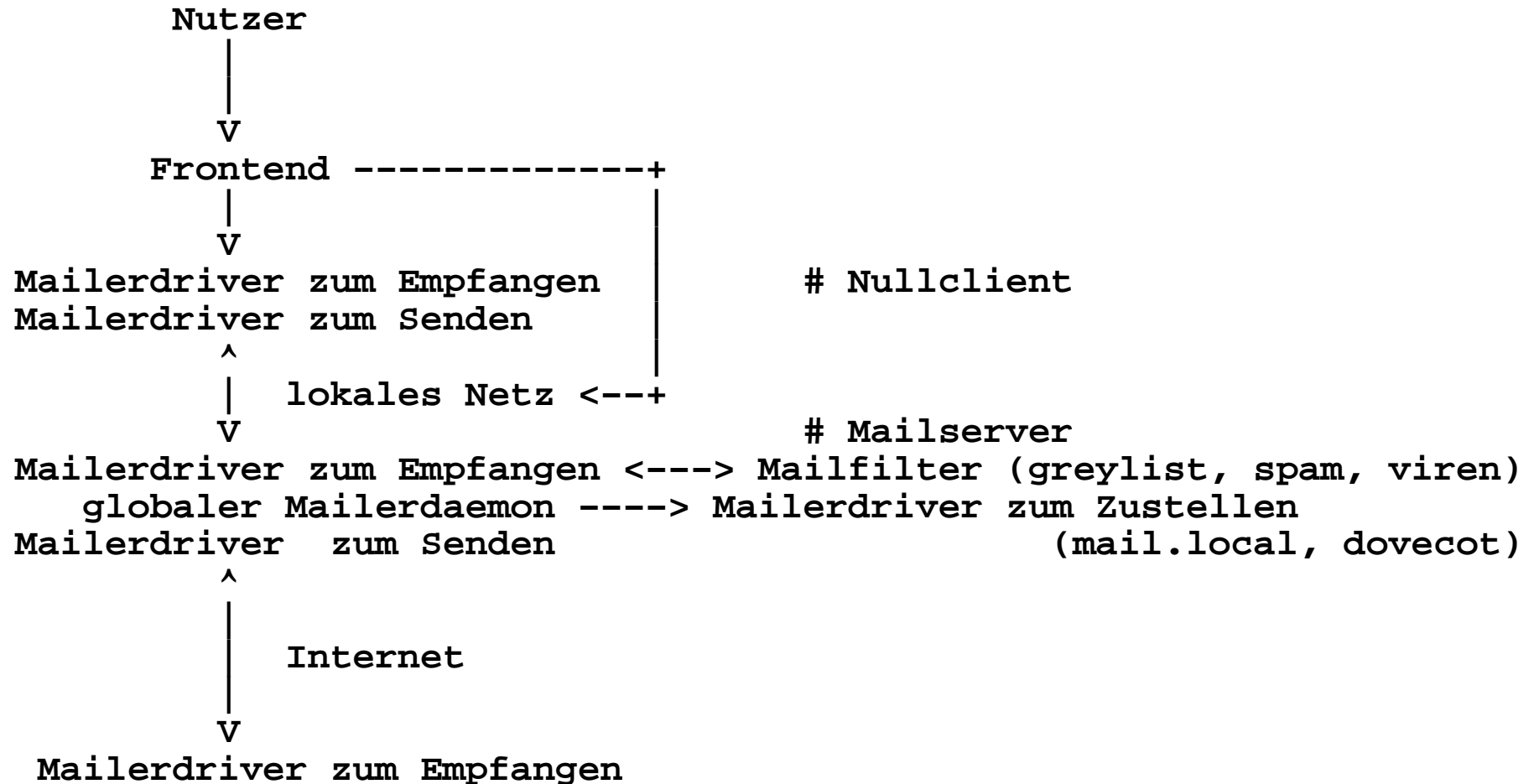


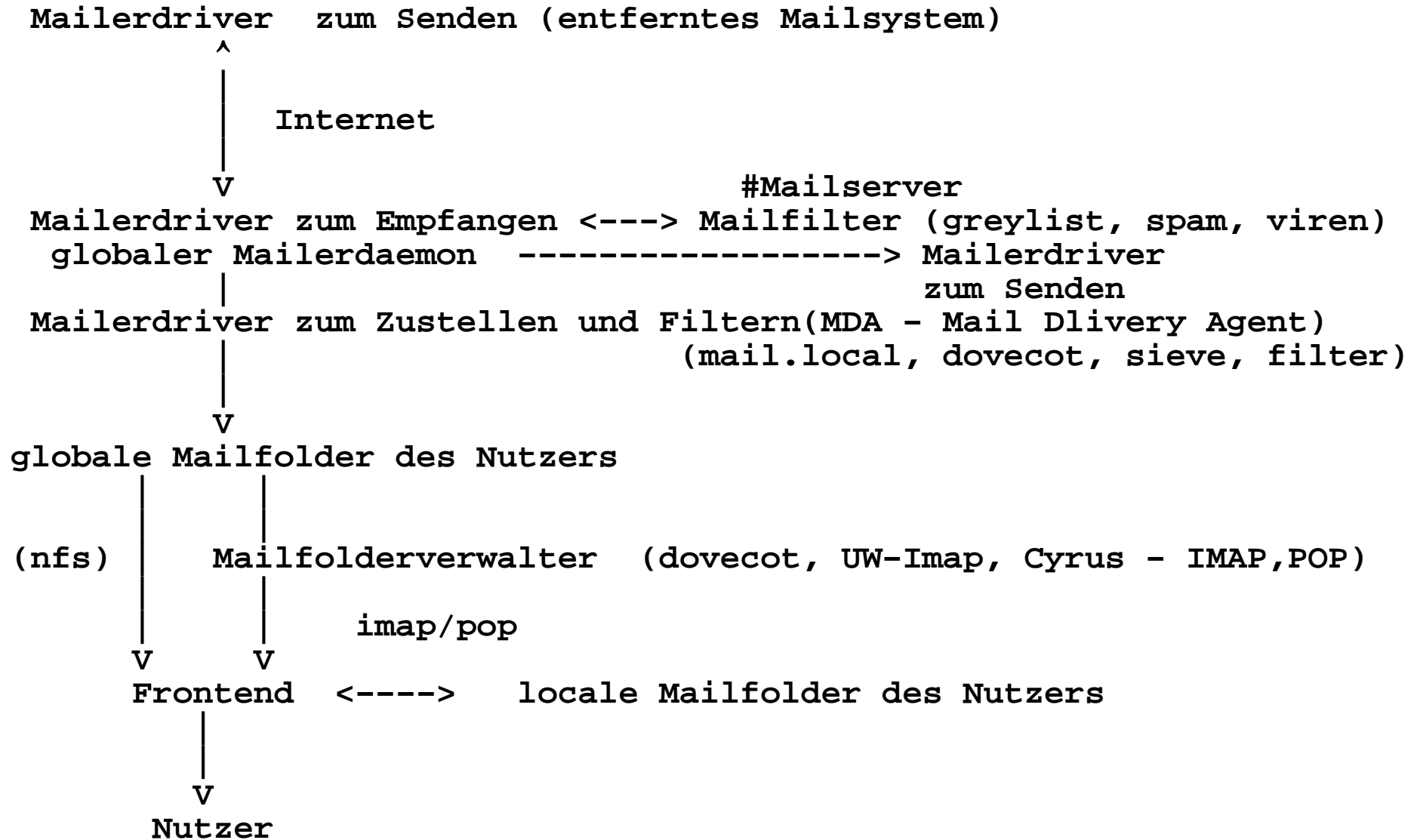
17. Electronic Mail - Sendmail
=====

Aufbau/Struktur eines Mailsystems:

Senden:



Empfangen:



Protokolle:

SMTP Simple Mailtransport Protocol
Mailerdriver zum Senden und Empfangen
Frontend des Nutzers zum Senden
ESMTP Extended Simple Mailtransport Protocol
IMAP Internet Message Access Protocol
POP Post Office Protocol (Version 2, Version 3)
Frontend des Nutzers zum Empfangen

Mailerdriver:

smtp-driver - intern
uucp - intern
x500 - extern
local - Zusteller: rmail, mail.deliver, deliver, mail.local
müssen sich synchronisieren können mit
dem Mailfolderverwalter, der die Zugriffe
des Nutzer-Frontends auf die globalen
Mailfolder des Nutzers ermöglicht.

Mailfilter:

vacation - Urlaubsverwaltung (serverseitig)
filter - Filterprogramm (serverseitig)
sieve - Filterprogramm (serverseitig)
procmail - Filterprogramm (serverseitig)
spamassassin - SPAM-Erkennungsprogramm
clamav - Virenfilter

Mailsysteme:

Sendmail mit Milter

procmail

Smail

Herstellerspezifische Mailsysteme:

SUN: Solstice Internet Mail 2.0

COMPAQ: DEC MAILworks, MAILbus 400

Konfiguration von Sendmail

Konfigurationsfile sendmail.cf wird durch M4-Macros erzeugt!!!

Konfiguration eines Nullclients unter Solaris:

```
cd /etc/mail/cf/cf
make      #  sendmail.mc  --> sendmail.cf
cp sendmail.cf /etc/mail/sendmail.cf
```

sendmail.mc file (Nullclient) für Institut:

```
divert(-1)
#
#  Kommentare
#
divert(0)dnl
VERSIONID(`@(#)sendmail.mc      1.11 (Sun) 06/21/04')
define(`confCF_VERSION', `SOLARIS-INF-2.0c')dnl
OSTYPE(`solaris8')dnl
DOMAIN(`informatik.hu-berlin.de')dnl
define(`confPRIVACY_FLAGS', `goaway')dnl
FEATURE(nullclient, mailbox.$m)dnl
MASQUERADE_AS(informatik.hu-berlin.de)dnl
DAEMON_OPTIONS(`Name=MSA4,      Family=inet, Addr=127.0.0.1, Port=25, M=E')dnl
```

```
domain-Konfiguration: /etc/mail/cf/domain/informatik.hu-berlin.de.m4
```

```
divert(-1)
```

```
#
```

```
#
```

```
# J-P Bell 3.12.98
```

```
# fuer informatik.hu-berlin.de
```

```
#
```

```
divert(0)
```

```
VERSIONID(`@(#)informatik.m4')
```

```
# feature(local_procmail, `/bin/procmail')dnl
```

```
define(`confDEF_CHAR_SET', `ISO-8859-1')dnl
```

```
define(`confSMTP_LOGIN_MSG', `$j Sendmail $v/$Z; $b')dnl
```

```
define(`confSMTP_MAILER', `esmtplib')dnl
```

```
define(`confMATCH_GECOS', `True')dnl
```

```
define(`confME_TOO', `False')dnl
```

```
define(`confCOPY_ERRORS_TO', `Postmaster')dnl
```

```
define(`confPRIVACY_FLAGS', `authwarnings,needmailhelo,needexpnhelo,needvrfyhe
```

```
define(`confTRUSTED_USERS', `bell,kaempfer,majordom')dnl
```

```
define(`confMAX_MESSAGE_SIZE', `20000000')dnl
```

```
define(`confEIGHT_BIT_HANDLING', `pass8')dnl
```

```
FEATURE(`allmasquerade')dnl
```

```
MASQUERADE_AS(informatik.hu-berlin.de)dnl
```

