puppet

Take control of your “DevOps Dumping Ground”

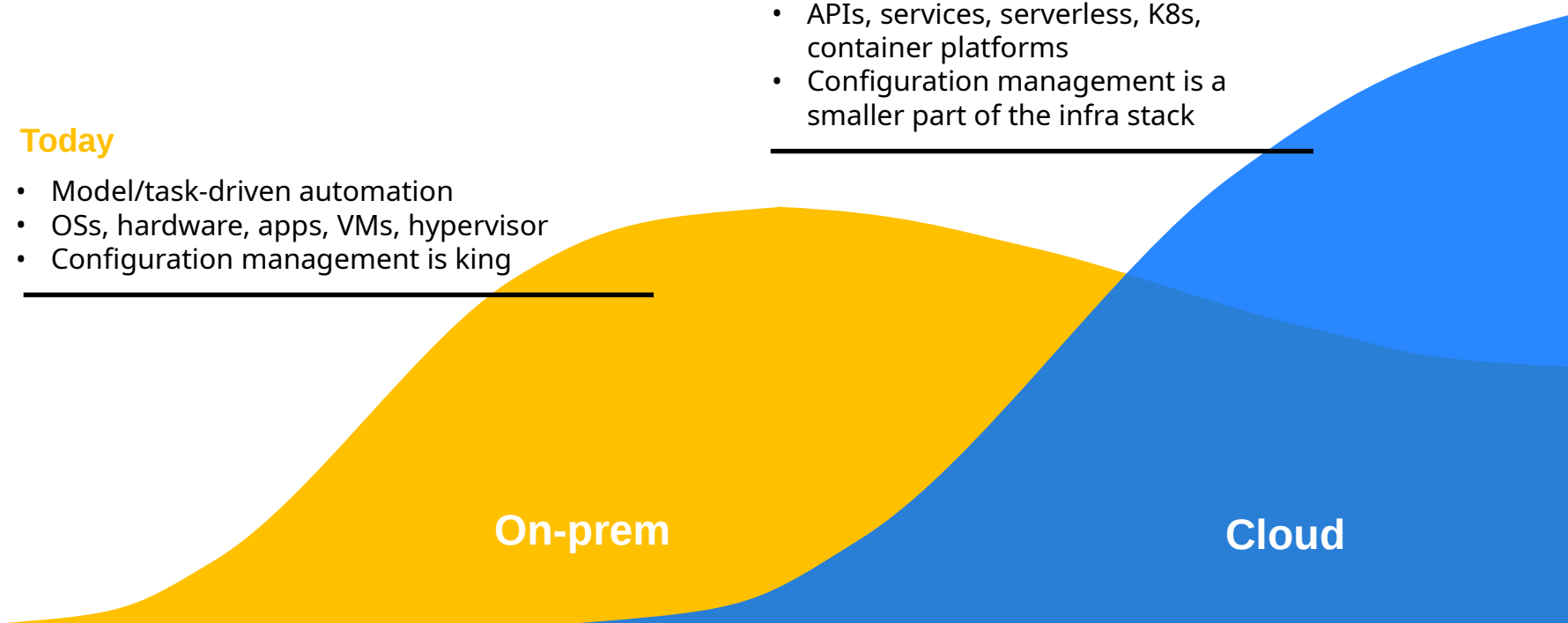
Cloud adoption has shifted the center of gravity for automation

