

Practical 05 - Use a Webservice

Objectives:

- To locate one or more publicly hosted WebServices
- To examine the web pages and WSDL associated with those WebServices
- Based on the WSDL, to predict what the functions of those WebServices will be
- To use SOAPUI to interact with those WebServices

Instructions:

1. Set up your development environment.
 - 1.1. Launch and sign on to your VM
 - 1.2. Create a folder to hold our development environment (may already be done from previous practicals)
 - 1.2.1. In the file manager, locate the folder "/home/user"
 - 1.2.2. Right click in the blank area of "/home/user".
 - 1.2.3. Select "Create New", then "Folder"
 - 1.2.4. Name the folder "development"
 - 1.2.5. Double click on the "development" folder to open it.
 - 1.3. Unpack SoapUI
 - 1.3.1. In the file manager, locate the "/home/user/Downloads" folder.
 - 1.3.2. Locate the SoapUI .<version>.sh file and double-click it.
 - 1.3.3. In the "Execute File" dialogue, click on <Execute>
 - 1.3.4. Wait for the "Setup – SoapUI <version>" application to launch.
 - 1.3.5. At "Welcome" dialogue, click <Next>
 - 1.3.6. At "License Agreement" dialogue, select "I accept the agreement" and click <Next>
 - 1.3.7. At "Select Destination Directory", set the directory to "/home/user/development/SoapUI", and click <Next>
 - 1.3.8. At "Select Components", select only "SoapUI", deselect all other items, then click <Next>
 - 1.3.9. At "Select Directory for Symlinks", just click <Next>
 - 1.3.10. At "Select Additional Tasks", just click <Next>
 - 1.3.11. Wait for the installation to complete.
 - 1.3.12. At "Completing...", deselect both options then click <Finish>
2. Examine a publicly available web service using your Web Browser.
 - 2.1. Within the VM, launch your web browser.
 - 2.2. Enter the following URL: <http://www.thomas-bayer.com/axis2/services/BLZService?wsdl>
 - 2.3. Note what is on the page.
 - 2.4. Identify the major sections of the WSDL

- 2.4.1.Types
- 2.4.2.Messages
- 2.4.3.Operations
- 2.4.4.PortTypes
- 2.4.5.Bindings
- 2.5. What do you think that this WebService will do?
- 3. Repeat this process for: <http://services.aonaware.com/DictService/DictService.asmx?wsdl>
 - 3.1. ...or you can Google for more examples of "Publically available web services".
- 4. Use SOAPUI to interact with the Dictionary web service:
 - 4.1. Launch SoapUI
 - 4.1.1. On the desktop, locate the icon for "SoapUI <version>" and double-click it.
 - 4.1.2. If asked about "Usage statistics", click <No>
 - 4.1.3. Wait for SoapUI to launch.
 - 4.1.4. If asked to subscribe to the updates email, click <Skip>
 - 4.1.5. You should now be at the SoapUI desktop.
 - 4.2. Within SOAPUI, create a new project
 - 4.2.1. Select "File", then "New SOAP project"
 - 4.2.2. In the "New SOAP Project" window:
 - 4.2.2.1. Set "Project Name" to "dictionary"
- 5. Set "Initial WSDL" to "<http://services.aonaware.com/DictService/DictService.asmx?wsdl>"
 - 5.1.1.1. Make sure that "Create sample request for all operations?" is ticked.
 - 5.1.1.2. Make sure that "Create a TestSuite for the imported WSDL" is ticked.
 - 5.1.1.3. Make sure that "Relative Paths" is ticked.
 - 5.1.1.4. Check that all the settings above are correct, then click <OK>
 - 5.1.2. Wait for the project to build.
 - 5.1.3. When asked to "Save project dictionary":
 - 5.1.3.1. Choose a suitable location (e.g. /home/user/development)
 - 5.1.3.2. Click <Save>
 - 5.1.4. Wait for the project to finish building.
 - 5.1.5. As requested above, SOAPUI will then generate a TestSuite for the SOAP v1.1 version of the WebService.
 - 5.1.6. When "Generate Test Suite" appears
 - 5.1.6.1. Ensure that "TestSuite" is set to <create>
 - 5.1.6.2. Ensure that "Style" is set to "One TestCase for each operation"
 - 5.1.6.3. Under "Request Content", ensure that "Create new empty requests" is selected.
 - 5.1.6.4. Ensure that under "Operations" the "GetQuote" operation is visible and selected
 - 5.1.6.5. IMPORTANT: Ensure the "Generate LoadTest" is *not* selected.

