

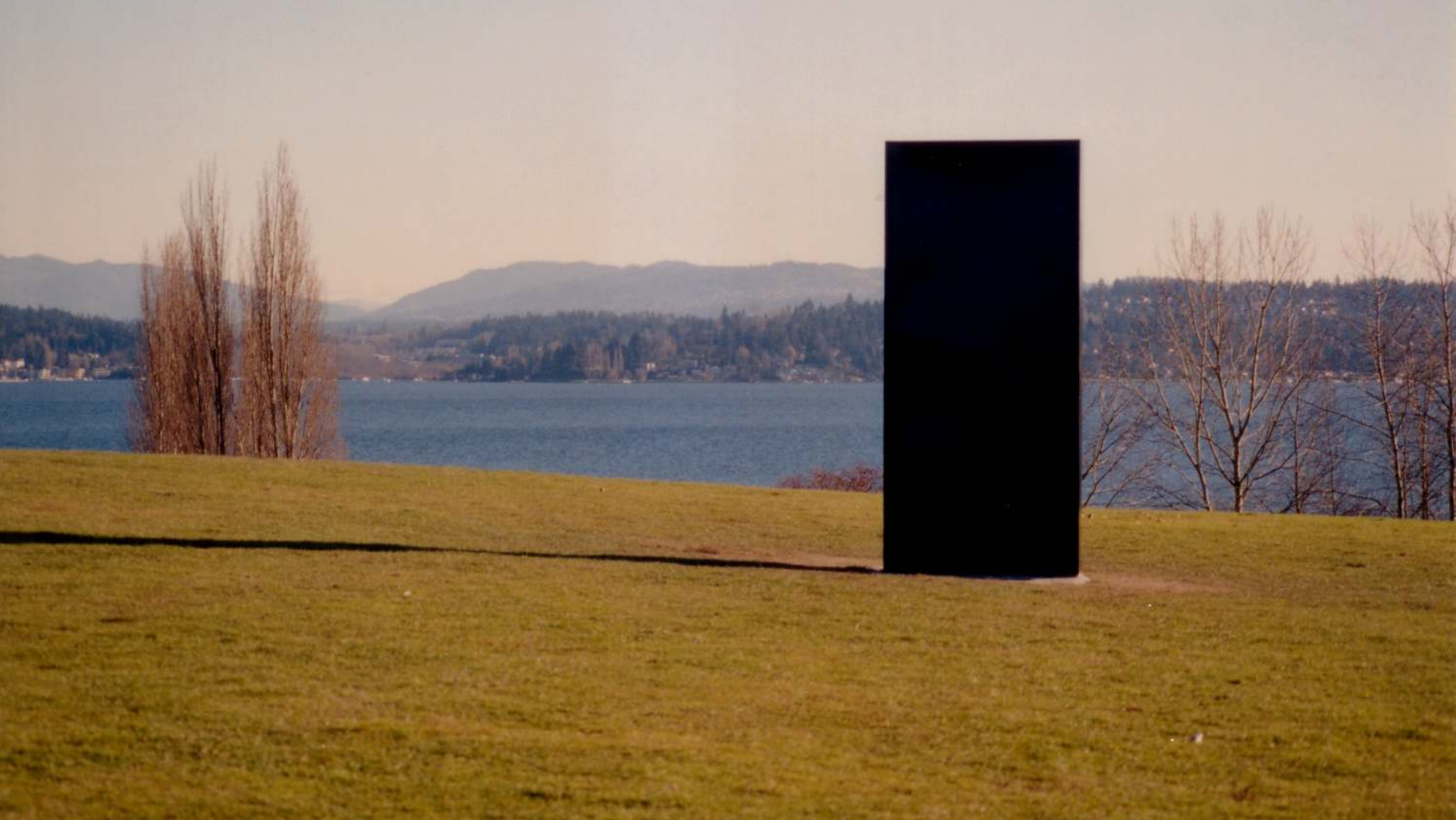


# DevOps with Amazon Web Services

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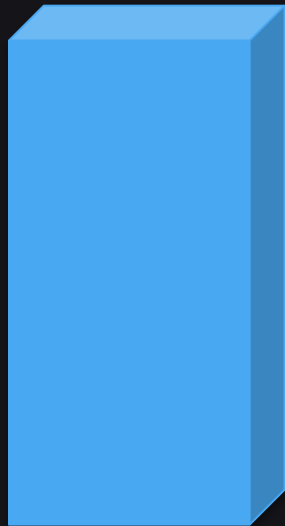
[@julsimon](#)



