DevOps Track Program Goal

Comprehensive Understanding & Practical Application

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Core Topics Covered

DevOps Fundamentals & Lifecycle

Learn DevOps as a modern practice enabling a single team to manage the entire application lifecycle.

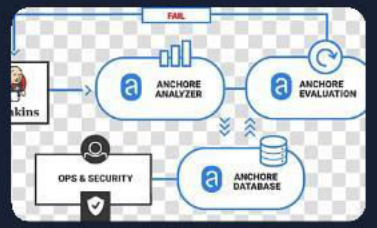
Collaboration | Agile | Efficiency

Version Control with Git & GitHub

Master Git for source code management and GitHub for collaborative development and workflows.

Code Management | Branching | Collaboration

CI/CD Pipelines (Jenkins, GitLab CI)



Implement CI/CD with industry-standard tools like Jenkins and GitLab CI for automated deployments.

Automation | Continuous Delivery | Speed

Containerization with Docker

Package applications into portable, isolated containers for consistent environments across the lifecycle.

Portability | Isolation | Efficiency

Phase 1: Foundational & Core Concepts

(Months 1 & 2 - Online)

Goal: Build core understanding and hands-on skills in DevOps.

Month 1: DevOps Principles & Foundational Tools

DevOps Principles: Explore DevOps as a modern methodology uniting development and operations teams, enabling a single, collaborative unit to manage the entire application lifecycle.

Foundational Tooling: Gain hands-on experience with fundamental tools, including mastering version control and understanding core CI/CD concepts to streamline software

Month 2: Infrastructure, Automation & Monitoring

Infrastructure as Code (IaC): Delve into defining and managing infrastructure programmatically to build, package, and release code with consistency.

Advanced Automation: Build advanced CI/CD pipelines to achieve rapid, code-driven deployment workflows and integrate seamlessly with business operations

Month 1: DevOps Principles & Foundational Tools

Week 1: DevOps Fundamentals

DevOps Essentials: Explore core CALMS principles and the cultural shift from traditional methods to a unified Dev & Ops approach.

Lifecycle & Environment: Dive into the full DevOps lifecycle and set up a foundational Linux environment.

CALMS | Collaboration

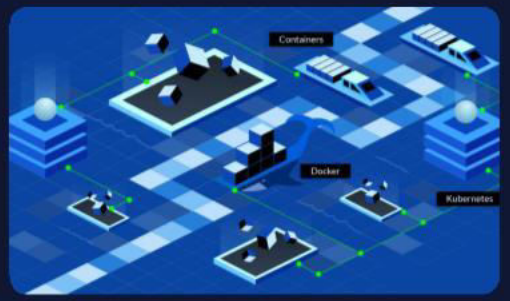
Week 2: Version Control

Git Fundamentals: Master the industry-standard distributed version control system for tracking changes and managing code history.

GitHub Collaboration: Gain experience with repos, commits, branching, pull requests, and resolving merge conflicts.

Code History | Branching

Week 3: Containerization



Docker Ecosystem: Understand containerization benefits with Docker images for lightweight, standalone, executable packages.

Building & Orchestrating: Write Dockerfiles and use Docker Compose to define and run multi-container applications.

Portability | Isolation

Week 4: CI/CD with Jenkins

CI/CD Concepts: Grasp Continuous Integration & Delivery to automate the software release process and streamline cycles.

Jenkins Implementation: Use Jenkins to configure Freestyle projects and leverage "Pipeline as Code" for scalable workflows.

Automation | Deployment

Month 2: Infrastructure, Automation & Monitoring

Week 5: CI/CD Pipelines

Advanced CI/CD: Delve into robust pipelines using GitLab CI & advanced Jenkins. Learn to build, test, and release application and infrastructure code.

Security Integration: Embed DevSecOps principles into your workflows, addressing vulnerabilities early to create secure deployments.

Week 6: Infrastructure as Code

Terraform Fundamentals: Master Terraform to define, provision, and manage infrastructure with a declarative workflow for reproducible environments.

State & Cloud Integration: Manage infrastructure changes collaboratively with remote state backends and integrate with major cloud platforms.

Automation

Week 7: Monitoring & Logging

Comprehensive Observability: Implement powerful monitoring using Prometheus and Grafana to gain deep insights from metrics, logs, and traces.

