

2016-01-22 Fedora API Extensions Meeting

Date: Friday January 22, 2pm EST (-5 UTC)

- Dial-in Number: (712) 775-7035
 - Participant Code: 479307#
 - International numbers: [Conference Call Information](#)
 - You may also call in using the [VoIP dialer](#) from a web browser, or Android/iOS apps
- IRC:
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Meeting Goals

1. Develop a program for engagement with SSWAP
2. Move forward on our understanding of service binding

Attendees

- [Unknown User \(acoburn\)](#)
- [Aaron Birkland](#)
- [Daniel Davis](#)
- [Ruth Duerr](#)
- [Elliot Metsger](#)
- [Bethany Seeger](#)
- [A. Soroka](#)
- [Joshua Westgard](#)
- [Stefano Cossu](#)
- [Randall Floyd](#) (Indiana University)

Agenda

1. Discuss [Stefano Cossu's](#) high-level architecture [diagram](#) (ran out of time last week)
2. Discuss [Unknown User \(acoburn\)](#)'s proof of concept for [Service Discovery and Binding](#)
3. Discuss [SSWAP](#) and its potential utility to API-X.
 - a. <http://sourceforge.net/p/sswap/wiki/publications/>
 - i. iPlant (the ecosystem? that SSWAP was designed to operate in) architecture <http://sourceforge.net/p/sswap/wiki/publications/attachment/iPlant%20Semantic%20Architecture%20and%20Design.pdf>
 - ii. Their main paper:

Gessler DDG, Schiltz GS, May GD, Avraham S, Town CD, Grant D, Nelson RT 2009. [SSWAP: A Simple Semantic Web Architecture and Protocol for semantic web services](#). BMC Bioinformatics, 10:309 doi:10.1186/1471-2105-10-309.

4. PoC implementation

Notes

- High-level diagram: Simple diagram, intended to advertise API-X work to Fedora and non-Fedora communities
 - Lots of discussion in various communities (e.g. hydra). Many use cases overlap
 - Triple store is in the diagram because many extensions will likely use on
 - Do all have to go through API-X? Thinking about scaling issues
 - Graph indicates how it works, does not imply it's mandatory always, just in cases where API-X is use
 - Suggestion: put "API-X client" in the box, rather than just "client"
 - Question regarding Arrows between extensions: is it the intent to communicate thait it is a recommended pattern that extensions invoke another? To what extent is it mediated by API-X?
 - Wanted to demonstrate a pipeline, in reality API-X mediated the pipes. Maybe make the arrows a different colour.
 - It's a common pattern that if extensions need to communicate with one another, they'd be a sort of client too.
 - Extensions should not directly be passing information to one another. They ideally should be a set of functions or configuration, these are parsed by API-X core. The API-X core is the one that routes.
 - Will communication bounce back between extensions and API-X core? there may be scalability issues.
 - Observation: There are no arrows between low-level storage and triple store.
 - Right, this is discouraged. Recommended means of populating storage is async/event driven.
 - In either case, though, there are no arrows currently on the diagram which indicate how triple store is populated
 - Maybe distinguish between Fedora and the APIs? Square boxes make them all look the same
 - re-affirm that we've decided that all interaction with Fedora is through it's REST api.
 - Boxes were "something with logic in it"
 - Should emphasize that API-X is a body of software
 - Swim-lane diagrams can make it clear what's an API
 - Diagram of what's inside API-X core would be useful at some point as well.
 - Action item: [Stefano Cossu](#) to revise graph
 - Offer from [A. Soroka](#) to assist with swim-lane diagrams to clarify interactions
 - This will aid debate/discussion

- Open repositories: [Aaron Birkland](#) preparing an API-X submission
 - Pass around stakeholders for input/comments
 - [Randall Floyd](#) and [Unknown User \(acoburn\)](#) may contribute materials as well
 - Action item: [Aaron Birkland](#) to send around initial draft early next week.
- Service Discovery and Binding (SD&B)
 - Overview
 - Make sure clients of API-X can understand which services are running.
 - Should be a way of registering change so clients know what is available or not.
 - Knowing if a service can be applied to repository objects of a type
 - Two possible client modes: Directly with the client (client polls registry and invokes service), or mediated (proxy, client uses public URI, request is routed behind the scenes by API-X using information from SD&B registry)
 - Binding of services: how would service interact with API-X: they register themselves (types they operate on)
 - Should be distributed (across multiple machines)
 - Ruth: To ensure that crawlers can understand these services and know how to invoke. Should be understandable and machine actionable.
 - Is the API of the SD&B, or the APIs they are describing? Both? Probably both
 - To what extent does API-X need to know how to invoke a service, or reason about descriptions?
 - Selecting services by nominal type vs description
 - If you want to factor behaviour, it becomes difficult
 - Types for objects in Fedora 3 were quite specific/narrow, rich description would be to avoid that scenario
 - Where do you want to do your inferencing: Pre-calculated, in API-X, or make the client do it?
 - Give discovery service a notion of an ontology (e.g. as SSWAP). Do it in a way so that you don't have to.
 - Less naming things, more "what they do"
 - Dan: What I saw in SSWAP is a framework for doing a model for lower-level information for service binding.
 - If we start with a bean registry, then we have no growth
 - Ruth: Similar questions in ESip being asked right now as well, but fedora doesn't really have a presence there at the moment.
 - API-X Service discovery & Binding may be an opportunity to correct what Fedora3 dissemination got wrong
 - Aaron B: No high-level requirements explicitly suggest description-based binding. Maybe describe the problem and pass by Stakeholders?
 - May lead to additional high-level requirement, don't want to miss opportunity
 - Action item: [A. Soroka](#) to add use cases where this is necessary
 - Action item: [Ruth Duerr](#) has a use case requiring description-based binding, will add it as well

Some interesting post-meeting discussion also followed on IRC (see conversation after 15:12) : <http://irclogs.fcrepo.org/2016-01-22.html>

Next call

Friday, Feb 5