

# Network Administration HW4

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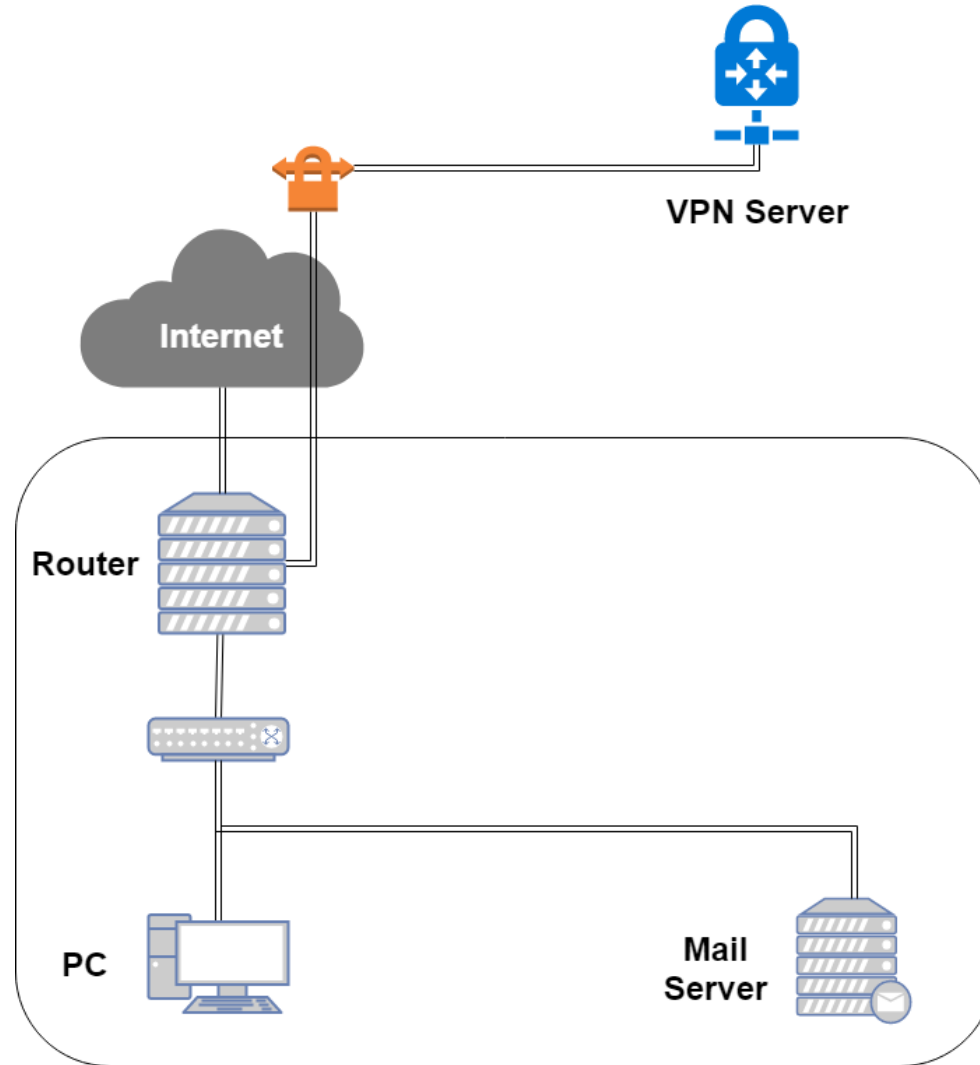
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# Purposes

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- Build a basic mail service
- Understand how to maintain Postfix service
- Understand how to maintain Dovecot service
- Understand how to protect your mail service

# Overview



# Overview (cont.)

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## ❑ One **Mail** Server

- Providing IMAP service
- Providing SMTP service
- Scanning virus
- Detecting spam mails

# Requirements (1/8)

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## ❑ Mail Server

- IP: 10.113.x.y/24 with static DHCP
- Hostname: mail.<student-id>.nasa.
- Mail domain:
  - @<student-id>.nasa.
  - @mail.<student-id>.nasa.
- STARTTLS on IMAP/SMTP
  - Use self-signed certificate
- User Authentication
  - Auth users inside **LDAP** in HW2
  - e.g. cn=TA, cn=<student-id>, etc.
- No Open Relay

# Requirements (2/8)

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## MX record

- Set MX record on your domain
- Sending mail to @<student-id>.nasa will go to mail.<student-id>.nasa

## SPF

- DNS TXT and DNS SPF record
  - Allow your server to send mail using your domain
  - Deny other servers from preventing your domain, and drop these invalid mail
- Do SPF policy check on incoming email

<student-id>.nasa. [TTL] IN TXT <SPF-rules>

<student-id>.nasa. [TTL] IN SPF <SPF-rules>

# Requirements (3/8)

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## ❑ DKIM

- Signing your outgoing email with your private key
- A DNS TXT record for DKIM
- DKIM policy check on the incoming email

❑ `<selector>._domainkey.<student-id>.nasa. IN TXT <DKIM-Information>`

# Requirements (4/8)

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## ❑ DMARC

- A DNS TXT record for DMARC
  - Let others drop mails that does not pass DMARC policy check
- Do DMARC policy check to the incoming email

❑ `_dmarc.<student-id>.nasa. IN TXT <DMARC-Rules>`



# Requirements (5/8)

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- ❑ Greylisting
  - For incoming mail from new mail server
  - Greylist for 30 seconds

# Requirements (6/8)

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## ❑ Specific user TA, TA2

- Add TA2 into your LDAP server
- Set password to your **VPN private key** in HW1
- Retrieve the key in WireGuard config if you forget it
- Keep all mails that TA and TA2 received on your server

## ❑ Virtual alias

- for any mail to **TA3@** alias to **TA@**
- for any mail to **<sth>|<user>@** alias to **<user>@**
  - e.g., i-am-a|TA@ send to TA@

## ❑ Sender rewrite

- Rewrite @mail.<student-id>.nasa to @<student-id>.nasa

# Requirements (6/8)

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## Ingoing mail filter

- Add "\*\*\* SPAM \*\*\*" in front of the subject if the mail contains virus or spam message
- You can use amavisd-new

## Test cases

- <http://www.eicar.org/download/eicar.com>
- <https://github.com/apache/spamassassin/blob/trunk/sample-spam.txt>

## Requirements (7/8)

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- ❑ Outgoing mail filter
  - Reject mails whose subject contains keyword "小熊維尼"

# Test your email services

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## ❑ IMAP (143) Testing

- <https://wiki.dovecot.org/TestInstallation>
- `openssl s_client -connect mail.<student-id>.nasa:143 -starttls imap`

## ❑ SMTP (25) Testing

- <http://www.postfix.org/INSTALL.html>
- `openssl s_client -connect mail.<student-id>.nasa:25 -starttls smtp`

## ❑ Or just install a GUI mail client in your client PC

# Demo

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- ❑ TAs will try to...
  - Login via SMTP and send some mails
  - Login via IMAP and retrieve mails that TA@ and TA2@ received
  - Send some mails to @<student-id>.nasa and @mail.<student-id>.nasa
  
- ❑ Due date: 6/20 18:30

# Help!

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- ❑ Email to [ta@nasa.cs.nctu.edu.tw](mailto:ta@nasa.cs.nctu.edu.tw)
  - Don't send email by E3new
- ❑ EC 3F CSCC