TrakSYS™ Real Time Operations & Performance Management

TrakSYS™ 7.0 Advanced Training Course Lab Manual

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Parsec Automation Corp.
180 North Riverview, No. 300
Anaheim, CA 92808 USA
Phone +1 714 996 5302
Fax +1 714 996 1845
www.parsec-corp.com

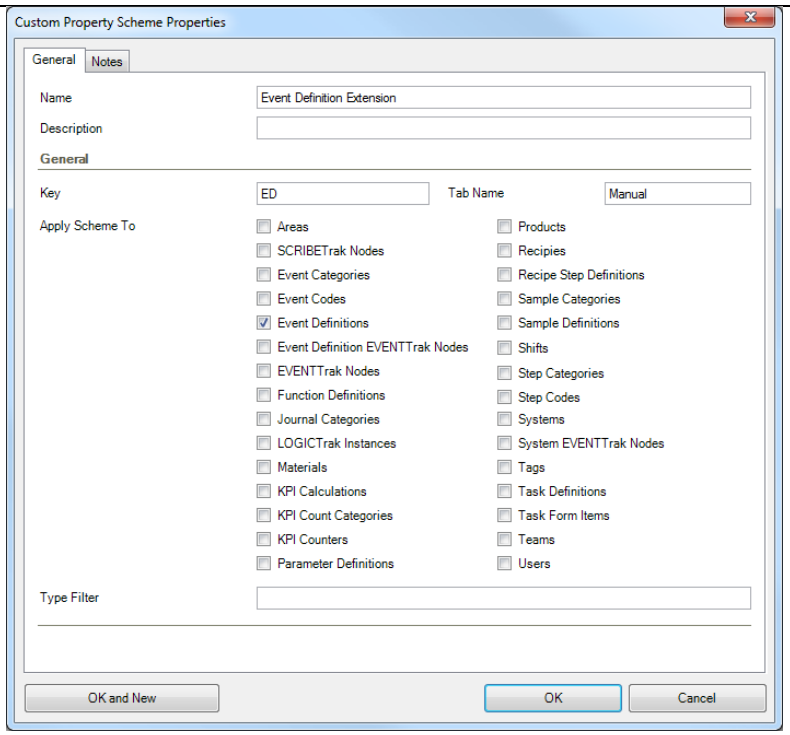
Contents

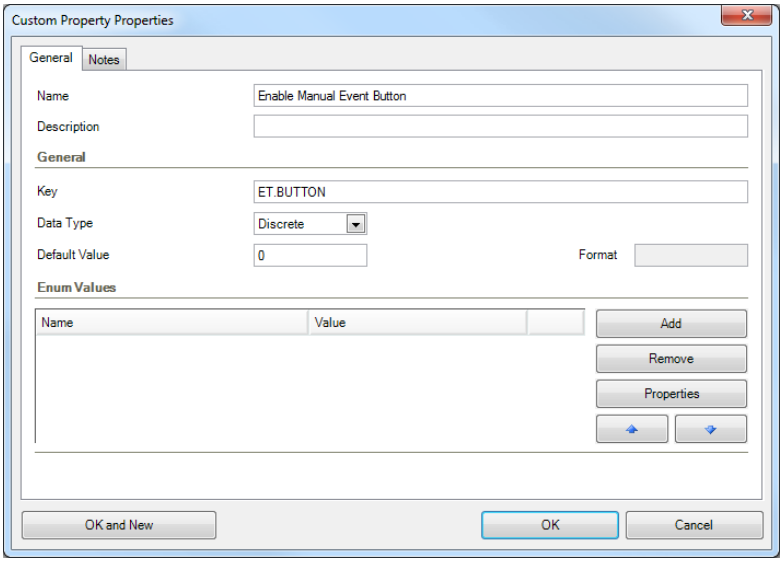
Lab 01: MODELTrak – Custom Properties

Objectives	• Create Custom Property Schemes • Add Custom Settings to Event Definitions • Query Custom Values from the Database
Estimated Time to Complete This Lab	20 minutes

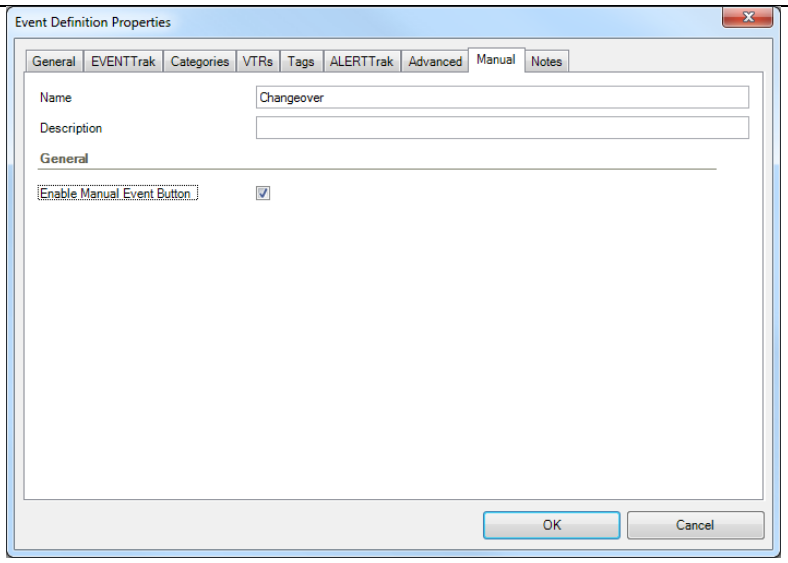
In this lab, you will extend the configuration of MODELTrak Event Definitions by adding new settings through Custom Properties. You will then learn how to retrieve Custom Property data by querying data views in the TrakSYS database.

Tasks	Detailed Steps
Open TrakSYS MODELTrak	1. Go to **Start | All Programs | Parsec | TrakSYS | TrakSYS MODELTrak**.
Create a Custom Property Scheme and Group	1. Go to the **Custom Properties** panel in the MODELTrak tree view. 2. Right-click on the **Custom Property Schemes** Group and select **New Custom Property Scheme** from the popup menu. 3. In the **Custom Property Scheme Properties** page, type **Event Definition Extension** for the **Name**, **ED** for the **Key**, and **Manual** for the **Tab Name**. 4. Check the box for **Event Definitions** in the **Apply Scheme To** list. 5. Click **OK** to save this Custom Property Scheme. 6. Right-click on the **Event Definition Extension** Scheme in the tree view and select **New Custom Property Group** from the popup menu. 7. In the **Custom Property Group Properties** page, type **General** for the **Name**. 8. Click **OK** to save this Custom Property Group. 9. Right-click on the **General** Custom Property Group in the tree view and select **New Custom Property**. 10. In the **Custom Property Properties** page, type **Enable Manual Event Button** for the **Name**, **ET.BUTTON** for the **Key**, **Discrete** for the **Data Type**, and **0** for the **Default Value**. 11. Click **OK** to save this Custom Property.





Add Custom Property Values	1. Go to the **Areas and Systems** panel in the MODELTrak tree view. 2. Expand the tree view to find the **Line 1** System under the **Packaging** Area and select it. In the detail view, right-click the **Changeover** Event Definition and select **Properties**. 3. In the **Event Definition Properties** page, select the **Manual** tab, check the box for **Enable Manual Event Button**, and click OK.

<table>
<tr><td></td><td> 

4. Repeat steps 2 and 3 for the Lunch and Maintenance Event Definitions.</td></tr>
<tr><td>Open SQL Server Management Studio</td><td>1. Go to Start | All Programs | Microsoft SQL Server 2005 | SQL Server Management Studio.</td></tr>
<tr><td>Execute a Query</td><td>1. From the File menu, select Open | File…, then select the file Custom Property Queries 1 [Empty].sql from the Files\Custom Properties folder on the computer desktop.
2. If prompted by the Management Studio, connect to the local SQL Server instance on the computer.
3. Write a SQL query in the open query window that lists the following fields for Event Definitions. Use the database view vwCustomPropertyEventDefinition to return these fields.
• EventDefinitionID
• EventDefinitionName
• ED.ET.BUTTON
4. Write a SQL query in the open query window that returns the value for Enable Manual Event Button for a specific Event Definition. Use the EventDefinitionID provided in the query template.

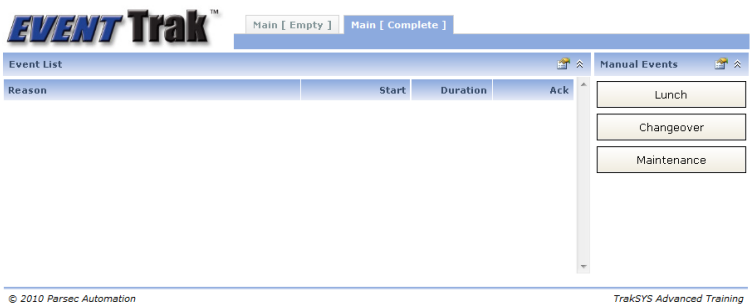
<pre>
USE [EDB_AT]
-- ---
-- select custom properties for event definitions

-- TODO : write query here

-- ---
-- select the value of a custom property for a specified event definition
DECLARE @eventDefinitionID INT

SET @eventDefinitionID = 9

-- TODO : write query here
</pre>
</td></tr>
</table>

	5. A possible solution for steps 3 and 4 may be found in the file **Custom Property Queries 2 [Complete].sql**, located in the **Files\Custom Properties** folder on the computer desktop.
Use Custom Properties in a Dashboard Web Part	1. Open **WEBTrak** and navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\Custom Properties**. 2. Open the **Main [Empty]** dashboard report and click the **Edit Dashboard** button on the menubar. 3. Edit the **Manual Events** HTML Content web part and go to the **Source** panel of the Web Part Settings. 4. Write a **SQL Query** for the web part's Data Source that will list the Manual Event buttons for a specific System. Use the database tables **tEventDefinition** and **tTag** in your query, along with the database view **vwCustomPropertyEventDefinition**. The query should return the following fields, where the Tag fields are based on the Trigger Tag for a given Event Definition: • EventDefinitionID • EventDefinitionName • TagID • TagName • TagValue 5. A possible solution can be found in the **Main [Complete]** dashboard. 