# Monolith development lifecycle



**developers**



**app**

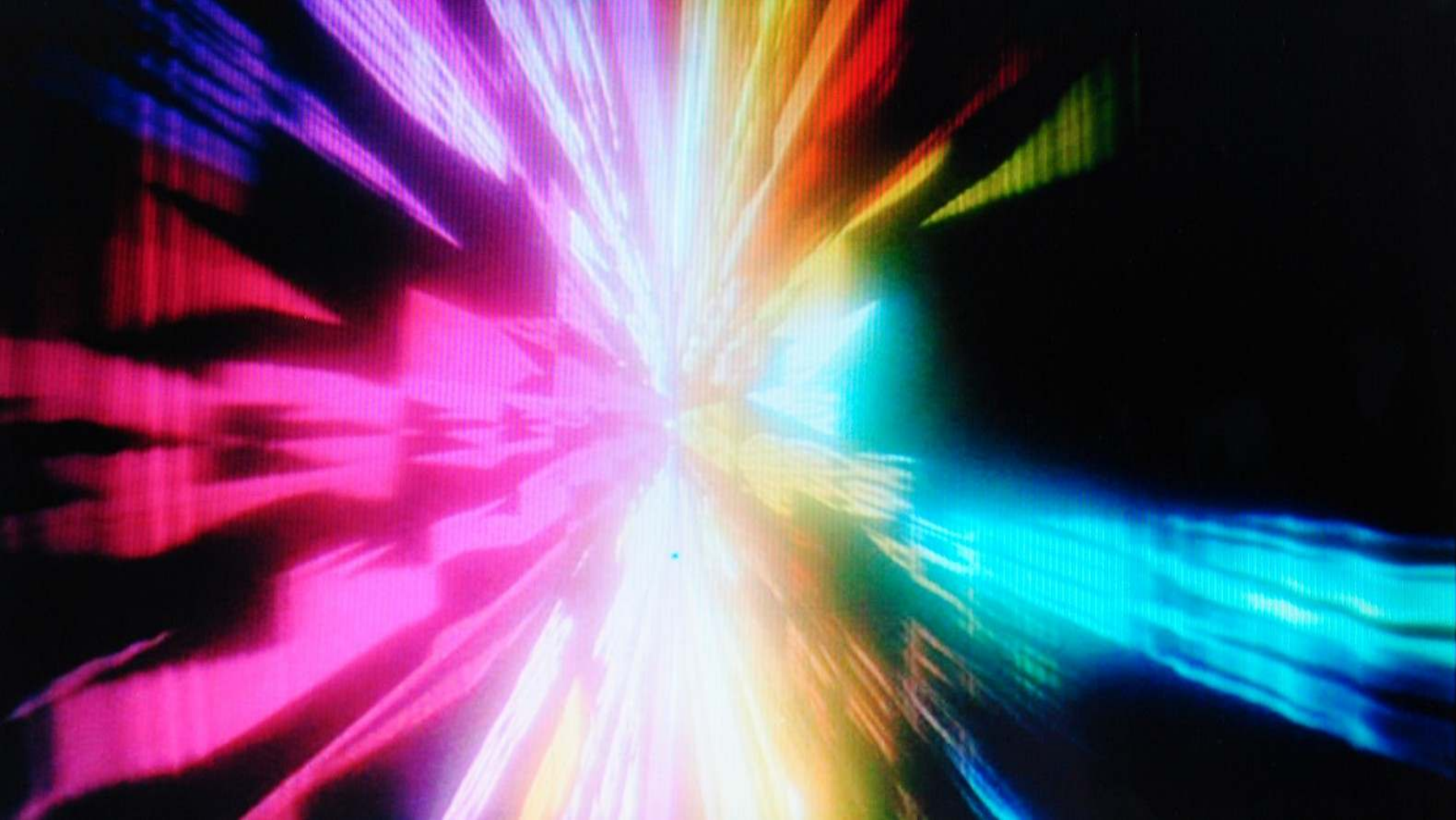


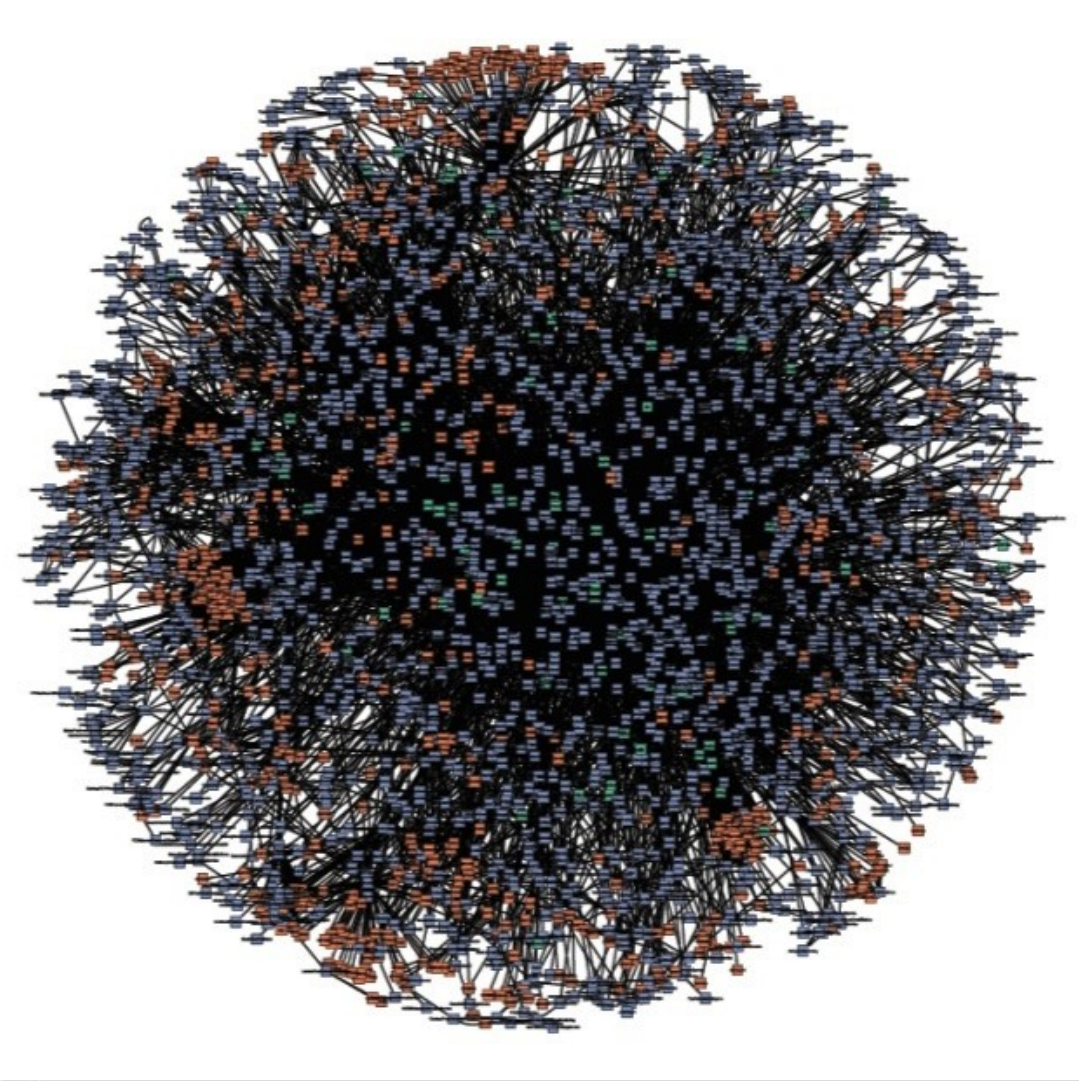
**delivery pipeline**



THE IRON







Service-Oriented  
Architecture (SOA)

