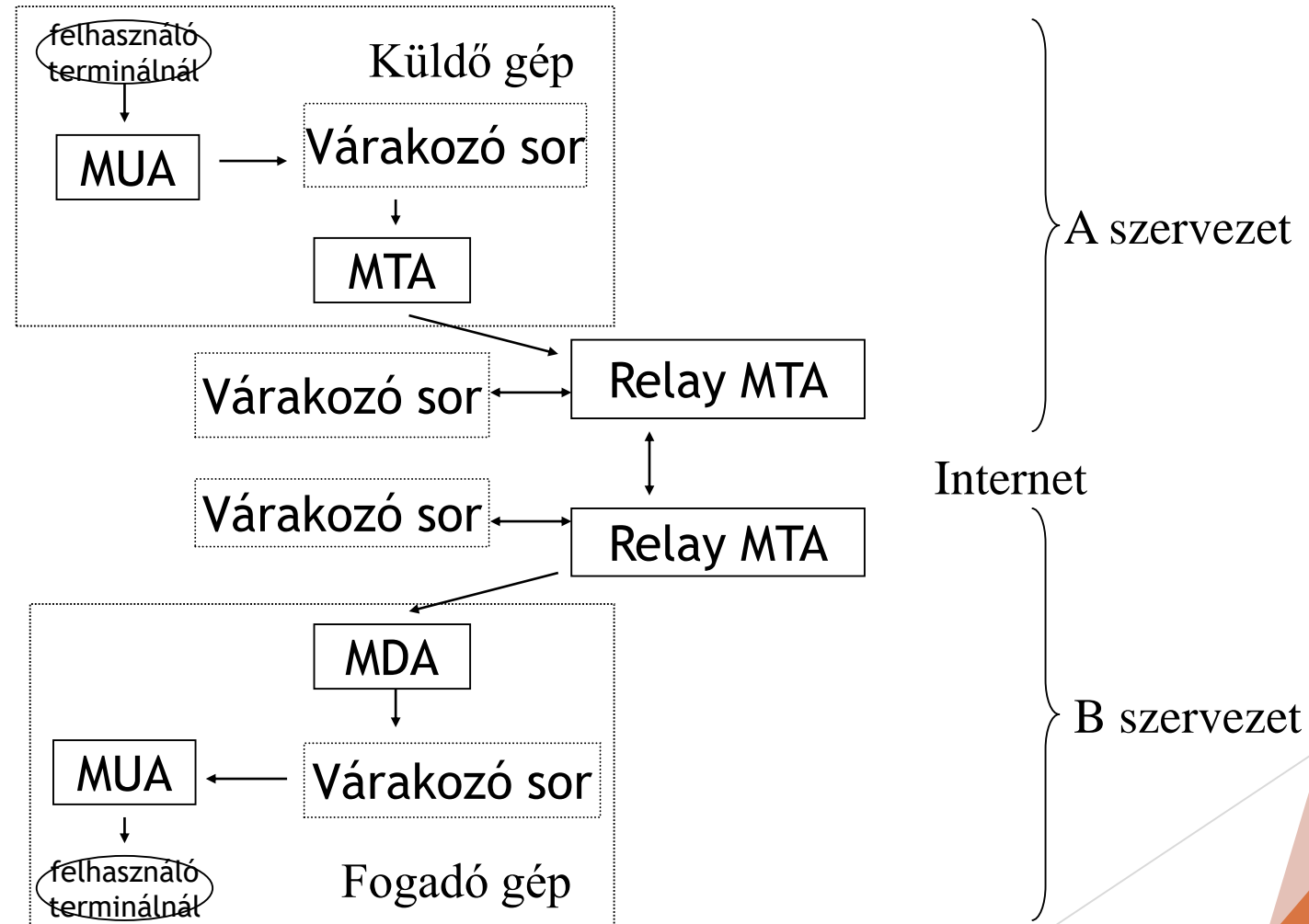


Levelezés

Fontos protokollok

- ▶ SMTP - Simple Mail Transfer Protocol
- ▶ POP3 - Post Office Protocol
- ▶ IMAP - Internet Message Access Protocol
- ▶ HTTP

SMTP - hagyományosan



SMTP

- ▶ **Application-level protocol on TCP**
- ▶ **Mail system is performed by two agents.**
 - MTA(mail transfer agent): Postfix, Exim, Sendmail, Qmail, Courier
 - MUA (mail user agent): Thunderbird, Outlook, Eudora, Evolution
- ▶ **Communication between two MTAs uses NVT (Network Virtual Terminal) 7 bit ASCII.**
 - Commands are sent by the client to the server.

