

With
Great Pipelines
comes
Great Responsibility

Standardizing Multi-Region Deployments @ Razorpay

Nanda Kishore B - Nov 8th 2025

About me

- Nanda Kishore B
- Passionate Builder 
- Platform Tinkerer

About Razorpay

Presence Across 3 Continents

Taking Indian payment prowess global

200Mn+

Unique
customers

100Mn+

Offline touch
points

Processing

\$150Bn+

TPV

Supporting

5mn+

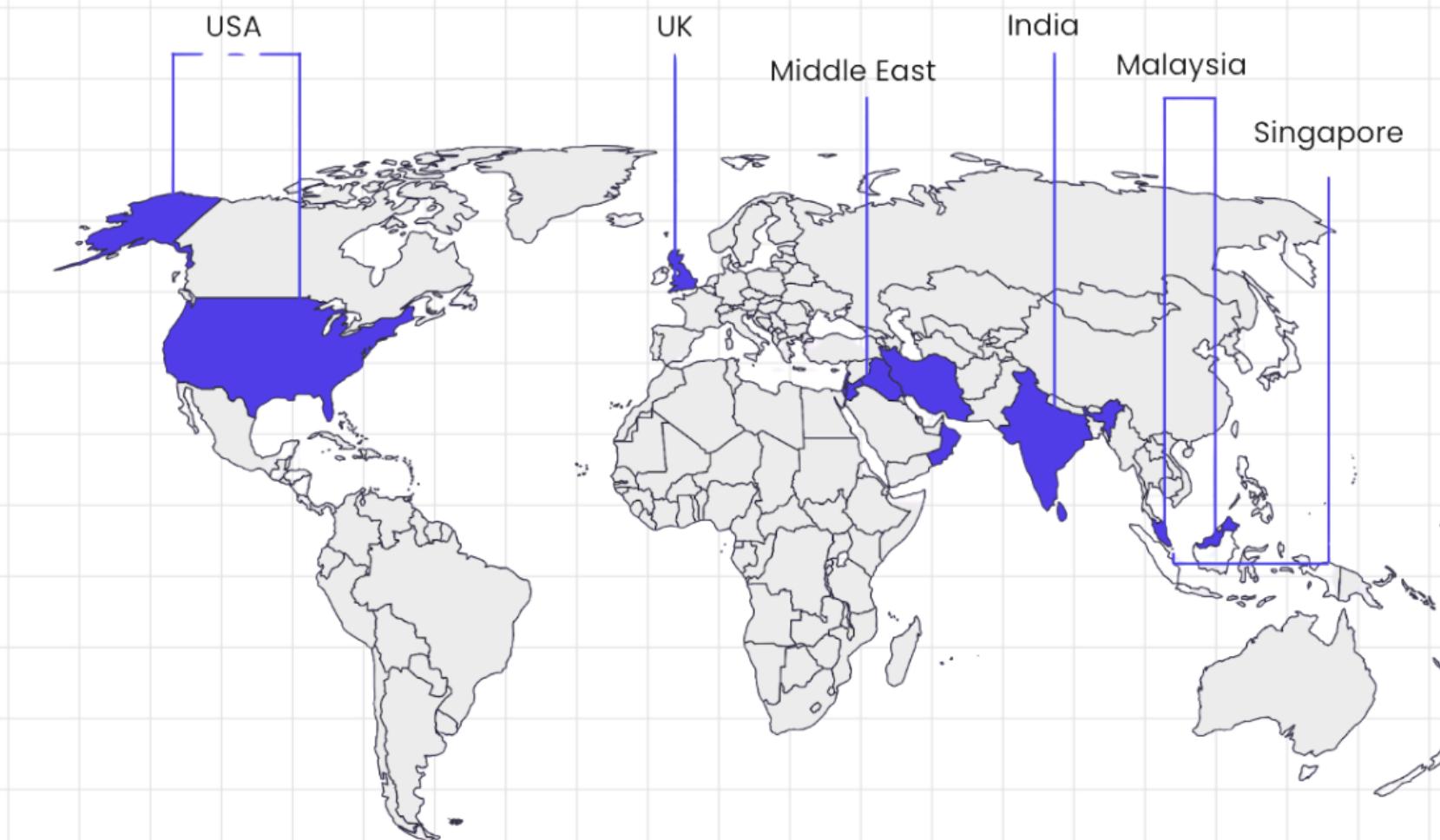
Businesses

60+

Banks

Operating from

6 countries



What is Spinnaker (for the uninitiated)

- Our Deployment Platform
- Continuous Delivery(CD) platform open-sourced by Netflix
- Focused on safe, repeatable, and multi-cloud deployments.
- Used to define pipelines - sequence of verify, deploy and rollback stages
- Rzp uses Spinnaker to deploy hundreds of services daily across multiple regions
- Think of it as “Kubernetes + CI + progressive rollout brain + guardrails = Spinnaker.”



