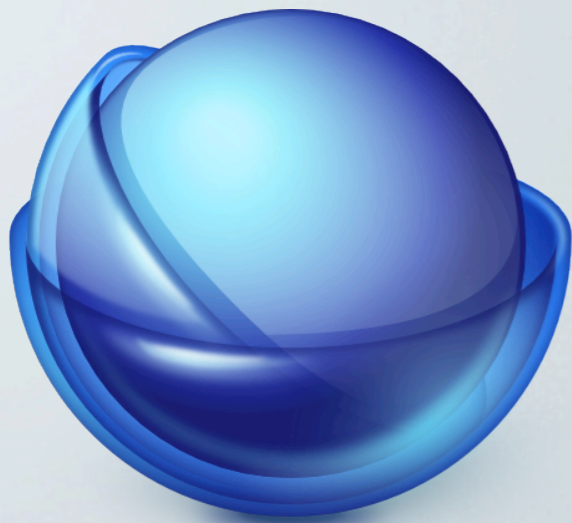




Avalanche in Your Pocket

KDEPIM on Mobile Devices



Till Adam - Akademy 2010 - Tampere, Finland



what



why



how



sauna!





why



“because we can, dammit”

- anonymous



*“I want it all, I want it all,
I want it all, and I want it now”*

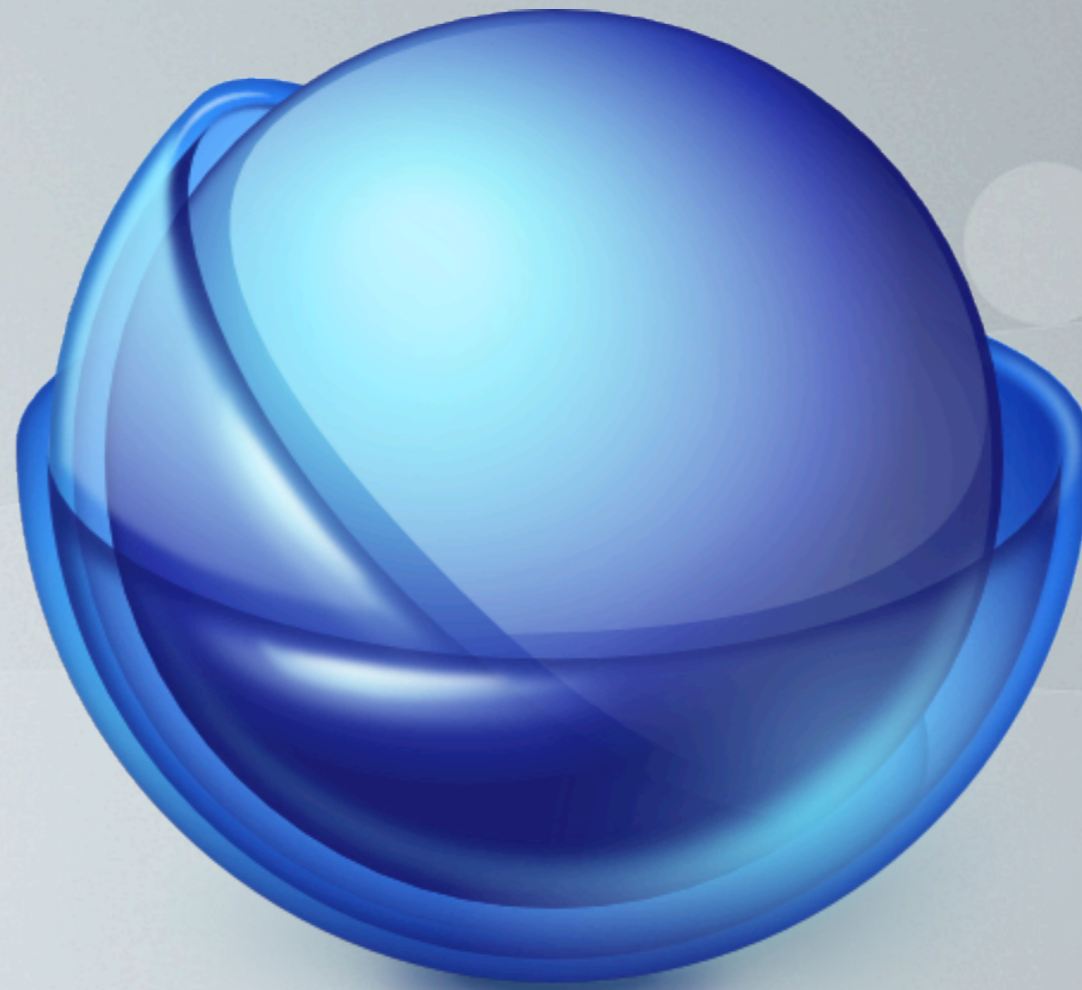
- ફારુક બુલસારા (Farrokh Bulsara)



