

Users, Communication, and a Light Application-Level API: A Request for Comments

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Website: <https://github.com/kltm/lala>

Repository: <https://github.com/kltm/lala>

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Much thought and paper has been put into sharing information between resources, from the use of common identifiers to use of common data stores and APIs. We would like to explore an area that has not, to the authors' knowledge, been as well explored: the sharing of simple information directly between web-based applications, without the use of a non-application central server or API as an intermediary.

More concretely, the use cases that we wish to look at are how to manage user authentication, authorization, and how to obtain small packets of specific information from an external resource that has its own associated web application. As a way to explore this space, we have created applications that accomplish this by passing tokens and round-tripping a packet of information (acting as a “black box” or “piggy bank”) through the external application using basic HTTP methods, allowing an easy high-level “federation”. In an environment where much effort is being spent on the creation of rich web applications tailored to the habits of specific groups of scientists and curators, users and engineers would have much to gain by being able to reuse functionality from external applications as-is in their workflows and stacks, as well as having the added benefit of driving traffic to external web applications that implement such a common specification.

Through these explorations, we have decided that a path forward should capture the following qualities:

- Easy to implement: complexity can be a barrier to adoption and implementation
- Basic HTTP tooling: any system should have easy access to the tools necessary
- “Stateless”: simplifying debugging and implementation
- Minimal need for initial coordination
 - Beyond what data is to be returned, the external application does not need to understand the transiting packet
- No need for calling application to coordinate changes to own API after initial coordination: as the calling application is responsible for decoding the information it initially sent and the location it is sent to, major API changes can occur without the need to coordinate with any other resource
- Have the ability to perform operations “remotely” while still logged-in to the calling application, without the need to coordinate cross-site logins: this can be done by placing an authorization token in the transiting packet

Taking inspiration from the methods used by Galaxy [1] to pull data in from external applications, we'd like to discuss this potential protocol and get feedback from the community about general patterns for passing users and relatively simple data directly between applications. Variations of this proposal have been implemented or explored in applications such as: Noctua, Textpresso Central, AmiGO, and PubAnnotation.

References

- [1] The Galaxy platform for accessible, reproducible and collaborative biomedical analyses, 2016 update *Nucleic Acids Research* 44(W1): W3-W10, doi:10.1093/nar/gkw343

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