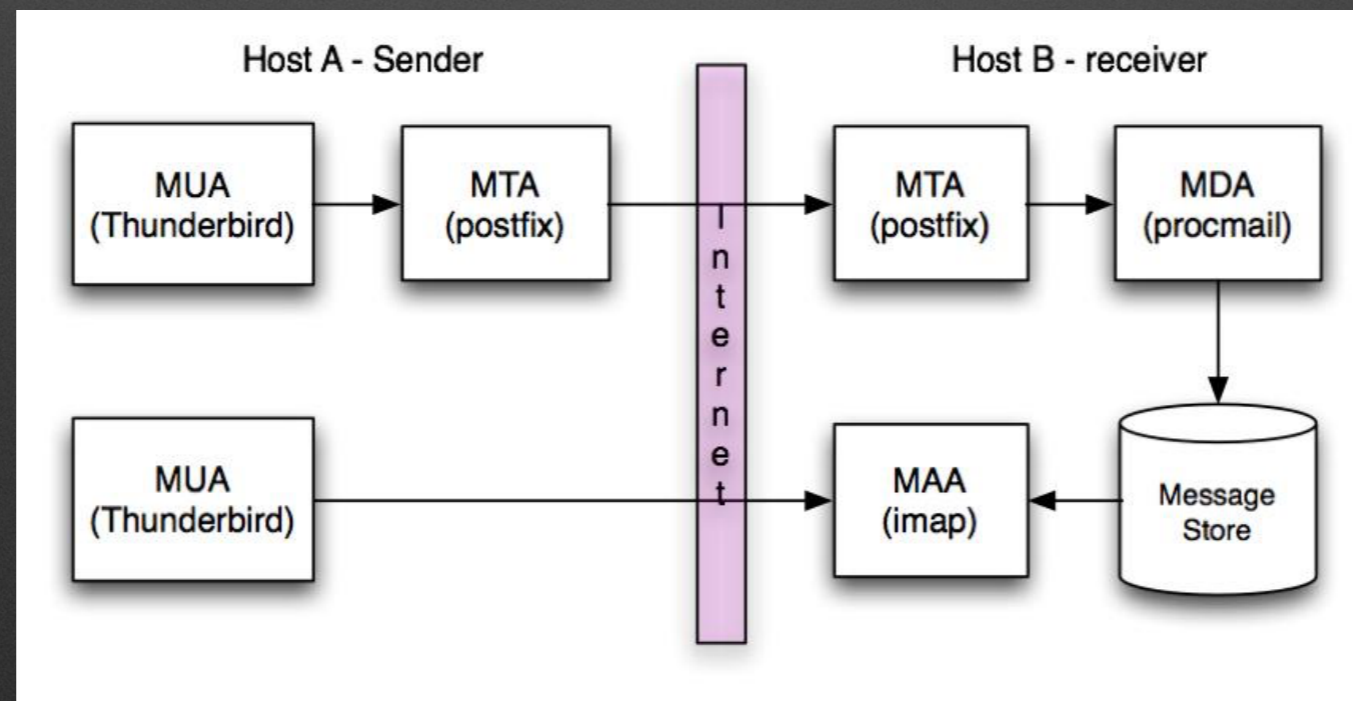


Email

Postfix, Dovecot, and Roundcube
COMP1071 Summer 2020

Concepts

- Email is a store and forward messaging technology, each message has a message **envelope** and message **body** (content)
- User agents (**MUAs**) create messages and submit them to transfer agents (**MTAs**)
- User agents retrieve messages from message stores using access agents (**MAAs**)
- Transfer agents may transfer messages between each other, delivery agents (**MDAs**) deposit messages into message stores
- MTAs are known as mail exchangers, and they are identified by **MX** records in **DNS**



Software

- **Postfix** package provides MTA and MDA
- **Dovecot** package provides MAA and auth
- **Roundcube** is a MUA with a web-based interface
- Each one requires configuration and has many options

