Creating Data Driven Testcases

SilkTest®
2008 R2

Borland®

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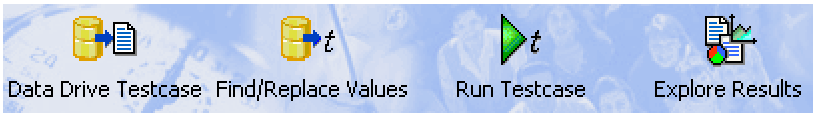
Overview of Data Driven Testing

A data driven testcase lets you store data combinations in a list of items and invoke the testcase once for each item, passing the data to the testcase as a parameter. You can think of a data driven testcase as a template for a class of testcases. The benefits are easy to see:

- Data driven testcases reduce redundancy in a testplan.
- Writing a single testcase for a group of similar testcases makes it easier for you to maintain scripts.
- Data driven testcases are reusable; adding new tests only requires adding new data.

You can now use the Data Driven Workflow to help you create data driven testcases that use data stored in databases. Previous versions of SilkTest explained how to store data in a testplan, how to type in the data at the time you are running the testcase, and how to pass in data from an external file. While those techniques still work, we strongly recommend that you use the Data Driven Workflow which generates much of the necessary code for you and guides you through the required steps.

To turn the Data Driven Workflow on and off, choose **Workflows/Data Driven**; the Data Driven Workflow looks like this:



Before you begin

Before you start working with data driven testcases, complete the following tasks:

- Get the files needed by the exercise. To do this, go to your <*SilkTest installation directory*>\examples directory and unzip the ddw.zip file into that same directory. The following files should now be in your <*SilkTest installation directory*>\examples directory:

  testexcel.xls
  gentest1_example.g.t
  gentest1_example.res
  frame.inc
  usability.t
  gentest2_example.g.t
  gentest2_example.res

- Take a look at the MS Excel file used as the database by this exercise by opening testexcel.xls located in the <*SilkTest installation directory*>\examples directory. If you cannot find this file in this directory, you have not unzipped the files as described in the preceding bulleted step.

  In testexcel.xls, notice that there are three worksheets: Products, Customers, and CreditCards. Each of these worksheets contains several columns of data. For example, on the Products worksheet, there are columns named Desc, Blurb, NumInStock, QtyToOrder, and OnSale.

- Ensure that you have the correct DSN available: Silk DDA Excel. This is automatically set up when you install SilkTest. On Windows, for example, choose **Start/Settings/Control Panel/Administrative Tools/Data Sources (ODBC)**. Click the **System DSN** tab and verify that the Silk DDA Excel driver is listed. This is the default DSN used by the Data Driven Workflow and, coincidentally, the one used by these exercises.

- If you are not familiar with the GMO application, navigate around the application to become familiar with it. You can locate this application at: http://demo.borland.com/gmopost/

To create a data driven testcase and run it using the sample record

When you create a data driven testcase, one of the things that SilkTest does is to write a sample record for each table. SilkTest does this by inserting a value from the original testcase into the sample record. You can then use the sample record to run a quick test of your data driven testcase or to verify your DSN connection.

The goal of this exercise is for you to use the Data Driven Workflow to create a data driven testcase and to run that testcase using the sample record.

Step 1: Create a data driven testcase

1. Open the GMO application at http://demo.borland.com/gmopost/

2. Start SilkTest and choose **File/Open**. Browse to <*SilkTest installation directory*>\examples and open usability.t.

3. Turn on the Data Driven Workflow bar (if it's not already visible) by choosing **Workflows/Data Driven**. On the Data Driven Workflow bar, click **Data Drive Testcase**. On the Select Testcase dialog, double-click **testcase1**.

4. On the Specify Data Driven Script dialog, click **Create a new file/Overwrite an existing file** and browse to the <*SilkTest installation directory*>\examples directory. Give the file the name **gentest1**, which means you will have to change the default new name.

5. Click **Save** to save the new file and then click **OK** when you return to the Specify Data Driven Script dialog. SilkTest automatically applies the .g.t file extension to that file.

6. On the Select Data Source dialog, tell SilkTest the location of the database you are using to supply values for the data driven testcase. Accept the default data source, Silk DDA Excel. At the Select Workbook field, click **Browse** and select the <*SilkTest installation directory*>\examples\TestExcel.xls and click **Open**. Click **OK** on the Select Data Source dialog.

7. On the Specify Data Driven Testcase dialog, click **OK** to indicate that you want to add a new testcase named DD_testcase1 to the gentest1.g.t file you created in Step #3.

8. The Find/Replace Values dialog appears; close this dialog because you are not using it for this exercise. SilkTest loads the database tables and columns and then displays the gentest1.g.t file in the 4Test Editor.

   You'll notice that there is a section at the top of your file that is collapsed; it contains the code that SilkTest writes including the DSN connection, a sample record, and other necessary information:

   ```
   [+] // *** DATA DRIVEN ASSISTANT Section (!! DO NOT REMOVE !!) ***
   ```

   To see the code that SilkTest creates, click [+] to expand that section. Do NOT edit any of the information contained in this section.