Lab 02: TrakSYS Data Structures

Objectives	• Create Queries Against the TrakSYS Data Views
Estimated Time to Complete This Lab	25 Minutes

In this lab, you will write different queries to retrieve data from the TrakSYS database using the standard TrakSYS data views for KPI and Event data. These data views are used frequently in custom KPI and report generation.

Tasks	Detailed Steps
Create Tag Groups	1. Go to **Start | All Programs | Microsoft SQL Server 2005 | SQL Server Management Studio**. 2. Connect to the local database server using **Windows Authentication**. 3. From the **File** menu, select **Open | File…**, then select the file **TrakSYS Data Structures 1 [Empty].sql** from the **Files\TrakSYS Data Structures** folder on the computer desktop. 4. If prompted by the Management Studio, connect to the local SQL Server instance on the computer. 5. Use the document **TrakSYS(TM) Data View Descriptions.pdf** to create a **SQL query** in the open query window for a Custom KPI called **Units per Minute**. • The KPI should be the **Total** count divided by the **Net Operating Time** for a specified date range. • Use the SQL parameters for **OeeCalculationID**, **StartDate**, and **EndDate** defined in the query template. • Use the data view **vwOeeInterval** to complete this query. 6. Create a **SQL query** in the open query window that **Event** data for a specific **Job ID**. • Use the **JobID** provided in the query template. • Use the data view **vwEvent** to complete this query. The query result set should contain the following fields: • EventID • EventStartDateTime • EventEndDateTime • SystemName • SubSystemName • EventDefinitionName • ShiftName • ProductName


```
USE [EDB_AT]
-- ---------------------------------------------------------------------
-- units per minute query
DECLARE @oeeCalculationID INT
DECLARE @startDate DATETIME
DECLARE @endDate DATETIME

SET @oeeCalculationID = 2
SET @startDate = '2010-08-16'
SET @endDate = '2010-08-22'

-- TODO : write the query

-- ---------------------------------------------------------------------
-- show events for a specific job ID
DECLARE @jobID INT

SET @jobID = 2

-- TODO : write the query
```

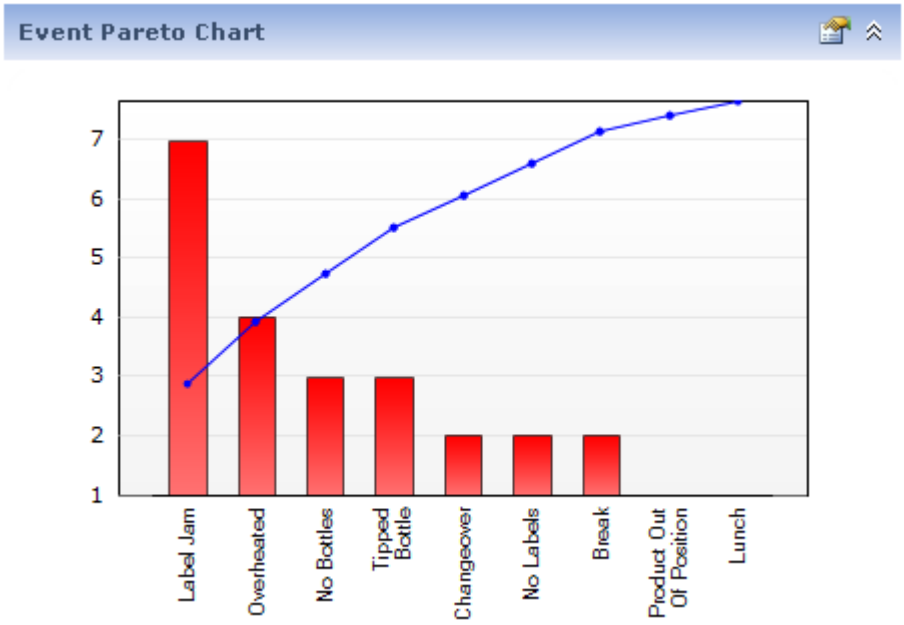
7. A possible solution for steps 4 and 5 may be found in the file **TrakSYS Data Structures 2 [Complete].sql** from the **Files\TrakSYS Data Structures** folder on the computer desktop.

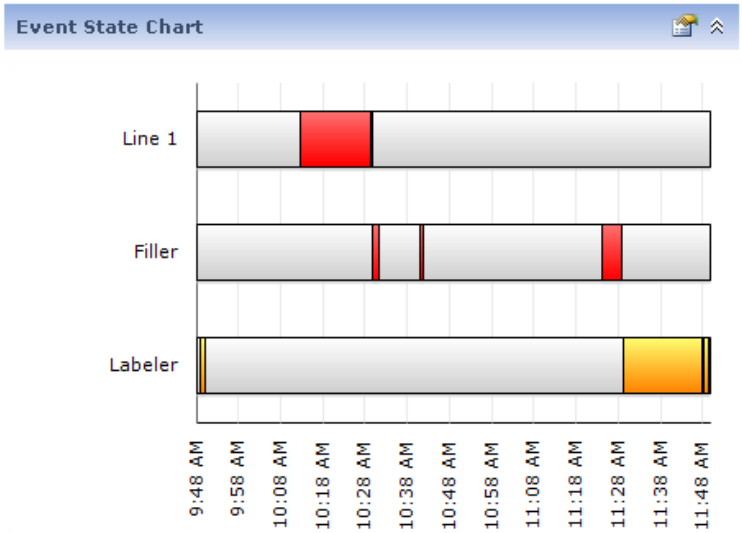
Lab 03: WEBTrak – Dashboard Data Sources

Objectives	• Configure Event Chart Web Parts • Configure a Custom Web Part Source Query
Estimated Time to Complete This Lab	35 minutes

In this lab, you will create a dashboard in WEBTrak that contains an Event Pareto web part. The Pareto Chart will be populated using a custom query that retrieves Event data from the TrakSYS database.

Tasks	Detailed Steps
Edit a Dashboard Report	1. Open **WEBTrak** from **Start | All Programs | Parsec | TrakSYS | WEBTrak**. 2. Click the **Login** button on the menubar to login as the **Adminstrator** (**admin / sa**). Check the **Remember Me** box to cache the login. 3. Navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\Dashboard Data Sources**. 4. Open the **Data Sources [Empty]** dashboard report and click the **Edit Dashboard** button on the menubar.
Add an Event Pareto Chart Web Part with a Custom Query	1. Click the **Add a Web Part** button above the left **Zone** on row 2 of the dashboard. 2. From the 1st column of the web part catalog, select the **Event Pareto Chart** web part. 3. Go to the settings for this web part. In the **Appearance** panel: a. For **Title** type **Event Pareto Chart**. b. Select **Title Only** for **Border Style**. c. Enter **450** for the **Width**. d. Enter **300** for the **Height**. 4. In the **Data** panel: a. Select **User Defined** for **Date/Time Source**. b. For **Group By** pick **Event Definition**. c. For **Metric Type** select **By Count**. 5. In the **Advanced** panel: a. Enter **65** for **X Axis Label Height**. 6. In the **Source** panel: a. Select **SQL** for **Mode**. 7. Write a **SQL Query** for the web part's Data Source that returns all events grouped by **Event Definition** for a specified date range. a. The value for each bar should be the total event count for that Event Definition. b. The custom query should filter the events by the starting and ending date/times of the assigned picker. c. The query for the Pareto Chart must include the following fields: • DataLabel : String • DataValue : Numeric (Integer or Float) • DataColor : null 8. Click **OK** to apply these settings.

	9. Click **View Dashboard** to see the report in view mode. 
Add an Event State Chart Web Part with a Custom Query	1. Click the **Add a Web Part** button above the right **Zone** on row 2 of the dashboard. 2. From the 1st column of the web part catalog, select the **Event State Chart** web part. 3. Go to the settings for this web part. In the **Appearance** panel: a. Select **Title Only** for the **Border Style**. b. Enter **450** for the **Width**. c. Enter **300** for the **Height**. d. Select **No** for **Chart Legend Visible**. 4. In the **Data** panel: a. Select **Current Day** for the **Date/Time Source**. 5. In the **Advanced** panel: a. Enter **55** for **X Axis Height**. b. Enter **LightGray** for **Default Slice Color**. 6. In the **Source** panel: a. Select **SQL** for **Mode**. 7. Write a **SQL Query** for the web part's Data Source that returns all events grouped by **Sub System** for a specified date range. a. The custom query should filter the events by the starting and ending date/times of the assigned picker. b. Use the document **TrakSYS 7.0 Web Part Data Interface.pdf** to determine the fields that the query must return for the Event State Chart. 8. Click **OK** to apply these settings. 9. Click **View Dashboard** to see the report in view mode.

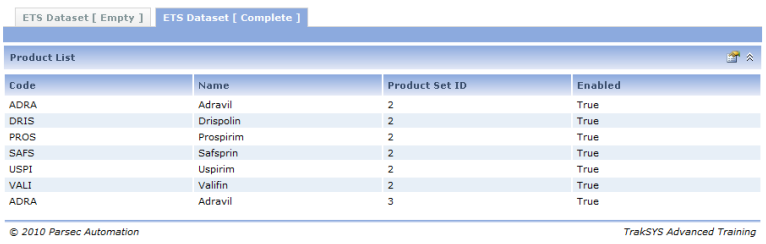


10. A possible solution can be found in the **Data Sources [Complete]** dashboard.

Lab 04: WEBTrak – Dashboard Content Expressions

Objectives	• Use <ets_dataset> with a custom query • Use <ets_repeat> to output custom content
Estimated Time to Complete This Lab	25 minutes

In this lab, you will use content expressions to output tabular content from a custom query. The query is to be embedded within an HTML Content web part using the <ets_dataset> Tag. The output from the query will be displayed in the web part using the <ets_repeat> Tag to loop through the query results.

