

# Talha's DevOps Cheatbook

## Docker

Mnemonic: "I Build Pretty Containers Daily" -> Image, Build, Push, Container, Deploy

Basic steps:

1. `docker build -t app .`
2. `docker run -d -p 80:80 app`
3. `docker ps` / `docker logs` / `docker exec`

Interview Tip: Explain Docker vs VM: Docker shares the host OS kernel, while VMs use a hypervisor.

## Kubernetes (EKS)

C-P-N-A Model: Control Plane, Nodes, Networking, Add-ons

Mnemonic: "Coffee Nourishes Nerdy Adventurers" -> Control Plane, Nodes, Networking, Add-ons

Interview Tip: K8s uses declarative YAML for desired state.

## CI/CD Pipeline

Mnemonic: "Cool Bears Taste Doughnuts" -> Code, Build, Test, Deploy

Interview Tip: CI catches bugs early; CD ensures safe delivery to production.

## DevOps Infinity Loop

Plan -> Code -> Build -> Test -> Release -> Deploy -> Operate -> Monitor

Mnemonic: "Peter Can Bake Ten Red Delicious Orange Muffins"

Interview Tip: Describe the infinity loop and how each phase flows into the next.

## Terraform

Mnemonic: "Iguanas Prefer Adding Dill" -> Init, Plan, Apply, Destroy

Commands: `terraform init/plan/apply/destroy`

Interview Tip: Terraform manages infrastructure as code with state.

## Monitoring & Logging

Mnemonic: "Michael's Aunt Loves Donuts" -> Metrics, Alerts, Logs, Dashboards

Tools: Prometheus, Grafana, Loki, ELK

Interview Tip: Monitoring = metrics + alerts; Logging = centralized logs.

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## Ansible

Mnemonic: "YAML Runs Everything" -> YAML, Roles, Execution

Interview Tip: Ansible is agentless and uses SSH & YAML.

## Jenkins

Mnemonic: "Pipelines Automate Work" -> Pipeline, Agent, Workspace

Interview Tip: Jenkins automates CI/CD with plugins and Groovy pipelines.

## Git & GitHub

Mnemonic: "Fetch Add Commit Push" -> fetch, add, commit, push

Interview Tip: Distributed version control.

## Security & Scanning

Tools: Trivy, SonarQube, Vault

Mnemonic: "Secure Systems Prevent Harm" -> Scan, Secure, Policies, HashiCorp

Interview Tip: Integrate scans in CI and manage secrets centrally.

## Artifact Repositories

Tools: Nexus, Artifactory, ECR

Mnemonic: "Always Carry Artifacts" -> Artifacts, Containers, Repositories

Interview Tip: Use repos for versioned binaries.

## GitOps

Tools: ArgoCD, Flux

Mnemonic: "Git Operates Production Seamlessly" -> GitOps

Interview Tip: GitOps uses Git as source of truth.

## AWS Core Services

EC2, S3, VPC, IAM, EKS

Mnemonic: "Every Cloud Starts Simple" -> EC2, CloudFormation, S3, Security

Interview Tip: Mention region, AZs, IAM roles.

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## Helm

Helm is the package manager for Kubernetes, automating deployment of charts to clusters. (Helm packages called Charts) [Source: CNCF Helm docs]

Mnemonic: "Happy Engineers Launch Modules" -> Helm, Environments, Lifecycle, Management

Interview Tip: Helm = apt/yum for Kubernetes, uses Chart.yaml and values.yaml.

## ArgoCD

Argo CD is a declarative GitOps continuous delivery tool for Kubernetes, monitoring live vs desired state in Git. [Source: ArgoCD docs]

Mnemonic: "Always Rekindle GitOps Dreams" -> ArgoCD, Reconcile, GitOps, Declarative

Interview Tip: ArgoCD syncs Git repo to cluster automatically.

## Nexus Repository

Sonatype Nexus is a universal binary repository manager supporting multiple formats (Maven, Docker, npm). [Source: Sonatype docs]

Mnemonic: "Need Universal EXchange Store" -> Nexus, Universal, EXchange, Store

Interview Tip: Use Nexus for versioned artifacts and proxy public repos.

## SonarQube

SonarQube provides static code analysis and continuous inspection for code quality across 30+ languages. [Source: SonarQube docs]

Mnemonic: "Sound Quality Understandable Reports" -> SonarQube, Quality, Understandable, Reports

Interview Tip: Integrate with CI to enforce quality gates on pull requests.

## Vault

HashiCorp Vault manages secrets and encryption keys with dynamic secrets and audit logging. [Source: HashiCorp Vault]

Mnemonic: "Very Awesome Unlimited Lockable Treasure" -> Vault, Access, Unseal, Leases, Tokens

Interview Tip: Use Vault for dynamic credentials and centralized secret management.