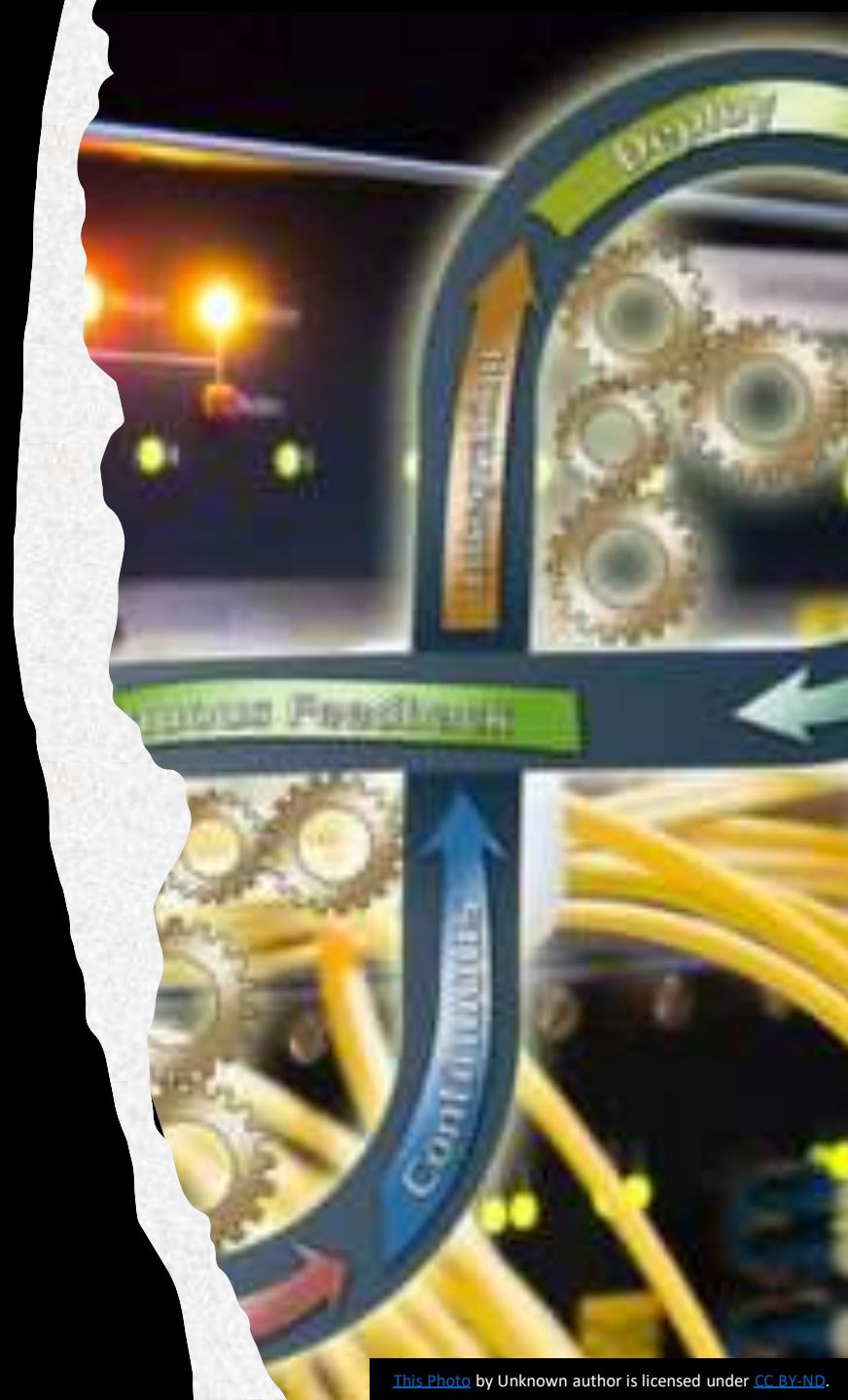




# DevSecOps

SECURING THE FUTURE OF  
DEVELOPMENT



# Introduction to DevSecOps

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- DevSecOps is a methodology that aims to integrate security practices into the DevOps process. This means that security is not an afterthought, but rather a fundamental aspect of the development process.
- The goal of DevSecOps is to create a culture of security, where everyone involved in the development process takes responsibility for security and works together to ensure that applications are secure by design.
- While implementing DevSecOps can be challenging, the benefits far outweigh the challenges. By following best practices and investing in training and tools, organizations can successfully implement DevSecOps and gain a competitive advantage in terms of security and speed of development.