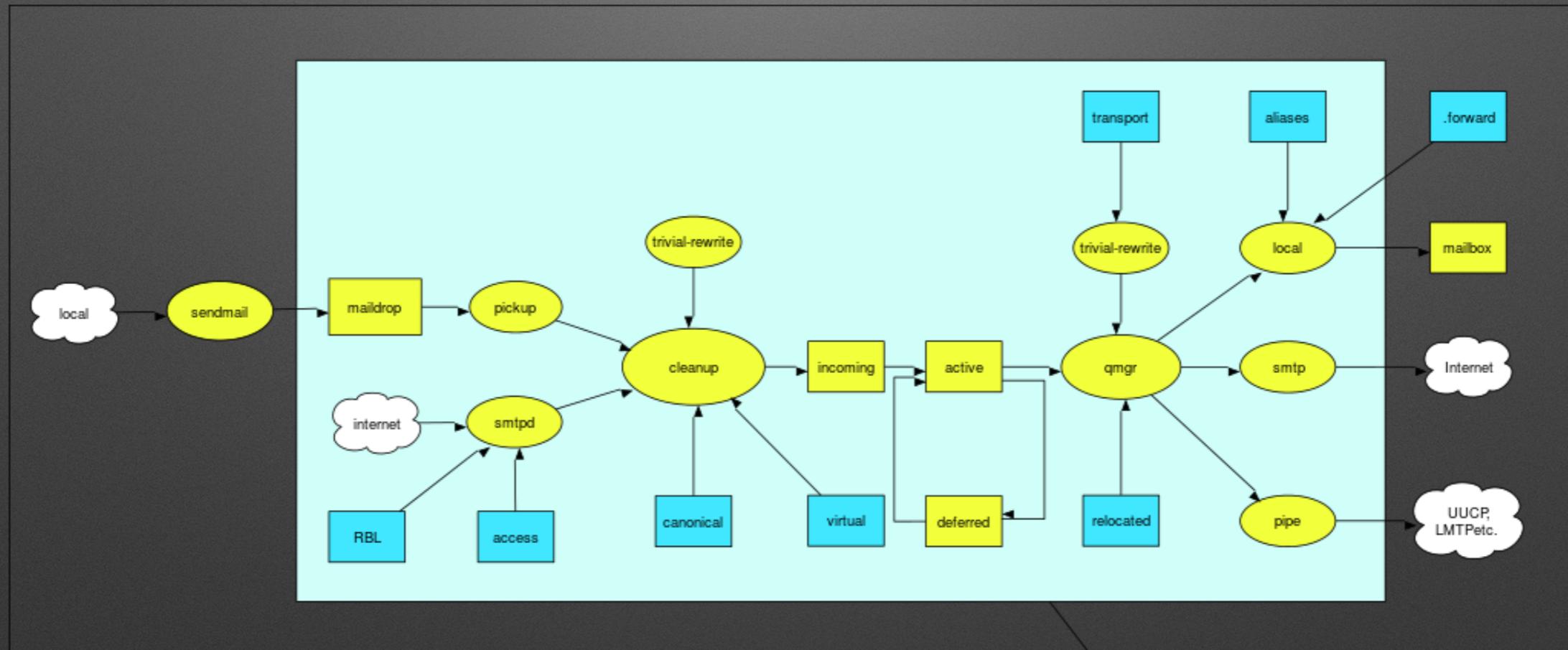


Postfix

- **Postfix** provides a configurable MTA
- Accepts **SMTP** connections on tcp ports 25 (**SMTP**), 587 (**Submission**) and 465 (**SMTPS**)
- Processes messages based on envelope content
- May rewrite, then forward or discard messages
- Hands off to **MDA** for local delivery, or sends to another **MTA** using **SMTP** when forwarding
- Returns error messages using email to originator of failed message

Postfix

Postfix architecture



Legend:

Lookup table

Mail programs

Mail queues or files

Controlled by Postfix master daemon

"Postfix architecture" by Denny-pug - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons - https://commons.wikimedia.org/wiki/File:Postfix_architecture.svg#/media/File:Postfix_architecture.svg

Dovecot

- **Dovecot** provides all major functions related to message store management and access
- End users communicate using **POP3** on tcp port **110**, **IMAP** on tcp port **143**, or the SSL versions of them on **995** (**POP3S**) and **993** (**IMAPS**)
- **POP3** does not support server-based user folders, **IMAP** does
- Both support complex multipart messages and user access controls
- In simple scenarios, users are simply the UNIX users defined on the mail server and messages are stored in a single system spool directory (mbox format) or in each user's home directory (Maildir format) - **spool** is another name for a **message store**

