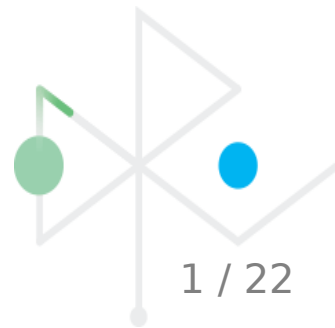


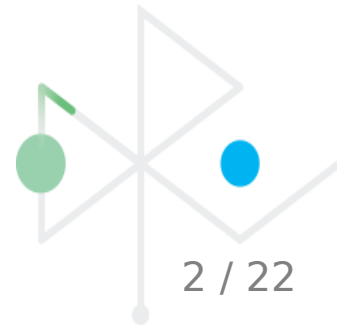
Introduction to Kopano

Jelle van der Waa



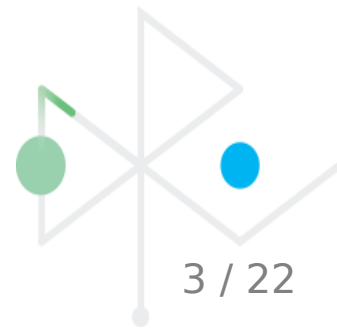
\$ whoami

- Developer @ Kopano
- Arch Linux Developer
- ✉ jelle@vdwaa.nl / j.vanderwaa@kopano.com
- 🔄 @jelly
- 🐦 @jvdwaa



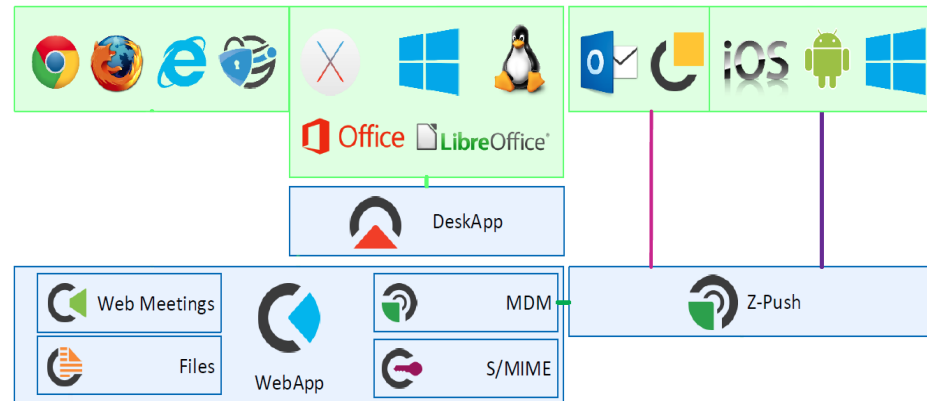
Introduction

- Open source communication, collaboration and sharing platform
- Email, video, calendaring, tasks, notes and file sharing
- Fork of Zarafa
- Implements the MAPI Specification
- AGPLv3



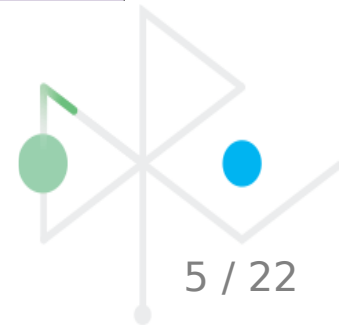
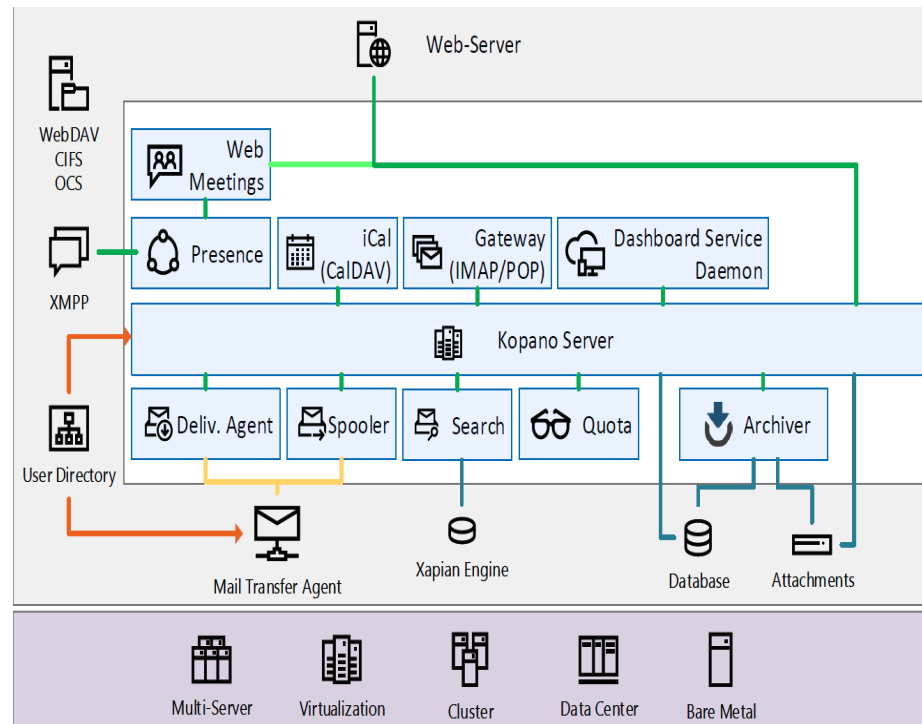
Architecture (clients)

