



AWS re:Invent

OPN205

Contributing to the AWS Construct Library

Lee Packham

Senior Developer Advocate
Amazon Web Services

Rico Huijbers

Senior Software Development Engineer
Amazon Web Services

Agenda

About the AWS Cloud Development Kit

CDK and open source

DEMO: Writing a new construct

Contributing via Pull Request

The AWS Cloud Development Kit



```
const vpc = new ec2.Vpc(this, 'vpc', { maxAzs: 2 });
const cluster = new ecs.Cluster(this, 'cluster', { vpc: vpc });
const service = new patterns.NetworkLoadBalancedFargateService(this, 'sample-app', {
  cluster,
  taskImageOptions: {
    image: ecs.ContainerImage.fromAsset('ping'),
  },
  domain
});
// Setup AutoScaling policy
const scaling = service.service.autoScaleTask
scaling.scaleOnCpuUtilization('CpuScaling',
  targetUtilizationPercent: 50,
  scaleInCooldown: Duration.seconds(60),
  scaleOutCooldown: Duration.seconds(60)
});
}
```

domainName

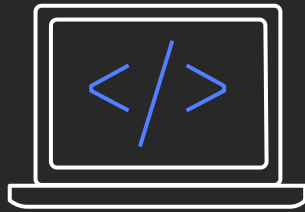
domainZone

(property) patterns.NetworkLoadBalancedServiceBaseProps.domainName?: string | undefined

The domain name for the service, e.g. "api.example.com."

@default

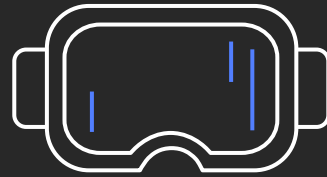
- No domain name.



Familiar

Your language

Just classes and methods



Tool Support

AutoComplete

Inline documentation



Abstraction

Sane defaults

Reusable classes

AWS CDK ❤️ open source



aws/aws-cdk

Some statistics



19 months

since public beta
(May 2018)

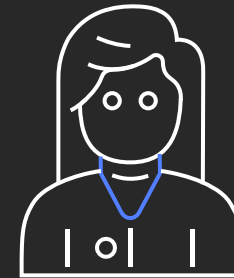


1,450 issues

created by

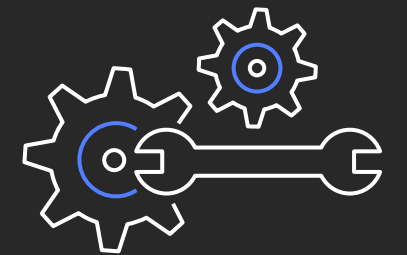
687

users



6 engineers

on the core team



494 pull requests

submitted by

220

unique contributors

almost **25%!**

Top contributors

76 pull requests



@jogold

Jonathan Goldwasser
Goldwasser Exchange

56 pull requests



@nmussy

Jimmy Gaussen
Logic'Gram

21 pull requests



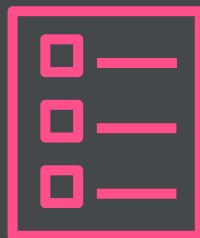
@hoegertn

Thorsten Höger
Taimos

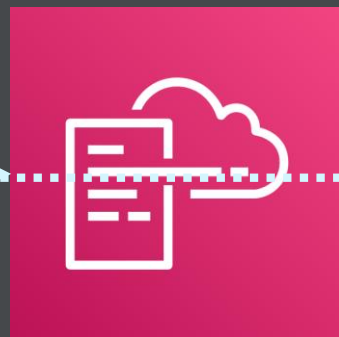
How it works



Developer



AWS CloudFormation



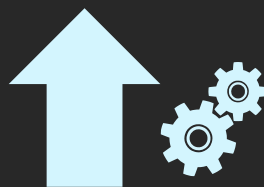
AWS Cloud



AWS CloudFormation
resources



AWS CloudFormation
template language



Resources:

MyBucket:

Type: `AWS::S3::Bucket`

MyUser:

Type: `AWS::IAM::User`

MyUserPolicy:

Type: `AWS::IAM::Policy`

Properties:

PolicyDocument:

Statement:

- Action:

- `s3:GetObject*`

- `s3:GetBucket*`

- `s3:List*`

Effect: `Allow`

Resource:

- `Fn::GetAtt`: [`MyBucket`, `Arn`]