- Typical message format
 - One part generated by sender's MTA.
 - The other part generated by sender's user agent.
 - E-mail is composed of three pieces.
 - Envelope : used by the MTAs for delivery.
 - Header : used by the user agents.
 - Body : the content of the message.
- ※ *Note : each line transferred using the DATA command must be less than 1000 bytes*

**generated by
sender's MTA**

**generated by
sender's
user agent**

```
Received: by client.ac.kr. (4.1/SMI-4.1)
        id AA004303; Mon, 20, Aug 98 12:30:34 MST
Message-Id: <98082033245.AA004303@client.ac.kr>
From: sender@client.ac.kr (Sender)
Date: Mon, 20, Aug 1998 12:30:33 -0070
Reply-To: receiver@server.ac.kr
X-Phone: +1 343 342 2345
X-Mailer: Mail User's shell(7.5.4 10/23/98)
To: receiver@server.ac.kr
Subject: Just testing mail.

hello, this is a testing mail.
bye..
```

Szerverek lekérdezése

```
hallgato@hallgato-desktop:~$ host -a -v -t mx google.com
Trying "google.com"
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53257
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 13, ADDITIONAL: 0

;; QUESTION SECTION:
;google.com.                IN      MX

;; ANSWER SECTION:
google.com.                 900     IN      MX      100 google.com.s9a1.psmtip.com.
google.com.                 900     IN      MX      200 google.com.s9a2.psmtip.com.
google.com.                 900     IN      MX      300 google.com.s9b1.psmtip.com.
google.com.                 900     IN      MX      400 google.com.s9b2.psmtip.com.
```

Limitations in SMTP

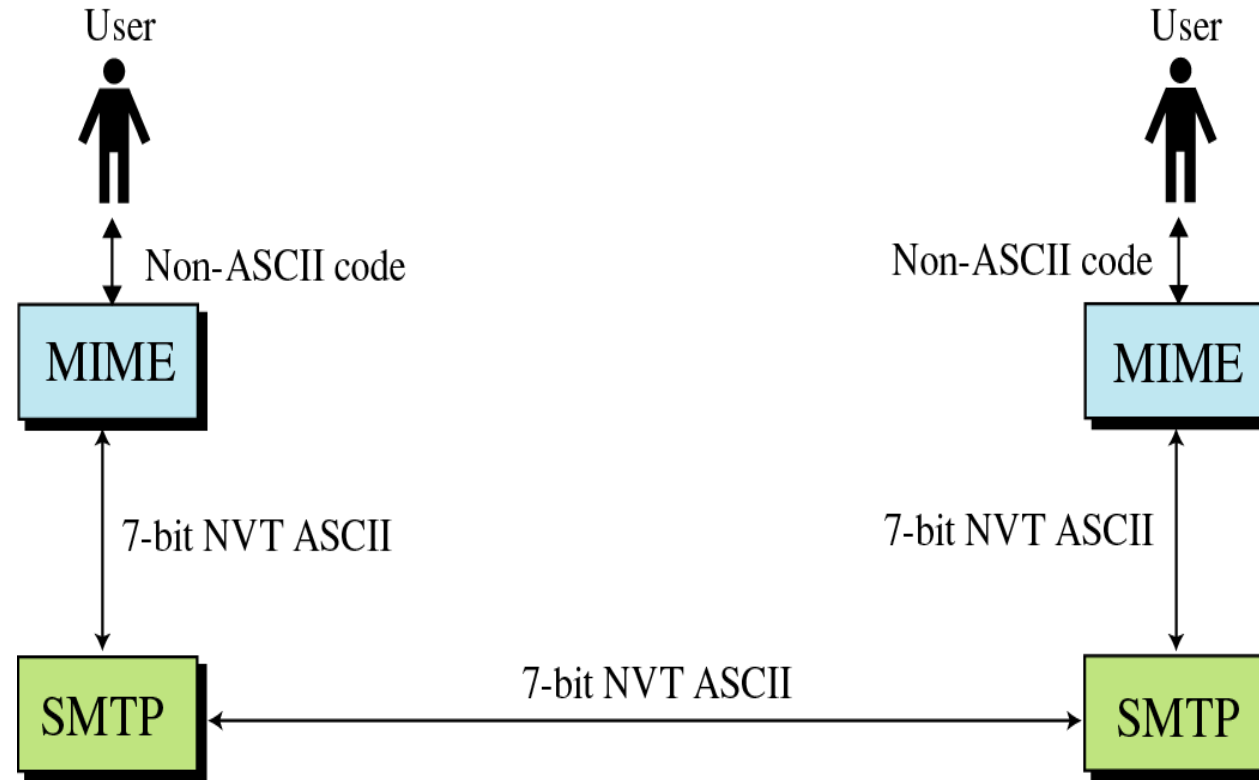
- ▶ Only uses NVT 7 bit ASCII format
 - ▶ How to represent other data types?
- ▶ No authentication mechanisms
- ▶ Messages are sent un-encrypted
- ▶ Susceptible to misuse (Spamming, faking sender address)

