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# Argo CD training

2 days (14 hours)

## Presentation

[Argo CD](#) training will introduce you to this open source declarative and continuous GitOps delivery tool for Kubernetes. You'll be able to manage the application lifecycle without compromising security and compliance.

In this course, you'll learn how to deploy applications automatically and in a controlled way.

You can report deviations and provide visualizations to help your developers automatically or manually synchronize an actual state with a desired state.

With Argo CD, let your teams use a single platform to deploy multiple applications on Kubernetes, minimizing error and security risks.

The training will be presented with the latest version of Argo CD, [version 2.10.0](#).

## Objectives

- Installing and configuring ArgoCD
- Configuring an application in ArgoCD
- Automatic/manual application deployment with GitOps
- View application health and logs in real time
- Integration into CI pipelines and use of api

## Target audience

- System administrators

- Developers
- DevOps

## Prerequisites

- Practical knowledge of Kubernetes
- Notion in software deployment

## Technical requirements

- Having this software installed on a Linux system :
  - Docker
  - Minikube
  - Kubectl
  - Helm

## Argo CD training program

### Introduction and installation

- Introduction to ArgoCD
- Introduction to GitOps principles
- [lab] Installing and configuring the tool on a local cluster

### Understand how it works and carry out deployments

- Continuous deployment workflow with ArgoCD
- ArgoCD as a Kubernetes extension
- [lab] Application deployment
- [lab] Operating the tool and its interface
- [lab] Experimenting with how ArgoCD keeps track of application state (real state)
- similar to the state described in git (desired state)
- [lab] launch automatic deployments

### ArgoCD administration

- Access control to Kubernetes resources
- Rights management in ArgoCD
- [lab] create users and assign access rights
- Supervision of multiple clusters
- Prometheus metrics exhibition

### Mastering continuous deployment

- Rollback and DR with ArgoCD
- [lab] History and rollback
- Argo Rollouts
- ArgoCD Hooks

## Integration with CI & Helm and best practices

- Advanced application configuration with Helm
- Definition of configMaps and Secrets namespaces in ArgoCD+[lab].
- Using ArgoCD manifests
- [lab] Integration with CI pipelines (Jenkins/Gitlab-ci)

## Companies concerned

This 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 course: 60% Practical, 40% Theory. Training material distributed in digital format 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.

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[Training Program Web page](#) - Appendix 1 - Training sheet

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