



Delivering Applications on AWS

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Amazon Web Services (AWS)

- 150+ cloud-based services and products
- 20+ global regions
- 100K+ programmers, sys admins, etc
- Netflix, Capital One, Comcast, etc
- Compute, networking, database, storage, machine learning, security, analytics, IoT, etc.
- APIs, CLI, Console, 3rd Parties
- Acronyms, Acronyms, Acronyms (AAA)
- aws.amazon.com

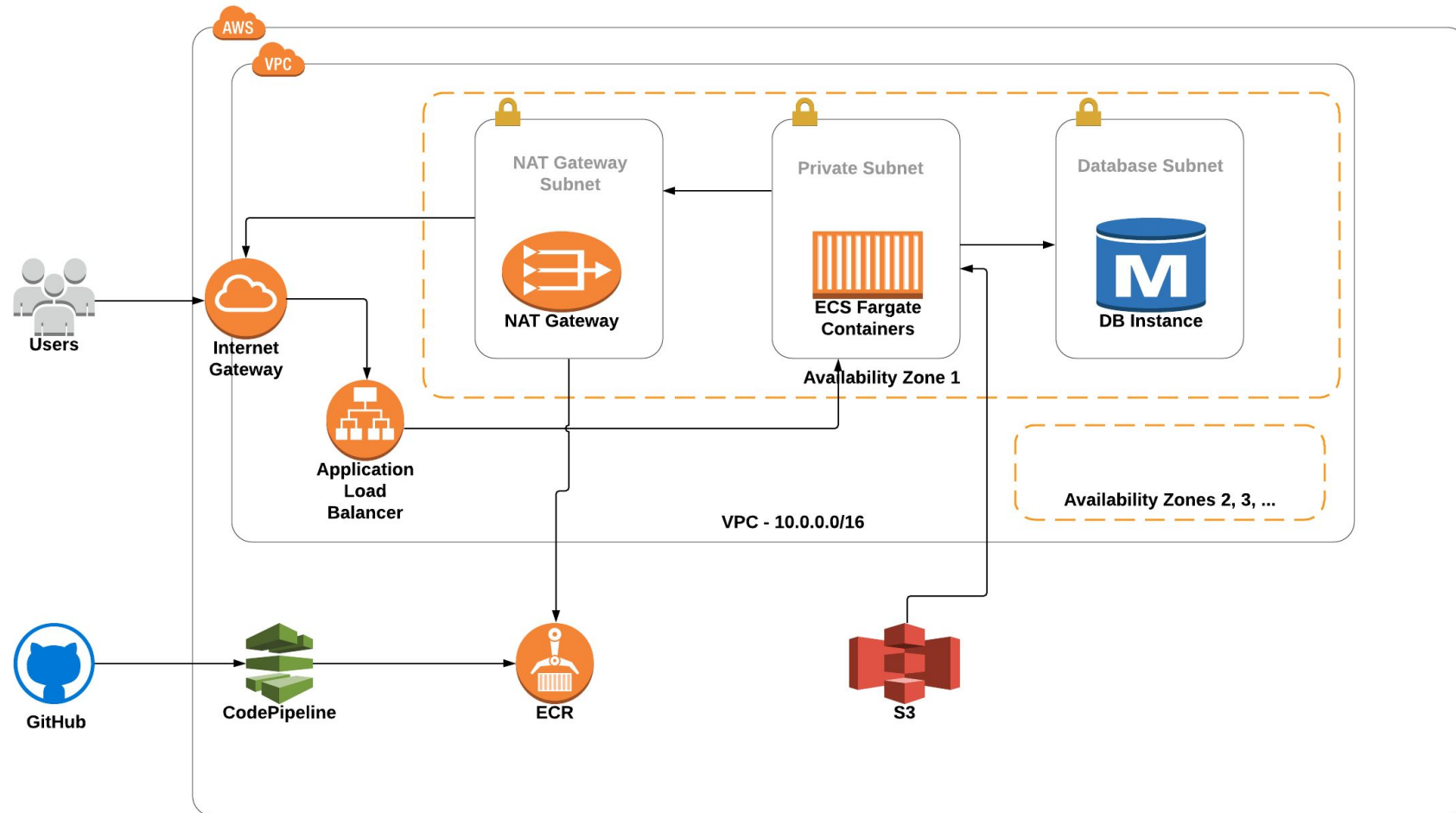
Why move to the cloud?