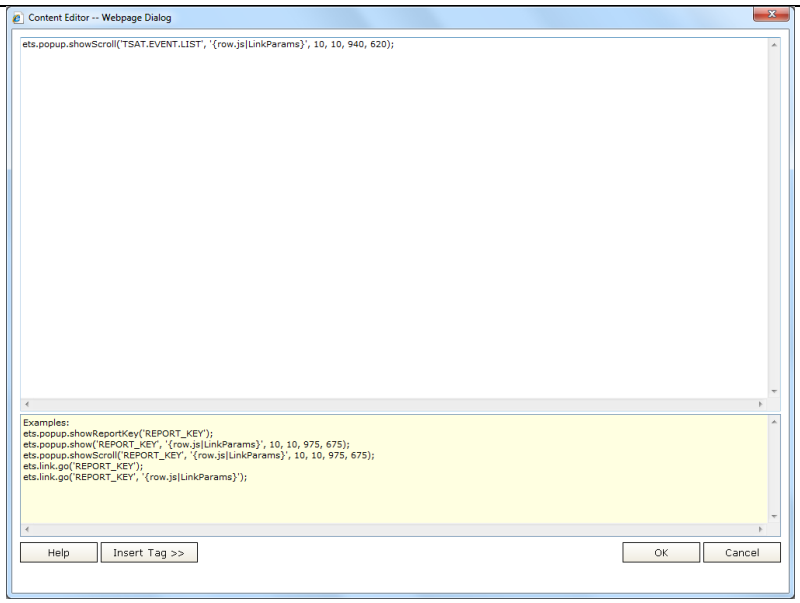
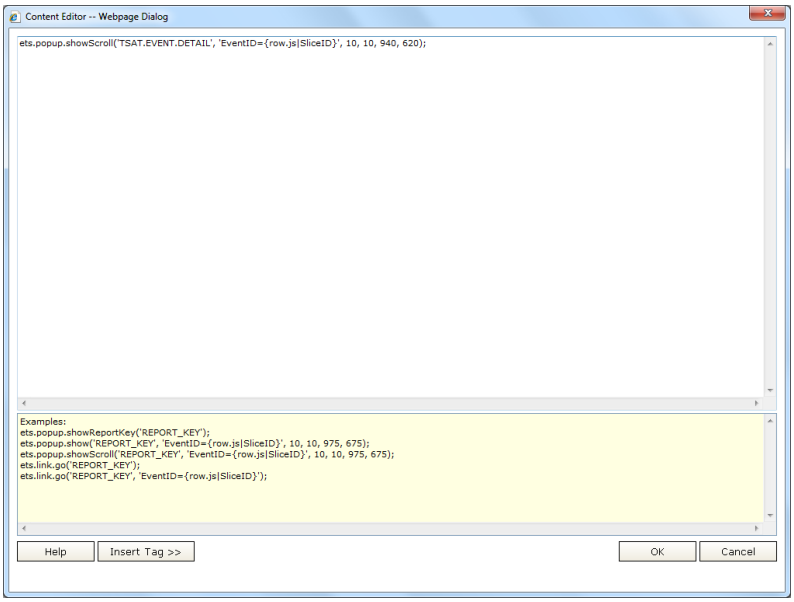
Tasks	Detailed Steps
Edit a Dashboard Report	1. Open **WEBTrak** and navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\Dashboard Content Expressions**. 2. Open the **ETS Dataset [Empty]** dashboard report and click the **Edit Dashboard** button on the menubar.
Add an HTML Content Web Part with a Custom Query	1. Add an **HTML Content** web part to an empty **Zone** on the Dashboard. 2. Open the **Web Part Settings** for the HTML Content web part and click the **Editor** or **Text** button to edit the HTML. 3. Add a custom query to the HTML using the **<ets_dataset>** Tag. The custom query should return data for all **Products** listed in the TrakSYS database. The custom query should return the following fields: • ProductCode • Name • ProductSetID • Enabled 4. Add an **HTML table** to the web part with 4 columns, one for each field in the custom query. 5. Use the **<ets_repeat>** Tag with the HTML table to loop through all of the rows returns by the custom query. 6. Click **OK** to save the HTML content and custom query and to apply all settings to the web part. 7. Click **View Dashboard** to view the results from the custom query. 8. A possible solution can be found in the **ETS Dataset [Complete]** dashboard. 

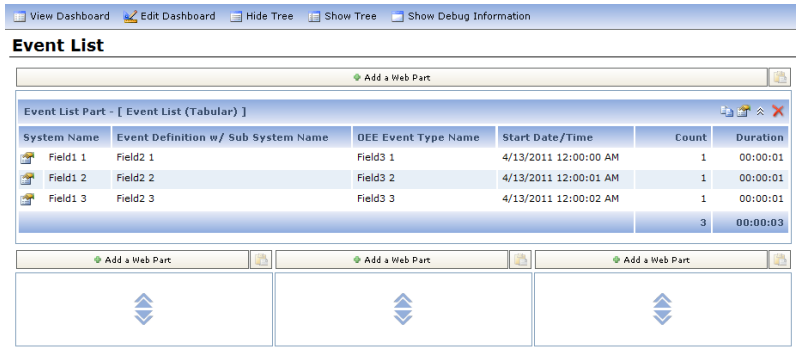
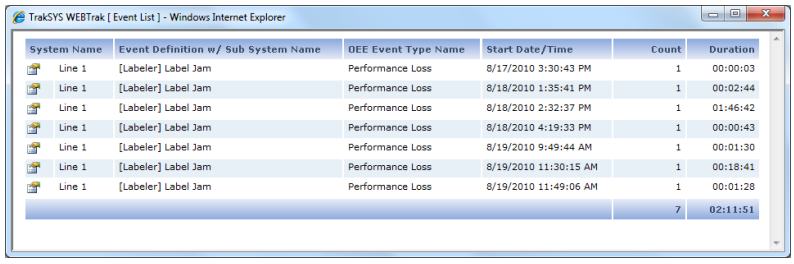
Lab 05: WEBTrak – Advanced Dashboard Techniques

Objectives	• Add a report link to an existing Event Pareto Chart • Add a report link to an existing Event State Chart
Estimated Time to Complete This lab	30 minutes

In this lab, you will learn how to create drilldown links for different web parts on a dashboard. You will add Links to existing Event Charts so that clicking a bar or slice on the chart will open a drilldown report with additional details. This lab will utilize Report Keys to identify the report to open from a web part link.

Tasks	Detailed Steps
Edit a Dashboard Report	1. Open **WEBTrak** and navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\Dashboard Advanced Techniques**. 2. Open the **Report Linking [Empty]** dashboard report and click the **Edit Dashboard** button on the menubar.
Add a Link to an Event Pareto Chart	1. Click the **Edit/Properties** button on the Event Pareto Chart to open the **Web Part Settings** list. 2. In the **Advanced Panel**, click the "…" button next to the **Link** setting to open a **Content Editor** window. 3. Create a drilldown link for the chart by copy-and-pasting one of the example links listed at the bottom of the Content Editor window. For the new link: • Replace the default '**REPORT_KEY**' with the value '**TSAT.EVENT.LIST**'. This will be the Report Key assigned to the drilldown report. • If the example link used contains settings to size the window, modify these settings so that the drilldown report opens in a window that is **940x620** pixels. 4. Click the **OK** button to close the **Content Editor** window and save the new drilldown value to the Link setting. 5. Click **OK** to apply the new settings to the web part.

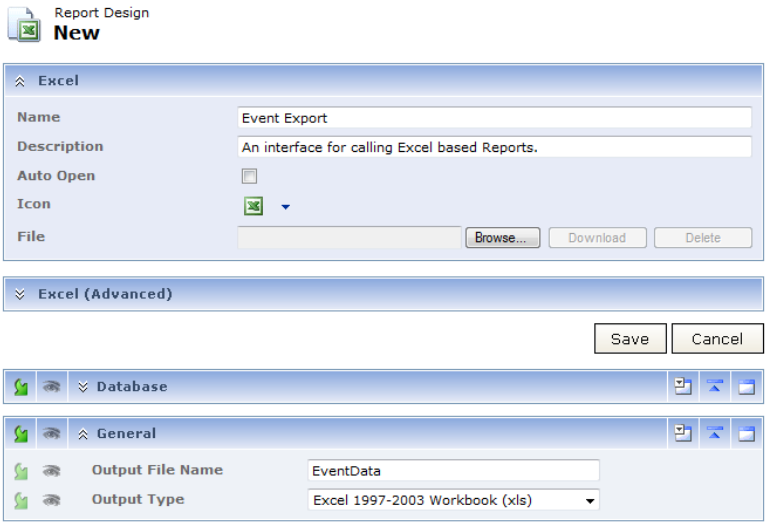
	
Add a Link to an Event State Chart	1. Repeat steps 1-5 listed above to add a link to the **Event State Chart**. 2. Link the Event State Chart to a dashboard with a **Report Key** of '**TSAT.EVENT.DETAIL**'. 
Create Event List Dashboard	1. In the **[Dialog]** Report Group under **Dashboard Advanced Techniques**, add a new **Dashboard** report. 2. In the **Report Design** window for the new dashboard, enter **Event List** for the **Name**. 3. In the **Dashboard (Advanced)** section, enter **TSAT.EVENT.LIST** for the **Key**. 4. In the **General** section, set **Show Header** to **No**. 5. Click **Save** to save all changes to the report. Click **Open** to view the dashboard.

