
BIACORE™

DATA ACQUISITION MODULE

Version 1.1.0

User Guide

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PLA 3.0

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WELCOME

Welcome to the Biacore™ Data Acquisition Module User Guide. This guide is intended for users, functional administrators of PLA, and system administrators.

It describes all aspects of the installation, configuration, and usage of the Biacore™ Data Acquisition Module.

HOW TO USE THIS GUIDE

The structure of this guide is as follows:

System requirements (System administrators and PLA administrators)

- Requirements of the Data Acquisition Module

Step by Step Guide: Acquire data with Biacore™ Data Acquisition Module (PLA users)

- Acquire data
- Manage configurations

Installation (System administrators)

- Installation of the Data Acquisition Module

OVERVIEW

The Biacore™ Data Acquisition Module allows you to acquire data from Biacore files using PLA 3.0.4. The Biacore™ Acquisition Module analyzes the data of a Biacore file and imports the values to a PLA 3.0 dataset.

A single import format is available for Biacore™ Data Acquisition Module:

Biacore – Allows importing data from Biacore files.

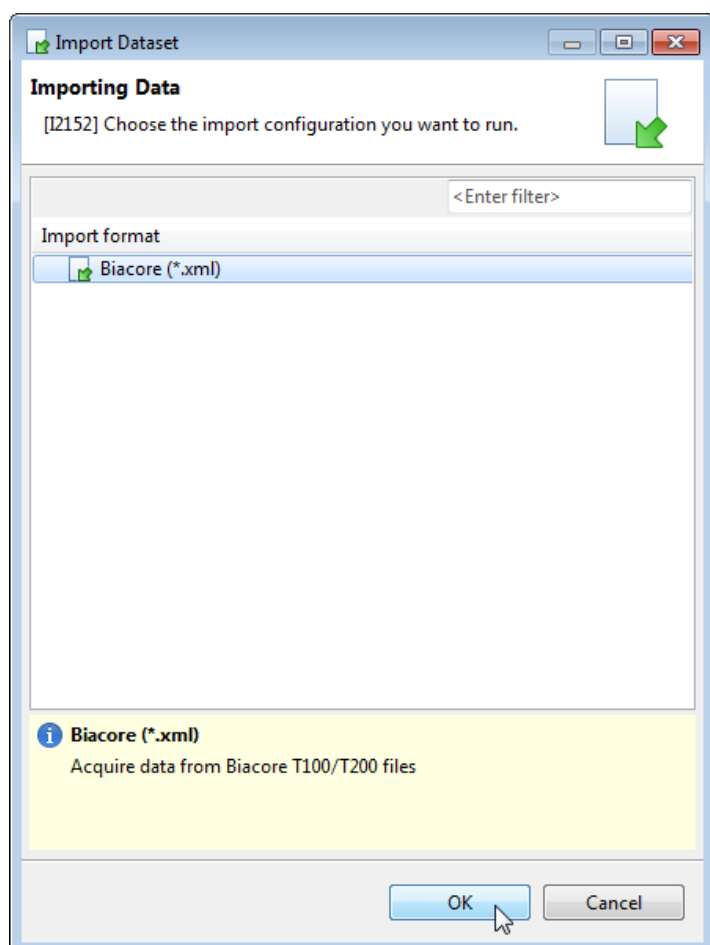
SYSTEM REQUIREMENTS

The Biacore™ Data Acquisition Module version 1.1.0 requires PLA 3.0.4. For viewing the generated report files, a PDF reader is required.

ACQUIRE DATA USING THE BIACORE™ DATA ACQUISITION MODULE

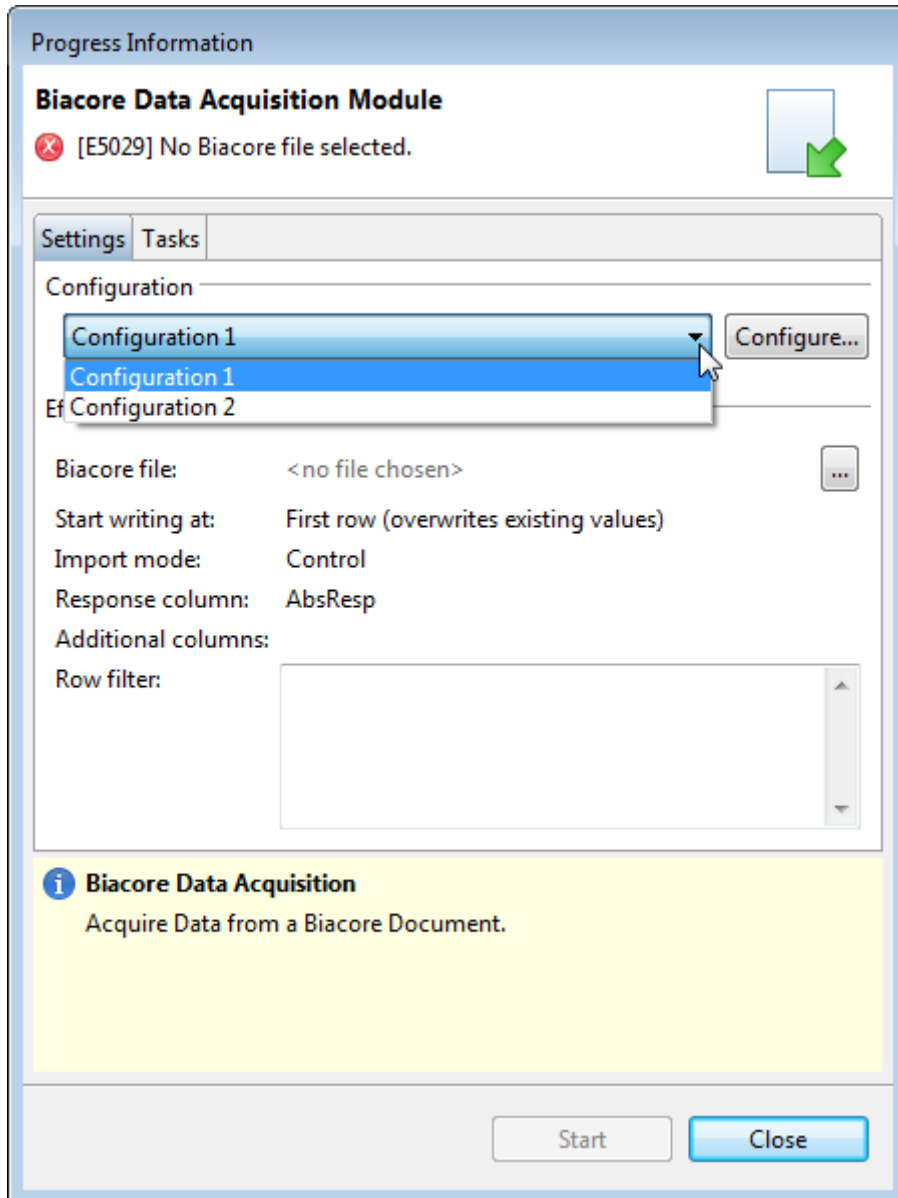
The Biacore™ Data Acquisition Module allows you to import values from Biacore XML files into PLA Assay documents. To start the Biacore™ Data Acquisition Module, run the Acquire Data... action of a PLA Assay document.

Select the Biacore import format and click the **OK** button.



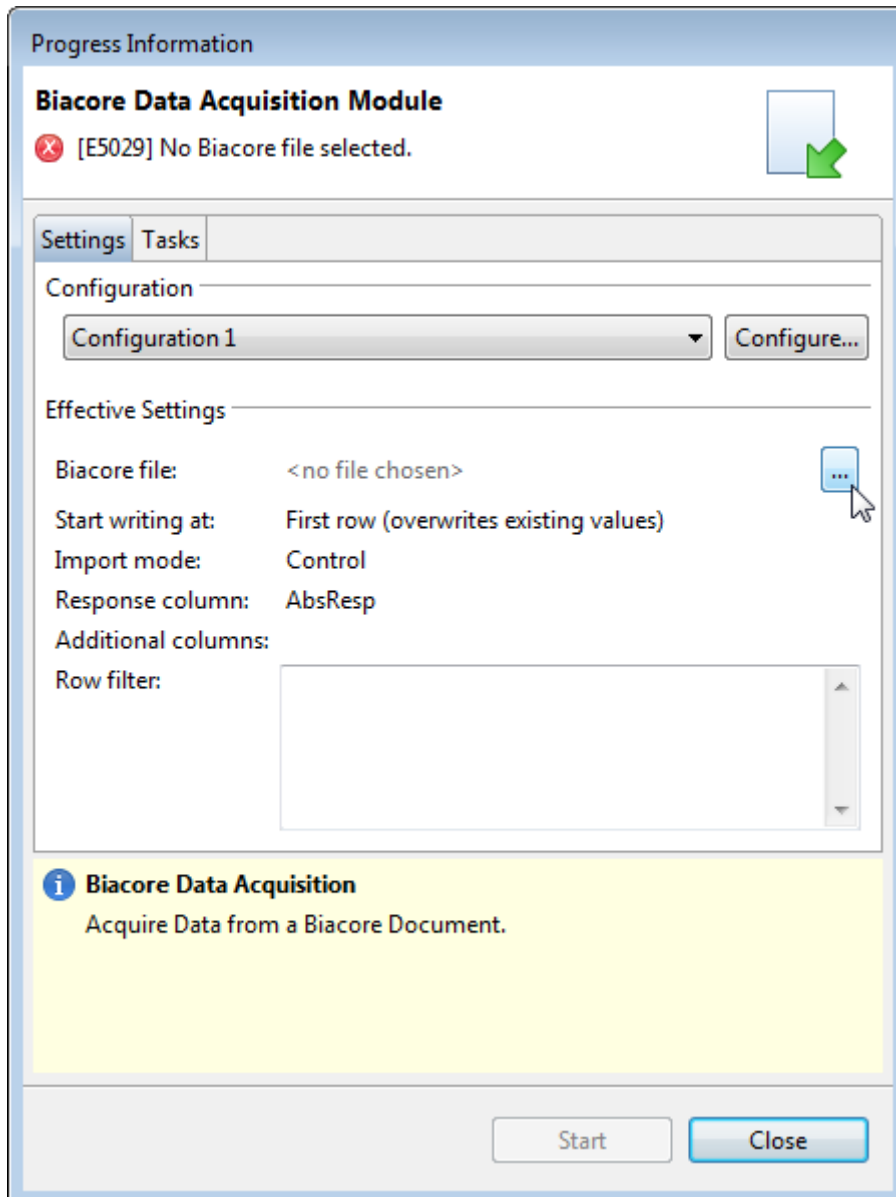
You can select a configuration profile using the drop-down menu of the Biacore Data Acquisition dialog.