Konfiguration Eingang-Mailserver

Script zum Erzeugen und installieren von sendmail.cf

```
#!/bin/sh
# konfigurieren sendmail.cf fuer solaris master auf mail
. ./SENDMAIL
/opt/csw/bin/gm4 -D_CF_DIR_=${SENDMAIL_CF}/ ${SENDMAIL_CF}/m4/cf.m4 mail.mc
  sed "/^CE/s/CE/#CE/"      | \
  sed -e "/Timeout.hoststatus/s/#O/O/" -e "/Timeout.hoststatus/s/30/10/"
  sed  "/Djinformatik/s/Djinformatik/Djmail.informatik/"> mail.sendmail.cf
cp mail.sendmail.cf /opt/csw/etc/mail/sendmail.cf
chmod 444 /opt/csw/etc/mail/sendmail.cf
chown root:bin /opt/csw/etc/mail/sendmail.cf
```


Mailserver Konfigurationsfile mail.mc:

```
divert(-1)
#
#
# XOSTYPE(solaris8)dnl
# XOSTYPE(solaris2.ml)dnl

VERSIONID(`@(#)informatik.hu-berlin.de master')

OSTYPE(solaris2.ml)dnl

DOMAIN(informatik.hu-berlin.de)dnl

FEATURE(use_cw_file)dnl
FEATURE(redirect)dnl
FEATURE(smrsh,/opt/csw/lib/smrsh)dnl
FEATURE(relay_entire_domain)dnl
FEATURE(access_db, hash -T<TMPF> /opt/csw/etc/mail/access)dnl
FEATURE(`greet_pause', `20000')
FEATURE(dnsbl,spam.informatik.hu-berlin.de)dnl
FEATURE(`ratecontrol')dnl
FEATURE(`conncontrol')dnl
FEATURE(`local_procmail', `'/opt/csw/libexec/dovecot/deliver',
        `'/opt/csw/libexec/dovecot/deliver -d $u')dnl
```

```
define(`QUEUE_DIR',`/opt/csw/var/spool/mqueue')dnl
define(`STATUS_FILE',`/opt/csw/etc/mail/statistics')
define(`MAIL_SETTINGS_DIR',`/opt/csw/etc/mail/')dnl
define(`confCF_VERSION',`INF-2.0-MA-SOLARIS-2.10-25')dnl
define(`confDOMAIN_NAME',`informatik.hu-berlin.de')dnl
define(`ALIAS_FILE',`/opt/csw/etc/mail/aliases')dnl
define(`confFORWARD_PATH',`/usr1/Forward/$u.forward')dnl
define(`confMAX_HOP',`40')dnl
define(`confMIN_QUEUE_AGE',`5m')dnl
define(`confCONNECTION_RATE_WINDOW_SIZE',`120')dnl
define(`confDEF_USER_ID',`0:0')dnl
define(`confMAX_MESSAGE_SIZE',`21000000')dnl
define(`confMAX_DAEMON_CHILDREN',`200')dnl
define(`confMATCH_GECOS',`False')dnl
define(`confREFUSE_LA',`6')dnl
define(`confDELAY_LA',`3')dnl
define(`confREJECT_LOG_INTERVAL',`5m')dnl
define(`confTO_IDENT',`0')dnl
define(`confHOST_STATUS_DIRECTORY',`.hoststat')dnl
define(`confTO_HOSTSTATUS',`5m')dnl
define(`LOCAL_MAILER_PATH',`/opt/csw/libexec/dovecot/deliver')dnl
define(`confCACERT_PATH',`/opt/csw/etc/mail/cacerts/')dnl
define(`confCACERT',`/opt/csw/etc/mail/certs/ca-chain.pem')dnl
define(`confCRL',`/opt/csw/etc/mail/certs/ca-chain-crl.pem')dnl
define(`confSERVER_CERT',`/opt/csw/etc/mail/certs/mail.pem')dnl
define(`confSERVER_KEY',`/opt/csw/etc/mail/certs/mail-key.pem')dnl
define(`confCLIENT_CERT',`/opt/csw/etc/mail/certs/mailc.pem')dnl
define(`confCLIENT_KEY',`/opt/csw/etc/mail/certs/mailc-key.pem')dnl
define(`confAUTH_MECHANISMS',`PLAIN LOGIN DIGEST-MD5 CRAM-MD5')dnl
```

```
TRUST_AUTH_MECH('PLAIN LOGIN DIGEST-MD5 CRAM-MD5')dnl
define('confLOG_LEVEL', '9')dnl
MODIFY_MAILER_FLAGS('LOCAL', '-f')dnl
MAILER(procmail)dnl
MAILER(local)dnl
MAILER(smtp)dnl
INPUT_MAIL_FILTER('spamassassin',
    'S=local:/var/run/sendmail/spamass.sock,
    F=T, T=C:15m;S:4m;R:4m;E:10m')dnl
INPUT_MAIL_FILTER('clamav',
    'S=local:/var/run/sendmail/clamav-milter.socket,
    F=T, T=C:15m;S:4m;R:4m;E:10m')dnl
INPUT_MAIL_FILTER('greylist',
    'S=local:/var/opt/csw/miltergreylist/milter-greylist.sock')dnl
define('confMILTER_MACROS_CONNECT',
    'b, j, _, {daemon_name}, {if_name}, {if_addr}')dnl
define('confMILTER_MACROS_ENVRCPT',
    'r, v, Z, {greylist}, {rcpt_mailer}, {rcpt_host}, {rcpt_addr}')dnl
define('confMILTER_MACROS_ENVFROM',
    'i, {auth_type}, {auth_authen}, {auth_ssf}, {auth_author},
    {mail_mailer}, {mail_host}, {mail_addr}')dnl
define('confMILTER_MACROS_HELO',
    '{tls_version}, {cipher}, {cipher_bits}, {cert_subject},
    {cert_issuer}, {verify}')dnl
define('confINPUT_MAIL_FILTERS', 'greylist,clamav,spamassassin')dnl
```