Key Tools: Get hands-on with the ELK Stack (Elasticsearch, Logstash, Kibana) for centralized log management and effective troubleshooting.

Week 8: Advanced Concepts

Cloud Native Paradigm: Explore principles of modern development, focusing on microservices, containers, and orchestration with an intro to Kubernetes.

Kubernetes & DevSecOps: Deepen your knowledge of DevSecOps by integrating security throughout the entire DevOps pipeline.

Phase 2: Industry Immersion & Integrated Project

(Month 3 - Offline)

Goal: Implement an end-to-end automated deployment pipeline.

Hands-on Project with Real-World Scenarios

This capstone project challenges participants to design, build, and deploy a complete DevOps pipeline from scratch, mirroring industry best practices and addressing real-world operational challenges. It serves as a comprehensive demonstration of learned skills and readiness for professional roles.

Automated Deployment | Real-World Application | Capstone

CI/CD Pipelines

Automated Flow: Design and implement robust automated pipelines that build, test, and deploy applications, accelerating software delivery.

Best Practices: Integrate continuous integration and continuous deployment principles to ensure reliability and rapid iteration for the project's codebase.

Containerization

Docker Application: Leverage Docker to package the project's applications and their dependencies into portable, isolated containers.

Month 3: Capstone Project & Career Readiness

Capstone Project: Build & Refine

Week 9: Kick-off & Design

Team Formation & Mentor Allocation: Organize into collaborative teams and receive dedicated mentorship from industry experts.

Architecture Design: Develop a robust and scalable architectural blueprint for your project.

Collaboration | Mentorship | Planning

Week 10: Build Pipeline & Containers

Dockerizing Applications: Package project applications into portable Docker containers for consistent environments.

CI for Images & Terraform IaC: Automate image builds with CI and provision cloud infrastructure programmatically.

Automation | Portability | IaC

Week 11: Deploy, Monitor & Troubleshoot

CD & Blue/Green Deployments: Automate releases and implement advanced strategies for zero-downtime deployments.

Alerts & Troubleshooting: Configure comprehensive monitoring with alerts and gain practical troubleshooting experience.

Efficiency | Resilience | Observability

Week 12: Project Showcase

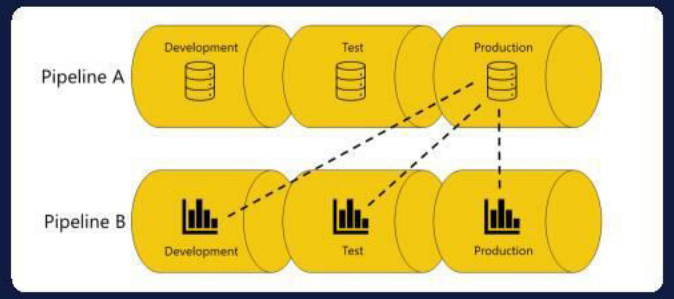
Final Presentations: Present your completed capstone project to a panel, demonstrating technical prowess and problem-solving skills.

Career Launchpad & Engagement

Mock Interviews & Networking: Engage in realistic interviews and connect with leading DevOps engineers and hiring managers.

Program Highlights & Outcomes

End-to-End Automated Deployment



Holistic Automation: Design and manage fully automated CI/CD pipelines, ensuring rapid, reliable software delivery from commit to production.

Seamless Delivery: Drastically reduce manual errors and accelerate time-to-market with expertise in seamless delivery workflows.

CI/CD Automation | Reliability | Efficiency

Mastery of Key DevOps Tools

Core Tool Proficiency: Deep expertise in Git, Docker, Jenkins/GitLab CI, and Terraform.

Monitoring & Observability: Hands-on experience with Prometheus for metrics and Grafana for powerful data visualization.

Git | Docker | Jenkins | Grafana

Practical Cloud Infrastructure

IaC Implementation: Provision and manage cloud infrastructure using Infrastructure as Code (IaC) principles with Terraform.

Scalable Environments: Create, update, and manage cloud resources in a consistent, repeatable, and scalable manner.

IaC | Cloud Agnostic | Automation

Connect with Us!

Reach out to our team for inquiries and collaborations.

Whether you have questions about our DevOps programs, want to explore partnership opportunities, or simply wish to learn more about SapiensAI, we are here to help.

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