



Exchange 2000 Pilot at CERN

HEPiX-HEPNT

Fermilab, October 2002

Outline

- Motivations
- What is Exchange
- Current Infrastructure and Architecture
- Tools developed (Demo)
- Security
- Remaining problems
- Next steps

Initial Motivations

- User requests for “shared” calendar
 - Delegation
 - Secretary reading the Boss calendar to know where he/she is or his/her availability
 - Secretary accessing the Boss calendar to manage his time
 - Secretary and Boss both take appointments and want to avoid conflicts
 - Sharing
 - E.g. publishing software release schedules together with a collaboration schedules
 - Replacement of Schedule+
 - Some part of divisions will not migrate to Windows 2000 without a shared agenda
- Traveling user requests
 - Web Mail
 - Access to mail and calendar from anywhere, without complicated setup
 - Traveling user managing his time with the PDA, synchronizing with Outlook late in the evening and want the secretary to be up to date

Initial Motivations (II)

- Cost reduction of mail service
 - Hardware costs
 - Largely based on (expensive) SUN's
 - Regular reminders for people to cleanup their mail folders to free up disk space
 - Manpower costs
 - Service run by a small number of highly skilled people
 - Does not scale for LHC Era requiring a 24x7 coverage
- Secure the mail environment
 - Mail password changes were not enforced
 - With ADSL becoming more popular, password and data is crossing public networks in clear
 - Virus checked at the smtp gateways only

❖ Started to investigate EOY 2001

Came up with the conclusion that Exchange 2000 might well do the job. So a pilot was proposed in 1Q2002.

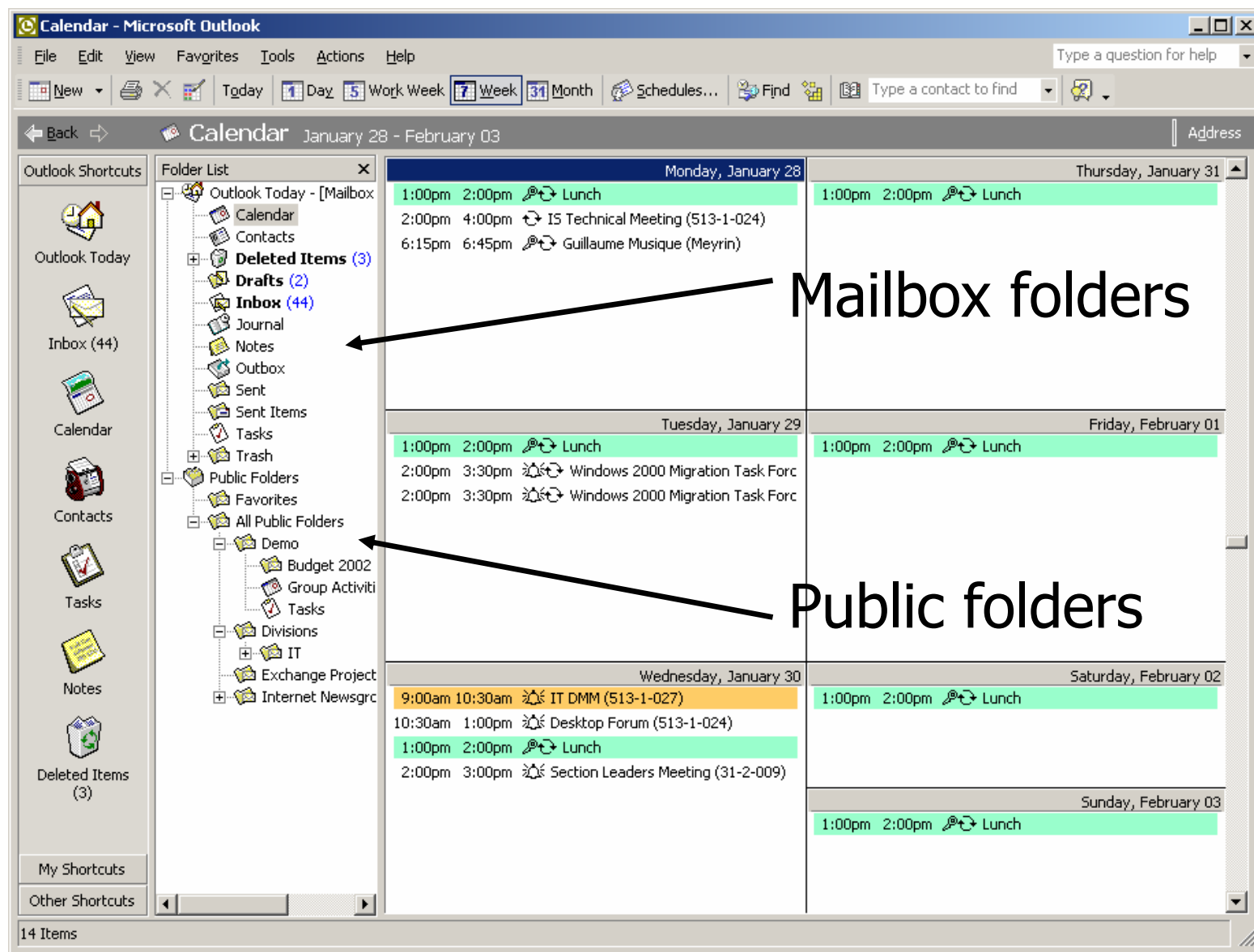
What is Exchange ?

- Collaboration platform running on Windows 2000 integrating
 - Mail
 - Calendar
 - Tasks
 - News
 - Public Folders
 - Global Address Lists
 - Workflows
 - etc...

What is Exchange (II) ?

- Exposes the functions through formal or de facto standards:
- IMAP4, POP3 for mail
 - Outlook, Pine, Netscape, Eudora, Evolution, etc...
 - All platforms incl. Linux, PDA's, etc.
- NNTP for News
 - Netscape, Outlook Express, etc.
 - All platforms Linux, etc. except PDA's
- MAPI for mail, calendar, tasks, etc...
 - Windows, Mac OS, PDA's, not Unix/Linux
 - Evolution (Linux) promises MAPI (Ximian connector for Exchange)
 - Accessed thru Outlook
- HTTP for everything
 - All platforms incl. PDA's
- WebDAV (RFC 2518 draft standard)
 - Currently Windows only, but this is changing (<http://www.webdav.org>)
- SMTP for mail routing