what



how





The Evil Interwebs



IMAP

Google

Kolab

Sugar

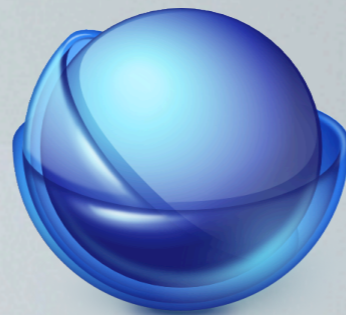
Resources

VCard

maildir

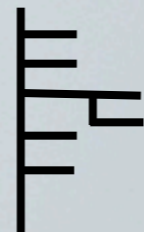
Calendar
Homescreen
Widget

Email
Application



database

file system





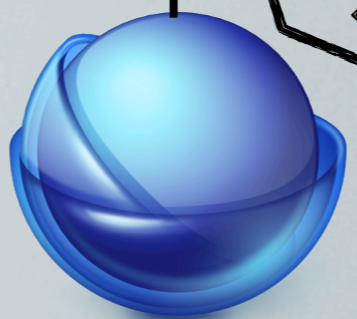
vcardresource

plasmoid

nepomukfeeder

DBus

carries low bandwidth,
low latency control traffic
(trigger, cancel, progress, log)



Akonadi Protocol

streams high throughput,
big payload data



kmail, korganizer,
kaddressbook,
...

kmail-mobile,
korganizer-mobile,
...

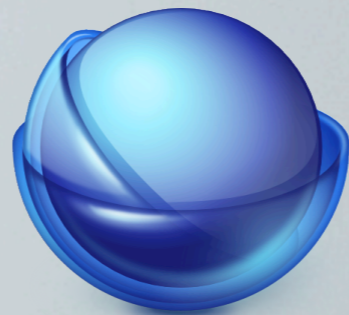
QML

messageviewer

messagecomposer

....

libakonadi





remote akonadiconsole

The screenshot shows the Akonadi Console window with the following agents and their status:

- Nepomuk Contact Feeder**: Waiting for the Nepomuk server to start...
- Notes**: Offline
- Mail Dispatcher Agent**: Ready to dispatch messages.
- Personal Calendar**: Ready
- Local Folders**: Ready

Details

Identifier: akonadi_nepomuk_contact_feeder
Type: Nepomuk Contact Feeder
Status: Online, Broken
Status Message: Waiting for the Nepomuk server to start...
Capabilities: Unique, Autostart, NoConfig
Mimetypes: text/directory

Buttons: Add Remove Configure... Abort Synchronize Restart



akonadiconsole

The screenshot shows the Akonadi Console application window. The title bar reads "Akonadi Console". The menu bar includes "Agents", "Browser", "Debugger" (which is selected), "Raw Socket", "DB Browser", "DB Console", "Job Tracker", "Resources Schedulers", "Notification Monitor", and "Item Search". Below the menu bar, there is a checkbox labeled "Enable debugger" which is checked. A toolbar contains several buttons: "All", "0x100b31dc0", "0x100c40f90", "0x100b47b60", "0x100c103e0", and "0x100c3bca0". The main area is a text editor displaying a log of messages. The log starts with "0x100b31dc0 * OK Akonadi Almost IMAP Server [PROTOCOL 25]" and continues with various "LOGIN" and "LIST" messages. The "LIST" message is particularly detailed, showing folder information for "drafts", "inbox", "outbox", "sent-mail", and "templates". At the bottom of the window, there are two buttons: "Clear All" and "Clear General".

```
0x100b31dc0 * OK Akonadi Almost IMAP Server [PROTOCOL 25]
0x100c40f90 @ LOGIN "AkonadiConsole Browser Widget"
0x100c40f90 @ OK User logged in
0x100b47b60 @ LOGIN "akonadiconsole-1998097157"
0x100b47b60 @ OK User logged in
0x100c40f90 1 LIST @ INF () (STATISTICS true ANCESTORS INF)
0x100c40f90 * 8 2 (NAME "drafts" MIMETYPE (message/rfc822 inode/directory) REMOTEID "drafts" REMOTEREVISION "" RESOURCE "akonadi_maildir_resource_0"
MESSAGES 1 UNSEEN @ SIZE 443 CACHEPOLICY (INHERIT true INTERVAL -1 CACHETIMEOUT -1 SYNCONDEMAND false LOCALPARTS (ALL)) ANCESTORS ((2
"/Users/till/.local/share/local-mail") (@ "")) SpecialCollectionAttribute "drafts" ENTITYDISPLAY ("\"drafts\" \"document-properties\" \"\" ()"))
0x100c40f90 * 6 2 (NAME "inbox" MIMETYPE (message/rfc822 inode/directory) REMOTEID "inbox" REMOTEREVISION "" RESOURCE "akonadi_maildir_resource_0"
MESSAGES @ UNSEEN @ SIZE @ CACHEPOLICY (INHERIT true INTERVAL -1 CACHETIMEOUT -1 SYNCONDEMAND false LOCALPARTS (ALL)) ANCESTORS ((2
"/Users/till/.local/share/local-mail") (@ "")) SpecialCollectionAttribute "inbox" ENTITYDISPLAY ("\"inbox\" \"mail-folder-inbox\" \"\" ()"))
0x100c40f90 * 3 2 (NAME "outbox" MIMETYPE (message/rfc822 inode/directory) REMOTEID "outbox" REMOTEREVISION "" RESOURCE "akonadi_maildir_resource_0"
MESSAGES @ UNSEEN @ SIZE @ CACHEPOLICY (INHERIT true INTERVAL -1 CACHETIMEOUT -1 SYNCONDEMAND false LOCALPARTS (ALL)) ANCESTORS ((2
"/Users/till/.local/share/local-mail") (@ "")) SpecialCollectionAttribute "outbox" ENTITYDISPLAY ("\"outbox\" \"mail-folder-outbox\" \"\" ()"))
0x100c40f90 * 7 2 (NAME "sent-mail" MIMETYPE (message/rfc822 inode/directory) REMOTEID "sent-mail" REMOTEREVISION "" RESOURCE
"akonadi_maildir_resource_0" MESSAGES @ UNSEEN @ SIZE @ CACHEPOLICY (INHERIT true INTERVAL -1 CACHETIMEOUT -1 SYNCONDEMAND false LOCALPARTS (ALL))
ANCESTORS ((2 "/Users/till/.local/share/local-mail") (@ "")) SpecialCollectionAttribute "sent-mail" ENTITYDISPLAY ("\"sent-mail\" \"mail-folder-sent\"
\"\" ()"))
0x100c40f90 * 10 2 (NAME "templates" MIMETYPE (message/rfc822 inode/directory) REMOTEID "templates" REMOTEREVISION "" RESOURCE
"akonadi_maildir_resource_0" MESSAGES @ UNSEEN @ SIZE @ CACHEPOLICY (INHERIT true INTERVAL -1 CACHETIMEOUT -1 SYNCONDEMAND false LOCALPARTS (ALL))
ANCESTORS ((2 "/Users/till/.local/share/local-mail") (@ "")) SpecialCollectionAttribute "templates" ENTITYDISPLAY ("\"templates\" \"document-new\" \"\"
\"\" ()"))
```



