Kubernetes Community Days
MUNICH 2024

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Speaker: Koray Oksay Batuhan Apaydın
Company: Kubermatic Trendyol

No More YAML Soup: Taking Control with Dagger's Pipeline-as-Code Philosophy

No More YAML Soup: Taking Control with Dagger's Pipeline-as-Code Philosophy

Batuhan Apaydın

Platform Engineer at trendyol and Software Supply Chain Security Enthusiastic 🧐

Best Sigstore Evangelist Award 2022 🏆

Kubestronaut 🏆

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Docker Captain

KCD Istanbul Organizer 🚀

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Koray Oksay

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ONE DOES NOT SIMPLY HAVE GREEN PIPELINES
ON THE 1ST ATTEMPT
imgflip.com


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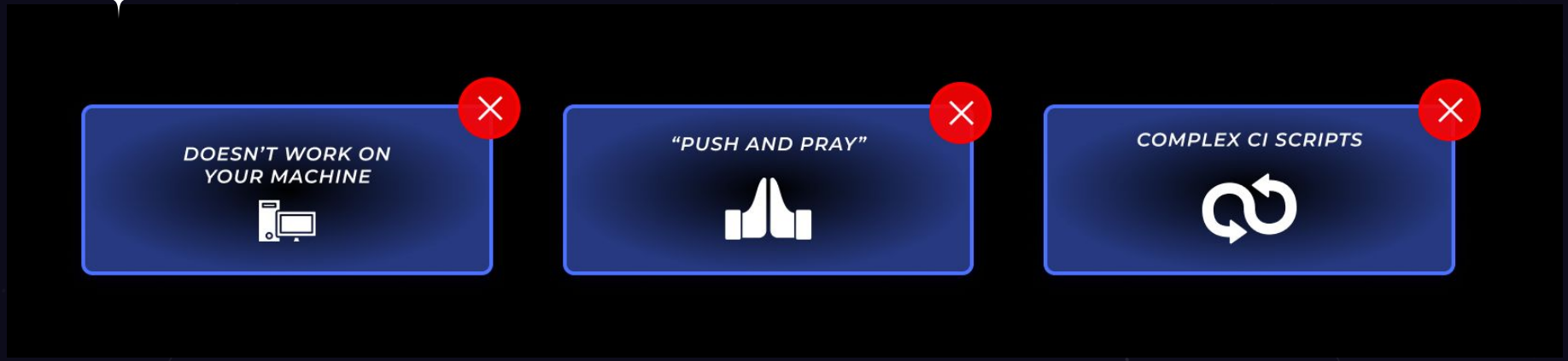
Current CI/CD Problems



Solomon Hykes
@solomonstre

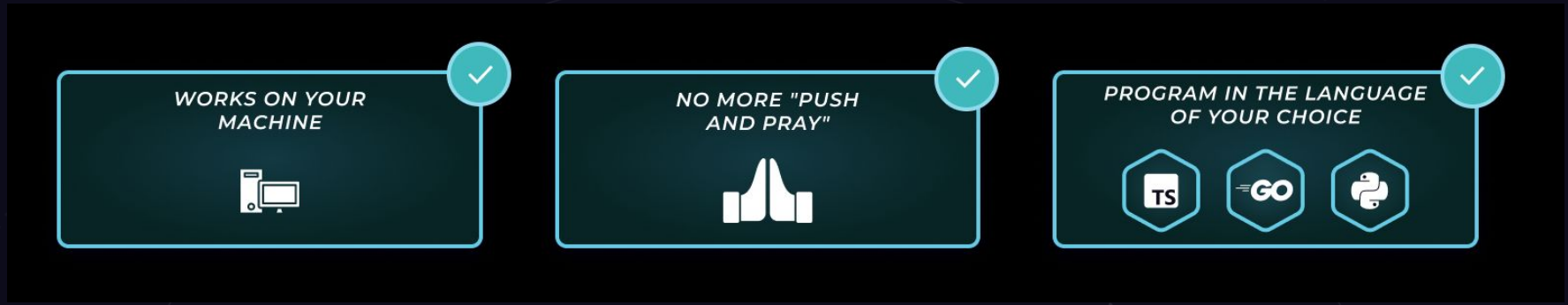
Your CI/CD pipeline should start on the developer's laptop. If it only starts after a git push, you're slowing your team down and throwing money down the drain.

