

Python For Good

CDK for Kubernetes in Python

Pahud Hsieh

Developer Advocate, Amazon Web Services

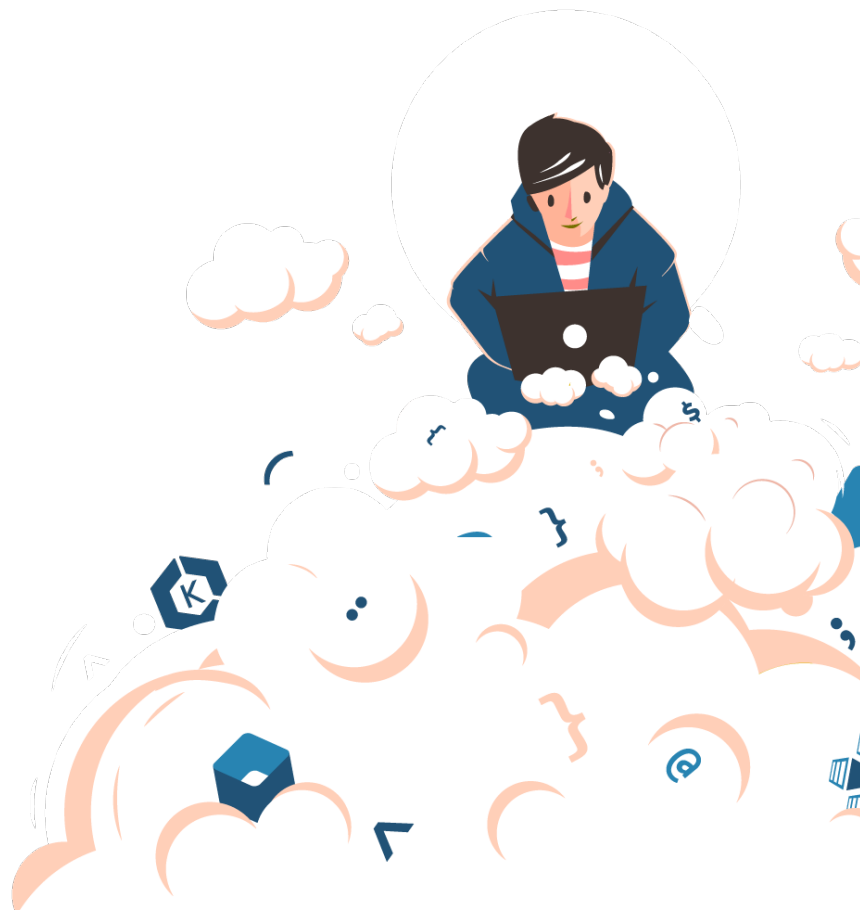
Pahud Hsieh(谢洪恩)

- AWS Developer Advocate
- 2016加入AWS
- 坐标台北
- 专注开发者工具与开发者体验
- 擅长Serverless与Container
- YouTube channel([pahud.dev](https://www.youtube.com/pahud.dev))



