

Parameterizing with Data Source and Data Bank Values

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Parameterization Introduction

You can parameterize applicable tools (e.g., SOAP/REST Clients, JSON/XML Assertors, Message Responders) to use values that are saved in:

- A Data Bank tool (described in [Data Banks for Test Scenarios](#) and [Data Banks for Message Responders](#)).
- A supported data source that is associated with the test scenario or responder suite—including Parasoft data repositories, data groups, Excel files, csv files, and SQL databases.
- A variable set that is associated with the test scenario (described in [Working with Variables](#)).

CTP automatically adds repository data sources when creating tests or virtual assets from traffic. Additional data sources can be defined directly from CTP, or added in the SOAtest/Virtualize desktop UI. Data Bank tools can be created directly from CTP, or added from the SOAtest/Virtualize desktop UI.

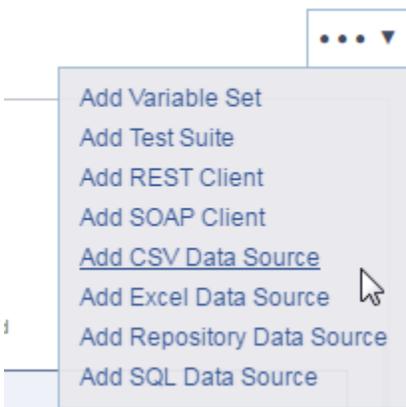
Adding and Configuring a Data Source

From CTP, you can add CSV, Excel, SQL Database, and Repository data sources to test suites and responder suites. You can view any data source added from the SOAtest/Virtualize desktop UI at the suite level (test suite or responder suite). Moreover, you can also modify settings for suite-level CSV, Excel, SQL Database, and Repository data sources added from the SOAtest/Virtualize desktop UI.

Adding a Data Source

To add a data source:

1. In the left pane, select the test or responder suite where you want the new data source added.
2. Choose the appropriate **Add New Data Source** command from the page-level action menu.



3. (Optional) Modify the name of the newly-created data source.
4. Configure the data source as described below:
5. Save the new data source configuration.

The new data source will be added to the selected test suite or responder suite.

Configuring an Excel Data Source

To configure an Excel data source:

1. Use the **Rows** controls to indicate the range of rows you want to use. If you only want to use selected rows, click the **Range** button, then enter the desired range (assuming a one-based index) by typing values into the **From** and **To** fields. For example, to use only the first 10 rows, enter 1 in the **From** field and 10 in the **To** field. To use only the fifth row, enter 5 in the **From** field and 5 in the **To** field.
2. For **Filepath**, specify the location of the Excel file you want to use. You can either click in the text field and select from the list of files already uploaded to the active workspace on this SOAtest/Virtualize server (using the process described in [Uploading Files](#)), or you can click **Upload** and add a file from your local system.
3. For **Sheet**, specify the sheet of the specified Excel file you would like to use.

- If you want SOAtest to limit the size of every column in the Excel data source to the size of the column with the least number of rows (in other words, if you want it to stop processing data when it encounters an empty cell), enable **Stop processing the spreadsheet at the first empty row**

Excel Data Source

emdemo > Parameterization_10_30_2015.tst > Data Sources

Cars Datasource

Save

Name: Cars Datasource *required

Rows: All Range 1 to 1

Excel:

Filepath: /TestAssets/cars.xlsx Upload

Sheet: cars

Stop processing the spreadsheet at the first empty row

Columns:

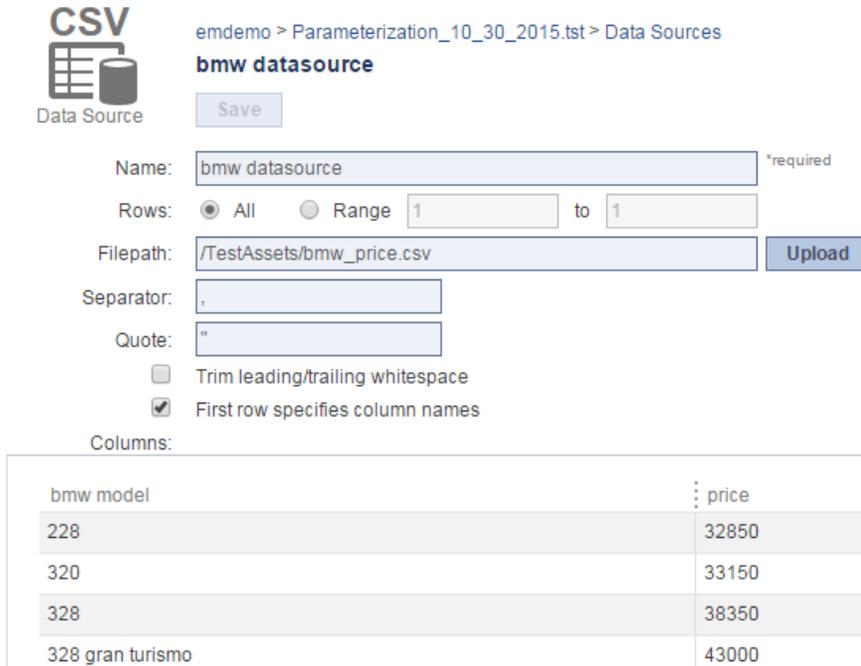
bmw	mercedes	volkswagen	honda	toyota	fiat	mazda
328	cla coupe	jetta	accord	4runner	500	mazda3
340	c-class coupe	passat	accord hybrid	avalon	500c	mazda6
428	e-class coupe	cc	civic	camry	500e	mazda5
528	cls coupe	beetle	crosstour	corolla	500l	mazda cx-3
535	s-class sedan	golf	cr-v	highlander	500x	mazda cx-5

Configuring a CSV Data Source

To configure a CSV data source:

- Use the **Rows** controls to indicate the range of rows you want to use. If you only want to use selected rows, click the **Range** button, then enter the desired range (assuming a one-based index) by typing values into the **From** and **To** fields. For example, to use only the first 10 rows, enter 1 in the **From** field and 10 in the **To** field. To use only the fifth row, enter 5 in the **From** field and 5 in the **To** field.
- For **Filepath**, specify the location of the CSV file you want to use. You can either click in the text field and select from the list of files already uploaded to the active workspace on this SOAtest/Virtualize server (using the process described in [Uploading Files](#)), or you can click Upload and add a file from your local system.
- For **Separator**, enter or select the type of separator that the file uses.
- For **Quote**, enter or select the type of quotes that the file uses.
- Modify additional options if desired:
 - Trim leading/trailing whitespace:** Specifies whether or not to strip whitespace from the beginning and end of the value.
 - First row specifies column names:** Specifies whether or not to consider the first row of the CSV file as column names. If the first row specifies column names, the elements in Form XML will show the column names as the name of each value. If the first row does not

specify column names, then the elements in Form XML will use "value" as the name of each value.



emdemo > Parameterization_10_30_2015.tst > Data Sources

bmw datasource

Save

Name: *required

Rows: All Range to

Filepath: Upload

Separator:

Quote:

Trim leading/trailing whitespace

First row specifies column names

Columns:

bmw model	price
228	32850
320	33150
328	38350
328 gran turismo	43000

Configuring a Repository Data Source

Parasoft's Data Repository is designed to help teams define, extend, and review large and/or hierarchical data sets for use in Parasoft messaging tools. A repository data source is a "wrapper" for the repository data source that allows you to consume it in Parasoft messaging tools—in the same manner as you would consume data from an Excel data sheet or CSV file.

To configure a repository data source:

1. Use the **Rows** controls to indicate the range of rows you want to use. If you only want to use selected rows, click the **Range** button, then enter the desired range (assuming a one-based index) by typing values into the **From** and **To** fields. For example, to use only the first 10 rows, enter 1 in the **From** field and 10 in the **To** field. To use only the fifth row, enter 5 in the **From** field and 5 in the **To** field.
2. Specify the repository to which this data source will connect.
 - a. For **Host**, specify which Data Repository server you want to connect to. You can select one of the servers connected through TDA—or you can specify a new server. If the named server does not yet exist, it will be created.
 - b. For **Port**, specify the port for that Data Repository server.
 - c. For **Repository name**, select or enter the name of the repository you want to use. You can select one of the repositories connected through TDA—or you can specify a new repository. If the named repository does not yet exist, it will be created.
3. Enter the username and password for connecting to this Data Repository server .

- Specify the data set to which this data source will connect. It's okay to specify a data set that does not yet exist. However, that data set will need to exist (and contain data) by the time you start applying tools to use this data source.



emdemo > from traffic.tst
add

Save Cancel

Name: add

Rows: All Range 1 to 0

Repository server: autobuild7:2424

Repository name: nightly-970-SWIFT

Host: autobuild7

Port: 2424

Username: admin

Password: *****

Type: Data Set SQL Data Set

Data set name: add

Creating a Repository Data Source for SQL Data Sets?