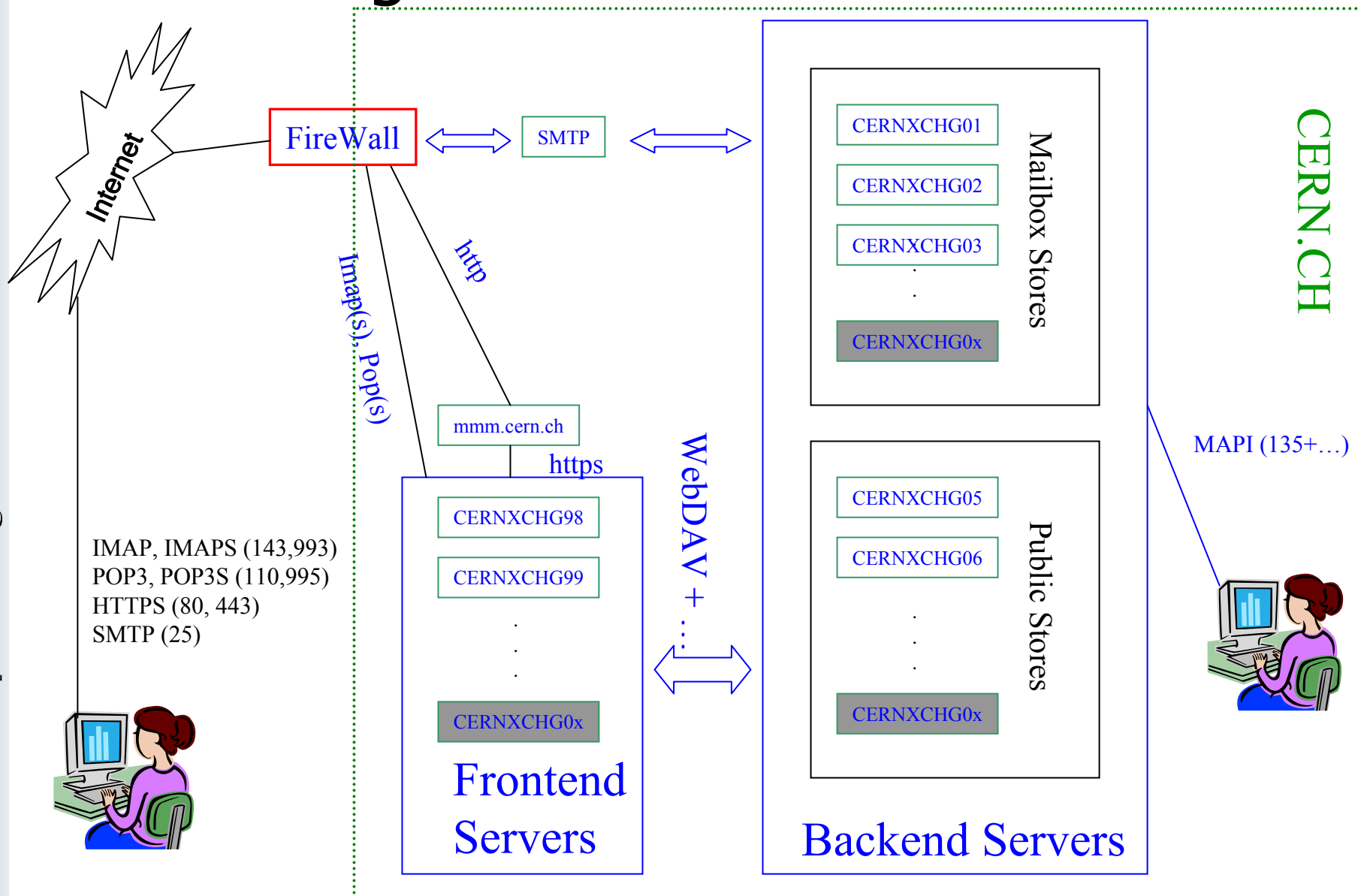
Understanding Folders



Current Infrastructure

- 8 Servers
 - 3 “Mailbox” stores
 - 2 Public Folder Stores
 - 2 Front-end servers
 - 1 Spare
- IMAP (secure), POP (secure), MAPI and HTTP
 - MAPI not yet open outside CERN
 - Web Mail, Calendar etc. fully available and open thru secure HTTP (<https://mmm.cern.ch>)
 - IMAP/HTTP work with almost any client
 - MAPI with Outlook on Windows/Mac
- Office XP recommended for collaborative features on Windows
 - Not possible to switch Outlook 2000 from IMO to CW
 - Allows for multi protocol
 - Allows to revert to existing mail solution

Exchange 2000 Architecture

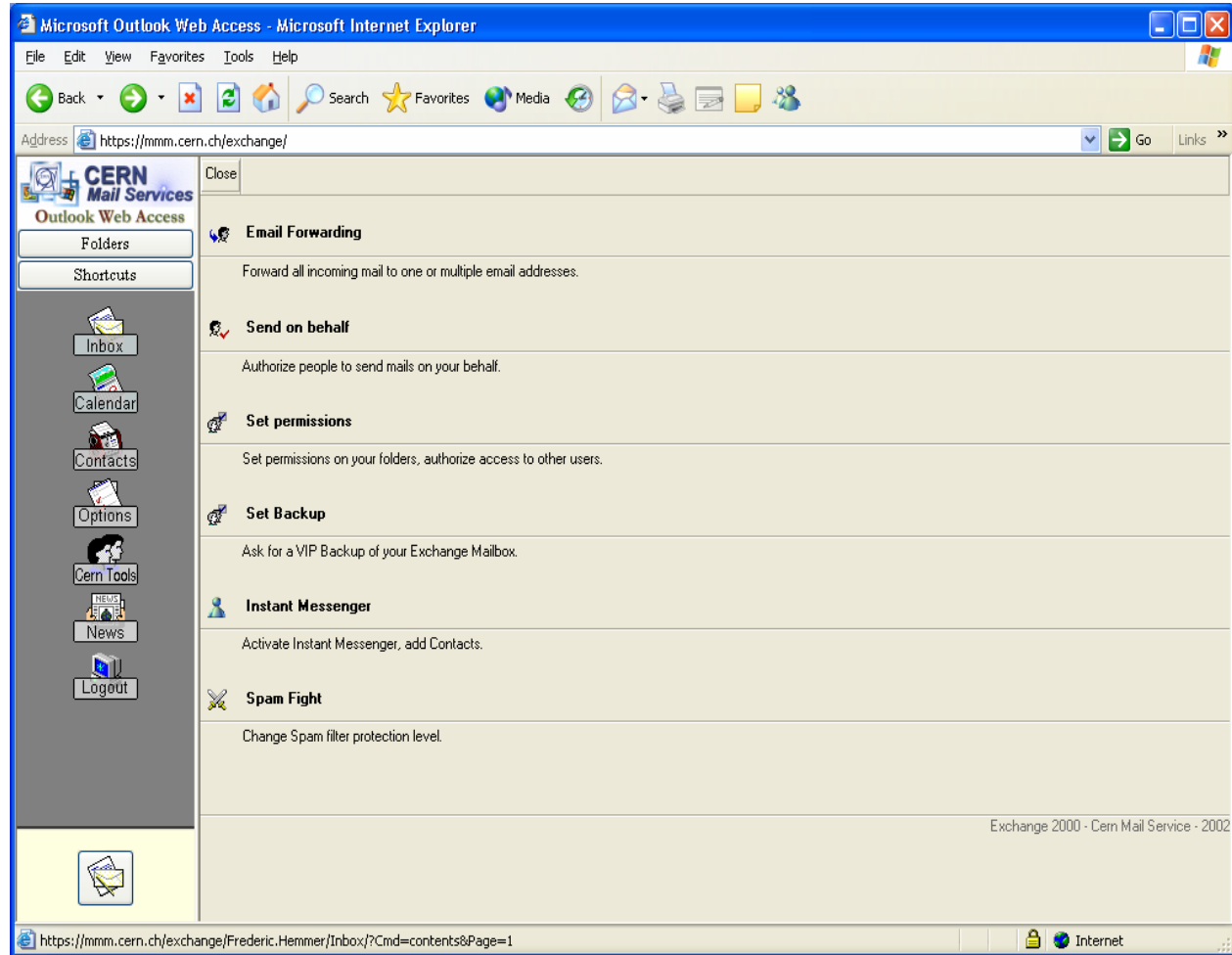


Yes but what if I'm not on Windows ...?

