Project Surfliner
Building the Tracks Before the Train

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Who Are We?

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Director of Technology and Digital Experience

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Director of Digital Library Development
Project Surfliner
Origin Story
What is Project Surfliner?
How Did This Get Started?

- Grassroots relationship building
- **UC Libraries DAMS Technology Report**
- UCLA white paper
- Library development community posts
  - Princeton
  - Stanford
  - Cornell
  - University of Alberta
  - Jonathan Rochkind
- Samvera Connect & DLF Forum in 2018
Our Way Forward

bit.ly/surfliner-forward
Project Surfliner Defined

The project is the collaboration effort. It is building and leveraging the strengths, experiences, and resources of the different campuses to focus on shared concepts and products.
What Makes This Different?

Old things, new tools

Focus on:

- Shared code / separate installations
- Development & deployment
- Feature abstraction not monolithic installs
- Open communication, documenting & learning from failures
People
How we work together
Project Surfliner is cross-campus and remote-first by design.
Teams

**Product Team**
The people currently working on a given product

**Project Team**
The entire active Surfliner team
Roles

Product Team
- Product Owner
- Technical Lead
- Developers
- Domain Experts
- Stakeholders

Project Team
- Project Champions
- Project Sponsors
Sprint Cycle

- Sprint Planning
- Backlog Refinement
- Sprint Review & Demo
- Combined Retrospective
- Combined Daily Standup
- Sprint 2 weeks
- 60-day on/off workcycles

“Scrum” by Björn Andersson & “Pocket Watch” by fauzan akbar from the Noun Project
Pair Programming

Pair programming guide: tuple.app/pair-programming-guide/
When one team member is remote, your whole team is remote.
What Went Well?

- Merge Reviews
  - Detailed Merge Reviews.
  - exciting to have almost cleared boards at the end of the workcycle

Theme Development

- UCSB theme development
  - Scheduling this ahead of time and just having them on the calendar (and cancelling them if necessary) worked very well.

What Didn't Go Well?

- Upstream communication with Spotlight. Result being a fork to get our needed changes in place

- Are the public stand-up necessary? It seems to be the same things that should happen in the Sprint Review? What is the difference?

External Blockers

- Shibboleth (UCSB)
Quarterly In-Person Meetings
DevOps Practices
Repeatable Infrastructure ++
DevOps is a culture shift.

“DevOps is not a Goal, But a never-ending process of continual improvement”

– Jez Humble
Mono Repo Not Monolith

One version control repository shared by all Surfliner products.
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
Continuous Integration

- Gitlab CI/CD Pipelines
  - Build, Code Quality, Dependency Scanning, Lint, Test, Deploy

- Docker image(s) per application
  - Google's Kaniko tool is used for building our application container images, tagging them, and pushing them to our GitLab registry

- Shared Docker images for services
  - Solr
  - Base Docker-in-Docker builder

- Gitlab Image Registry
Continuous Delivery

- Cloud-native infrastructure
  - Docker, Kubernetes (k8s), Helm
- Auto-deploy across environments & campuses
  - Review applications are created for Merge Requests, resulting in a live environment stakeholders can review and sign-off on
  - Push-button production deployment
- Helm + k8s + 12-Factor means:
  - Deployments are repeatable
  - Applications are observable and scalable
  - Rollback is simple
What We Learned
Challenges & Impacts
Challenges.
Challenges.
So many.
<table>
<thead>
<tr>
<th>I want to...</th>
<th>Therefore, I will invest...</th>
<th>In return, I....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn more but not necessarily do anything yet.</td>
<td>My own time using the resources available from the Surfliner project team.</td>
<td>Can be informed of the roadmap and can share project updates with my campus.</td>
</tr>
<tr>
<td>Implement one or more Surfliner products</td>
<td>Local resources to deploy software at my own campus, record issues and/or submit minor bug fixes.</td>
<td>Am assured that product work will result in public, MIT licensed software and operations tooling. I can expect up-to-date documentation and open communication about development priorities and known issues.</td>
</tr>
<tr>
<td>Contribute opinions towards the design of a product (as a stakeholder).</td>
<td>Local resources (developers, devops, subject matter experts, etc.) who actively participate as a member of a product team in sprints.</td>
<td>Get releases of the product with help from the product team in deploying and implementing the product.</td>
</tr>
<tr>
<td>Example: I have authority records that I want to put into the Lark product so my institution can use this collaborative authority records system...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive the roadmap of a product with specific requirements that my institution needs to meet.</td>
<td>A product owner from my institution, in addition to local</td>
<td>Get releases of the product with help from the product team in</td>
</tr>
</tbody>
</table>
But the impacts have been worth it.
Increased Capacity

Culture Shifts

Remote

Agile

DevOps

Knowledge Sharing

Local Practice

Products
What’s Next?
For the collaboration
Life in Production

Product Deployments

UCSB

- Shoreline (Staging): http://shoreline-staging.eks.dld.library.ucsb.edu/
- Shoreline (Production): http://geodata.library.ucsb.edu/
- Starlight (Staging): https://spotlight-stage.library.ucsb.edu/
- Starlight (Production): https://spotlight.library.ucsb.edu/

UCSD

- Shoreline (Staging): http://geodata-staging.ucsd.edu
- Shoreline (Production): http://geodata.ucsd.edu
- Starlight (Staging): https://exhibits-staging.ucsd.edu/
- Starlight (Production): https://exhibits.ucsd.edu/
Thank you!
Thanks to all the Project Surfliner team!
Learn More
surfliner.ucsd.edu
gitlab.com/surfliner
The Lark Team

**Technical Lead**
Tom Johnson, Santa Barbara

**Product Owner**
Jessica Hilt, San Diego

**Campus Product Owner**
Chrissy Rissmeyer, Santa Barbara

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**Subject Matter Experts**
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The Shoreline Team

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Tom Johnson, Santa Barbara

Subject Matter Experts
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Amy Work, San Diego
Project Sponsors & Champions

**Project Sponsors**
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Erik T. Mitchell, San Diego

**Project Champions**
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Tim Marconi, San Diego