

# Our Microsoft Exchange is Zarafa



*Open Source Days 2012, Copenhagen*

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fedora<sup>™</sup> 

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# What is Zarafa?



- ▶ Arabic for “giraffe” means “charming” or “lovely one”
- ▶ Name of first giraffe in Europe at the year 1827
- ▶ Open Source alternative to Microsoft Exchange
- ▶ Groupware / Collaboration Platform



# Zarafa Collaboration Platform

- ▶ Zarafa is a Groupware / Collaborative Software
- ▶ Exists since 2005, Open Source since 2008
- ▶ Developed by Zarafa B.V. in the Netherlands
- ▶ GNU Affero General Public License, Version 3
- ▶ Focused to Open Standards and Compatibility
- ▶ Optimal integration into Linux and Windows
- ▶ Outlook/BlackBerry connectivity are proprietary

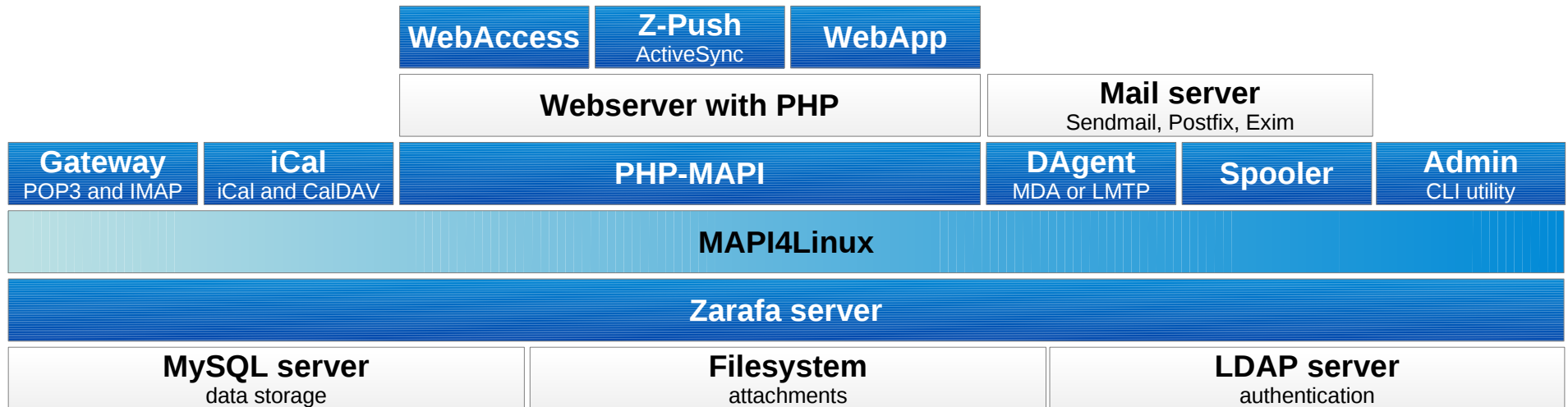


# What is MAPI?

- ▶ Messaging Application Programming Interface
- ▶ Designed in 1991 by Microsoft and ~ 100 ISVs
- ▶ Allows control of messaging system & mailbox
- ▶ Only interface specification, not a protocol
- ▶ MAPI is not proprietary, but an Open Standard
- ▶ MAPI/RPC is proprietary (used for Exchange)
- ▶ Different MAPI service providers



# Architecture & Components



▶ Caption

Zarafa component

Open Standard

3<sup>rd</sup> party component



# Server: Heart component

- ▶ Main process: The only non-optional part
- ▶ Contacts the MySQL database server
- ▶ Offers “MAPI in SOAP” for all other services
  - ▶ Via Unix socket at /var/run/zarafa
  - ▶ Via HTTP (optionally over SSL) at port 236 & 237
- ▶ Handles MySQL database server connection
- ▶ Optional: Queries external sources for users



# DAgent: Mail Delivery Agent

- ▶ Converts e-mails (RFC 822) into MAPI objects
  - ▶ Mail Delivery Agent (MDA) like `procmail`
  - ▶ LMTP server listening at port 2003 (by default)
- ▶ Mail parsing happens by using `libvmime`
- ▶ Executes `zarafa-autoresponder` if needed





