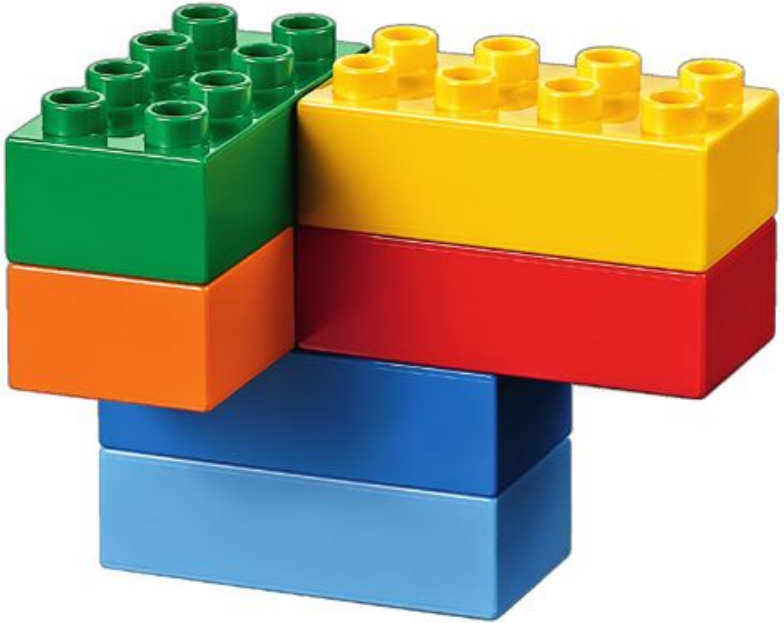
A case-study in FOLIO modularity: replacing mod-ldp with mod-reporting



Mike Taylor
Software Guy
Index Data
mike@indexdata.com

Where we're going

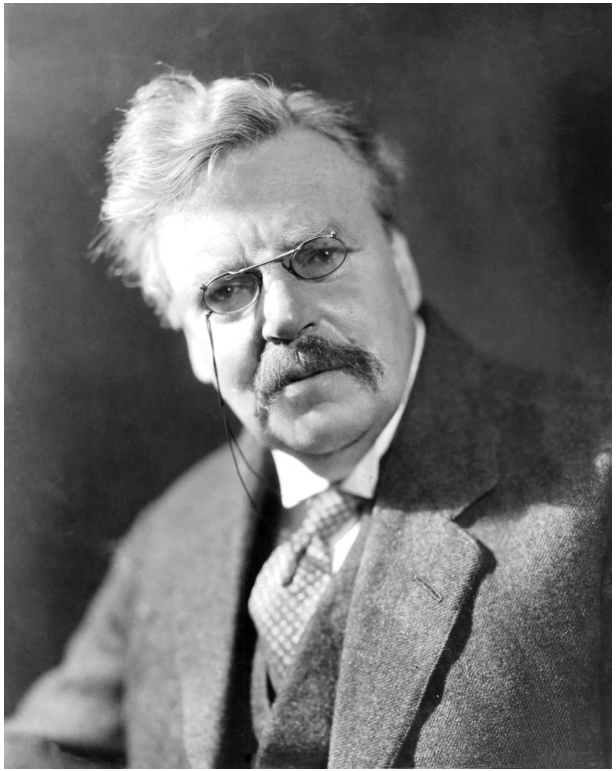
1. Philosophy
2. Modularity in FOLIO
3. Benefits of the modular architecture
4. An ecosystem of modules
5. Some light technical details
6. A case-study: mod-reporting
7. Implications

1. Philosophy

"I'm afraid I'm a practical man", said the doctor with gruff humour, "and I don't bother much about [...] philosophy."

"You'll never be a practical man till you do", said Father Brown.

— G. K. Chesterton,
The Dagger with Wings.



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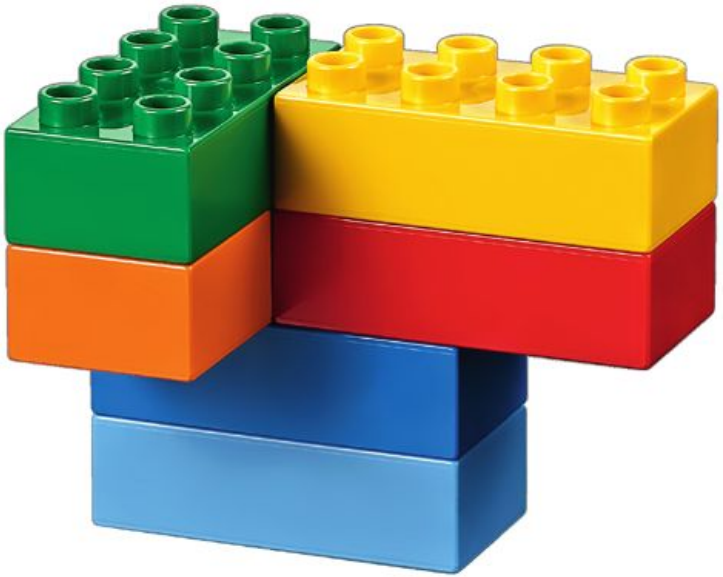
- FOLIO belongs to the library community, not to a vendor.
- Any member of the community should be able to contribute.

No special access for insiders: we eat our own dogfood.

2. Modularity in FOLIO

FOLIO's community philosophy is reflected in its technical design: from the start, it was constructed to be modular.



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"Here is a thing we made"

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This provides a context in which any module from any source can be deployed.