- IMAP / POP3 / CalDav support
- ActiveSync for mobile devices / OL (13 and higher)
- Our own web and desktop client
- plugin support for web / desktop client



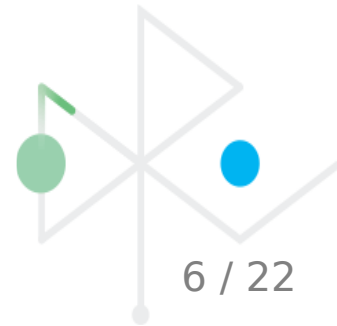
Architecture (backend)

- Use of any MTA possible
- MySQL as MAPI storage db
- Various user backends: LDAP, AD, DB, Unix
- Attachments on disk or S3 based (protocol)
- Multi-server architecture






Architecture (backend)

- All data is stored as MAPI objects
- Bindings for C++, PHP, Python for MAPI Clients
- Conversion to eml, vcf, ics to and from MAPI
- SOAP for transport
- Does not implement the DCE/RPC, MAPI/HTTP or "Outlook anywhere"

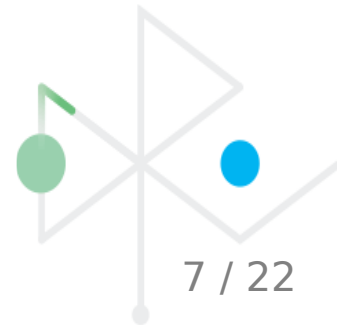


Z-Push

- Open Source ActiveSync implementation
- Sync mail, calendar, contacts and tasks to   
- Written in PHP (uses PHP-mapi extension)
- Supports multiple backends (Kopano, Maildir, Vcard, IMAP)
- Kopano Outlook Extension (KOE) - Extends the feature-set of OL's ActiveSync Implementation

<http://z-push.org> <https://stash.z-hub.io/projects/ZP/repos/z-push/browse>

https://stash.kopano.io/projects/KOE/repos/kopano_ol_extension_source/browse

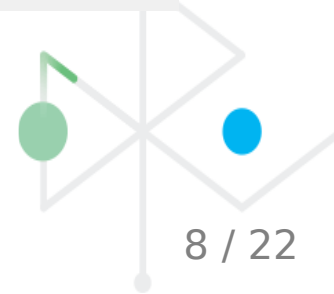


MAPI (Objects)

Store
└─ Folder
 └─ Item
 └─ Attachment

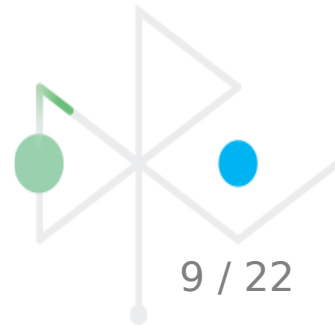
Proptag	Proptype	Value
PR_SUBJECT	PT_STRING	'hello'
PR_HASATTACH	PT_BOOLEAN	False
PR_CREATION_TIME	PT_SYSTIME	2017-01-26 10:26:22
PR_MESSAGE_FLAGS	PT_LONG	8

```
PR_SUBJECT = PROP_TAG( PT_TSTRING, 0x0037)  
mapiobj.SetProps([SPropValue(PR_SUBJECT, 'subject')], 0)  
mapiobj.GetProps([PR_SUBJECT], 0)
```