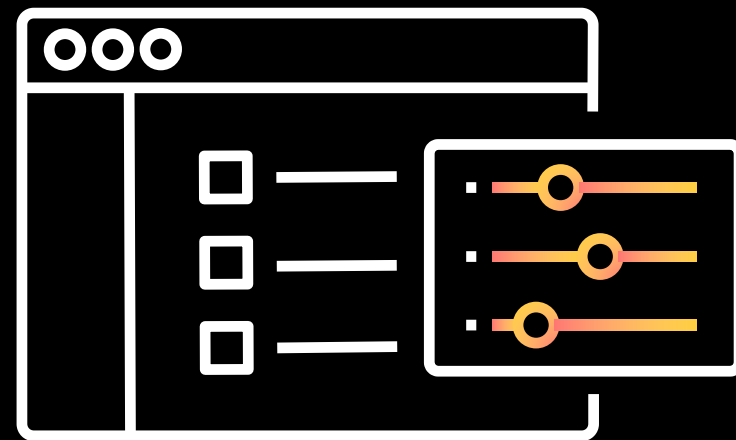
Agenda

- YAML到底怎么了
- cdk8s解决了什么问题
- Construct
- cdk8s+
- Show me the Code in Python



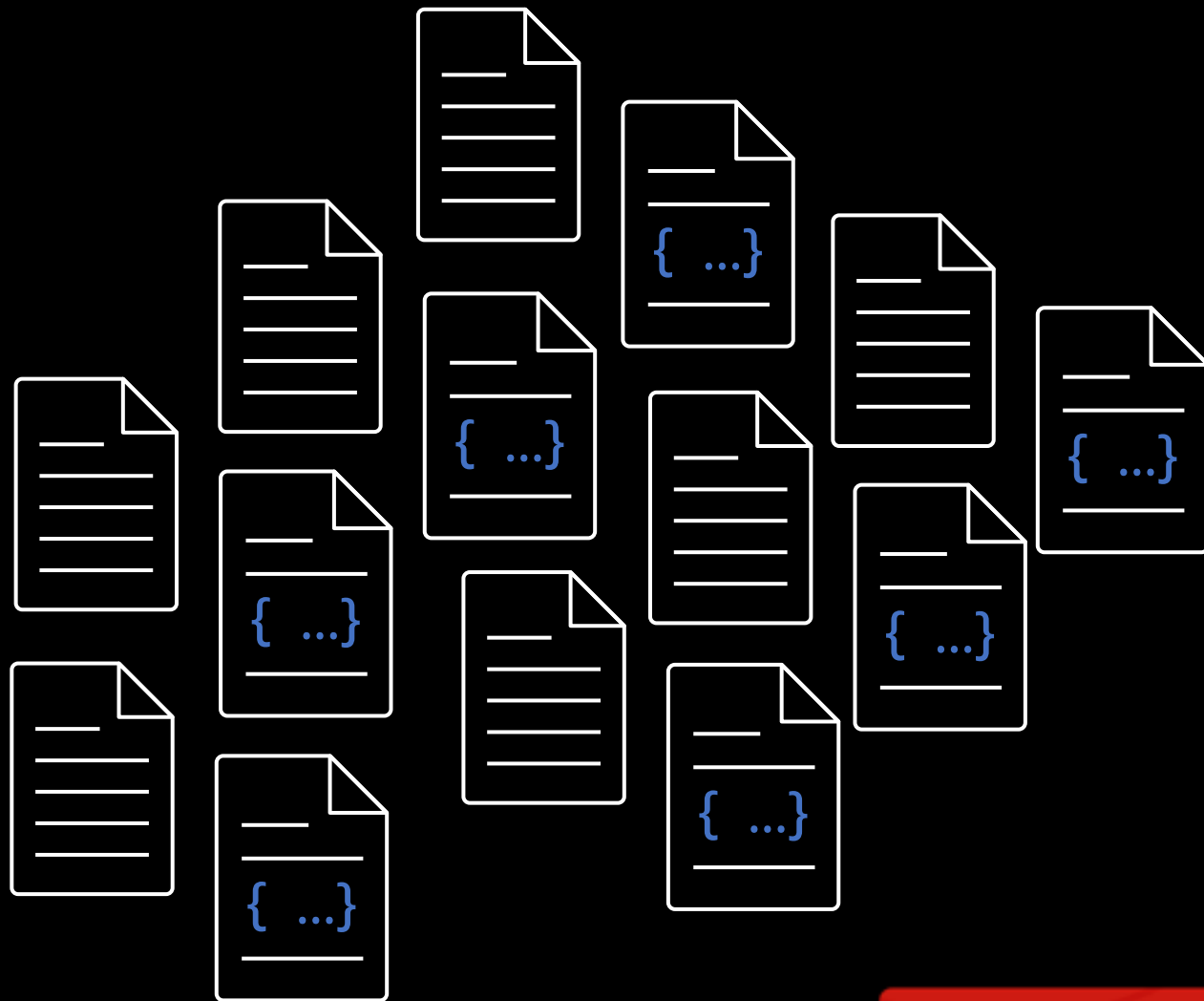
YAML优点

- 容易理解
- 静态
- 宣告式语法为主
- 广泛被使用



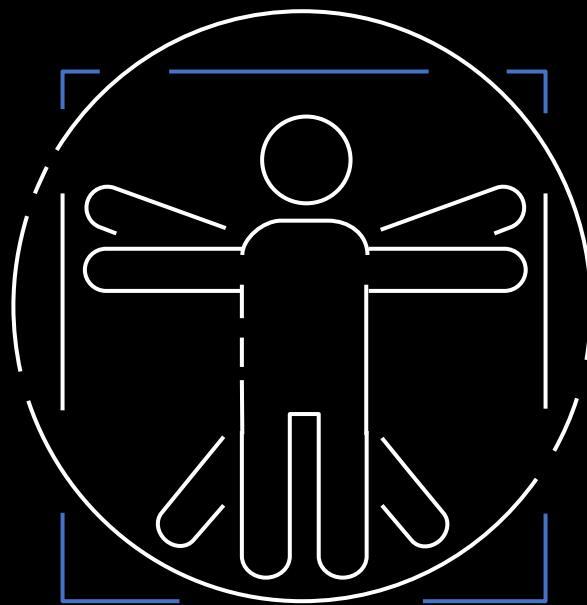
随着项目规模成长

- 无法展现逻辑
- 松耦合
- 难以验证
- 无资料型别
- 撰写体验不好
- 无法抽象化
- 无法高度重用
- 大量的复制贴上



使用通用语言取代的优势

- 完善的工具生态
- 容易建模
- 清楚描述逻辑
- 分发、共享与重用
- 协同作业
- 你已经非常熟悉了的语言



“cdk8s用你已经很熟悉的语言做到宣告式YAML的功能，
而不需要直接跟YAML打交道”

Cloud Development Kit for Kubernetes

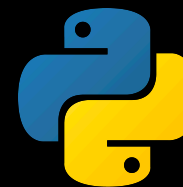
cdk8s is an open-source software development framework for defining Kubernetes applications and reusable abstractions using familiar