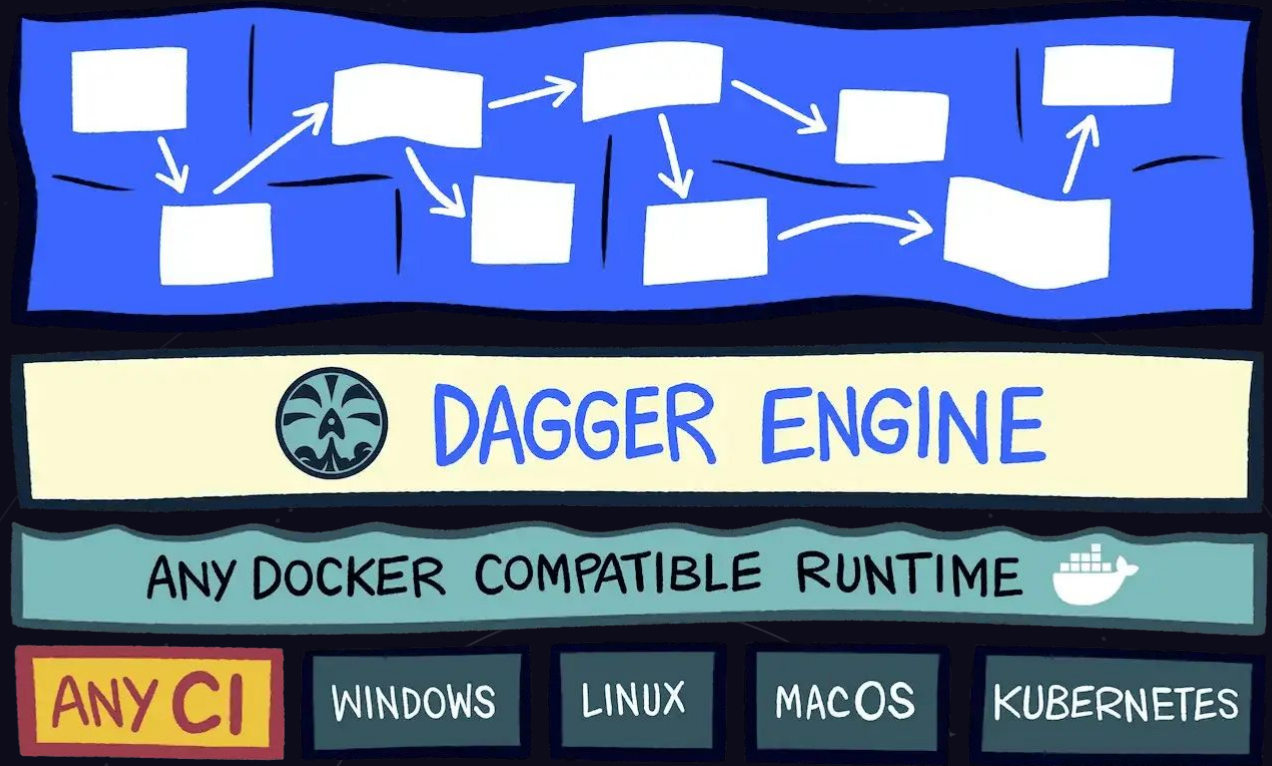
CI/CD "shift left" is the lowest-hanging fruit for engineering efficiency in teams of 20+ engineers IMO.

9:29 PM · Apr 20, 2023 · **388.9K** Views

83 225 1.3K 486

CI/CD Solutions with Dagger





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The Dagger Platform

Integrations (https://dagger.io/integrations)

GitLabCI

Documentation: Use less YAML and gain more control by calling Dagger functions in GitLab CI/CD

Tekton

Documentation: Using Dagger with Tekton CI

Argo Workflows

Documentation: Code sample demonstrates how to integrate Dagger with Argo Workflows

Azure Pipelines

Documentation: Unlock local execution and the power of TypeScript, Python, or Go

Kubernetes

Daggerverse modules: Dagger Functions that range from "dev" to "deploy" on Kubernetes

GitHub Actions

Documentation: Call Dagger Functions from Actions workflows using the dagger-for-github action