# Benefits of DevSecOps

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- DevSecOps offers several benefits over traditional software development methodologies. By integrating security practices into the development process, organizations can reduce the risk of security vulnerabilities being introduced into their applications.
- In addition, DevSecOps promotes collaboration between developers and security professionals, which can lead to more effective security practices and faster identification and remediation of vulnerabilities



# AWS BASIC SERVICES

## **EC2 with NGINX**

- What is an Ec2
- key pair Concept
- Launching an Ec2
- What is an AMI.
- How to take AMI backup How to host an application in Ec2 (Nginx/ httpd as a middleware)

## **IAM & Trusted advisor**


- User, Roles, Policies & Groups
- Permission Boundaries
- Best Recommendations



## **S3 with CRR**

- Bucket & Object
- Bucket and Object level properties
- Cross region replication & Same region replication
- How to protect our s3 Bucket from malicious attack

## **LOAD-BALANCER, ASG & CLOUDWATCH**

- Types of Load balancers.
  - Need for autoscaling.
  - Achieving HA through LB, ASG & CW
- 



## RDS

- BASIC SQL Commands with hands-on
- SQL Vs NOSQL Database concepts with Hands-on (Tables, Schema, Database, queries, Stored procedure)
- MySQL with hands-on
- Connecting the database using SQL Workbench

## R53

- What is Domain Registrar
- How to map a domain
- Record sets
- Routing policies



## VPC

- Networking core concepts
- CIDR
- NAT Gateway Vs IGW
- Public Subnet Vs Private Subnet
- VPC Peering – Intra VPC & Inter VPC peering
- VPC Endpoints
- Security Best practice for configuring VPC

# AWS NATIVE SECURITY TOOLS

## **Guard-duty & AWS Inspector**

- Guard-duty Overview
- AWS Inspector Overview
- How to analyse the critical findings in AWS
- Real Time use case

## **WAF**

- Why do we need WAF ?
- WAF Rules How to integrate
- WAF with Load balancer



## **KMS**

- KMS Overview
- Symmetric & Asymmetric Key pair
- Real-time use cases with hands-on

## **AWS MACIE**

- Macie - Overview
- Real time use case with Macie
- S3 Integration with Macie

## **Secrets Manager**

- Secrets Manager Overview
- Use cases for Secret Manger
- hands-on

## **ECR**

- What is ECR
- Benefits of ECR
- ECR basic commands
- Hands-on – pushing a docker image to ECR

## **TRUSTED ADVISOR**

## **IAM**

## **SSO**

## **KMS, SHIELD**

## **ETL TOOL**

- Aws GLUE with ATHENA
- Quicksight

## **TICKETING TOOL**

- JIRA
- SERVICE NOW



# DevSecOps Tools

## Source Code Management Tool:

### **GITHUB**

- Github-console overview
- Security best practice with Github
- Git advanced commands with - Hands-on
- Branching strategies
- Git cherry pick and stash
- Pull request

### **BITBUCKET**

- Github Vs BitBucket
- Hands-on Practical
- CI-CD Project using BitBucket & EKS

# DevSecOps Tools

## **CI TOOL**

- Github Actions Overview
- CI-CD Project using Github - Actions & EKS

## **GITLAB**

- Gitlab intro and account setup
- Implementing DevSecOps pipeline
- Integrating SAST, DAST, SCA
- Integrating Sonarcloud

