

Samvera Connect 2020

Mono: The Kissing Repository

Project Surfliner's Monorepo Strategy

Matt Critchlow, UC San Diego
Tamsin Johnson, UC Santa Barbara

PROJECT
Surfliner

What is Project Surfliner?



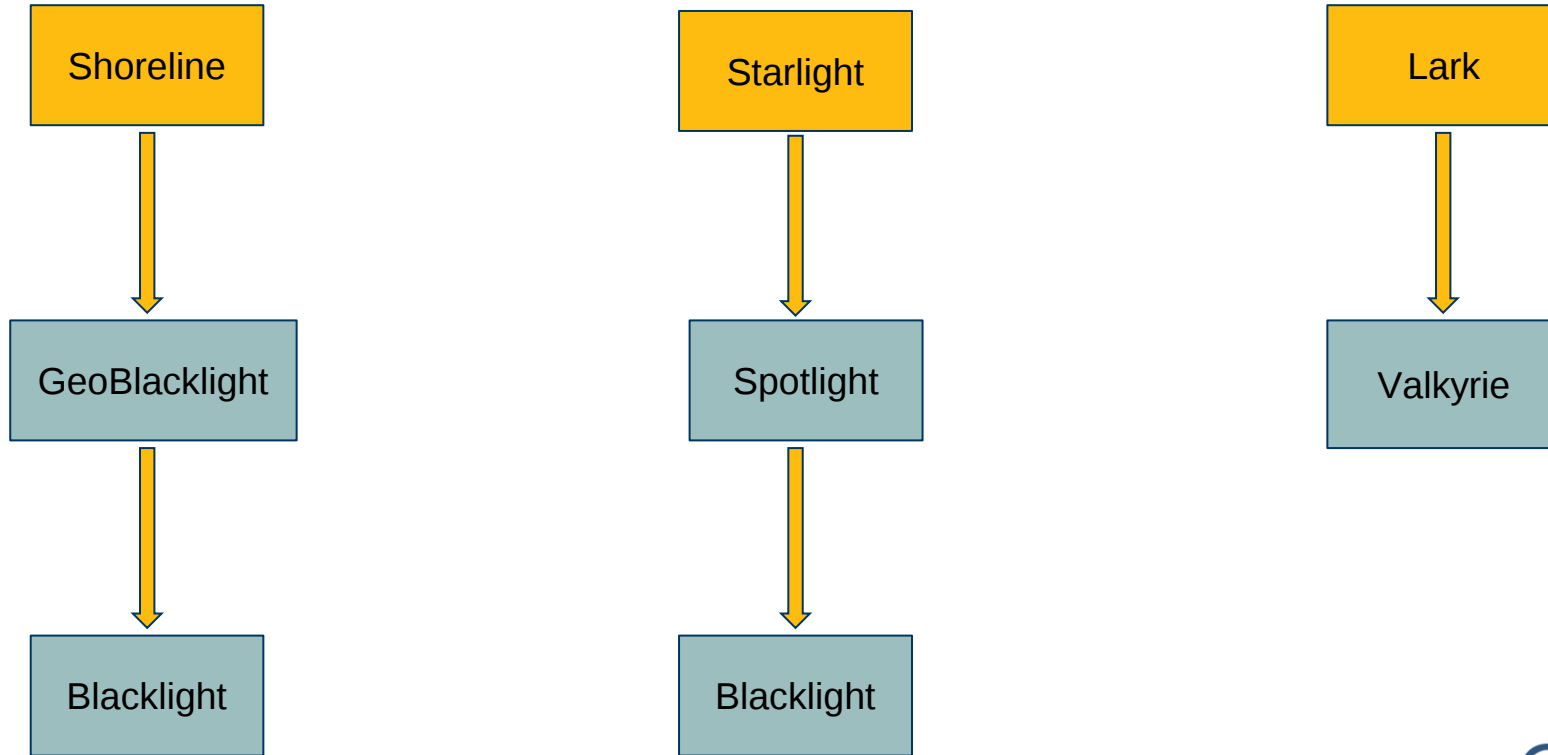
The Library
UC SAN DIEGO



UC SANTA BARBARA
Library

PROJECT
Surfliner

Surfliner Applications



Development Methodology

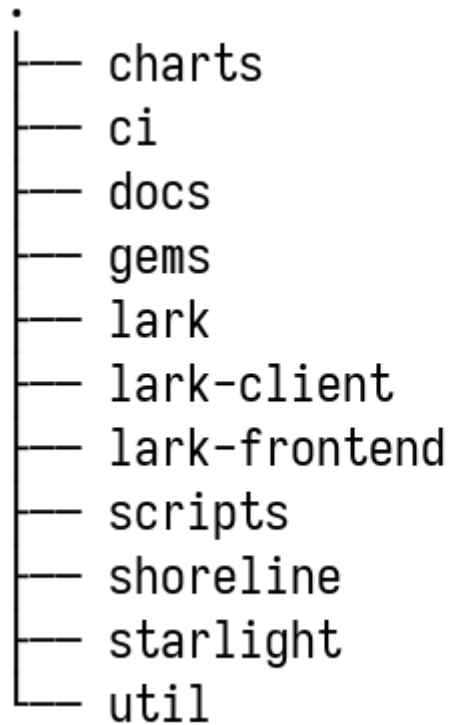
- Follow [12-factor methodology](#)
 - Example: Environment variables for shared deployment
- Agile
 - Combined daily stand-up
 - Two week sprints
 - Retrospectives
- Code Review
- Pair Programming

One (git) Repository

To Rule Them All

Mono Repo

*One version control repository
shared by all Surfliner products.*



Flexible Code Boundaries