Helm

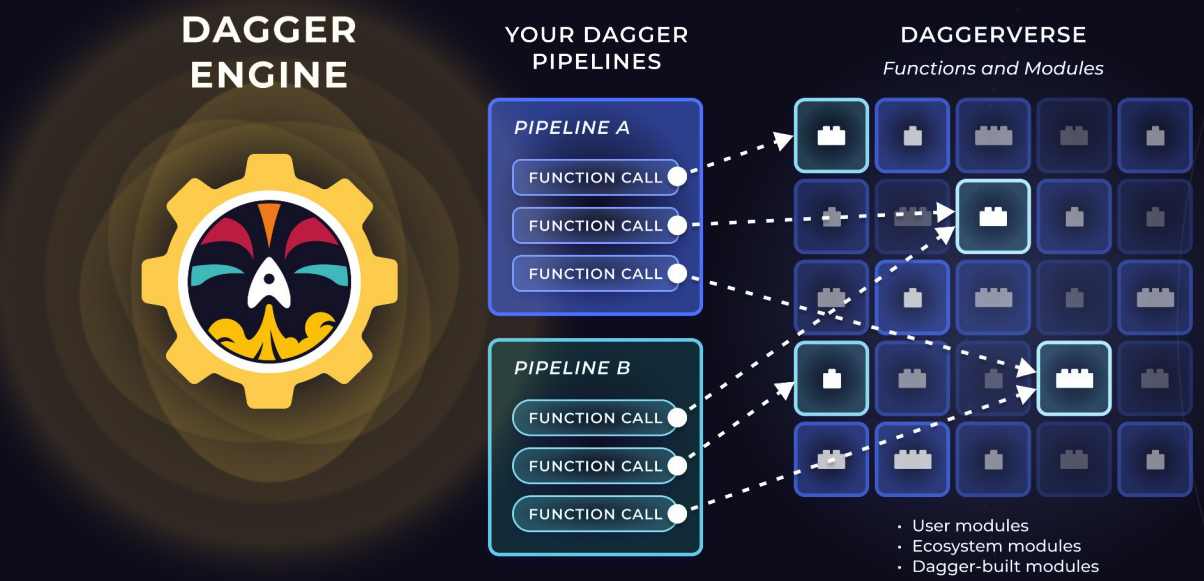
Daggerverse Module: Use Helm Charts help define, install, and upgrade complex Kubernetes applications

Amazon EKS

Daggerverse module: Leverage managed Kubernetes in AWS to run your Dagger Pipelines

