

# Change-Based Testing

Parasoft can help you optimize your testing efforts by automatically identifying the test cases directly related to your most recent source code modifications. You can then rerun only the impacted test cases rather than retest the entire system after each modification. Parasoft's change-based testing solution is enabled through Parasoft Development Testing Platform (DTP), which collects and correlates development and testing data. You can process the data with DTP extensions that execute custom calculations, trigger workflows, and perform other intelligent analytic processes.

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## Correlating Code via Test Case Execution

Parasoft DTP can monitor which source code is exercised when a test executes, then correlate that source code with the appropriate task, requirement, or defect.

To do this, you need to:

1. Enable reporting to Parasoft DTP - see [Connecting to Parasoft Development Testing Platform](#).
2. Mark which task, requirement, or defect each test is related to - see [Indicating Code and Test Correlations](#).

You can also review Parasoft's [Application Coverage](#) workflow for additional information.

## Correlating Tests

If you are correlating code via test case execution (as described above) no additional configuration is necessary.

## Determining Where Retesting is Needed

You can extend DTP with custom tools from the [Parasoft Marketplace](#), such as the Change Based Testing DTP Workflow, to help you determine when retesting is required. The high-level process is:

1. DTP collects data from SOAtest
2. DTP correlates the SOAtest data with additional observations collected throughout the application development and testing lifecycle
3. Change Based Testing and other DTP Workflows further refine and process the data according to your policies
4. Prioritized, actionable findings are returned to the developer or tester for immediate implementation

## Using Project Center

1. Open DTP and choose **Project Center** from the applications drop-down menu.
2. Choose your project from the projects drop-down menu and click the Requirements tab.
3. Click on a requirement ID and click the **Tasks** tab. Tasks that require retesting will have a retest icon in the Re-test column.

Edit Requirement: [459] Web Functional Testing Usability					
General	Collaboration	Tasks  15	Defects/Enhancements  31	Code  6734	Auto
15 Item(s)	New Task	Assign Existing Task(s)	Unassign		
<input type="checkbox"/>	ID	Name	Status	Re-test	
<input type="checkbox"/>	<a href="#">4490</a>	Fix PR 84712 - Improve logging in various areas	completed		
<input type="checkbox"/>	<a href="#">7453</a>	Fix Def. 87879 : (Life Cycle Engineering) - Enable two-way SSL authentication	completed		
<input type="checkbox"/>	<a href="#">3521</a>	Fix FR 82564 : Show validation/extraction names in error messages	completed		
<input type="checkbox"/>	<a href="#">6599</a>	Fix Def. 87400 : Create locators from the rendered view with tag names in lowercase	completed		
<input type="checkbox"/>	<a href="#">6745</a>	Fix Def. 87777 : Extra "amp;" string when inspecting an element with the &amp; entity in the rendered view	completed		

A RETEST REQUIRED flag will also appear in the Automated Tests tab if retesting is necessary.

Edit Requirement: [459] Web Functional Testing Usability

General Collaboration Tasks 15 Defects/Enhancements 31 Code 6734 Automated Tests 8/546

Project: ----

Currently you can see details of failed tests only, press [Show all tests] button to see details of all tests.

Test Name	Status	Date	Pass	Fail	Total	Notes
Unit Testing _Jtest@buteo	Pass		20	0	20	
Unit Testing _Jtest@anteater	Pass		30	0	30	
Unit Testing _Jtest@otter	Fail		156	4	160	RETEST REQUIRED
Unit Testing - WebKing	Fail	2010-03-30 22:53	156	4	160	
webtool.browserstest.BrowserTestingTool	Fail	2010-11-02 23:54	0	2	2	

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For more information, see the Parasoft Concerto User's Guide.