SIMPLIFIED TEACHING AND RESEARCH APPLICATION PLATFORM

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AGENDA

Brief overview

Conclusion

I have five minutes
IMPETUS

• UVic RCS ARC Software Team is brand new. Members: 1
• Projected workload: infinite
• We want to enable, not just create, software for research
• A lot of our researchers have or need to deploy web applications
• What do you need to do when you build and deploy web applications?
  • Identity management
  • Database administration and tuning
  • Logging
  • Backups
  • Documentation
  • Oh yeah, write the application
  • Deploy it on a thing and maintain the thing
HOW DO YOU DO THAT?

- You may have a dedicated research support analyst who’ll help
- At UVic we do. He has deployed ~100 such applications and they represent 30% of his workload
- Problems with this:
  - 30% of his workload! ~100 projects!
  - Also, this is not his area of expertise.
  - He has 12 PhDs but he is not a systems administrator.

- Researchers should do research.
- Systems experts should manage systems.
- Each should be aware of the other context, but shouldn’t have to swim in it.
STRAP: APPROACH

• Opinionated platform: flexible, but limited choices
• We provide the common parts for free
• For the researcher: develop your application as a container, following a few basic conventions, and don’t worry about:
  • Authentication
  • Databases
  • Logging and backups
  • TLS termination, load balancing
  • Infrastructure
STRAP: ARCHITECTURE
## Summary

<table>
<thead>
<tr>
<th>Identifier</th>
<th>smash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>SMASH server</td>
</tr>
<tr>
<td>Description</td>
<td>Simple Monitoring and Alerting System for Home</td>
</tr>
<tr>
<td>Image</td>
<td>dlek/smash</td>
</tr>
<tr>
<td>Port</td>
<td>5055</td>
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<tr>
<td>Authentication</td>
<td>uvic</td>
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<tr>
<td>Exempt routes</td>
<td></td>
</tr>
<tr>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
</tr>
</tbody>
</table>

## Status

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</thead>
<tbody>
<tr>
<td>Status</td>
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<tr>
<td>Databases</td>
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</tr>
<tr>
<td>DB owner</td>
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<tr>
<td>Initial DB password</td>
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<tr>
<td>Deployment logs</td>
<td>View</td>
</tr>
<tr>
<td>Application logs</td>
<td>View</td>
</tr>
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</table>
SO THEN WHAT

• Terraformation!
• Database created on configured server
• Client created on Keycloak configured for appropriate realm
• Helm chart deployed to Kubernetes:
  • Ingress routes created
  • Authentication forwarding invoked
  • Application deployed as pods, services
• Wildcard DNS and wildcard LE cert already taken care of
CURRENT STATUS

• Concluded proof of concept, on to prototype/alpha stage
• First goal is to get the STRAP manager self-hosted
• Sending out first invitations for early adopters
HOW TO GET THERE

• Tutorials and consultation on containerizing applications
• Application templates
  • Have one using Python and Flask
  • Maybe new projects with other environments will lead to new ones
• Cross-pollination opportunities with developers on the administration side
Thank you!
No time for questions!

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