



When OpenChange assimilates the Borg

Julien Kerihuel

samba
experience

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A faint, light blue background image of a robot character, likely from the movie "The Iron Giant". The robot has a large, round head with a single eye, a blue body, and is holding a large metal object.

**Part
1**

Welcome aboard OpenChange Deck

- **Provides a portable Open Source implementation of Microsoft Exchange Server and Exchange protocols.**
- Exchange is a groupware server designed to work with Microsoft Outlook providing a messaging server, shared calendars, contact databases, public folders, notes and tasks.
- OpenChange is working on two different aspects:
 - **Interoperability with Exchange protocols**
 - **Transparent replacement to Microsoft Exchange Server with native Exchange protocols support and direct communication with Microsoft Outlook.**





Built over Samba4 infrastructure

- **Relies on a limited set of Samba4 libraries:**
 - dcerpc and ndr for MSRPC transport
 - talloc for Memory Allocation
 - ldb for storage
- **Server side designed as samba4 loadable plugins**
- **Client-side designed as stand-alone libraries calling samba4**
- OpenChange is 5 years old



- **Client and server difference explained**
- **Libmapi:**
 - client-side library only
 - Enable clients to communicate with a real Exchange server
 - Implements Exchange protocols:
 - NSPI protocol implementation: address book, name resolution
 - EMSMDB protocol implementation: message store
- **OpenChange Server:**
 - Doesn't use libmapi but implements providers
 - Implements the NSPI provider (EMSABP)
 - Doesn't implement the message store yet



- What's new since Samba XP 2007?
- Almost everything ;-)
- Growing community
- Many discussions with other projects and communities
- **3 new libmapi releases**
 - **0.4 WARP**
 - **0.6 HOLODECK**
 - **0.7 PHASER** (released a week ago)
 - **0.8 ROMULUS on the way**
 - **1.0 BORG** release planned this year
- Star Trek saved our release naming convention



- **License and Legal work:**
 - OpenChange has adopted the GPLv3 or later license
 - Except IDL, which uses BSD like Samba
 - Client of the SFLC (Software Law Freedom Center)
 - Member of the Software Freedom Conservancy
- **Strategy and Collaboration:**
 - Focused on providing reliable and scalable client libraries
 - Helping other projects integrating libmapi



Gnome Evolution



Akonadi plugin (KDE)





Gnome Evolution

- Few months after SambaXP 2007, we got contacted by Gnome evolution (Novell-India)
- The Exchange 2007 WEBDAV interoperability story :-)
- Evolution finally decided OpenChange was the only solution
- **Gnome-Evolution moved to GPLv2, GPLv3**
- **Provides most common operations:**
 - Account configuration wizard
 - **Email operations**
 - **Calendar, Tasks and Contacts**





