Outlook CalDav Synchronizer
The missing link in FOSS Exchange server replacement

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Every FOSS groupware’s nightmare
Motivation

- Alternative to MS Exchange/Outlook and Exchange ActiveSync (EAS) wanted
  - No license fees, no dependency on proprietary protocols

- OpenChange (Open Source MAPI Implementation) for native Exchange support on top of Samba4 stalled

- Most “open” groupware solutions use proprietary Outlook connectors or dropped Outlook support
To the rescue!

- AGPLv3
  - The only FOSS Outlook Addin for CalDAV/CardDAV support

- synchronizes events, tasks, and contacts between Outlook and any CalDAV or CardDAV server

- initially developed as a master thesis project at the University of Applied Sciences Technikum Wien, Software Engineering Degree program

- Meanwhile >350k downloads

- VSTO C#, .NET 4.5, MS Outlook 2007-2016 supported but 2013+ recommended
Features

- Two-way sync with timerange filter
- SSL/TLS support, self-signed certificates and client certificate authentication
- Autodiscovery via `.well-known/caldav` and SRV records RFC 6764 `_caldavs._tcp`
- Support for Google native contact and task API
- Map Windows to standard IANA/Olson timezones
- Map Outlook formatted RTFBody to html description via X-ALT-DESC attribute
### Advanced settings

#### Timezone settings
- [ ] Create events on server in UTC
- [ ] Create events on server with downloaded IANA Timezones
  - Use IANA Timezone: Europe/Berlin
- [ ] Include full IANA zone with historical data

#### Privacy settings
- [ ] Map Outlook Private flag to DAV CLASS:CONFIDENTIAL
- [ ] Map DAV CLASS:CONFIDENTIAL to Outlook Private
- [ ] Map DAV CLASS:PUBLIC and default events to

#### Scheduling settings
- [ ] Map Organizer and Attendees
- [ ] Set SCHEDULE-AGENT=CLIENT
- [ ] Don’t send appointment notifications (from Outlook)

#### Outlook settings
- Sync only Appointments with this category:
- [ ] Sync also Appointments without any category
- [ ] Negate filter and sync all Appointments except
- [ ] Map Calendar Color to category color
- Category Shortcut Color to category color
- Category Cleanup duplicate events after each sync run

[Hide advanced settings]
Fancy stuff

- Initial support for Distribution Lists, only Outlook client which supports SOGo VLIST format

BEGIN:VLIST
UID:2399-588DFE80-1C1-1BE27080.vlf
VERSION:1.0
FN:MyDistList
DESCRIPTION:This is a SOGo VLIST
CARD;EMAIL=alice@mydomain.com;FN=Alice:2399-588DFE80-1BD-1BE27080.vcf
CARD;EMAIL=bob@mydomain.com;FN=Bob:2399-588DFE80-1BF-1BE27080.vcf
END:VLIST
Case study

- heterogenous university environment with event scheduling, invitations and shared calendars
- LDAP global address book
- Web frontend to manage custom free/busy URL, set as global Outlook option

https://mydomain.com/freebusy.php/%Name%
Internal architecture

- generic synchronization framework
- implemented as state machine

- Focus on performance
  - 3500 contacts initial sync in 90s, subsequent sync without changes 3s
Challenges

- C# ICalendar parser
  - DDay.iCal abandoned, iCal.NET work in progress
- C# vCard parser
  - Thought.vCard abandoned, support for vCard 4.0 missing

- Outlook Object Model issues
  - COM (reference counting) vs. net (garbage collection)
  - iCalendar has a more generic data model
  - read only Outlook properties, access via PropertyAccessor
  - UI should stay responsive during synchronizing, although Outlook is a STA application
Future work

- Support for contact groups via X-ADDRESSBOOK-KIND

BEGIN:VCARD
VERSION:3.0
PRODID:-//Sabre//Sabre VObject 3.5.0//EN
UID:urn:uuid:b2876972-cc24-40eb-ac0a-105d62f9cf89
X-ADDRESSBOOKSERVER-KIND:GROUP
N;SORT-AS=Dummy_DL:Dummy_DL;;;
FN:Dummy_DL
MEMBER;X-CN=Max Muster:mailto:Max.Muster@mail.xy
MEMBER;X-CN=Moritz Muster:mailto:Moritz.Muster@mail.xy
END:VCARD

- Collection Sync Support, RFC 6578
- Automated deployment guidelines
- Server side app for Exchange integration?
- Support for attachments (linked to cloud storage)
Thank you! Questions?

More information:

https://caldavsynchronizer.org

Sources and Releases:

https://github.com/aluxnimm/outlookcaldavsynchronizer
https://sourceforge.net/projects/outlookcaldavsynchronizer/