Single-purpose

Connected through APIs

Highly decoupled

“Microservices”





Two-pizza teams

Full ownership

Full accountability

Aligned incentives

“DevOps”

# Missing tools



delivery pipeline





Self-service

Technology-agnostic

Encourage best practices

Single-purpose services



Deployment service

No downtime

Health tracking

Versioned artifacts

Rollbacks



# Pipeline

S

Continuous delivery

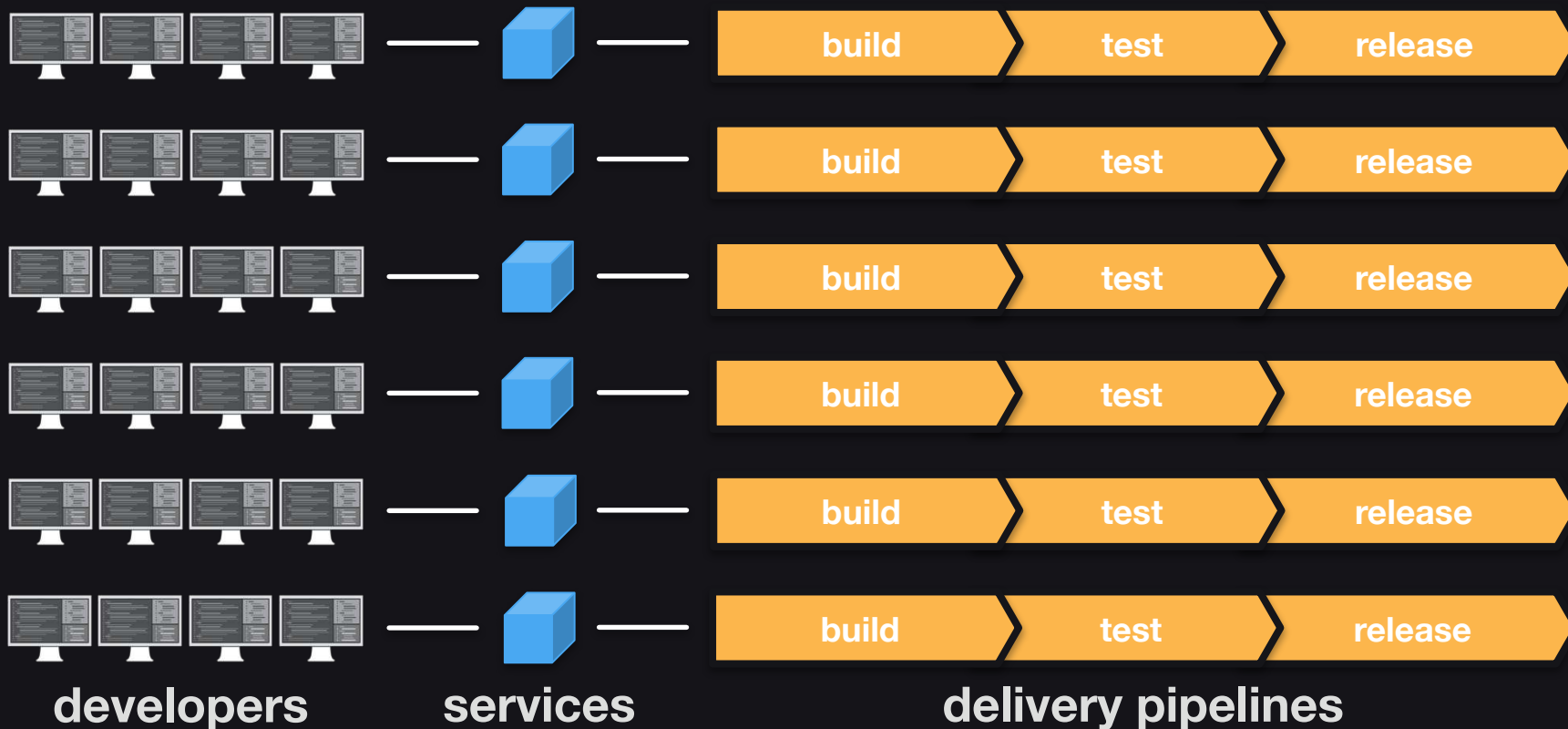
Automated release  
process

Faster and more reliable  
releases

Used by >90% of teams



# DevOps development lifecycle





**Thousands of teams**

**× Microservice architecture**

**× Continuous delivery**

**× Multiple environments**

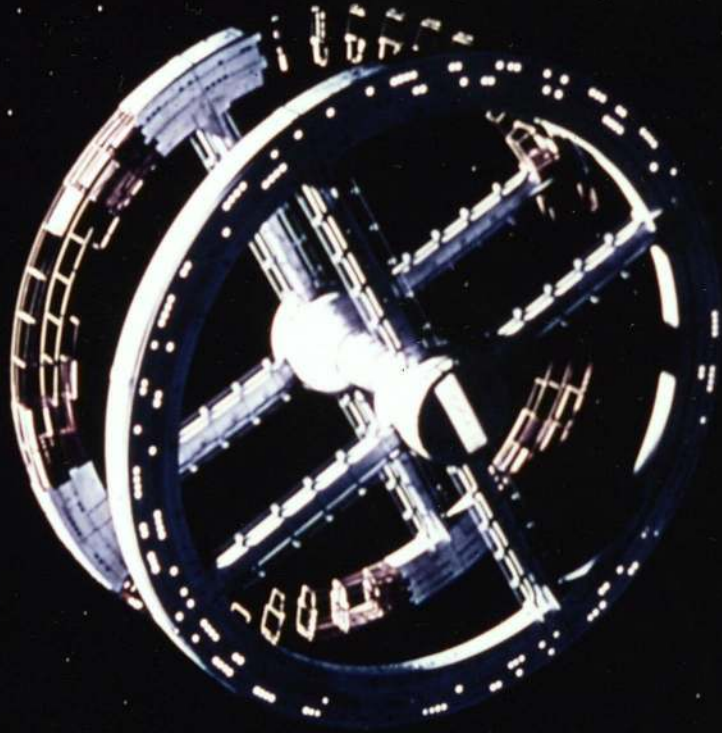
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**= 50 million deployments a year  
(1.5 deployment every second)**





