



Web Services Testing with soapUI

Course ISI-1416 3 Days Instructor-led, Hands on

Introduction

This course teaches functional and performance testing of service-oriented solutions using soapUI. soapUI can be used to test various aspects of a service-oriented solution without merely playing the role of a web service invocation tool. The course will provide the students a hands-on approach throughout in which they will explore all key features provided by soapUI based on a sample web services project. This course is ideally designed to guide students to get more detailed insight on soapUI by doing a lot of hands-on exercises.

Course Objectives

Students will learn to:

- Understand the history, features, and installation of soapUI
- Work with a sample web services project which will be used as the target application for functional and performance testing in the remaining module
- Get started with soapUI projects and the schema and WSDL of a web service in detail.
- Use soapUI to invoke the operations of a sample web service and the structure of SOAP requests, responses, and faults
- The basic constructs of a soapUI project: TestSuites, TestCases, and TestSteps
- Validation of responses using assertions and soapUI properties.
- Use soapUI as a load and performance testing tool
- Use the load test strategies provided by soapUI and the load test specific assertions
- How to simulate Web Services with soapUI and how to use the soapUI mock services model with static as well as dynamic mock responses
- The testing aspects of web services extensions such as WS-Security and WS-Addressing
- How to test RESTful web services and how soapUI can be utilized in RESTful services testing
- How to test databases with soapUI and understand the direct database query invocations of soapUI
- Use JMS in soapUI and expose one of the sample web services over a JMS transport
- Use scripting to extend soapUI capabilities and how to extend the use of soapUI API methods through Groovy scripts inside tests
- How to implement various automated testing approaches with soapUI and how to integrate the soapUI tests with build tools such as Apache Maven
- The useful tools integrated with soapUI such as WS-I validation tool and the utilities provided by external web services framework such as Apache Axis2
- How to use soapUI when testing services by sending attachments.

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Prerequisites

To get the most out of this course you'll need a basic knowledge of web services.

Course Materials

The student kit includes a comprehensive workbook and other required materials for this class.

Course Outline

Module 1: Web Services Testing and soapUI

- Simple Object Access Protocol
- Alternatives to SOAP
- Web Services Description Language
- Message exchanging patterns
- SOAP Faults
- Approaches of testing web services
- What is soapUI?
- Capabilities of soapUI
- Installing soapUI
- A glance at soapUI user interface

Module 2: The Sample Project

- The problem domain
- Project pre-requisites
- Designing the web services
- Implementing the web services
- Deploying web services

Module 3: First Steps with soapUI and Projects

- Understanding the web services definition
- Creating a soapUI project
- Invoking the guest management web service
- A detailed look at SOAP requests and responses
- Generating SOAP Faults

Module 4: Working with Your First TestSuite

- A sample test scenario
- Creating a TestSuite
- Running the first TestSuite
- Adding properties to soapUI tests

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Module 5: Load and Performance Testing with soapUI

- Non-functional testing of web services
- Planning for web service performance testing
- Using soapUI for performance testing
- Working with load tests in soapUI

Module 6: Web Service Simulation with soapUI

- Mocking in software testing
- Mocking in web services testing
- Mock services with soapUI
- soapUI mock services in action

Module 7: Advanced Functional Testing with soapUI

- Introduction to web services extensions
- Configuring Apache Axis2 for WS-Addressing and WS-Security
- Testing asymmetric binding policy with soapUI
- Validating WS-Security responses

Module 8: Getting Started with REST Testing

- Introduction to REST
- Testing RESTful APIs using soapUI
- REST Services in soapUI
- REST parameters
- Functional testing of REST services
- WADL

Module 9: Testing Databases with soapUI

- Testing data in isolation
- Setting up soapUI to connect to the database
- JDBC Request TestStep
- JDBC test assertions

Module 10: JMS Testing with soapUI

- Introduction to JMS
- JMS integration in soapUI

Module 11: Extending soapUI with Scripting

- Introduction to Groovy scripting language
- Groovy scripting in soapUI
- soapUI ModelItems
- Request and response handling using Scripts

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Module 12: Automated Testing with soapUI

- Test automation
- soapUI JUnit integration
- soapUI command line executions
- Maven soapUI plugin

Module 13: Miscellaneous Topics

- soapUI IDE plugins
- WS-I validation using soapUI
- soapUI integration with external web services' frameworks
- Sending attachments with SOAP