The Mumbai Era



- Life was simple in one region
- One Spinnaker (hosted in AWS Mumbai Region).
- One Mumbai (Prod Region to deal with).
- One way to deploy.



The Great Expansion (Singapore 🇸🇬)

- Singapore calls. Multi-Region begins.
- New Clusters. New “Cell”.
- Same (Mumbai) Spinnaker
- Say Goodbye to Weekends



The Forest of Chaos

- Shared Spinnaker
- Deployed 30/150+ services in SG
- $30 \times 5 = 150$ pipelines manually modified.
- Sometimes, **Powered by Ctrl-C, Driven by Ctrl-V** 🤦
- Pipeline Config Drift across environments.



Mislinked stage related to
Singapore 🇸🇬
caused an outage
in Mumbai 🇮🇳



The Turning Point

- Realization: We need structure, not scripts
- Helm-based releases as Standard currency
- When a checkout in Singapore 🇸🇬 sneezes, Mumbai 🇮🇳 shouldn't catch a cold.

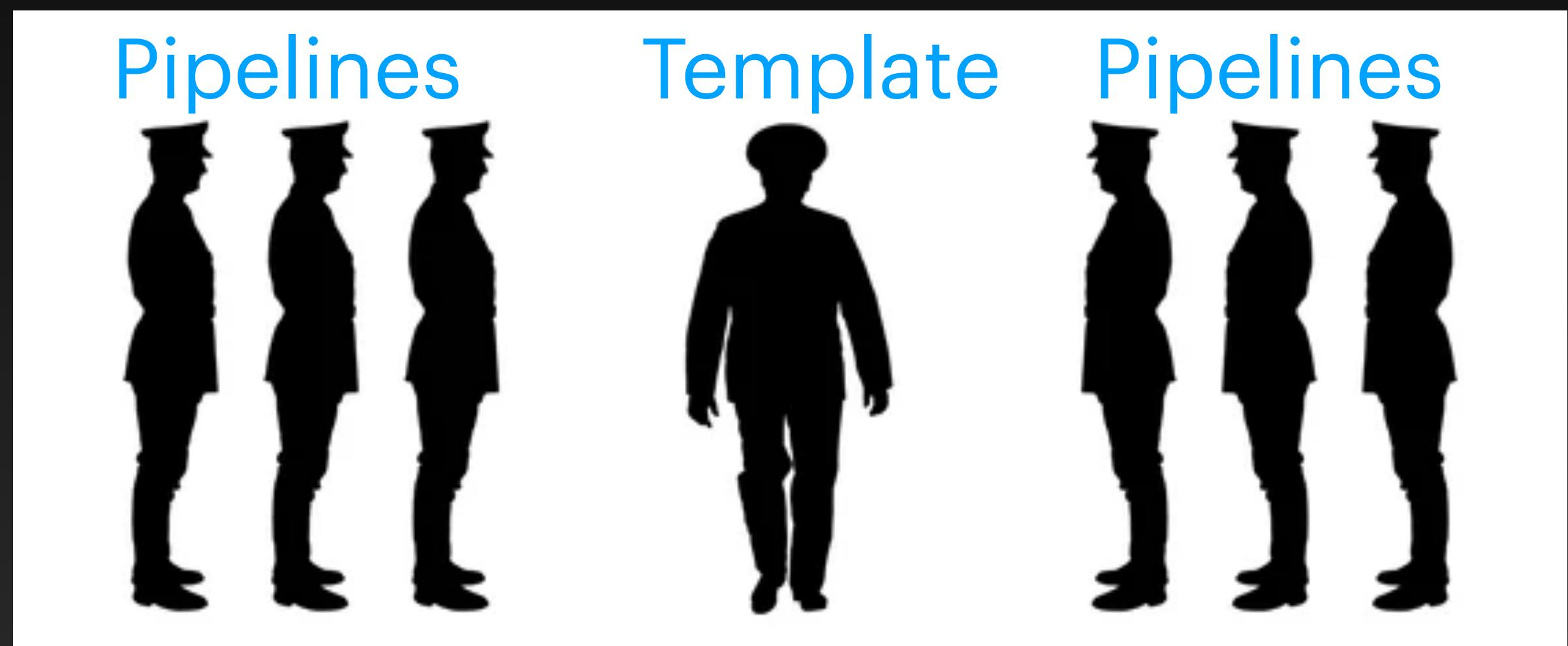


Structure = Pipeline-Templates

Fault Isolation = Regional Spinnakers

Pipeline Templates

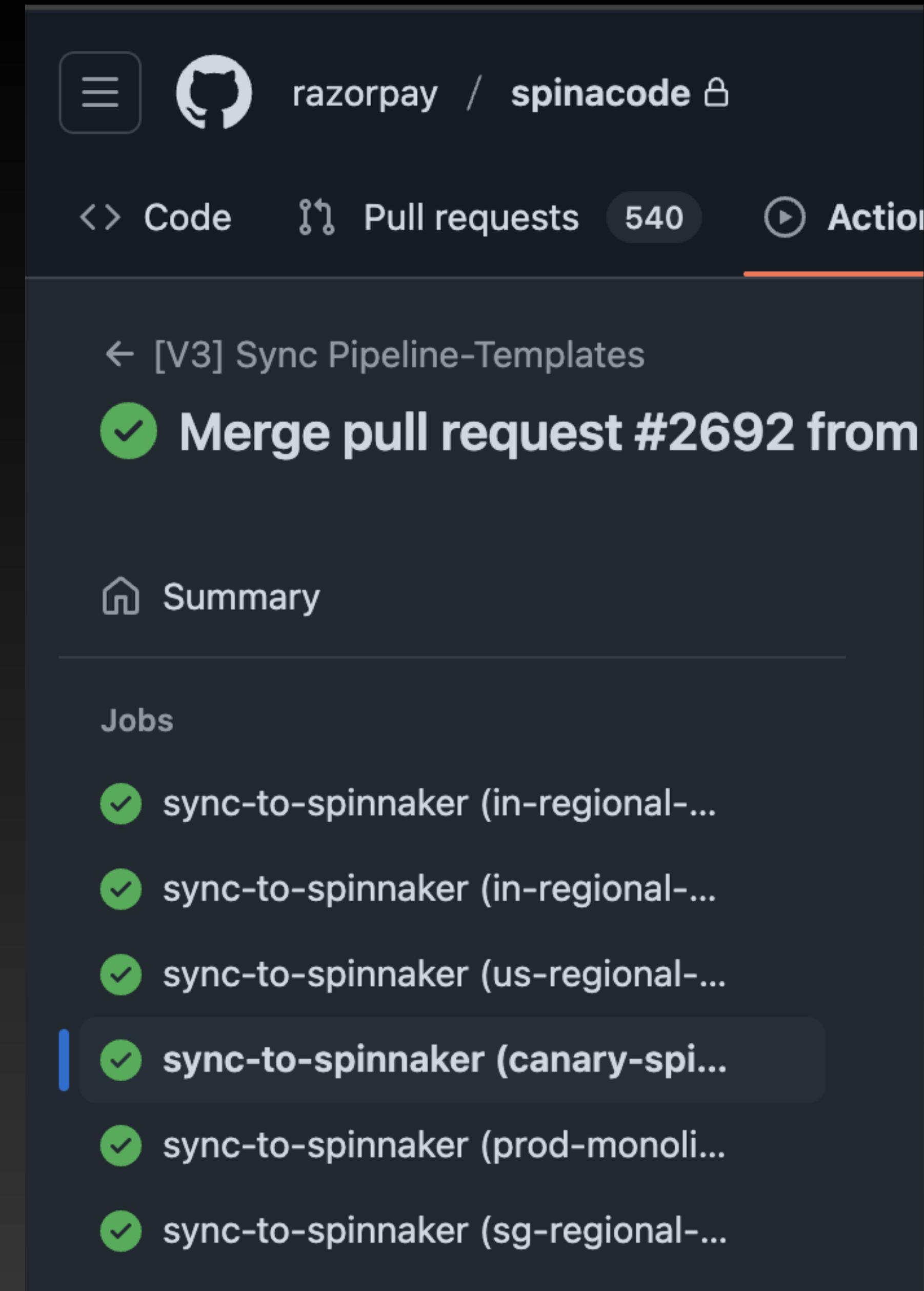
- Native to Spinnaker
- Centralized Config (no need to reinvent the 🎪)
- Custom Stages for Helm Releases, Canary and Mirror Deployments
- Central Policy Enforcement
- Individual pipelines just “refer” to “latest” copy of the template