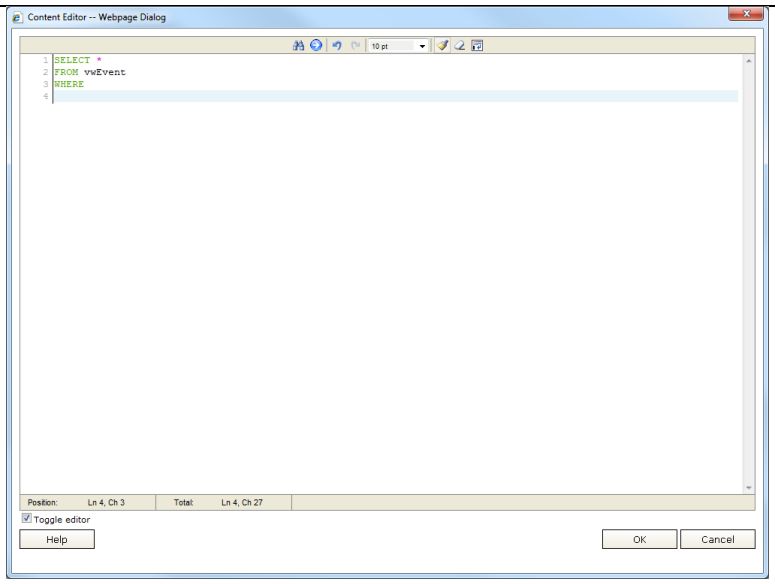
	6. Edit the dashboard and add an **Event List (Tabular)** web part to an empty zone. 7. In the **Web Part Settings** for the Event List (Tabular) control, enter **TSAT.EVENT.DETAIL** for **Link Report Key**, and set **Use Linked Parameters** to **Yes**. 8. Click **OK** to save all changes to the dashboard. 
Create Event Detail Dashboard	1. In the **[Dialog]** Report Group under **Dashboard Advanced Techniques**, add a new **Dashboard** report. 2. In the **Report Design** window for the new dashboard, enter **Event Detail** for the **Name**. 3. In the **Dashboard (Advanced)** section, enter **TSAT.EVENT.DETAIL** for the **Key**. 4. In the **General** section, set **Show Header** to **No**. 5. Click **Save** to save all changes to the report. Click **Open** to view the dashboard. 6. Edit the dashboard and add an **Event Detail (Tabular)** web part to an empty zone. 7. Click **OK** to save all changes to the dashboard.
Test the Report Link	1. Open the **Report Linking [Empty]** dashboard and click any of the bars on the **Event Pareto Chart** to test the report link. The **Event List** dashboard should open with data for the bar that was clicked. 2. Click a slice on the **Event State Chart** to test the report link. The **Event Detail** dashboard should open with data for the event that was clicked. 3. A possible solution can be found in the **Report Linking [Complete]** dashboard. 

Lab 06: WEBTrak – Excel Reports

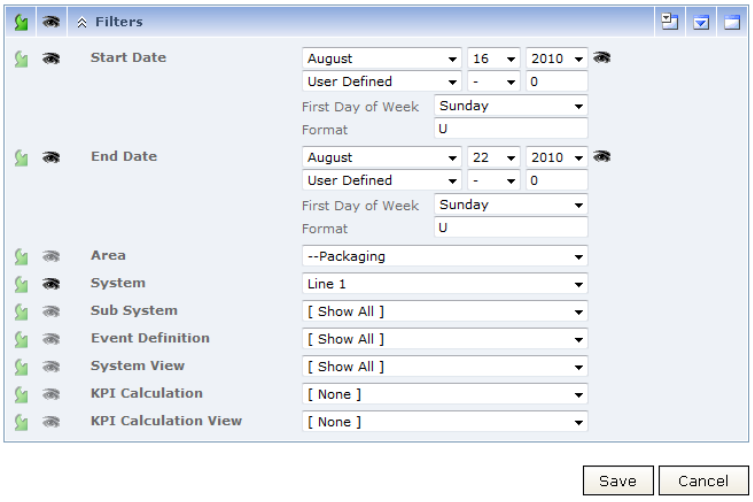
Objectives	• Create an Excel Report to export data • Create a formatted Excel Report
Estimated Time to Complete This lab	20 minutes

In this lab, you will learn how to use the Excel Report type in WEBTrak to export data from TrakSYS or from another external database. You will also import a pre-existing Excel file with a formatted report and merge it with a custom query from TrakSYS.

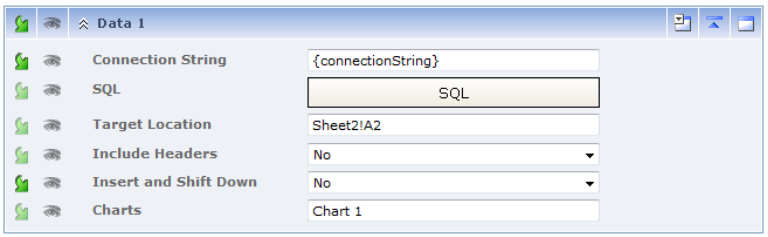
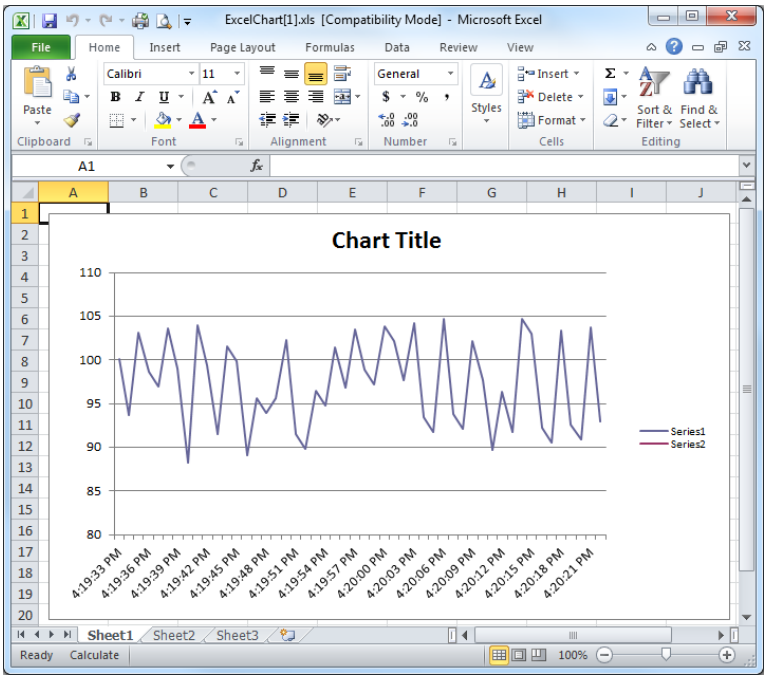
Tasks	Detailed Steps
Create a New Excel Report	1. Open **WEBTrak** and navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\Excel Reports**. 2. Add a new **Excel** report to the Report Group. 3. In the Report Design window for the new report, enter **Event Export** for the **Name**. 4. In the **General** section, enter **EventData** for the **Output File Name**, and set **Output Type** to **Excel 1997-2003 Workbook (xls)**. 
Add a SQL Query to an Excel Report	1. In the **Data 1** section, click the **SQL** button to open a **Content Editor** dialog. 2. In the Content Editor dialog, enter a query that returns all **Event** records from database view **vwEvent** for a specific **System** and **Date Range**. • Use the values for **System**, **Start Date**, and **End Date** from the Report Designer's **Data** section in the query. • Add the parameters to the query using **Content Expressions**. • Return all fields from the database view. 3. Click the **OK** button to save the query to the report.



4. In the **Filters** section:
   a. Select **August 16, 2010** for **Start Date**.
   b. Select **August 22, 2010** for **End Date**.
   c. Select **--Packaging** for **Area**.
   d. Select **Line 1** for **System**.
   e. Hide the parameters for **Area**, **Sub System**, **Event Definition**, **System View**, **KPI Calculation**, and **KPI Calculation View** using the **Show/Hide Parameter** icons next to each parameter.
5. Click the **Save** button to save the new report to the WEBTrak tree view.



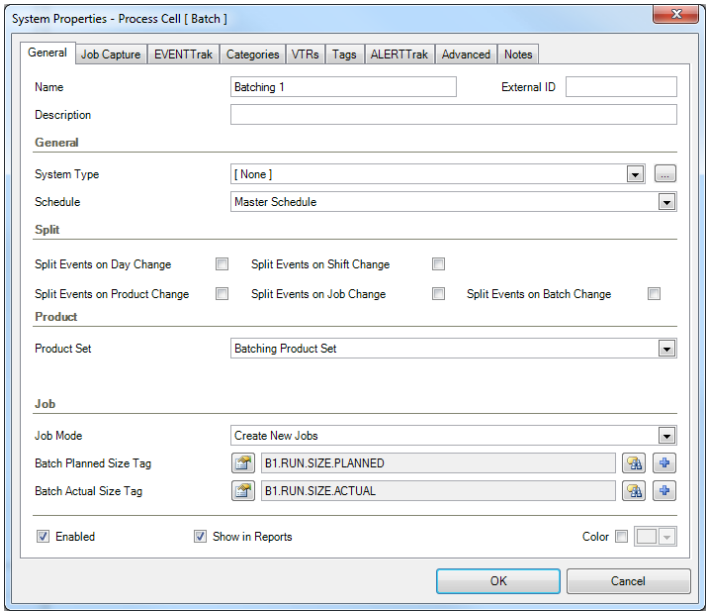
Add a Formatted Excel Template to an Excel Report	1. In the **Excel Reporting** Report Group, right-click the **Excel Chart [Empty]** Excel report and select **Design**. 2. In the **Excel Chart [Empty]** section, click the **Browse…** button and upload the file **ExcelChart.xls** from the **Files\Excel Reports** folder on the computer desktop.

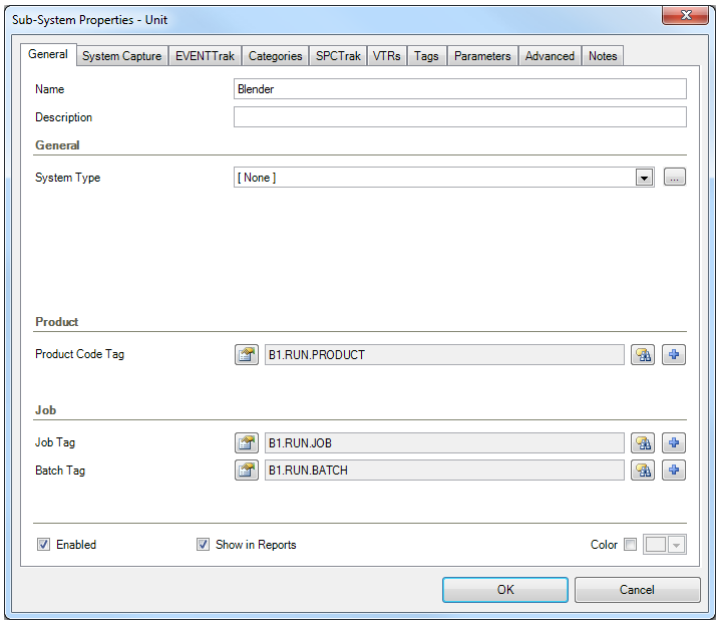
	3. In the **Data 1** section, click the **SQL** button to add a new query to the Excel report. a. The query should return the **RecordedDateTime** and **TagValueFloat** fields from the database table **tTagHistory**. b. The query should use the **Start Date** and **End Date** parameters from the **Report Designer** as filters in the WHERE clause. 4. In the **Data 1** section: a. Enter **Sheet2!A2** for **Target Location**. b. Set **Include Headers** to **No**. c. Set **Insert and Shift Down** to **No**. d. Enter **Chart 1** for **Charts**. 5. Click the **Save** button to save the report changes. 
View Reports	1. Click on and open each of the Excel reports to view them. Possible solutions for each report can be found in the **Event Report [Complete]** and **Excel Chart [Complete]** Excel reports. 