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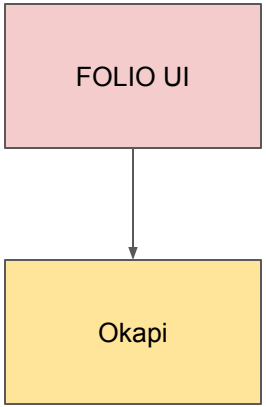

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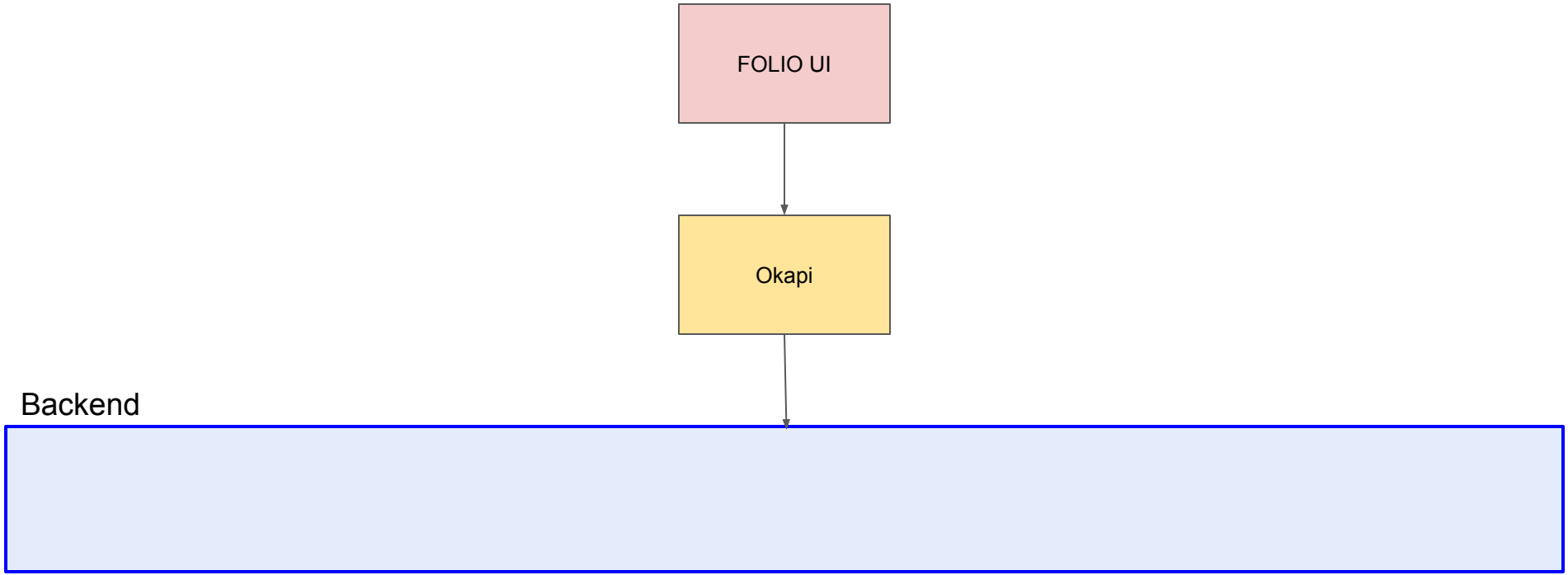

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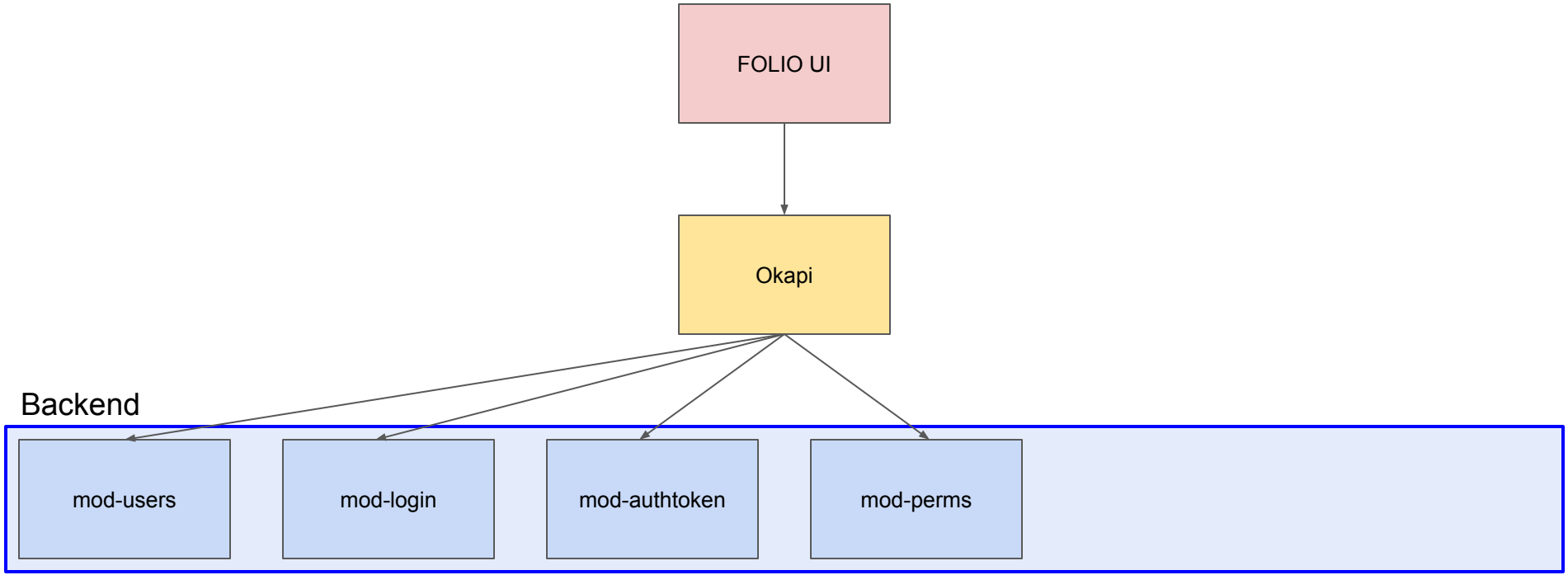