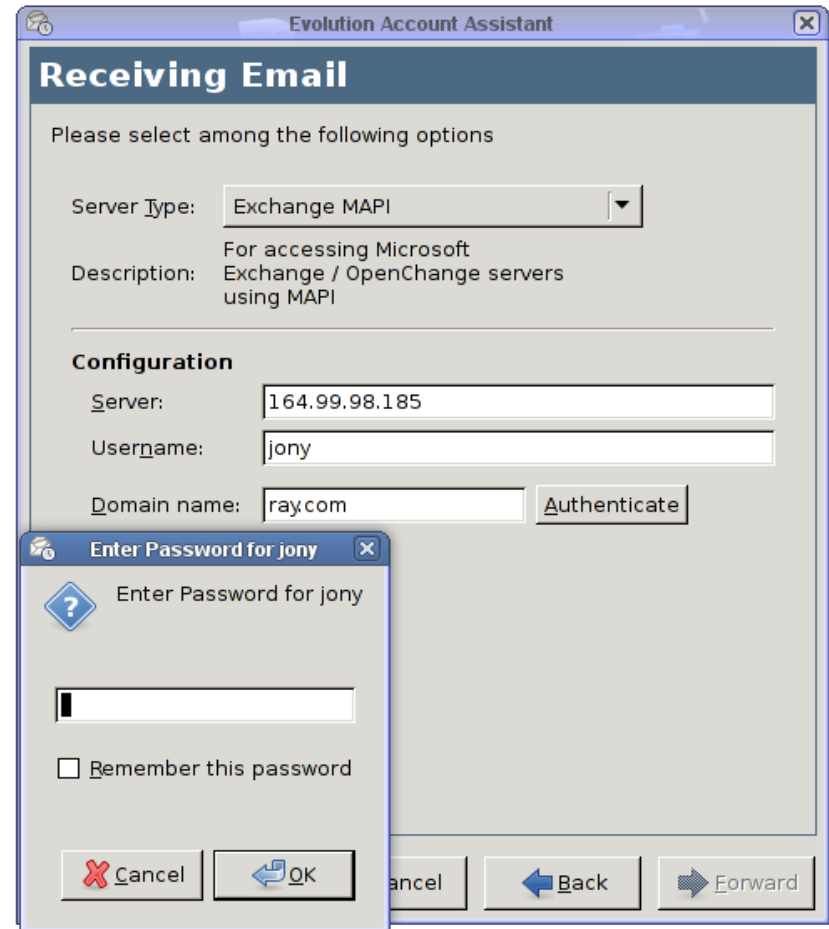
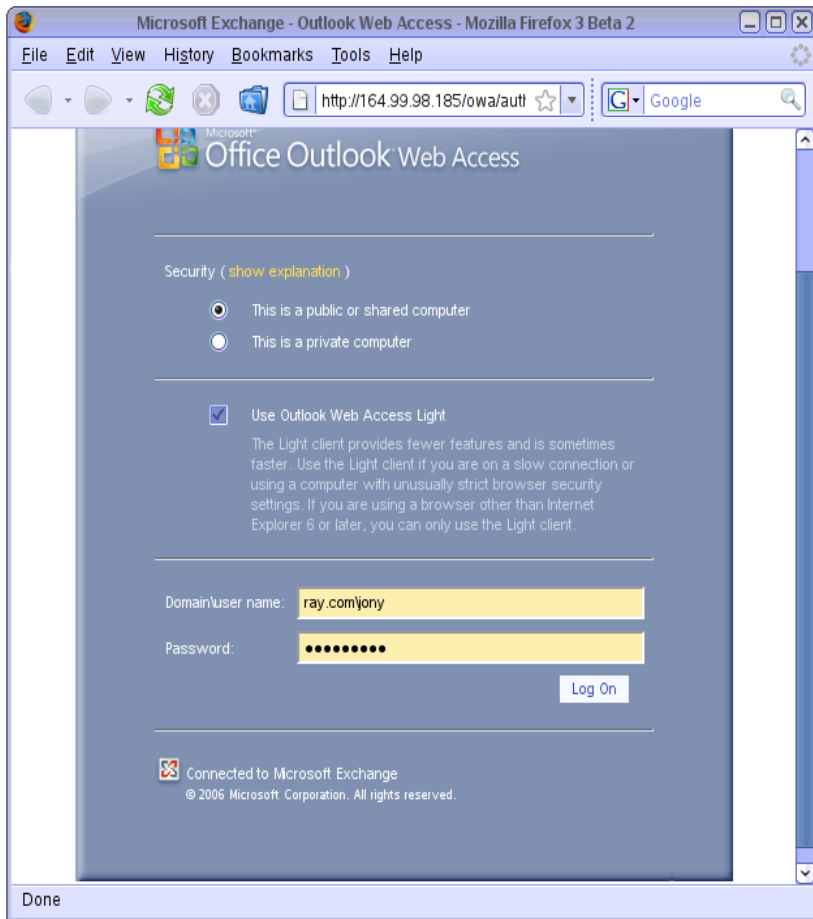
Gnome Evolution

- **What is available?**
 - Preview releases working with latest libmapi release
 - Packages for some distributions (Fedora Core 8, OpenSuse)
 - SVN repositories to the EXCHANGE_MAPI_BRANCH code
 - Mailing-lists (developers and users)
- **Resources and Information:**
 - <http://www.openchange.org> (Download / Evolution plugin)
 - <http://www.go-evolution.org>



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Welcome aboard OpenChange Deck



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Welcome aboard OpenChange Deck



File Edit View Actions Search Help

New Send / Receive Print Delete Previous Today Next Go To Day Work Week

Calendar Tuesday 15 Apr 2008 Show: Any Category Search: Summary Contains

CalDAV

- On This Computer
 - Personal
- On The Web
- Contacts
 - Birthdays & Annivers...
- Weather
- jony@ray.com
 - Calendar
- jony@ray.com

April 2008

M	T	W	T	F	S	S
31	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	1	2	3	4
5	6	7	8	9	10	11

