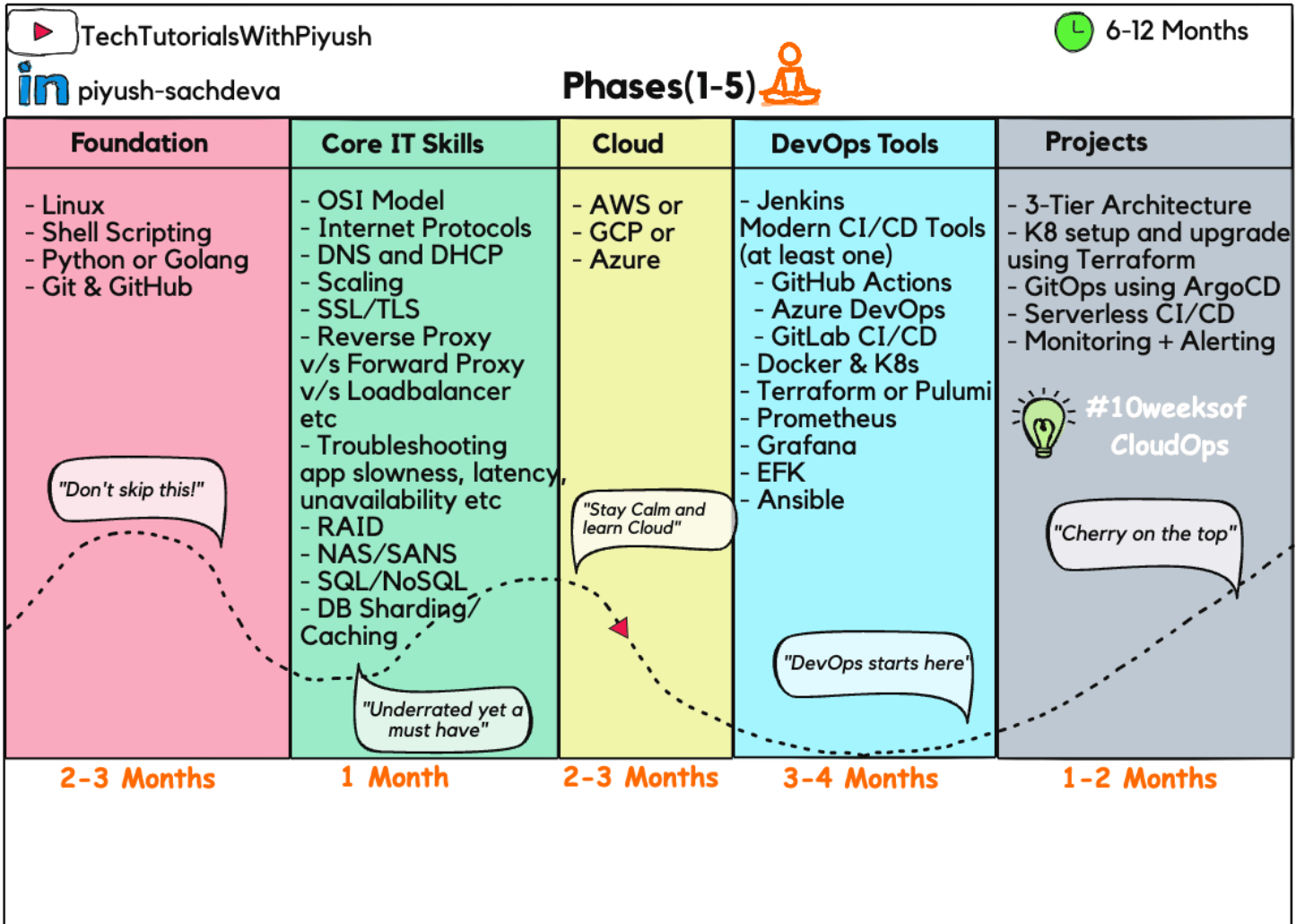


# DevOps ROADMAP 😊

By Piyush Sachdeva



piyushsachdeva for AWS Community Builders

Posted on Dec 20, 2024



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## DevOps and Cloud Engineering Roadmap 2025