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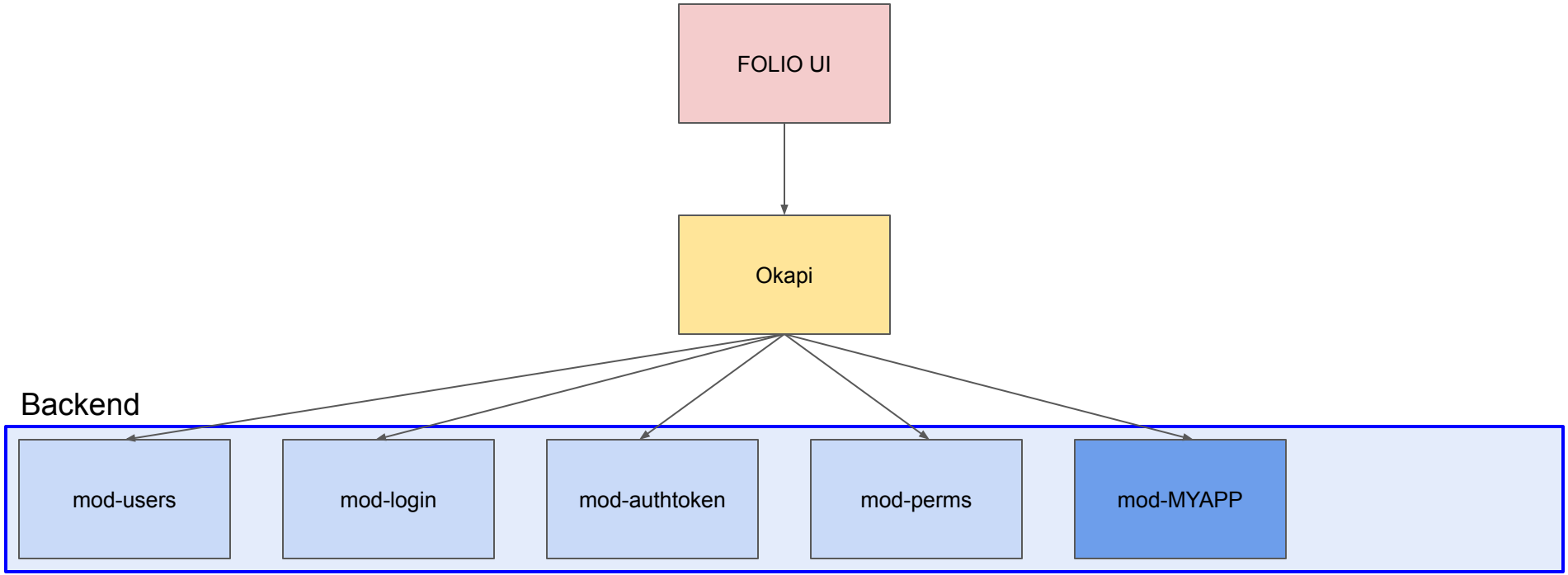

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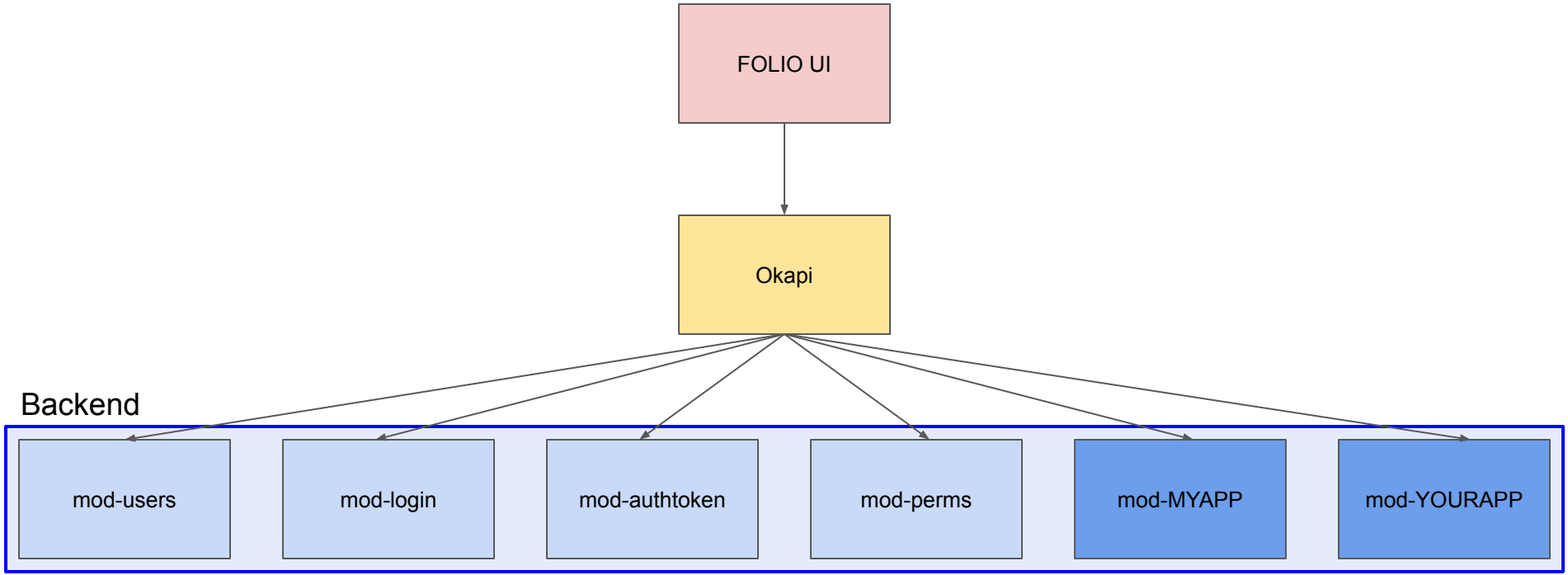

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(The UI is also modular, but this talk is not concerned with that.)