Lab 07: MODELTrak – Batch Systems and Recipes

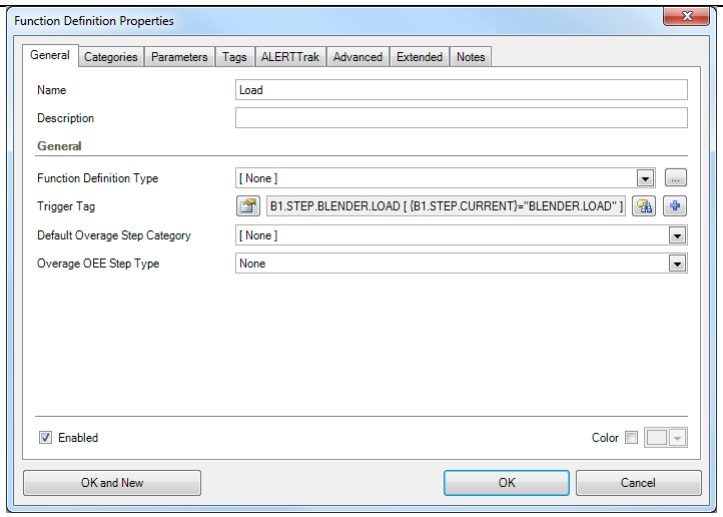
Objectives	• Configure a Batch System • Create Product Recipes
Estimated Time to Complete This lab	25 minutes

In this lab you will configure TrakSYS to record data for a batch process. You will create a new Batch System in MODELTrak and utilize Function Definitions, Parameters, and Tags to define what the process can do. You will then create a Recipe for an existing Product in PRODUCTTrak that specifies the sequence and duration of steps required to produce the Product.

Tasks	Detailed Steps
Open TrakSYS MODELTrak	1. Go to **Start | All Programs | Parsec | TrakSYS | TrakSYS MODELTrak**.
Create a System and Sub-System	1. Go to the **Areas and Systems** panel of MODELTrak. 2. Right-click on the **Batching** Area and select **New System [Batch]** from the popup menu. 3. In the **System Properties** page, type **Batching 1** for the **Name**. 4. Select **Master Schedule** for the **Schedule**. 5. Select **Batching Product Set** for the **Product Set**. 6. For the **Batch Planned Size Tag**, find and select **B1.RUN.SIZE.PLANNED**. 7. For the **Batch Actual Size Tag**, find and select **B1.RUN.SIZE.ACTUAL**. 8. Click **OK** to save this System.  9. Right-click on the Batching 1 System in the tree view and select **New Sub-System [Unit]**. 10. In the **Sub-System Properties** page, type **Blender** for the **Name**.

<table>
<tr>
<td></td>
<td>
11. Find and select the required tags for each of the following settings.
<table>
<tr><th>Setting</th><th>Tag Name</th></tr>
<tr><td>Product Code Tag</td><td>B1.RUN.PRODUCT</td></tr>
<tr><td>Job Tag</td><td>B1.RUN.JOB</td></tr>
<tr><td>Batch Tag</td><td>B1.RUN.BATCH</td></tr>
</table>
12. Click OK to save this Sub-System.


</td>
</tr>
<tr>
<td>Create Function Definitions</td>
<td>
1. Right-click the Blender Sub-System and select New Function Definition from the menu list.
2. In the Function Definition Properties, type Load for the Name of the Function.
3. For the Trigger Tag, find and select B1.STEP.BLENDER.LOAD.
4. Click OK to save this Function Definition.
</td>
</tr>
</table>

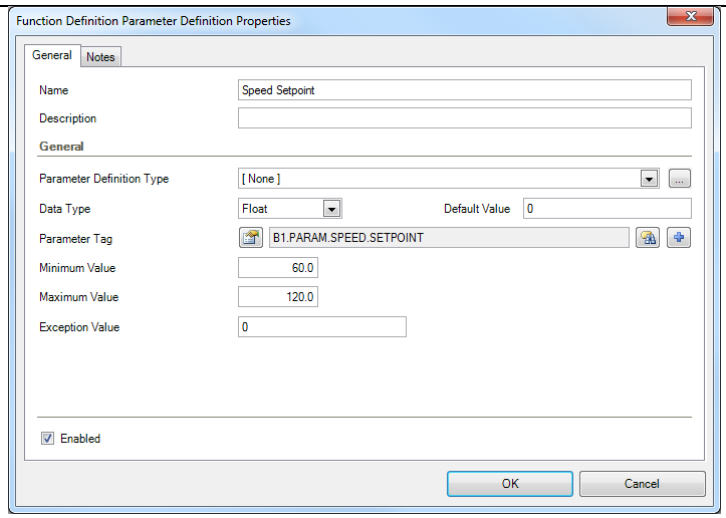


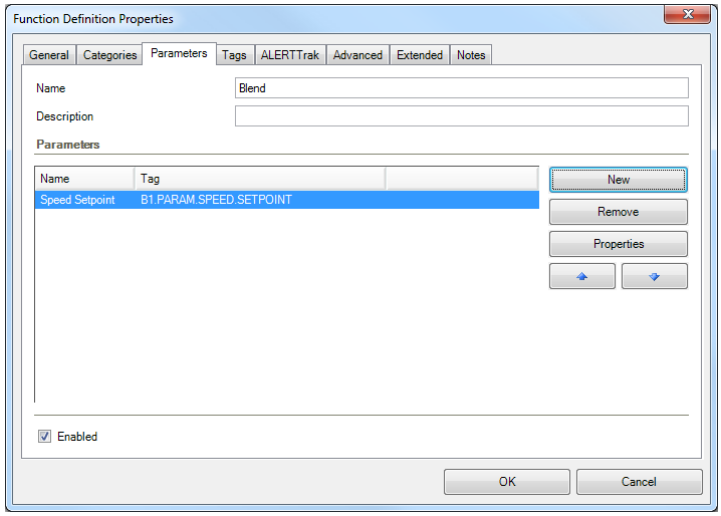
5. Repeat steps 1-4 to create the following Function Definitions.

Function Definition Name	Trigger Tag
Blend	**PL1.STEP.BLENDER.BLEND**
Unload	**PL1.STEP.BLENDER.UNLOAD**
Clean	**PL1.STEP.BLENDER.CLEAN**

Add a Parameter to a Function Definition

1. Right-click on the **Blend** Function Definition for the **Blender** Sub-System and select **Properties**.
2. In the **Function Definition Properties,** click the **Parameters** tab.
3. In the Parameters section, click the **New** button to add a new Parameter to the Function.
4. In the **Function Definition Parameter Definition Properties**, enter **Speed Setpoint** for the **Name**.
5. Select **Float** for the **Data Type**.
6. Enter **60.0** for the **Minimum Value** and **120.0** for the **Maximum Value**.
7. For the **Parameter Tag**, find and select **B1.PARAM.SPEED.SETPOINT**.
8. Click **OK** to save this Parameter Definition. Click OK again to save changes to the Function Definition.



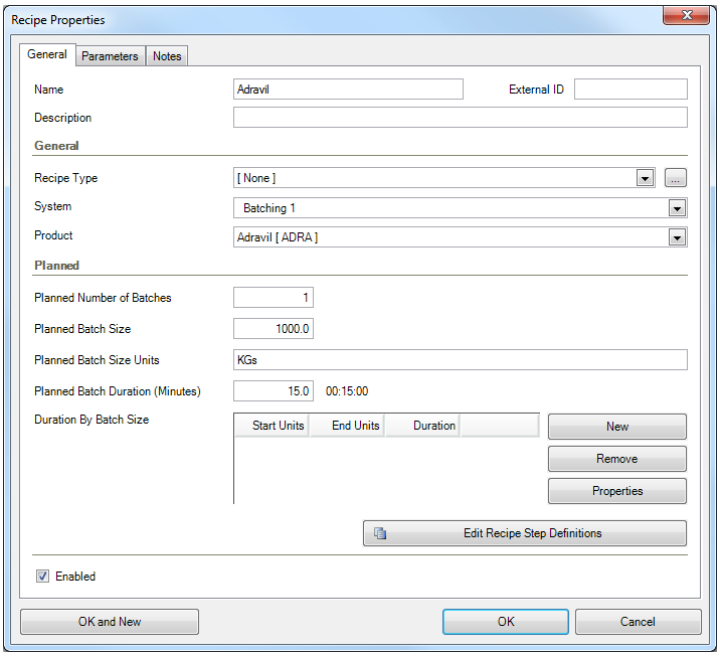


Create a Product Recipe

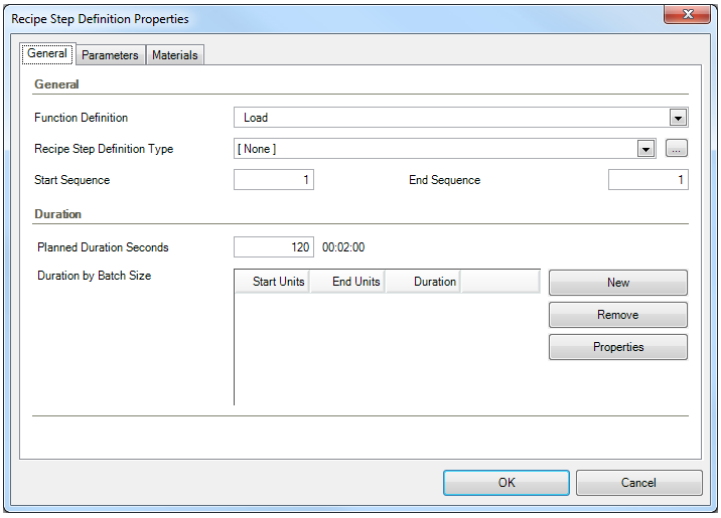
1. In the **PRODUCTTrak** panel of **MODELTrak**, under the **Packaging Product Set**, right-click the **Recipes** folder and select **New Recipe** from the menu list.
2. In the **Recipe Properties**, enter Adravil for the Name.
3. Configure the following settings with the specified values.