#devops #roadmap #aws #azure

## 🚀 DevOps and Cloud Engineering Roadmap 2025



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## About

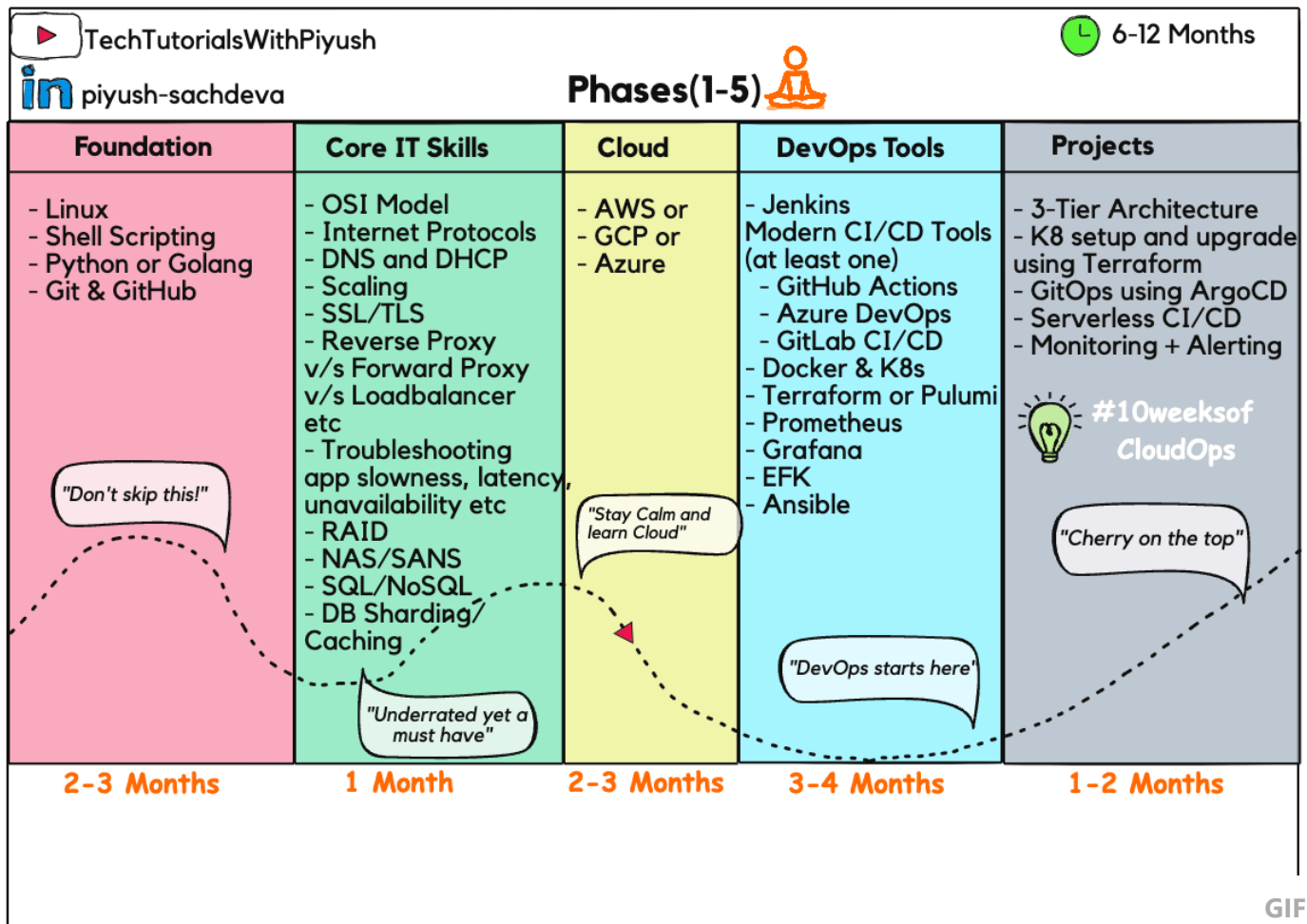
This repository contains a structured learning path for beginners entering the DevOps and Cloud Engineering field. The curriculum is designed for students, recent graduates, and career switchers, with an estimated completion time of 6-12 months of dedicated learning.



