DevOps: State of the Art and Best Practices

Seminar of 2 days - 14h
Ref.: DOE - Price 2024: CHF2 090 (excl. taxes)

EDUCATIONAL OBJECTIVES
At the end of the training, the trainee will be able to:

Measure the scale of a DevOps-driven ISD reorganization

Know what makes up a DevOps software factory

Be able to design a strategy to enable an ISD to grow into a DevOps organization

TEACHING METHODS

The instructor describes the software they feel is important. No demonstrations are included.

Strategy discussions.

THE PROGRAMME
last updated: 01/2018

1) » DevOps approach: In search of an initial definition
- Description of DevOps by DevOps supporters.
- Observation of contradictory goals.
- Origin of DevOps and Internet companies.
- The DevOps solution.

2) » The genealogy of DevOps: Agile Methods and Lean Manufacturing
- Some principles of Lean Manufacturing.
- The mass production of traditional IT.
- "Just-in-time" doesn't care about the nature of the business.
- The one-piece-flow model: Smaller, faster, more frequent.
- Limiting demand and increasing flow. Stacks and one-piece-flow.
- Optimizing the flow and productivity. The value chain.
- Eliminating bottlenecks and waste.
- Reducing the size of batches to one-piece-flow.
- Stopping at the first defect.
- The fourteen principles of Deming.
- "The Machine That Changed the World" by James Womack.
- "The Agile Manifesto".
- "Lean Software Development" by the Poppendiecks.
- "Continuous Deployment" by Jez Humble.
- "The Phoenix Project" by Gene Kim.

3) » Operation and key processes of the DevOps ISD
- Life cycle of the Release.
- Scrum Agile development.
- Backlogs and waste, sprints and reactivity, Scrum Master and Lean Management.
- Continuous integration: Principle and tools (Jenkins, SVN, GIT).
- "Branches are evil".
- Automating tests.
- Continuous development. Modularity. Role of interfaces.
- Industrializing/automating Deployments: Tools like Capistrano and Ansible.
- Data cases, package types, and the Liquibase tool.
- Zero Downtime Deployment.

- Business Activity Monitoring.
- Service infrastructure and provisioning servers.
- Puppet: Administration of servers.

4) » From operability to dependability
- Non-functional requirements.
- Integrated Logistics Support and total cost of ownership.
- DevOps and dependability.
- Netflix and ability to survive.
- Achieving dependability by instrumenting the platform.
- The Cloud solution and instrumentation.
- Programmable infrastructure.
- Productivity and dependability: The two pillars of DevOps.

5) » DevOps movement and traditional ISDs: Radical differences
- The reticence of traditional ISDs.
- "Production-Ready" software.
- The structure of traditional ISDs.
- "You build it, you run it": Another specialization of Amazon's structure.
- Integrated mode and Taylorized mode.
- Two ways of seeking productivity.
- DevOps: A new paradigm in corporate IT.

6) » Reorganizing a traditional ISD into DevOps
- An inevitable, desirable, and possible change, how far and at what price?
- The digital revolution, SaaS, Cloud, and business behavior.
- Doing DevOps without the ISD. Shadow IT.
- A complex situation, a possible imbalance.

7) » What vision should be central to managing the DevOps transformation?
- Bottom-up versus top-down changes: The need for a vision.
- Determining the target and multimodal ISDs.
- The structure of the DevOps ISD. The example of Spotify in 2014.
- Redefining roles and responsibilities: What roles for production?
- Tricky issues, change levers, DevOps culture.
- Agile vs. ITIL?
- CALMS, the change management proposed by DevOps.
- Change management in the Lean sense: More experimentation than imitation.
- Checking up on change already begun in the field. Limits of bottom-up approaches.

8) » Enterprise architecture for change management
- Why enterprise architecture?
- DevOps promise: Responsibility and dependability for business divisions.
- Changing responsibilities. Necessary skills and HR impact. Promoting a collaborative culture.
- Building the trajectory by application. Eligible applications.
- Urbanization and interface management. Modularity of the target IS.
- Impact on the outsourcing strategy. Scope and new types of contracts.
- Production platform instrumentation program.
- Budget governance: Free or managed.
- Group discussion¤Summary, conclusion, debates.

DATES

REMOTE CLASS
2025 : 27 Mar, 03 Jul, 16 Oct, 04
Dec