

Creating Tests From BPEL Files

SOAtest can automatically create test cases from vendor-specific BPEL deployment artifacts. You can then arrange these test cases into suites that reflect different aspects of testing of a BPEL process.

SOAtest can create the following types of tests from BPEL files:

BPEL Semantics Tests

BPEL Semantics tests include the BPEL Semantics Validator – a static analysis tool that verifies syntactic correctness through schema validation, which verifies that the elements and attributes conform to the XML Schema. Beyond this, the validator explicitly verifies constraints imposed by the BPEL specification that are not enforced by the XML Schema. The validator finds errors such as:

- Unresolved references to BPEL, WSDL, and XML Schema types.
- Violations to constraints on start activities, correlations, scopes, variables, links, and partner links.
- Incompatible types in assignments.
- Errors in embedded XPath expressions.

WSDL Tests

BPEL depends on Web Services Description Language (WSDL) to define both outgoing and incoming messages. The SOAtest BPEL Wizard examines the BPEL process deployment artifacts for WSDL references. For each referenced WSDL file, the Wizard will create tests that verify WSDL schema validity, semantic validity, WS-I interoperability and will create a regression control.

BPEL Process Tests

BPEL Process tests emulate external business partners accessing the deployed BPEL process. The SOAtest BPEL Wizard examines the business process deployment artifacts, including BPEL and WSDL files. The Wizard maps the process's partner link description to a WSDL port type and a protocol binding through which the process can be externally invoked. The BPEL Wizard then creates a test for each operation of the port type of the business process.

BPEL Partner Tests

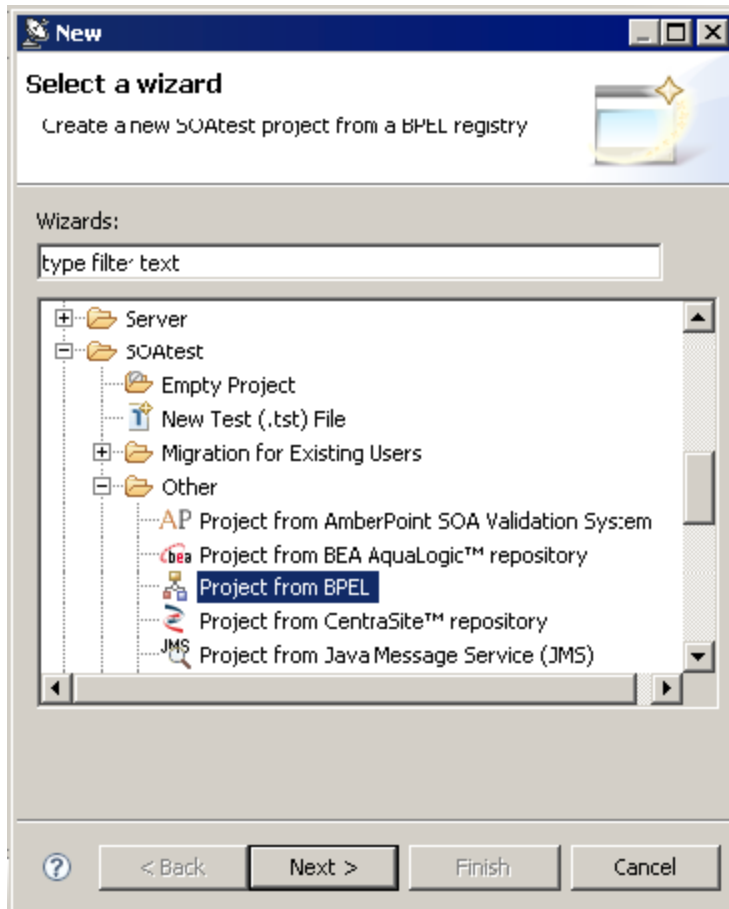
The correct functioning of a BPEL process directly depends on the correct functioning of its business partners. A change in the behavior of a business partner may cause the BPEL process to fail. Finding the cause of such failures can be time consuming. By including BPEL partner tests into the BPEL process test suite, the SOAtest BPEL Wizard allows users to test BPEL partners as components of the BPEL process and detect business partner errors and unexpected behavior early in the development lifecycle.

The SOAtest BPEL Wizard examines the business process deployment artifacts, including BPEL and WSDL files. The Wizard then maps partner links descriptions to WSDL port types and protocol bindings through which business partners can be externally invoked. The Wizard will then create a test suite for each business partner - within each test suite will be a test for every operation declared in the partner's port type.

Automatically Creating Test Suites from BPEL Process Deployment Artifacts

To automatically create test suites from BPEL process deployment artifacts, complete the following:

1. Choose the **Other> BPEL** option in one of the available test creation wizards. For details on accessing the wizards, see:
 - [Adding a New .tst File to an Existing Project](#)
 - [Adding a New Test Suite](#)



2. In the BPEL wizard page, go to the BPEL Engine drop-down menu and select the **BPEL engine** type where the BPEL process you would like to test is deployed.
 - If **BPEL Maestro** is selected from the **BPEL Engine** drop-down menu, complete the following:
 - Enter the URL of the BPEL file in the **BPEL URL** field
 - Enter the public WSDL URL of the BPEL process in the **Public WSDL URL** field.
 - If **Active BPEL** is selected from the **BPEL Engine** drop-down menu, complete the following:
 - Enter the location of the BPEL process **Deployment Descriptor File** (.pdd file).
 - Enter the location of the **BPEL file**.
 - Enter the **Engine URL** where the Active BPEL 2.0 engine is deployed. For example, if you installed Active BPEL 2.0 to run in a Tomcat servlet container with the address: `http://mybpelhost:8080`, then your Active BPEL 2.0 Engine URL will be `http://mybpelhost:8080/active-bpel`. Verify that this is the right URL by opening it in the browser—you should see the Administrative Servlets panel.
 - If **Generic BPEL** is selected from the **BPEL Engine** drop-down menu, complete the following:
 - Enter the URL of the BPEL file in the **BPEL URL** field
 - Enter the public WSDL URL of the BPEL process in the **Public WSDL URL** field.

For **BPEL Generic BPEL** engines, it is likely that the BPEL partner link to WSDL port map-pings, and the ports and port types of your BPEL process business partners, are declared in WSDL files other than the public WSDL of the BPEL process. If this is the case, you should declare those dependency WSDLs in the Optional Parameters dialog. To invoke this dialog press the **Optional Parameters Configure** button, press Add and enter the dependency WSDL URL in the newly created table row. Add as many dependency WSDLs as needed.
3. Select the test categories that you would like the BPEL Wizard to create:
 - **Create BPEL Semantics Tests:** Verifies semantic and schema validity of BPEL files.
 - **Create WSDL Tests:** Checks WSDL files referenced in the BPEL deployment for schema validity, semantic validity, WS-I interoperability, and regression.
 - **Create BPEL Process Tests:** Emulates external business partners accessing the deployed BPEL process.
 - **Create BPEL Partner Tests:** Allows direct testing of BPEL process business partners.
4. Click the **Finish** button. SOAtest will examine the BPEL process deployment artifacts and automatically create test suites for the BPEL process you selected.