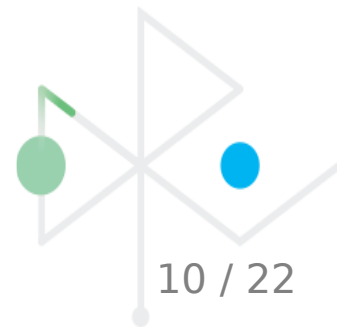
MAPI (Good parts)

- Technology from ~ '80, still developed
- Extensible
- ICS framework (Incremental change synchronisation)



MAPI (Bad parts)

- Hard to grasp
- Low-level
- Documentation
- Legacy



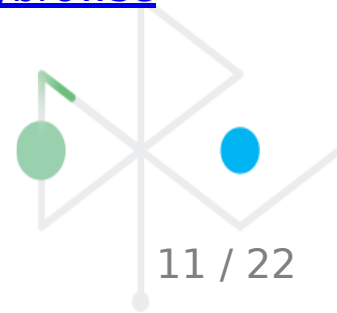
Python-kopano

- 2 years ago started hacking on a high level Python API
- Acts as a MAPI client
- Abstracts MAPI
- Easy to interface
- Tools / programs built on top of it

Examples:

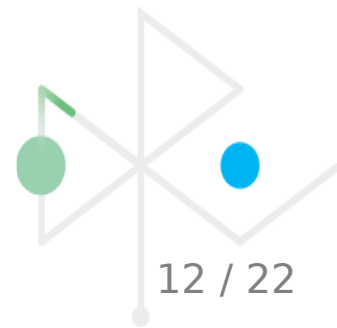
- Search
- Backup
- Spam learning daemon
- Debugging tools
- Functional tests

<https://stash.kopano.io/projects/KSC/repos/lab-scripts/browse/python-kopano> <https://stash.kopano.io/projects/KSC/repos/kopano-spamd/browse>



MAPI Example (email)

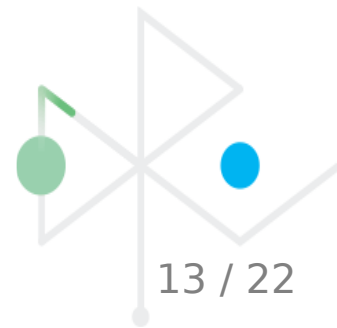
```
session = OpenECSession('user1','pass',os.getenv('KOPANO_SOCKET'))
```



MAPI Example (email)

```
session = OpenECSession('user1','pass',os.getenv('KOPANO_SOCKET'))
```

```
store = GetDefaultStore(session)  
outboxid = HrGetOneProp(store, PR_IPM_OUTBOX_ENTRYID).Value  
outbox = store.OpenEntry(outboxid, None, MAPI_MODIFY)
```

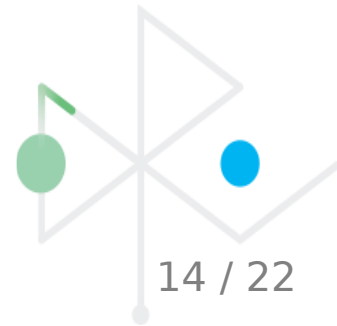


MAPI Example (email)

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outbox = store.OpenEntry(outboxid, None, MAPI_MODIFY)
```

```
message = outbox.CreateMessage(None, 0)
```



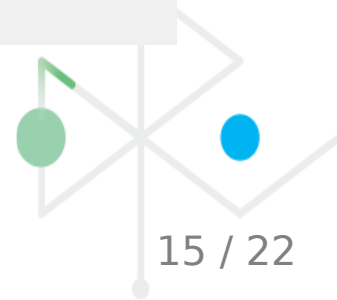
MAPI Example (email)

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outbox = store.OpenEntry(outboxid, None, MAPI_MODIFY)
```

```
message = outbox.CreateMessage(None, 0)
```

```
message.ModifyRecipients(0, [[SPropValue(PR_RECIPIENT_TYPE, MAPI_TO),  
                               SPropValue(PR_DISPLAY_NAME,  
                                           'Jelle van der Waa'),  
                               SPropValue(PR_EMAIL_ADDRESS_A,  
                                           'j.vanderwaa@kopano.com')  
                               ]])  
message.SetProps([SPropValue(PR_SUBJECT, 'hello fosdem'),  
                  SPropValue(PR_BODY, 'empty body!')])
```