9 am

10 am

11 am

12 pm

1 pm

2 pm

3 pm

4 pm

5 pm

6 pm

7 pm

11:30am Big Meeting

4:30pm Team Meeting

Tasks

Summary

Click to add a task

Memos

Summary

Click to add a memo

Icons: Mail, Address Book, Calendar, Memo, Task





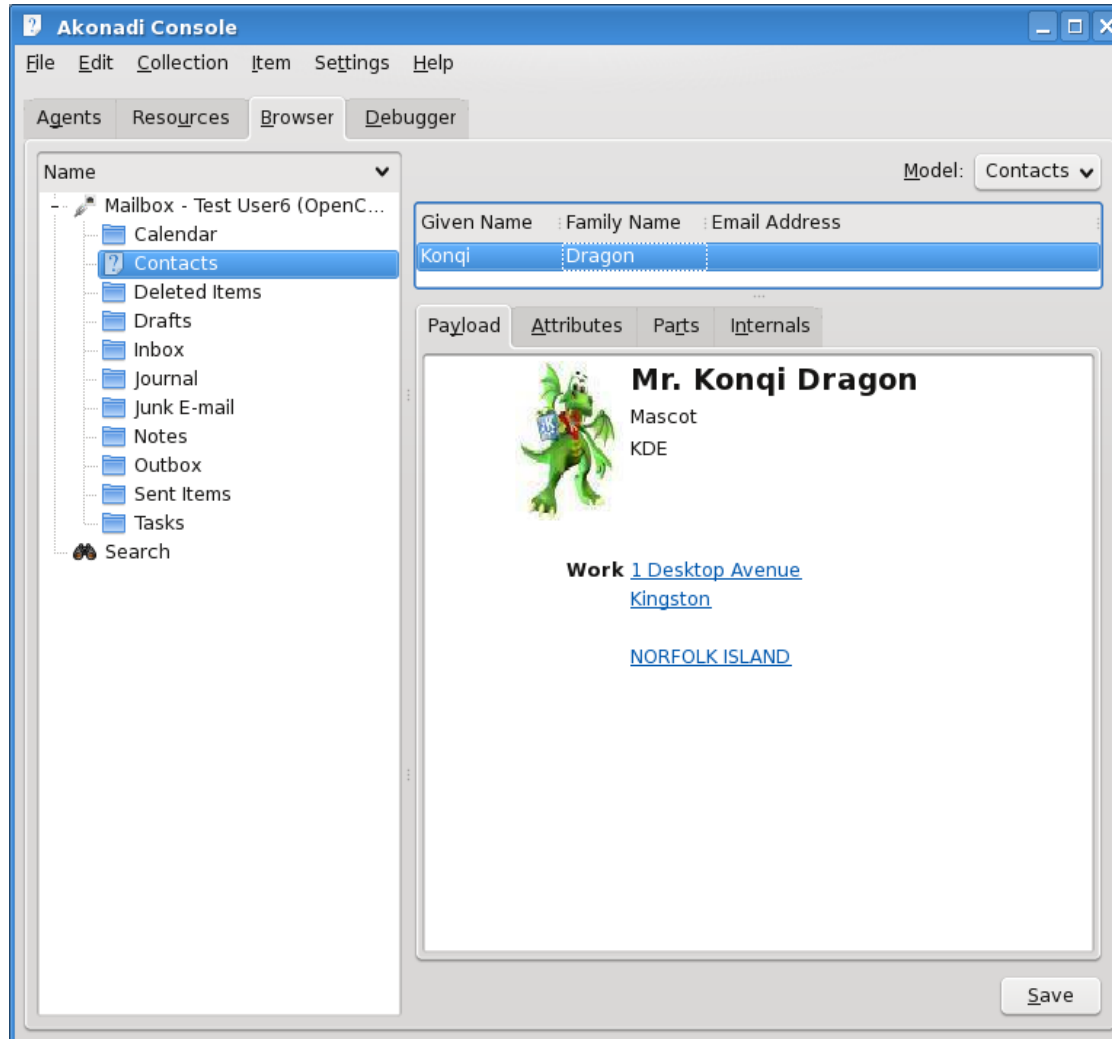
Akonadi plugin (KDE4)

- **Developed by Brad Hards from KDE**
- Frozen for a while due to license incompatibility between OpenChange, Samba4 and QT
- **QT moved to GPLv3**
- **Development “on the road again”**
- Further information soon available on OpenChange website



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Welcome aboard OpenChange Deck



Welcome aboard OpenChange Deck



The screenshot shows the Akonadi Console application. On the left, a tree view shows the 'Inbox' folder selected. The main area displays an email with the following details:

Subject	Sender	Receiver
Working Remotely with Windows Small Business Server	from@someone.local	
Welcome to Windows Small Business Server 2003	from@someone.local	

The email's payload is shown in HTML format:

```
<html>
<head>
</head>
<style>
  a:link, a:visited      { color: #0000FF; text-decoration:underline;}
  a:active, a:hover     { color: #009900; cursor:hand; text-decoration:underline;}
  p{font-family: arial; font-size: 11pt; color: #000033;}
</style>
<body bgcolor=White>
<p id="Header">Your company installed Windows Small Business Server 2003 on your computer network. Windows S
<table width="100%" CELLPADDING="5" CELLSPACING="0">
<tr>
<td align="center"><a href="http://OPENCHANGE-TEST/clienthelp/defaultl.htm" target="_new"><p id="InternalWeb"><a href="http://OPENCHANGE-TEST/clienthelp/defaultl.htm" target="_new">Internal Web S
</tr>
</tr>
```





Mozilla Thunderbird

- A word about Mozilla
- Have been speaking with Mozilla Messaging
- Very promising, centers on new Thunderbird infrastructure having pluggable protocols
- We need to find a developer with strong Thunderbird knowledge
- **Call for developers: we need you! Suggestions anyone?**





Google Summer of Code 2008

- OpenChange is a mentoring organization at GSoC 2008
- 2 students applications approved
- 2 slots allocated for 2 projects:
 - **Fetchmail plugin**
 - **Akonadi Resource**



- Since Samba XP last year, 3 new members joined the OpenChange team:



Dan Shearer



Jelmer Vernooij



Brad Hards

- With **Ali Mdidech** and I, OpenChange now has 5 developers.
- Moreover, there is a growing and active community
- **The only community anywhere discussing Exchange wire protocols**





**Part
2**

MAPI Library Features

- **What's new since SambaXP 2007?**
 - Planned 1.0 release candidate for August 2007 with basic features -- but we reached this point much sooner!
 - So we **raised the bar, aiming for a feature-complete implementation.**
- Much better understanding of MAPI
- Supports all versions of Exchange: 5.5, 2000, 2003, 2007
- Works in clustered Exchange environments
- **55 MAPI calls implemented**
- Covers most of messaging applications needs and even more



- **We now support all MAPI objects: email, calendar, contacts, notes etc.**
- Create, delete, update and copy objects
- Restrictions and Filtering
- Notifications (newmail MAPI and UDP)
- **Public Folder support**
- ACLs and permissions support (add, delete and modify)
 - Support for default and anonymous



- **MAPI Named Properties support**
- Developer documentation
 - Libmapi API fully documented
 - toolchain generated with Doxygen
 - <http://apidocs.openchange.org>
- **Build system greatly improved**
- Preliminary Perl Bindings



- **Libmapiadmin: the MAPI administration library**
 - **Create Exchange user** on a remote Exchange server
 - Delete a user
- **Based upon SAMR and LDB asynchronous code**
 - Create a user in the Windows AD
 - Extend its attributes using LDB (LDAP connection)
 - Callback waiting for the mailbox creation to be completed
- Currently broken (minor samba4 issues), but torture test still working
- Still pretty early stage of development





Time for a Demo



**Part
3**

OCPF Library

▪ Observations:

- Openchange tools have a lot of features but they manipulate MAPI properties with static C code
- New features requires additional C code and command-line options
- Endlessly extending tool's parameters doesn't make sense

▪ Objectives:

- Goes beyond OpenChange tools default properties
- Create custom messages with user-defined fields
- Provides an easy way to play with MAPI properties
- Shouldn't require programming skills



- **OCPF** stands for **OpenChange Property Files**
- Plain text file format

- **Main API and high-level features**
 - **Dump MAPI Messages into OCPF file** (MAPI to OCPF conversion)
 - **Convert OCPF file into MAPI messages** (OCPF to MAPI conversion)
 - Check OCPF file syntax

- **Light grammar and syntax**
 - top keywords kept to their minimum
 - Most common property types supported



- OCPF can be used for various purposes:
- **Research on properties**
 - Suitable for documentation
 - Share OCPF templates
- **Web applications**
 - Offers scripted language with substitution variables
 - OCPF templates in conjunction with web forms provides an easy way to add features in no time
- **Backup and Restore solutions**
 - Dump messages as flat files stored on the filesystem
 - Restore all or part of the user mailbox





Worth more than a thousand words... OCPF in action!