programming languages and rich object-oriented APIs. **cdk8s** apps synthesize into standard Kubernetes manifests which can be applied to any Kubernetes cluster.

语言支持

使用你熟悉的语言定义你的K8s应用

现在：Python, Java, TypeScript, JavaScript

未来：Go, .NET, and more!



用代码库来分发与共享

透过代码库的方式来分发与共享最佳设计范式



整合代码发布流程

使用cdk8s结合GitOps之后，你可以用代码描述你的应用，并且透过CI/CD管道生成assets，让GitOps工具帮你部署到Kubernetes集群





cdk8s application



Chart(s)



Construct



deploy



pod



Construct



ing



deploy



svc



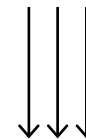
sts



YAML



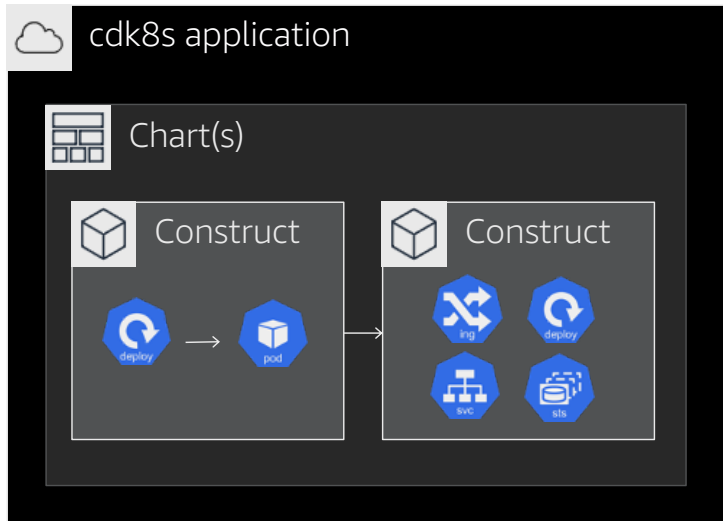
kubectl apply or
GitOps



Resources



工作流程图



“source”

cdk8s CLI



“compiler”

