
AWS
re:Invent

CON202

AWS Copilot: Simplifying container development

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AWS re:Invent

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Agenda

Voting application use case (Why AWS Copilot?)

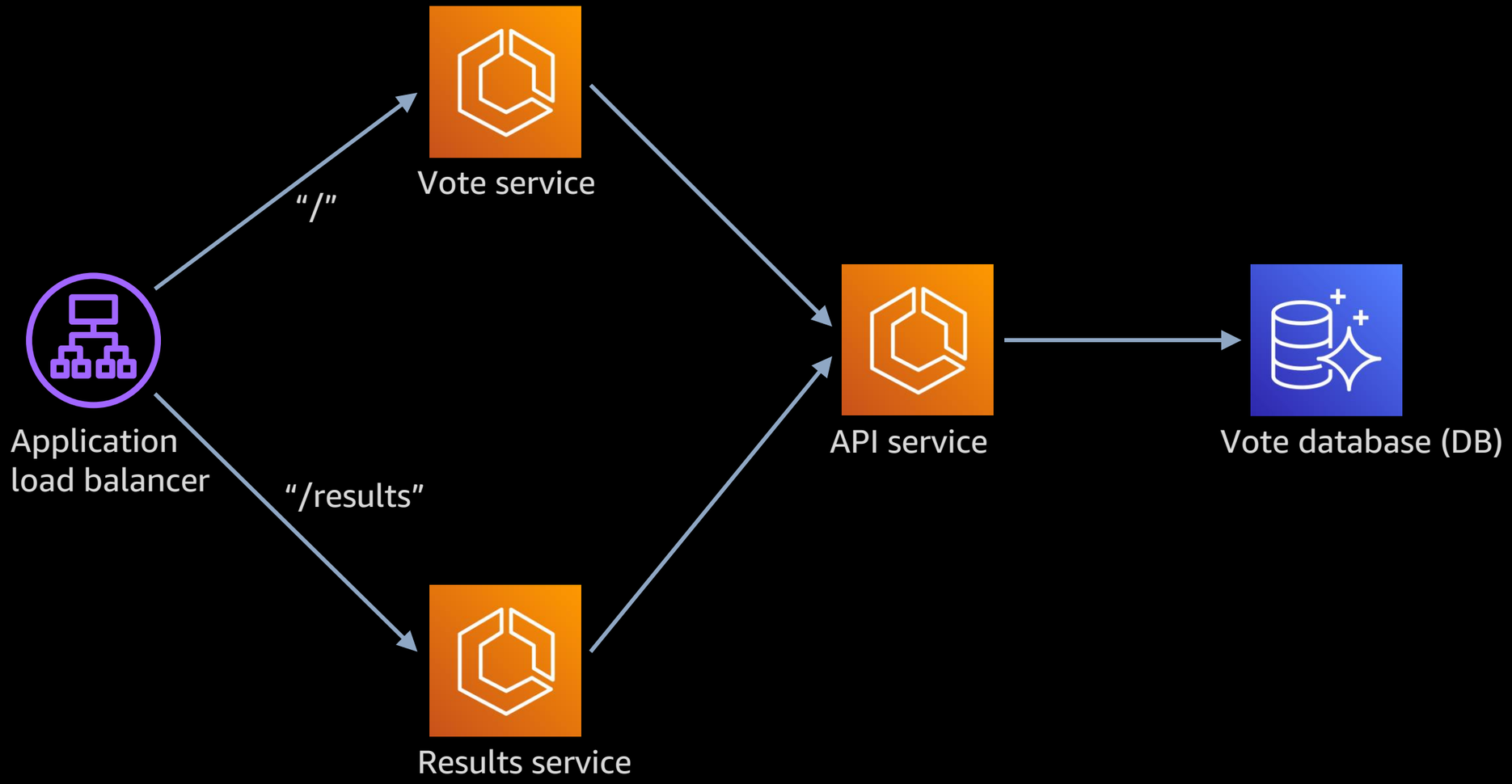
Overview of AWS Copilot

- Getting started
- Architecture-as-code
- Deployment environments
- Continuous delivery
- Monitoring and operating



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Voting app: Architecture



Voting app: Challenges – Build

1 Amazon Virtual Private Cloud
2 Public subnets
2 Private subnets
2 Route tables
1 Internet gateway
1 Internet gateway attachment
2 Security groups
1 Application Load Balancer
1 HTTP listener
3 HTTP listener rules
3 Target groups

1 Service discovery namespace
3 Service discovery services
1 Elastic container service (ECS) cluster
3 ECS services
3 Task definitions
3 Elastic container registry repository
6 Identity and access management (IAM) roles
3 Log groups
1 Aurora DB cluster

