RBCS
TIME TESTED.
TESTING IMPROVED.
www.RBCS-US.com

Performance Testing Immersion Workshop
Course Outline

General Description

This course provides test engineers with the essential concepts, the hands-on experience, and the real-world skills needed for effective performance testing. This hands-on course covers performance and related testing types, including demonstrations and exercises on live systems using real-world tools and test scripts. The course covers the major topics associated with performance and performance testing, including:

- Essential performance (and related testing) concepts
- Key lessons in performance and related types of testing
- Dynamic and static performance models
- Load and load generators
- Data and data generators
- Performance test environment configuration
- Performance testing at the unit and component levels
- Performance testing at the integration and system levels
- Integrating performance testing into the software development lifecycle

The topics will be covered through a mixture of three types educational components:

- Lecture
- Demonstration
- Exercises

The course will consist of an approximately equal mixture of each type.

This course was created by Rex Black, President of the International Software Testing Qualifications Board (www.istqb.org), Danny Faught, an acknowledged expert on automated testing tools, and Barton Layne, a performance-testing expert.

Learning Objectives

Through presentation, discussion, demonstration, and hands-on exercises, attendees will learn to:

- Understand performance testing and related test types, identify test levels and test objects for such tests, and analyze and write proper objectives for performance tests and related types of tests.
- Identify typical failures associated with performance testing and related test types.
- Understand the uses and misuses of dynamic and static performance models.
- Understand different types of load generators and data generators, and explain their proper use.
- Use load generators and data generators for performance testing and related test types.
- Explain the importance of realistic test environments, test loads, test data, and performance models.
- Design realistic usage scenarios and create appropriate test load scripts and test data.
- Design appropriate performance test environments, identify differences between test environments and the production environment(s), and understand how those differences reduce the validity of test results.
- Apply common types of performance testing tools.
- Plan and execute performance testing for the unit and component test levels.
- Plan and execute performance testing for the integration and system test levels.
- Adjust performance testing to the software development lifecycle model in use.
- Identify and assess performance risks during quality risk analysis sessions.

Course Materials

This course includes the following materials:

Name	*Description*
Course Outline	A general description of the course along with learning objectives, course materials and an outline of the course topics, including approximate timings for each section.
Noteset	A set of approximately 200 PowerPoint slides covering the topics to be addressed.
Scripts and programs	A set of scripts and programs which are used to demonstrate the topics and techniques which are described.
Bibliography and resources	A set of further readings, Web sites, tools and other resources to help implement the concepts.
Computer configuration instructions	For those exercises that require attendee use of computers, instructions are provided for configuration of the computers.

The printed course materials are provided in a binder in a way which makes it convenience for course attendees to remove portions as needed for reference; e.g., during exercises. The scripts and programs are provided as electronic copies on CD-ROM.

Session Plan

The course runs for three days. Each day is about 360 minutes of class time, from 9:00 to 5:00. For custom courses, material may be deleted, added, or expanded upon as needed. Please note that timings are approximate, depending on attendee interest and discussion.

1. Introduction (1 hour)
2. Essential concepts of performance testing (1.5 hours)
    a. Lecture
    b. Demonstration
    c. Exercise

3. Key lessons learned in performance and related types of testing (2.0 hours)
    a. Lecture
    b. Demonstration
    c. Exercise
4. Static and dynamic performance modeling (1.0 hour)
    a. Lecture
    b. Demonstration
5. Load and load generators (2.5 hours)
    a. Lecture
    b. Demonstration
    c. Exercise
6. Data and data generators (2.5 hours)
    a. Lecture
    b. Demonstration
    c. Exercise
7. System configuration (2.5 hours)
    a. Lecture
    b. Case study
    c. Exercise
8. Performance testing at the unit and component levels (2 hours)
    a. Lecture
    b. Demonstration
    c. Exercise
9. Performance testing at the integration and system levels (2 hours)
    a. Lecture
    b. Demonstration
    c. Exercise
10. Performance testing in the software development lifecycle (2 hours)
    a. Lecture
    b. Exercise

The demonstrations and exercises use open-source applications and testing tools, and are hands-on.

Computer Requirements

The following configuration is required for the computers used in the course:

- Windows XP Service Pack 2
- 1 GB or more of RAM
- 20 GB free disk space
- 1 GHz or better CPU speed

All systems in the lab classroom must be identically configured and pre-installed with the software for the exercises and demonstrations. To avoid loss of classroom time, every system's configuration and installation must be tested prior to the beginning of class.

Existing installations of MySQL and Apache can interfere with the installation process.

At least one system per two participants must be provided for hands-on exercises. One additional system must be provided for the instructor to use for demonstrations; i.e., the instructor's slide presentation system cannot be used for the demonstrations or exercises.