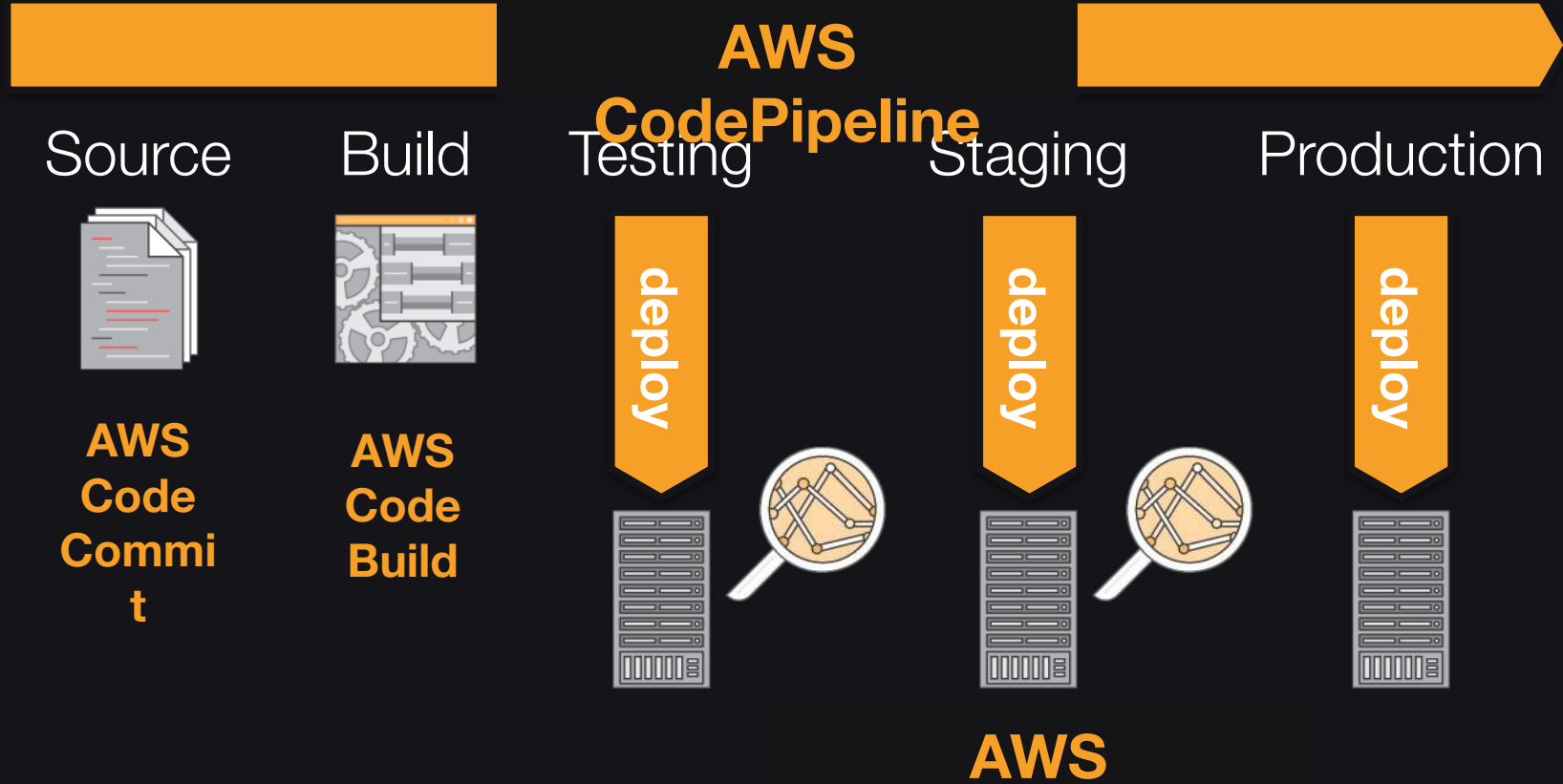
# Science Fiction becomes reality



# How can we help others do this?



# Setting up a delivery pipeline





# AWS Code\* partners

**GitHub**

**Atlassian**

**circleci**

**CHEF**



**Jenkins**

**CloudBees**



**Travis CI**

**puppet  
labs**



**Solano Labs**



**CODESHIP**



**Apica**



**Runscope**

**XebiaLabs**  
Deliver Faster



**ANSIBLE**

**BlazeMeter**

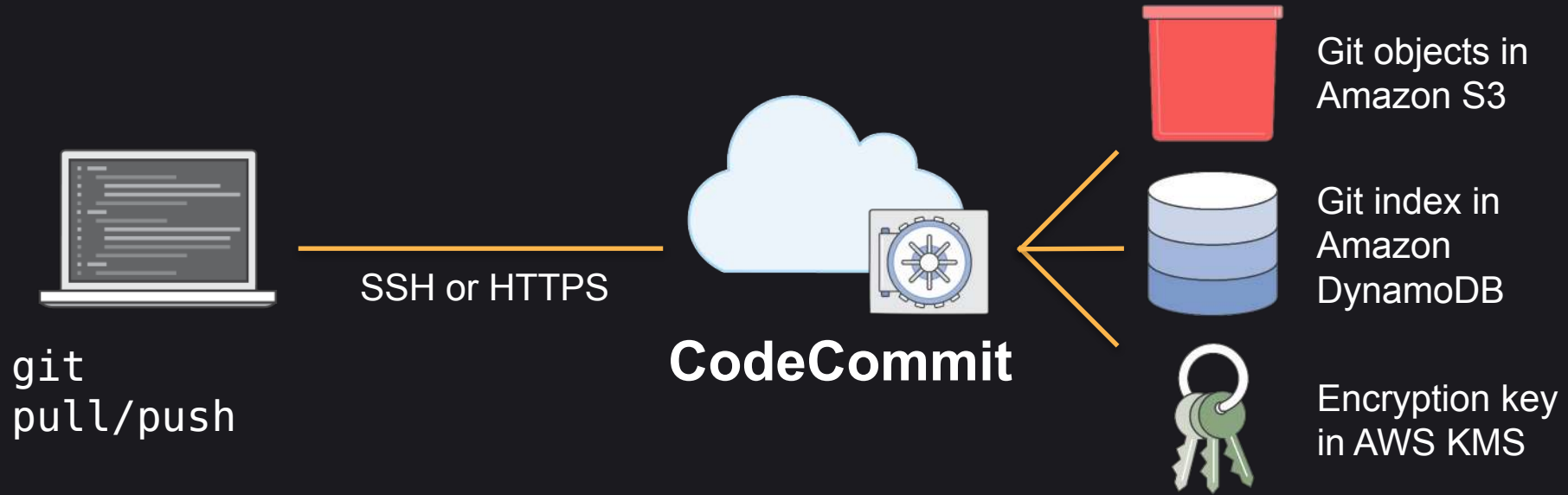


**Ghost Inspector**



**SALTSTACK**

# AWS CodeCommit



Use standard Git tools