GitOps

takes center-stage

- Fully native to Engineering teams
- All checks-and-balances enforced as CI Checks



**With Great Templates comes Great
Responsibility**

Guard-Rails

- `spin pipeline-template plan` 🤦
- CI Checks ✅
- Preview Pipelines ✅
 - No executions/back-doors ✅
- Per Region ✅

A screenshot of a GitHub Actions comment from the bot "github-actions" (@github-actions) 3 weeks ago. The comment subject is "[CRITICAL] Pipeline Template Change(s) detected and 1016 Pipelines will be affected". It includes an "Impact Summary" section with two bullet points: "13 template file(s) modified" and "1016 pipeline(s) will be affected across all regions". Below that is a "Mandatory Review Before Merge" section with four bullet points: "Changes to templates can break all referencing pipelines", "Test all changes using the preview pipelines listed below", "Notify impacted service owners if needed", and "Coordinate with Platform/DevOps for review and approval". At the bottom, there's a "Preview Pipeline URLs" section for the "HYD Region" and "MUM-DR Region", each listing several deployment options. Two red arrows point from the "No executions/back-doors" and "Per Region" items in the list above to the "Preview Pipeline URLs" sections in the screenshot.

[CRITICAL] Pipeline Template Change(s) detected and 1016 Pipelines will be affected

Impact Summary

- 13 template file(s) modified
- 1016 pipeline(s) will be affected across all regions

Mandatory Review Before Merge

- Changes to templates can break all referencing pipelines
- Test all changes using the preview pipelines listed below
- Notify impacted service owners if needed
- Coordinate with Platform/DevOps for review and approval

Preview Pipeline URLs

HYD Region

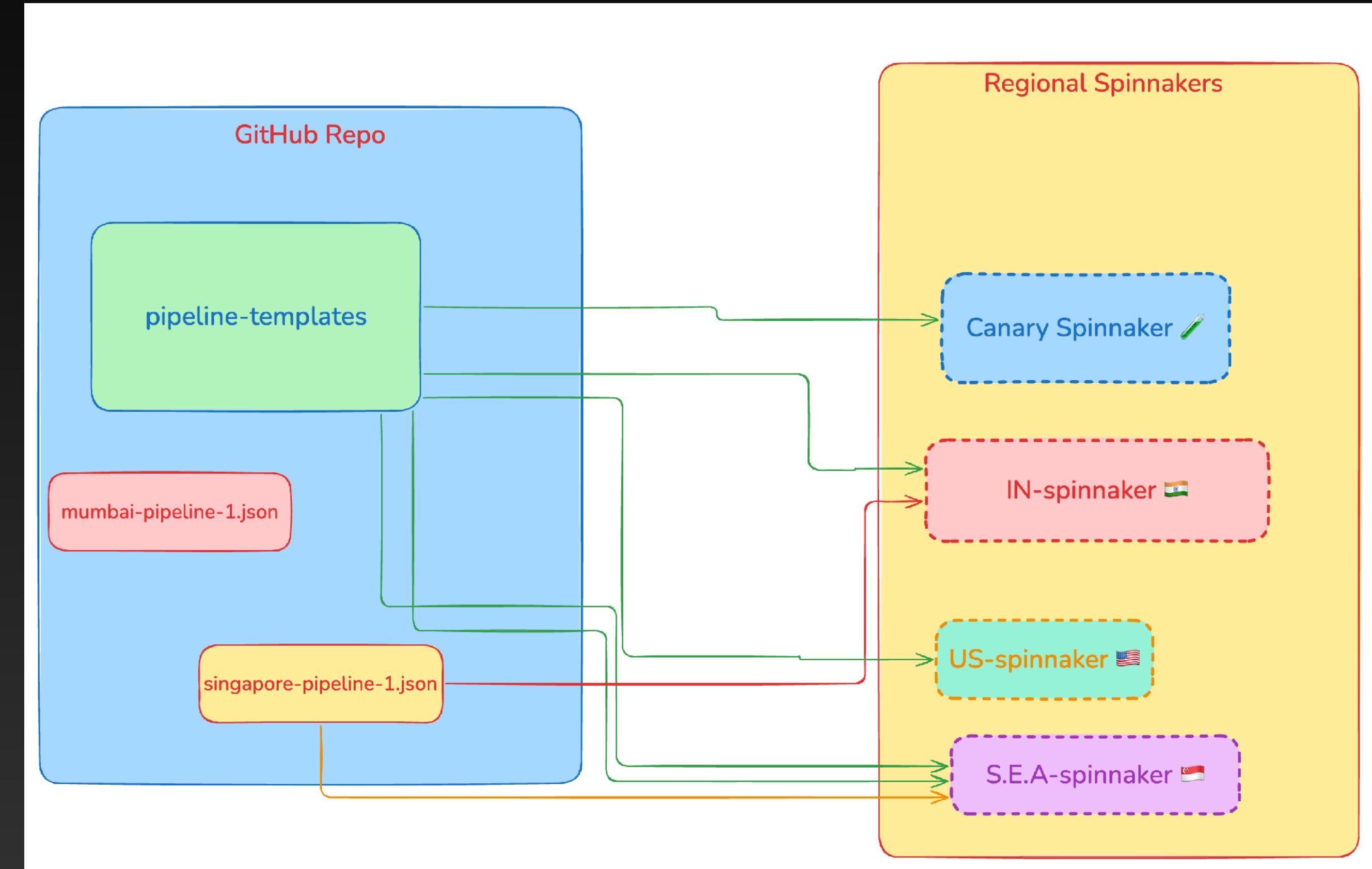
- [hyd - \[API Monolith\] Deploy to just one K8s Cluster](#)
- [hyd - \[Data Platform - Region Agnostic\] Deploy to just one K8s Cluster](#)
- [hyd - \[Region Agnostic\] Deploy to just one K8s Cluster](#)
- [hyd - \[Region Agnostic\] Deploy to a AWS Region](#)
- [hyd - \[Region Agnostic\] Deploy to all Blue and Green K8s Clusters in a Single AWS Account or a Cell](#)
- [hyd - \[Region Agnostic\] Deploy to just Blue K8s Clusters in a Single AWS Account or a Cell](#)
- [hyd - \[Region Agnostic\] Dual Deploy to CDE and NonCDE Clusters in a Single AWS Account or a Cell](#)

