

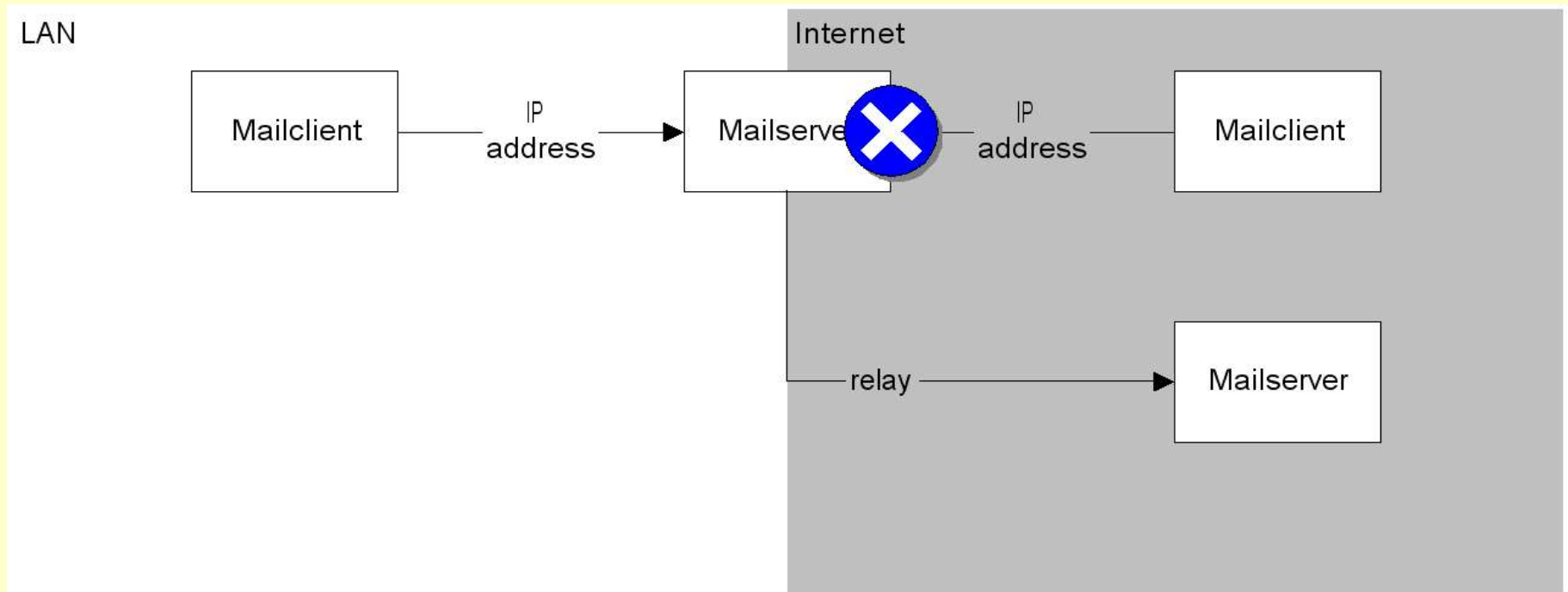
# Postfix and alternative, non-IP based relay concepts

## SMTP Authentication and Certificate Based Relaying with Postfix

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# Status Quo



Mobile users need simple and secure access to their domains resources; IP-based identification to permit relaying is insufficient for dynamic IP-adresses.

# Existing Solutions

- Port-Forwarding with SSH
- Virtual Private Networks
- SMTP-after-POP
- SMTP Authentication
- Certificate Based Relaying

# Problems of existing solutions

- Port-Forwarding with SSH
  - Requires client side interaction  
“Users want to focus on the computing, not the computer.”
  - Too complicated for regular users
- SMTP-after-POP/IMAP
  - Does not solve the problem where it arises
  - Binds the MTA to another application
  - Introduces just another point of failure