# Gateway: POP3 and IMAP

- ▶ Enables non-MAPI clients to access e-mails
  - ▶ POP3 and POP3 over SSL (POP3S)
  - ▶ IMAP4 and IMAP4 over SSL (IMAPS)
- ▶ Gateway: No native POP3 or IMAP server
- ▶ Puts the different MAPI properties together
- ▶ Mail parsing happens by using `libvmime`
- ▶ Rewrite for Zarafa 7 for performance reasons



# iCal: iCal/CalDAV gateway

- ▶ Enables non-MAPI clients to access calendars
  - ▶ iCalendar (RFC 2445/5545)
  - ▶ CalDAV (RFC 4791)
- ▶ Gateway: No native iCal or CalDAV server
- ▶ Puts the different MAPI properties together
- ▶ Supports HTTP and HTTPS requests
- ▶ Uses existing `libical` implementation



# WebAccess: Outlook feeling

- ▶ Familiar Outlook “Look & Feel” web interface
- ▶ View own or colleagues' e-mails via browser
- ▶ Sending and answering meeting requests
- ▶ Free/busy information and resource scheduling
- ▶ Context menu, “Drag & Drop” for all elements
- ▶ Ajax technology for more interactive feeling
- ▶ Plugins: S/MIME, Google Maps, MDM, ...



Date picker

October 2011

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Folder list

- All folders
- Postfach - Robert Scheck
    - Aufgaben
    - Entwürfe
    - Gelöschte Objekte
    - Gesendete Objekte
    - Journal
    - Junk E-Mail
    - Kalender**
    - Kontakte
    - Notizen
    - Postausgang
    - Posteingang
    - RSS Feeds
    - Weitere Kontakte
  - Alle Öffentlichen Ordner
    - Favorites
    - Public Folders

Kalender

1 October 2011

08:00	
09:00	
10:00	
11:00	RPM Future / Alternative Packaging (Room Alpha)
12:00	How Fedora is made (Room Alpha)
13:00	
14:00	Publican (Room Beta)
15:00	You could be the next Fedora Project Leader (Room Alpha)
16:00	Secondary architectures (Room Alpha)
17:00	Opensourcing VDSM (Room Alpha)
18:00	
19:00	

- Open
- Print
- Categories
- Delete

FUDCon Milan 2011 (Università degli Studi di Milano, Dipartimento di Informatica e Comunicazione (DICO), Via Comelico 39-41, 20135 Milano, Italien)

Kleine Kehrwoche

Open shared folders...  
Open Multi User Calendar

# Spooler: E-mail spooler

- ▶ Converts MAPI elements into mails (RFC 822)
- ▶ Reads only the “Outbox” folder of Zarafa
- ▶ Speaks SMTP to configured relay host
- ▶ Does not support SMTP authentication
- ▶ SMTP relay host is often the local mail server



# Indexer: Search engine

- ▶ Indexing service for fast full-text searching
- ▶ Makes an index per user of messages and attachments
- ▶ Search queries use index to find messages
- ▶ Also finds content in attachments of e-mails
  - ▶ Configurable in `/etc/zarafa/indexerscripts/`
- ▶ Uses CLucene search engine (`libclucene`)



# Monitor: Quota monitor

- ▶ Monitors the user store (mailbox) sizes
- ▶ Notifies user (and administrator) if soft or hard quota limits are reached
- ▶ Just quota monitor, does not enforce quota
- ▶ Quota limit enforcement by Zarafa Server



# Archiver: Move old messages

- ▶ Copies or moves messages to
  - ▶ 2<sup>nd</sup> Zarafa server (requires a common userbase)
  - ▶ Another store at the same server (simple setup)
- ▶ Goal: Decrease size of production Zarafa
- ▶ Rules decide about age and copying/moving
- ▶ One of the key features of Zarafa 7 release





# Admin: Administration utility

- ▶ Full-featured command line utility (CLI)
- ▶ Create/modify/remove users and groups
- ▶ Management of multi-company support
- ▶ Quota settings, administrative privileges
- ▶ Not to be mixed up with “Z-Admin” project
- ▶ Additionally: `zarafa-stats` and `zarafa-fsck`