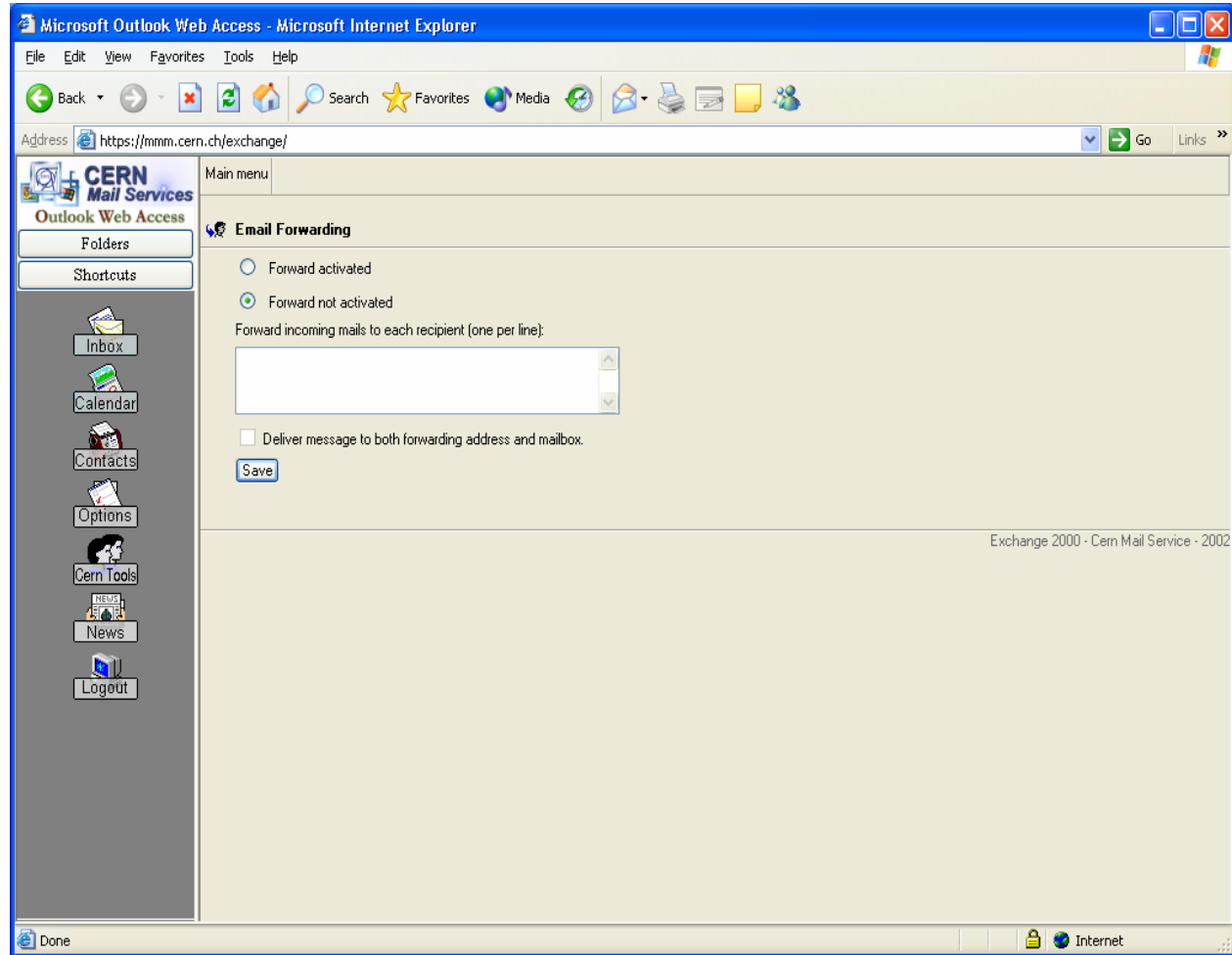
- Exchange limitations include
 - No Mail forwarding
 - Limited and slow migration tools
 - Folder Permissions manipulation only with Outlook
 - Send on behalf only from Outlook
 - No real server side spam filtering
 - Nothing to help better Outlook Users
 - MAPI requires RPC (135) which can be a source of DoS
 - Etc...
- So, we decided to investigate how to extend OWA and Outlook to provide missing or new features