Voting app: Challenges – Release

. . . and

1 AWS CodePipeline pipeline

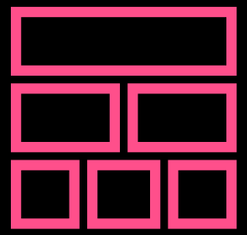
2 AWS CodeBuild projects

2 Amazon Simple Storage Service (Amazon S3) buckets

2 AWS Key Management Service customer master keys

2 IAM roles

Voting app: Challenges – Operate



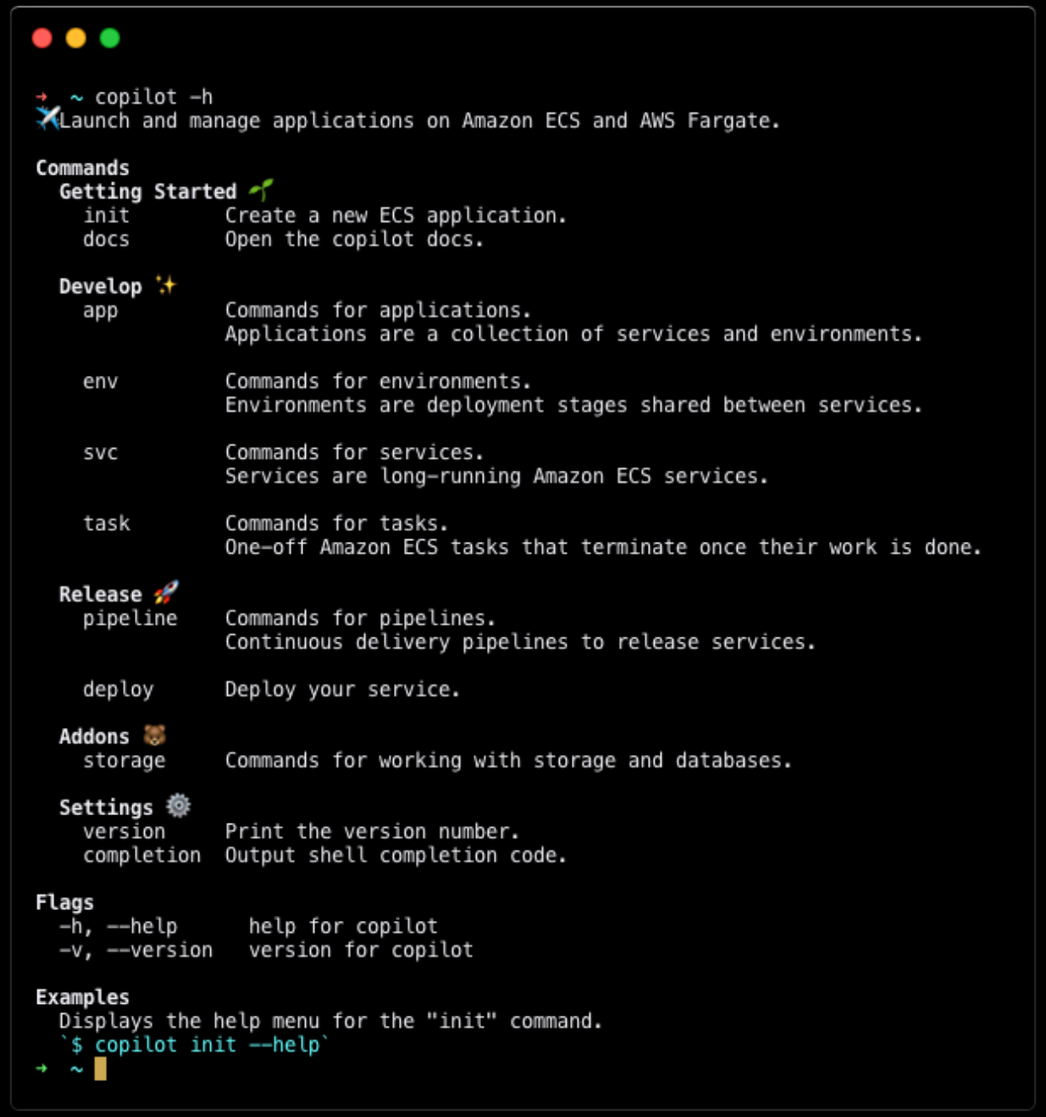
Provision infrastructure





Monitor and troubleshoot

AWS Copilot command line interface (CLI) (now GA! 🎉)



```
→  ~ copilot -h
✈️ Launch and manage applications on Amazon ECS and AWS Fargate.

Commands
  Getting Started 🌱
    init        Create a new ECS application.
    docs        Open the copilot docs.

  Develop ✨
    app         Commands for applications.
                Applications are a collection of services and environments.

    env         Commands for environments.
                Environments are deployment stages shared between services.

    svc         Commands for services.
                Services are long-running Amazon ECS services.

    task        Commands for tasks.
                One-off Amazon ECS tasks that terminate once their work is done.

  Release 🚀
    pipeline    Commands for pipelines.
                Continuous delivery pipelines to release services.

    deploy      Deploy your service.

  Addons 🐻
    storage     Commands for working with storage and databases.

  Settings ⚙️
    version     Print the version number.
    completion  Output shell completion code.

Flags
  -h, --help      help for copilot
  -v, --version   version for copilot

Examples
  Displays the help menu for the "init" command.
  `$ copilot init --help`
→  ~
```

