PATHAHEAD · FREE ROADMAP

Become a Cloud / DevOps Engineer from Scratch

The engineers who ship and run software at scale. Go from zero to job-ready in about five months — with real pipelines, containers, and cloud deployments.

22
weeks · ~10–12 hrs/wk

5
hands-on projects

4
phases · to production

₹0
free tiers only

A free PathAhead learning resource · adjust the pace to your life — the order matters more than the dates.

THE ONE RULE

Automate → containerize → deploy

DevOps is learned by building pipelines, not reading about them. Everything below runs on free cloud tiers and ends in something deployed and automated.

THE ROADMAP

Four phases, step by step

0 Foundations

Weeks 1–5

The Linux, Git, and scripting base everything sits on.

WEEK 1
Linux & CLI
Shell, files, permissions, processes.

WEEK 2
Networking basics
DNS, HTTP, ports, load balancing.

WEEK 3
Git workflows
Branches, PRs, merge strategies.

WEEK 4
Scripting
Bash and Python for automation.

WEEK 5
Programming refresher
Enough code to build tooling.

1 Containers & CI/CD

Weeks 6–11

Package apps and ship them automatically.

WEEK 6
Docker
Images, containers, Dockerfiles.

WEEK 7
Docker Compose
Multi-service local environments.

WEEK 8
CI/CD concepts
Pipelines with GitHub Actions.

WEEK 9
Build & deploy
Automated test-and-deploy workflows.

WEEK 10
Registries
Push and pull container images.

WEEK 11 · PROJECT ▶
Containerized pipeline
Dockerize an app and auto-deploy it.

2 Cloud & Orchestration

Weeks 12–17

Run workloads on AWS and Kubernetes.

WEEK 12

Cloud fundamentals

AWS core: EC2, S3, IAM.

WEEK 13

Cloud networking

VPCs, subnets, security groups.

WEEK 14

Kubernetes basics

Pods, deployments, services.

WEEK 15

K8s scaling

Replicas, autoscaling, config.

WEEK 16

Infrastructure as Code

Terraform to define infrastructure.

WEEK 17 · PROJECT ▶

Deploy to Kubernetes

Run your app on a K8s cluster.

3 Monitoring & SRE

Weeks 18–22

Keep production healthy and secure.

WEEK 18

Monitoring

Prometheus and Grafana dashboards.

WEEK 19

Logging

Centralized logs with the ELK stack.

WEEK 20

Security & secrets

Secrets management, least privilege.

WEEK 21

Cert prep

AWS Cloud Practitioner study.

WEEK 22 · CAPSTONE ▶

Full platform

CI/CD + IaC + K8s + monitoring, end to end.

BUILD A PORTFOLIO

Five projects that get you hired

Projects beat certificates. Do them in order — each builds on the last. Put every one on GitHub with a clear README: problem → approach → result.

Start here

1 · Dockerize an App

Take any app and package it into a container that runs anywhere.

CI/CD

2 · CI/CD Pipeline

GitHub Actions that test and deploy on every push.

Cloud

3 · Deploy to AWS

Host an app on EC2/S3 with proper IAM and networking.

In demand

4 · Kubernetes Deployment

Run a multi-service app on a cluster with scaling.

Capstone

5 · IaC + K8s + Monitoring

A fully automated, monitored platform defined in Terraform.

ROLES YOU CAN APPLY FOR

DevOps Engineer · Cloud Engineer · Site Reliability Engineer · Platform Engineer

TYPICAL STARTING SALARY · INDIA

₹6–14 LPA

LEARN IT

Learning resources

Every item links to the real source (clickable in this PDF).

BOOKS

- The Phoenix Project by Gene Kim, Kevin Behr and George Spafford
- The DevOps Handbook by Gene Kim, Jez Humble, Patrick Debois and John Willis
- Site Reliability Engineering by Google

COURSES

- AWS Cloud Practitioner Essentials by AWS (free)
- DevOps on AWS by Coursera
- Docker and Kubernetes by freeCodeCamp (free)
- Google Cloud Fundamentals by Coursera

YOUTUBE

- TechWorld with Nana
- freeCodeCamp.org
- KodeKloud

PRACTICE

- KodeKloud
- AWS Free Tier
- GitHub

DO THIS TODAY

Your first step (takes 30 minutes)

1

Install Docker Desktop

Free — your local container playground.

2

Open an AWS free-tier account

aws.amazon.com/free — enough to learn the core services.

3

Run one container

docker run hello-world, then containerize a small app. Started.

Job-ready checklist: 3–5 solid projects on GitHub (≥1 deployed or documented) · can explain your work in an interview · comfortable with the core tools of the field · a portfolio or profile recruiters can find.

PathAhead — India's premium career guidance platform. This roadmap is a free educational resource; timelines are a guide and everyone learns at a different pace. Referenced third-party resources (KodeKloud, freeCodeCamp, AWS Skill Builder, TechWorld with Nana (YouTube), Docker docs) are for learning only and are not affiliated with PathAhead.