Scalability, availability and durability of Amazon S3

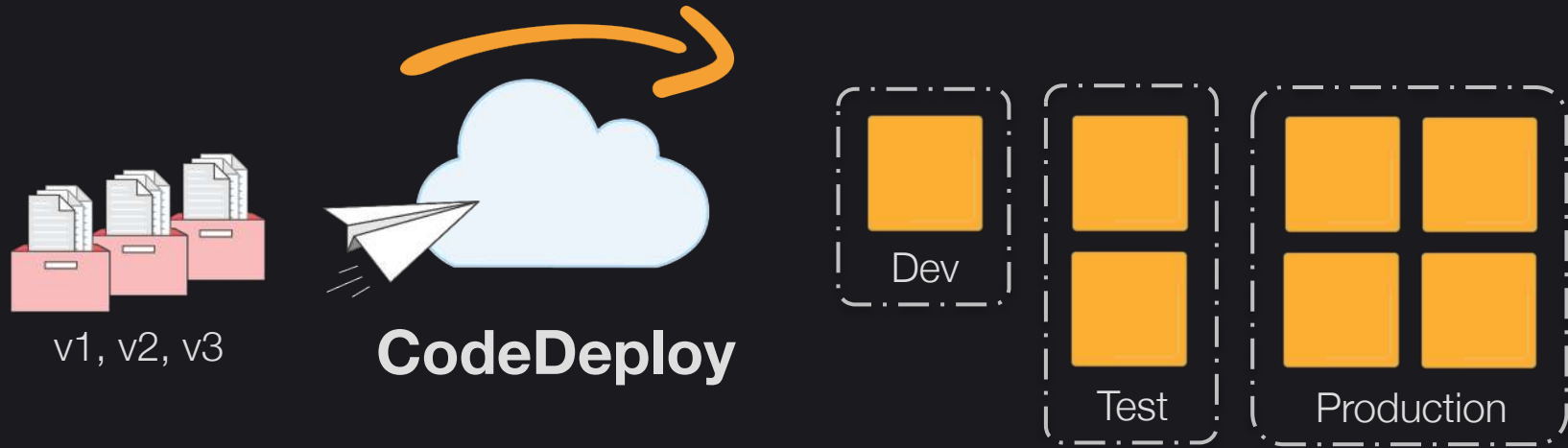
Encryption at rest with customer-specific keys

# AWS CodeBuild

- New service launched at re:Invent 2016
- Managed build environments (Linux only)
- Pull sources from Github, S3 or CodeCommit
- Build on an AWS-provided image or on your Docker container
- Supported environments : “base”, Android, Java, Go, Python, Ruby, Go, Docker
- Build commands: inline or in buildspec.yml file
- Pricing starts at \$0.005 per minute (free tier available)



