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# DevOps conversion training

10 days (70 hours)

## Presentation

Are you a developer, administrator or engineer looking to specialize in DevOps? DevOps is one of the development systems most in demand by companies.

Indeed, [DevOps is the IT skill most in demand](#) (64% of companies cited this approach, according to an OpsRamp survey).

Given the adoption of agility in most large organizations, a DevOps retraining is an excellent opportunity to land a job or promotion in the IT sector. Still according to the OpsRamp survey, 94% of companies find it difficult to recruit DevOps profiles.

Our 10-day DevOps conversion training course will teach you how to use the most commonly used DevOps tools and implement a DevOps culture within your company.

## Objectives

- Be able to manage the implementation of a Devops culture within a company
- Install Devops tools, automation and CI/CD platform
- Scale up and evolve the platform
- Be a driving force behind the integration of Kubernetes within a company
- Coaching beginners and juniors in Devops concepts and associated tools

## Target audience

- Developers
- Architects

- System administrators
- Engineers

## Prerequisites

- Knowledge of Linux and the command line
- Attention intensive course, you must be ready to type hundreds of lines of commands manually with support provided.

## DevOps conversion training program

### Day 1 - Origins of DEVOPS

- Introduction to Devops
- Devops Implementation
- Statistics, walking,
- Preparing your company for Devops
- DevOps tools: an introduction to each tool
- Scaling up
- The CALMS concept
- Continuous delivery
- Engineering site reliability and resilience
- DevSecOps
- ChatOps
- Kanban
- Agile
- ITSM
- Lean
- Safety culture
- Learning organizations
- Ongoing financing
- The importance of metrics
- Technical metrics
- Commercial metrics
- Measurements and metric ratios

### Morning Day 2 - Agility

- Reminder of Agile, Lean, XP, DSDM, Scrum, Kaban methods
- Building the sprint backlog, identifying tasks, planning.
- Implement continuous improvement: lead reviews and end-of-iteration retrospectives.
- Daily planning: daily scrum or standing meeting: objective, organization.
- Development organization. WIP, XP's development iterations.
- Engineering principles: simple design, code improvement through rewriting, continuous integration.
- Define the "done" of a release, a sprint, a task...
- Progress indicators: release and sprint Burndown Chart, Kanban Work In Progress.

- Other useful indicators.
- Prioritization of stories based on risk and customer value.
- TP - Dashboard on Github, Jira

## Afternoon Day 2 - ITIL

- A reminder of ITIL v4
- DEVOPS reminder
- Differences between ITIL and DEVOPS
- ITIL and DEVOPS deployment
- ITIL and DEVOPS administration
- Devops Flops
- Tackling the administrative side of ITIL
- ITSM, CMDB, CAB
- Avoiding silos

## Day 3 - Ansible

- Simulation on 4 machines
- Static and dynamic inventory
- Ad-hoc commands
- Playbooks
- Filters and modules
- Roles, Vault,
- Configuration with Ansible.cfg
- AWX - Getting started
- TP- Modular playbook writing style
- TP- writing a filter that formats external disks

## Days 4 and 5 - Docker

- TP - GIT reminder
- Introducing Docker
- Create images from scratch, and from ISO
- Registry, Registry-proxy, volumes, links, DinD, Portainer, docker-compose
- multi-stage build, distroless,
- Network, CNI weave
- TP- dockerfile writing style
- TP - Secure Docker

## Days 6-7 - Jenkins

- Complete CI/CD platform with gitlab, jenkins, sonar, nexus, docker, jmeter, selenium, Ansible AWX
- Introduction to sonar,
- Introduction to Nexus
- Test plan with Jmeter
- Writing java tests for Selenium
- Pipeline writing in graphics mode

- Writing JenkinsFile pipelines in DSL
- Webhooks, Checkstyle, Log parser, Performance
- 4 TP - complete CI/CD

## Days 8-9 - Kubernetes

- Installation with Ansible and kubeadm
- All Kubernetes objects, StorageOS, CRD, Operator, ReplicatSet, Daemonset, NFS usage, PersistenceVolume, PersistenceVolumeClaim
- Pod, InitContainer, Sidecard Pod, Maintenance, Troubleshooting
- Network
- TP - CI/CD with Argo CD
- TP Administration

## Day 10 - Monitoring with Prometheus

- Installation, with docker and with Kubernetes
- Scrapes, PromQL, Rules, node-exporter, Grafana and Loki

Ansible training

Kubernetes training

Docker training

## Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical training: 60% Practical, 40% Theory. Training material distributed in

to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.