3. Benefits of the modular architecture

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- Individual libraries may create modules that meet their needs
  - Or hire developers to do so
  - Or crowdfund development of widely needed modules
- Different libraries can deploy different sets of modules, lowering operating costs.

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(At least in principle.)

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This is exactly what happened with Course Reserves:

- Needed by FLO, the Fenway Library Organization in Boston.
- Developed by Index Data with their funding
- Now used by almost all US Academic libraries

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Eight years on, it has grown to 114 back-end modules
(as of the current snapshot build).

SIDEBAR

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This is more of an organizational problem than technical one.

We can talk more about it in the Q&A if there is interest.

5. Some light technical details

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It can be written in any language (though most are in Java).

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- WSAPIs are typically RESTful and use JSON payloads.
- It must provide a machine-readable description of the requests it accepts and the responses it can give.

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A module's description must specify:

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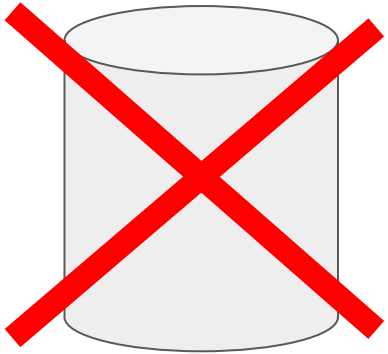
All communication between modules is via these interfaces: *there is no shared database.*



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A module's description must specify:

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All dependencies are on *interfaces*.

Not on modules
(which are implementations).

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An example interface description (from mod-ldp):

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  "handlers": [
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Multiple modules can provide alternative implementations of the same interface.

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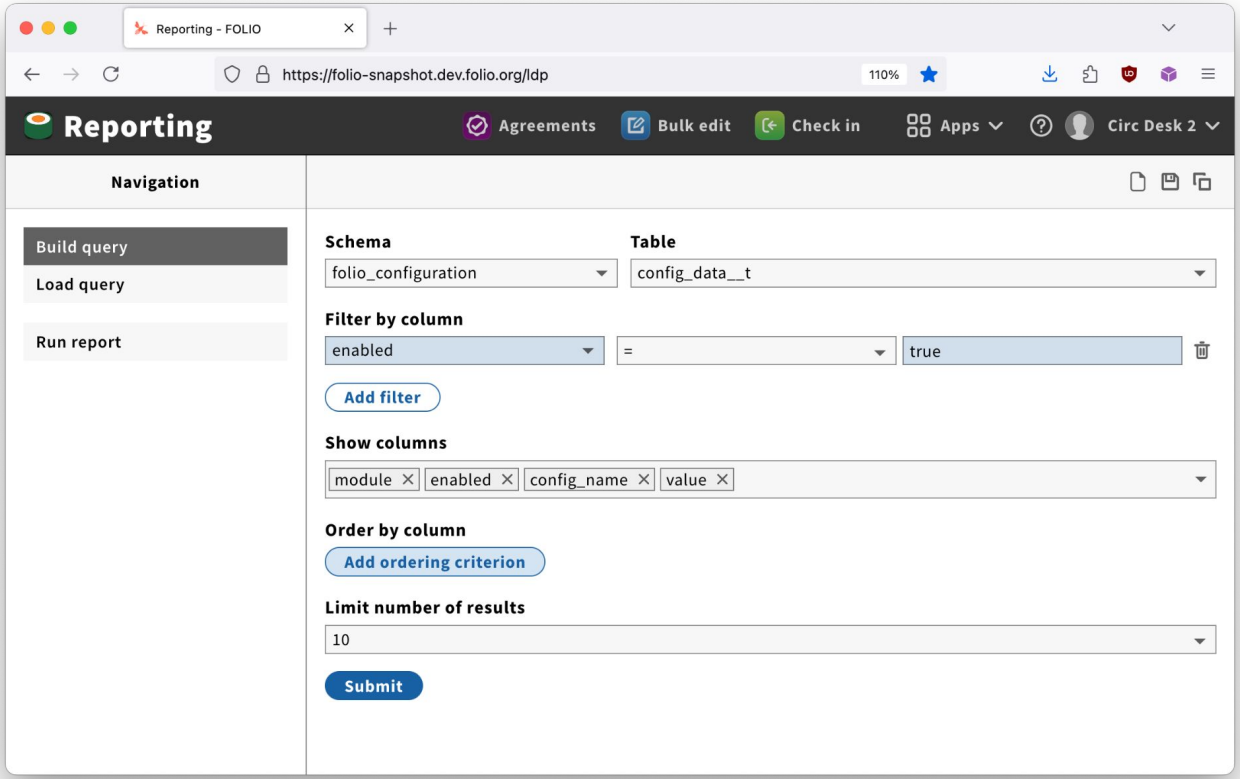

