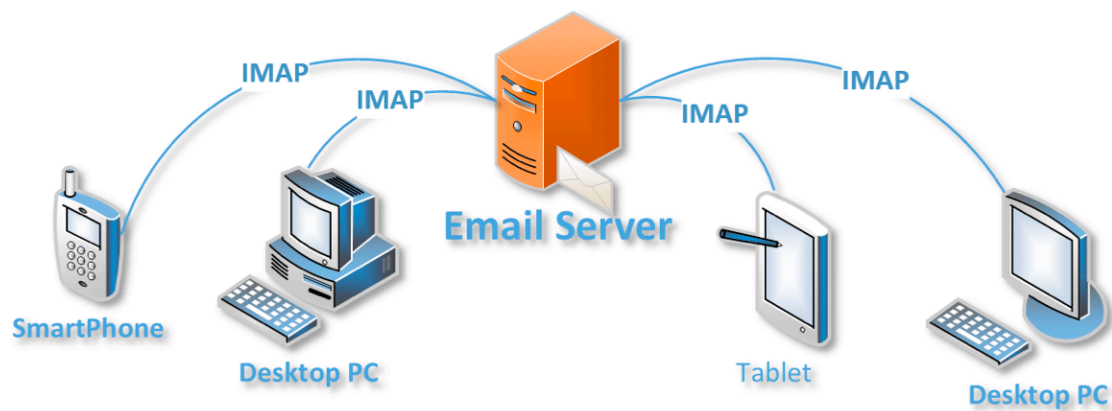# Email

Sean Barker

Simple Mail Transfer Protocol (SMTP)

Sean Barker
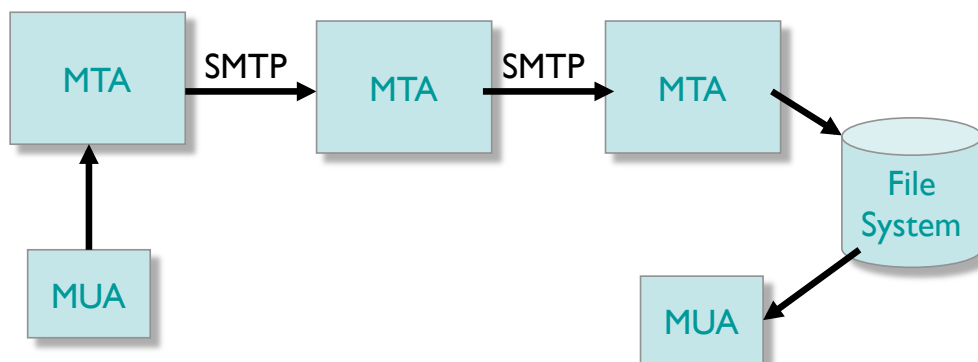
Post Office Protocol (POP)
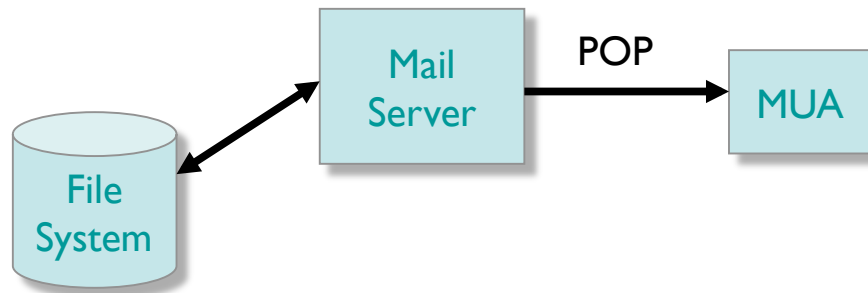
Internet Message Access Protocol (IMAP)

Porcupine

Porcupine Architecture
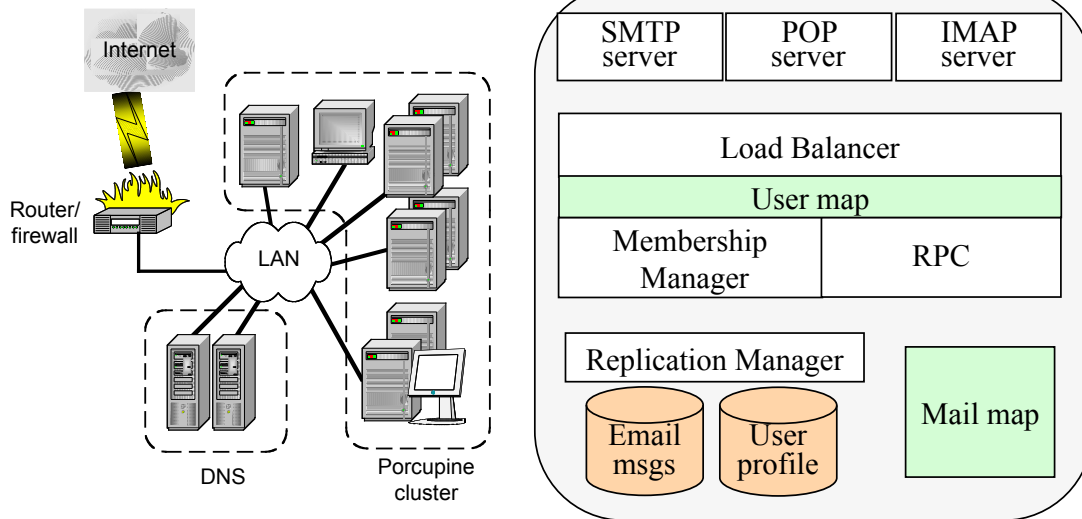
Porcupine Data Structures

bob

`hash("bob") = 2`

0 1 2 3 4 5 6 7	0 1 2 3 4 5 6 7	0 1 2 3 4 5 6 7	
B C A C A B A C	B C A C A B A C	B C A C A B A C	*User map*

bob: {A,C}   suzy: {A,C}   joe: {B}   *Mail map / user profile*
                ann: {B}