If you are creating a data source for use in Virtualize's SQL Responder tool, be sure to change the Type setting from Data Set to SQL Data Set:

Configuring a SQL Data Source

A SQL data source pulls database data using a SQL query. To add a SQL data source:

- Use the **Rows** controls to indicate the range of rows you want to use. If you only want to use selected rows, click the **Range** button, then enter the desired range (assuming a one-based index) by typing values into the **From** and **To** fields. For example, to use only the first 10 rows, enter 1 in the **From** field and 10 in the **To** field. To use only the fifth row, enter 5 in the **From** field and 5 in the **To** field.
- Specify the database to which this data source will connect.
- For **Database type**, select the type of database you want to connect to. *The driver for the specified database type must be available on your CLASSPATH.*



Using a different type of database

If the database you want to use is not listed under Database type, select Custom. You can then specify a driver class in the Driver class field. Type the path to the appropriate JDBC driver class, including the package name.

- Specify the settings for that particular type of driver. Settings will vary from driver to driver.
- In the SQL Query area, type or copy the SQL query that expresses which data you want to use. A preview of the resulting data will be shown in the **Columns** area.

6. (Optional) Enable **Close connection** if you want to close the connection to this database. It is recommended when you plan to use the data source only once, and it doesn't need to wait for another command. It is not recommended when you plan to have multiple data sources all connecting to the same database. In that case, all of the data sources can share a connection—and do not need to waste resources on a new connection each time.

127.0.0.1 > sample.tst > Data Sources

MySQL datasource

Save

Name: MySQL datasource *required

Rows: All Range 1 to 1

Connection Parameters:

Database type: MySQL

Host: localhost *required

Port: 3306 *required

Database: em

User: em

Password:

Close connection

SQL Query:

```
1 SELECT value
2 FROM test
3 WHERE value > 10
4 AND value < 75;
```

Columns:

value
11
12
13

Selecting a Data Source within a Test Scenario or Responder Suite

If multiple data sources are associated with a test scenario or responder suite, use the **Data source** drop-down menu to indicate which data source you want to use to parameterize the tool you're configuring.

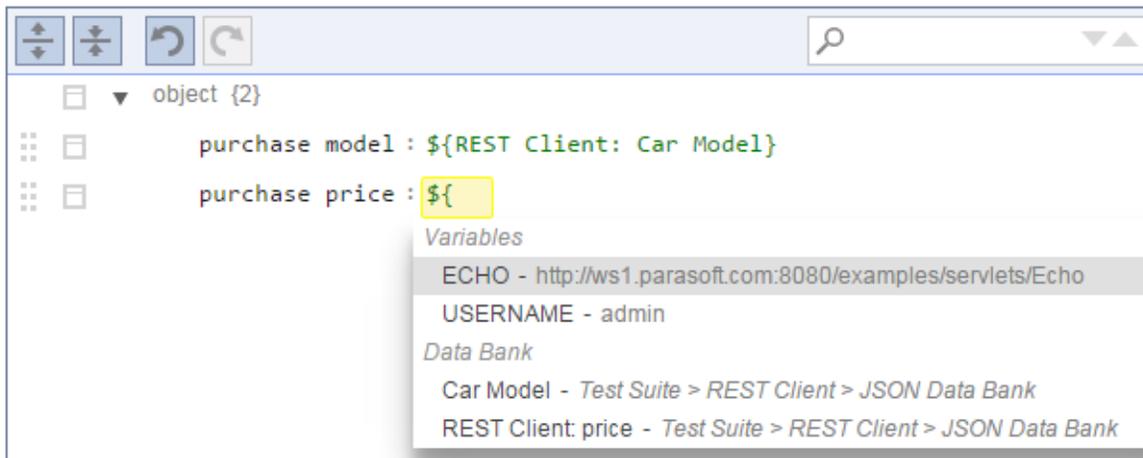
Data source: Books

Transport: Books
Keywords

You do not need to select a data source here in order to use values stored in a Data Bank tool.

Specifying Parameterized Values

You can use the $\$(value)$ notation to reference data bank and data source values (as well as variables) that are defined for the test suite or responder suite. To select from a list of applicable values, start typing $\$\{$. This will open a widget listing all the available parameterization options.



Select one of the options in the list, and the parameterization will be automatically configured.