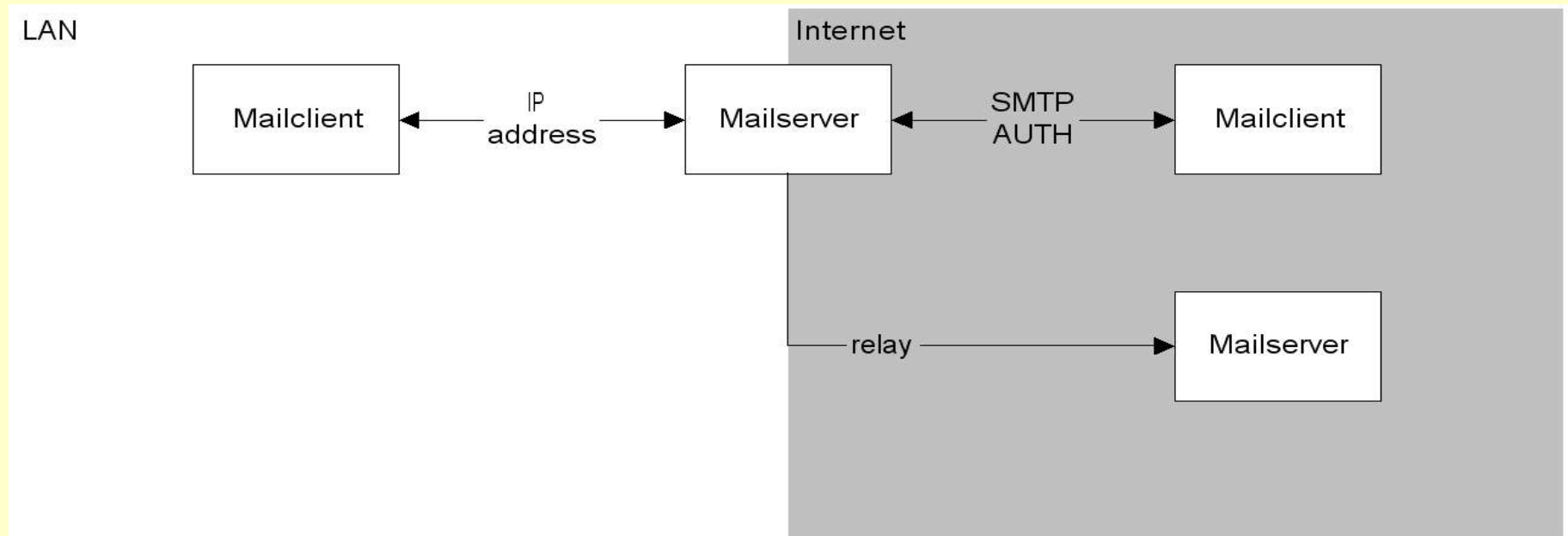
# Implementation Goals

- Low dependencies
- Secure
- Set and forget

# Software Prerequisites

- **Server**
  - Cyrus SASL > 2.1.17 (from CVS) for SMTP Authentication
  - OpenSSL > 0.9.7c for Certificate Based Relaying
  - Postfix with SASL2 and TLS enabled
- **Client**
  - SMTP AUTH capability
  - Client side TLS

# SMTP Authentication



SMTP Authentication identifies the mail client using the credentials it submits; an authenticated client may relay messages.

# SMTP Authentication: Steps

You have to configure how Postfix interacts with Cyrus SASL **and** how Postfix interacts with clients.

- Postfix interaction with Cyrus SASL
  - Choose a password verification service
  - Choose mechanisms to offer
  - Configure password verification service
  - Test authentication with Cyrus SASL tools
- Postfix interaction with mail clients
  - Enable SMTP AUTH
  - Set security settings
  - Test SMTP AUTH

# Configuring Cyrus SASL

Cyrus SASL configuration settings for Postfix are stored in `/usr/lib/sasl2/smtpd.conf`.

```
pwcheck_method: saslauthd
mech_list: PLAIN LOGIN
log_level: 3
```

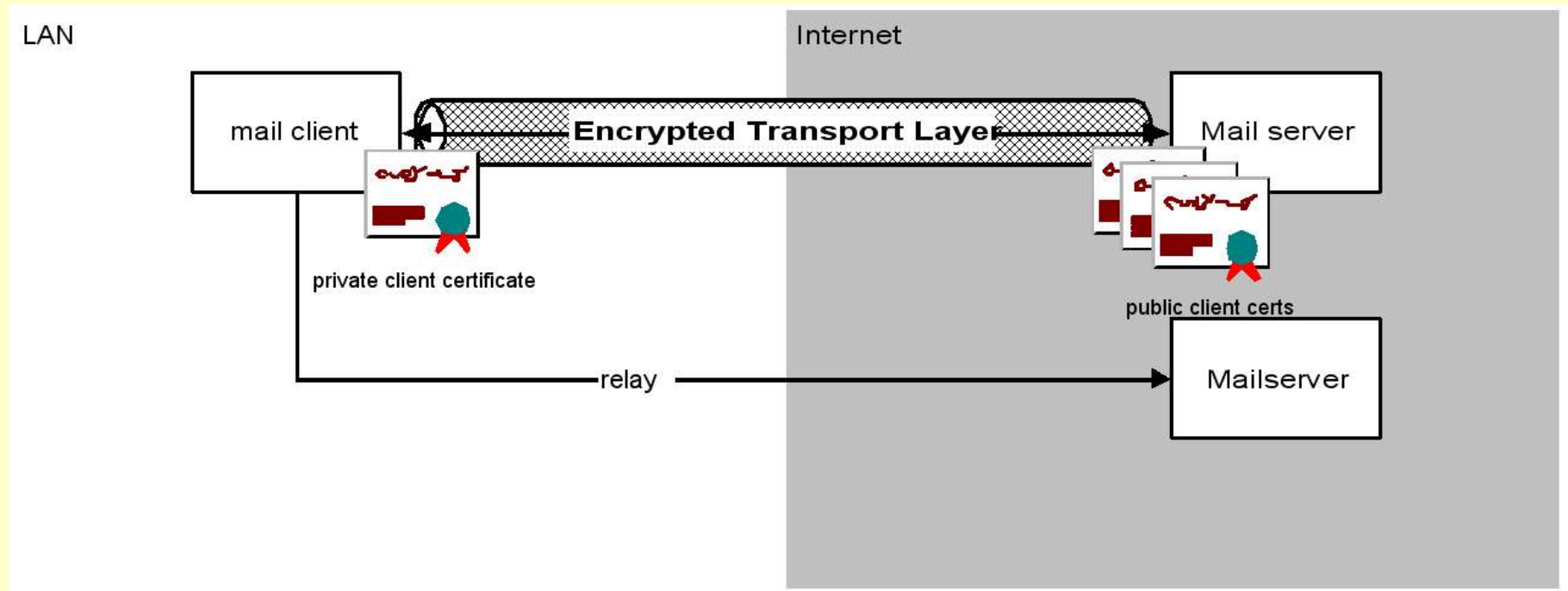
Use `server` and `client` or `testsaslauthd` from Cyrus SASL to test authentication before you enable SMTP AUTH in Postfix.