Solution: SMTP extensions

► MIME - Multipurpose Internet Mail Extensions

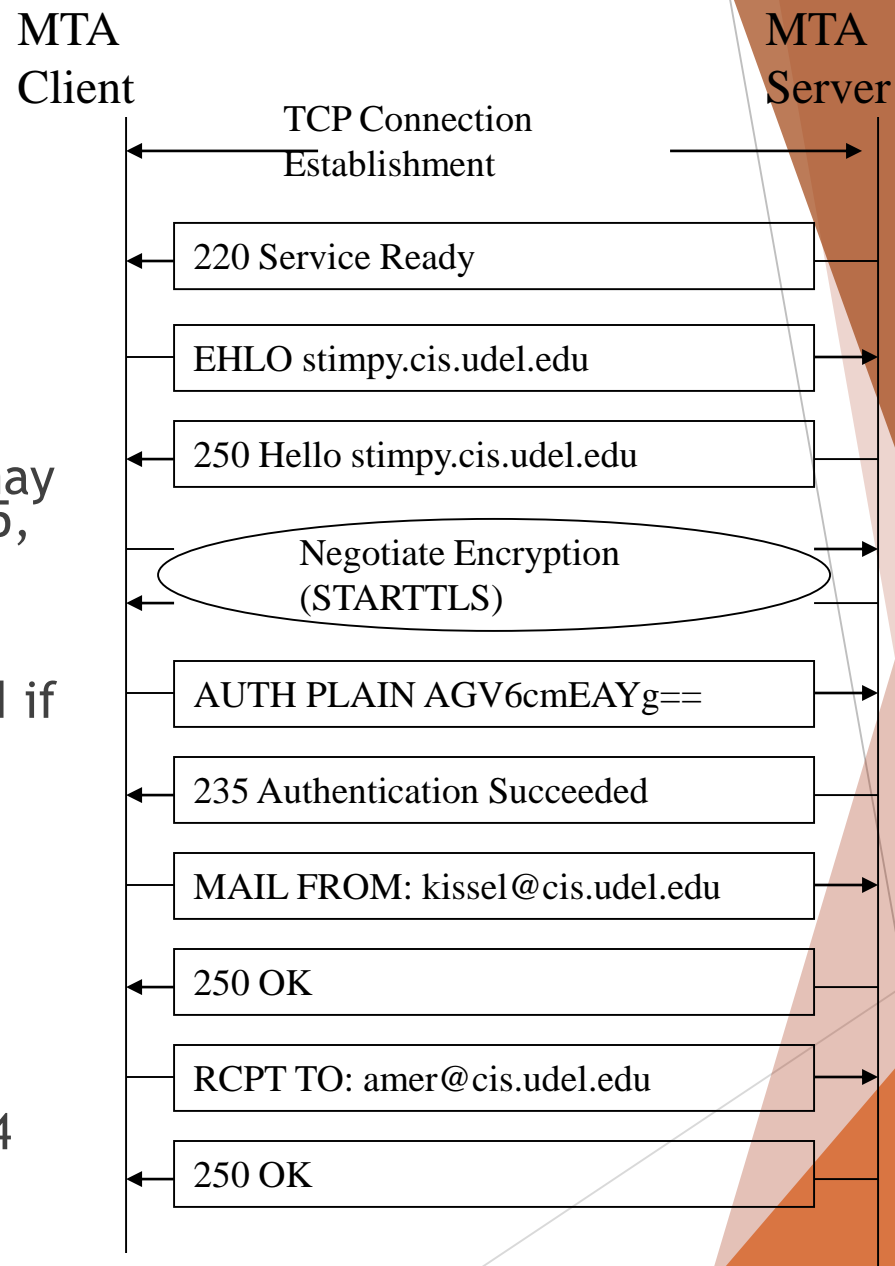
- Transforms non-ASCII data to NVT (Network Virtual Terminal) ASCII data

