



## **DevOps Implementation Boot Camp (ICP-FDO)**

**DevOps100; 3 days, Instructor-led**

### **Course Description**

For decades there have been big disconnects between the different roles of the IT shop. We struggle with inherent barriers between development projects and the stable infrastructure needed to deploy and run products. Applications get completed and tested in insulated internal environments without adequate collaboration between production IT staff and infrastructure administrators. Unforeseen challenges plague the production environment, wreaking havoc with deadlines, deliverables, and ultimately the business mission. Security is often a wet blanket at best, and an afterthought at worst. In the meantime, huge backlogs of work and technical debt pile up, chronically eroding the efficiency and agility of the business' IT capability.

This three-day DevOps Implementation training class is loaded with practical real-world tools and techniques. From the nation's largest Agile development trainers comes a comprehensive program to get you started on the road to DevOps success. You will leave this course fully literate in the whole array of available DevOps tools and lessons, ready to select what's right for you and chart a path to holistic long-term IT success in your own organization.

Attendees who complete this course automatically receive the ICP designation after course completion. The ICP-FDO is one of two Continuous Learning Certifications (CLCs) on the DevOps Track. This certification provides an overview of core concepts for DevOps and is geared towards a broad audience of professionals, technical and non-technical. The learning objectives cover areas such as the business case for DevOps, Continuous Integration, Continuous Delivery, accompanying cultural changes, operational considerations, configuration management, etc. Participants who complete this certification will gain an excellent foundation in DevOps concepts and ingredients for a successful transition.

## Audience

- Anyone in an IT Leadership role
- CIOs / CTOs
- System Administrators
- IT Operations Staff
- Release Engineers
- Configuration Managers
- Anyone involved with IT infrastructure
- Developers and Application Team leads
- ScrumMasters
- Software Managers and Team Leads
- IT Project & Program Managers
- Product Owners and Managers

## Course Outline

### Module 1: Introduction: DevOps – More than just Dev and Ops

#### High-Performance IT Organizations

##### Core Chronic Conflict

- Siloes of job function vs. alignment of mission
- Waste, batching and flow

##### Where DevOps Came From

- The Lean Movement
- Toyota, total quality, & Deming
- The Agile Movement
- The Continuous Delivery Movement

### Module 2: Maturing a DevOps Practice in the Enterprise

#### The cultural component

- Culture vs. individual work
- How to present the business case to leadership
- How to keep leadership involved
- How to dissolve operational silos over time

#### Patterns You Can Follow

- Lean Startup Teams
- Collaboration Tools
- Automate Everything You Can
- Key tooling & automation groups
- Reserve Time for Improvement

## **Eliminating Waste**

- Detecting uneven demand
- Resolving overburdened teams
- Applying waste principles and management to IT

## **The Involvement Principles**

- Information Security Principles

## **Security**

- Security management and process
- Integrating security priorities with the rest of IT
- Transforming security from a cost center to an equity builder
- Resolving stakeholder conflicts

## **Automation**

- Benefits of Automation: What to expect
- Disruptions of Automation
- How to prevent new bottlenecks
- Automating Deployments
- Leveling workflow around automation tools
- Where should you automate?

## **Selecting the Value Stream to Start With**

### **Value Stream Mapping**

### **Plan the Transformation**

### **Product and Organization Architecture**

## **Module 3: Your DevOps Journey: Optimize Flow**

### **Principles of Flow**

- Tracking flow in the enterprise environment

### **Infrastructure as Code**

- Infrastructure Configuration Management
- Configuration Management Tools Examples: Chef, Puppet, Ansible, Salt
- Models with proven enterprise track records
- Where to target value with IaaS

### **Deployment Pipeline**

- Moving towards continuous deployments
- Deployment Tools Examples: Jenkins & Maven
- Iteration and frequency
- Changing handoff procedure
- Shared Version Control
- Version Control Tools Examples: Git & Github
- Artifact Management Tools Examples: Artifactory & Nexus
- Infrastructure As Code Results

### **Automated Testing**

- Testing Tools Examples: Selenium, Cucumber, & TDD toolsets
- Code Quality & Security Scanning

### **Continuous Integration**

## **Containerization**

- Containerization Tools Examples: Docker & Kubernetes

## **Architecture for Reduced Risk Deployments & IT Ops**

- Microservices
- The Strangler Pattern
- Blue-Green Deployment Pattern
- Virtualization & The Cloud

## **Change Review & Coordination**

# **Module 4: Your DevOps Journey: Amplify Feedback**

## **Principles of Feedback**

### **Telemetry: Metrics, Monitoring, Alerting**

- System Monitoring Tools Examples: Nagios, Monit & PagerDuty
- How to choose tools and analyze their costs
- Building M&M into operational processes
- Log Aggregation & Tools Example: Splunk
- How to use alerts to boost efficiency
- Metrics

### **Using Telemetry to Anticipate Problems**

### **Feedback for Safe Deployment of Code**

### **Hypothesis-Driven Development**

# **Module 5: Your DevOps Journey: Continual Learning & Experimentation**

## **Principles of Continuous Learning**

- Knowledge Management Tools
- More Principles

## **Learning Culture**

- Westrum's organizational typologies
- Blameless Postmortems

## **Innovation Culture**

- Rehearsing Failures
- Knowledge Sharing
- Reserve Time for Organizational Learning

# **Module 6: Conclusion and Charting Your Course**

## **Review**

### **Charting Your Course**

- Establishing a timeline

### **Open Discussion**