## Learning Path

### DevOps ROADMAP 😊

By Piyush Sachdeva



## Phase 1: Foundation (2-3 months)

## Linux and Shell Scripting

### # Topics:

- |— Linux Administration
  - | |— Linux Installation
  - | |— Command Line Basics
  - | |— File System Management
  - | |— Process Management
  - | |— User Administration
  - | |— Package Management
- |— Bash Scripting
  - | |— Variables and Data Types
  - | |— Control Structures
  - | |— Functions
  - | |— Automation Scripts

## Programming Foundation

Choose one:

- **Python** (Recommended for beginners)
  - Basic syntax and data structures
  - Object Oriented Programming
  - File handling and automation
  - API integration
  - Libraries: requests, pandas, numpy
- **Golang**
  - Systems programming
  - Concurrent programming
  - Cloud-native development

## Version Control

### # Git & GitHub

- |— Git Setup
- |— Basic Commands
- |— Branching Strategies
- |— Git Flow
- |— Pull Requests
- |— Code Reviews
- |— Collaborative Development

## Phase 2: Core IT Skills (1 month)

## Network Fundamentals

- OSI Model - In-depth
- TCP/IP Protocol Suite
- Internet Protocols ( HTTP, HTTPS, SSH, SMTP, ICMP, etc)
- How to analyze network packets using tools such as Wireshark
- DDOS attack and how to mitigate that
- CIDR and Subnetting [Video Link](#)
- DNS and DHCP [Video Link](#)
- Vertical V/s Horizontal Scaling
- SSL/TLS, symmetric vs asymmetric encryption and how it works : [Video Link](#)
- Reverse Proxy V/s Forward Proxy V/s load balancer
- Troubleshooting application slowness, latency, unavailability etc
- RAID
- NAS vs SAN storage
- SQL vs NoSQL
- DB Sharding, Caching etc

## Phase 3: Cloud Computing (2-3 months)

Choose your cloud provider:

- Which Cloud Provider to choose? Confused? Watch the video below and you should be good [Video link](#)

Cloud provider	Certification type	Certification	Tutorials
AWS	Foundation Associate	<ul style="list-style-type: none"><li>• AWS Certified Cloud Practitioner</li><li>• AWS Solutions Architect Associate</li></ul>	
Azure	Foundation Associate	<ul style="list-style-type: none"><li>• AZ-900 Azure Fundamentals</li><li>• AZ-104 Azure Administrator</li></ul>	<a href="#">Playlist</a>
GCP	Foundation Associate	<ul style="list-style-type: none"><li>• Google Cloud Digital Leader</li><li>• Associate Cloud Engineer</li></ul>	<a href="#">Playlist</a>

Note: Got more questions about the Cloud/DevOps Certifications? Watch the video below:

[Video Link](#)

## Phase 4: DevOps Tools (3-4 months)

### 1. Containerization (Docker)

#### # Docker Fundamentals

- └ Container Basics
- └ Dockerfile Creation, Multi-Stage Builds
- └ Image Management
- └ Docker Compose
- └ Container Networking
- └ Docker Best Practices
- └ Volume Management

Checkout the free YouTube playlist 🖱 [here](#)

### 2. Container Orchestration (Kubernetes)

Checkout the free YouTube playlist 🖱 [here](#)

### 3. CI/CD Pipeline

- Jenkins ( Checkout the free Youtube video [here](#))
- Modern CI/CD Tools(at least one from below)
  - GitHub Actions
  - Azure DevOps (Checkout the free Youtube Playlist [here](#))
  - GitLab CI/CD (Checkout the free Youtube video [here](#))