Today

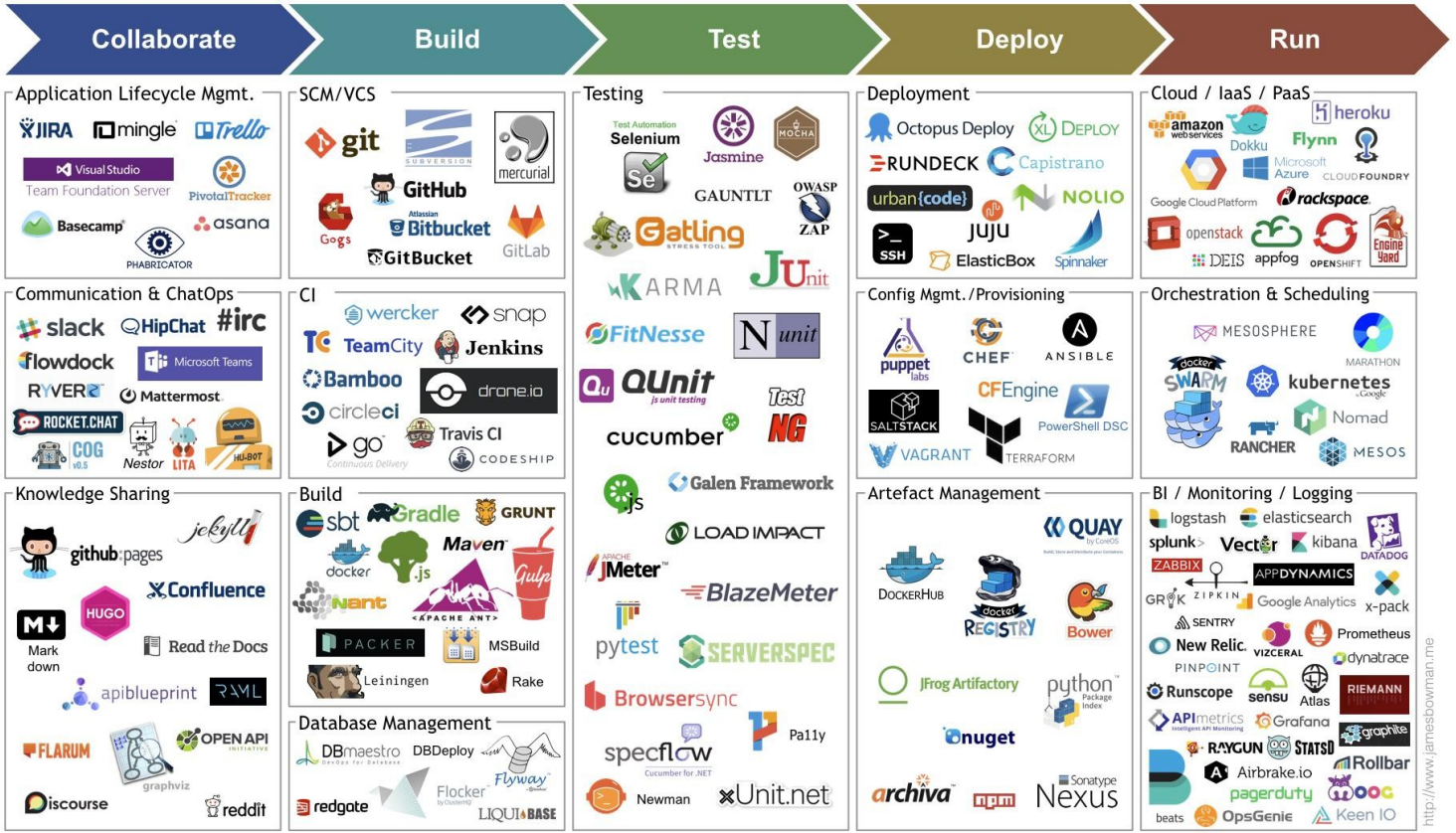
- Model/task-driven automation
- OSs, hardware, apps, VMs, hypervisor
- Configuration management is king

Tomorrow

- Event-driven orchestration
- APIs, services, serverless, K8s, container platforms
- Configuration management is a smaller part of the infra stack



Lesson 1: CD is Hard. Really Hard.