- 5.1.6.6. Click <OK>
 - 5.1.7. Under "Generate TestSuite", the default name is suitable, just click <OK> - SOAPUI will then attempt to generate a TestSuite for the SOAP v1.2 version of the WebService.
 - 5.1.8. When "Generate Test Suite" appears
 - 5.1.8.1. Ensure that "TestSuite" is set to <create>
 - 5.1.8.2. Ensure that "Style" is set to "One TestCase for each operation"
 - 5.1.8.3. Under "Request Content", ensure that "Create new empty requests" is selected.
 - 5.1.8.4. Ensure that under "Operations", all of the operations are visible and selected
 - 5.1.8.5. Ensure the "Generate LoadTest" is *not* selected.
 - 5.1.8.6. Click <OK>
 - 5.1.9. Under "Generate TestSuite", the default name is suitable, just click <OK> - SOAPUI will then attempt to generate a TestSuite for the SOAP v1 version of the WebService.
- 5.2. Save the project so far by clicking on the "Save As;" icon on the tool bar.
- 5.3. Note in the dictionary project:
 - 5.3.1. SoapUI found two versions of the WebService in the WSDL, for SOAP 1 and SOAP 1.2
 - 5.3.2. SoapUI has created a testsuite for each version of the WebService
 - 5.3.3. SoapUI found a number of operations in the web service.
 - 5.3.4. We will use the "DictServiceSoap" version and the corresponding "DictServiceSoap Test Suite", rather than the "1.2" equivalents.
6. Interact with the WebService:
 - 6.1. Locate and open the "DictServiceSoap" item.
 - 6.2. Within the "DictServiceSoap" item, locate and open the "Define" item
 - 6.3. Within the "Define" item, locate and double click the "Request1" item
 - 6.4. Note the two-part editor - on the left is the request to be sent, on the right the response (currently empty).
 - 6.5. Set the "word" in the Request to a word of your choice, e.g. "hill"
 - 6.6. Click on "Submit Request" (green arrow to top left of request)
 - 6.7. Wait for the response to be returned, and examine the structure of the response – note roughly how long it takes the webservice to return the data.
 - 6.8. Try again with additional words.
 - 6.9. Try again with a string that is not a word, eg. "sfweiouawu" - What do you think of the error handling of this WebService?
 - 6.10. Break the request XML (e.g. remove one of the closing tags), and submit - is this what we expected?
 - 6.11. Close the "Request 1" window (click on the [x] in the top right hand corner of the request window)
7. Modify the DictServiceSoap TestSuite.
 - 7.1. Locate and open the " DictServiceSoap TestSuite " item.
 - 7.2. Within the " DictServiceSoap TestSuite " item locate and open the "Define TestCase" item.
 - 7.3. Within the "Define TestCase" item, locate and open the "TestSteps(1)" item
 - 7.4. Within the "Test Steps (1)" item, locate and double click on the "Define" item.

- 7.5. Note that this is similar to previous tests - request on the left, response on the right.
- 7.6. Set the "word" to a valid value, e.g. "cross".
- 7.7. Save the project
- 7.8. Run the test, note the response
8. Add a response time test to the test suite
 - 8.1. Click on the "Assertions" button (bottom left below the request).
 - 8.2. Click the "+" item to add an assertion
 - 8.3. In the "Add Assertion" window:
 - 8.3.1. Select the "SLA" category.
 - 8.3.2. Under "SLA" select the "Response SLA" item - read the description of this assertion.
 - 8.3.3. Click <Add>
 - 8.3.4. Under "Configure Response SLA Assertion"
 - 8.3.4.1. Set "Specify desired response time" to a reasonable time (e.g. 500ms)
 - 8.3.4.2. Click <OK>
 - 8.4. Save the project
 - 8.5. Re-run the test, noting the response time
 - 8.6. Adjust the SLA time and re-run until you have seen at least one pass and one fail.
9. Add additional Assertions:
 - 9.1. Add "Compliance, Status and Standards" Assertions for:
 - 9.1.1. SOAP Response,
 - 9.1.2. Not SOAP Fault
 - 9.1.3. Valid HTTP Status Codes (add "200" as a valid code)
 - 9.1.4. Add "Property Content" Assertions for: "Contains" and set the value to the word symbol you asked for, e.g. mountain.)
 - 9.2. Save the project, re-run the test, and examine the output.
10. Produce documentation for this WebService
 - 10.1. Under the dictionary project, locate the "DictServiceSoap" item.
 - 10.2. Right click the item, and select "Generate Documentation"
 - 10.3. Under "Create Documentation" select a suitable output folder, then click <OK>
 - 10.4. The documentation should open in your browser.
 - 10.5. Read the documentation, and see if it corresponds to your expectations.
 - 10.6. Invoice customer for "Time spent preparing documentation".