- Atomic changes cross-product
- Lock-step releases

Flexible Team Boundaries

- Shared build/test/deploy pipeline
- Global code style and quality standards
- Easy integration testing

Pain Points

Where does it hurt? Where are we growing?

Relearning Dependencies

- Extracting shared services is different than we're used to.
 - More like working with an inlined dependency than a gem; poly-inlined.
- We can (but mostly don't) release packages like Gems.

Pipeline Maintenance: Sequential

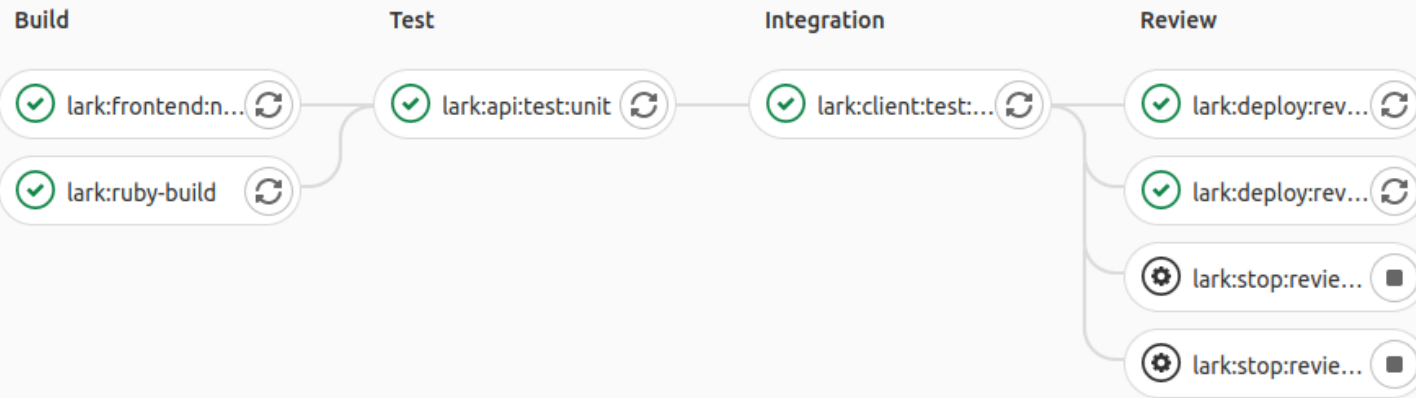
🕒 8 jobs for [!844](#) with [refactors-again](#) in 1 minute and 37 seconds (queued for 1 second)

🚩 [latest](#) [detached](#)

🔑 [aa788dcc](#) ⋮ 📄

🔗 1 related merge request: [!844 lark: isolate HTTP error behavior in Controllers](#)