MUM-DR Region

- [mum-dr - \[API Monolith\] Deploy to just one K8s Cluster](#)
- [mum-dr - \[Data Platform - Region Agnostic\] Deploy to just one K8s Cluster](#)
- [mum-dr - \[Region Agnostic\] Deploy to just one K8s Cluster](#)
- [mum-dr - \[Region Agnostic\] Deploy to a AWS Region](#)

Regional Spinnakers

- Isolated by design
- Region-wise releases
- Each region owns its destiny, yet aligned



But no Global Deployer



Because one bad push, shouldn't take down the whole 

Rollout & Migration

- Used US 🇺🇸 as a first pilot region
- Created Canary Pipelines first in US 🇺🇸
- Singapore 🇸🇬 followed.
- Standardized Mumbai 🇮🇳 Spinnaker setup and created full end-to-end V3 pipelines



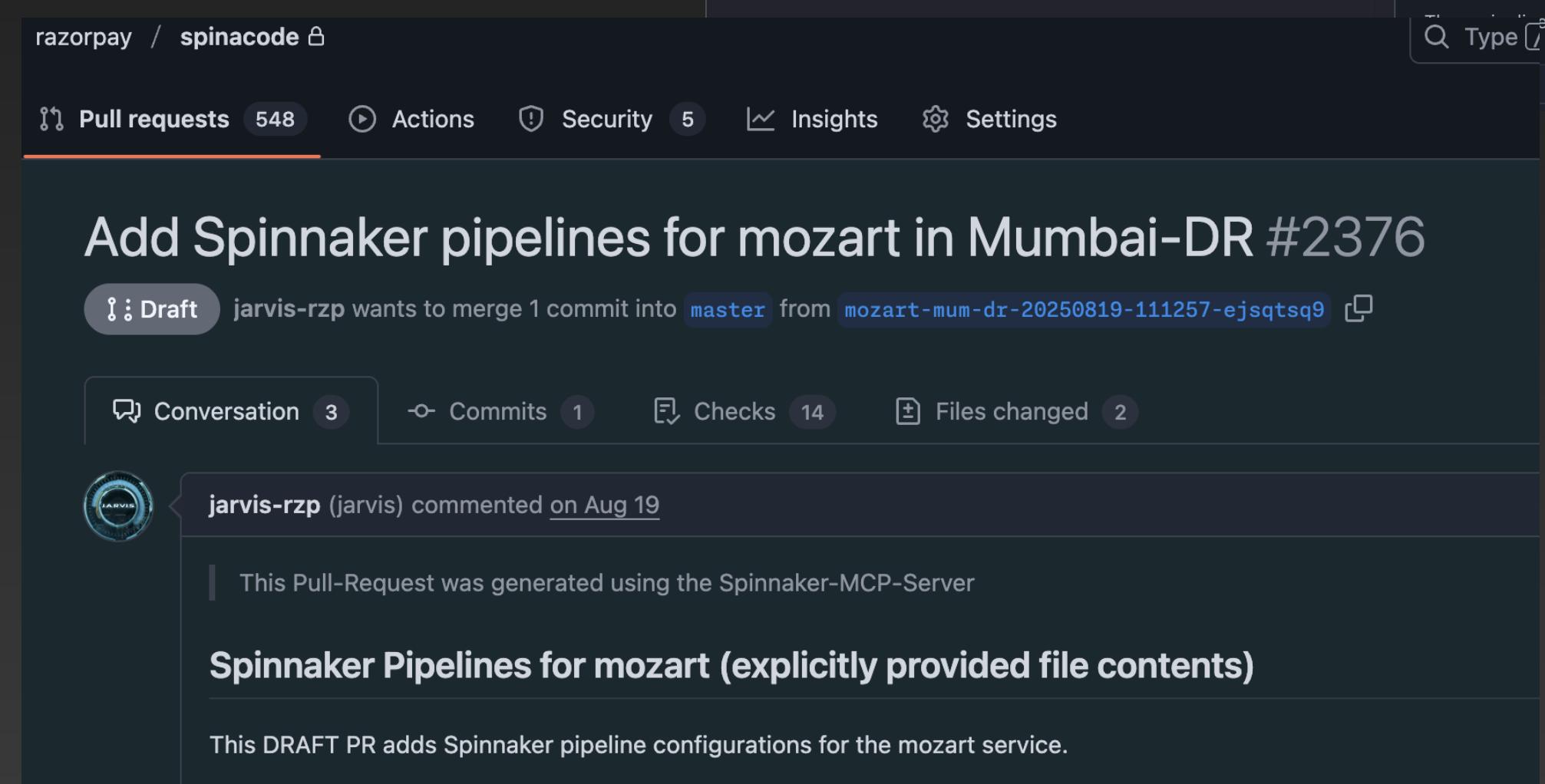
Tools are easy to Build

But adoption, selling, story-telling
are hard

- Every DevOps/Platform person ever

Closer to the Service Teams

- Spinnaker MCP Server
- Self-Serve Migration pipelines empowering teams
- Track adoption



```
mcp.json - v3
{
  "mcpServers": {
    "remote-spinnaker-mcp-server": {
      "name": "remote-spinnaker-mcp-server",
      "type": "streamable-http",
      "url": "https://spinnaker-mcp.razorpay.com",
      "streamable": true
    }
  }
}

{
  "id": "fea5ac0e-668a-4491-8aaa-3c5ea266e324",
  "applications": [
    "prod-mum-dr-payment-service"
  ],
  "keepWaitingPipelines": false,
  "application": "prod-mum-dr-payment-service",