Mailsystem am Institut - Sendmail

- Entwicklung der Struktur
- Struktur von Mailclients und Mailservern
- Sicherheit und Mail
- Statistik, Wartungstechnologien und Umstellung

Test für Mailserver:

```
telnet mail 25  
ehlo hostname
```

```
openssl s_client -starttls smtp -connect mail:25 -showcerts  
ehlo hostname
```

Mail lesen

Protokolle:

```
( NFS          - elm, mutt, pine )
  IMAP, IMAPS  - pine, thunderbird, ...
  POP, POPS    - pine, thunderbird, ...
```

IMAP/POP - Server

```
UW IMAP Toolkit - University of Washington
  POP2, POP3, POP3S, IMAP, IMAPS
  MDAs für sendmail, postfix, procmail
  Mailbox-Format: File
  INBOXes auf Mailserver, USERBOXes das Homedirectory des Nutzers
  Letzte Fassung 2008
```

```
Mailserver Cyrus - Carnegie Mellon University
  POP3, POP3S, IMAP, IMAPS, KPOP
  MDAs für sendmail, postfix, procmail
  Mailbox-Format: eigene Datenbank
  INBOXES und USERBOXes auf dem Mailserver
    (user.bell, user.bell.sent)
  Shared Folders
  Quotas
  sieve
```

Courier Mail Server

POP3, POP3S, IMAP, IMAPS

MDAs für Courier Mail Server, Qmail, Exim, Postfix, Sendmail

Mailbox-Format: mdir

Quotas

Dovecot – OpenSource

POP3, POP3S, IMAP, IMAPS

MDAs für sendmail, postfix, procmail

Mailbox-Format: mbox, mdir, mbox

INBOXes auf Mailserver, USERBOXes konfigurierbar

(im Directory im Homedirectory des Nutzers,
auf dem Mailserver)

sieve: Server-seitige Mailfilterung