jMeter – Performance Testing

Course ID #: 7000-629-ZZ-Z

Hours: 28

Delivery Method: Instructor Led Live & Group Internet Based

Course Content

Course Description:

The Apache JMeter™ application is a 100% pure Java application designed to load test functional behavior and measure performance. Use JMeter to test performance both on static and dynamic resources, and Web dynamic applications. Use JMeter to simulate load on a server, group of servers, network, or object to test its strength and analyze overall performance under different load types. This course provides a rich interactive learning experience with incremental lessons and labs that build upon one another.

Course Objectives:

- Understand the components of a load test and how to set them up
- Plan your test execution parameters to simulate real users
- Use correlation, parameterization, and regular expressions to avoid errors
- Monitor your tests, analyze logs, and produce actionable results

Prerequisites:

- Knowledge and understanding of Java
- One or more years of programming experience
- Understanding of HTTP protocol
- Performance testing concepts
- Understanding of system architectures

Target Audience:

Software Testers, Test Engineers, Performance Testers, Performance Engineers, Test Leads, Operational Support Personnel.

Topics:

Lesson 1- Introduction
- Intro to performance and load testing
- Intro to JMeter
- Resource installation, configuration, and Java version requirements
- Minimum hardware requirements, configuration best practices
- Examples of JMeter Installation Topologies

Lesson 2 - Overview of JMeter functionality
- HTTP Proxy setup
- Record and Playback
- Application Testing and Analysis
  - Thread Groups
  - Controllers, Samplers & Logic Controllers
  - Listeners
  - Assertions
  - Timers

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- • Pre-processor, Post-processor and Configuration Elements
- Analyzing Metrics and Reporting

Lesson 3 - How test planning is accomplished in JMeter
- Planning a Scenario
  - • Determining which test cases to perform
  - • Gathering information on number of users completing each business process
  - • Determine rates of business process usage
- Scheduling
  - • Ramp-ups
  - • Run-lengths
  - • Ramp-downs
- Running a Scenario
  - • Start the run manually
  - • Start the run to follow the schedule
  - • Viewing the logs during the test run

Lesson 4 - Web Test Plan
- Web Test Plan Example
  - • Dynamic Response
  - • Correlation and analysis, scripting techniques
  - • Regular Expressions and parsing Responses
  - • HTTP Cookie Manager
- HTTP link parser

Lesson 5 - Database and Webservice Test Plans
- Database Test Plan Example
  - • mySQL database
  - • Data Tables
  - • Logical Operators
  - • Regular Expressions
- Webservice Test Plan Example
  - • REST API Load Testing
  - • Fundamentals of REST
  - • Test case development

Lesson 6 - Monitoring with JMeter
- Stress testing and system management analysis
- Server performance and response time on the client side
- Monitor multiple servers from one console

Lesson 7 - Beanshell Scripting
- Beanshell Scripting Basics
- Functions and Variables
- Generating Dynamic Values
- Post processor validation

Lesson 8 - Advanced Topics
- Listeners - Saving and loading response data
- Scripting and Fundamentals of Regular Expressions
- Fundamentals of Data Driven Testing
- JMeter Functions and Variables
- Distributed Testing in JMeter

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