Galaxy Client Architecture
Demo of “Single Page”.
https://github.com/galaxyproject/galaxy/pull/13984

Demo of “Multi-History”.
https://github.com/galaxyproject/galaxy/pull/13985

Demo of “myGalaxyUI”.
https://github.com/galaxyproject/galaxy/pull/14523
Client Map in 22.05

Masthead

API

Provider

Resource

Store

VUE-LIBRARY

Analysis

Admin

Login

Stateless

Backbone

APP

MAKO

BACKBONE

VUE

Galaxy PROJECT

MAKO BACKBONE VUE
Client Map

Now
Modernization Process

Data produced by running: `find . -type f | wc -l` and `find . -type f | xargs wc -l` on the `components`, `mvc` and `template/webapps/galaxy` directories. Changes replace structural makos loading Vue app and mock Masthead.
Modernization Timeline

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<td>LOGIN BACKEND</td>
<td>LOGIN FRONTEND</td>
<td>APP CORE</td>
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<tr>
<td>TOOL BACKEND</td>
<td>FORMS</td>
<td>PAGE EDITOR</td>
<td>FORMS</td>
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<td>TOOL PANELS</td>
<td>WORKFLOW EDITOR</td>
<td>HISTORY</td>
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<td>TOOLSHEED REMOVAL</td>
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- Orange: Backend
- Dark blue: Backbone
- Light blue: Vue
Recent Progress

Removal of 11k lines (totals 22k history client code removal)

Staged removal of core makos and associated controllers 20+

Completed rewiring of 100+ routes as Vue-routes

Migrated client layout handling to Vue
Last Makos

1. build_from_current_history.mako
2. phyloviz.mako
3. sweepster.mako
4. trackster.mako
5. tool_runner.mako
6. as_xml.mako
7. list_as_xml.mako
8. dataset/copy_view.mako
9. dataset/large_file.mako
10. dataset/display.mako
11. dataset/display_application/display.mako
12. dataset/tabular_chunked.mako
Benefits Summary

for Users:

- Instant page rendering without reloads.
- Window location can be copied and shared.
- Increased test coverage.

for Developers:

- Architecture aligns with current literature.
- Excellent routing features, consistent throughout the application.
- Better software management and feature deployment.
- Allows whole client performance and memory usage analysis.
This work is the result of a **Continuous Community Effort** to modernize Galaxy on all levels throughout many years. Particularly the **UI Team** and:

- **@guerler**
  - Strategy + Architecture
  - Schatz Lab, USA

- **@jmchilton**
  - Selenium + Implementation
  - Nekrutenko Lab, USA

- **@bgruening**
  - Planning + Testing + Review
  - Gruening Lab, Germany

- **@dannon**
  - Build System + WebPack
  - Schatz Lab, USA

- **@mvdbeek**
  - Strategy + API-Architecture
  - Nekrutenko Lab, USA

- **@wm75**
  - Workflow Validation + Editor Testing
  - Gruening Lab, Germany
Thank you!