# CI/CD

# Current Problems

- Currently we are investing more time in deploying our features than in the features themselves which in turn hinders our ability to grow as a business and increase revenue
- We have low code coverage and hence also low quality assurance for our customers which could impact customer satisfaction and conversion rates
- There is blaming between operations and developers because of all the issues leading to people leaving the team and costing us in hiring and training of new personel

# How CI/CD Solves our Problems

- CI/CD gives us the ability to push code live automatically, without having to intervene manually, hence speeding up our deployments
- We can integrate our test suite in our CI/CD pipeline forcing a green test suite before every change goes live, increasing our quality assurance
- Operations and developers can work together improving the code base and focus on providing maximal value for our customers

# Suggested CI/CD Setup

- Build server to run the CI/CD pipeline
- Build, Test and Lint the code
- Use infrastructure as code to spin up completely new infrastructure for each release
- Use configuration management to provision our servers after creation
- Finally smoke test the deployment, switch the live loadbalancer, and tear down the old infrastructure

# Suggested CI/CD Tools

- Using Circleci as a build server minimizes costs since it does not require maintenance or administration of a build server
- NPM package manager and shell scripts for building, testing and linting are already available, need only be integrated into the build pipeline
- Cloudformation for infrastructure as code is the simplest solution using AWS since we get access to the UI in AWS
- Ansible for configuration management is the simplest solution since it focuses on simplicity, runs over ssh and has simple yaml configuration

# Cost of Implementation

- Our engineers have verified that as a team they can get the pipeline running in one week if the suggested tooling is approved
- And the benefits in increased revenue from being able to focus on features, savings on hiring new personal, and the increase in conversion rates from higher customer satisfaction due to better quality assurance; far outweigh this one-week cost