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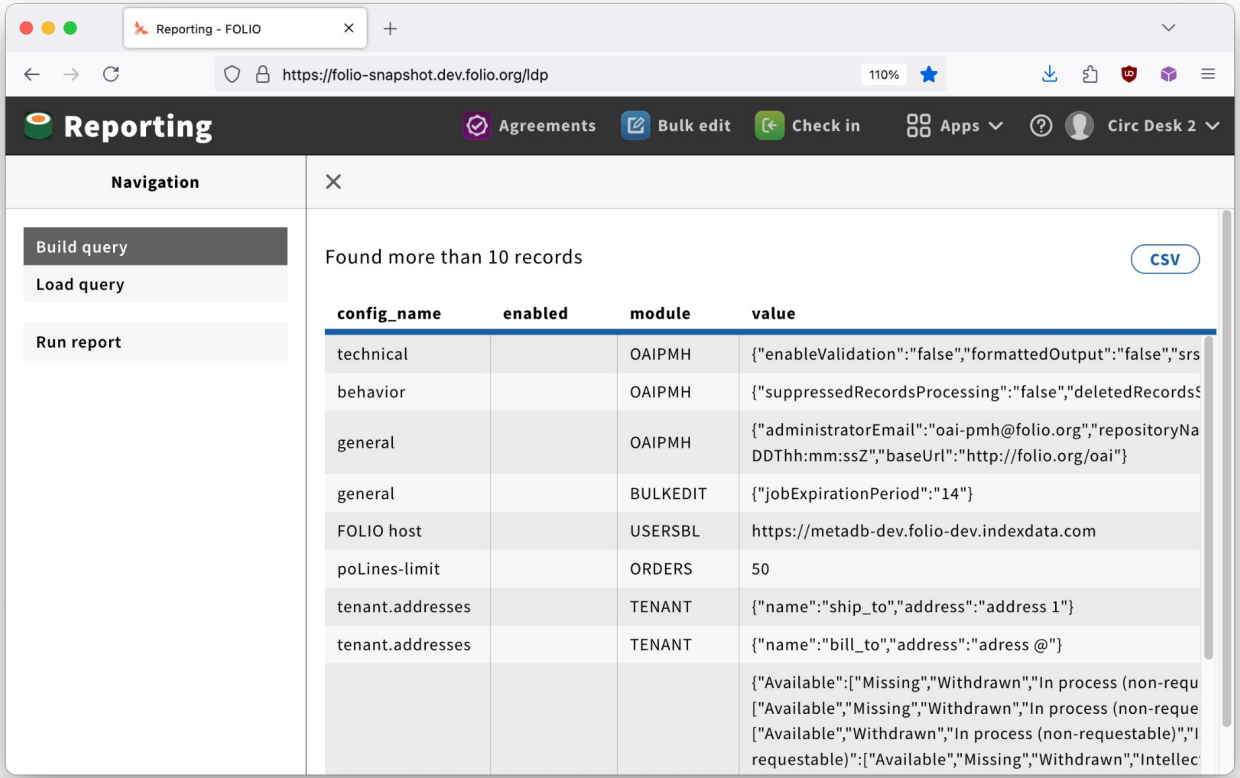

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FOLIO's Reporting app allows users to search in Metadb.

This is a relational database that contains normalized records harvested from FOLIO.

They are continually updated as they change, and history is maintained.

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Apart from the UI component, the app is implemented by a back-end module (mod-ldp) which communicates on the UI's behalf with Metadb.

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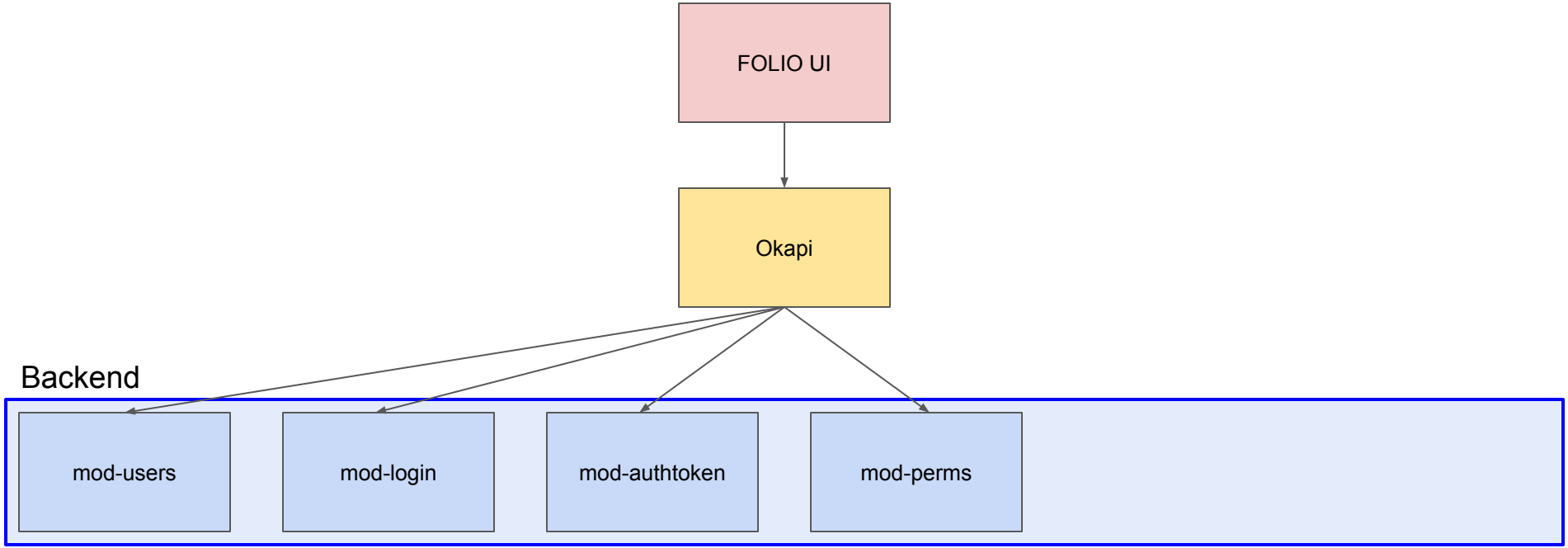

