TrakSYS™ 11 Training Lab Manual Day 1

Revised August 23, 2019

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

Lab 01 | Installation and Equipment Modeling

Overview

In this assignment, you will install the TrakSYS software and configure its component infrastructure. Once a platform is available, execute the first steps in modeling a production environment for performance and operations management. Define 3 different Areas named **Batching**, **Packaging**, and **Inventory** for the **Orange County Vitamin** plant (referred to as **OCV** from this point forward). To each Area, add Systems and Sub-Systems that represent the production lines and assets to be monitored by TrakSYS.

Estimated Time to Complete This Lab

30 Minutes

Details

The following sections describe the detailed steps to be completed for this lab.

1. Install TrakSYS using the Setup

Install TrakSYS on the training server using the TrakSYS setup. Note that this step includes only running the setup and deploying the files. Further configuration and of the components will be done in the next step using Installation Manager.

- The TrakSYS setup executable can be found in the folder **C:\Setup** and is called **TrakSYS11.exe** (type: Application).
- Accept the default choices in all dialogs during the setup.

2. Installation Manager | Create a new Database

Using the TrakSYS **Installation Manager** application, create a new, empty TrakSYS database. This would be the first step in setting up a new implementation.

- The **Installation Manager** application can be launched by accessing the Windows Start menu and typing “Installation”. The **Installation Manager** shortcut should appear in the filtered list of applications. Click and open the application.
- Select the **Database** section from the left tabs.
- Select the **Create Database** menu option from the right menu.
- Appropriate credentials are required for to create a database. Use the following credentials:

Login	sa
Password	Sqlsa!23

- Select the **Empty Project Configuration** database from the **Template** list. Leave the other fields as their default values.

Upon completion, return to the **Overview** section from the left tabs. The **Database** status indicator should be a **green check**.

3. Installation Manager | Install and Activate the License

Using the TrakSYS **Installation Manager** application, import and activate a TrakSYS license file in the newly created database.

- Select the **License** section from the left tabs.
- Select the **Import License** menu option from the right menu. Locate the TrakSYS license file at **C:\Setup\license.ts11lic**. Select and import.
- In the **Features** table, for any feature line that requires a **Host**, modify the **Host** value to the **name of the training server** (the name of the training server is different for every student).
- Select the **Activate License (Online)** menu option from the right menu.

Upon completion, return to the **Overview** section from the left tabs. The **License** status indicator should be a **green check**.

4. Installation Manager | Change the Database Connection

For the training course, a TrakSYS database has been pre-created with some existing configuration for reference. Use the **Installation Manager** to change the database connection from the new database that was just created, to the pre-existing database called **EDB_TRAINING**.

- Select the **Database** section from the left tabs.
- Select the **Edit Connection** menu option from the right menu.
- Change the database name in the connection to **EDB_TRAINING**.

5. Installation Manager | Install Services

Using the TrakSYS **Installation Manager** application, register the **Logic**, **Historian**, **Data Management**, and **Maintenance** services on the training server.

- Select the **Services** section from the left tabs.
- Select the **Install Logic** menu option from the right menu.
- Select the **Install Historian** menu option from the right menu.
- Select the **Install Data Management** menu option from the right menu.
- Select the **Install Maintenance** menu option from the right menu.

Upon completion, all 4 services should be displayed in the **Installed Services** list AND show **Stopped** as the status. Return to the **Overview** section from the left tabs. The **Services** status indicator will **NOT** be a **green check**, as the services are not all running. Do NOT attempt to start them all yet, as they will not run without further configuration.

6. Installation Manager | Setup the TS Web

Using the TrakSYS **Installation Manager** application, deploy the **TS Web** application to the training server.

- Select the **Webs** section from the left tabs.
- Select the **Setup TS Web** menu option from the right menu.

Upon completion, return to the **Overview** section from the left tabs. The **Webs** status indicator should be a **green check**.

7. Log into TrakSYS as the Administrator

Before you can configure anything within TrakSYS you will need to first log in. For the purposes of this training class you will be using the **Administrator** account. In order to log into this implementation please follow the steps below.