### 4. Infrastructure as Code

#### # Terraform

- └ HCL Syntax
- └ Resource Management
- └ State Management
- └ Modules
- └ Cloud Provider Integration

Checkout the free Terraform playlist [here](#)

### 5. Monitoring & Logging

- Prometheus & Grafana
- ELK Stack
- Fluentd

## Phase 5: 🛠️ Projects

- Check out the [Repo here](#) for #10weeksofcloudops projects

## 📚 Learning Resources

### Official Documentation

- [Docker Docs](#)
- [Kubernetes Docs](#)
- [Terraform Docs](#)

### YouTube Channels

- [Tech Tutorials With Piyush](#)

### Practice Platforms

- [Katacoda](#)
  - [Play with Docker](#)
  - [Play with Kubernetes](#)
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Made with ❤️ by [Piyush Sachdeva]

Last updated: December 2024



AWS

PROMOTED





# THE 2030 VERSION OF A RUBBER DUCK

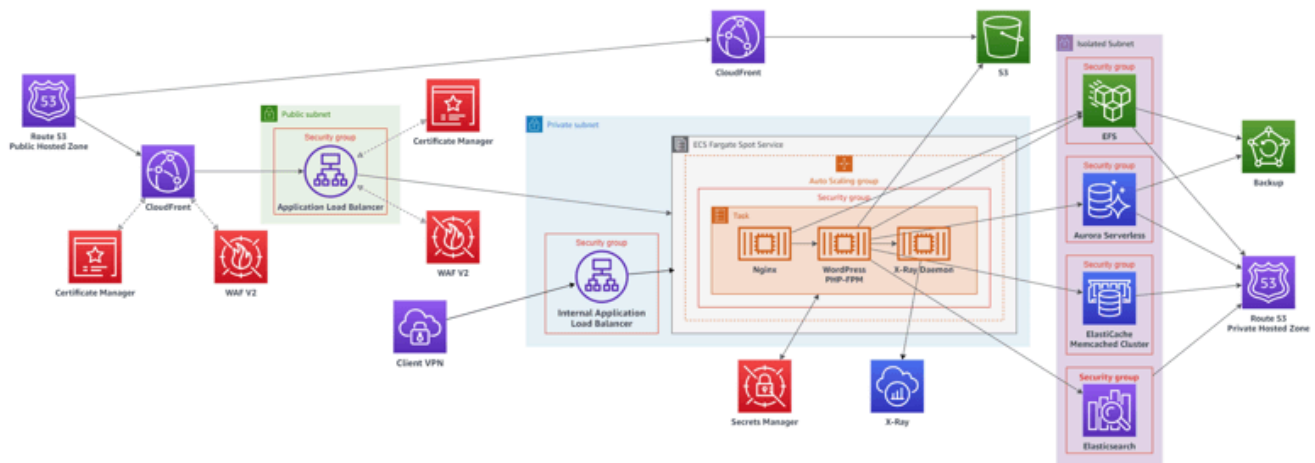
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## [Best Practices for Running Container WordPress on AWS \(ECS, EFS, RDS, ELB\) using CDK](#)

This post discusses the process of migrating a growing WordPress eShop business to AWS using AWS CDK for an easily scalable, high availability architecture. The detailed structure encompasses several pillars: Compute, Storage, Database, Cache, CDN, DNS, Security, and Backup.

[Read full post](#)



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The Hidden Costs of AWS: How to Avoid Unexpected Cloud Bills

[#aws](#) [#finops](#) [#cloud](#) [#cloudcomputing](#)



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## [Low Cost "Overkill" AWS Infrastructure for a Newborn Startup](#)

The author designs a low-cost architecture for a maintenance management platform startup, ensuring features such as security, availability, and scalability using AWS Services like EKS, RDS, S3, and CloudFront.

[Read full post](#)