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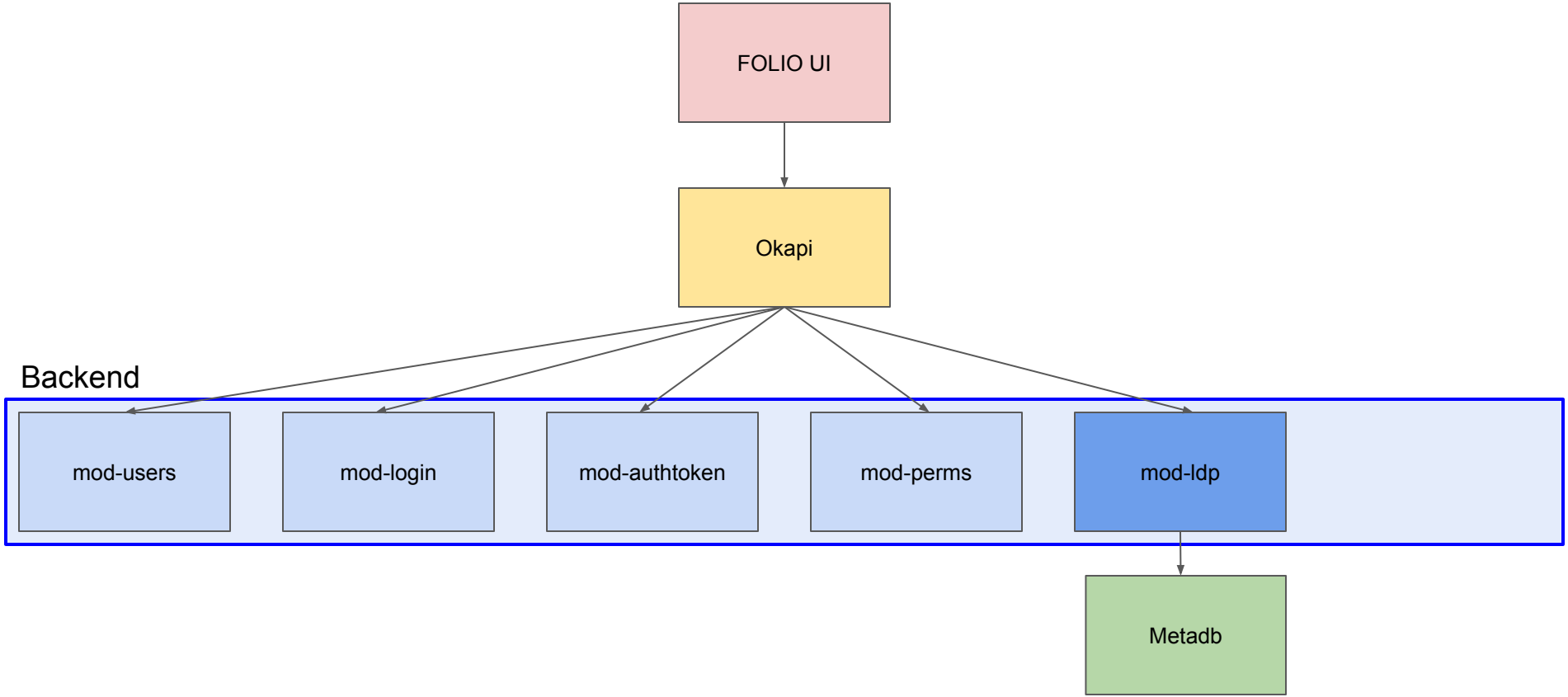

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- old code
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- tenant separation is questionable
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Rather than fix it, we decided to replace mod-ldp with a new module, mod-reporting, written in Go.