Step 2: Run your data driven testcase

1. Click **Run Testcase** on the Data Driven workflow bar to run this testcase.
2. Select **DD_testcase1** and check **Use Sample Data from Script**. Click **Run**.

Result

Testcase1 should have run only once and the sample data from REC_Products_ grTest_Products_ been passed into it. Compare your file with the gentest1_example.g.t and gentest1_example.res found in the <*SilkTest installation directory*>\examples directory.

To run a data driven testcase using all rows and tables

Values are text strings, numbers, and booleans (true/false) that exist in your original testcases. One of the steps in creating a data driven testcase is to find these values and replace them with references to columns in your data source.

SilkTest checks to make sure that each value you selected is appropriate for replacement by the column in your testcase. You can turn off this validation by choosing **Edit/Data Driven/Validate Replacements** while you are in a .g.t file. This means that the "Find" aspect of Find and Replace works as usual, but that the values you replace are not validated. By turning off this checking, you suppress the error messages that SilkTest would have otherwise displayed. Any 4Test identifier or fragment of a string is considered an invalid value for replacement unless Validate Replacements is turned off.

If you are new to creating data driven testcases, we recommend that you keep this validation turned on.

The goal of this exercise is for you to use the Data Driven Workflow to:

- Create a data driven testcase
- Find and replace values in a testcase with links to the data source
- Run the data driven testcase with all rows and tables from the data source

Step 1: Create a data driven testcase

1. Open the GMO application at http://demo.borland.com/gmopost/, if it is not already open.

2. Start SilkTest and choose **File/Open**. Browse to <*SilkTest installation directory*>\examples and open usability.t.

3. Turn on the Data Driven Workflow bar (if it's not already visible) by choosing **Workflows/Data Driven**. On the Data Driven Workflow bar, click **Data Drive Testcase**. On the Select Testcase dialog, double-click **testcase2**.

4. On the Specify Data Driven Script dialog, click **Create a new file/Overwrite an existing file** and browse to the <*SilkTest installation directory*>\examples directory. Give the file the name **gentest2**, which means you will have to change the default new name.

5. Click **Save** to save the new file and then click **OK** when you return to the Specify Data Driven Script dialog. SilkTest automatically applies the .g.t file extension to that file.

6. On the Select Data Source dialog, specify the location of the database you are using to supply values for the data driven testcase. Accept the default data source, Silk DDA Excel.
At the Select Workbook field, click **Browse** and select the <*SilkTest installation directory*>\examples\TestExcel.xls and click **Open**. Click **OK** on the Select Data Source dialog.

7. On the Specify Data Driven Testcase dialog, click **OK** to indicate that you want to add a new testcase named DDA_testcase2 to the gentest2.g.t file you created in Step #3.

Step 2: Find and replace values

1 Underneath the Find/Replace Values dialog, SilkTest displays the gentest2.g.t file in the 4Test Editor.
You'll notice that there is a section at the top of your file that is collapsed; it contains the code that SilkTest writes including the DSN connection, sample data, and other necessary information:

```
[+] // *** DATA DRIVEN ASSISTANT Section (!! DO NOT REMOVE !!) ***
```

To see the code that SilkTest creates, click the [+] to expand that section. Do NOT edit any of the information contained in this section.

2 Indicate the names of the table and column that contain values that you want to link to. You can do that with either the Find/Replace Values dialog or using the Find and Replace menu bar; this exercise uses the Find/Replace Values dialog.

On the Find/Replace Values dialog, select **Customer$** from the list of tables and **Address** from the list of columns. Click **Find Next** to start searching for addresses within the testcase.

3 SilkTest finds and highlights various values, click **Find Next** until SilkTest highlights **201 Spring street**. Since this is an address, click **Replace** on the Find/Replace Values dialog to replace that number with a value from the data source.

4 There is only one address in this testcase, so you can now start searching for Name.

a. On the Find/Replace Values dialog, select **Name** from the Column list.

b. Click **Find Next** until SilkTest highlights "**Susan**". Remember that you may have to change the direction of your search by clicking **Up** on the Find Replace Values dialog to locate this value.

c. Click **Replace** on the Find/Replace Values dialog to replace that name with a link to the values in the data source

5 Now search for and replace Zip codes in your script.

a. On the Find/Replace Values dialog, select **Zip** from the Column list.

b. Click **Find Next** until SilkTest highlights "**02421**". Remember that you may have to change the direction of your search.

c. Click **Replace** on the Find/Replace Values dialog to replace that zip code with a link to the values in the data source.

6 You're done replacing values, so click **Cancel** on the Find/Replace Values dialog.

Step 3: Run your data driven testcase

1 Click **Run Testcase** on the Data Driven workflow bar and select **DD_testcase2**.

2 Click **Run** to run all rows.

Result

Testcase2 should have run six times. Compare your files with the gentest2_example.g.t and gentest2_example.res found in the <*SilkTest installation directory*>\examples directory.