Setting	Value
System	**Batching 1**
Product	**Adravil [ADRA]**
Planned Number of Batches	**1**
Planned Batch Size	**1000.0**
Planned Batch Size Units	**KGs**
Planned Batch Duration (Minutes)	**15.0**

4. Click the **Edit Recipe Step Definitions** button to add Steps to the Recipe.

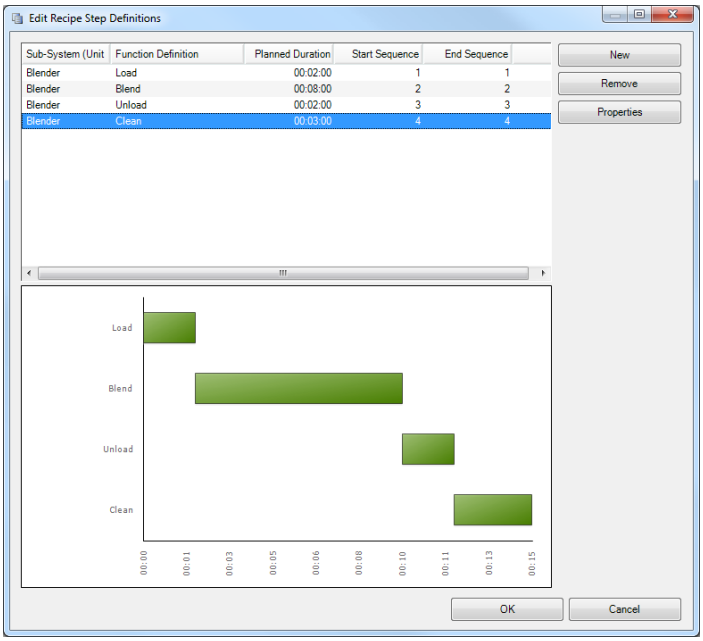


5. In the **Edit Recipe Step Definitions** page, click the **New** button to add a new Recipe Step.
6. In the **Recipe Step Definition Properties**, select **Load** for the **Function Definition**.
7. Enter **120** for the **Planned Duration Seconds**.
8. Enter 1 for the Start Sequence and the **End Sequence**.
9. Click **OK** to save this Recipe Step.



10. Add 3 more Recipe Steps with the following settings.

Function Definition	Planned Duration Seconds	Start Sequence / End Sequence
Blend	**480**	**2**
Unload	**120**	**3**
Clean	**180**	**4**

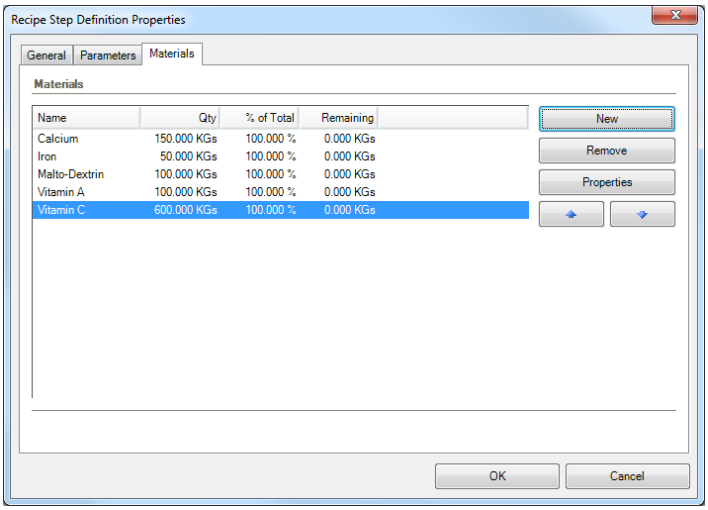
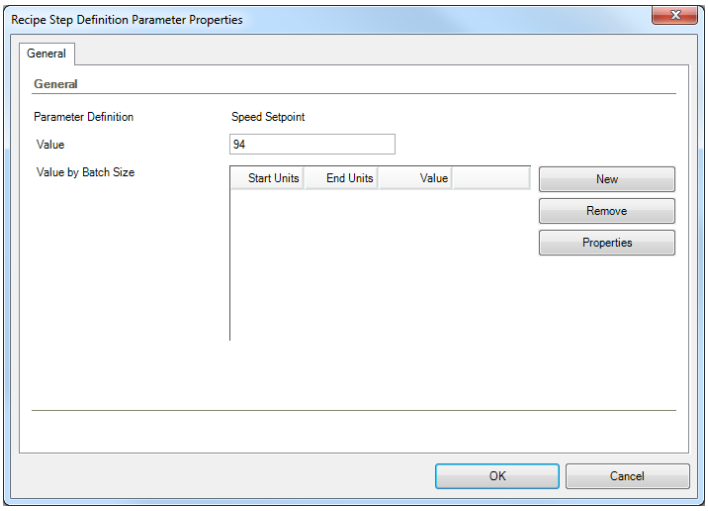


11. Click **OK** on the Recipe Properties to save the new Recipe.

Add Materials to a Recipe Step

1. Right-click on the **Adravil** Recipe and select **Properties**.
2. Click **Edit Recipe Step Definitions**.
3. Select the **Load** Recipe Step, the click the **Properties** button.
4. In the **Recipe Step Definition Properties**, click the **Materials** tab.
5. Click the New button to add a new Material to the Recipe Step.
6. In the **Recipe Step Definition Material Properties**, select **Calcium** for the **Material**, enter **150.0** for the **Quantity**, and click **OK**.
7. Repeat steps 5 and 6 to add additional Materials to the Load Recipe Step with the following properties.

Material	Quantity
Iron	**50.0**
Malto-Dextrin	**100.0**
Vitamin A	**100.0**
Vitamin C	**600.0**

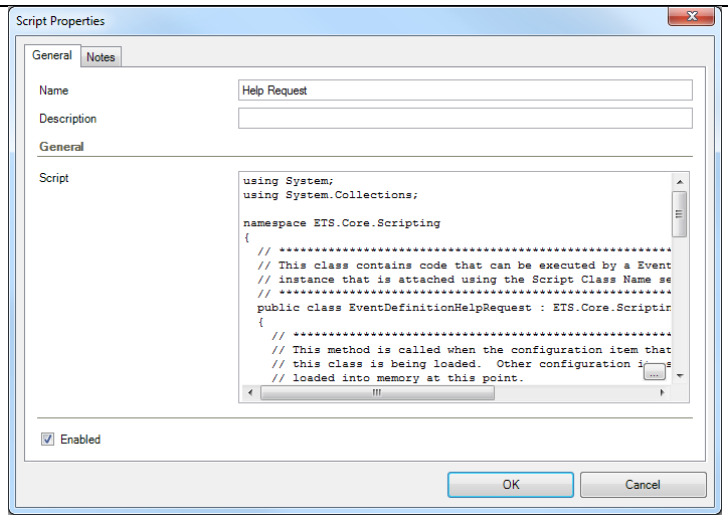
	8. Click OK to save changes to this Recipe Step. 
Add Parameters to a Recipe Step	1. In the **Edit Recipe Step Definitions** page, select the **Blend** Recipe Step and click the **Properties** button. 2. In the **Recipe Step Definition Properties**, click the **Parameters** tab. 3. Select the Parameter **Speed Setpoint** and click the **Properties** button. 4. In the **Recipe Step Definition Parameter Properties**, enter **94.0** for the **Value** and click **OK**.  5. Click **OK** to save changes to the Recipe Step Definition, **OK** again to save changes to all Recipe Steps, and **OK** a third time to save changes to the Recipe.

Lab 08: MODELTrak – Entity Script Classes

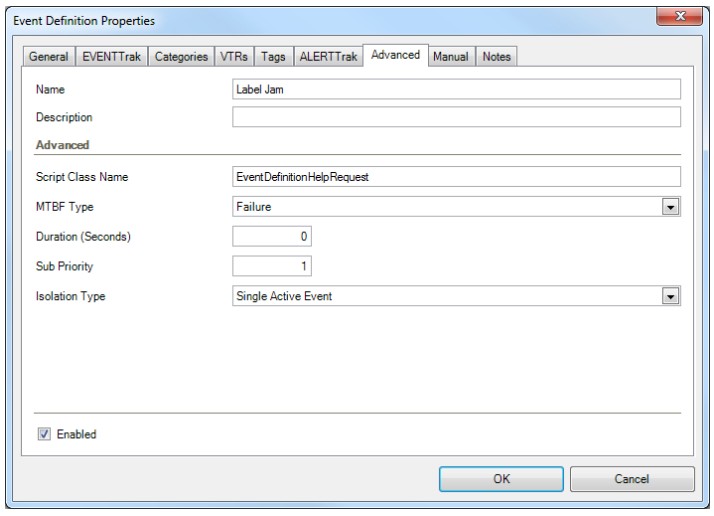
Objectives	• Create an Entity Script Class • Add Custom Functionality to an Event Definition
Estimated Time to Complete This lab	30 minutes

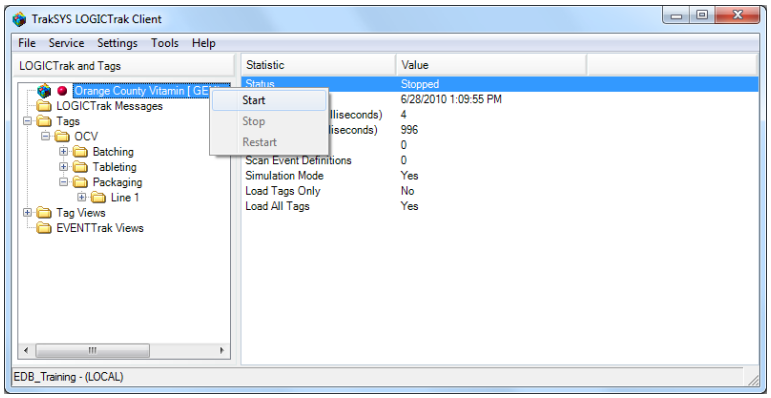
In this lab you will utilize C#.NET to create Entity Script Classes in MODELTrak. Script Classes are used to add custom functionality to TrakSYS that can be triggered by standard configuration entities, such as Systems, Event Definitions, and Tags. You will then assign the Script Classes to specific Event Definitions that will run the custom functionality whenever they are started by their Trigger Tags.