## **SAST**

- SONARCLOUD / SONARQUBE & FORTIFY

# DevSecOps Tools

## **SCA**

- SYNK, SNEAK

## **DAST**

- OWASP ZAP

## **IAST**

- VERACODE

## **CONTAINERIZATION TOOL:**

### **DOCKER**

- Docker intro
- Physical Machine Vs Containers Vs VM. Images and containers - Hands on
- Docker file
- Docker-basic commands
- Docker Volumes: (Bind Mount & Volume Mount)  
Docker Networks
- Docker Swarm
- Docker Compose

### **PODMAN**

## **CONTAINER ORCHESTRATION TOOL:**

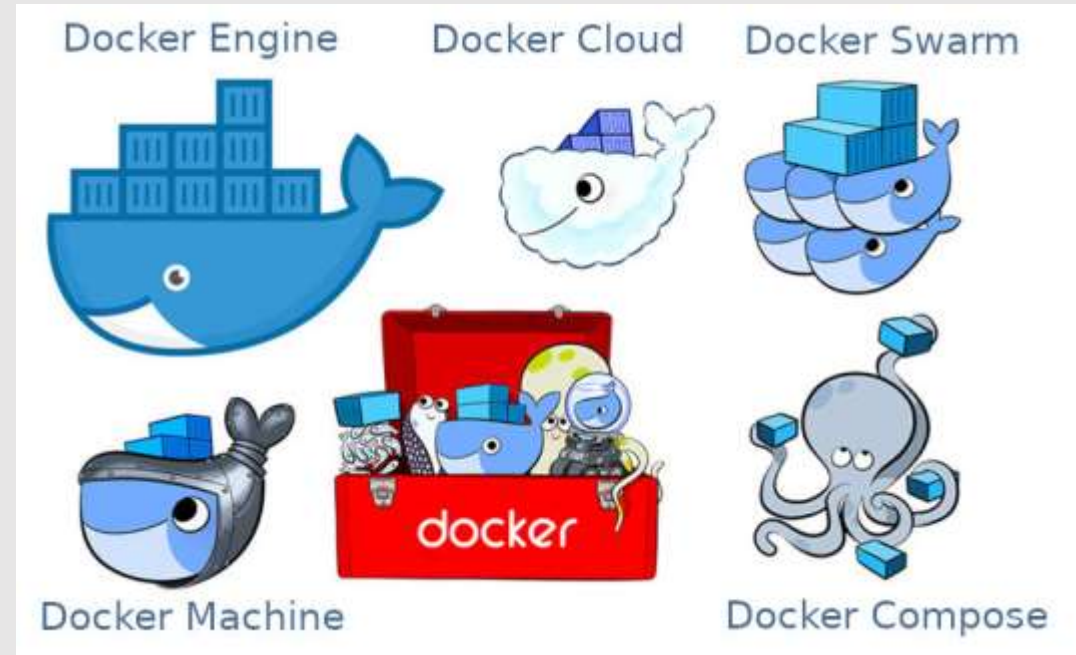
### **ECS**

- What is ECS
- ECS Vs EKS
- New features involved in ECS 2023
- ECS deployment strategy
- ECS VS EKS.
- ECS Core Concepts
- Hands-on Practical with ECS & ECR

### **EKS**

- Why do we need Kubernetes
- Kubernetes Vs DockerSwarm Vs Apache Mesos
- Spinning up a Kubernetes using KOPS & AWS EKS (KubeADM doc will be shared) EKS – Console Overview
- Upgrading an EKS cluster nodes & Worker nodes without any downtime