Demo

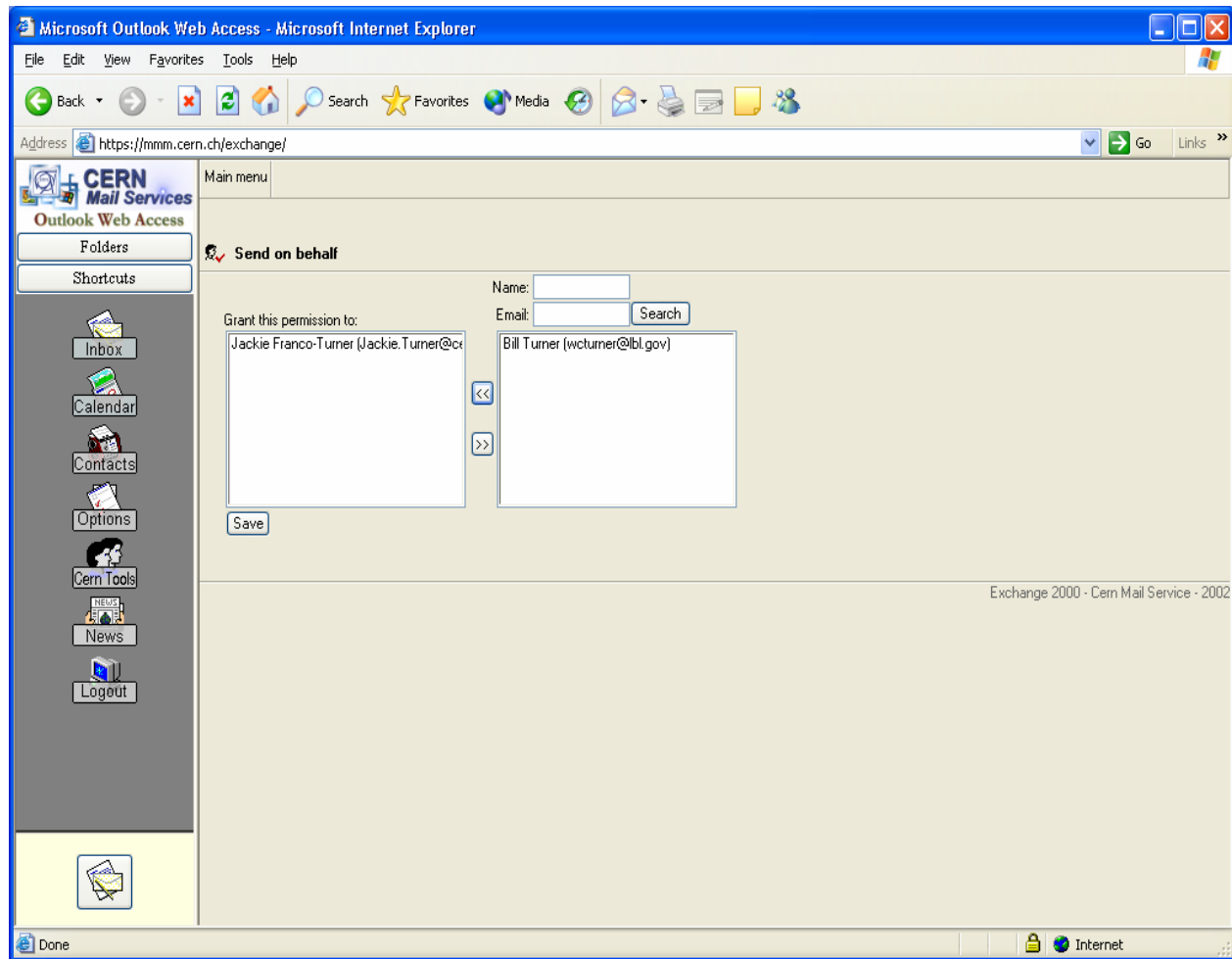
OWA – CERN Tools



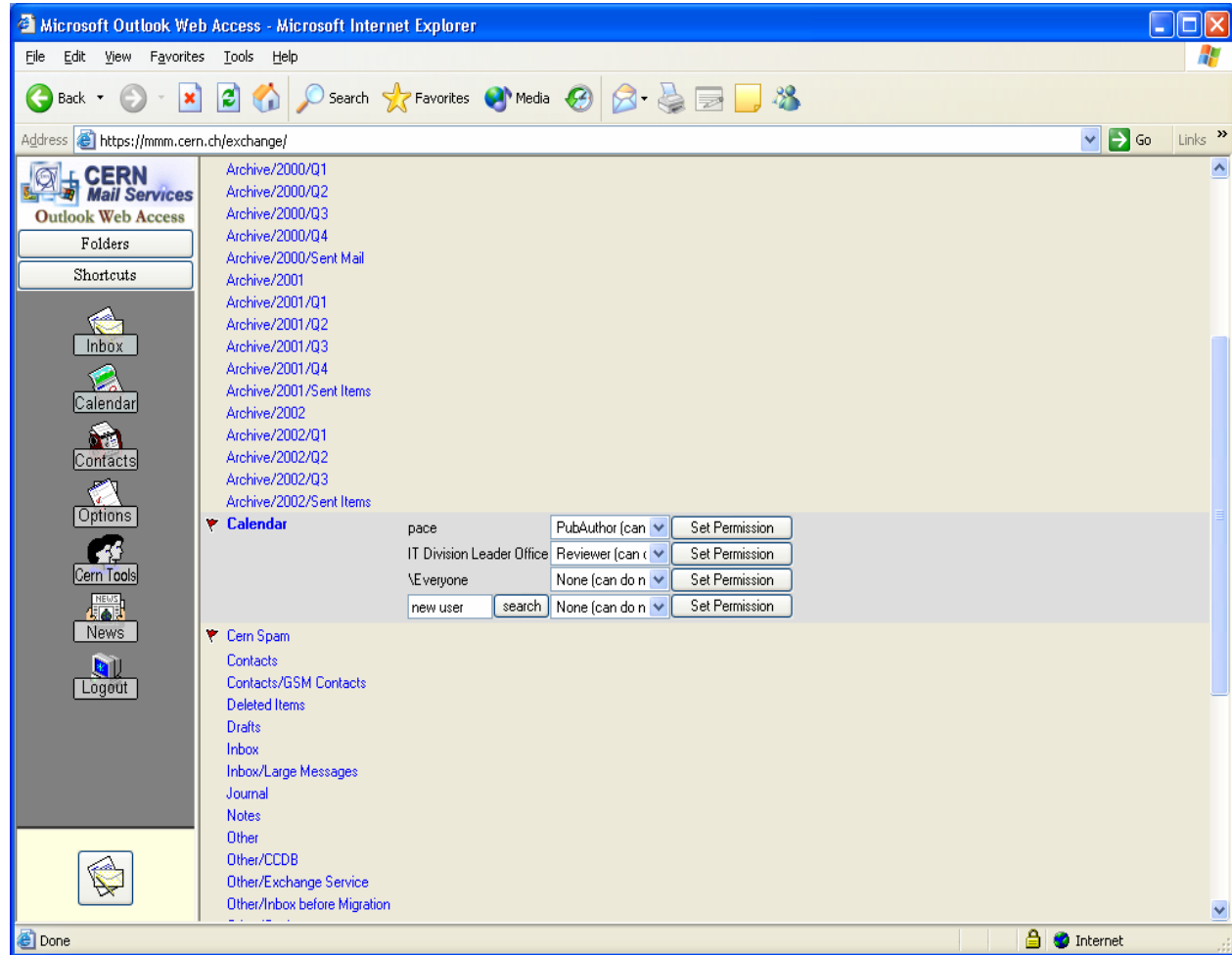
Email forwarding