If there is no configuration profile listed, you have to create one (see chapter Manage Configurations).

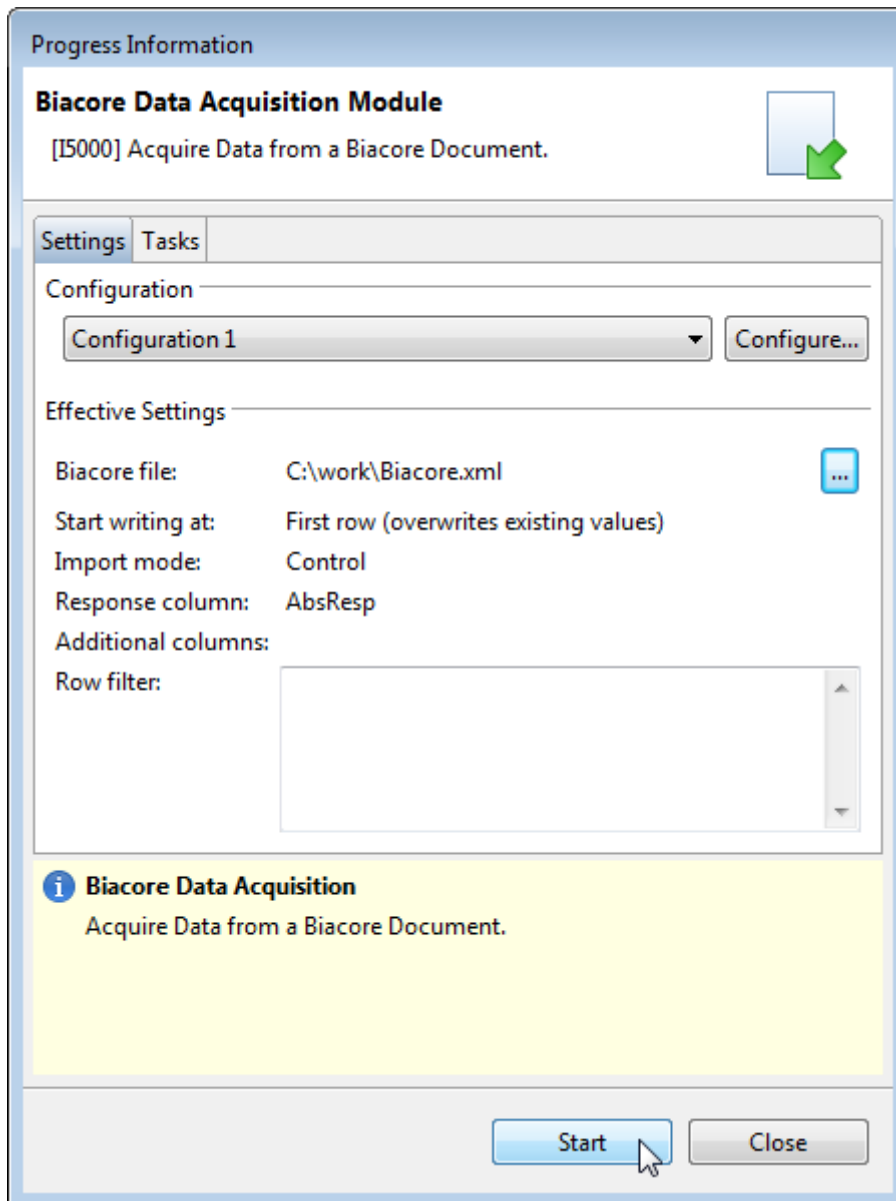


Acquire Data Using the Biacore™ Data Acquisition Module

After selecting a configuration profile, select a Biacore file using the ... button.

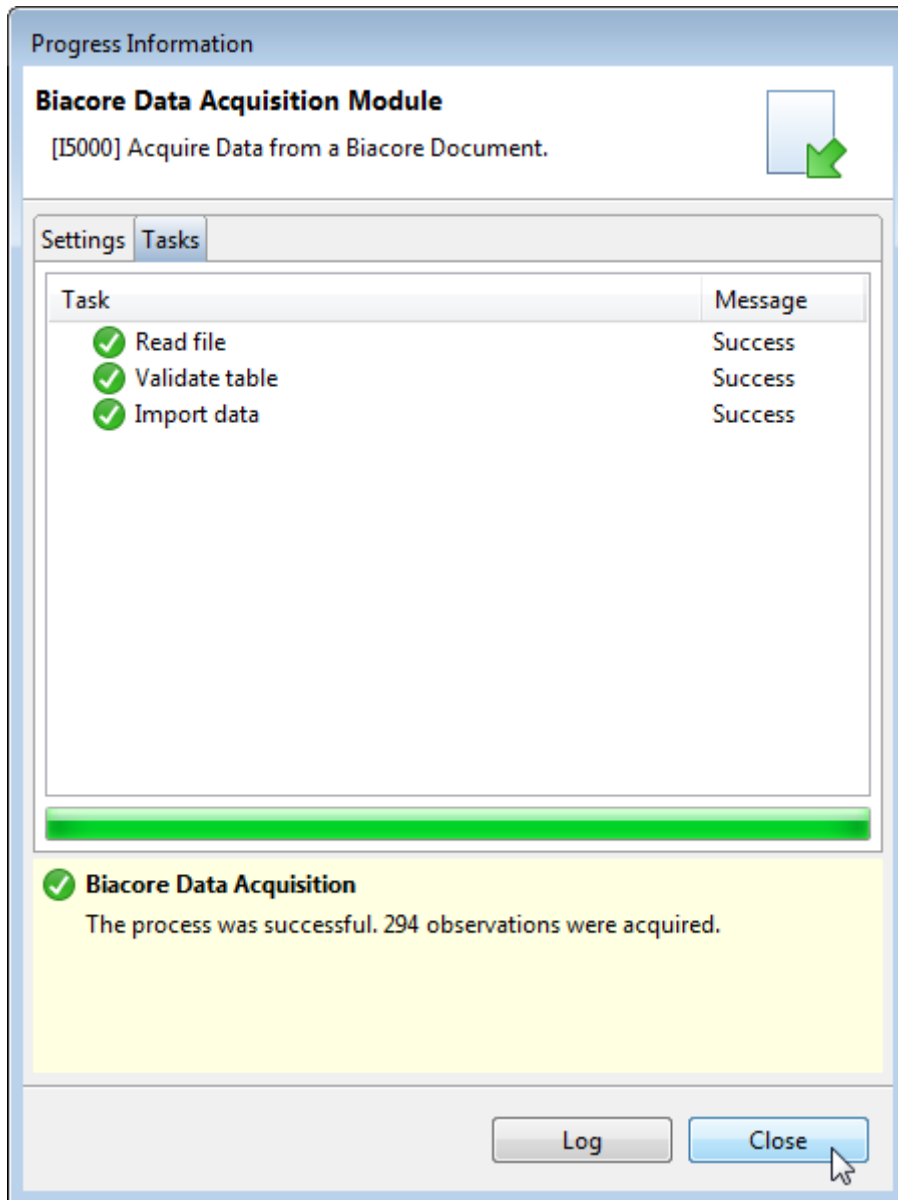


After selecting a configuration and a Biacore file, you can start the import process using the **Start** button. The effective settings are set by the configuration profile.