- Hardware, software, and network challenges internally
- Deliver business value
- Hosting as a commodity
- Features, availability, scale
- Already there (Pantheon, SaaS)

AWS Services We Use

- Virtual Private Cloud (VPC)
- Simple Storage Service (S3)
- Elastic Container Registry (ECR)
- Elastic Container Service (ECS)
- Relational Database Service (RDS)
- Elastic Load Balancing (ELB/ALB)
- Certificate Manager (ACM)
- Identity and Access Management (IAM)
- Parameter Store
- CodePipeline / CodeBuild

Infrastructure on AWS



Infrastructure as Code

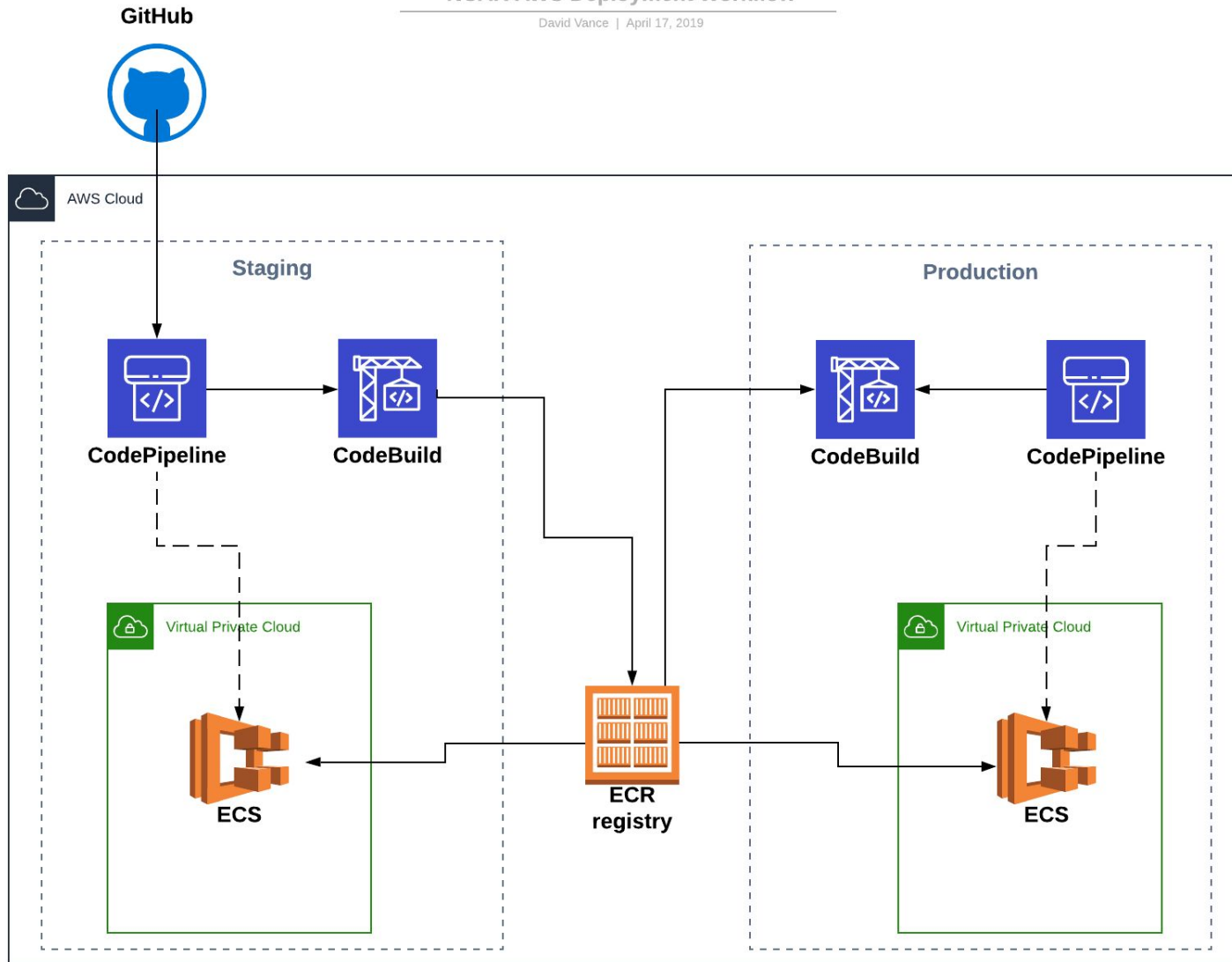
- Reproduce environments (dev, stage, prod)
- Shared knowledge (bus factor)
- GitHub (versions, history, distributed, etc)
- Terraform (Hashicorp)
 - Create cloud resources with code
 - Declarative language (no loops!)
 - Quirky
- CloudFormation (AWS)

Deployment Workflow

- Commit to GitHub
- CodePipeline sees commit and pulls repo
- CodeBuild runs commands:
 - Run tests
 - Build Docker image
 - Push image to ECR
- CodePipeline deploys container to ECS and restarts service
- Manual approvals

NCAR AWS Deployment Workflow

David Vance | April 17, 2019





Demo

- Build infrastructure with Terraform
- Deploy application



Questions and Comments

A decorative graphic consisting of a network of white dots connected by thin white lines, forming a complex, interconnected web. The dots are scattered across the slide, with a higher concentration in the top-left and bottom-right areas.