akonadiconsole

Akonadi Console

Agents | Browser | Debugger | Raw Socket | DB Browser | DB Console | Job Tracker | Resources Schedulers | Notification Monitor | Item Search

Job ID	Timestamp	Job Type	State
▼ akonadi_maildir_resource_0			
▼ 103066f90	16:27:49.362	Akonadi::CollectionSync	Ended
10304b0e0	16:27:49.362	Akonadi::TransactionBeginJob	Ended
▼ 10303d010	16:27:49.362	Akonadi::CollectionFetchJob	Ended
103068cd0	16:27:49.542	Akonadi::TransactionBeginJob	Ended
1030819c0	16:27:49.542	Akonadi::ItemModifyJob	Ended
1031eae30	16:27:49.379	Akonadi::CollectionModifyJob	Ended
1031eae10	16:27:49.379	Akonadi::CollectionModifyJob	Ended
1031ed8d0	16:27:49.380	Akonadi::CollectionModifyJob	Ended
117f05a70	16:27:49.380	Akonadi::CollectionModifyJob	Ended
117f06ae0	16:27:49.380	Akonadi::CollectionModifyJob	Ended
117f06090	16:27:49.380	Akonadi::CollectionModifyJob	Ended
117f072b0	16:27:49.380	Akonadi::CollectionModifyJob	Ended
117f032c0	16:27:49.420	Akonadi::TransactionCommitJob	Ended
1031ed580	16:27:49.420	Akonadi::CollectionFetchJob	Ended
▶ 117f05230	16:27:49.453	Akonadi::ItemSync	Ended
▶ 103110900	16:27:49.491	Akonadi::ItemSync	Ended
▶ 1030cd390	16:27:49.493	Akonadi::ItemSync	Ended
▶ 1031ece20	16:27:49.495	Akonadi::ItemSync	Ended
▶ 103184060	16:27:49.534	Akonadi::ItemSync	Ended
▶ 103098d20	16:27:49.539	Akonadi::ItemSync	Ended



Caches upon caches upon caches ...

application memory

application memory



per user server memory

filesystem



zero copy retrieval



ranged queries and virtual collections



Entity Tree Model





what next.?



bandwidth and latency dependent job queue scheduling



can we do zero copy indexing?



item cache in shared memory?



memory mapping larger payloads?



MRU sort order caching?



battery vs. RAM vs. IO vs. performance



Questions?



thanks

adam@kde.org

kde-mobile and kde-mobile-users mailinglists

#akonadi and #kontakt on freenode

akonadi-project.org

<http://techbase.kde.org/Projects/PIM/Akonadi>