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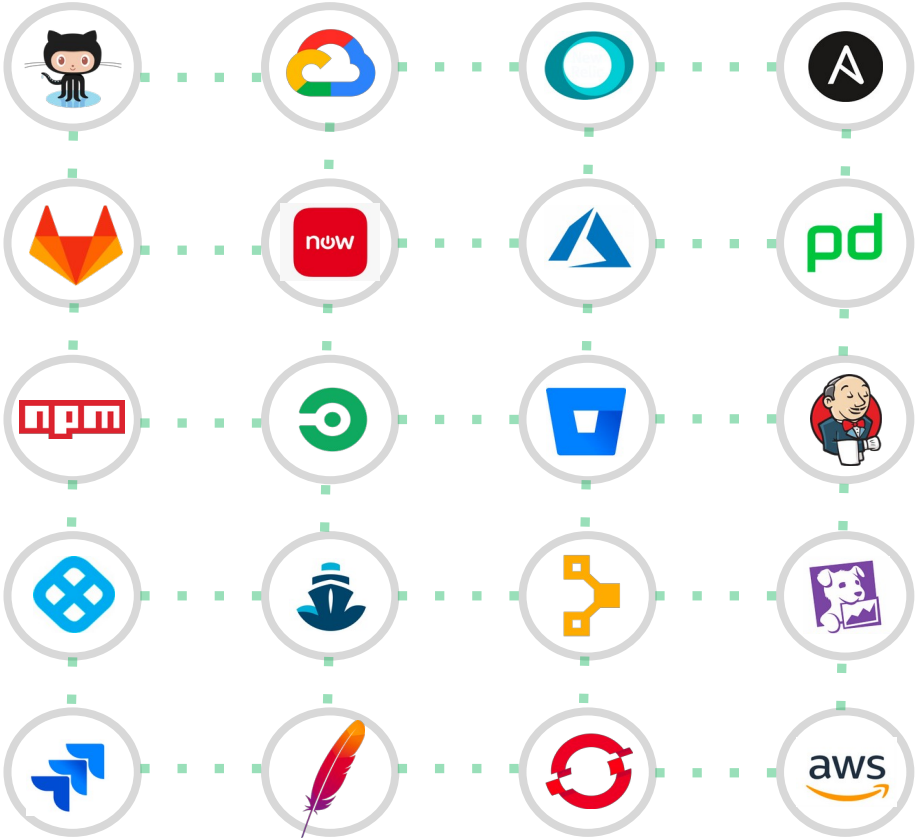
Lesson 2: Events Are Everywhere.



Lesson 3: 'Ware The DevOps Dumping

source: tirefi.re

Listen to events from the services that you already use

- Cloud events
- Incidents
- Tickets
- Git events
- Monitoring

- Triggers
- Secrets
- Workflows
- AI/ML/data

Orchestrate actions across downstream tools and services

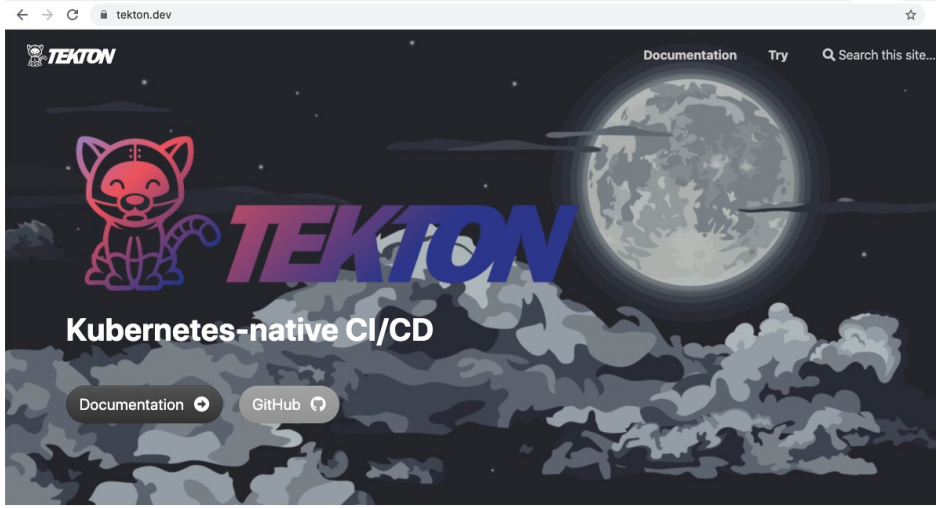
- K8s
- Serverless
- Cloud storage
- CI/CD Tools
- Config Mgmt