# AWS CodeDeploy

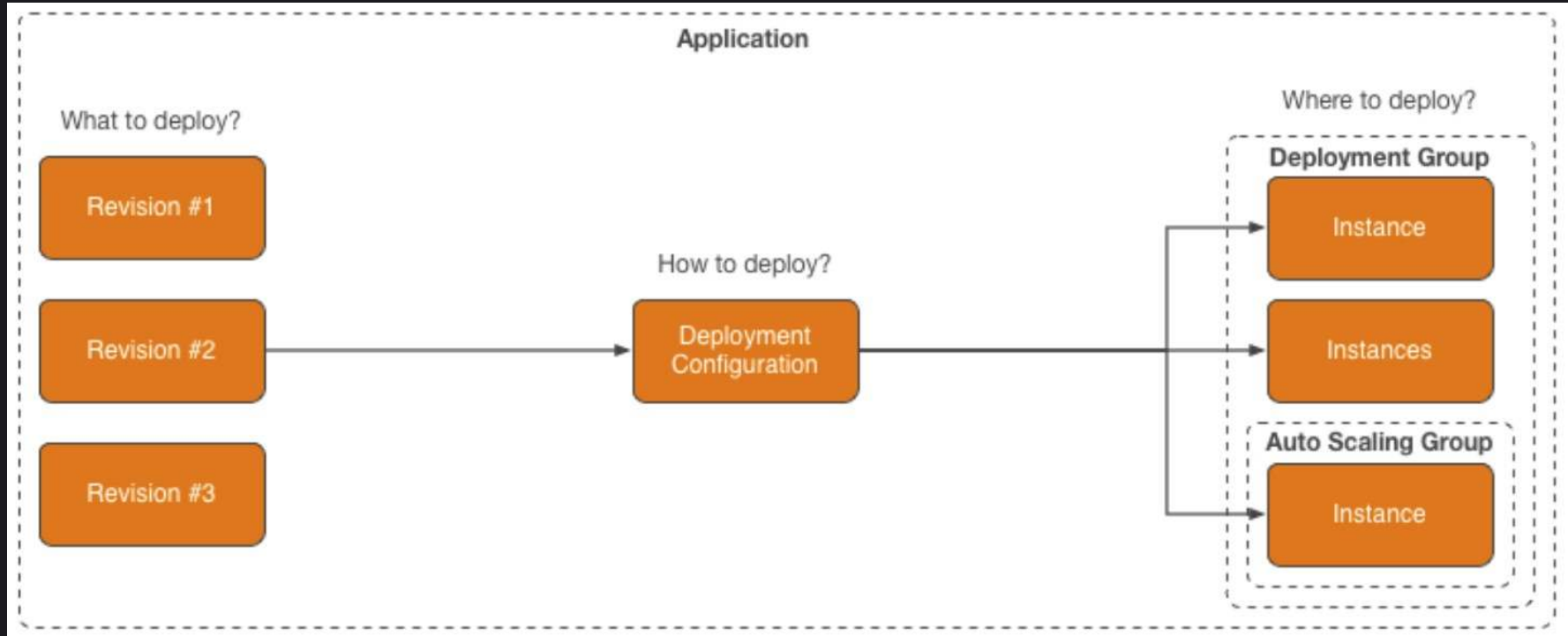


Easy and reliable deployments (zero downtime, rollbacks)

Scale with ease (support for Auto Scaling groups)

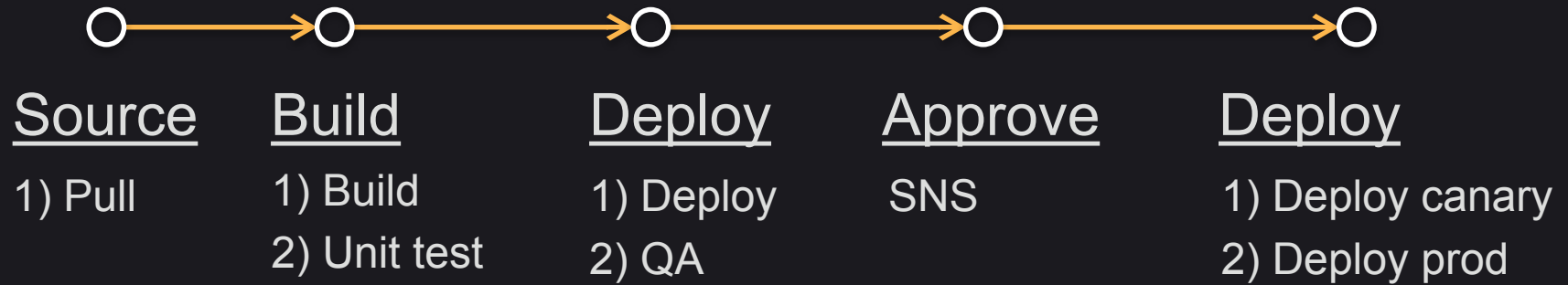
Deploy to any server (Linux / Windows, EC2 / on-premise)

# AWS CodeDeploy Key Components



Deployment commands in `appspec.yml`

# AWS CodePipeline



Define stages: Source, Build, Test, Deploy, Invoke, Approve

Connect to best-of-breed tools

Accelerate your release process

Consistently verify each release

# AWS CodePipeline Key Components



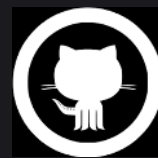




**LET'S ROCK!!**

# AWS Code\* demo

Source (GitHub) → Build (Jenkins) → Deploy Dev (CodeDeploy) → Approve (SNS Email) → Deploy Prod (CodeDeploy)