Dovecot

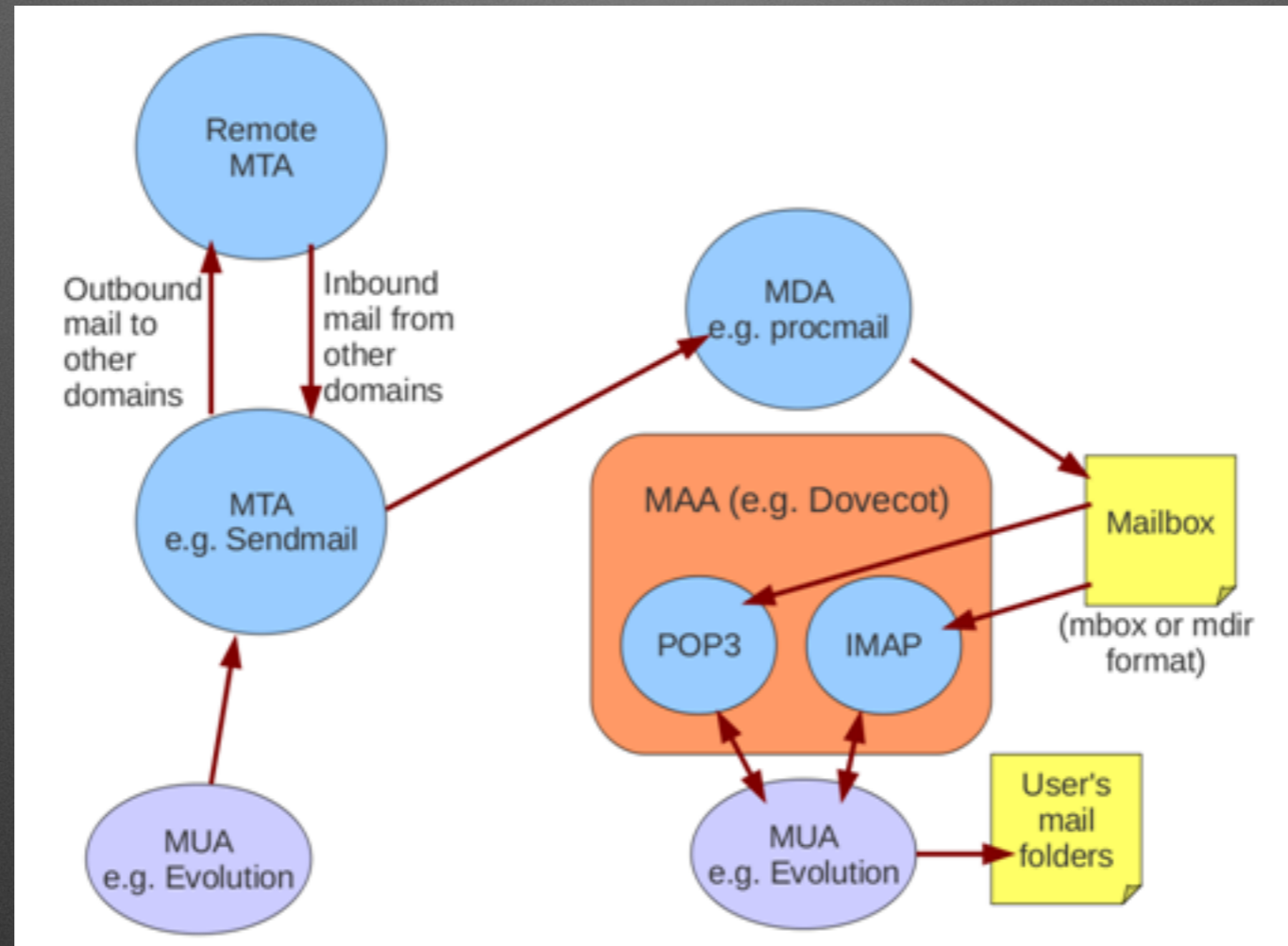


Image courtesy of wikieducator.com

Postfix/Dovecot Installation

- Installed with **apt**, service is live when **apt** finishes
- Package names are **postfix** and **dovecot**
- Install script asks for **system mail name**, **server type**, and will ask for additional info depending on the selected server type
- Can incorporate many auxiliary packages for anti-spam (**SpamAssassin**), anti-virus (**ClamAV**), content control, connection tracking, and format control and manipulation

Postfix Configuration

- Configuration kept in `/etc/postfix/main.cf`
- `postconf` command is best way to make changes and view configuration
- Changes to `main.cf` requires reload using `service` command
- `/usr/share/postfix` has fully commented version of `main.cf` for reference
- Default delivery is to **Maildir-format message store** in each user's home directory

Dovecot Configuration

- Configuration kept in `/etc/dovecot`
- `dovecot.conf` is the primary configuration file, but most configuration is in `/etc/dovecot/conf.d` in function-specific files, similar to apache
- Default configuration mostly works with postfix
- Changes to configuration files require dovecot reload, can use `doveadm reload`

Command Line Tools

- **postconf** can help manage postfix config
- **doveconf** can help manage dovecot config
- **doveadm** can help administer dovecot service
- **mail** or **mailx** can be used as trivial user agent if using **mbox** format message store in **/var/mail**