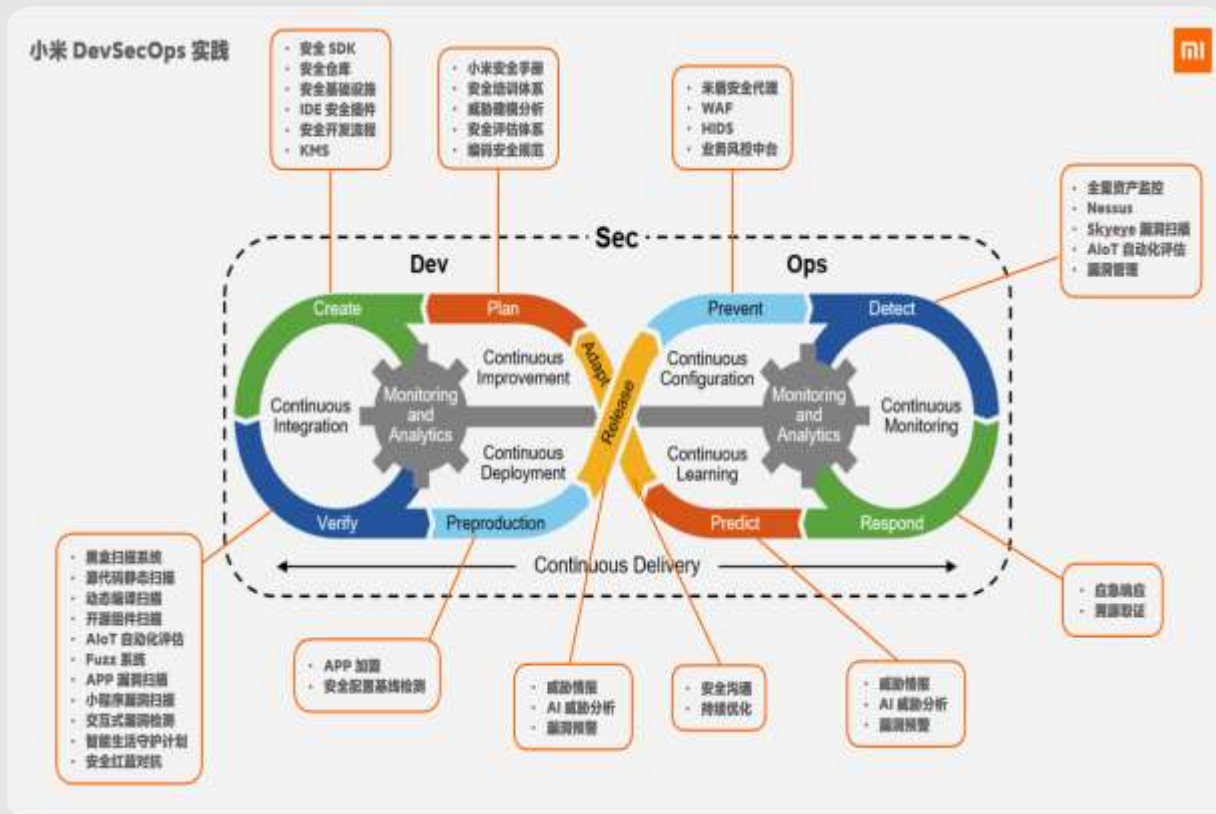
- Kubernetes architecture
- Replica set vs daemonSet
- K8's Services & Ingress
- Pods Vs containers
- Docker Vs K8's
- PV & PVC - k8's Volumes
- Config Map & Secrets
- Namespaces & Deployment
- Kubernetes Core concepts with hands-On



## APP TESTING

- Postman





## IAAC TOOL: TERRAFORM

- Terraform Vs CloudFormation
- What is Terraform
- Terraform Commands
- Benefits of Terraform
- Terraform Modules
- Terraform Provisioners
- Terraform State files
- Terraform Data Sources
- Terraform Cloud & Terragrunt

## MONITORING TOOL:

### NEW RELIC

- What is new Relic
- Advantage of new Relic
- Pricing
- Alert monitoring
- Hands-on Practical



### DATADOG

- What is DataDog
- Advantage of DataDog
- Pricing Alert monitoring
- Hands-on Practical



## **CI-CD PROJECTS**

- Bitbucket Integration with ECS. (DevSecOps Project)
- Kubernetes integration with Gitlab/ Github actions (DevSecOps Project)
- ECS project using AWS native Tools (AWS DevSecOps Project)

**AWS INTERVIEW PREPARATION SESSION – 2 hours**

**MOCK INTERVIEW**

THANK YOU

