When OpenChange assimilates the Borg

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Part 1

Welcome aboard OpenChange Deck
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.
Welcome aboard OpenChange Deck

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
Welcome aboard OpenChange Deck

- **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
Welcome aboard OpenChange Deck

- 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

http://www.openchange.org
Welcome aboard OpenChange Deck

- **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)

http://www.openchange.org
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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
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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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Office Outlook Web Access

Security (show explanation)
- This is a public or shared computer
- This is a private computer

Use Outlook Web Access Light
The Light client provides fewer features and is sometimes faster. Use this Light client if you are on a slow connection or using a computer with unusually strict browser security settings. If you are using a browser other than Internet Explorer 6 or later, you can only use the Light client.

Domain user name: jony
Password: *********
Log On

Connected to Microsoft Exchange
© 2006 Microsoft Corporation. All rights reserved.

Evolution Account Assistant

Receiving Email
Please select among the following options

Server Type: Exchange MAPI
Description: For accessing Microsoft Exchange / OpenChange servers using MAPI

Configuration
Server: 164.99.98.185
Username: jony
Domain name: raycom

Enter Password for jony

Enter Password for jony

Remember this password

OK

http://www.openchange.org
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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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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?
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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
Welcome aboard OpenChange Deck

- 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
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
- Works in clustered Exchange environments
- **55 MAPI calls implemented**
- Covers most of messaging applications needs and even more
MAPI Library Features

- 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 Library Features

- 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
MAPI Library Features

- **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
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 Library

- 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 Library

- 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
MOCABOX Project

- Acronym for Messaging OpenChange Applications Box
- Open Source Unified Messaging Solution for Microsoft Exchange
- Application gateways mixing OpenChange with third-party softwares
- Based upon Ubuntu dapper 6.06 LTS
Main objectives:

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

2. Maintain a list of service providers
MOCABOX Project

- 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
MOCABOX Project

- Combine mocabox with other Open Source
MOCABOX Project

- **Mocabox Voice:**
  - Microsoft Unified Messaging Gateway in Open Source
  - Combine an Open Source PBX and OpenChange tools

![openchange + asterisk = mocabox voice]

- 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

Gauthier Provost from Picoda SARL

http://www.picoda.fr

- 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
MOCABOX Project

- Website: http://www.mocabox.com
- Email: staff@mocabox.com
- IRC: #mocabox on irc.freenode.net
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.