Roundcube

- Package name is `roundcube`, install with `apt`
- Install script does basic configuration on a web server such as Apache
- Need to review aliases in `/etc/apache2/conf-available/roundcube.conf` after install to provide web resource name
- Roundcube provides a user interface for reading, composing, filing and managing email messages

Roundcube

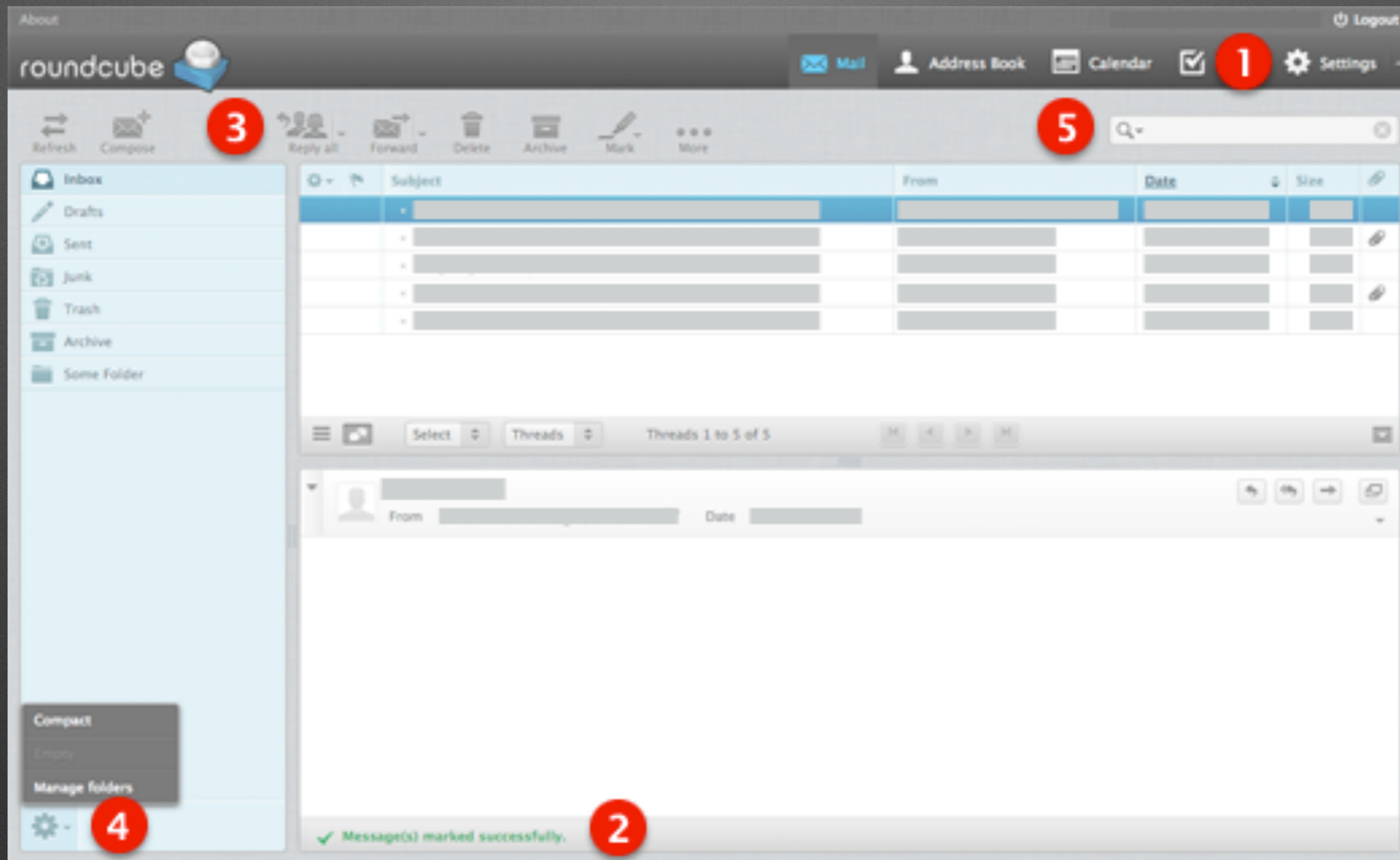


Image courtesy of roundcube.net

Log Files

- Logs kept in `/var/log`
- `mail.log`, `mail.err`, `mail.warn` are all auto-aged
- Most problems result in email to mail administrator, usually root, sometimes postmaster

Port Numbers for Email

PROTOCOL	PORT
SMTP TRANSFER	25
SMTPS TRANSFER	465
SMTP SUBMISSION	587
POP3	110
POP3S	995
IMAP4	143
IMAP4S	993

Further Reading

- postfix.org
- dovecot.org
- roundcube.net
- [**Ubuntu Server Guide**](#)