

# Exchange Exchange

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Exchanging DESY's e-mail backend system from Exchange to ...  
... something new

Dirk Jahnke-Zumbusch  
Björn Schulz  
HEPiX spring 2013  
CNAF/INFN, Bologna, Italy

# Outline

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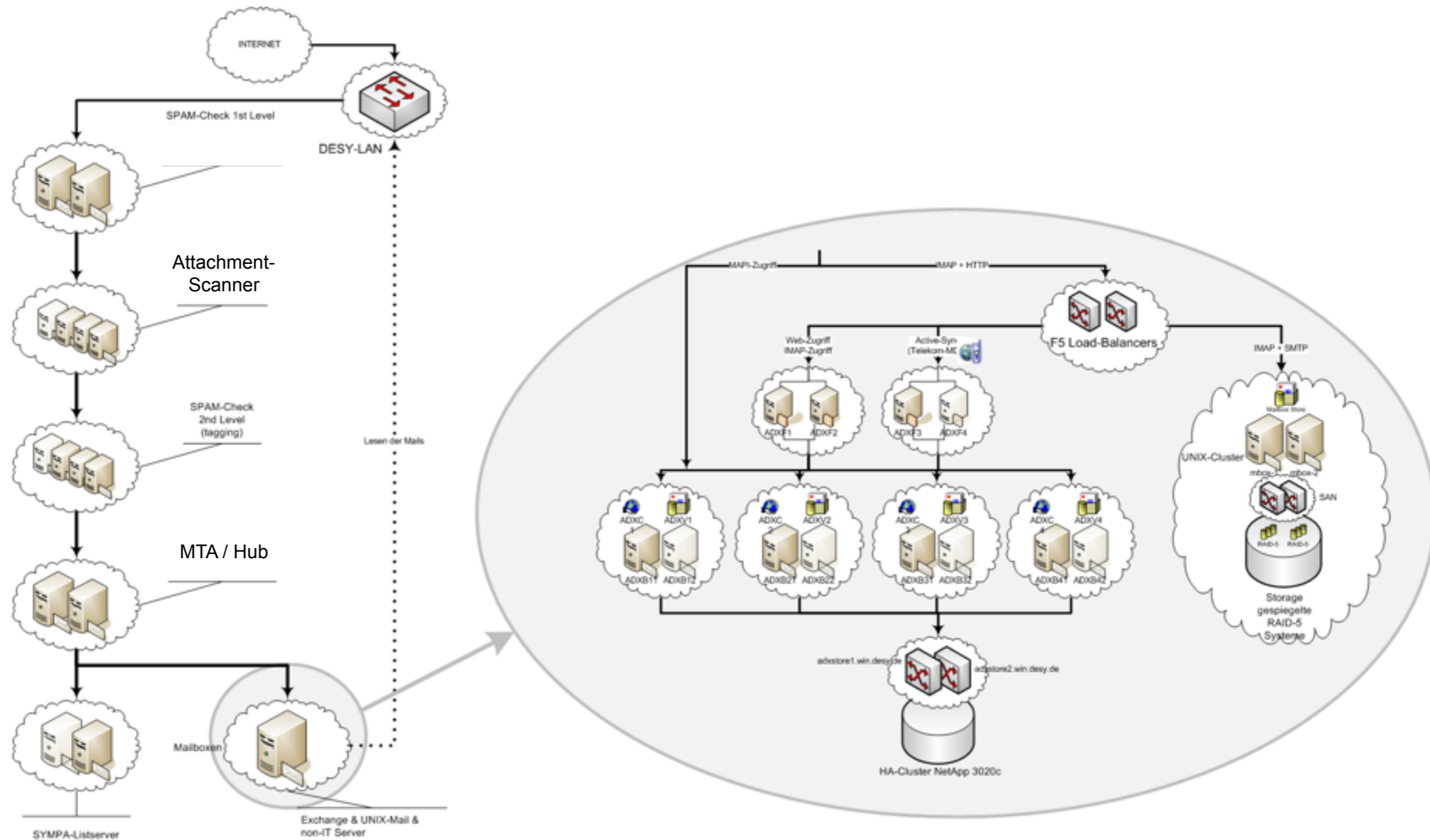
- > what's in production
- > Exchange Exchange – why?
- > objectives
- > candidates
- > about Zimbra
- > conclusions so far

# What DESY has in production

- > for historical reasons there are two centrally provided e-mail systems
- > both systems share around 7'000 active users nearly 50:50
- > in 2004            Windows NT → Windows Active Directory “cold” start  
                         Exchange 5.5 → Exchange 2003, also “cold” start
- > in both worlds there were updates and upgrades in hard- and software
- > up to now: successful operations
  - quite some cases, a few hotfixes derived from those
- > not to forget the surrounding equipment:
  - Postfix MTAs (DMZ, internal, buffering, outgoing)
  - attachment filtering  
(viruses, trojans, executables, encrypted content)
  - mailing list software
  - provisioning systems



# Production environment – overview



# The reasons why we have to exchange Exchange 2003

- > end of life announced for April, 8th, 2014
  - something has to be done ;-)
  
- > hardware has to be renewed (and partly already is)
  
- > limitations of ever increasing mailboxes and user expectations
  - decreasing performance
  - therefore irritated users
  
- > programmatic access is cumbersome and integration into DESY-environment needed quite some effort
  - account provisioning (DESY-registry)
  - public folder access through the CMS-system
  - all other kind of extensions
  - have you ever used Outlook Web Access 2003? And why not a second time?
  - no unified communications (telephone, web meetings)