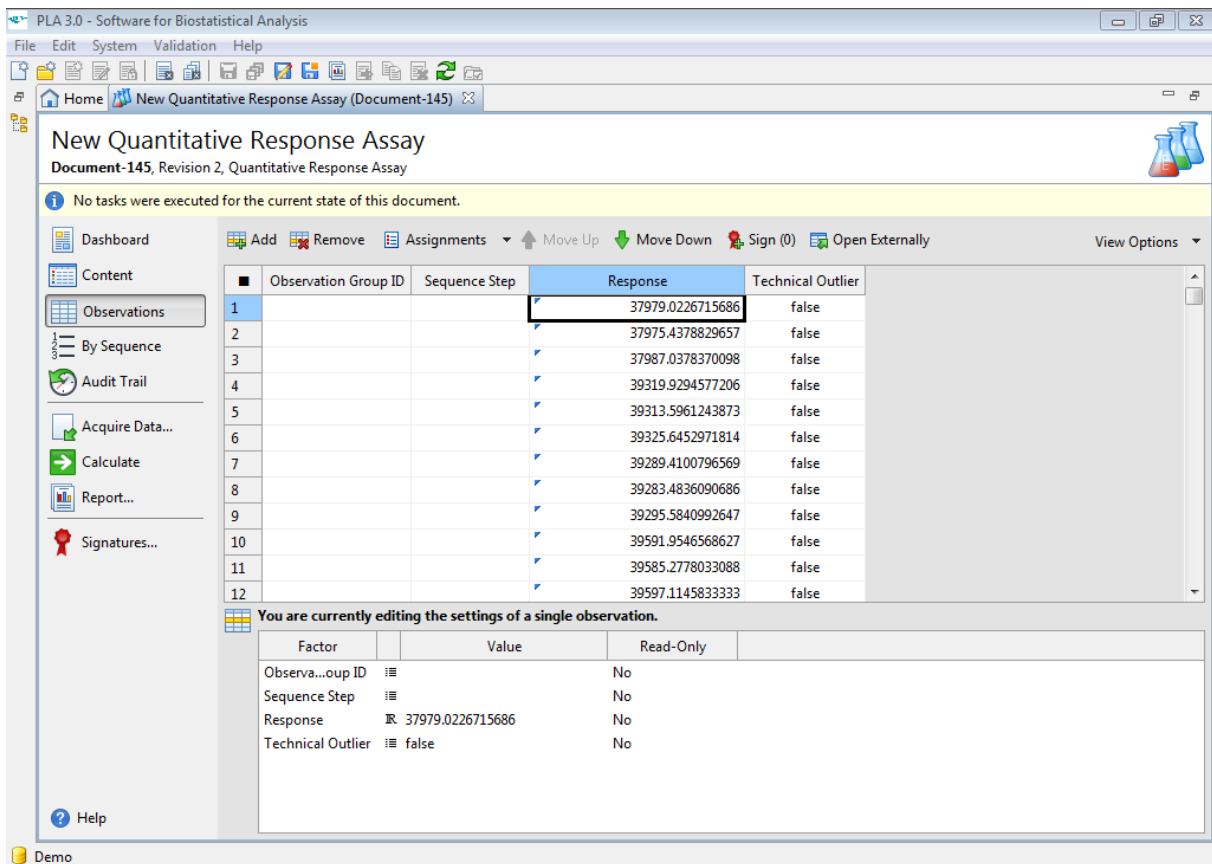
Acquire Data Using the Biacore™ Data Acquisition Module

You can view the progress and result of the data acquisition using the status dialog.



Biacore™ Data Acquisition Module - User Guide

The result of the data acquisition is available in the response column in the observations view of the PLA document editor.



The screenshot displays the 'New Quantitative Response Assay' window in the PLA 3.0 software. The window title is 'PLA 3.0 - Software for Biostatistical Analysis'. The main area shows a table of observations with the following data:

Observation Group ID	Sequence Step	Response	Technical Outlier
1		37979.0226715686	false
2		37975.4378829657	false
3		37987.0378370098	false
4		39319.9294577206	false
5		39313.5961243873	false
6		39325.6452971814	false
7		39289.4100796569	false
8		39283.4836090686	false
9		39295.5840992647	false
10		39591.9546568627	false
11		39585.2778033088	false
12		39597.1145833333	false

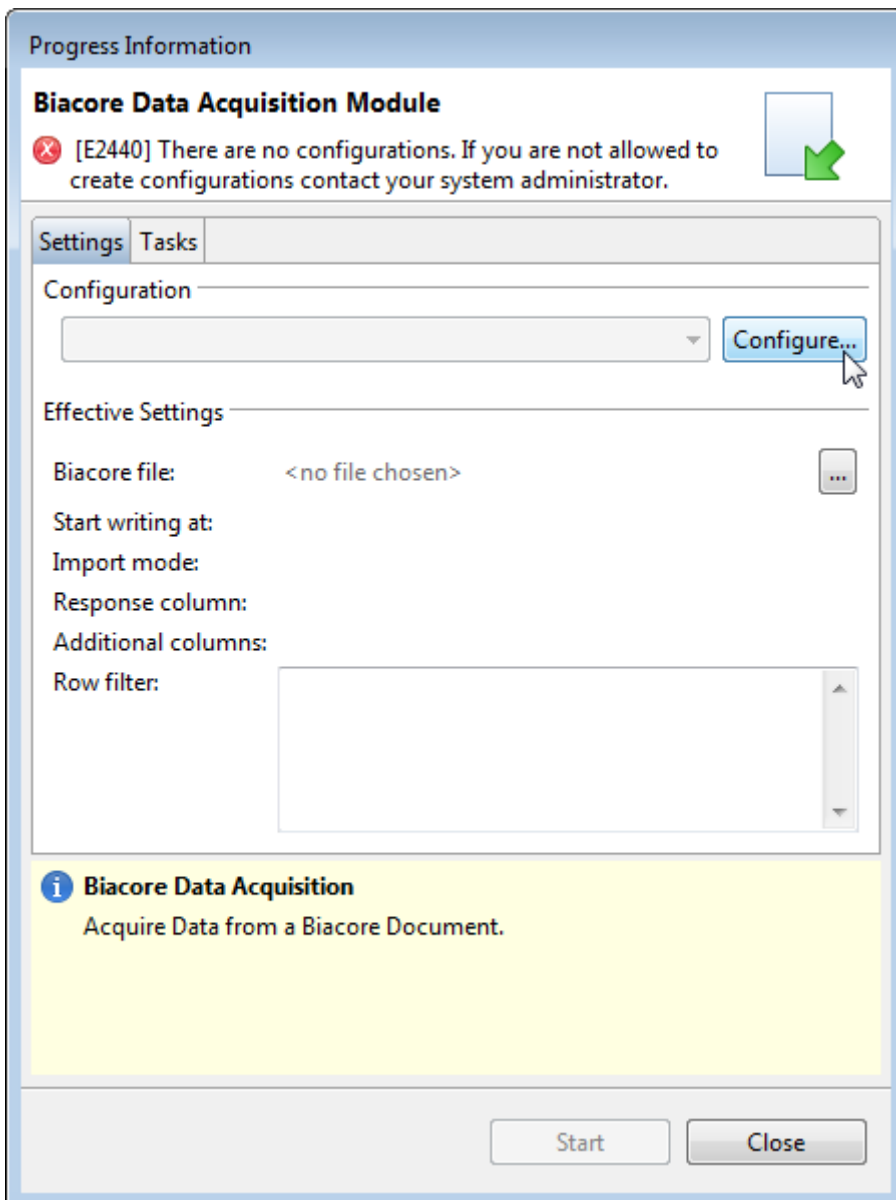
Below the table, there is a section titled 'You are currently editing the settings of a single observation.' with the following details:

Factor	Value	Read-Only
Observa...oup ID		No
Sequence Step		No
Response	37979.0226715686	No
Technical Outlier	false	No

MANAGE CONFIGURATIONS

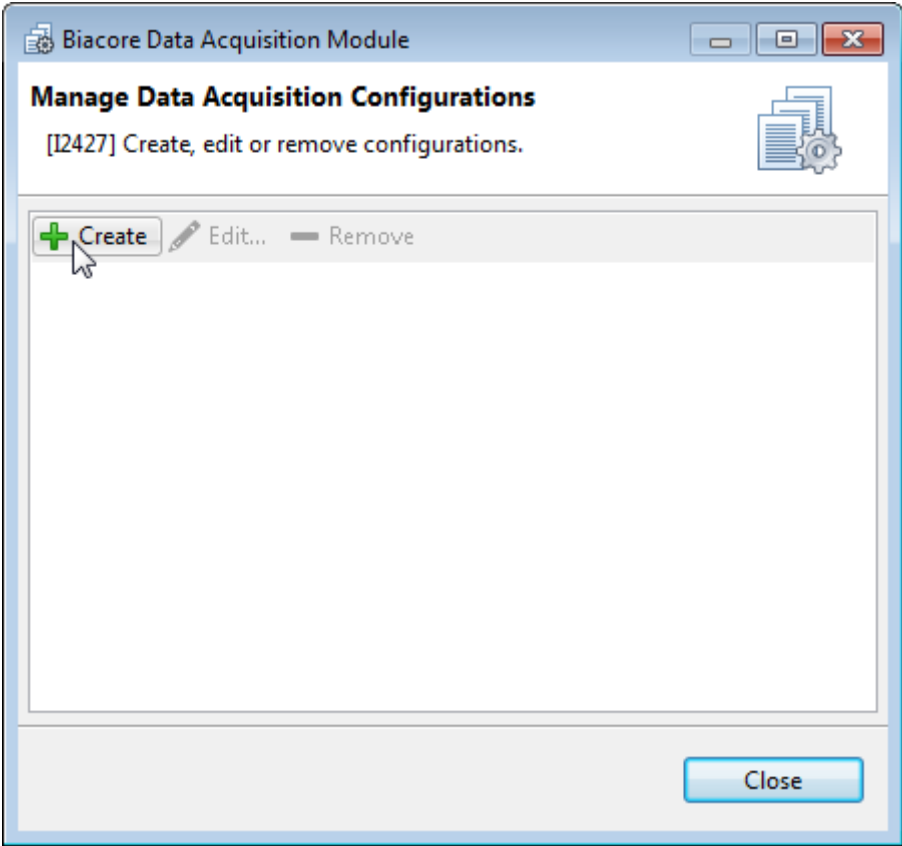
Within PLA, the Biacore™ Data Acquisition Module offers the possibility of creating, editing, or deleting data acquisition configurations.