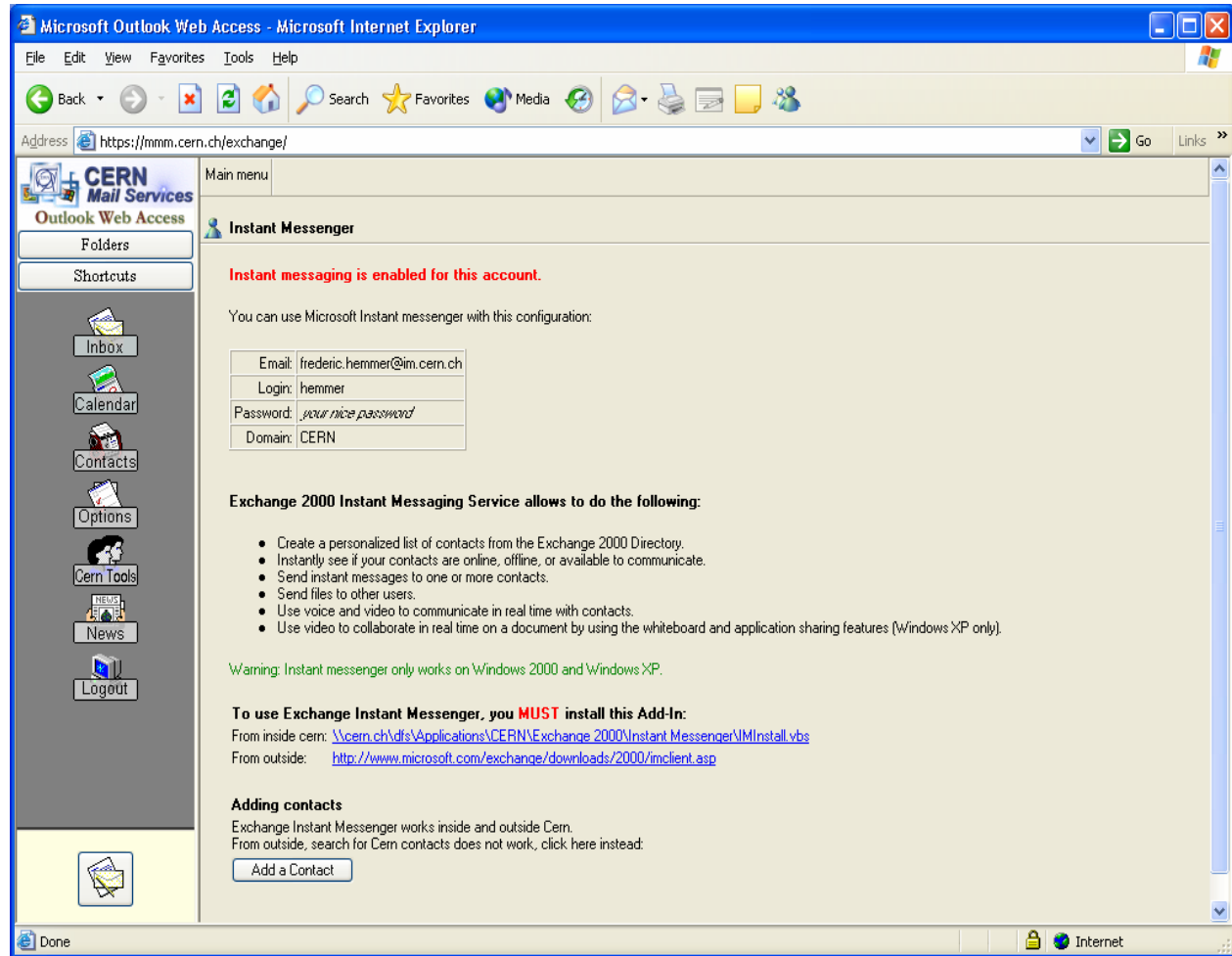
Send on behalf



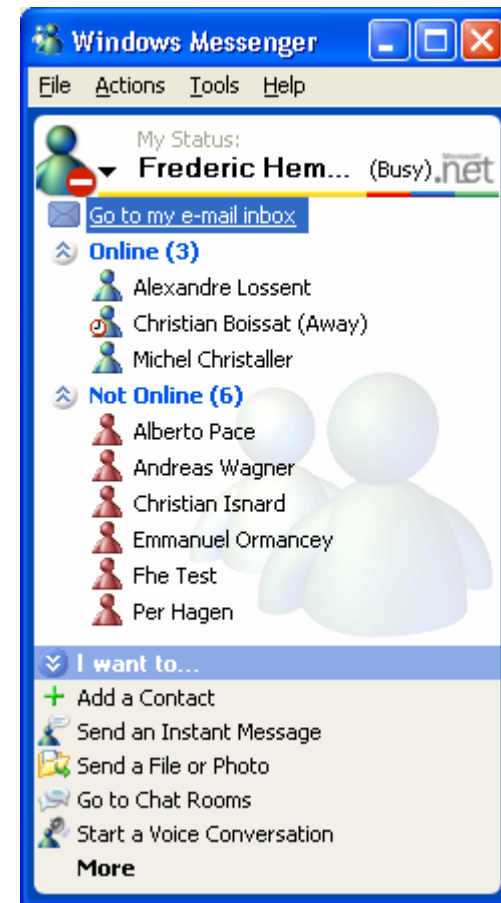
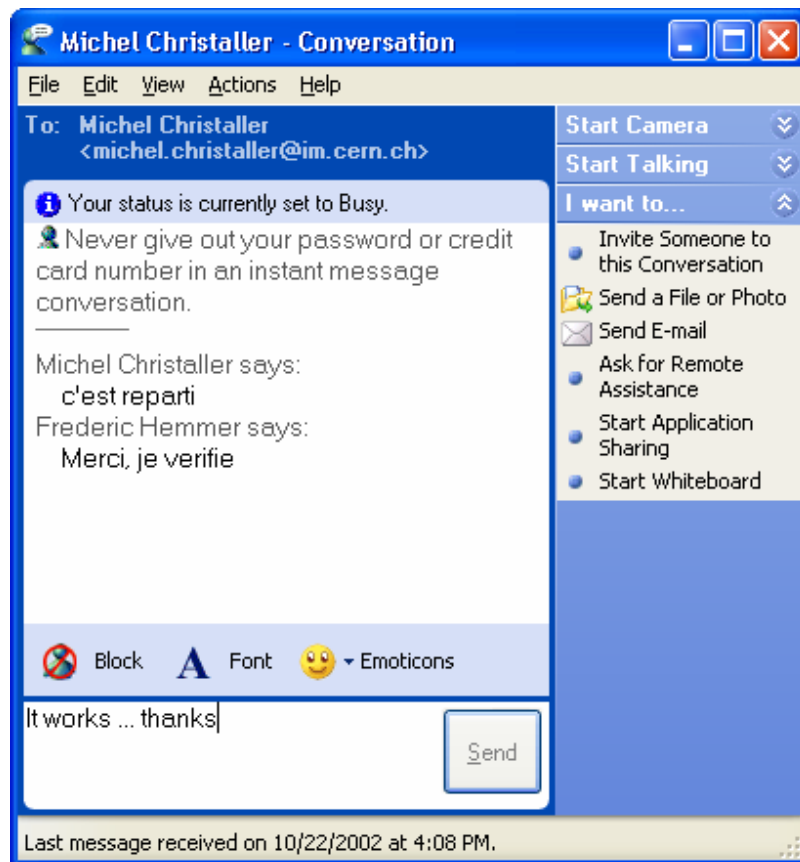
Folder permissions