- Text
- Application
- Image
- Audio
- Video



SMTP AUTH

- ▶ Allows the server to provide features only to known users and limit others.
- ▶ Various authentication methods may be used (PLAIN, LOGIN, CRAM-MD5, etc.)
- ▶ Encryption is highly recommended if not enforced by MTA.
- ▶ Ex. AUTH PLAIN
 - ▶ Simple
 - ▶ Usage: AUTH PLAIN <id>\0<user>\0<password>
 - ▶ Authentication string is Base64 encoded



Email can be faked...

HELO stimpy.eecis.udel.edu

MAIL FROM: cis-dept@cis.udel.edu

RCPT TO: amer@cis.udel.edu

DATA

From: Department Chair

To: Dr. Paul Amer

Subject: CISC856

Solutions

- Email signatures (PGP)
- Sender Policy Framework (SPF)

Dr. Amer,

By department decree all students in your CISC856 TCP/IP class are hereby to be given automatic A's.

Thank you,

Department Chair

.

QUIT

MTAs and Mail Access Protocols

- ▶ The MTA delivers email to the user's mailbox
- ▶ Can be complex with numerous delivery methods, routers, and ACLs
- ▶ Exim, Postfix, Sendmail
- ▶ The Mail Access Protocols are used by the users to retrieve the email from the mailbox
 - ▶ POP3
 - ▶ IMAP4

Post Office Protocol v3

- ▶ Simple
- ▶ Allows the user to obtain a list of their Emails
- ▶ Users can retrieve their emails
- ▶ Users can either delete or keep the email on their system
- ▶ Minimizes server resources

Internet Mail Access Protocol v4

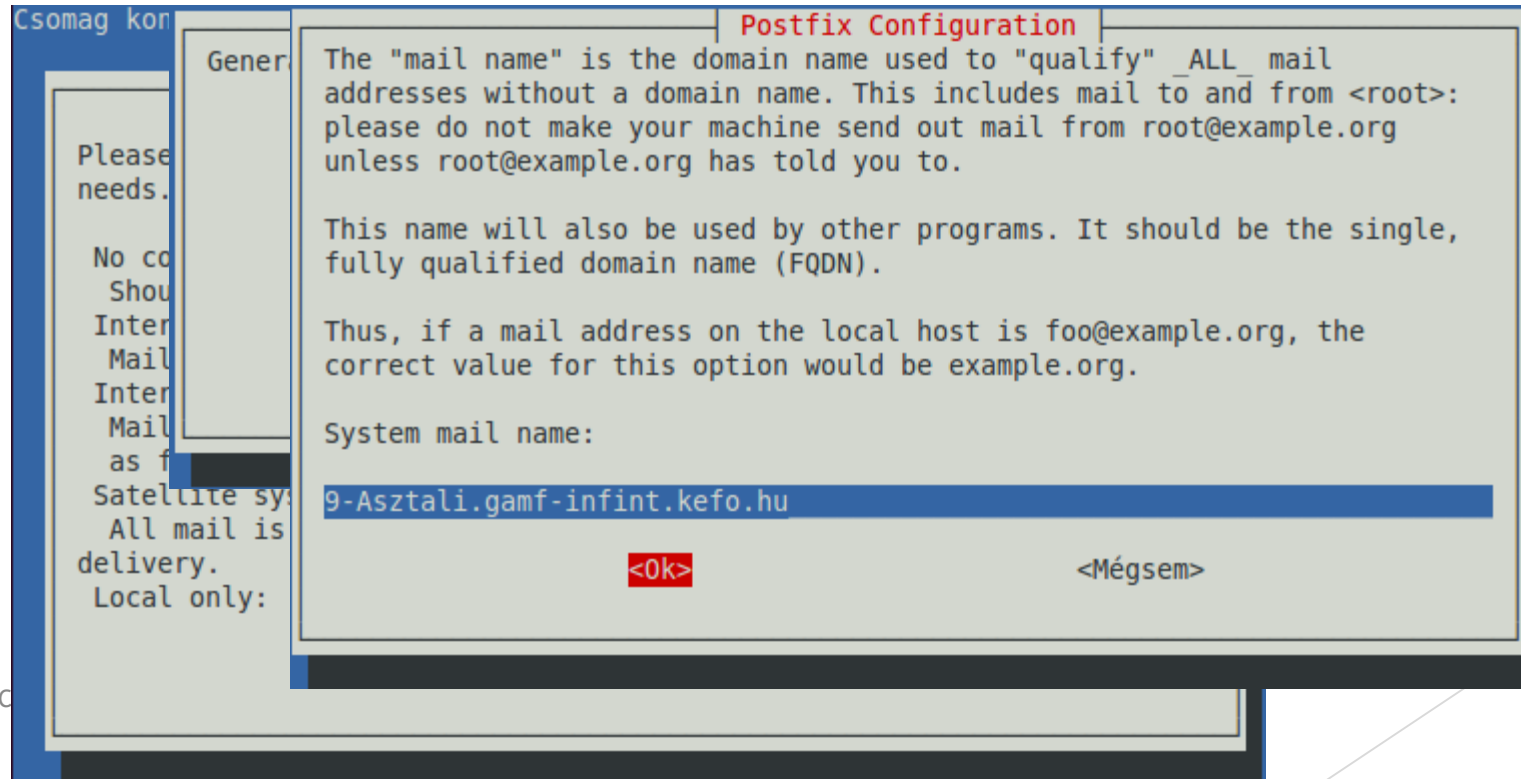
- ▶ Has more features than POP3
- ▶ User can check the email header before downloading
- ▶ Emails can be accessed from any location
- ▶ Can search the email for a specific string of characters before downloading
- ▶ User can download parts of an email
- ▶ User can create, delete, or rename mailboxes on a server

