

DevOps AWS Intermediate Syllabus



Design a detailed syllabus for 5 years experienced devops engineer with primary cloud aws to clear intermediate level interviews.



Here's a detailed **syllabus for a 5-year experienced DevOps Engineer** with AWS as their primary cloud to prepare for intermediate-level interviews. It covers key topics, tools, and hands-on practices relevant to the industry.

Syllabus for DevOps Engineer Interview Preparation

1. Core AWS Concepts (25%)

- **Compute Services:**
 - EC2: Instance types, Auto-scaling, Launch Templates, Spot Instances.
 - Lambda: Event-driven architecture, troubleshooting, best practices.
 - ECS, EKS: Container orchestration with ECS Fargate vs EKS (Kubernetes).
- **Storage Services:**
 - S3: Versioning, Lifecycle policies, Cross-region replication, Bucket policies.
 - EBS & EFS: Performance tuning, backup strategies, encryption.
- **Networking:**
 - VPC: Subnets, Route tables, NAT Gateway, Internet Gateway, VPC peering.
 - Load Balancers: ALB, NLB, CLB configurations.
 - Route 53: DNS concepts, failover routing, latency-based routing.
 - Security Groups, Network ACLs, and VPN setup.
- **Databases:**
 - RDS: Multi-AZ, Read replicas, backup & recovery.
 - DynamoDB: Indexing, partitions, query optimization.
 - Aurora and Redshift overview.
- **IAM and Security:**
 - IAM roles, policies, and cross-account access.
 - AWS KMS, Secrets Manager, Cognito.
 - Security best practices and monitoring (GuardDuty, AWS Inspector).
- **Monitoring and Logging:**
 - CloudWatch: Logs, Metrics, Alarms.
 - CloudTrail: Governance and auditing.
 - AWS Config: Compliance management.

2. DevOps Tools and Practices (35%)

- **CI/CD Pipelines:**
 - Jenkins: Declarative pipelines, Blue-Green deployments.
 - GitLab CI/CD or AWS CodePipeline.
 - ArgoCD: Kubernetes-native continuous delivery.
 - **Containerization:**
 - Docker: Advanced usage (multi-stage builds, private registries).
 - Kubernetes: Pods, Deployments, StatefulSets, DaemonSets, Services, ConfigMaps, and Secrets.
 - Helm: Chart creation, dependencies, versioning.
 - **Infrastructure as Code (IaC):**
 - Terraform: Writing, modularizing, state management, remote backend.
 - AWS CloudFormation: YAML templates, nested stacks.
 - Ansible: Playbooks, roles, dynamic inventory.
 - **Version Control and Collaboration:**
 - Git: Branching strategies, resolving conflicts, PR best practices.
 - GitHub/GitLab Actions.
 - **Monitoring and Observability:**
 - Prometheus: Custom metrics, alerting.
 - Grafana: Dashboards, AWS data sources.
 - ELK/EFK Stack: Log aggregation, analysis.
 - Datadog/New Relic: Application performance monitoring.
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3. Automation and Scripting (15%)

- **Scripting Languages:**
 - Python: boto3 for AWS automation, automation scripts.
 - Bash/Shell scripting: Common Linux commands, CRON jobs.
 - **Workflow Automation:**
 - AWS Step Functions, Lambda functions for automation.
 - EventBridge for event-driven workflows.
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4. Security and Compliance (10%)

- AWS Security Hub, Trusted Advisor.
 - Securing pipelines: Secrets management, scanning vulnerabilities.
 - OWASP Top 10 for DevOps pipelines.
 - Compliance standards: HIPAA, PCI DSS, ISO 27001 on AWS.
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5. System Design for DevOps (10%)

- Designing HA & scalable architectures on AWS.
 - Disaster recovery strategies: RTO, RPO.
 - Cost optimization techniques (Savings Plans, Reserved Instances, Spot).
 - Building end-to-end CI/CD pipelines for microservices.
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6. Soft Skills and Problem Solving (5%)

- Troubleshooting production issues under pressure.
 - Incident response & RCA (Root Cause Analysis).
 - Communication for collaboration with cross-functional teams.
 - Behavioral interview preparation (STAR method).
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Suggested Learning Plan (3-4 Months)

Phase 1: Foundations (Weeks 1-4)

- Deepen knowledge of AWS services.
- Revise scripting basics and Terraform.
- Build or refine a small-scale CI/CD pipeline.

Phase 2: Intermediate-Level Tools (Weeks 5-8)

- Set up Kubernetes clusters on EKS.
- Write modular Terraform scripts.
- Practice Dockerizing and deploying applications.

Phase 3: Advanced Practices (Weeks 9-12)

- Solve AWS Well-Architected Framework exercises.
- Implement monitoring solutions (Prometheus, Grafana).
- Practice deploying blue-green and canary releases.

Phase 4: Mock Interviews & Fine-Tuning (Weeks 13-16)

- Conduct mock interviews focusing on AWS, CI/CD, and Kubernetes.
 - Review incident response scenarios.
 - Sharpen problem-solving and behavioral responses.
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Resources

- **AWS Official Documentation:** Deep dives into services.
 - **Certifications:** AWS Solutions Architect Associate, Kubernetes CKA.
 - **Books:**
 - *Terraform: Up & Running* by Yevgeniy Brikman.
 - *The Phoenix Project* and *The DevOps Handbook*.
 - **Platforms:**
 - Coursera, Pluralsight, and Udemy for hands-on labs.
 - LeetCode, HackerRank for problem-solving.
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By following this structured approach and dedicating consistent effort, you can confidently clear intermediate-level DevOps interviews. Let me know if you'd like tailored resources or project suggestions!