<http://apidocs.openchange.org>



**Part
4**

MOCABOX Project

- Acronym for **M**essaging **O**pen**C**hange **A**pplications Box
- **Open Source Unified Messaging Solution** for Microsoft Exchange
- Application gateways mixing OpenChange with third-party softwares
- Based upon Ubuntu dapper 6.06 LTS



MOCABOX

Messaging OpenChange Applications
Voice Backup Web Access

- Main objectives:

- 1 Unite developers from many projects (OSS and corporate) willing to **improve Exchange interoperability**

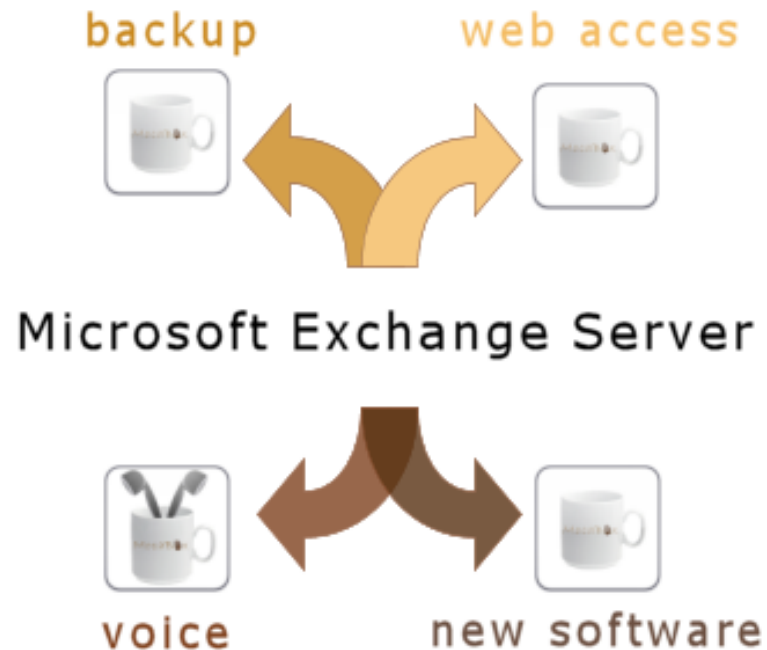
- 2 Maintain a list of service providers

- **Open Embedded Platform and Appliances**
 - Developers: Build mocabox appliance from scratch
 - Customers: Buy configured mocabox appliance
 - Retailers: Build mocabox appliance from scratch
 - Mocabox can also be run in a virtual machine: no fees at all

- **Implement common appliance-specific features:**
 - Watchdog: soft/hard reset – fall back to the default configuration
 - filesystem: squashfs + unionfs for compact flash
 - Update system

- **Roll-your-own solution**
 - Focus on integration rather than installation
 - Use “./configure” and design the appliance which match your needs
 - Run “make” automates the creation of a ready-made solution

- Combine mocabox with other Open Source



▪ Mocabox Voice:

- Microsoft Unified Messaging Gateway in Open Source
- Combine an Open Source PBX and OpenChange tools



- **Send voicemail messages to Exchange users**
- **Schedule appointments over the phone**
- **User Friendly Web Admin Interface:**
 - Administrate Exchange users (enable/disable voicemail accounts)
 - Configure Exchange profile

- In collaboration with



<http://www.picoda.fr>

Gauthier Provost from Picoda SARL

- We have been working on Mocabox (design and development) since March 2008.
- We recently came to work on mocabox-voice, and ...



After 3 days of work and a lot of coffee, we have a working mocabox voicemail prototype.

- Free TTS solutions don't provide good rendering and commercial solutions are too expensive. I had no other option than Open Sourcing my voice.
- You may laugh ;-)
- In the meantime, we had found a perfect and charming woman voice willing to contribute to mocabox, but was unable to process it properly in time. Thanks to Beata Malczewska for sharing her voice!
- Upcoming mocabox-voice features:
 - **Voice to appointment**
 - **Manage mailbox over the phone**
 - **Read emails**
- Finally we should be able to provide a release within some weeks

- Website: <http://www.mocabox.com>
- Email: staff@mocabox.com
- IRC: [#mocabox on irc.freenode.net](https://irc.freenode.net/#mocabox)



MOCABOX

Messaging OpenChange Applications
Voice Backup Web Access

**Part
5**

Conclusion

Conclusion



- We have one important upcoming release for libmapi
- In the meantime, we should now have more time to develop OpenChange server.
- **See you next SambaXP for OpenChange Server release.**