"The amazing thing about Copilot is that it allows us to create a production-ready ECS environment that comes preintegrated with other components necessary for production workloads like CI/CD pipelines, all with ease and the barest minimum resources to prepare beforehand."



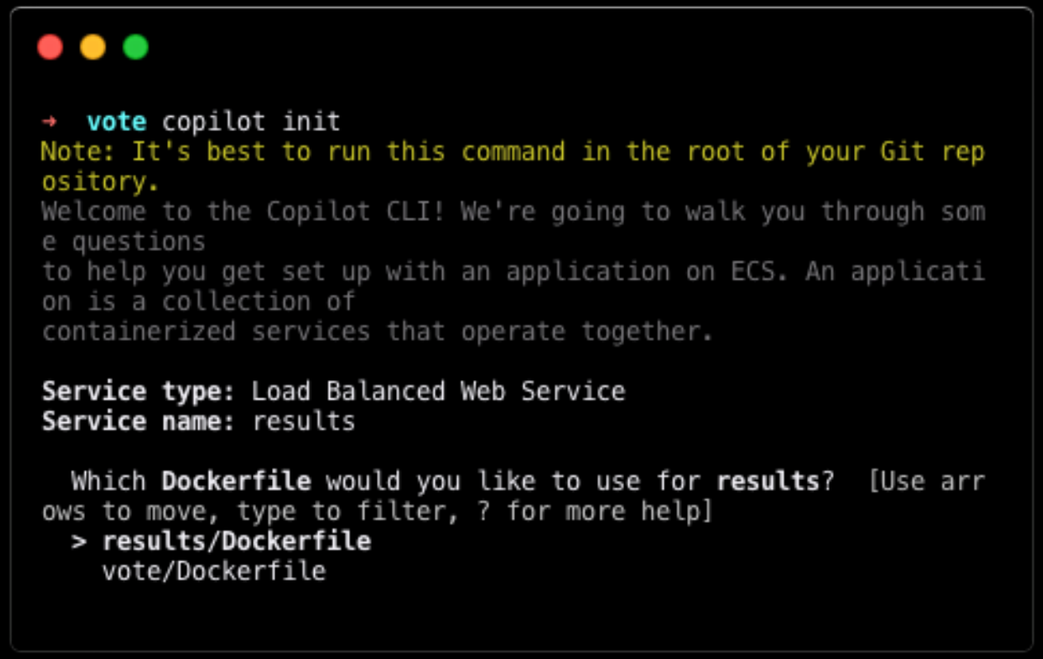
Koji Hamada

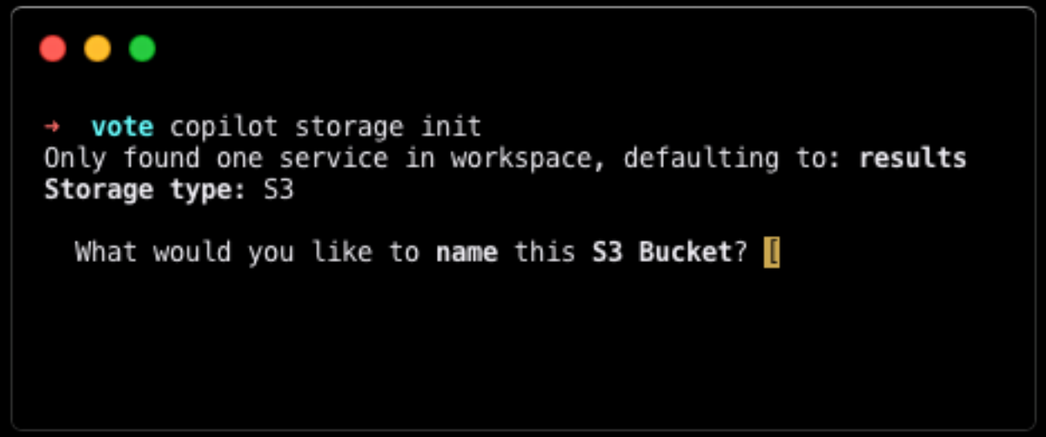
Manager of CX Division Modern Application Development Team, Classmethod, Inc. / AWS Partner Network Ambassador 2020

