Working with Serverless Functions and CI/CD

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Serverless code builds or uses infrastructure.
Developers are writing different types of code that should be tested.
Challenges
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- Continuous Integration process is slowed down as developers have to wait for pipeline to build out.

- How do you deal with code promotion to different environments?

- Code depends on infrastructure.
Challenges

After the infrastructure is built out, the developers are mostly just writing code.
Decouple

- Decouple code from infrastructure as much as possible.
- If multiple functions use the same infrastructure components, separate the components from the functions.
- Use integration tests to test dependencies.
Continuous Integration

- Separate your code pipeline from your infrastructure pipeline, but have the code pipeline trigger the infrastructure pipeline.
<table>
<thead>
<tr>
<th>Microservice Pattern</th>
<th>Monolith Pattern</th>
<th>Service Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Separate code pipeline for each microservice</td>
<td>- One code pipeline to ensure all tests are passing</td>
<td>- Separate code pipeline for each service</td>
</tr>
<tr>
<td>- Infrastructure pipeline should be able to be triggered for each microservice</td>
<td></td>
<td>- Integration tests should be able to be triggered for each service</td>
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Continuous Integration

- Test code locally as much as possible before pushing code (use pre-commit hooks, create a test script/dockerfile)
- Don’t skimp on integration tests.
Continuous Delivery

- During code promotion, build the full pipeline and only allow the code promotion to pass if all the tests pass.
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<td>Code promotion should run microservice pipeline and infrastructure pipeline</td>
<td>Code promotion should run all pipelines</td>
<td>Code promotion should run service pipeline and infrastructure pipeline</td>
</tr>
</tbody>
</table>
Further Challenges

- Separating code into multiple pipelines adds load to CI/CD runners
- More code to maintain
Thank You