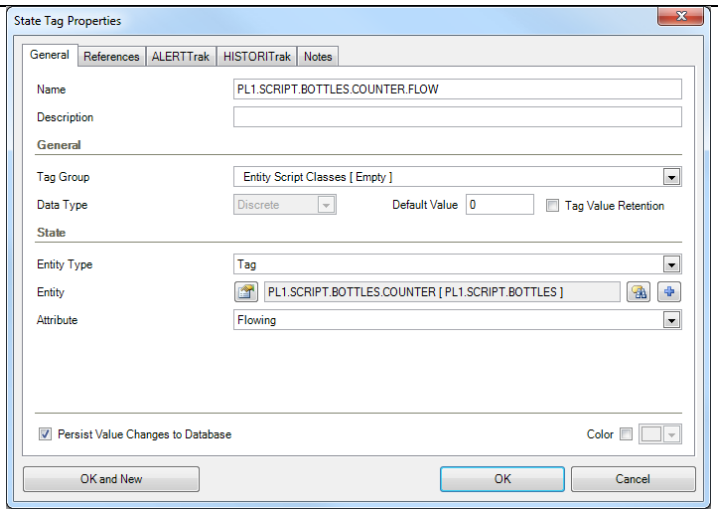
Tasks	Detailed Steps
Open TrakSYS MODELTrak	1. Go to **Start | All Programs | Parsec | TrakSYS | TrakSYS MODELTrak**.
Create an Entity Script Class	1. Go to the **Administration** panel of MODELTrak. 2. Under the **Script Library** group, right-click on the **Entity Script Classes** group and select **New Script | Event Definition Script Class**. 3. In the **Script Properties**, enter **Help** Request for the **Name**. 4. Click the  button to open the **Script Editor** dialog. 5. In the **Script Editor** dialog, change the name of the class from **EventDefinitionScript** to **EventDefinitionHelpRequest**. 6. Edit the method **PostScanEventStart(context)** to perform the following custom functionality whenever an Event starts. a. Insert a new record into the table **_tHelpRequest**. b. The values for the table field **RequestDateTime** should be the current date and time. c. The values for the table field **RequestMessage** should contain the ID for the current Event. The ID can be retrieved using the object property **context.EventID**. d. Use the TrakSYS Script API function **context.Execute(sql)** to insert data into the table. 7. Click the **Test Compile** button to check the script for syntax errors. Click **OK** to save this script. 8. Click **OK** again to save the new Entity Script Class.

<table>
<tr><td></td><td> 

9. A possible solution can be found in the Help Request [Complete] Entity Script Class.</td></tr>
<tr><td>Assign the Entity Script to an Event Definition</td><td>1. Go to the Areas and Systems panel of MODELTrak.
2. Under the Packaging Area, expand the Line 1 System and click the Labeler Sub-System. In the List View for the Labeler, right-click on the Label Jam Event Definition and select Properties from the menu.
3. In the Event Definition Properties, click the Advanced tab.
4. On the Advanced tab, enter EventDefinitionHelpRequest for the Script Class Name.
5. Click OK to save this Event Definition.

 
</td></tr>
<tr><td>Run LOGICTrak Service</td><td>1. Go to Start | All Programs | Parsec | TrakSYS | TrakSYS LOGICTrak Client.
2. Run the LOGICTrak service by right-clicking on the LOGICTrak icon in the tree view and selecting Start. Notice the red icon</td></tr>
</table>

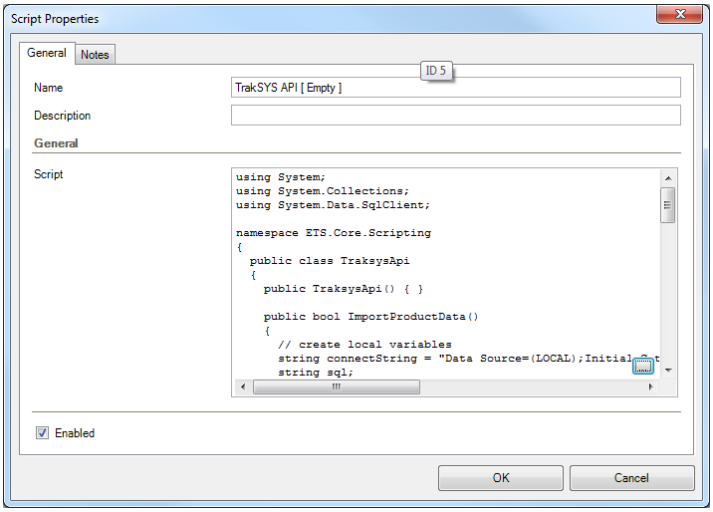
	becomes green once the service has started. 
Change Tag Values in LOGICTrak	1. In the LOGICTrak tree view under the **Line 1** Tag Group, click the **Labeler** group. 2. Double-click on the **PL1.LABELER.LABEL.JAM** Tag to open the Update Tag Value dialog Box. 3. Change the value of the Tag from **0** to **1** to trigger a **Label Jam** Event, click the **Save** button and wait for a few seconds. 4. Change the Tag value back to 0 to make the Event inactive.
Run SQL Server Management Studio	1. Go to **Start | All Programs | Microsoft SQL Server 2005 | SQL Server Management Studio**. 2. Connect to the local server using **Windows Authentication**. 3. Check the table **_tHelpRequest** to confirm that a new record was written to the table when the **Label Jam** Event was triggered.
Create a State Tag [*Optional*]	1. Go to the **Tags** panel of MODELTrak. 2. Navigate to the Tag Group **TrakSYS Training Assignments\Entity Script Classes [Empty]**. 3. Right-click on the Entity Script Classes [Empty] group and select **New Tag | New State Tag** from the menu. 4. In the **State Tag Properties**, enter **PL1.SCRIPT.BOTTLES.COUNTER.FLOW** for the **Name**. 5. Select **Tag** for the **Entity Type**. 6. Find and assign the Tag **PL1.SCRIPT.BOTTLES.COUNTER** for the **Entity**. 7. Select **Flowing** for the **Attribute**. 8. Click **OK** to save this Tag.

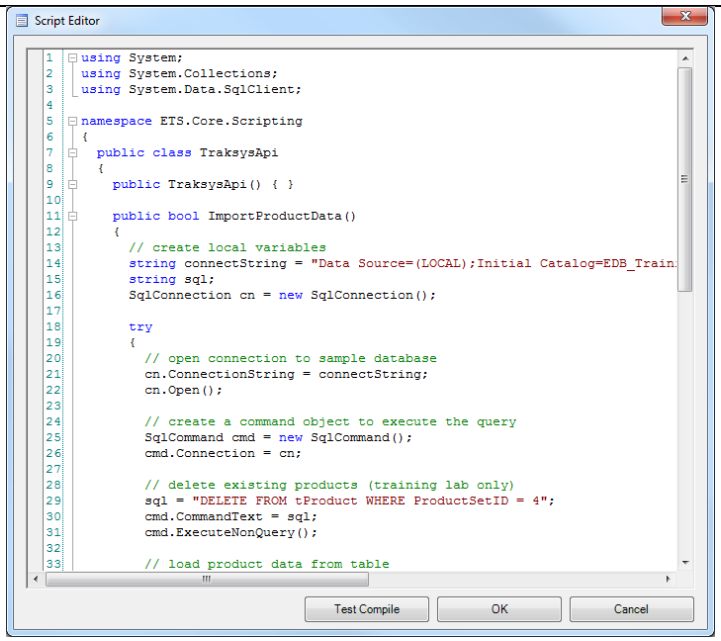
	
Create an Entity Script Class [*Optional*]	1. Go to the **Administration** panel of MODELTrak. 2. Add a new **System Script Class** to the **Entity Script Classes** group. 3. In the **Script Properties**, enter **Manual Events** for the **Name**. 4. Open the **Script Editor**, change the name of the class from **SystemScript** to **SystemManualEvents**, and modify the method **PostScan(context)** to perform the following functionality. a. Reset the value of all Virtual Trigger Tags for the System's Event Defintions to zero (0) when the Tag PL1.SCRIPT.BOTTLES.COUNTER.FLOW is turns true (changes from zero (0) to one (1)). 5. Save the new System Script Class and assign it to the Packaging **Line 1** System. 6. A possible solution can be found in the **Manual Events [Complete]** Entity Script Class.
Reset Manual Events [*Optional*]	1. Go to **LOGICTrak Client** and restart the **LOGICTrak Service** for your changes to take effect. 2. Navigate to the Tag Group **TrakSYS Training Assignments\Entity Script Classes [Empty]** and set the Tag **PL1.SCRIPT.BOTTLES.COUNTER.CONTROL** to **0**. 3. Navigate to the Tag Group **OCV\Packaging\Line 1\[Event]** and change one or more Tags in this group to a value of 1. 4. Return to the **Entity Script Classes [Empty]** group and change the Tag **PL1.SCRIPT.BOTTLES.COUNTER.CONTROL** back to **1**. 5. Return to the **[Event]** group and confirm that all of the Event Tags have been reset to 0.