YAML



“assembly language”

K8s Cluster



“processor”

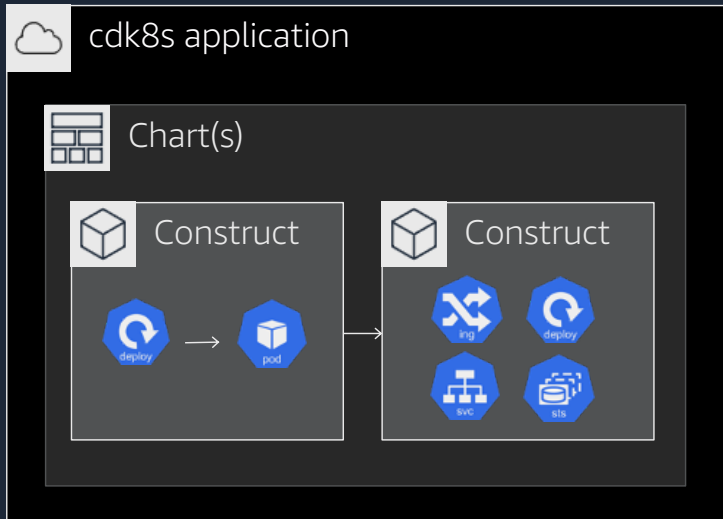
executes

synthesize

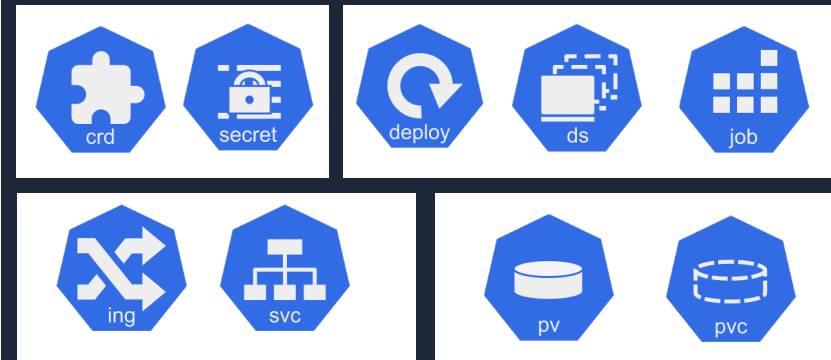
deploy

主要部件

Core Framework



Cdk8s+



cdk8s cli

```
~/Projects/hello-cdk --zsh -zsh -- 80x24
~/Projects/hello-cdk
> cdk init --language typescript sample-app
Applying project template sample-app for typescript
Initializing a new git repository...
Executing npm install...
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN hello-cdk@0.1.0 No repository field.
npm WARN hello-cdk@0.1.0 No license field.

# Useful commands
* `npm run build`  compile typescript to js
* `npm run watch` watch for changes and compile
* `cdk deploy`    deploy this stack to your default AWS account/region
* `cdk diff`     compare deployed stack with current state
* `cdk synth`    emits the synthesized CloudFormation template

~/Projects/hello-cdk master* 33s
>
```

Show me the Code!!



2020年11月11日，
cdk8s正式进入CNCf
沙箱项目(Sandbox Projects)



Cloud
Development
Kit for
Kubernetes
(cdk8s)

<https://www.cncf.io/sandbox-projects/>

巅峰科技 重塑未来

亚马逊 re:Invent 2020即将启幕
#community#

11月30日—12月18日

有史以来首次**免费在线**会议



即刻扫码注册

会议亮点

动手实践

参与各种动手实践来扩展您的 AWS 技能

与亚马逊 Builders 深入探讨

了解 AWS 如何运行其软件开发团队并解决技术难题

与社区负责人洞见未来科技

了解 AWS 社区负责人的相关主题和趋势主题

与 AWS 专家实时沟通

了解如何开发、部署和操作可扩展、安全和可维护的应用程序

精选内容，助力开发者技能值 up!

计算、存储、AI/ML、IoT、容器、分析、数据库、前端 Web 移动开发、无服务器等

THANK YOU



@pahudnet