You can open the profile configuration dialog using the **Configure...** button in the Biacore Data Acquisition Module dialog.

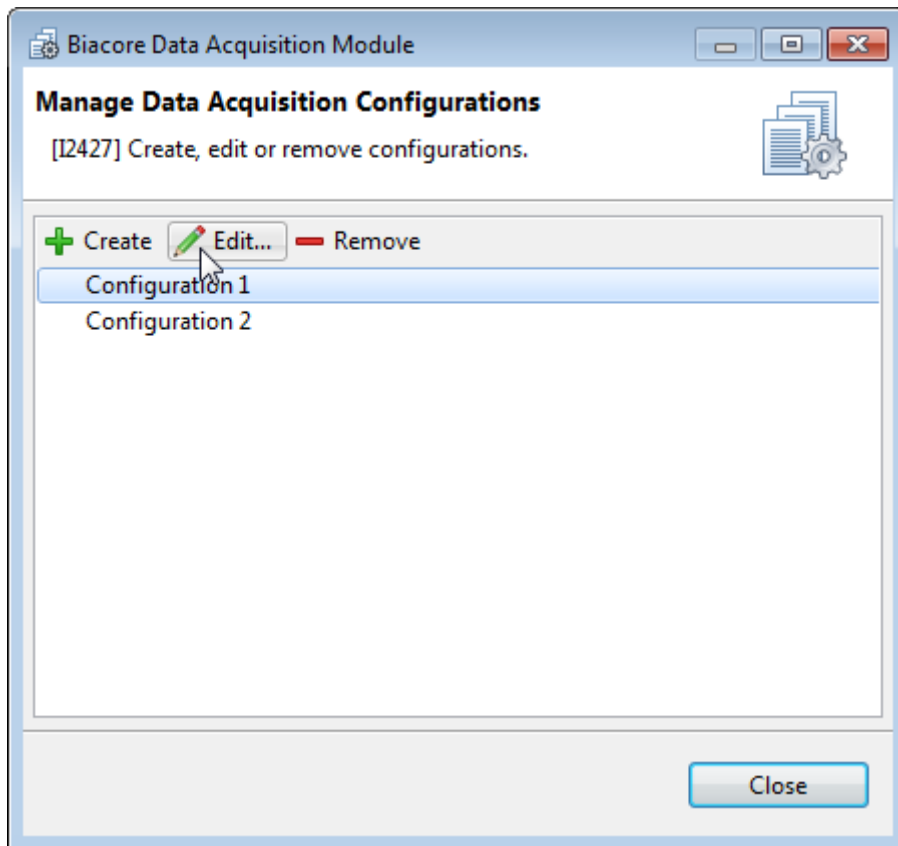


Biacore™ Data Acquisition Module - User Guide

To configure the Biacore™ Data Acquisition Module, you have to create a configuration profile in the Manage Data Acquisition Configurations dialog.



The Manage Data Acquisition Configurations dialog also allows editing or removing existing configuration profiles.

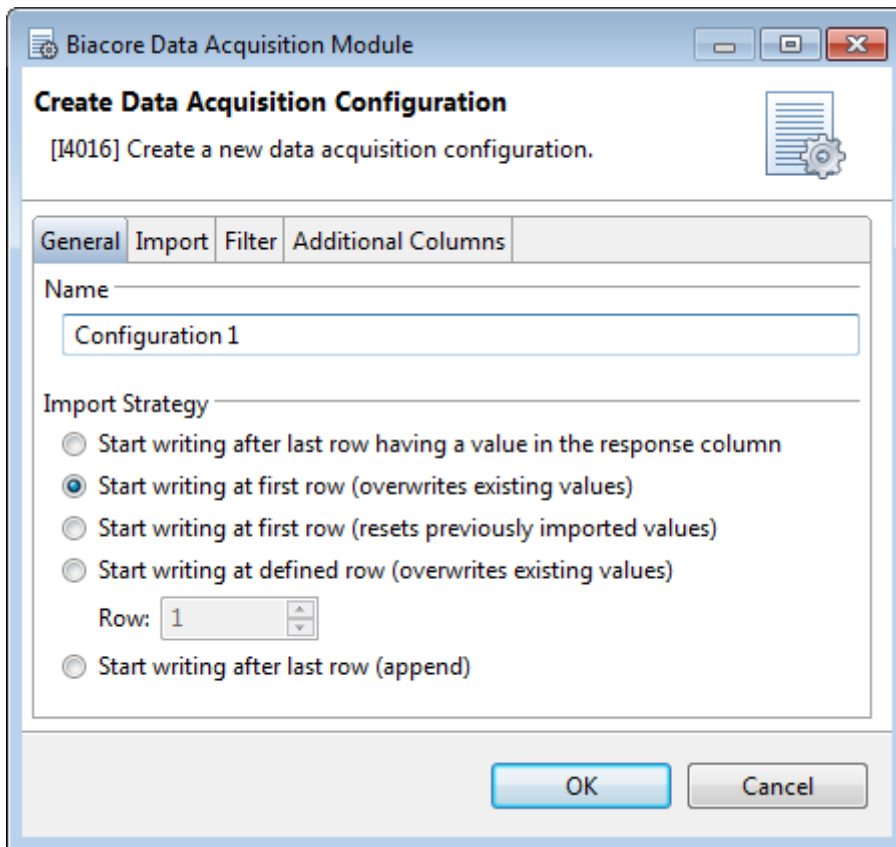


STANDARD CONFIGURATION OPTIONS

Within PLA, the Manage Data Acquisition Configurations dialog offers the possibility of creating, editing, or deleting data acquisition configurations. When creating or editing a configuration profile, the following options are available:

GENERAL

You can name the profile and define an import strategy using the General tab of the configuration dialog.



NAME

Allows you to enter the name of the configuration profile.

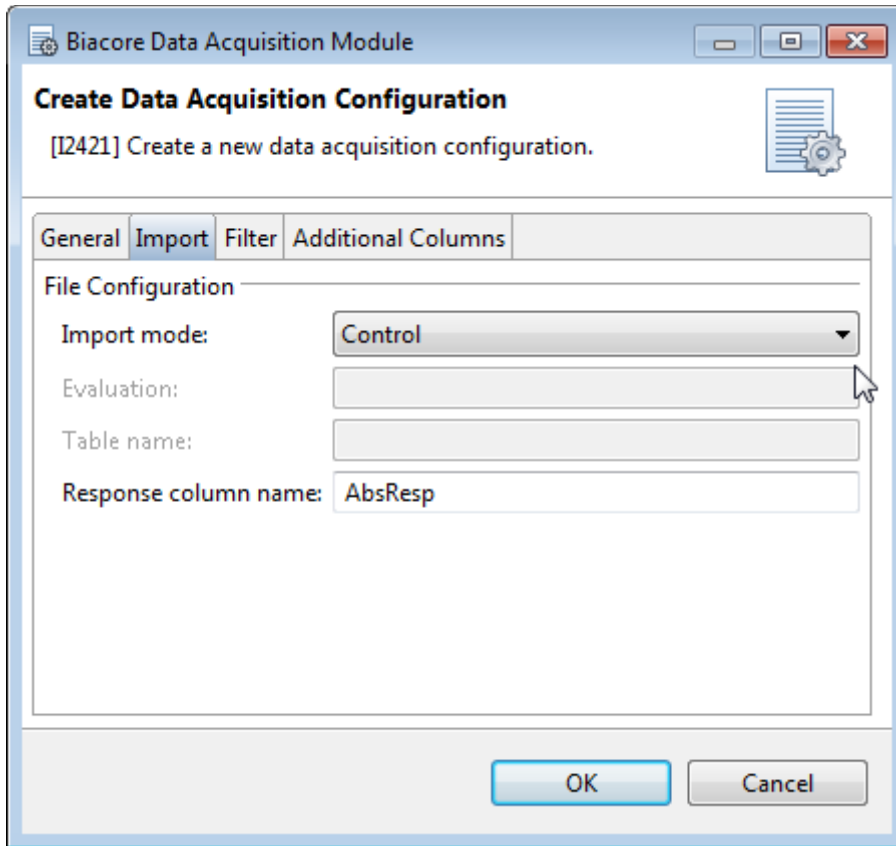
IMPORT STRATEGY

Describes how the data is written into the observations view of the Quantitative Response Assay.

Label	Description
Start writing at first empty row	Starts writing at the first empty observation row, keeping existing values
Start writing at first row (overwrites existing values)	Starts writing at the first observation row, overwriting existing values
Start writing at first row (resets previously imported values)	Starts writing at the first observation row resets all values to default values before inserting data.
Start writing at defined row (overwrites existing values)	Starts writing in specified observation row, overwriting existing values
Start writing after last row (append)	Starts writing after the last observation row, keeping existing values

IMPORT

You can define the response column name, import mode, evaluation, and table name using the import tab.



Label	Description
Import Mode	Allows switching between Biacore control and Biacore evaluation files.
Evaluation	The evaluation to import. Only editable in import mode evaluation.
Table Name	The table to import. Only editable in import mode evaluation.
Response Column Name	The column containing the values to import.

