

# Using a Debugger During Test Execution

This topic explains how to step through C++test test cases with a debugger to better examine the code's internal state during a given test. For example, you might want to debug test cases to learn more about how C++test obtained an unexpected outcome, or to determine why a test case failed. You do not need to manually add breakpoints to the code. C++test will automatically set the breakpoints at the beginning of each test case that you select for execution.

Sections include:

- [Configuring Debugger Settings](#)
- [Executing Tests with a Debugger](#)

## Configuring Debugger Settings

To enable debugging inside Visual Studio IDE

1. Open test configuration you use for running test cases
2. Choose the **Execution> Runtime** tabs
3. Enable the **Run tests in debugger(\*)** option.

## Executing Tests with a Debugger

This section covers debugging tests in native development environments. For information about debugging tests in embedded environments see [Debugging Test Cases](#).

To execute a test with the Visual Studiodebugger:

1. Prepare a "Debug Unit Tests" Test Configuration.
  - Either use the built-in "Debug Unit Tests" Test Configuration or develop a custom Test Configuration by duplicating the built-in configuration and customizing it as described in the [Configuring Test Configurations and Rules for Policies](#).
2. Run your preferred "Debug Unit Tests" Test Configuration as follows:
  - a. Select test case(s) that you want to debug in one of the following ways:
    - Select the test case in the Test Case Explorer.
    - Select the test case function name in the code editor.
    - Select the test case function in the Class view. Note that these functions will be located under the Testsuite classes, not under the classes corresponding to the original source.
  - b. Launch your preferred "Debug Unit Tests" Test Configuration. For example, right-click the selection, then use the **Parasoft** shortcut menu to run the preferred Test Configuration. C++test will then launch appropriate debugger and automatically set the break-points at the beginning of each selected test case function.
  - c. If you are using Microsoft Visual Studio 2003 with Service Pack 1, perform the following steps:
    - Select the test process in the **Processes** dialog and click **Attach**.
    - Confirm the application type (Native) by clicking **OK** in the Attach to Process dialog.
    - Close the Processes dialog.
3. Use standard debugger features to step through the test case.

- The debugger will be activated only if the debugging Test Configuration is run on a selection of one or more test cases. Otherwise, the following warning will appear in the console output and the execution will continue without debugging:  
Warning: debugger will not be activated - no valid breakpoints found. Select (test case) function definitions to set breakpoints.