Bob's MSGs	Suzy's MSGs	Ann's MSGs	Joe's MSGs	Bob's MSGs	Suzy's MSGs	*Mailbox storage*

A   **B**   **C**
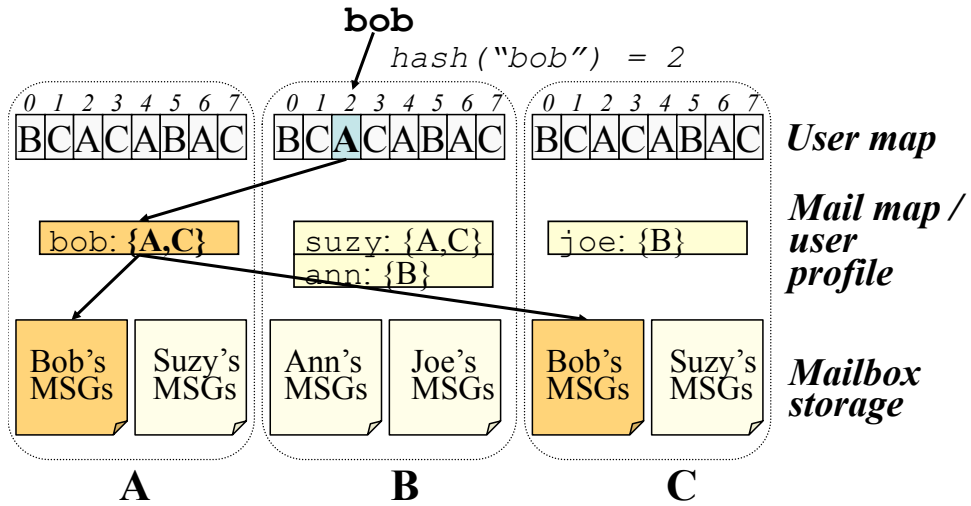
Sending Mail in Porcupine

Protocol handling ⟹ *User lookup* ⟹ *Load Balancing* ⟹ *Data store (replication)*

Internet

A

C → **D**

DNS-RR selection

1. "send mail to bob"

3. "Verify bob"

4. "OK, bob has msgs on C, D, & E"

7. "Store msg"

6. "Store msg"

... **A** **B** **C** **D** ...

B

2. Who manages bob? ⟹ A

5. Pick the best nodes to store new msg ⟹ {C,D}
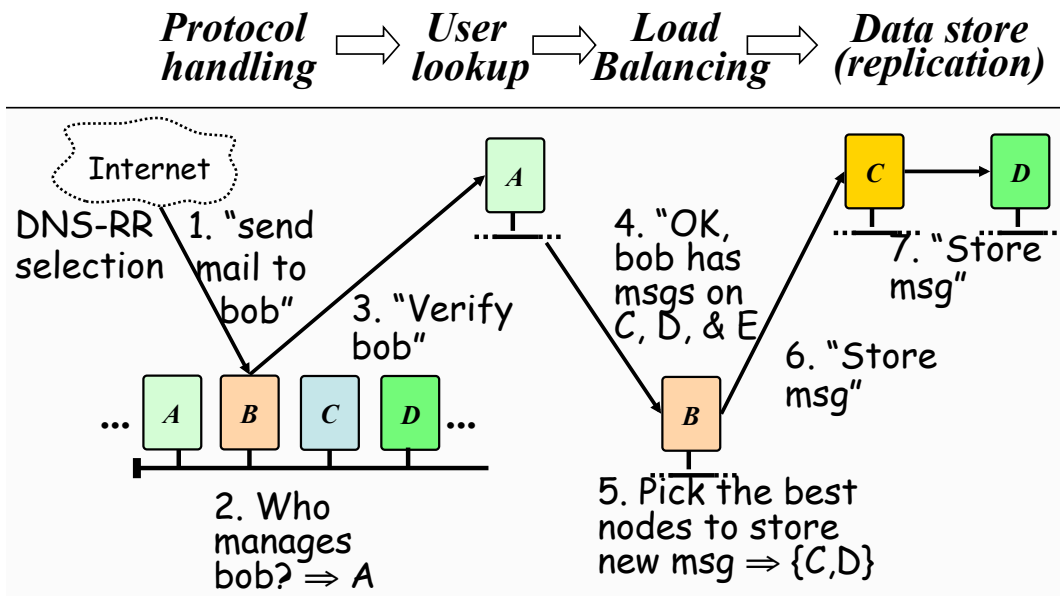
Porcupine Performance

POP performance, no email replication