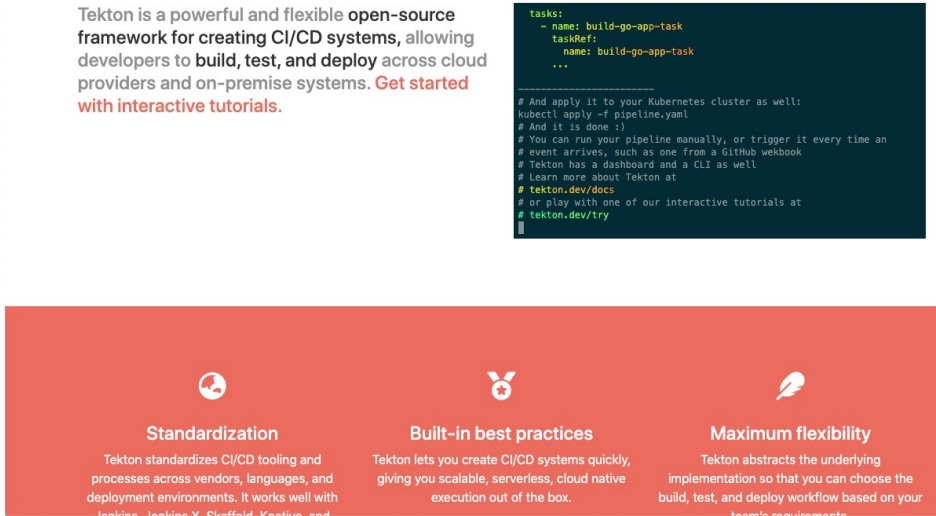
Tekton

- Kubernetes-native CI/CD
- Powerful, open-source workflow engine
- *Tasks* are individual, containerized steps
- *Pipelines* stitch together tasks into a workflow

Tekton pipelines help us build and traverse a graph of the Actions and Queries that make up the workflows for Relay!

