

AWS Certified DevOps Engineer - Professional Prep

AWS DevOps Engineer Professional. CI/CD, infrastructure as code, and automation on AWS.

IT Certifications Instructor: Nick Williams • 5 sections • 44 lessons • 16.00h total

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About this course

This course prepares you for the AWS Certified DevOps Engineer Professional exam. We focus on CI/CD pipelines, infrastructure as code, monitoring, and automation on AWS.

You will learn through hands-on labs, real scenarios, and practice exams. The course covers CloudFormation, CodePipeline, Elastic Beanstalk, and related services.

Course curriculum

Foundations and Exam Strategy

- **Understanding the DOP-CO1 Exam Blueprint (12m)**
We break down the exam domains, question formats, and scoring to give you a clear map of what to expect on test day.
- **Setting Up Your AWS Exam Sandbox (18m)**
A step-by-step guide to configuring your AWS free-tier account for the labs, including IAM user setup and budget alerts to avoid surprise costs.
- **Key AWS Services for DevOps You Must Know (25m)**
A high-level overview of the core services tested, like CodePipeline, CloudFormation, and Systems Manager, and how they fit into the DevOps lifecycle.
- **AWS CLI and SDKs for Automation (15m)**
Learn how to efficiently use the command line and SDKs to automate tasks, a critical skill for both the exam and real-world scenarios.
- **IAM Deep Dive: Roles, Policies, and Best Practices (32m)**
We explore advanced IAM concepts, including permission boundaries and cross-account access, which are frequent topics in complex exam questions.
- **AWS Well-Architected Framework for DevOps (14m)**
Understand how the five pillars of the Well-Architected Framework directly inform exam scenarios and best-practice recommendations.
- **Decoding AWS Service Limits and Quotas (10m)**
A practical look at service limits that often appear in exam questions, and how to request increases when necessary.
- **Time Management and Study Plan (8m)**
Get a realistic study plan and time management tips to cover all exam domains effectively before your test date.

CI/CD and Automation Mastery

- **Designing High-Performance CI/CD Pipelines (22m)**
We'll show you how to architect scalable and resilient pipelines using AWS CodePipeline, focusing on parallel actions and deployment strategies.
- **Deep Dive into AWS CodeBuild and Caching (28m)**
Learn to optimize build times with CodeBuild project caching, buildspec configurations, and managing build environments.
- **Deployment Strategies with AWS CodeDeploy (24m)**
A problem-solving session on implementing blue/green and canary deployments using CodeDeploy, including hooks and rollback mechanisms.
- **Managing Multi-Stage Pipelines with AWS CodePipeline (26m)**
Step-by-step guide to building complex, multi-stage pipelines with approval gates and conditional execution paths.

- **Infrastructure as Code with AWS CloudFormation (35m)**
Master CloudFormation templates, nested stacks, and change sets for predictable and repeatable infrastructure deployments.
- **Advanced CloudFormation: StackSets and Drift Detection (20m)**
Learn to manage infrastructure across multiple regions and accounts and detect configuration drift effectively.
- **Automating Deployments with AWS CDK (30m)**
Explore the AWS Cloud Development Kit (CDK) for defining infrastructure in familiar programming languages and synthesizing CloudFormation.
- **Securing Your CI/CD Pipeline (19m)**
A real case study analysis on securing secrets with AWS Secrets Manager, artifact encryption, and IAM role assumption in pipelines.
- **Troubleshooting Common CI/CD Failures (16m)**
We'll diagnose and solve common issues in CodePipeline, CodeBuild, and CodeDeploy to prepare you for scenario-based questions.

