JOSE in Action: XMPP E2E

(draft-miller-xmpp-e2e-02)

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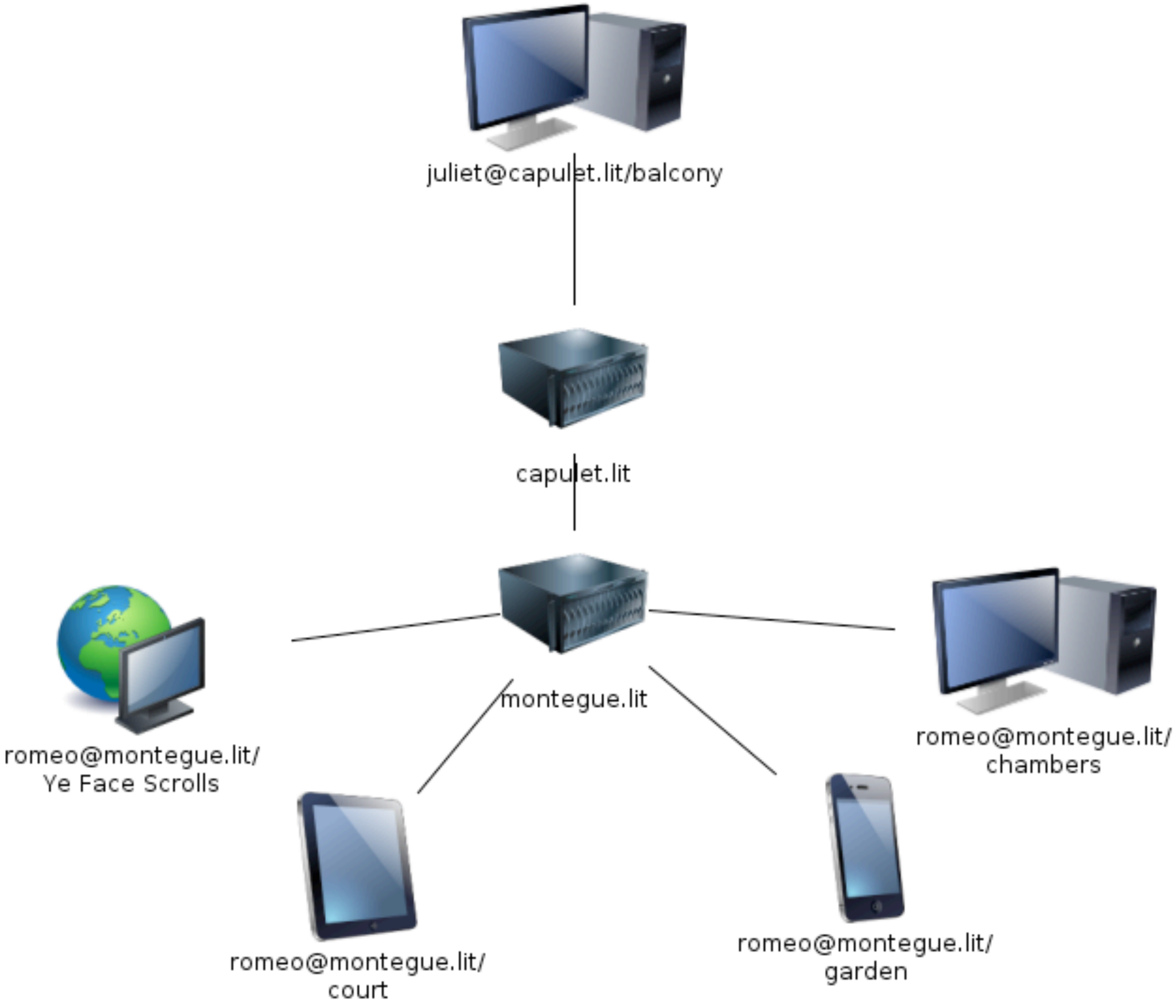
Requirements

- Encrypt whole stanzas
- Support multiple end-points
- COMING SOON: Non-optimistic Signing...

About Addressing

- “example.com” ==> server
- “user@example.com” ==> account
- “user@example.com/desk” ==> end-point

Example Topology



Encrypting

- Generate keying material
- Encrypt stanza (alg=keywrap,enc=*)
- Send to user
  - no public key yse (yet)

Delivery

- Sender indicates recipient
- Server determines which end-point
- Might be multiple (e.g. forking)

Key Request

- Exchanges SMK
- Uses PKI from recipient
- Sender can reject

Benefits

- PKI limited to interested end-points
- Compatible with groupchat

Liabilities

- Simultaneously online ... at some point
- Potential for keyreq flooding

JOSE Considerations

- Keyreq feels too custom
- Base64url is slightly awkward