Google Cloud

Daggerverse modules: Running Dagger with GCP and GoogleCloud Run

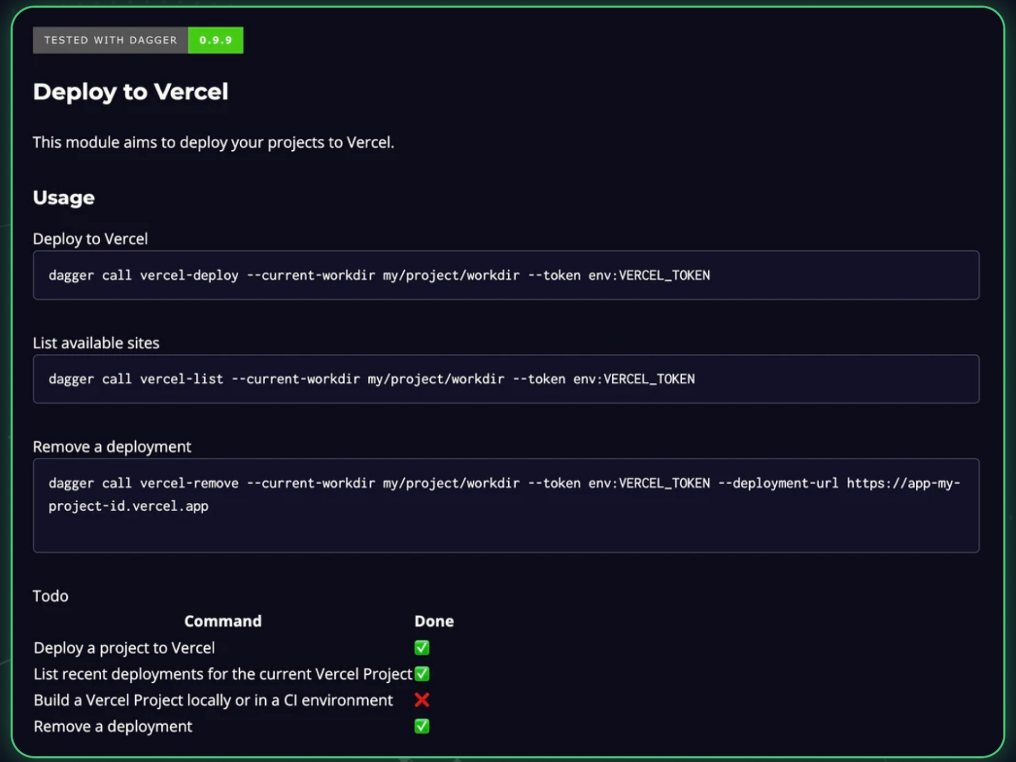


No more YAML soup

Replace complex CI scripts with a programmable platform

Standardized Dagger Functions

Pipelines just chain Dagger Functions - built by your team or by the community



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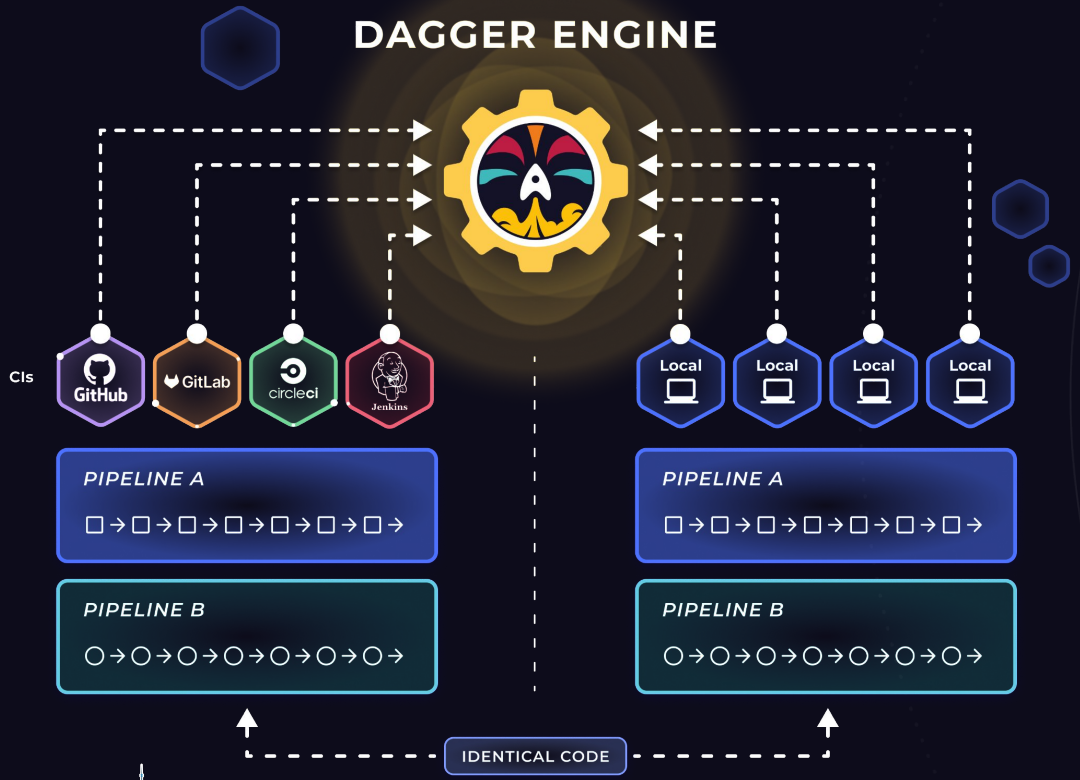

Eliminate Push And Pray

If it works on your laptop
it'll work in CI

Cached
For Speed

Avoid unnecessary rebuilds and test reruns when nothing has changed

```
func (g *Golang) Base(version string) *Golang {
    mod := dag.CacheVolume("gomodcache")
    build := dag.CacheVolume("gobuildcache")
    image := fmt.Sprintf("golang:%s", version)
    c := dag.Container().
        From(image).
        WithMountedCache("/go/pkg/mod", mod).
        WithMountedCache("/root/.cache/go-build", build)
    g.Ctr = c
    return g
}
```

```typescript
import { dag, Container, Directory, object, func } from "@dagger.io/dagger"

@object()
// eslint-disable-next-line @typescript-eslint/no-unused-vars
class Ci {

  /**
   * example usage: "dagger call ci --source ."
   */
  @func()
  async ci(source: Directory): Promise<string> {
    // Use Golang module to configure project
    var goProject = dag.golang().withProject(source)

    // Run Go tests using Golang module
    await goProject.test()

    // Get container with built binaries using Golang module
    var image = await goProject.buildContainer()

    // Push image to a registry using core Dagger API
    var ref = await image.publish("ttl.sh/demoapp:1h")

    // Scan image for vulnerabilities using Trivy module
    return dag.trivy().scanContainer(dag.container().from(ref))
  }
}
```

Multi-Language

Pipelines in the same language as your app. Each Dagger Function is just an API call away.

Demo Time

https://github.com/deveoper-guy/kcd-munich-2024-demo

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Thank you!

Questions?