Configuration Management and Monitoring

- **Automating Configuration with AWS Systems Manager (29m)**
Learn how to use State Manager, Patch Manager, and Parameter Store for consistent configuration and patching at scale.
- **Designing Centralized Logging Architectures (23m)**
We'll build a solution using CloudWatch Logs, Subscription Filters, and Kinesis Data Firehose to aggregate logs from multiple accounts.
- **Setting Up CloudWatch Alarms and Dashboards (25m)**
A hands-on guide to creating meaningful metrics, alarms, and dashboards to monitor application health and infrastructure performance.
- **Using AWS X-Ray for Distributed Tracing (17m)**
Understand how to instrument your applications with X-Ray to analyze and debug performance bottlenecks in complex microservices.
- **Event-Driven Automation with Amazon EventBridge (27m)**
Learn to build decoupled, event-driven architectures using EventBridge rules to react to changes in your AWS environment in real-time.
- **Automating Responses with AWS Lambda and SNS (21m)**
We'll create a real-world solution that automatically responds to CloudWatch alarms by invoking a Lambda function to remediate issues.
- **Cost Optimization and Reporting Strategies (18m)**
A practical look at using Cost Explorer, Budgets, and Trusted Advisor to identify and act on cost-saving opportunities in DevOps workflows.

Security, Compliance, and Governance

- **Managing Secrets and Encryption at Rest/In Transit (31m)**
A deep dive into AWS KMS, Secrets Manager, and Systems Manager Parameter Store for managing sensitive data securely.

- **Implementing VPC Security Best Practices (26m)**
We'll configure Security Groups, NACLs, and VPC Flow Logs to secure network access and monitor traffic patterns for anomalies.
- **Automating Compliance with AWS Config (22m)**
Learn to deploy Config rules to continuously audit and assess whether your AWS resources comply with your security policies.
- **Detecting Threats with Amazon GuardDuty (15m)**
Understand how GuardDuty uses machine learning to detect malicious activity and how to integrate it with your incident response workflow.
- **Protecting Web Applications with AWS WAF and Shield (19m)**
A step-by-step guide to deploying WAF rules to block common web exploits and using Shield for DDoS protection.
- **Cross-Account Security and IAM Role Assumption (28m)**
We'll design a secure multi-account strategy using Organizations and IAM roles for centralized access control and auditing.
- **Auditing API Calls with AWS CloudTrail (13m)**
Learn how to enable and analyze CloudTrail logs to track user activity and API usage for security investigations and compliance.
- **Data Encryption in S3, EBS, and RDS (20m)**
A practical problem-solving session on enabling encryption by default and managing encryption keys for various data stores.
- **Disaster Recovery and Business Continuity Planning (24m)**
Explore strategies for backup, restore, and failover using AWS Backup, RDS snapshots, and multi-region deployments.
- **Securing Serverless Applications (16m)**
We'll review best practices for securing Lambda functions, API Gateway, and event sources to minimize your attack surface.

High Availability and Resilience

- **Designing for Fault Tolerance and Scalability (30m)**
We'll analyze architectures for EC2, RDS, and serverless applications to ensure they can handle component failures gracefully.
- **Automating Backups and Recovery with AWS Backup (21m)**
Learn to configure backup plans, vaults, and lifecycle policies to automate data protection for EBS, RDS, and DynamoDB.
- **Implementing Auto Scaling and Load Balancing (27m)**
A deep dive into EC2 Auto Scaling groups, target tracking policies, and Application Load Balancer configurations for dynamic workloads.
- **Multi-Region Architectures for High Availability (33m)**
Explore patterns for active-active and active-passive setups using Route 53, Global Accelerator, and data replication services.

- **Database Resilience: RDS Multi-AZ and DynamoDB Global Tables (19m)**
We'll configure highly available databases and understand the trade-offs between consistency, availability, and latency.
- **S3 Storage Strategies for Durability and Performance (14m)**
Learn to use S3 storage classes, cross-region replication, and lifecycle policies to optimize for cost and data durability.
- **Automating DNS Failover with Route 53 (18m)**
A step-by-step guide to setting up health checks and failover routing policies to automatically redirect traffic during outages.
- **Using SQS and SNS for Decoupled Architectures (23m)**
We'll build a resilient, decoupled system using SQS queues and SNS topics to handle traffic spikes and prevent data loss.
- **Elastic Load Balancer Deep Dive: Listeners and Rules (17m)**
Master complex ALB and NLB configurations, including path-based routing and SSL termination for multi-tier applications.
- **Final Exam Review: Key Scenarios and Services (25m)**
A comprehensive review of the most critical concepts and services, walking through sample exam-style scenarios to test your knowledge.

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