From Wordpress to Serverless

How to create and run a blog using Hugo, Terraform, CodeCommit, CodePipeline, S3, CloudFront and Lambda@Edge

Prerequisites for Building

- AWS Account
- Internet Access
- Route 53 Domain
- Terraform IAM User
- S3 Bucket for Terraform State File
- Computer running Bash, Docker, GNU Make, Git, Terraform, AWS CLI and Hugo
- Optional: Visual Studio Code (with Terraform, Gitlens and Docker Extensions)

Prerequisites for Running

- Internet access

- A Computer or Tablet running your favorite Markdown Editor with Git support

- A Smartphone to receive SMS notifications on build / deployment status

- Your brilliant and creative mind focused on producing awesome content

Infrastructure Life Cycle Objectives

- Only AWS Managed Services
- Zero Human Touch Operation
- Avoid hacks and workarounds
- Avoid unsupported or undocumented features
- Terraform must be used to manage infrastructure
- Terraform state file must be persisted in AWS S3
- GNU Make must be used for every build workflow
- Generated AWS Credentials go to SSM Parameter Store
- Generated SSH Key Pairs go to SSM Parameter Store

Content Life Cycle Objectives

- All content is static and automatically generated
- All content is served from AWS S3 via CloudFront
- All content is version controlled in CodeCommit
- No AWS Console interaction for managing content
- No AWS Console interaction for build status
- No AWS Console interaction for deployment status
- No AWS CLI interaction for managing content
- No AWS CLI interaction for build status
- No AWS CLI interaction for deployment status

High Level Structure
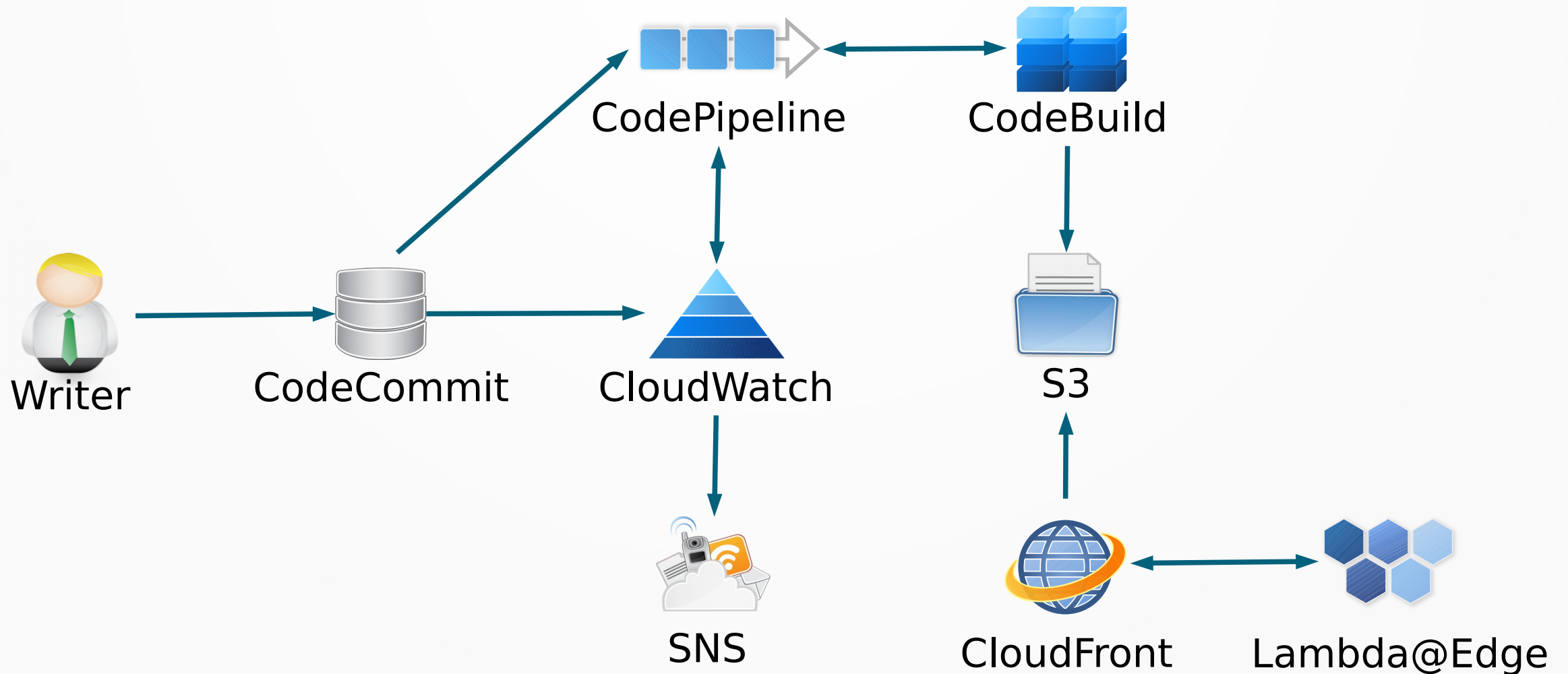
Challenges

- AWS CloudFront only supports default root object
  - Can be addressed using Lambda@Edge
- AWS CodePipeline cannot pass data to CodeBuild
  - Was addressed by having multiple
    - CodePipelines
    - CodeBuild Projects
    - CloudWatch Rules
- AWS CodeBuild runs much longer than the actual build
  - Could be addressed by running the build as Lambda Function

Demonstration and Discussion

Thank you very much!

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