

Email Mysteries ...

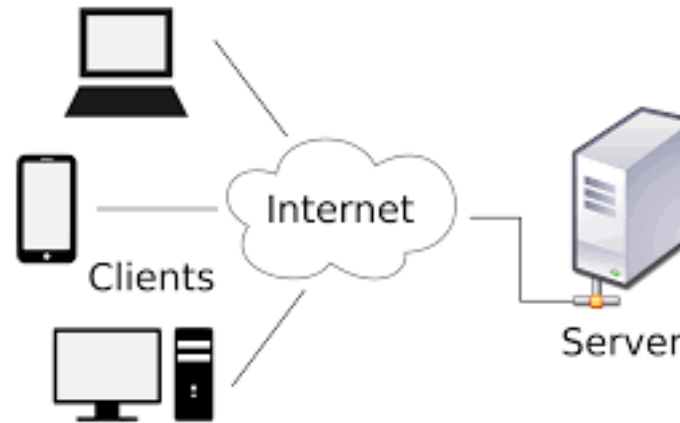
(POP, SMTP, IMAP, webmail)

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Email uses a client-server model

- ▶ Similar to going to a bank
- ▶ You are the client
- ▶ The teller is the server
- ▶ You have to have an email account and password
- ▶ You need to follow the transaction protocols
- ▶ You need to identify yourself to make a transaction
- ▶ Etc., etc.



Your email client software could be ...

- ▶ Apple Mail on a Mac
- ▶ Thunderbird for the Mac
- ▶ Apple Mail app on iPhone/iPad
- ▶ Gmail app on iPhone/iPad
- ▶ Webmail on Safari/Chrome/FireFox
 - ▶ Webmail is really email client software that runs inside a browser - sometimes called a web-app
 - ▶ This confuses *MANY* people



There are lots of other clients ...

- ▶ <http://www.macworld.com/article/2099441/web-apps/top-choice-our-favorite-mac-mail-clients.html>
- ▶ <http://dailytekk.com/2016/01/06/the-3-best-mac-email-apps-clients-for-2016/>
- ▶ <http://www.knowyourmobile.com/mobile-phones/apple-iphone-5s/22449/best-iphone-email-apps-2016>
- ▶ <http://www.imore.com/best-mail-apps-iphone>



Email server software ...

- ▶ ... is at your ISP/email provider
- ▶ Or is outsourced to an external email provider ...
 - ▶ Rogers uses Yahoo!
 - ▶ Bell uses Hotmail/Outlook
- ▶ Or you may use another provider directly
 - ▶ Gmail
 - ▶ Hotmail
 - ▶ Yahoo!