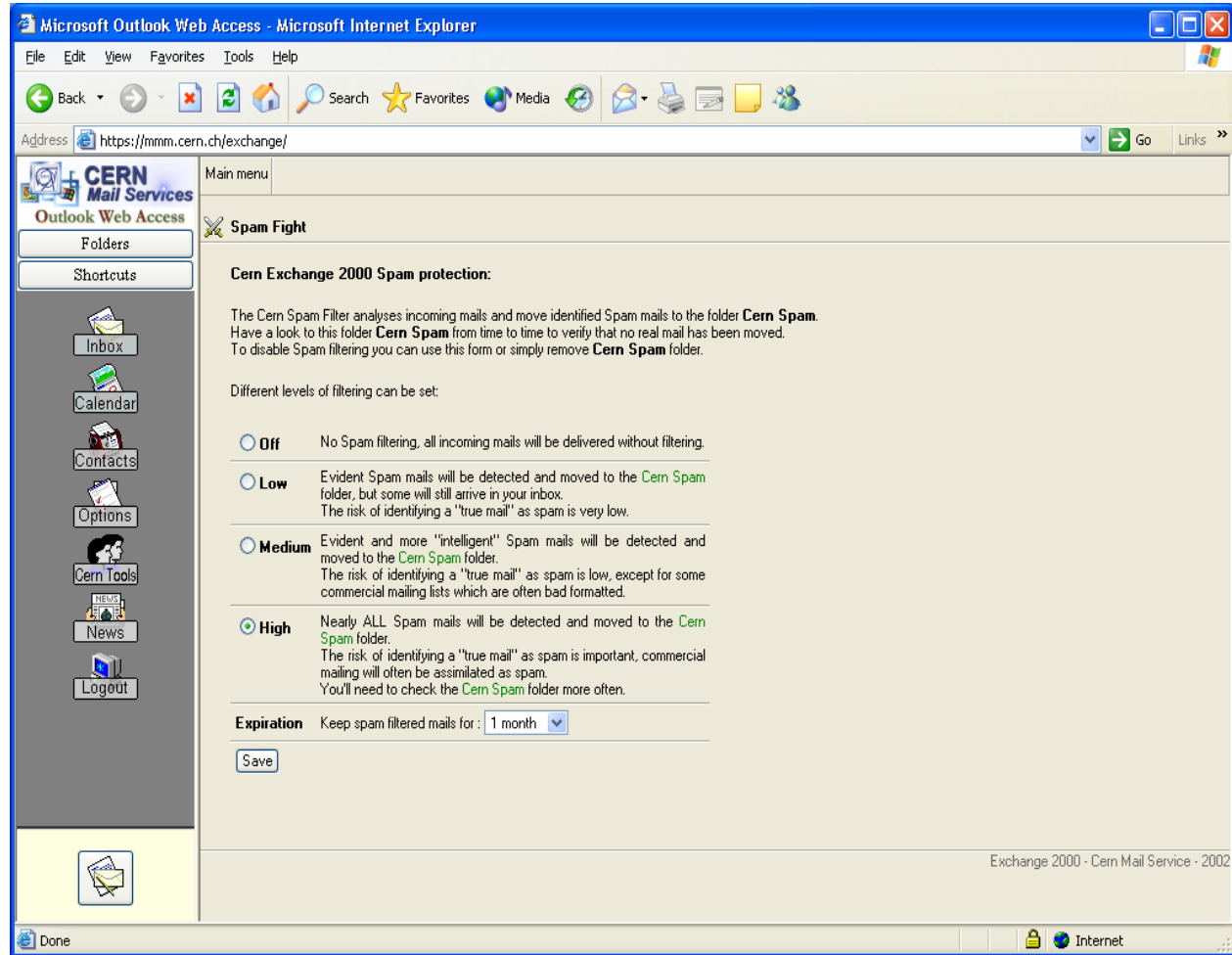
Instant Messaging



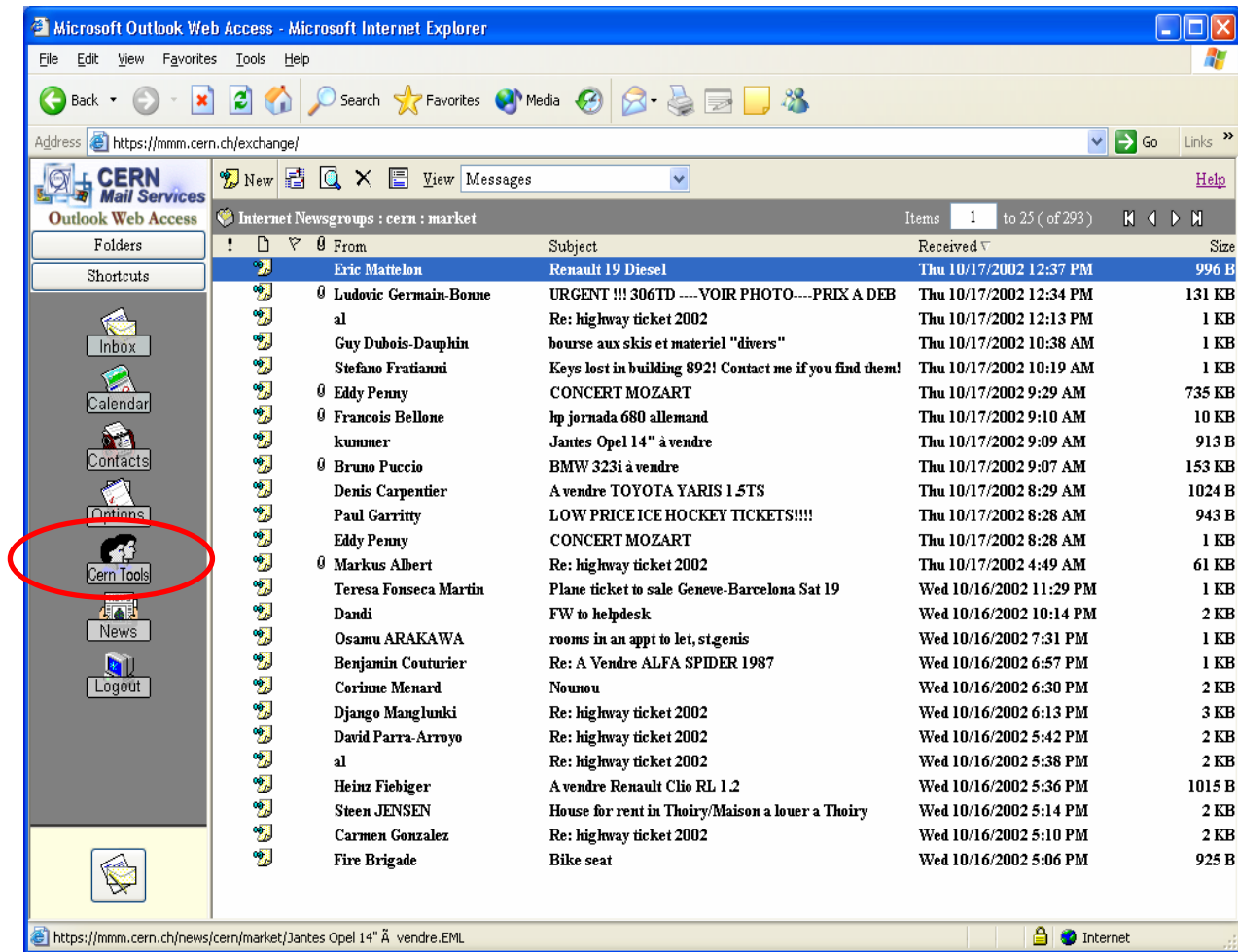
Instant messaging



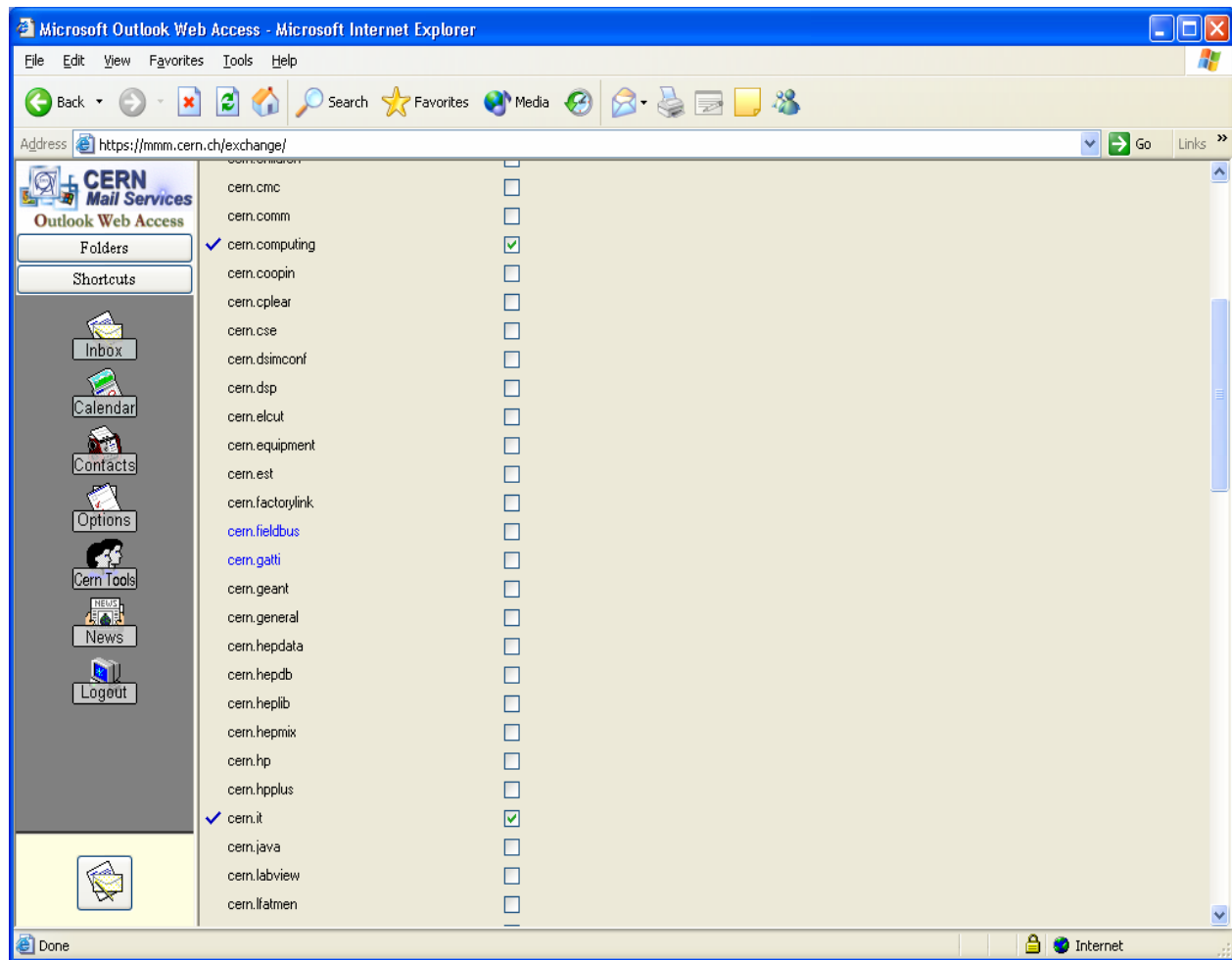
Spam filtering



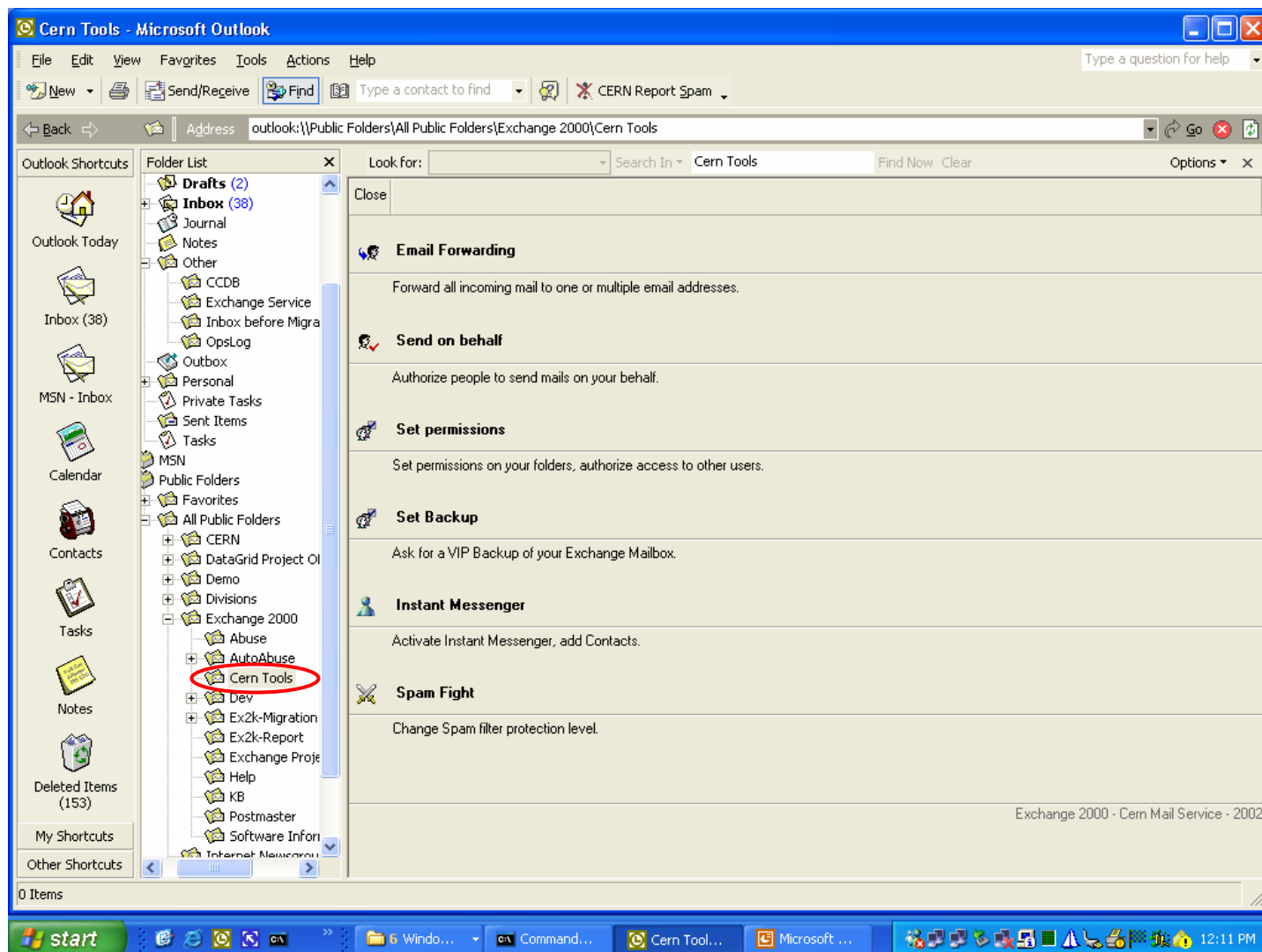
Access to News



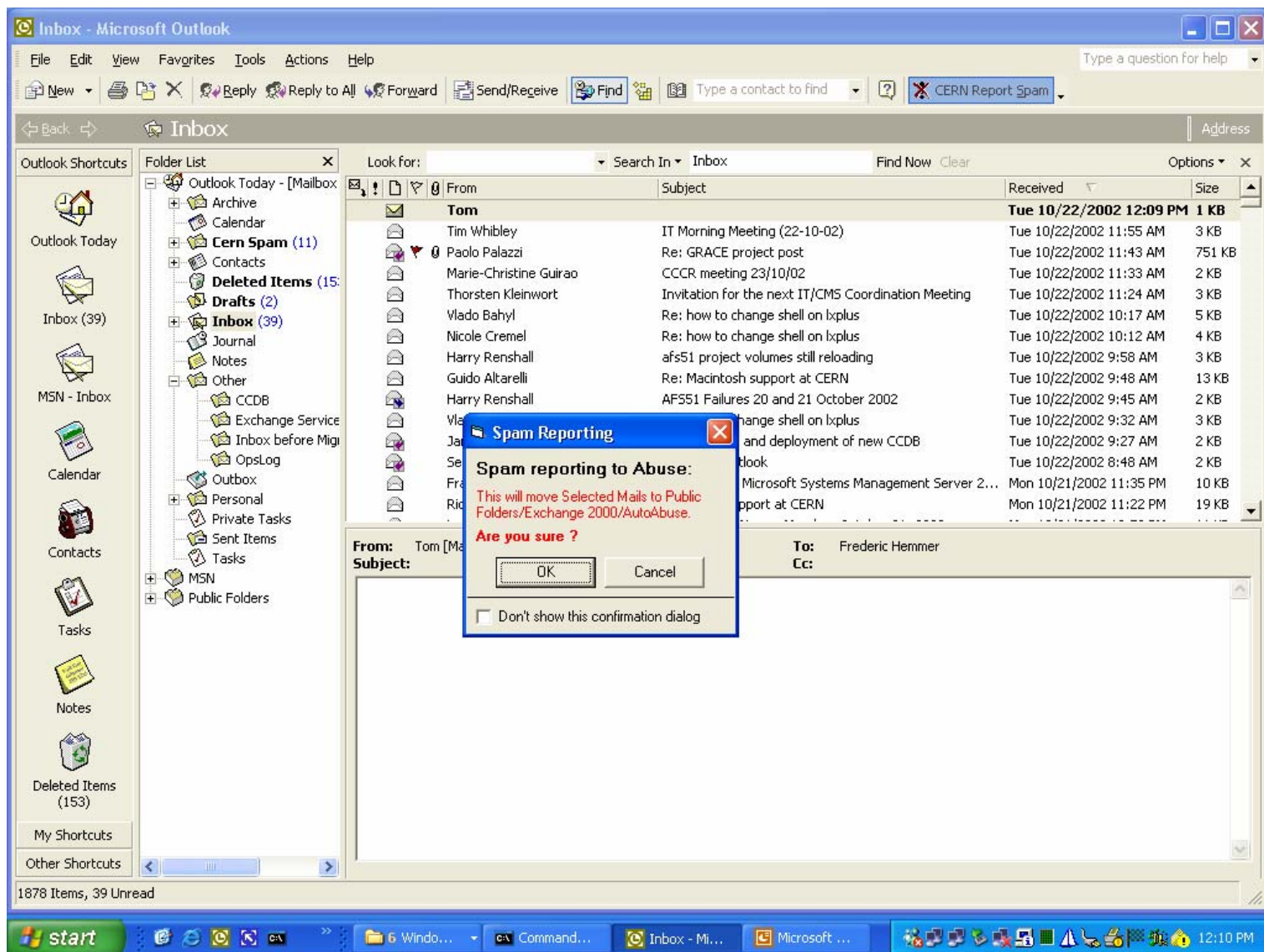
Subscribing to news



CERN Tools in Outlook



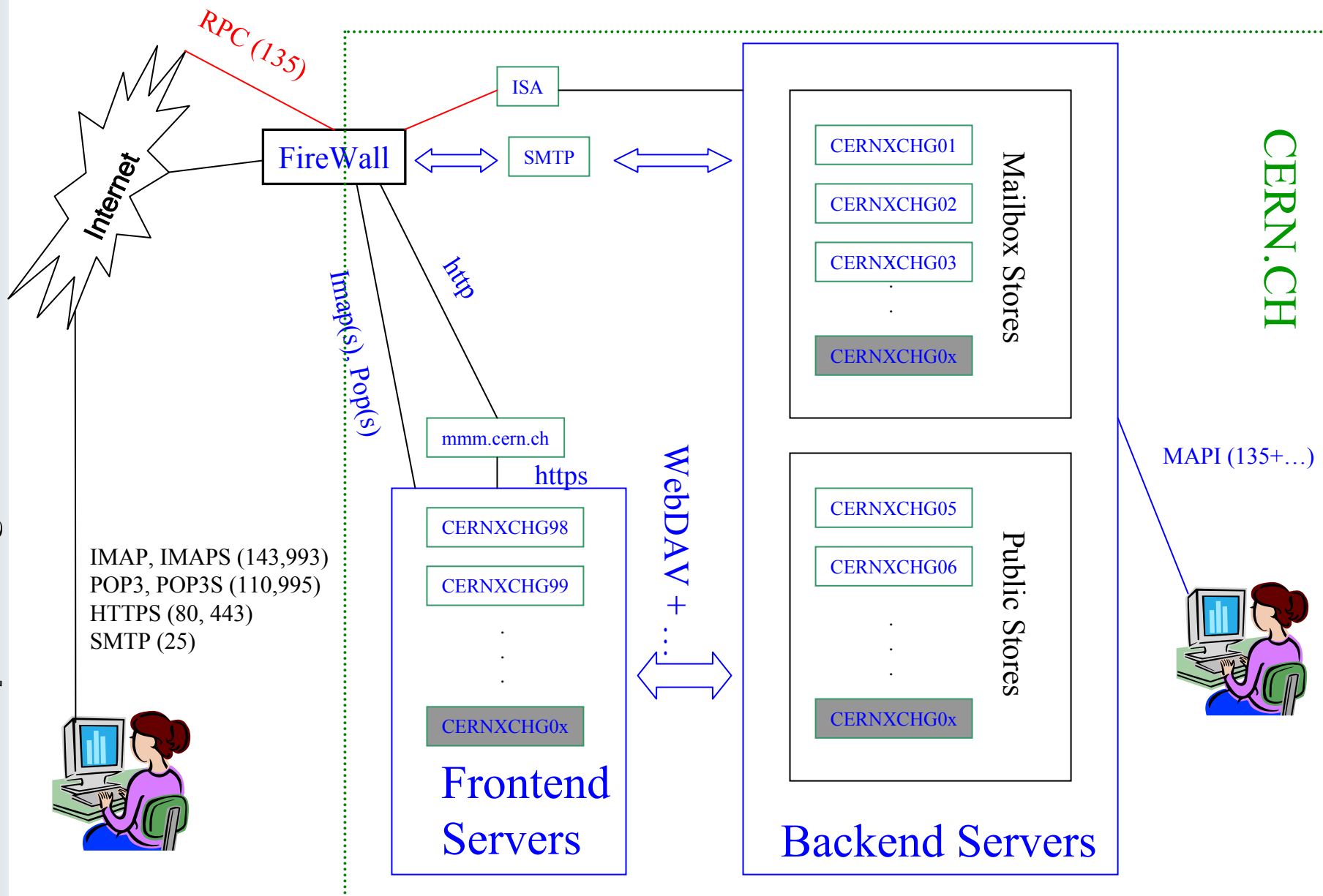
Outlook AddIn



Securing Exchange 2000

- Remove IMAP, POP protocols from offsite access
 - Need client reconfiguration
 - Recent clients only (Mozilla, NS6, IE 5/6 OK)
 - Others would need to upgrade or use http
- MAPI access (Outlook)
 - Disabled for offsite access
 - Use it over a VPN
 - Yes, but... as a minimum requires client configuration
 - Security Officer does not like this
 - Use ISA Servers

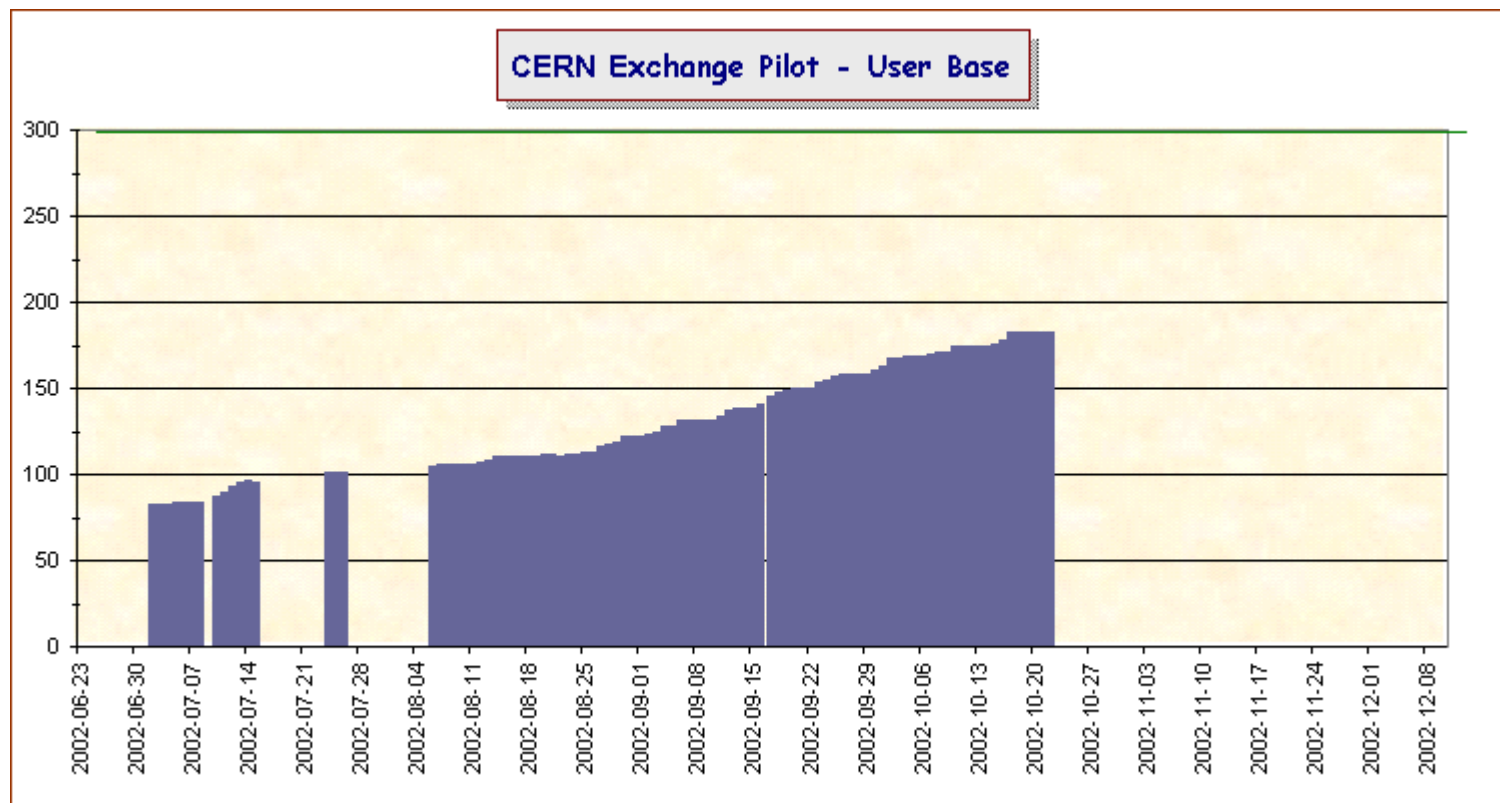
Exchange 2000 Architecture



Still some problems ...

- PINE
 - Pine IMAP preauthentication will not work anymore
 - People will have to type their passwords for the session