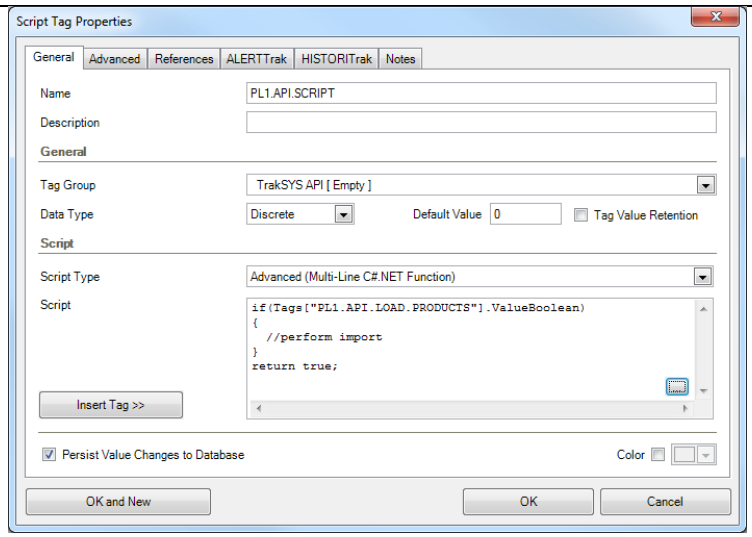
Lab 09: TrakSYS API

Objectives	• Use TrakSYS API classes and objects in a custom script.
Estimated Time to Complete This lab	20 minutes

In this lab you will use classes from the TrakSYS API to import Product data from an external database. A custom table in the TrakSYS database will be used as the data source for this lab. You will create this import functionality inside of a TrakSYS Script Class and trigger it manually from an Advanced Script Tag.

Tasks	Detailed Steps
Create a Script Class	1. Go to the Administration panel of MODELTrak. 2. In the TrakSYS API Script Group, right-click the Script Class TrakSYS API [Empty] and select Properties from the menu. 3. Click the  button to open the Script Editor.  4. Modify the existing script class to write product data from an existing query into the TrakSYS database using classes from the TrakSYS API. a. Loop through the SqlDataReader rs, which has been populated with the following Product data from an external database: **ProductCode**, **Name**, **Description**, **ProductSetID**. b. Create a **Data Model** object for Products (**ETS.Core.Api.Models.Data.DbProduct**) that can be populated with data from the SqlDataReader object. c. Use the existing **ApiService** object available from the **Global.Context** object (**Global.Context.Api**). 5. Click **OK** to save changes to this Script Class.

<table>
<tr><td></td><td> 
</td></tr>
<tr><td>Create an Advanced Script Tag</td><td>1. Go to the Tags panel of MODELTrak.
2. Navigate to the Tag Group TrakSYS Training Assignments\TrakSYS API [Empty], right-click on the Tag Group, and select New Script Tag from the menu.
3. In the Script Tag Properties, enter PL1.API.SCRIPT for the Name.
4. Select Advanced (Multi-Line C#.NET Function) for the Script Type.
5. Click the  button to open the Script Editor.
6. Enter a script block that executes the method TraksysApi.ImportProductData() whenever the Tag PL1.API.LOAD.PRODUCTS is true.
a. Create an instance of the TraksysApi class (this is not a static class).
b. Use the function Global.Context.QueueTagNameEqualsForAssignment (tagName, value) to reset the Tag PL1.API.LOAD.PRODUCTS to false after the import is complete.
c. Be sure that the script returns a true/false value as the value for the Script Tag.</td></tr>
</table>

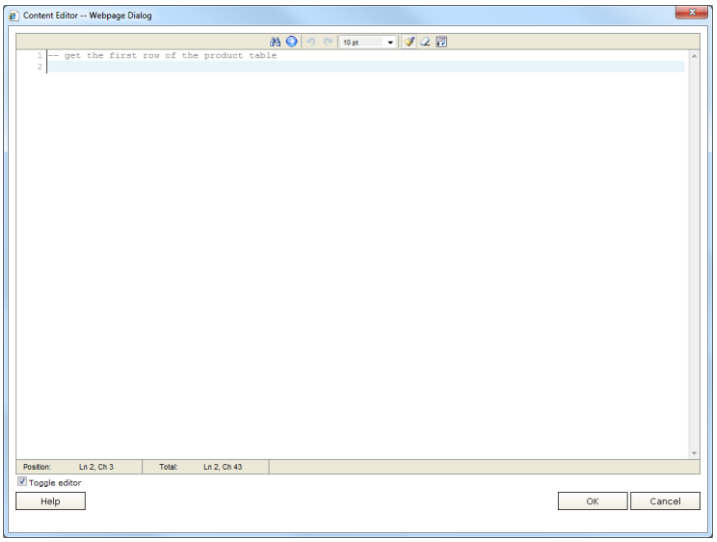


7. A possible solution can be found in the Script Tag **PL1.API.SCRIPT.COMPLETE**, under the Tag Group **TrakSYS API [Complete].**

Lab 10: WEBTrak – HTML Content (with Post Back)

Objectives	• Create a user form with the HTML Content (with Post Back) Web Part
Estimated Time to Complete This lab	30 minutes

In this lab you will create a custom user form in a WEBTrak Dashboard using the HTML Content (with Post Back) Web Part. This form will allow a user to edit data for an existing Product in a PRODUCTrak Product Set. You will create the form using HTML, populate it with default data from the TrakSYS database, and execute an update query when the form is submitted to save any changes.

Tasks	Detailed Steps
Edit a Dashboard	1. Open **WEBTrak** from **Start | All Programs | Parsec | TrakSYS | WEBTrak**. 2. Click the **Login** button on the menubar to login as the **Adminstrator** (**admin** / **sa**). Check the **Remember Me** box to cache the login. 3. Navigate to the Report Group **TrakSYS Reports\TrakSYS Advanced Training\HTML Content (with Post Back)**. 4. Open the **HTML Post Back [Empty]** dashboard report and click the **Edit Dashboard** button on the menubar.
Edit the HTML Content (with Post Back) Web Part	1. Click the  button on the **Product Editor – [HTML Content (with Post Back)]** to edit the shared Web Part. 2. Under **Web Part Settings**, go to the **Source** panel. 3. For **SQL Query**, enter a query to retrieve the first row in the table **tProduct** from the TrakSYS database.  4. In the **Settings** panel, click the **Text** button to create an HTML form for the Web Part using the **HTML Editor** dialog. a. The form should have one (1) hidden input for storing the

ID of the Product.

b. The form should have two (2) text inputs for editing the following values from the Source **SQL Query**: **ProductCode**, **Name**.

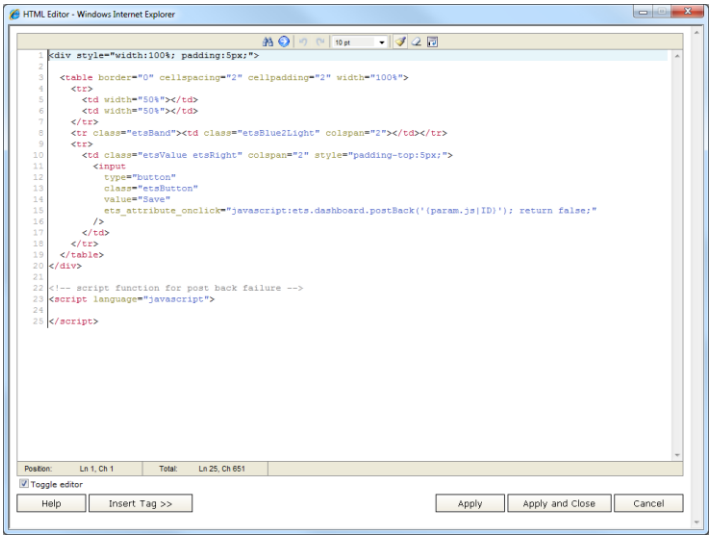
c. For the text inputs on the form, initialize the input values using the WEBTrak HTML attribute **ets_attribute_etsinitvalue**.

d. A **Save** button has already been added to the HTML form for posting the form data back to the server for processing.

e. Inside the existing **<script>** tag at the bottom of the form, add the following JavaScript function:

```
function postBackFailure(array) {
   alert('Update Failed!');
}
```

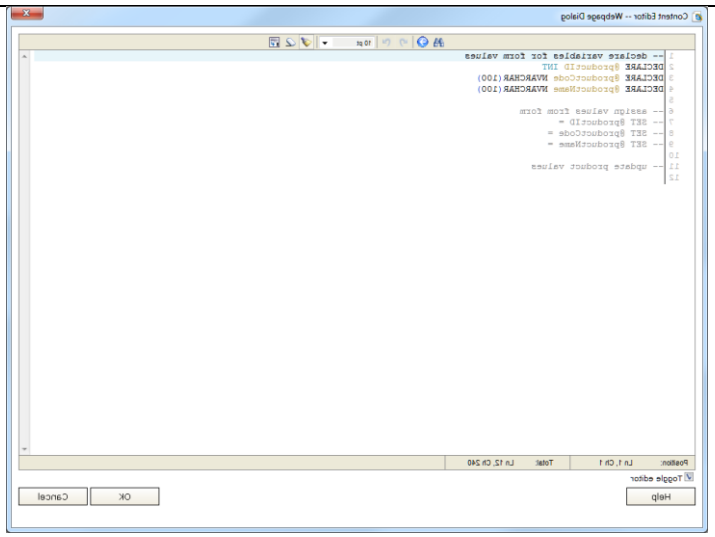
f. Click **Apply and Close** when you are finished editing the HTML content for the Web Part to close the HTML Editor dialog.



5. In the **Advanced** panel, for **Post Back SQL**, enter a query that updates the table _tProduct with new values from the HTML form for a specific product.

a. Load data from the HTML form into SQL variables using **Content Expressions** (**{form|FieldName}**).

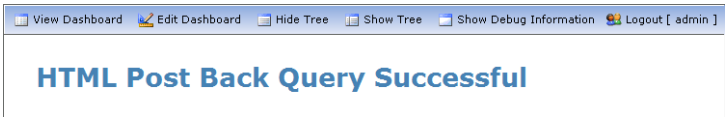
b. Be sure to only update rows that match the selected ID.



6. Enter the following value for **On Success Redirect URL**: http://localhost/webtrak/report/view.aspx?ReportKey=HTML.SUCCESS
7. Click OK to save changes to this Web Part.

Edit a Product

1. Click **View Dashboard** on the menubar to view the completed form. Change the **ProductCode** or **Name** values for the selected product (**Adravil**) and click the **Save** button to update the TrakSYS database.
2. You will be redirected to the following web page if the update was successful.



3. A possible solution can be found in the **HTML Post Back [Complete]** dashboard.