# User Management

- ▶ Zarafa provides different user plugins
  - ▶ Internal database plugin
  - ▶ Integration with Unix (Linux system) users
  - ▶ Integration with LDAP
    - ▶ OpenLDAP, 389 Directory Server, Red Hat Directory Server, Novell eDirectory, Microsoft Active Directory
- ▶ Many users: Database or LDAP plugin



# Programming Interfaces

- ▶ C++
  - ▶ Most complete, because all Zarafa services use it
- ▶ PHP
  - ▶ Similar complete like C++ for WebAccess/Z-Push
- ▶ Python
  - ▶ Less complete than PHP, usually for prototyping
- ▶ Perl
  - ▶ Exists, but somehow retired since switch to swig



# What is Z-Push?

- ▶ Sync for mobile devices and smart-phones
- ▶ Works with all devices supporting Exchange
- ▶ GNU Affero General Public License, Version 3
- ▶ Exchange ActiveSync is patented by Microsoft
- ▶ RPM Fusion, 3<sup>rd</sup> party repository in Europe
- ▶ Two RPM packages: z-push and zarafa-z-push
- ▶ Full rewrite for Z-Push 2, release in Q2/2012



# MailBridge: Zarafa ↔ Dovecot

- ▶ Connects Zarafa with Dovecot on mail base
- ▶ Zarafa uses Dovecot server as IMAP cache
  - ▶ High performance and full IMAP compatibility
- ▶ Extended/MAPI functionality for existing users
  - ▶ ActiveSync via Z-Push for Dovecot IMAP users
  - ▶ BlackBerry integration for Dovecot IMAP users
- ▶ Nearly real-time synchronization via Python



# Missing Features

- ▶ File upload via “Drag & Drop” by W3C File API
- ▶ Offline WebAccess / Offline WebApp
- ▶ Integration with Evolution or Thunderbird
- ▶ Exchange Web Services (EWS)
- ▶ vCard interface or CardDAV server
- ▶ IPv6 support
- ▶ Internationalized Domain Name (IDN) support



# Future: Zarafa WebApp

- ▶ Successor of current Zarafa WebAccess
- ▶ Complete rewrite: Visually and technically
- ▶ Own Ajax framework replaced by Ext JS
- ▶ Faster, behaves more like an application
- ▶ Microsoft Outlook 2010 feeling and features
- ▶ 1<sup>st</sup> release in Q2/2012: Not feature complete



Zarafa WebApp

Items: New, Copy/Move, Delete

Actions: [Icons]

Search options: Search, Advanced find

View Options: Today, Day, Workweek, Week, Month, List, Zoom

Folders List

October 2011

M	T	W	T	F	S	S
26	27	28	29	30	1	2
3	4	5	6	7	8	9
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  - Kalender**
  - Kontakte
  - Notizen
  - Postausgang
  - Posteingang
  - RSS Feeds
  - Weitere Kontakte

[Open Shared Folders...](#)

Kalender | 1 October 2011

Search in 'Kalender'

Time	Event
Sat 1 Oct	
FUDCon Milan 2011 (Università degli Studi di Milano, Dipartimento di Informatica e Comunicazione (DICO), Via Comelico 39-41, 20135 Milano, Italien)	
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- Open
- Delete
- Categories
- Show as
- Label
  - None
  - Important**
  - Work
  - Personal
  - Holiday
  - Required
  - Travel Required
  - Prepare Required
  - Birthday
  - Special Date
  - Phone Interview



# Help at Fedora needed

- ▶ Further work at Zarafa policy in SELinux
  - ▶ Matěj Cepl, Miroslav Grepl and Daniel Walsh
- ▶ Rewrite of the initscripts for systemd support
  - ▶ Somebody with systemd knowledge interested?
- ▶ Intensive Zarafa WebApp testing and usage



# Links to further resources

- ▶ Fedora Project
  - ▶ <http://fedoraproject.org/wiki/Zarafa>
  - ▶ <http://lists.fedoraproject.org/mailman/listinfo/zarafa>
- ▶ Zarafa upstream
  - ▶ <http://community.zarafa.com>
  - ▶ <http://forums.zarafa.com>
  - ▶ <http://www.zarafa.com/content/documentation>
  - ▶ <http://jira.zarafa.com/browse/ZCP>



# Questions?



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**Thank you!**

