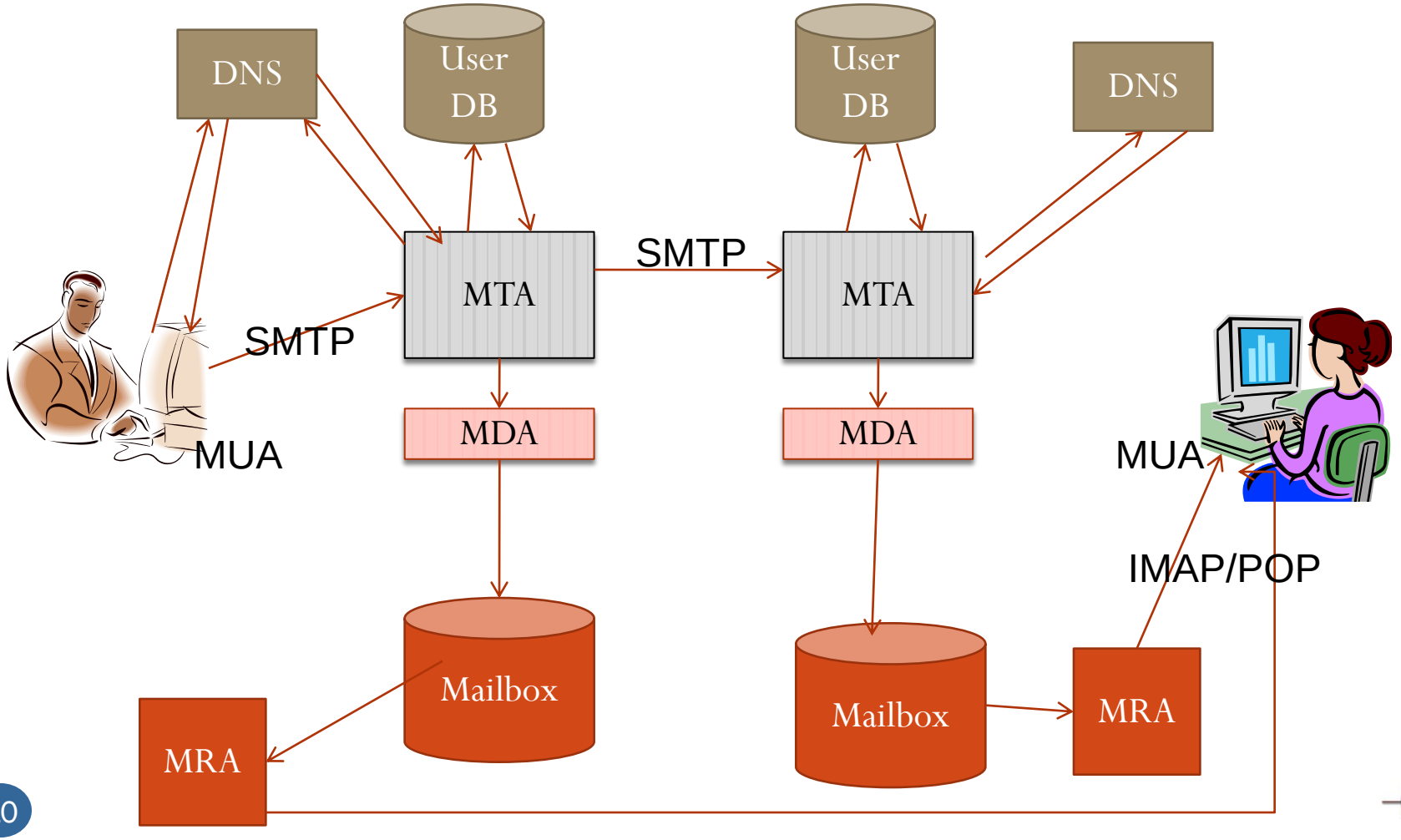
Introduction to a corporate email system

Similarities with postal system

	POSTAL SYSTEM	EMAIL SYSTEM
7	Recipient (or maid) periodically visits local post office Uses a key to open mailbox to check if there is any new letters If there is a letter, picks it up and takes it home for reading	MRA periodically checks email in users mail account, this account requires authentication usually via username/password combination
8	Recipient opens letter and reads its in comfort of his/her home	MUA uses MRA to retrieve email and view it in appropriate format

Introduction to a corporate email system

How components fit/work together



Design and Planning a Corporate Email System

Requirements

Software

1. OS
2. MTA and MDA
3. MRA
4. Database
5. Mailing list
6. Anti-Virus
7. Anti-SPAM
8. **Authentication**
9. MUA
10. Backup and Recovery

Design and Planning a Corporate Email System

Requirements

Hardware requirements

1. Processors
2. RAM
3. Disk space
4. Backup and Recovery

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Setting Up Enterprise Mail Server

Requirements:

Software

- Postfix as MTA and MDA
- Dovecot as POP/IMAP
- Maildir as mailbox format
- Mailman for mailing list
- Amavis-new, spamassassin and clamav for spam and virus protection
- Squirrelmail, outlook express, Microsoft outlook as MUA

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Requirements:

Hardware:

Desktop Computer

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Download and Install

- Installation via yum/apt-get
- Make it start on boot
- Test if it can start and stop

Configurations

- System layout
  - Email and/or mailbox location directories
- User and Password Management
  - Important files /etc/passwd, /etc/shadow (disable ssh)

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Configurations

MTA, MDA Postfix

- Important configuration files – main.cf and master.cf
- Important configuration attributes
  - Myhostname, mydomain, mydestination, relayhost, mynetworks

MDA (POP/IMAP) dovecot

- Important configuration files – /etc/dovecot.conf
- Important configuration attributes
  - enable pop/imap, mail_location, mailbox format

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Configurations

Authentication: Cyrus SASL

Encryption: TLS

MUA: Squirrelmail

- Important configuration file – config.php accessed via perl program conf.pl
- Important configuration attributes
  - Type of pop/imap, and name of server
  - Preference and attachment storage
  - plugins (change password, filters, calendar)

Deployment of a corporate email system

Case Study 3 Enterprise Mail Server

Configurations

Anti-Virus and Spam filtering (clamav, Amavis-new, spamassassin,)

- Important configuration files - /etc/amavisd.conf, /root/spamassassin/local.cf, /etc/clamd.conf
- Important configuration attributes
  - Sa_tag_level, etc

Backup & Recovery

- What to backup
- Types of backup
- How to backup and Recover

Operations and Support

Operations

1. Account management
2. Managing Security policies
3. Managing backups and logs

Operations and Support

Support

1. Setting up mail client on clients workstation
2. Training Users

END

? Questions and Discussions !