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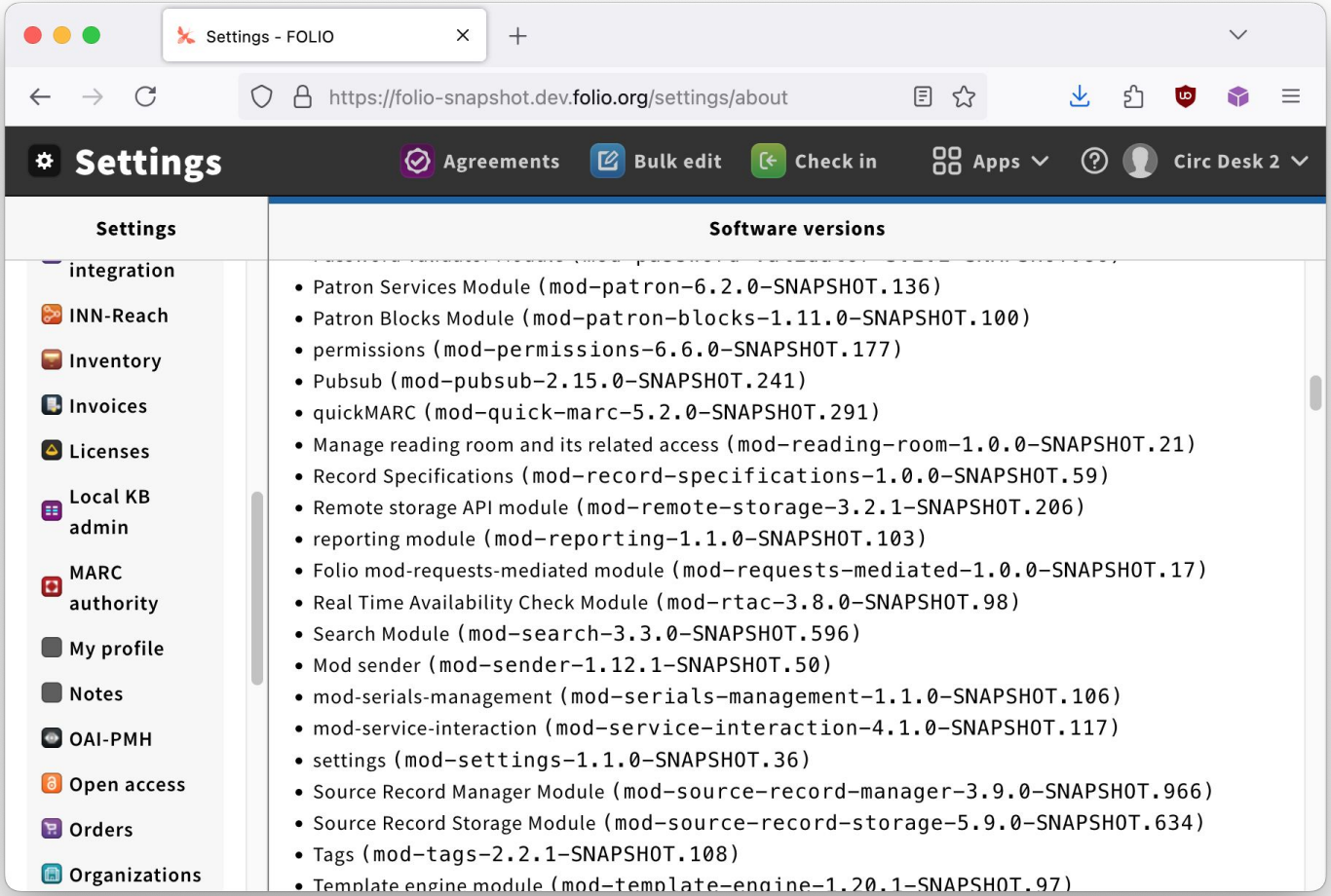
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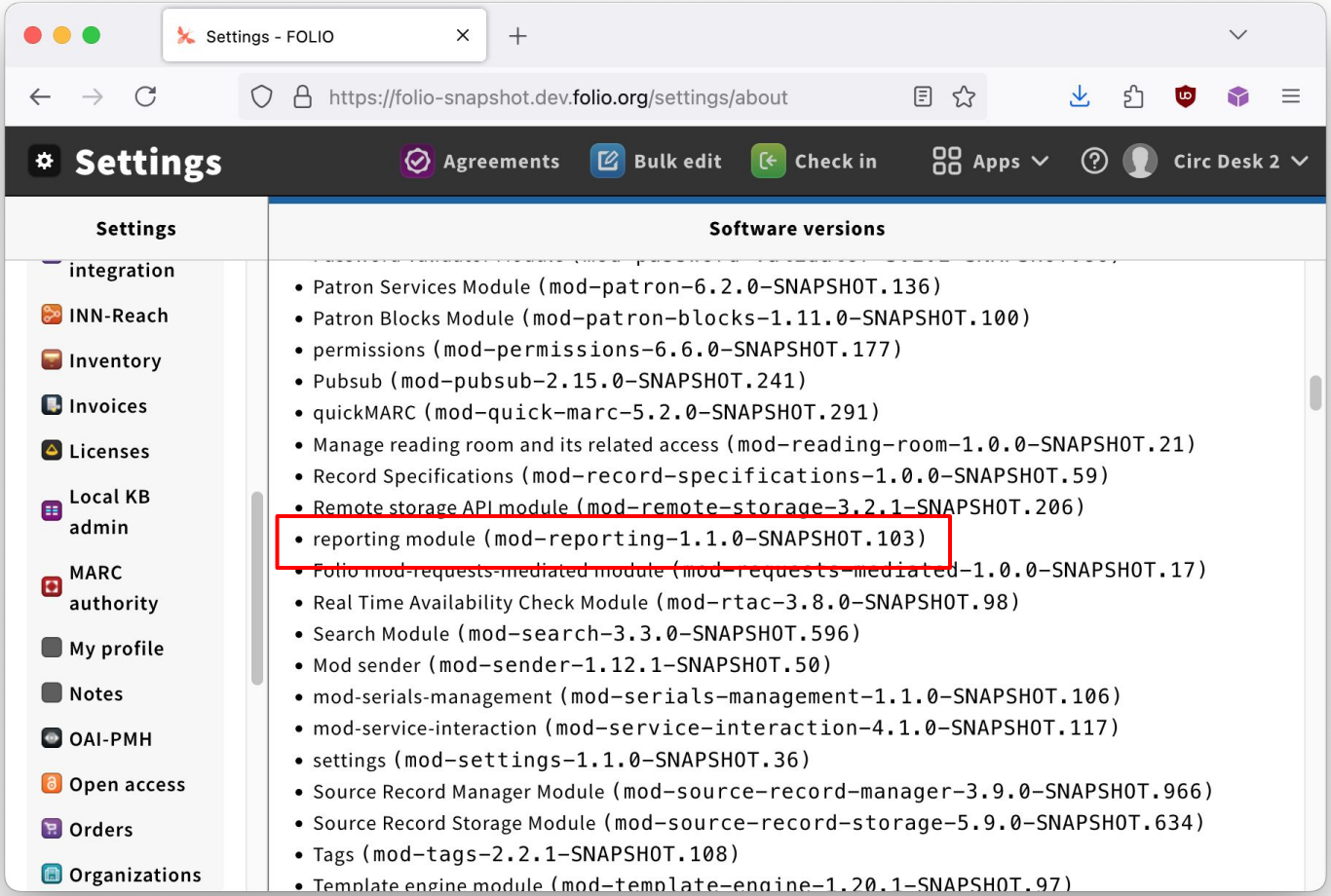
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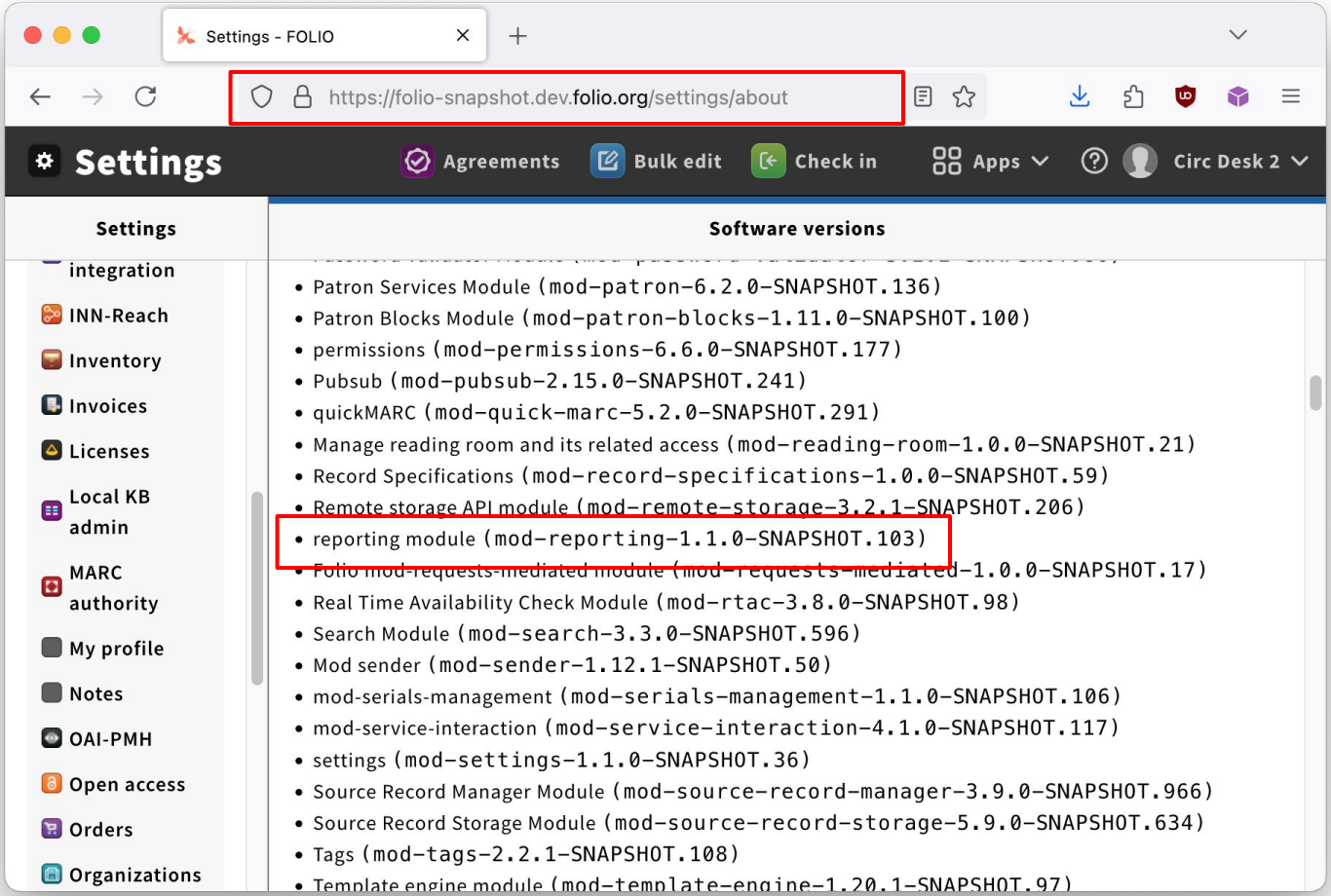
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It provides a pathway for piecewise refreshment of parts of FOLIO as they age out.