Pipeline DAG Jobs 8 Tests 0



PROJECT
Surfliner

Pipeline Maintenance: DAG

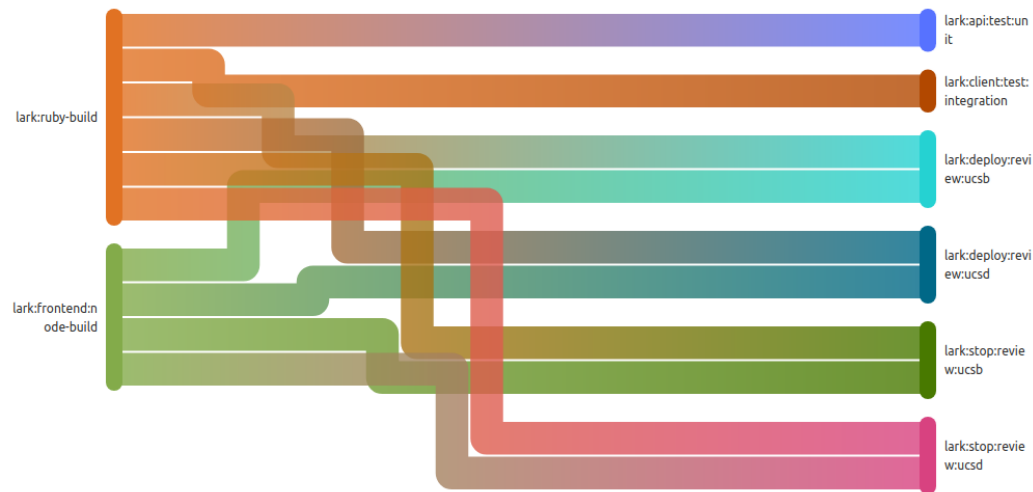
🕒 8 jobs for !844 with `refactors-again` in 1 minute and 37 seconds (queued for 1 second)

🚩 `latest` `detached`

🔗 `aa788dcc` ... 📁

🔗 1 related merge request: !844 `lark: isolate HTTP error behavior in Controllers`

Pipeline **DAG** Jobs 8 Tests 0



Status	Pipeline	Commit	Stages		
 passed	#61752888 by  latest	 reindex_eve...  a019bc1b  Update README for SOLR re-i...	      	 00:17:22  42 minutes ago	   
 running	#61749072 by  latest	 master  e4e571d9  Updated lark README.	      	 00:12:29  17 hours ago	  
 passed	#61746859 by 	 dummy_data  e4e571d9  Updated lark README.	      	 00:12:04  17 hours ago	   
 running	#61746778 by 	 master  bf3c3440  lark: Make staging deploy req...	      	 00:07:34  17 hours ago	  
 passed	#61743209 by 	 staging-dep...  bf3c3440  lark: Make staging deploy req...	   	 00:10:03  18 hours ago	   
 passed	#61742382 by 	 master  8fd4d12c  starlight [UCSB]: fix footer link...	   	 00:09:59  18 hours ago	   
 passed	#61734817 by 	 reindex_eve...  498c339a  Update README for SOLR re-i...	      	 00:12:31  19 hours ago	   
 passed	#61733575 by 	 GL-210  8fd4d12c  starlight [UCSB]: fix footer link...	      	 00:19:56  18 hours ago	   
 passed	#61733501 by 	 dummy_data  f61b9a19  Updated lark README.	      	 00:09:51  20 hours ago	 

Impact on Outside Collaborators

- The project looks BIG.
 - Multiple layers of READMEs to get to a given product.
 - Other documentation has high surface area.
 - Developing on one application requires checking them all out.
- What if I want to fork the repo?
 - Running the pipelines and contributing MRs is hard; maybe prohibitively so.
 - Permanently forking one application would be a major pain.
 - (maybe this is a feature)

Questions & Discussion

Our Way Forward



bit.ly/surfliner-forward



Pipeline #61752888 passed with warnings for a019bc1b on reindex_event_table



Deployed to [ucsd.review.lark/reindex...](#) 17 hours ago

[View app](#)



lark-ucsd-review-lark-sfhtz x



lark-ucsd-review-lark-sfhtzk.169.228.62.60.xip.io



JSON

Raw Data

Headers

Save

Copy

Collapse All

Expand All

version: "0.1.0"

surfliner > surfliner > Environments > ucsd.review.lark/reindex_event_table

ucsd.review.lark/reindex_event_table



[View deployment](#)

[Monitoring](#)

[Edit](#)

[Stop](#)

ID

Commit

Job

Created

#183

reindex_event... -> a019bc1b
Update README for SOLR re-indexing.

review_ucsd (#214099491)
by

17 hours ago



#173

reindex_event... -> 498c339a
Update README for SOLR re-indexing.

review_ucsd (#214033086)
by

20 hours ago



#158

reindex_event... -> d99a50be
Update README for SOLR re-indexing.

review_ucsd (#214003380)
by

22 hours ago



Continuous Integration

- Gitlab CI/CD Pipelines
 - Build, Code Quality, Dependency Scanning, Lint, Test, Deploy
- Docker image(s) per application
 - Lark API, Lark Frontend
 - Starlight
 - Shoreline
- Gitlab Image Registry

Continuous Delivery



- Cloud-native infrastructure
 - Docker, Kubernetes (k8s), Helm
- Auto-deploy across environments & campuses
 - Automated review deployments per merge request
 - Automated staging deployments on merge to mainline
 - Push-button production deployment
- Helm + k8s + 12-Factor means:
 - Deployments are repeatable
 - Applications are observable and scalable
 - Rollback is simple