- `Fn::Sub`: `"${MyBucket.Arn}/*"`

Version: `"2012-10-17"`

PolicyName: `MyUserPolicy`

Users:

- `Ref`: `MyUser`

AWS CloudFormation
resources

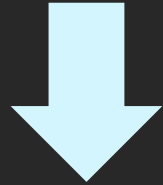
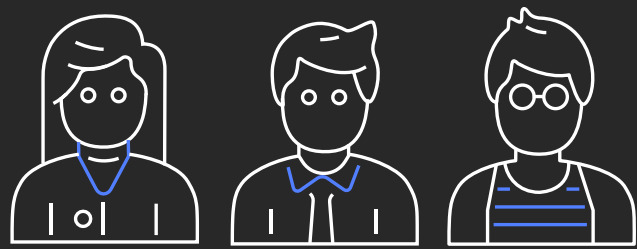


"L1"

AWS CloudFormation
template language



```
const bucket = new CfnBucket(this, 'MyBucket');
const user = new CfnUser(this, 'MyUser');
new CfnPolicy(this, 'MyUserPolicy', {
  policyName: 'MyUserPolicy',
  policyDocument: new PolicyDocument({
    statements: [new PolicyStatement({
      actions: [
        's3:GetObject*',
        's3:GetBucket*',
        's3:List*'],
      resources: [
        bucket.bucketArn,
        `${bucket.bucketArn}/*`]
    })]
  }),
  users: [user.userName],
});
```



AWS Construct Library



"L2"



AWS CloudFormation
resources



"L1"

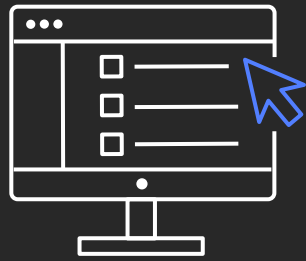


AWS CloudFormation
template language



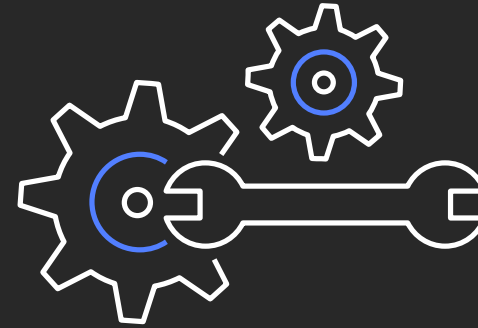
```
const bucket = new s3.Bucket(this, 'MyBucket');  
const user = new iam.User(this, 'MyUser');  
  
bucket.grantRead(user);
```

All contributions are welcome



Bug reports

Feature requests



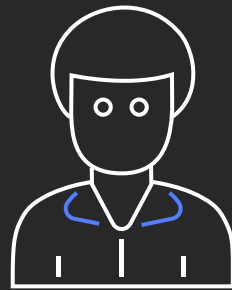
Bug fixes

New constructs

Documentation

A practical example: Amazon DynamoDB Accelerator (DAX)

Takeaways



You can help!

Feature requests/bug reports

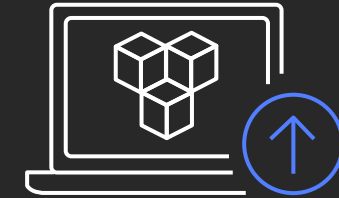
Even pull requests



Think of the consumer

Sane defaults where possible

Document everything

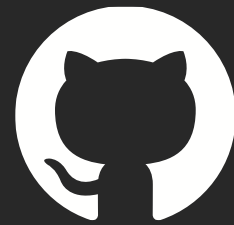


Submit early

Let's discuss designs

Linters are there to help

Review comments
are not personal



aws/aws-cdk/issues

good first issue

CONTRIBUTING.md

Related breakouts

DOP402 Deep dive into AWS Cloud Development Kit

WIN310 Infrastructure as .NET with the AWS CDK

CON333 Successful deployment of CI/CD using containers and AWS CDK

CON420 Infrastructure as code for containers

DOP306 Building a scalable serverless application with AWS CDK

DOP311 Generating dynamic deployment pipelines with AWS CDK

DOP336 Serverless app infrastructure with the AWS Cloud Development Kit



CDK Happy Hour

Wed 5–7 PM

Re:Match Bar

@Linq

Thank you!

Lee Packham

leepac@amazon.com

Rico Huijbers

huijbers@amazon.com



Please complete the session survey in the mobile app.