# Configuring Postfix

SMTP AUTH settings for Postfix are configured in `/etc/postfix/main.cf`:

```
smtpd_sasl_auth_enable = yes
smtpd_sasl_local_domain =
smtpd_sasl_security_options = noanonymous
broken_sasl_auth_clients = yes
smtpd_recipient_restrictions =
    permit_sasl_authenticated,
    permit_mynetworks,
    reject_unauth_destination,
    ...
```

# Certificate Based Relaying



Certificate Based Relaying uses the clients certificate to identify clients that may relay.

# Certificate Based Relaying: Steps

- **OpenSSL**
  - Create server cert
  - Create client cert
  - Sign certs
- **Postfix Server**
  - Enable TLS for smtpd daemon
  - Add clients cert fingerprint to lookup map
  - Ask for client certificates
- **Postfix Client**
  - Add server's CA cert to CA store
  - Enable TLS for smtp daemon

# Creating Certificates in OpenSSL

- Create CA cert

```
# ./CA.pl -newca
```

- Create cert

```
# openssl req -new -nodes -keyout \  
postfix_private_key.pem -out \  
postfix_private_key.pem -days 365
```

- Sign cert

```
# openssl ca -policy policy_anything -out \  
postfix_public_cert.pem -infiles \  
postfix_private_key.pem
```

# Configuring TLS in Postfix server

```
# cd /etc/postfix/certs
# chmod 600 postfix_private_key.pem
```

```
smtpd_use_tls = yes
smtpd_tls_loglevel = 3
smtpd_tls_CApath = /etc/postfix/certs
smtpd_tls_cert_file =
    /etc/postfix/certs/postfix_public_cert.pem
smtpd_tls_key_file =
    /etc/postfix/certs/postfix_private_key.pem
smtpd_tls_received_header = yes
relay_clientcerts = hash:/etc/postfix/relay_clientcerts
smtpd_tls_ask_ccert = yes

smtpd_recipient_restrictions =
    permit_mynetworks
    permit_tls_clientcerts
    reject_unauth_destination
```

# Configuring TLS in Postfix client

```
# cd /etc/postfix/certs  
# chmod 600 postfix_private_key.pem
```

```
smtp_use_tls = yes  
smtp_tls_CApath = /etc/postfix/certs  
smtp_tls_loglevel = 2  
smtp_tls_note_starttls_offer = yes  
smtp_tls_cert_file =  
    /etc/postfix/certs/postfix_public_cert.pem  
smtp_tls_key_file =  
    /etc/postfix/certs/postfix_private_key.pem
```

# Further Readings

## Online

- Postfix  
<http://www.postfix.org>
- Postfix TLS patch  
[http://www.aet.TU-Cottbus.DE/personen/jaenicke/postfix\\_tls/](http://www.aet.TU-Cottbus.DE/personen/jaenicke/postfix_tls/)
- Cyrus SASL  
<http://asg.web.cmu.edu/cyrus/download/sasl/>
- Postfix SMTP AUTH (and TLS) HOWTO  
<http://postfix.state-of-mind.de/patrick.koetter/smtpauth/>

## Offline

The Book of Postfix, Best practice guide to Postfix - alternative to Sendmail  
Ralf Hildebrandt and Patrick Koetter, No Starch Press, June 2004  
<http://www.postfix-book.com>

# about: speaker

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