Training: Micro Focus
DevOps330 - Continuous Integration Workshop

<table>
<thead>
<tr>
<th>FORM OF TRAINING</th>
<th>MATERIALS</th>
<th>PRICE</th>
<th>DURATION</th>
</tr>
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<tbody>
<tr>
<td>Traditional</td>
<td>Digital materials</td>
<td>1440 USD</td>
<td>2 days</td>
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<td>CTAB Tablet</td>
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LOCATIONS

Krakow - 5 Tatarska Street, II floor, hours: 9:00 am - 4:00 pm
Warsaw - 17 Bielska Street, hours: 9:00 am - 4:00 pm

TRAINING GOALS:

This hands-on workshop teaches your teams how to implement Continuous Integration techniques & practices to achieve better code quality, better maintenance, and speed to delivery. Effective CI practices, when combined with well-aligned IT teams, lay the foundation for mature Continuous Delivery environments and the many benefits associated with them - for your software, your IT shop, and your business. Technology: This class is designed to teach effective CI skills for teams who utilize either open-source toolsets or proprietary technology stacks such as Microsoft. This workshop features Microsoft Visual Studio and Jenkins CI as testbeds for your own hands-on continuous integration lab practice.

In this course you will learn how to:

- Set up and navigate a CI environment that enables automated testing & automated builds
- Execute releases in test environments prior to product delivery
- Identify the most efficient CI tools for quick release & reliable maintenance of products
- Integrate Continuous Integration methods & techniques into current workflow for a SCM environment
- Deliver value from continuous integration in your own organization
- Examine real world examples of continuous integration benefits

This 3-day instructor-led course will teach the fundamental concepts, practical application, and workflow integration skills necessary for successful CI implementation. Students will learn through hands on labs, class demos, class participation exercises, frequent quizzes, video tutorials, and traditional power point presentations. This is an interactive class, and individuals will be expected to participate fully in all exercises to retain maximum benefit of the course.
Audience/Job Roles

This class is designed for:

- Software Developers
- Project Managers
- Quality Assurance staff
- Product Owners
- Business Intelligence Professionals

The Introduction to Kanban Workshop is a perfect place for cross-functional teams to familiarize themselves with Kanban and learn the basics of how to function as an Agile team. It's also a wonderful springboard for team building & learning. We invite you to bring your team and a team project to work on in class.

CONSPECT:

- Continuous Integration Overview
  - The difference between Integration, Deployment, and Delivery
    - Continuous integration
    - Continuous deployment
    - Continuous delivery
    - Continuous Integration Flow
    - Checking for updates
    - Extracting Code
    - Integrating updates into a test environment
    - Reviewing test results
    - Integrating updates into the Build

- Demo
  - Make a Change in CI environment
  - Check in update
  - View Code Analysis Report
  - View Test Results
  - Verify Build

- Advantages of Continuous Integration
  - Reaping the benefits of Continuous Integration
    - Reduce implementation effort
    - Increase speed of resolution
    - Improve quality & maintenance of each product release
Increase speed of delivery

- Communicating Analytics with Clients & Managers
  - High Transparency
  - Running Tests in the real world
  - Updating code with changing requirements

- Class Quiz
  - Fundamentals of Continuous Integration
  - Execution of Continuous Integration
  - Testing Results of Continuous Integration
  - Companies utilize CI techniques successfully

- Case Studies for Continuous Integration
  - Production Changes every 11.6 seconds at Amazon
  - The Facebook Release Process
  - Continuous Delivery at Google
  - The Software Revolution Behind LinkedIn's Gushing Profits | Business | WIRED
  - Deploying the Netflix API
  - Tesla utilizing Continuous upgrades
  - How Etsy Deploys More Than 50 Times a Day

- Class Discussion Integration?
  - How did each company in these reports utilize Continuous
  - How was CI most likely implemented in each example?
  - How would you apply CI to your own production environment?

- Implementing a CI Environment
  - Creating & Managing a Source Code Repository
    - Distributed code Repositories
    - Choosing the right tools: Repository Tools Review
    - Separating requirements & dependencies
    - To use branches or not to use branches?
  
- Configure Automated Deployment
  - Configuring the DHPC server
  - Source Commit Check
  - Starting with simple Deployment scripts
  - Real time bug alerts

- Creating Automated Tests
  - Unit Testing
  - User Interface Testing
○ API Testing
○ Regression Testing
○ Load Testing
○ Security Testing

○ Lab
○ Create a Source Code Repository
○ Build an Automated Test
○ Check new code into Repository
○ Run a unit Test on New Code

○ Database Versioning
○ Best Practices for database versioning
  ○ Database Schema & scripts
  ○ Database versioning tools
  ○ Multiple database instances for each developer
  ○ Benefits of Database Versioning

○ Database Versioning Process:
  ○ Check out object to be modified
  ○ Apply modifications in database test environment
  ○ Run tests to verify changes have not broken the build
  ○ Check in object for final authentication

○ Database Versioning Approaches
○ Task Based Development
○ Compare & Sync
○ Database version checks
○ Upgrade scripts & Parallel Development

○ Lab
○ Modify an object in test environment
○ Check in modifications to repository
○ Run Unit test to check against changes
○ Run final test for deployment

○ Maintaining a CI Environment
○ Test, and Release Process
  ○ Software Configuration
  ○ Automatic Launch
  ○ Test Report Generation
  ○ Submit to Testers
- Product Maintainability & Monitoring
  - Reliability, Availability, Maintainability: Why you need all three
    - Criteria for "pass" requirements
  - Scope & Scalability
  - Consistent updating of Software functionality
  - Analytics & Reporting

- Agile tools for Continuous Integration
  - Setting up the CI Server
    - CI environment, standard workflows, & core tech architecture
    - Software Configuration Management (SCM)
    - Setting up Jenkins as a CI server
    - Open source CI tools
    - Build automation tools for CI
    - Recommended learning resources

- Lab
  - Set up the Jenkins build server
  - Run a shell script
  - Archive the build result
  - Run integration tests
  - Run report on test results

**Difficulty level**

**CERTIFICATE:**

The participants will obtain certificates signed by Micro Focus (course completion).

**TRAINER:**

Authorized Micro Focus Trainer