Levelező szerver

- ▶ Mail Transfer Agent - levelek fogadása és küldése (szerver)
 - ▶ **Postfix**
 - ▶ exim4
- ▶ Levélszűrés - spam és vírus felismerés
 - ▶ Amavis-new
 - ▶ Spamassassin
 - ▶ Clamav
- ▶ Mail Delivery Agent
 - ▶ **Dovecot**
 - ▶ Cyrus
 - ▶ Courier
- ▶ Levelezési lista
 - ▶ Mailman

Postfix

- ▶ MTA - levelek küldése és fogadása
- ▶ `sudo apt-get install postfix`



Konfiguráció folytatás

If synchronous updates are forced, then mail is processed more quickly. If not forced, then there is a remote chance of losing some mail if the system crashes at an inopportune time, and you are not using a journaling filesystem (such as ext3).

Force synchronous updates on mail queue?

<Igen>

<Nem>

► sudo d

The image shows a collage of several overlapping Postfix configuration windows. The windows contain the following text:

- Postfix Configuration** (multiple instances):
 - Mail for the 'postmaster' user will be redirected to the user specified below. If this user is not a system user, it will be created. If you do not want mail for the postmaster user, please enter a valid email address. (The input field contains 'Asztali.gamf-inf').
 - Please specify the network blocks for which this host should relay mail. The default is to relay mail for all networks. (The input field contains '127.0.0.1').
 - By default, whichever Internet protocols are enabled on the system at installation time will be used. You may override this default with any of the following:
 - all : use both IPv4 and IPv6 addresses;
 - ipv6: listen only on IPv6 addresses;
 - ipv4: listen only on IPv4 addresses.
 - Internet protocols to use:
 - all
 - ipv6
 - ipv4 (highlighted in red)
- Force synchronous updates on mail queue?
 - <Igen>
 - <Nem> (highlighted in red)

További beállítások

- ▶ Levelek tárolására szolgáló könyvtár megadása
- ▶ TLS-t alkalmazó SASL hitelesítési mechanizmus beállítása (SMTP-AUTH) - egy hitlesítésszolgáltató által kiadott vagy "önaláírású" tanúsítvány szükséges
- ▶ Lehetséges SASL megvalósítások: Dovecot SASL (postfix-dovecot csomag) és Cyrus SASL