CONTROL MODE

In Control mode, only the response column name is necessary. The following screenshot shows where to find possible values in your Biacore file.

```
<?xml version="1.0" encoding="iso8859-1"?>
<LIMSInformation>
  <FileInformation>


---


    <Table Name="ReportPointTable">
      <Column1>Cycle</Column1>
      <Column2>Fc</Column2>
      <Column3>Time</Column3>
      <Column4>Window</Column4>
      <Column5>AbsResp</Column5>
      <Column6>SD</Column6>
      <Column7>Slope</Column7>
      <Column8>LRSD</Column8>
      <Column9>Baseline</Column9>
      <Column10>RelResp</Column10>
      <Column11>Report Point</Column11>
      <Column12>CycleType</Column12>
      <Column13>AssayStepPurpose</Column13>
      <Column14>Sample_1_Conc#</Column14>
      <Column15>Sample_1_Ligand</Column15>
      <Column16>Buffer</Column16>
      <Column17>Temp#</Column17>
      <Column18>Sample_1_Sample</Column18>
      <Column19>Sample_1_MW#</Column19>
      <Column20>AssayStep</Column20>
```

EVALUATION MODE

In Evaluation mode, evaluation name, table name, and response column name are necessary. The following screenshot shows where to find possible values in your Biacore file.

```
<?xml version="1.0" encoding="utf-8"?>
<EvaluationFile>
  <FileProperties>


---


  <Evaluation>


---

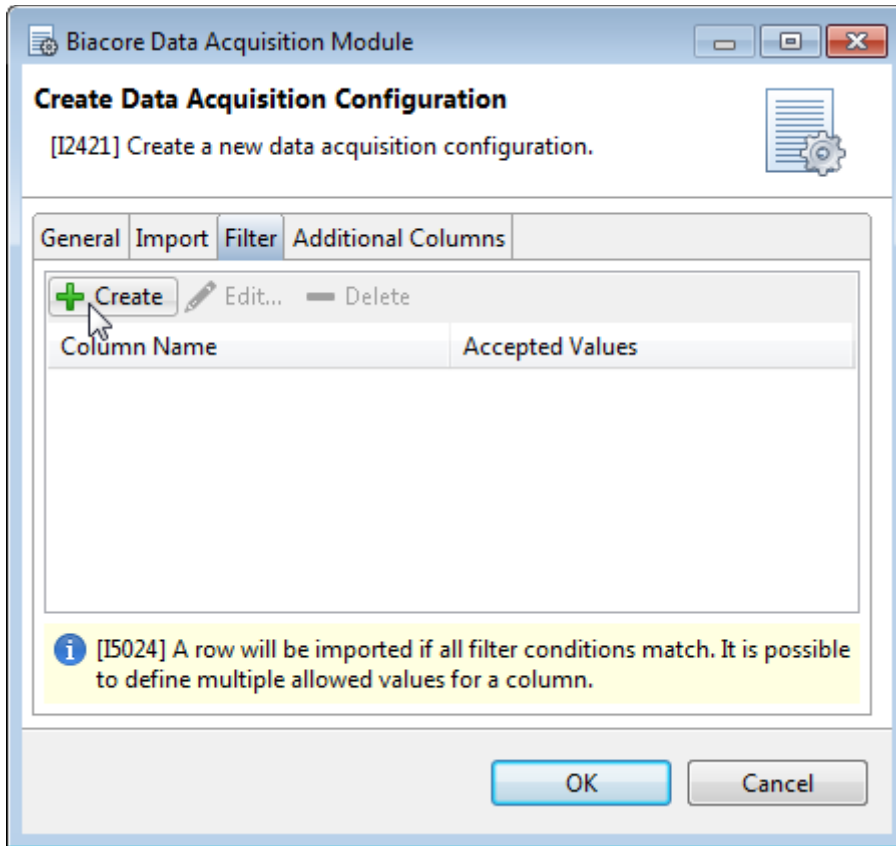

  <Evaluation>
    <Type>Plot</Type>
    <Name>Binding stability</Name>
    <XAxis>
      <Variable>Cycle number</Variable>
    </XAxis>
    <YAxis>
      <ReportPoint>stability</ReportPoint>
      <ResponseType>Relative response</ResponseType>
    </YAxis>
    <Table Name="Table">
      <Column1>X-Value</Column1>
      <Column2>Y-Value</Column2>
      <Data><![CDATA[1  17.0188808441162
2  15.4114580154419
3  13.5279951095581
4  19.1790370941162
5  25.2408847808838
6  37.375
7  61.1640625
8  110.585289001465
9  200.87760925293
10 366.481781005859
11 49.25
12 36.0592460632324
13 27.8684902191162
14 23.84375
15 22.4713535308838]]></Data>
    </Table>
  </Evaluation>
</Evaluation>


---


</EvaluationFile>
```

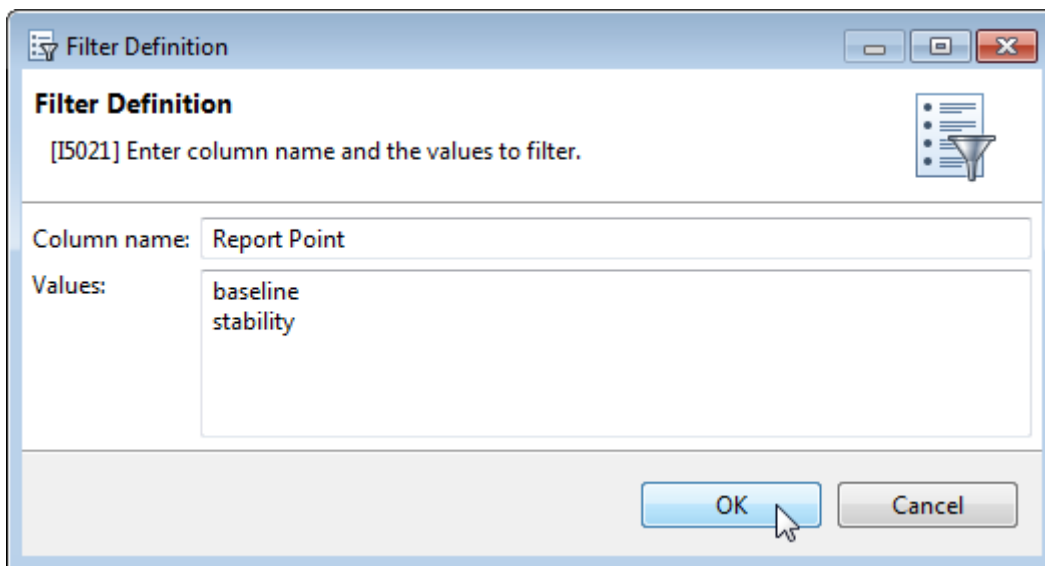
FILTER

You can configure up to ten different filters. A row will be imported if all filter conditions match. It is possible to define multiple allowed values for a column.



CREATE A FILTER

Enter the column name and the values to filter line by line.



Label	Description
Column Name	The column where the values have to match.
Values	The values defining if the filter matches.

FILTER EXAMPLE

Assumed you apply a filter with column name "Included" and value "Yes" to the following table. In consequence, only rows where the filter matches (red underlining) are considered when it comes to the data acquisition.

```

<Table Name="CalibrationTable">
  <Column1>File #</Column1>
  <Column2>Calib. Curve</Column2>
  <Column3>Cycle #</Column3>
  <Column4>Conc. (µg/ml)</Column4>
  <Column5>Response (RU)</Column5>
  <Column6>Calc. Conc. (µg/ml)</Column6>
  <Column7>CV (%)</Column7>
  <Column8>Included</Column8>
  <Column9>
</Column9>
  <Column10>
</Column10>
  <Data><![CDATA[1 1 3 0 13,5279947916715 0.00853254171022106 Yes
Avg. 13.5279947916715 0.00853254171022106 N/A

1 1 4 0.25 19,1790364583285 0.248104854860805 Yes
Avg. 19.1790364583285 0.248104854860805 N/A

1 1 5 0.5 25,2408854166642 0.499141044479087 Yes
Avg. 25.2408854166642 0.499141044479087 N/A

1 1 6 1 37,375 0.997679396638664 Yes
Avg. 37.375 0.997679396638664 N/A

1 1 7 2 61,1640625 1.97490726813862 Yes
Avg. 61.1640625 1.97490726813862 N/A

1 1 8 4 110,585286458336 4.03720232163469 Yes
Avg. 110.585286458336 4.03720232163469 N/A

1 1 9 8 200,877604166664 7.98232564351184 Yes
Avg. 200.877604166664 7.98232564351184 N/A

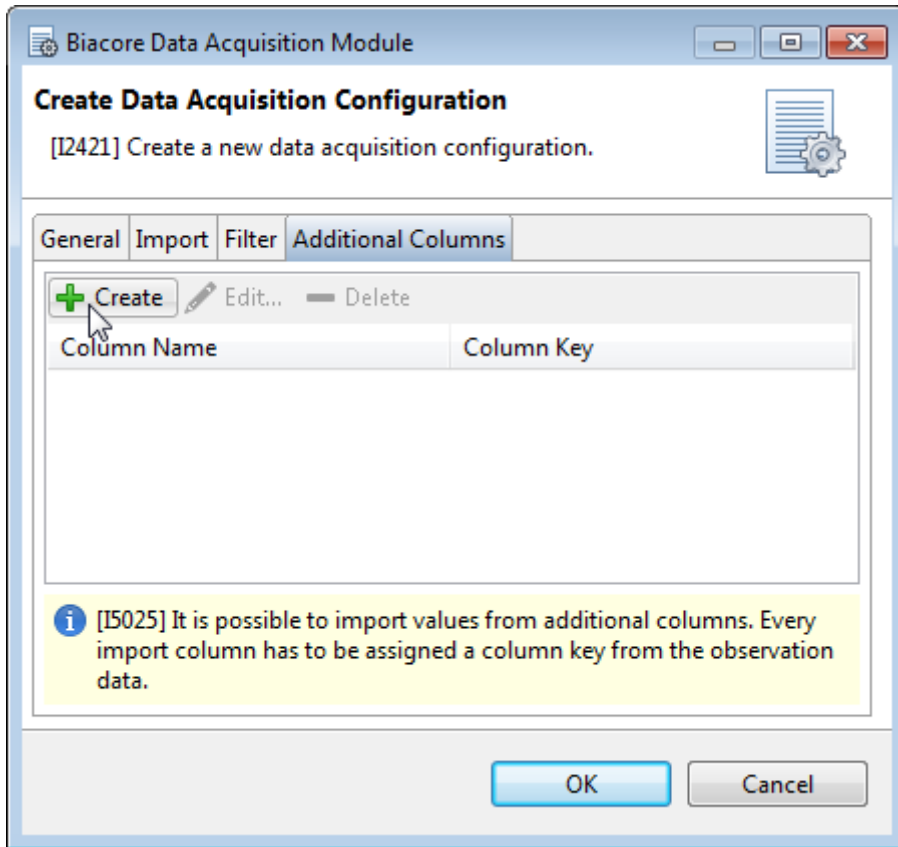
1 1 10 16 366,481770833336 16.0029686574351 Yes
Avg. 366.481770833336 16.0029686574351 N/A ]]></Data>
</Table>