MAPI Example (email)

```
session = OpenECSession('user1','pass',os.getenv('KOPANO_SOCKET'))
```

```
store = GetDefaultStore(session)  
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```

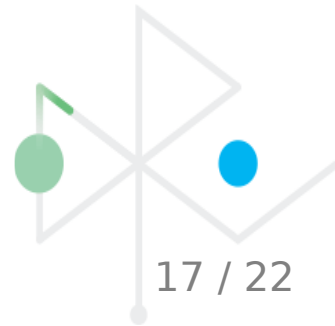
```
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```

```
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                               SPropValue(PR_DISPLAY_NAME,  
                                           'Jelle van der Waa'),  
                               SPropValue(PR_EMAIL_ADDRESS_A,  
                                           'j.vanderwaa@kopano.com')  
                               ]])  
message.SetProps([SPropValue(PR_SUBJECT, 'hello fosdem'),  
                  SPropValue(PR_BODY, 'empty body!')])
```

```
message.SubmitMessage(0)
```


Python-kopano Example (e-mail)

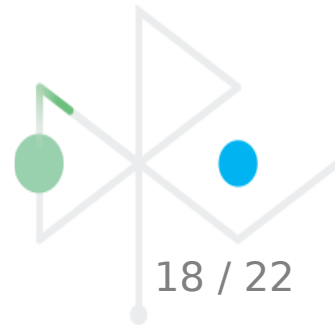
```
import kopano  
server = kopano.Server(auth_user='user1', auth_pass='user1')  
user = server.user('user1')
```



Python-kopano Example (e-mail)

```
import kopano
server = kopano.Server(auth_user='user1', auth_pass='user1')
user = server.user('user1')
```

```
# Send e-mail
user.outbox.create_item(subject='hello fosdem',
                        body='empty body!',
                        to='jelle van der Waa <j.vanderwaa@kopano.com>').send()
```



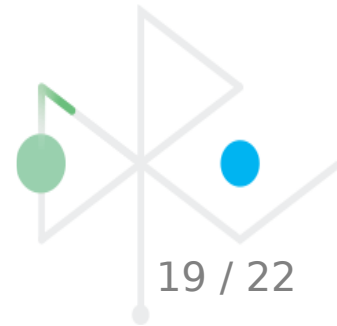
Python-kopano Example

```
# access MAPI property
item = next(user.inbox.items())
item.subject = 'new subject'

# Iterate users
for user in server.users():
    print(user)
    print(user.enabled)
    print(user.outofoffice.enabled)

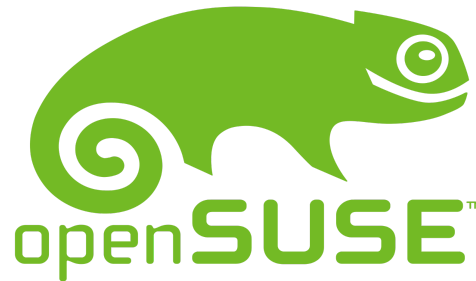
# Search!
for item in user.inbox.search('hello'):
    print(item)

# Low-level possible
item.mapiobj.GetProps([PR_SUBJECT], 0)
```




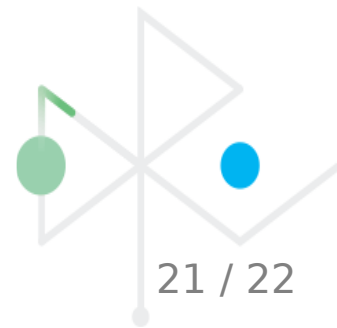
Downstream

- Debian - process of getting into Debian
<https://wiki.debian.org/groupware/kopano>
- OpenSUSE - build service repository
<https://build.opensuse.org/project/show/server:mail:kopano>



Conclusion

- Main website <https://kopano.io>
- Packages <https://download.kopano.io/community/>
- Git <https://stash.kopano.io>
-  <https://github.com/Kopano-mirror/>



Questions