tekton.dev



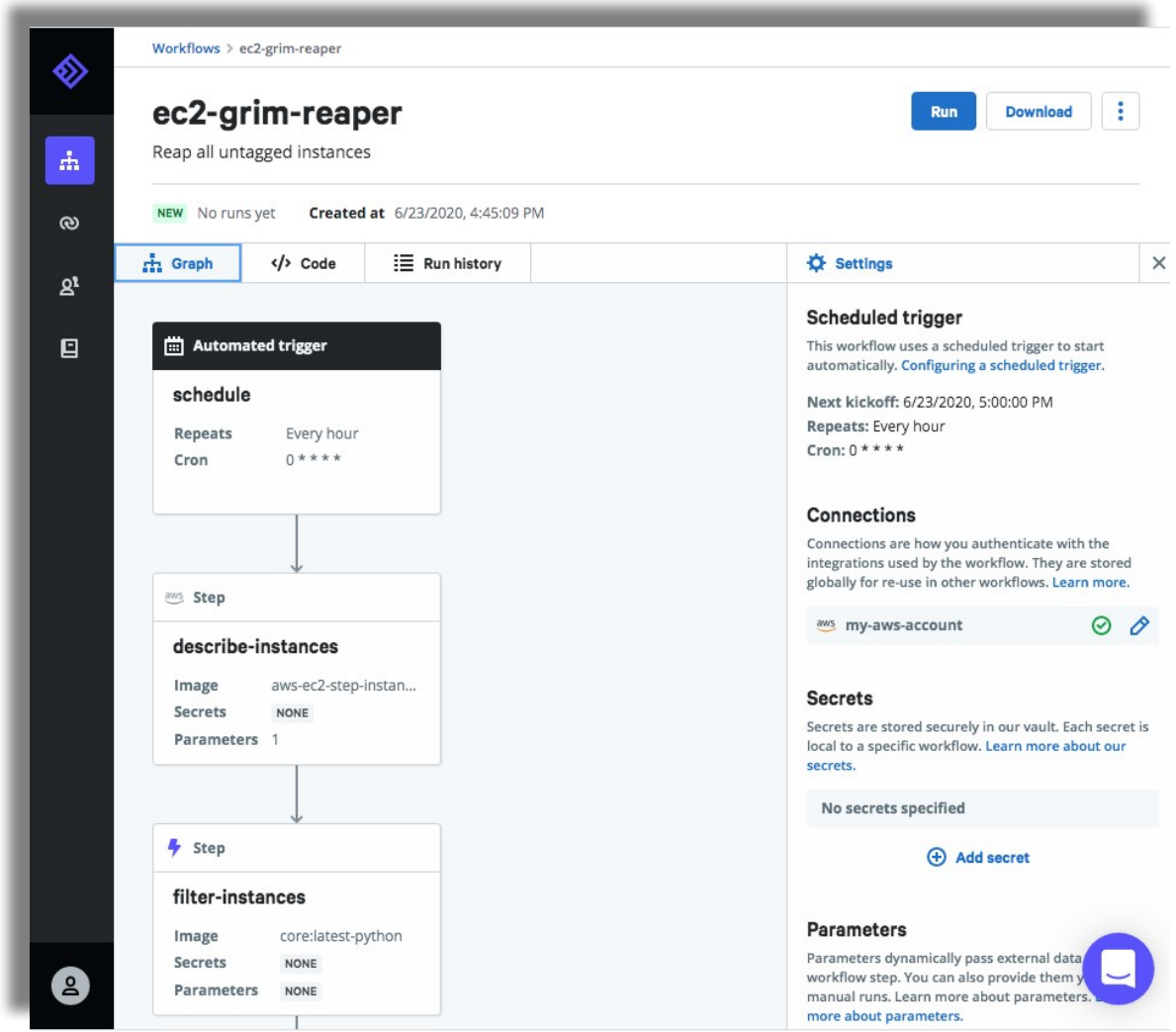


Relay Taxonomy

Trigger steps are based on cloud events, git events, monitoring alerts, tickets, and incidents – like a Splunk alert, a Cloudwatch alert, a GitHub PR being merged, etc.

Action steps are reusable, modular, and composable--things like destroying old EC2 instances, provisioning environments with Terraform, or clearing unattached EBS volumes.

Query steps let you break out of a workflow to wait for an external process like manual approval or a callback from another system.



Workflows-as-~~Code~~-YAML

Parameters prompt the user for data input at runtime to customize the behaviour of the workflow. Values can be supplied interactively, via API, or on CLI.

Secrets are stored securely server-side using Hashicorp Vault, referenced in a workflow using the "!Secret" tag.

Output tags enable data from previous steps to be used by ones that come later.

```yaml
description: Automatically clean up EC2 instances that do not have the correct tags

parameters:
  region:
    description: The AWS region to run in
    default: us-east-1
  terminationDateTag:
    description: The name of the tag to use for determining the termination date
    default: termination_date
  lifetimeTag:
    description: The name of the tag to use for determining the lifetime
    default: lifetime
  dryRun:
    description: True if this workflow should only print the resources it would delete
    default: 'true'

steps:
- name: describe-instances
  image: projectnebula/ec2-describe-instances
  spec:
    aws: &aws
      region: !Parameter region
      accessKeyID: !Secret aws.accessKeyID
      secretAccessKey: !Secret aws.secretAccessKey
- name: filter-instances
  image: projectnebula/core:latest-python
  spec:
    terminationDateTag: !Parameter terminationDateTag
    lifetimeTag: !Parameter lifetimeTag
    instances: !Output [from: describe-instances, name: instances]
  inputFile: workflow/filter-instances.py
- name: terminate-instances
  when:
  - !Fn.equals [!Parameter dryRun, 'false']
  image: projectnebula/ec2-terminate-instances
  spec:
    aws: *aws
    instanceIDs: !Output [from: filter-instances, name: instanceIDs]
```

