NDN E-MAIL
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Motivation and problem statement

The idea is to design and develop an email service using the NDN architecture. The application will include a client (mobile device app) running on an Android platform and a server that will be a node on the testbed. It will be listening to the user requests, trying to send mails like SMTP. We believe that the existence of such a service will increase adoption.

Contribution to NDN

- Stimulate the development of a centralised application
- Create a mailing application designed solemnly on NDN
- Ready-to-use application on NDN
- Unlike MailSync, which essentially syncs email for one user, explore efficient implementation for multiple users.
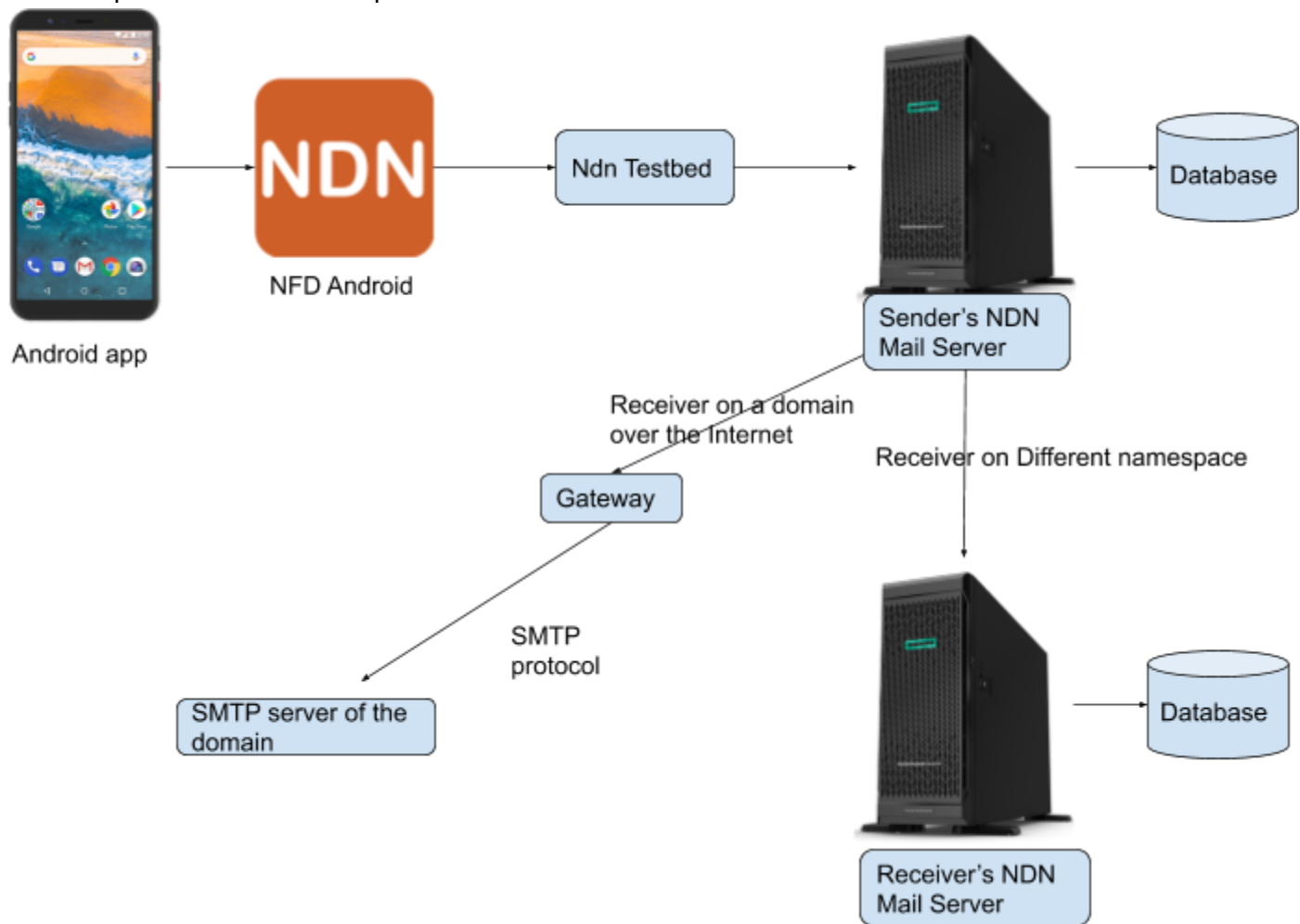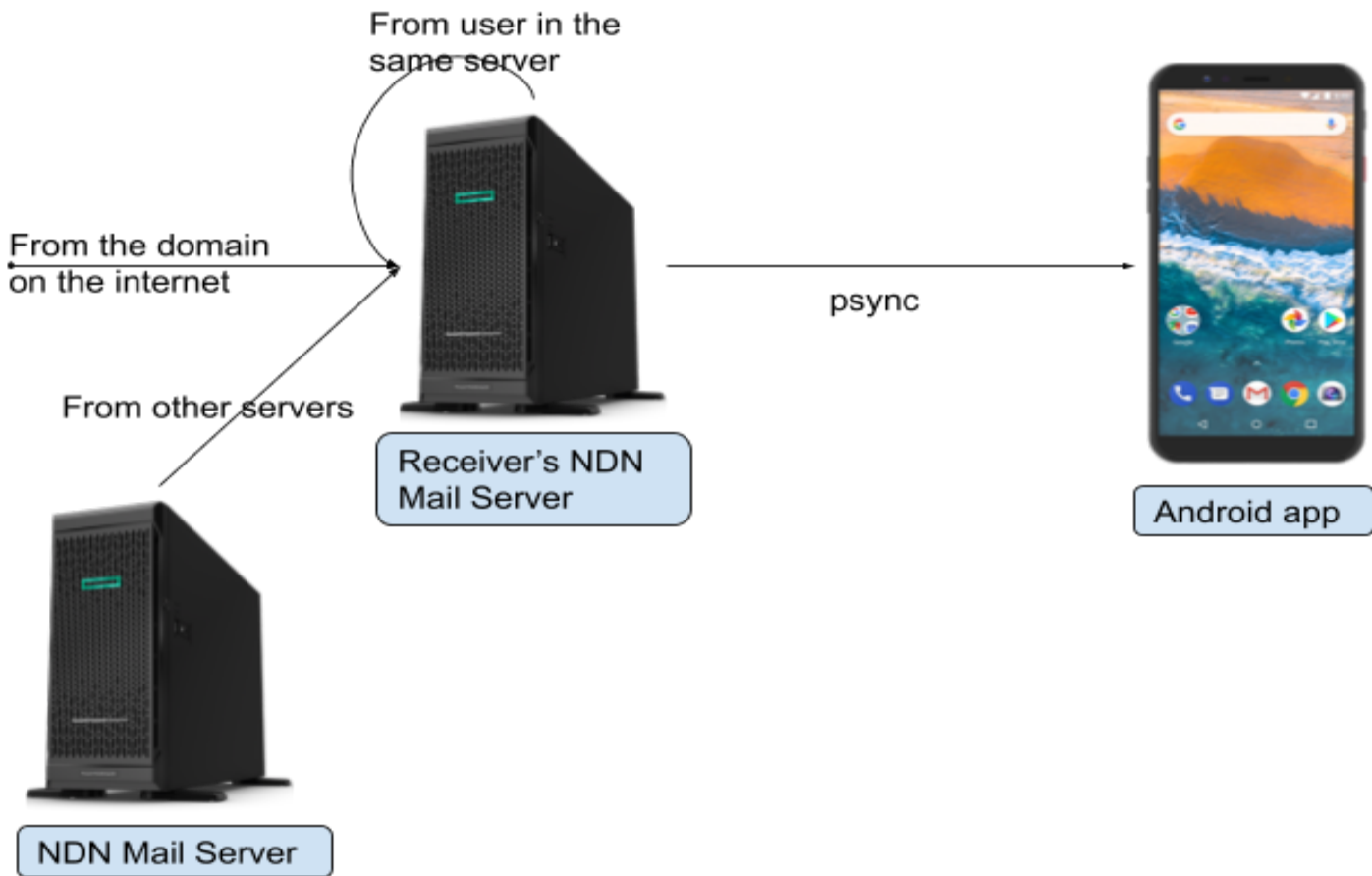

Figure 1: Sending a mail

Figure 2: Receiving a mail

Tasks

- Establish namespace for this application on NDN testbed
- Design a suitable application architecture (as proposed in the figure)
- Develop the client-side (user's mobile device application):
- Develop the server-side application
    - Develop a user login and signup setup.
    - Process the interests to fetch the mail.
    - Save the mail in the database.
    - Send the mail to the destination server if it is not the same as the sender's.
    - Update user with the recent emails, using Psync

Expected outcome

Demo with following features:
- Send/receive a mail to a user registered with in the same namespace on NDN
- Send/receive a mail to a user registered in a different namespace on NDN

Required knowledge for participant

● Be familiar with jNDN and android development
● Be familiar with the NDN forwarder
● Be familiar with any of the NDN libraries
● Be familiar with SMTP and IMAP mail service protocol
● Be familiar with DB and interaction.

Future Work

● Make a gateway for the Internet.
● Establish a domain on the internet to send and receive mail from other domains like Gmail, protonmail, etc.