  "exclude": [],
  "id": "d2539764-bebd-40df-b200-2e9520cf4b80",
  "keepWaitingPipelines": false,
  "application": "prod-mum-dr-payment-service",
  "exclude": [],
  "id": "82426dd1-1a5b-4385-874b-669a3afe00b4",
  "keepWaitingPipelines": false
}
```

I'll help you generate a pipeline for payment-service in Mumbai-DR with CDE environment using traefikservice traffic routing.

✓ Ran generate_pipeline

config { "prompt": "Generate pipeline for payment-service in Mumbai-DR with CDE environment using traefikservice" }

Perfect! I've successfully generated the pipeline files for payment-service in Mumbai-DR with CDE environment using traefikservice traffic routing. These files locally in the appropriate directory structure.

canary-config.json (new) +126 -1

deploy-to-a-region.json (new) +29 -1

progressive-canary-deployment-through-traefikservice-to-blue-and-green-clusters.json (new) +71 -1

Summary

10 files have been created in generated-pipelines/v3/payment-service/prod/mum-dr/:

The Impact

- ✓ Standardized multi-region deployments
- ✓ Regional Spinnakers for fault isolation
- ✓ Pipeline-Templates as shared contracts
- ✓ Canary discipline across teams
- ✓ Self-Serve adoption tooling
- ✓ Foundation for Cell Automation



The End... Or the Beginning

Because in DevOps, peace is temporary - But Evolution is permanent

Thank You 🙏

Q & A