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For example:

- A plug-compatible mod-users alternative that uses LDAP as the source of truth
- A plug-compatible mod-fqm-manager replacement that runs queries against MetaDB

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Modularity is empowering!

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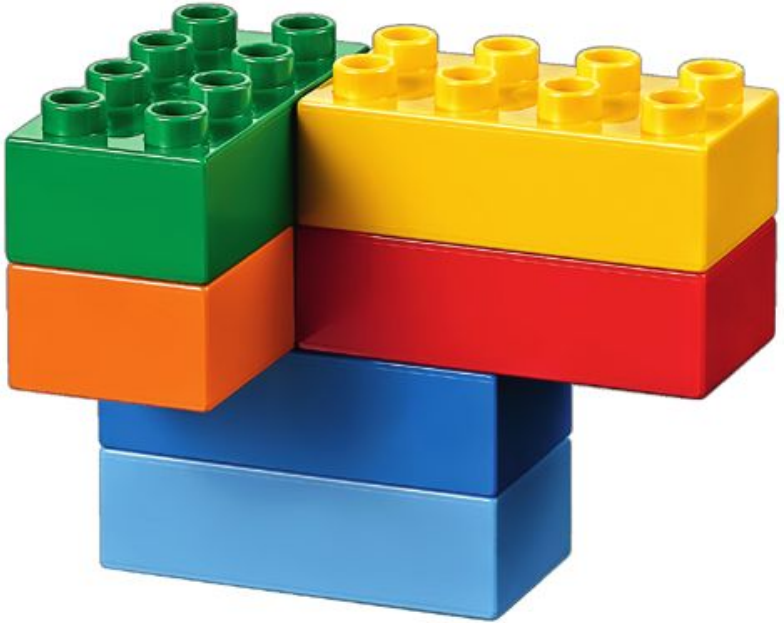

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Software Guy
Index Data
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