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AWS Copilot: Build





Conventions over configuration

Start from a Dockerfile

Grow with addons

AWS Copilot: Release

```
→  vote copilot env init
What is your environment's name? prod

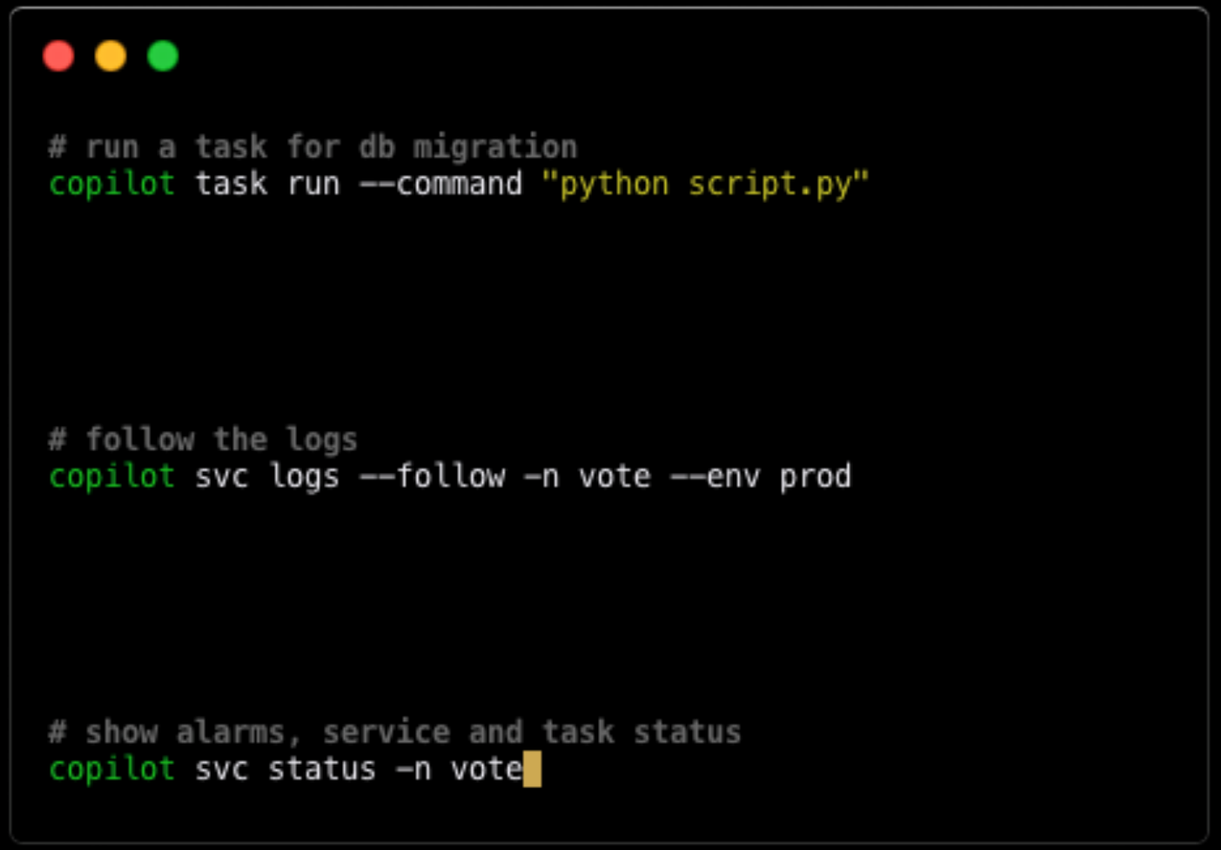
  Which credentials would you like to use to create prod?  [
Use arrows to move, type to filter, ? for more help]
  > Enter temporary credentials
    [profile default]
    [profile staging]
    [profile prod-iad]
    [profile prod-pdx]
```

Multiple AWS accounts and regions

```
File: copilot/pipeline.yml
1  name: pipeline-voting-app
2  stages:
3      -
4        name: test
5        test_commands:
6          - make integ-test
7      -
8        name: prod
9        requires_approval: true
lines 1-12
```

Automated release process

AWS Copilot: Operate



Run one-off tasks

Tail your service logs

View the health of your service

Takeaways

Focus on **business** not infrastructure

- Get started with "copilot init"
- Customize patterns with the manifest; grow with addons
- Release frequently with a continuous delivery pipeline

Next steps

AWS Copilot CLI repository

https://github.com/aws/copilot-cli/

AWS Copilot CLI documentation

https://aws.github.io/copilot-cli/

Containers from the Couch videos

https://www.youtube.com/c/ContainersfromtheCouch/search?query=copilot

Thank you!



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