Code  
+ appspec.yml  
+ scripts



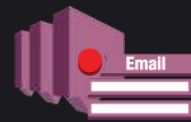
CloudFormation



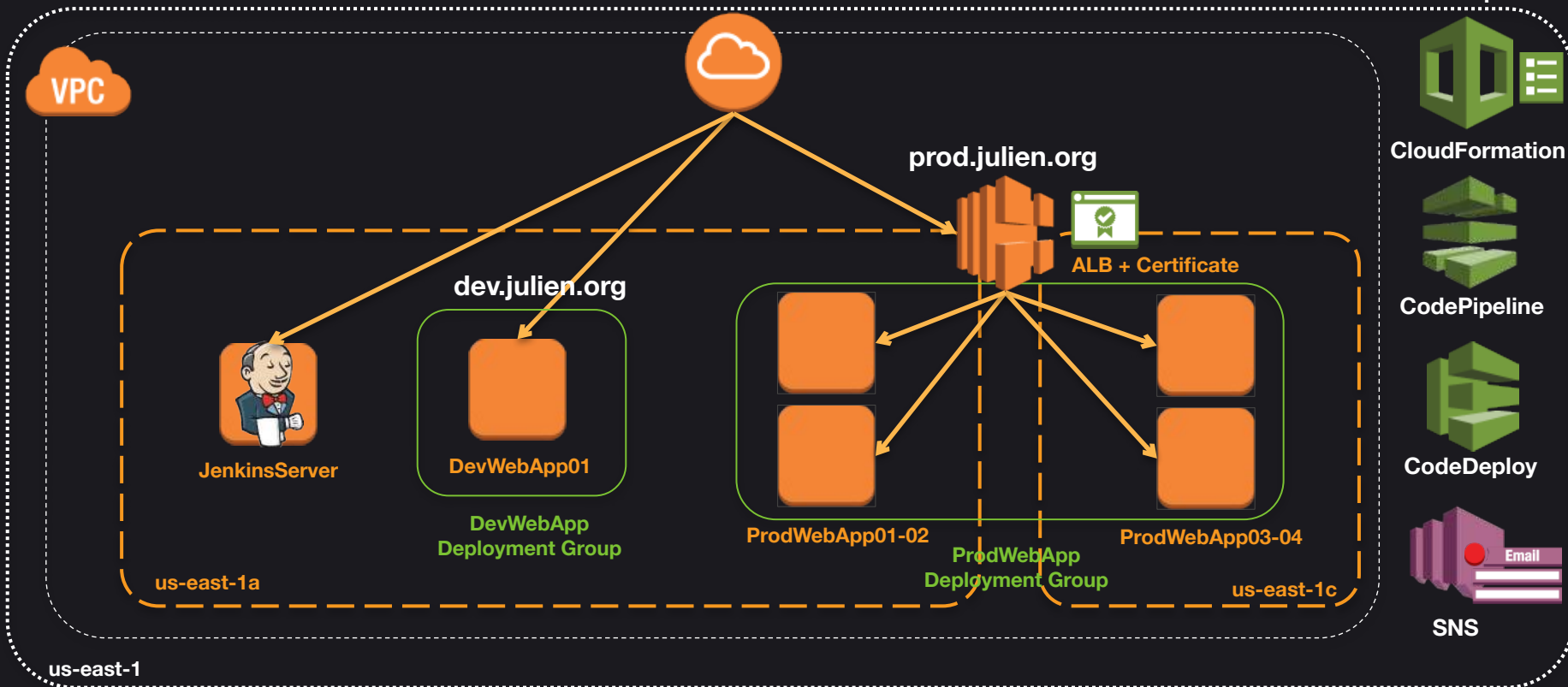
CodePipeline



CodeDeploy



SNS



# APPROVAL NEEDED: AWS CodePipeline app-name-Pipeline for action My\_Approval



Email JS

11:15



Hello,

The following Approval action is waiting for your response:

--Pipeline Details--

Pipeline name: app-name-Pipeline

Stage name: Approval

Action name: My\_Approval

Region: us-east-1

--Approval Details--

Content to review: <http://dev.julien.org>

Approve or reject: [https://console.aws.amazon.com/codepipeline/home?region=us-east-1#/view/app-name-Pipeline/Approval/My\\_Approval/approve/0bba2e19-4c19-4a74-87de-cdc1f9612613](https://console.aws.amazon.com/codepipeline/home?region=us-east-1#/view/app-name-Pipeline/Approval/My_Approval/approve/0bba2e19-4c19-4a74-87de-cdc1f9612613)

Additional information: Please review this deployment

Deadline: This review request will expire on 2016-10-12T09:15Z

Sincerely,

Amazon Web Services

# Building our app with CodeBuild

**Build project** [SuitsForDogs](#)  
**Source provider** GitHub  
**Repository** <https://github.com/julien-simon/aws-codedeploy-sample-tomcat.git>  
**Start time** 58 minutes ago  
**End time** 56 minutes ago  
**Status** **Succeeded**  
**Initiator** julien

## ▸ Build details

## Phase details

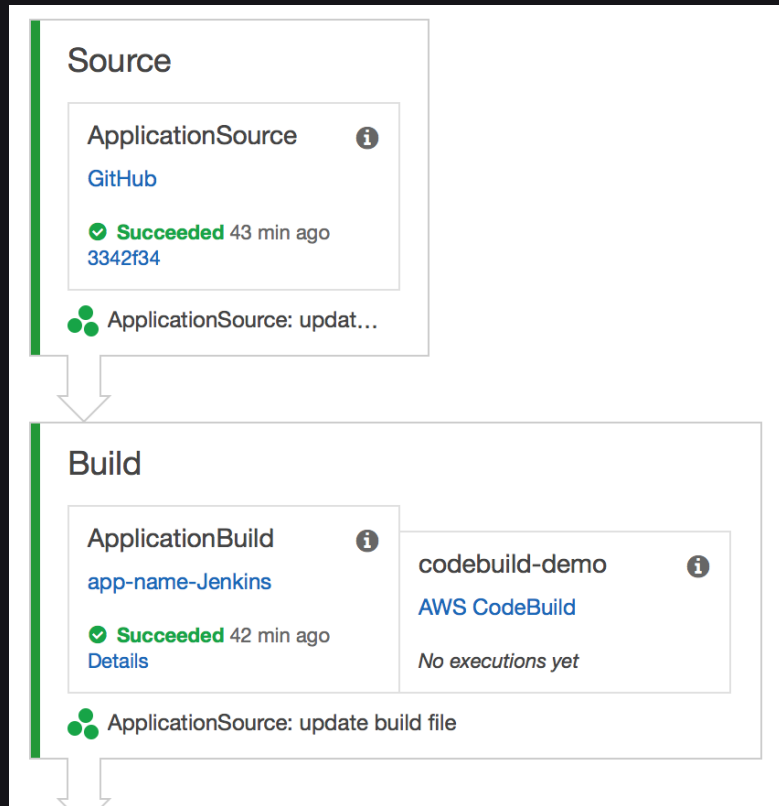
	Name	Status	Duration	Completed
▸	SUBMITTED	Succeeded	1 sec	58 minutes ago
▸	PROVISIONING	Succeeded	1 min, 22 secs	57 minutes ago
▸	DOWNLOAD_SOURCE	Succeeded	21 secs	56 minutes ago
▸	INSTALL	Succeeded	-	56 minutes ago
▸	PRE_BUILD	Succeeded	-	56 minutes ago
▸	BUILD	Succeeded	14 secs	56 minutes ago
▸	POST_BUILD	Succeeded	6 secs	56 minutes ago
▸	UPLOAD_ARTIFACTS	Succeeded	1 sec	56 minutes ago
▸	FINALIZING	Succeeded	4 secs	56 minutes ago
▸	COMPLETED	Succeeded	-	



# Adding CodeBuild to the pipeline

You can run **multiple builds** in parallel

- Split the CI process
- Build a debug version
- Build for multiple targets
- ...