# Our objectives (and non-objectives)

- > objective A: find a substitute for Exchange 2003, which delivers at least what Exchange 2003 is providing yet (or similar) = satisfied users(!)
- > objective B: find some solution, which support client software on Windows, mobile systems, OS X and Linux
- > objective C: find not the all-round universal and even more extensible groupware solution; meaning also the solution should (remember the budget)
- > objective D: smooth operations (stability, reliability, ease of administration)
- > taking objective A & B into account, we found Zimbra, Exchange 2013, OpenXchange and some others
- > taking objective C into account renders solutions like IBM Lotus Notes and Oracle BeeHive to non-solutions, even if they fulfill A & B and a lot more
- > recently it showed that the “stay in budget” part of objective C will affect Microsoft products:
  - Microsoft announced that license conditions will change  
→ raise by 300% for all kind of software licenses is – say – notable ...

# Short list of our candidates

## > OpenXchange

- Open Source based (+ specials for Active Sync and MAPI/Outlook)
- UNIX-IMAP backend needed; we have a reliable one: Dovecot  
→ no migration needed for half of our users
- Web-Interface o.k.
- but: Outlook-Connector did not meet our expectations

## > Zimbra

- Open Source based (+ specials for Active Sync and MAPI/Outlook)
- integration potentials (SOAP & REST, other APIs, Zimlets on clients)
- good web-interface with mash-up possibilities
- Outlook-Connector mostly meets our expectations
- HA-features

## > Exchange 2013

- Outlook works best with Exchange (sic!)
- good HA-features



# Zimbra – architectural overview

## > client architecture

- deliver to OS platform dependent clients, e.g. MS Outlook (via MAPI connector), Apple Mail, Thunderbird, iOS client software
- Java-Script-based web client, AJAX based, with mash-up features (Zimlets), JSON optimized; mobile web UI

## > server architecture

- open protocols / standards (SOAP, REST, XML, JSON, to name the most popular)
- Open Source products (Postfix, Lucene, MySQL, Open LDAP, nginx, Jetty, SpamAssassin)
- AV scanning also possible via 3rd-party software integration (already in place)
- Java based server
- compliance, hierarchical storage management
- scalability
  - scale out: just put in some more mailbox server into the game
  - replication of e.g. configuration data (LDAP) and other metadata to each mailbox server





# High availability options

## > several options available

- VMware vSphere; in-house installed for telecommunications software
- other VM solutions (e.g. Citrix XenServer); broad in-house installation
- “classic” installation on raw-iron / e.g. Linux-cluster

## > going for VMware

- Zimbra and vSphere are both from VMware
- features and maturity are making this solution attractive
- foreseeing increasing numbers of VMs and stable number of staff; this calls for an easy to handle environment, esp. for operations staff with (hopefully) only occasional need for action
- integrates nicely with NetApp and Cisco environment
- spreading of systems over our different computing centers possible (four locations at DESY in Hamburg, one at DESY in Zeuthen)



# Migration of mailboxes and public folders

> content migration has to be done, either for Zimbra or Exchange 2013

- Zimbra: migration wizard; first experiences see following slide
- Exchange: migration from 2003 to 2013 has to be done by two migrations
  - Exchange 2003 → Exchange 2007 SP3 RU10  
OR
  - Exchange 2003 → Exchange 2010 SP3  
THEN
  - Exchange 2007/2010 → Exchange 2013

> Public folders

- no traditional public folder implementation with Exchange 2013
- special mailboxes are used instead
- with Zimbra you would use also special mailboxes
- own migration path for public folders



# First migration experiences

- > There is a batch-enabled migration wizard: new = re-written for v8
- > in general, it works, but ...
  - too many errors migrating e-mails from huge mailboxes right now (discrepancy MAPI object counts) → migrating just e-mails with IMAPsync works out fine
  - we found Exchange is using calendar UIDs with more than 255 characters (334), which is more than the 255 characters which RFC 2445 states an implementation must be able to persist; Zimbra supports the RFC's minimum of 255; so Microsoft fulfills the RFC and Zimbra does also, but this hinders exchange of calendar objects between different implementations
  - calendar items in Exchange were “accepted” but were not after migration: this is true for Zimbra reading from Exchange as well as Outlook exports into PST files(!) but you can see a different value e.g. using MS's MFCMAPI tool
  - not every function of Exchange is available in Zimbra: follow-up e-mails split up into mail and an extra task, notes will become “briefcase” content
  - rules migration has to be reviewed by user, as SIEVE does not match exactly Exchange server rules
  - Zimbra support: we have access to the development team
  - anyhow it seems, that the migration from Exchange to Zimbra is not as common as we had expected



# Conclusions – up to now

- > migration is a one-off effort
- > test users from various departments deliver valuable feedback
  - they are (mostly) content
- > web interface is quite usable, some testers are using it exclusively
- > Microsoft Outlook connector works; handling is slightly different, e.g. for creating rules
- > traditional public folders are gone – there are solutions
- > integration of Cisco products DESY uses ...
  - WebEx on-premises
  - Unified Communications
- > ... and of other products → API
  - Indico (event calendar, rooms, ...)
  - DESY's CMS (ZMS) for displaying calendars
  - provisioning (DESY-Registry)
  - multi tenancy (DESY as a provider)



# Thank you for your attention !

➤ aerial view of DESY, Hamburg location

