Holistic Testing for Continuous Delivery: for a quality DevOps culture

Course length - 14 hours; given remotely or in-person

Janet Gregory and Lisa Crispin developed this course to help teams fit testing into our modern, continuous software development world. The course is designed for product delivery teams that include testers, programmers, managers, operations specialists and more.

There are many resources today to learn about continuous delivery and DevOps, but this course takes a unique approach. Participants are introduced to a holistic approach to testing activities that help teams succeed with continuous delivery. They learn how the holistic testing loop guides development from discovery to build, deployment, release, observability, learning from production usage, and applying those learnings to drive the next changes.

The course gives participants the basics to engage in a DevOps quality culture. They learn to apply critical thinking skills to help their team build a good approach for continuous delivery. Participants will leave understanding concepts and terminology that enables them to collaborate with site reliability engineers and other specialists.

Participants learn concepts and practices that build confidence to continually release new changes to customers, with their desired level of product quality. Takeaways include:

- Techniques to get the whole team engaged in implementing continuous integration and continuous delivery (CD)
- Applying the Holistic Testing continuous loop model to allow testing to "keep up" with continuous delivery
- Learning the language of DevOps practices, and join the conversations to shape CD
- Understanding deployment pipelines
- Strategies for test automation in continuous delivery
- Planning and including all necessary testing activities in CD

Participants learn from trainers' real-life experiences, and practice basic techniques hands-on. Course activities include, but not limited to:

- Planning for and understanding risks and applying mitigation strategies
- Visualizing the deployment workflow and identifying ways to shorten feedback cycles
- Using a test suite canvas to plan effective automated test suites
- Evaluating and choosing strategies for safe production releases
- Testing in production – the safe way
- Planning for and visualizing production usage data to guide improvement
- Practice designing experiments to help teams overcome obstacles

Note: The course does not teach specific tools, although examples are provided to help participants understand their purpose and usage.

Course Outline

Introduction, and early testing - Module 1
- Quality-focused DevOps culture
- Holistic Testing model
- Discovery and planning
    - Evaluating and mitigating risks
    - Prioritizing quality attributes
- Understanding what to build
    - Guiding development with business-facing tests (ATDD, BDD)
    - Techniques to build shared understanding
    - Choosing data & events for monitoring & observability

Deploy – Module 2
- Continuous integration
- Continuous delivery / deployment
- Deployment pipelines – integrating testing activities
- Risk-based automation
- Testing infrastructure-as-code
- Measuring feedback loops

Release – Module 3
- Release strategies to build confidence
- Testing in production – the safe way

Observe – Module 4
- Service levels
- Monitor and alert for production issues
- Making a system observable
- Data to guide continuous improvement

Learn – Module 5
- Learning from production usage
- Steps to achieve continuous delivery goals
- Designing experiments to overcome obstacles