The server



Email protocols

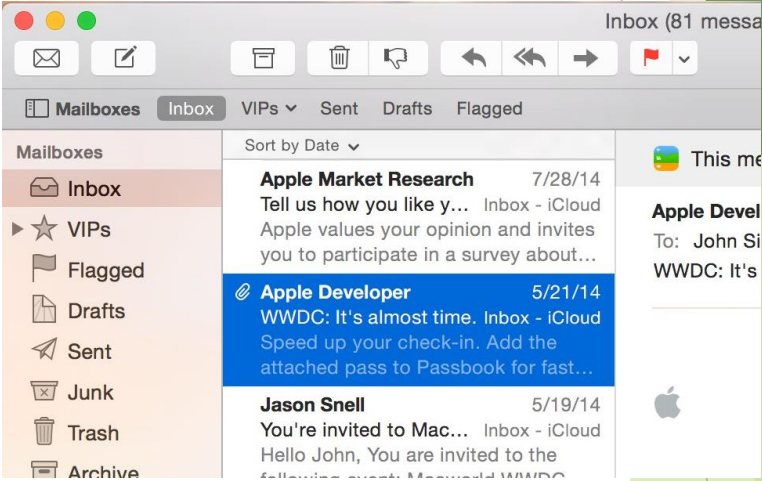
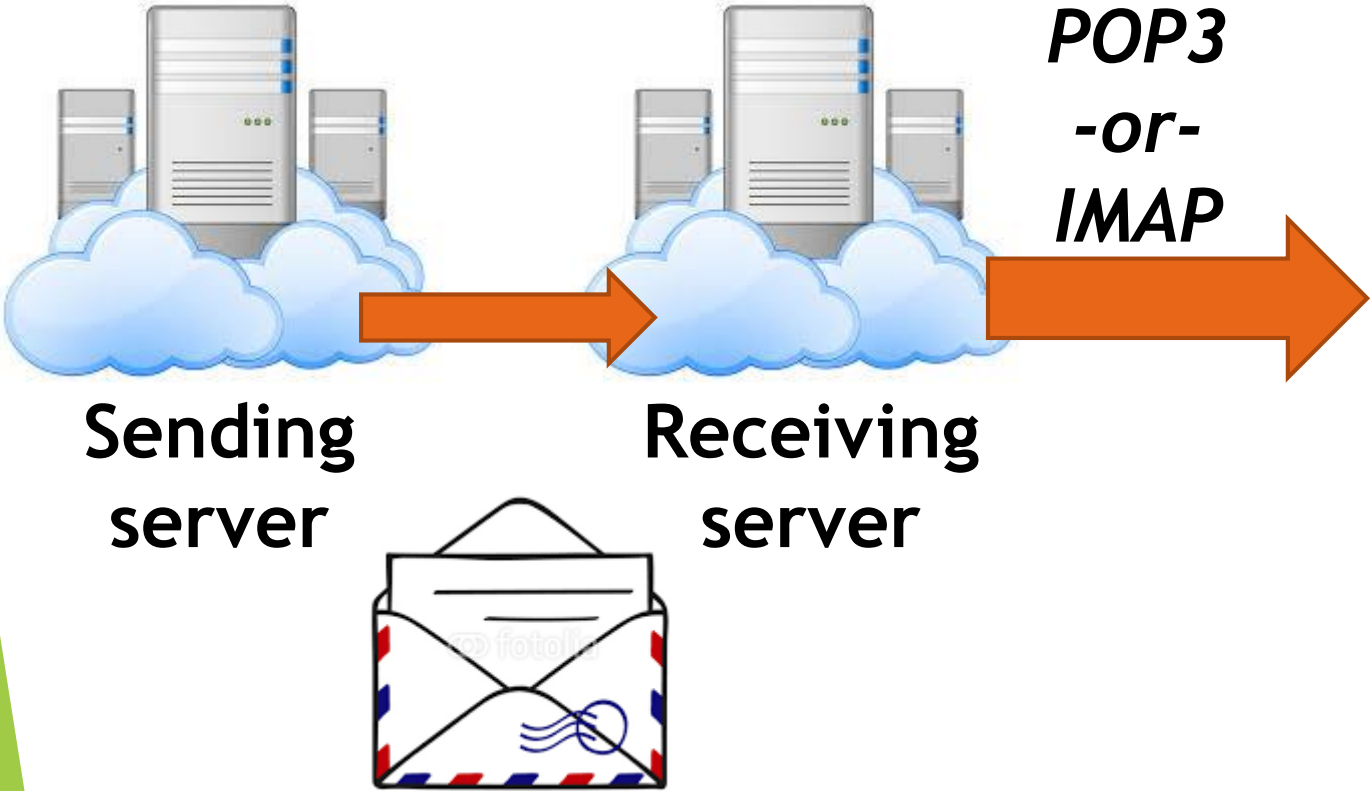


- ▶ SMTP - Simple Mail Transfer Protocol - to send email
- ▶ POP3 - Post Office Protocol 3 - to receive email
- ▶ IMAP - Internet Message Access Protocol - to receive mail
- ▶ Webmail is an email client that runs inside a browser effectively using:
 - ▶ SMTP to send mail
 - ▶ IMAP to receive it

Sending mail to someone ...



Receiving mail from someone



Your client

If you use POP3 ...



- ▶ You must decide whether to keep read mail on the server
- ▶ POP servers do NOT keep track of the mail state
- ▶ The server only has ONE inbox
- ▶ Typically the mail is kept by the client
- ▶ Only one client at a time can fetch mail
- ▶ There is no concept of syncing different clients
- ▶ One client can “steal” the mail before others see it

If you use IMAP ...



- ▶ Mail stays on the server
- ▶ IMAP server keeps track of mail state
- ▶ IMAP server can have many mailboxes (which behave like folders)
- ▶ Most clients will keep local copies of a number of received emails for offline access
- ▶ Some (all??) IMAP providers will index your mail and feed you ads based on the contents

If you use webmail ...



- ▶ It is like an IMAP client running inside a browser
 - ▶ So all of the IMAP points above generally apply
- ▶ You can use webmail on virtually any browser or any device without having to install an app or software

Email security...



- ▶ ... does NOT exist
 - ▶ Well, without effort there is virtually no security
- ▶ Treat ALL email as confidential as a postcard
- ▶ You CAN and SHOULD always make secure connections from your client to the server
 - ▶ This protects you from having your password exposed
 - ▶ But it DOES NOT protect the email content
- ▶ Bank example ...

For real email security...



- ▶ You need to encrypt your messages using something like PGP
 - ▶ Some systems may classify PGP-encrypted mail as spam because it cannot scan its contents
 - ▶ Encrypted mail is difficult to deal with in webmail
- ▶ Or create a document, encrypt it, and send it as an attachment to a plaintext email
 - ▶ Again, some systems may suspect the attachment

Conclusions

- ▶ Email is as secure as a postcard
- ▶ Make your client-server connection secure
- ▶ Have a very strong email password
 - ▶ If a hacker breaks into your email account, they can effectively imitate you, and it will fool your friends
- ▶ Avoid webmail on devices you do not control completely
- ▶ If you have multiple devices, IMAP will make your mail easier to manage