# And I promised to you show X-Ray, didn't I? ;)

- New service announced at re:Invent 2016
  - Join the preview here: <https://pages.awscloud.com/aws-xray-preview.html>
- Distributed application debugging & visualization
- Languages: Node.js, Java, C#
- Platforms: EC2, ECS containers, Elastic Beanstalk
- Instrumentation is required
  - HTTP filter to log requests
  - X-Ray Daemon
  - Easy to setup!

# Trace every single request

## Trace overview

Group by: URL

URL ▲	Avg Latency ▲	% of Traces ▼	Response ▲
<a href="http://52.16.224.76/signup">http://52.16.224.76/signup</a>	134 ms	66.67%	4 OK, 0 Throttled, 0 Errors, 0 Faults
<a href="http://52.16.224.76/favicon.ico">http://52.16.224.76/favicon.ico</a>	1.0 ms	16.67%	0 OK, 0 Throttled, 1 Errors, 0 Faults
<a href="http://52.16.224.76/">http://52.16.224.76/</a>	1.0 ms	16.67%	1 OK, 0 Throttled, 0 Errors, 0 Faults

## Trace list (6)

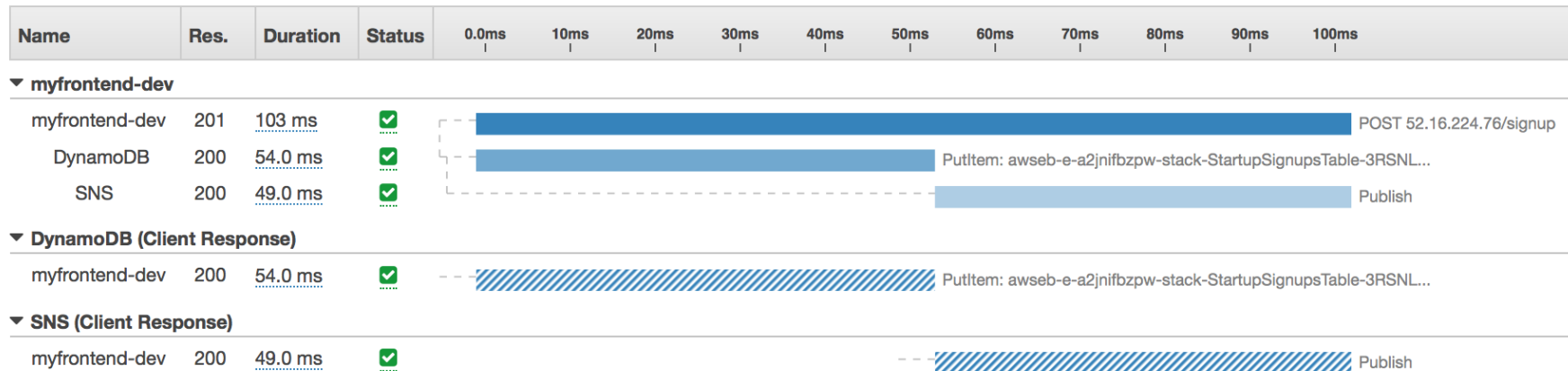
ID ▲	Age ▼	Method ▲	Response ▲	Latency ▲	URL ▲	Client IP ▲	Annotations ▲
<a href="#">...f53e4c7c</a>	7.3 sec	POST	201	103 ms	<a href="http://52.16.224.76/signup">http://52.16.224.76/signup</a>	109.1.191.16	1
<a href="#">...43a451f6</a>	15.3 sec	POST	201	99.0 ms	<a href="http://52.16.224.76/signup">http://52.16.224.76/signup</a>	109.1.191.16	1
<a href="#">...fc129aee</a>	23.3 sec	POST	201	115 ms	<a href="http://52.16.224.76/signup">http://52.16.224.76/signup</a>	109.1.191.16	1
<a href="#">...297faf7e</a>	29.3 sec	POST	201	219 ms	<a href="http://52.16.224.76/signup">http://52.16.224.76/signup</a>	109.1.191.16	1
<a href="#">...ae25e118</a>	31.3 sec	GET	404	1.0 ms	<a href="http://52.16.224.76/favicon.ico">http://52.16.224.76/favicon.ico</a>	109.1.191.16	0
<a href="#">...0b7edf8f</a>	33.3 sec	GET	200	1.0 ms	<a href="http://52.16.224.76/">http://52.16.224.76/</a>	109.1.191.16	0

# Zoom in on every single request

Traces > 1-587f8aee-fee77a02097748c8f53e4c7c

Timeline

Raw





# View service dependencies

Service map

Updated on 2017/01/18



# Resources

## Learn more

[aws.amazon.com/awsgo](https://aws.amazon.com/awsgo)

[blogs.aws.amazon.com/application-management](https://blogs.aws.amazon.com/application-management)

[blogs.aws.amazon.com/application-management/post/Tx2CIB02ZO05ZII/Explore-Continuous-Delivery-in-AWS-with-the-Pipeline-Starter-Kit](https://blogs.aws.amazon.com/application-management/post/Tx2CIB02ZO05ZII/Explore-Continuous-Delivery-in-AWS-with-the-Pipeline-Starter-Kit)

2 AWS webinars in French every month in 2017! <https://aws.amazon.com/fr/events/>

# AWS User Groups



Lille  
Paris  
Rennes  
Nantes  
Bordeaux  
Lyon  
Montpellier  
Toulouse  
Côte d'Azur (soon!)



[facebook.com/groups/AWSFrance/](https://facebook.com/groups/AWSFrance/)



[@aws\\_actus](https://twitter.com/aws_actus)





# Thank you!

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[@julsimon](#)