 - Pine 3.x does not see folders other than Inbox
 - Pine 3.x does not support IMAPS
- Outlook
 - Some attachments sent from pine are not seen in IMO (Q309493)
 - Addresses lists handling is very clumsy in Outlook 2002
 - Offline access is slow when not used correctly
- Outlook Web Access
 - Rather slow over a modem
 - OWA delegated calendar only read (but not if admin rights!)
- Procmal
 - No clear upgrade for procmal apart for simple server side rules
- Exchange
 - Backup (or rather Restore) is complicated and difficult to automate
 - Currently every store is backed up mightly as a PST file
 - But this does not scale
 - Titanium may help
 - Defragmentation seems to be required (although does not free very much) and needs service interruption.

Exchange 2000 user base



183 Exchange2000 Users @ 12:05:12 PM - Tuesday, October 22, 2002

Next Steps

- Migrate users from our oldest SUN
 - Users not willing to move will be migrated to another SUN
- Adapt registration tools to create new users in Exchange 2000
 - Under way – first user done yesterday
- Devise a plan for global migration to Exchange 2000

Summary

- For the user
 - Exchange 2000 could give opportunity to long outstanding requests:
 - Mail, Calendar and more
 - Web access to most of the features
 - Does not rely on any particular client (browser ≥ 4)
 - and allowing group collaboration
 - e-groups and “groupware”
- For IT
 - While taking into account the constant search for economy
 - Maintenance/Server replacement at least 30% cheaper (per year) assuming 13000 users
 - And address manpower issues
 - by consolidating on a platform that we have to support anyway
 - reducing diversity requires less specialization
 - mail expertise currently limited to two individuals could expand to 7-8 persons
 - as well as potential integration of other products/security features
- ❖ An opportunity for offering more services & coverage for a global reduced cost
- ❖ Even better, end user feedback has been very positive