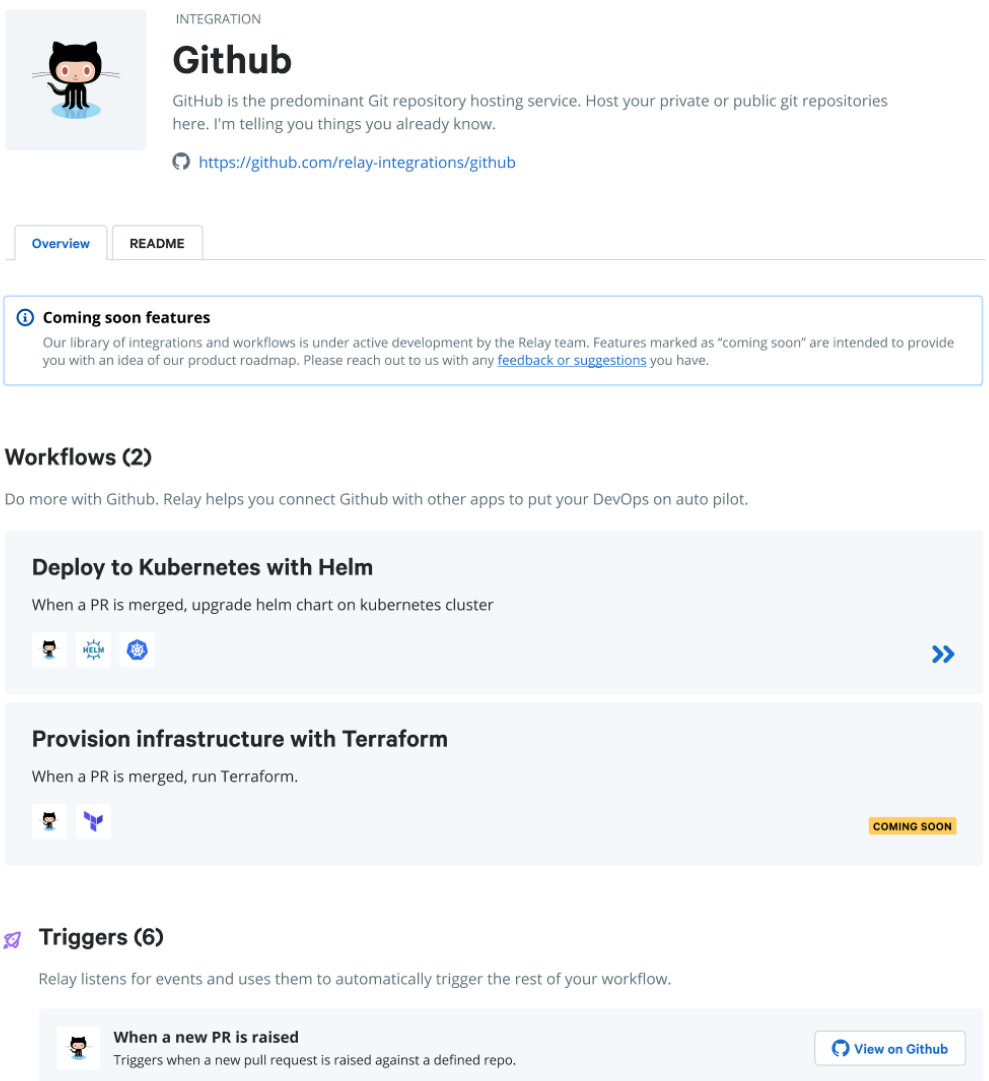
Open-source Integration Ecosystem

A library of useful integrations that cover the most common use cases and external services with sample workflows and well-documented steps that let you remix and combine however you want.

Low-friction interoperability if you have existing containers that you want to use in Relay workflows, they can drop right in alongside purpose-built integrations.