```

Adding "N/A" to the values would result in the filter matching every line. The data acquisition would import the same values as if there was no filter, except the empty lines are left out.

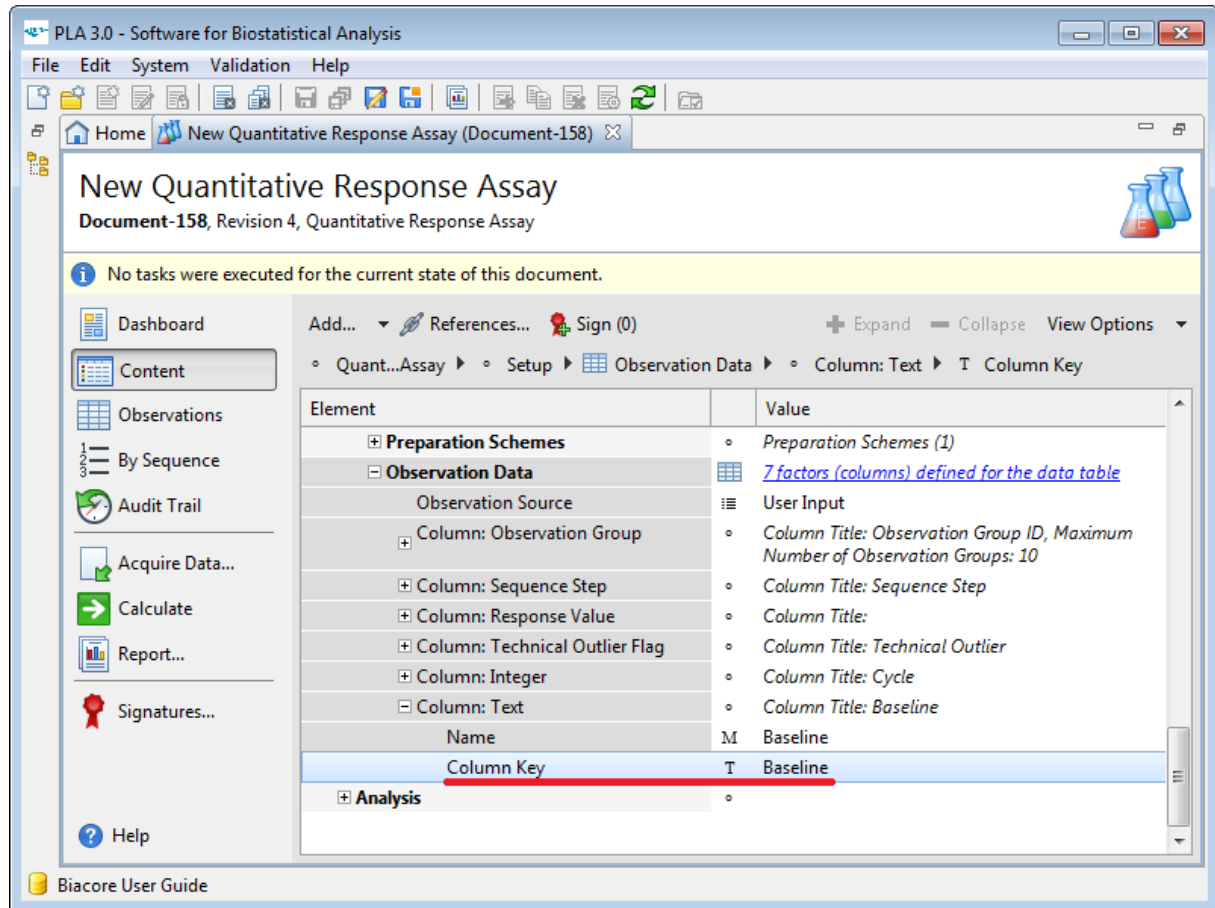
ADDITIONAL COLUMNS

You can define additional columns to import into your document.



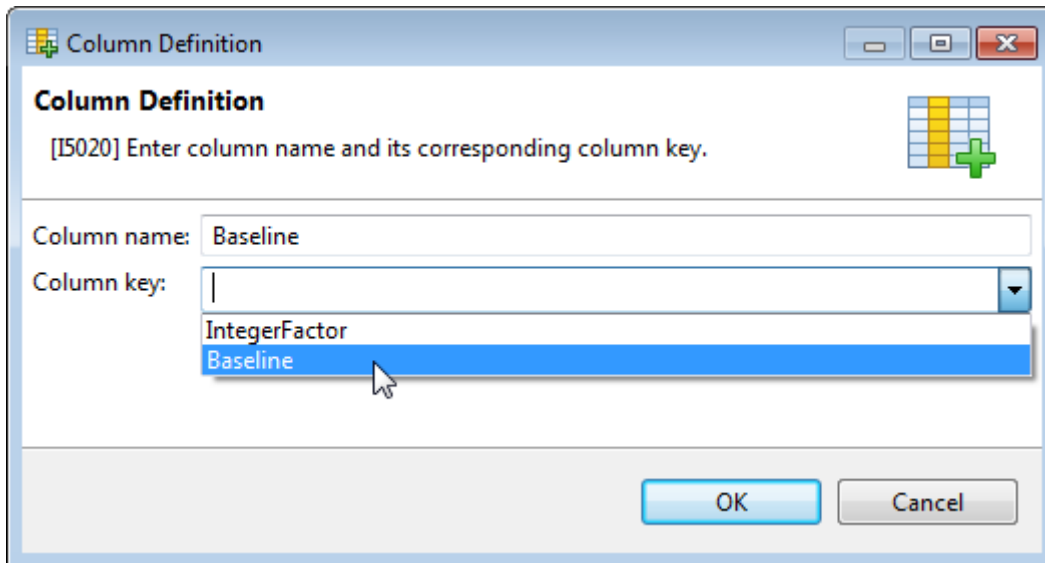
PREPARATION

Prepare your document to acquire data from an additional column by adding a new column within the content section. The defined column key will later be suggested in the column key combo box.



CREATE AN ADDITIONAL COLUMN

Enter a column name and column key to define the additional column.



Label	Description
Column Name	The name of the column in your Biacore file you want to import.
Column Key	The key of the column you want the values to be imported.

ADVANCED CONFIGURATION OPTIONS

The advanced configuration of the Biacore™ Data Acquisition Module is handled via the `Biacore Data Acquisition Package.properties` configuration that is stored in the `C:\ProgramData\Stegmann Systems\PLA [version]` directory. Any settings that are made using the Biacore Data Acquisition Module configuration profiles are also saved to the `Biacore Data Acquisition Package.properties` file.

Important: The encoding of the `.properties` file is ISO-8859-1 (Latin-1). All non-Latin-1 characters must be entered by using `\` as an escape character. Example: The special character `:` must be entered as `\:` and the special character `\` must be entered as `\\`

To configure the Biacore™ Data Acquisition Module, you need write permissions on the `Biacore Data Acquisition Package.properties` file. Regular Microsoft Windows user accounts do not have write permissions within the Program Data directory, so you might need an administrative account to change the configuration.

DEFINE AVAILABLE CONFIGURATION PROFILES

You can define the available configuration profiles per folder on a database. To define the available configuration profiles, add the following property to your `Biacore Data Acquisition Package.properties` file:

```
com.stegmannsystems.edp.dataacquisition.biacore.restrictions.<DB-UUID>.profile.<Folder-Key>
```

You can view the DB-UUID of the database using the PLA Database Policies (General tab). The folder key can be viewed using the PLA folder properties dialog (Document Key value).

