Automation Intro Class Concepts and Notes

What is DevOps?

DevOps is combining the Software Development Team with the Software Operations Team to increase the speed of code deployment often the focus of the Dev team with the goal of stability that is often emphasized by the operation team.

What is Automation? Why is Automation good?

What are Containers? What are the benefits of Containers?

What is Infrastructure as Code?

What is IAAS, PAAS, and SAAS?

Why should you implement logging?

What is serverless?

What is Infrastructure Automation?

What is CI/CD?

What are MicroServices?

What is Decoupling?

What is the difference between continuous delivery and integration tools and automation/configuration management tools?

Automation

Automation Deployment tools

* Jenkins
  + Jenkins is an open source automation server written in Java
* ***Salt***
  + A python based open source configuration management software and remote execution engine supporting the infrastructure as code approach to deployment and cloud management
* *Puppet*
  + An open source software configuration management tool. It uses its own declarative language to describe system configuration.
* *Chef*
  + Configuration management tool written in Ruby and Erlang.
* ***Ansible***
  + An open source it automation engine and can be written in any programming language.
* AWS CodeDeploy
  + Automates code deployments to EC2 and on prem servers.

Container Orchestration tools

* **Docker**
* **Amazon ECS**
* Azure Container Service
* Cloud Foundry’s
* Docker Swarm
* **Kubernetes**

Infrastructure as Code Tools

* **CloudFormation**
* **Terraform**
  + IAC software written in GO. 3rd party tool that can be used with any cloud provider.
* **Elastic BeanStalk**
* **AWS OpsWorks**

Others

* OpenStack
  + A free and open-source software platform for cloud computing, used to deploy IAAS.
* **CloudWatch Events**
* **CloudWatch Metric Filters**
* **EC2 Systems Manager**
  + A way to manages instances or on prem servers at scale efficiently.
  + Run Command, Systems Patch Manager, Parameter Store
* Inspector
* **GitHub**
* S3 Events

Logging

* Athena
* **CloudTrail**
* **CloudWatch Logs**
* Kinesis
* **Config**
* ElastiSearch Service
* VPC Flow Logs
* DNS Query Logs
* S3 Access Logs

Serverless

* **Lambda**
* DynamoDB
* S3
* SQS
* SNS
* Serverless Aurora
* Cognito
* X-Ray
* API Gateway
* Cloud 9