Easy step authoring if you've built something that other people might find useful or want to contribute to existing steps

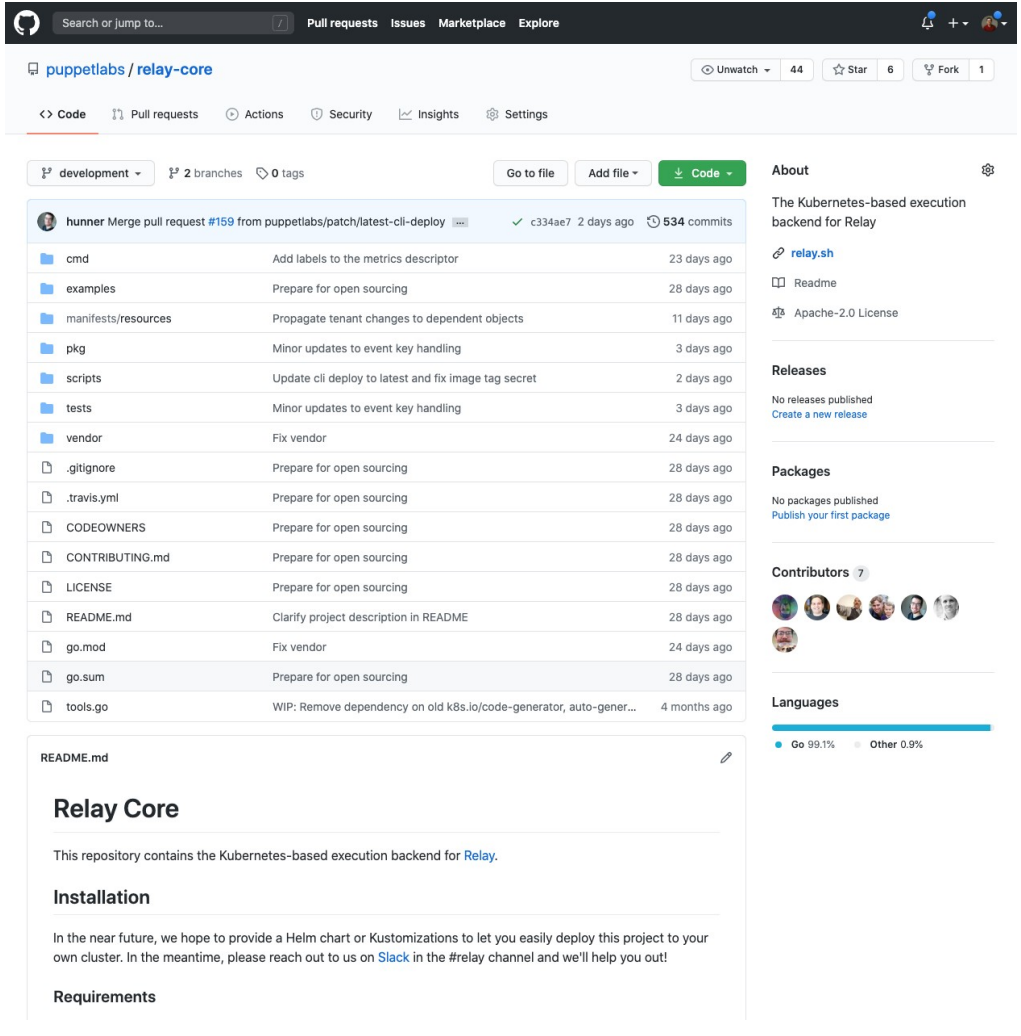
github.com/relay-integrations



DEMO

puppetlabs/relay-core

Kubernetes-based execution backend for running workflows on top of Tekton.



Available now!
Sign up at https://relay.sh/ !
Join us in Slack for Q&A: #relay channel

Check out our Github Repos:
Integrations: **github.com/relay-integrations**
Relay core: **github.com/puppetlabs/relay-core**

Thank you!

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