The following example will limit the available configuration profiles for the folder with the folder-key "Folder-1" (Root Folder) and all of its subfolders unless a subfolder defines its own set of available configuration profiles. Multiple configuration files need to be separated by a pipe symbol (`|`). Only the configuration profiles named "Biacore Profile1" and "Biacore Profile2" can be used in the Biacore™ Data Acquisition Module:

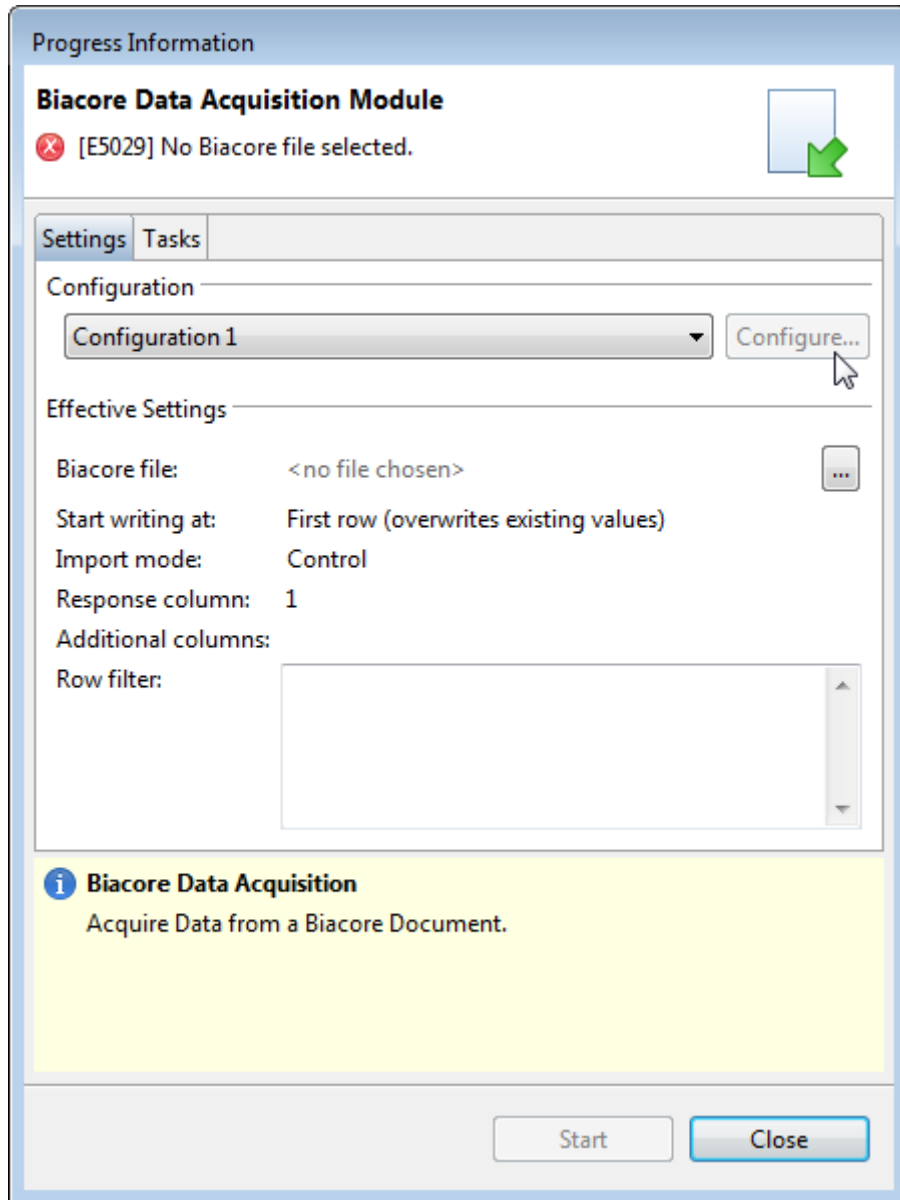
```
com.stegmannsystems.edp.dataacquisition.biacore.restrictions.6c868b23-d386-45f8-833b-15e8014b424f.profile.Folder-1=Biacore Profile1|Biacore Profile2
```

This setting does not prevent users from changing the available profiles. See chapter Prevent Configuration of Configuration Profiles for further information.

PREVENT CONFIGURATION OF CONFIGURATION PROFILES

By default, all users that can access the Biacore™ Data Acquisition Module can create, edit, and delete configuration profiles. To prevent users from creating, editing, and deleting configuration profiles, you have to add the following property to your Biacore Data Acquisition Package.properties file:

```
com.stegmannsystems.edp.dataacquisition.biacore.restrictions.canEditProfiles=false
```

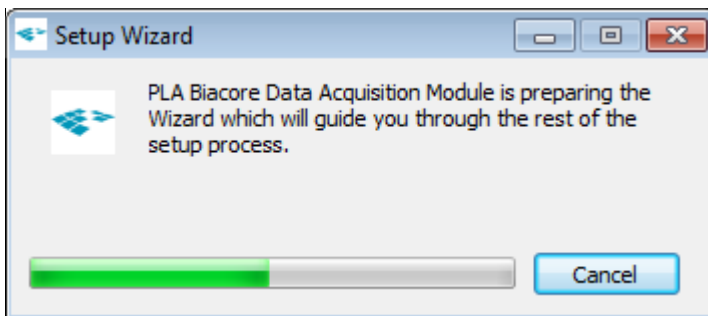


INSTALLATION

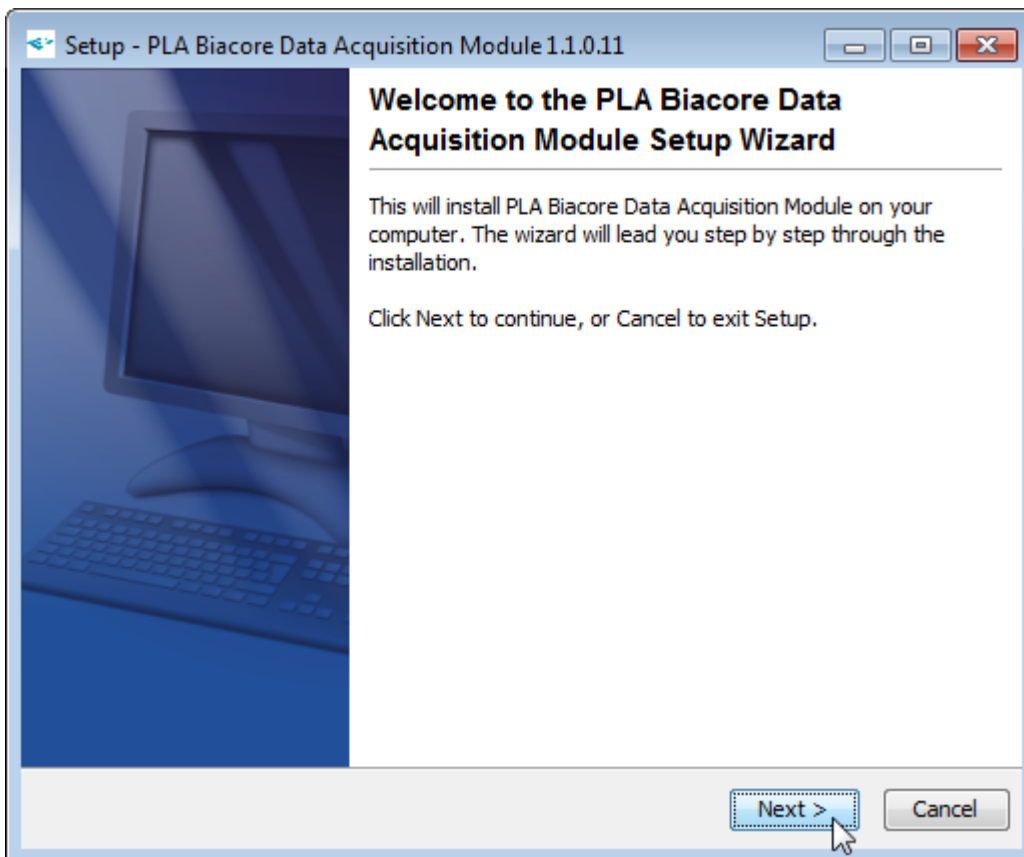
Installing the Biacore™ Data Acquisition Module consist of two parts. The Setup part will install the Data Acquisition Module on your local hard disk. Afterward, it can be activated on multiple databases via the PLA Package Management.

SETUP

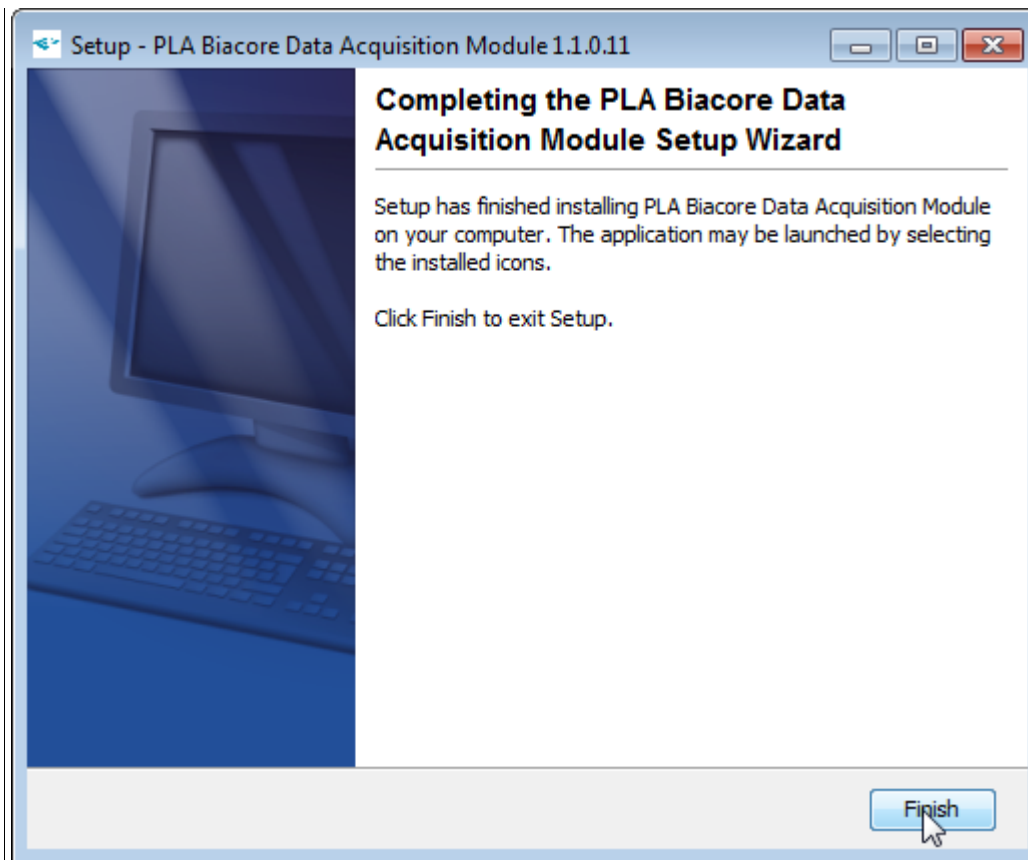
To install the Biacore™ Data Acquisition Module, start the installation program using a Microsoft Windows Administrator account.



Follow the on-screen instructions.



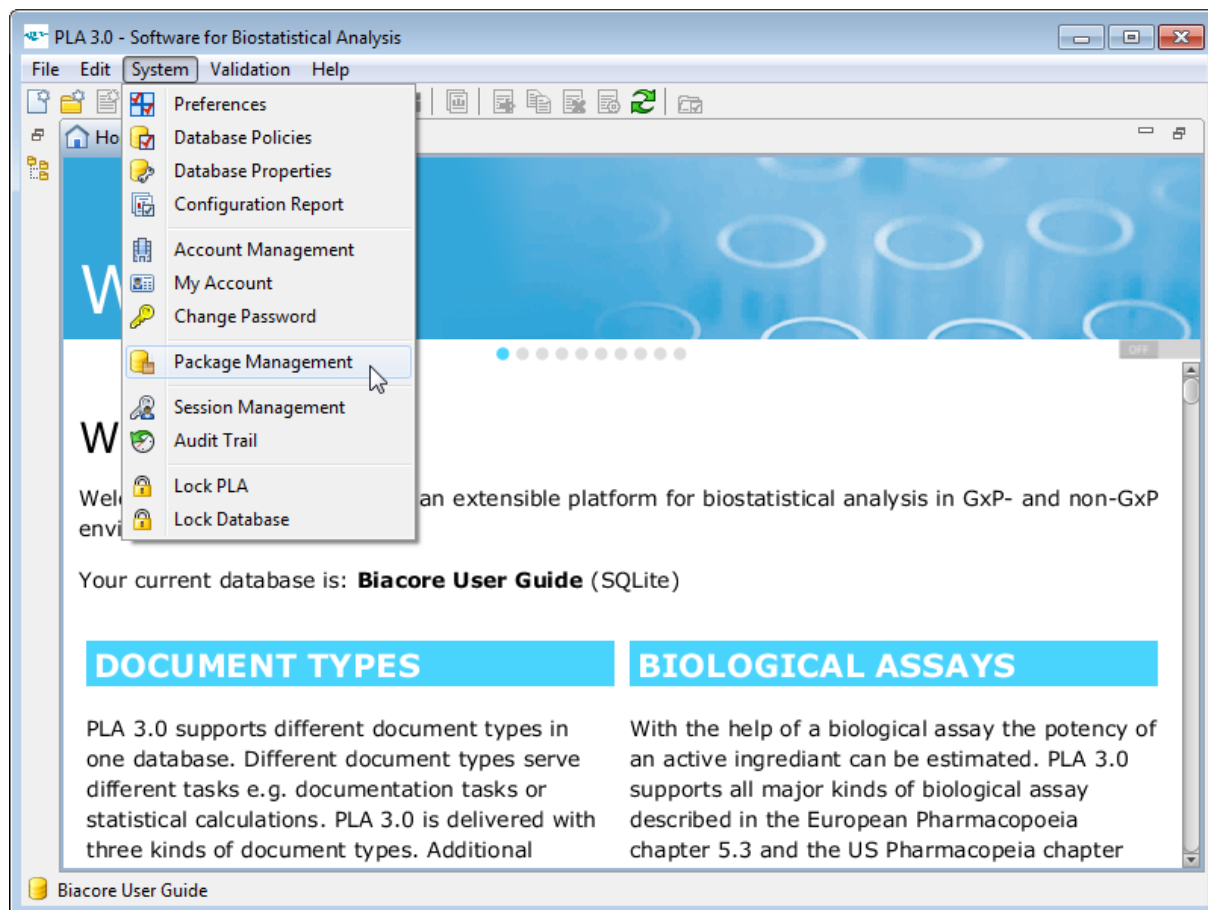
When the installation finished successfully, click **Finish** to close the installation program.



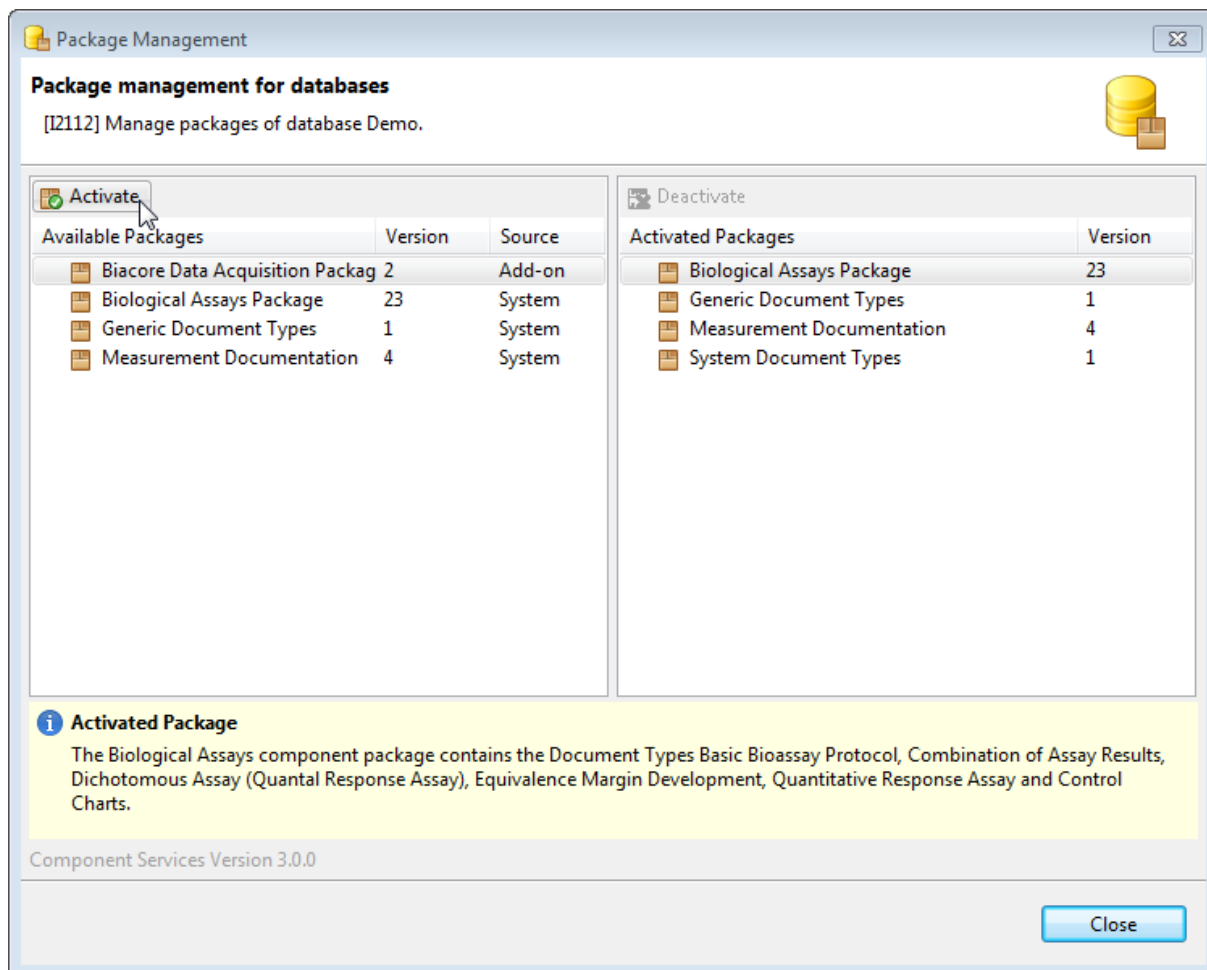
PACKAGE MANAGEMENT

To use the Biacore™ Data Acquisition Module, it has to be activated in the specific database.

To make the module available in a PLA database, a PLA user account with permission to view and manage packages is required. Login to PLA using a user account with the required permissions and open the **Package Management** from the **System** menu.



Select the Biacore Data Acquisition Module out of the list of available packages and click **Activate**.



PLA will activate the selected Data Acquisition Module in the database. When the activation is complete, the package will be listed as an activated package. The Data Acquisition Module can now be used to acquire data into PLA Quantitative Response Assays, using the **Acquire Data** action of the PLA document editor.