- Using the **Installation Manager** click **Webs** on the left-hand side**.**
- On the Webs section look for **URL** and click the link with your **server name**
  Example: **http://t01/ts**
- After clicking the link, it will launch **TrakSYS**. **Log On** will be at the top right of the page.
- Click **Log On** and use "**Administrator**" as Login name, **no password is needed**.
- After typing in Administrator, click the **Sign In** button**.**

8. Configure the Logic Service

The **Logic Service** entity represents the TrakSYS component that will collect the real-time production data from the plant floor. The training database has a pre-configured **Logic Service**, however, the **Computer** name property must be set to the **name of the server** that it is running on.

- In the **TrakSYS Web,** navigate to **Configuration | Services | Logic Services**.
- Select the **OCV** entry in the list of **Logic Services** in slice 1. Click the **Edit** menu option in slice 3.
- Change the name of the **Computer Name** field from **Servername** to the **name of the training server** (the name of the training server is different for every student).

Name	OCV
Computer Name	<name of your specific training server>

9. Configure Production Areas

Create 2 **Areas** in the TrakSYS configuration. These Areas will represent the main types of production in the **OCV** plant.

- Navigate to **Configuration | Systems**.
- Select the **+ New Root** menu option under **Areas** to add a new **Root**.
- Create 1 **Root Area** with the following property values…

Name	**Key**
Warehouse	WH

Create a new Child Area under Packaging Root.

- In **Configuration | Systems | Area** select **Packaging** Root Area which will reveal **+ New Child.**
- Select **+ New Child** option and create the following **Child Area** with the following properties...

Name	Key
Packaging A	PACK.A

10. Configure a Discrete System and Sub-Systems

Each **Area** will contain 1 or more production lines. These will be represented by TrakSYS **Systems**. Beneath the **Packaging A Area**, create the **Packaging Line 1 System**, with 3 **Sub-Systems** called **Filler**, **Labeler** and **Caser**.

- Navigate to **Configuration | Systems**.
- Select the **Packaging | Packaging A**.
- In slice 2, select the **+ New** menu option under **Systems** in slice 2 to add a new **Discrete System**.
- Create the **Packaging Line 1 System** with the following property values…

Name	Packaging Line 1
Key	P1
Refresh Key (Advanced Tab)	P1

- Select **Packaging Line 1** from the **System** list in slice 2. Additional details and options for **Packaging Line 1** will be displayed in slice 3.
- Select **Sub-Systems** from the **Related** menu in slice 3. The **Packaging Line 1** details will move to slice 1 and the **Sub-Systems** will be listed in slice 2.
- In slice 2, select the **+ New** menu option under **Sub-Systems** to add a new **Sub-System**.
- Create 3 **Sub-Systems** under **Packaging Line 1** with the following property values…

Name	Key
Filler	FLR
Labeler	LBL
Caser	CSR

11. Installation Manager | Start the Logic Service

Using the TrakSYS **Installation Manager** application, start the **Logic Service** on the training server.

- Select the **Services** section from the left tabs.
- Select the **Logic Service** from the **Installed Services** list and click the **Start** button.

Upon completion, the Logic Service should be shown in the **Installed Services** list AND show **Running** as the **Status**.

12. Lab Check

As a final check, navigate to **Training | Day 1 | Lab 1**. This page will function as a small **Lab Check** to ensure your database is properly configured. You should not see anything marked in red on this screen. In addition, there is a small **Lab Glossary** available as a **Hub 3** that contains some common words and phrases from the section.

Conclusion

In this exercise, you have learned how to install and configure the TrakSYS components for use in an implementation using the setup and the **Installation Manager** application. You have also created several TrakSYS configuration entities including **Areas**, **Systems** and **Sub-Systems**. Finally, you now know how to start and re-start the **Logic Service**. This will be required whenever new configuration changes are made.

It is recommended that you take moment to review the navigation through the Configuration section of the application. Cycle between **Areas** to see the child **Systems**. Select a System and display its **Sub-Systems**. Experiment with the **Edit** menu option on different entities to become used to modifying and saving changes to the configuration.

Many of the following labs and real-world use of the TrakSYS software rely on and build upon the basic skills learned in this lab.

Common Mistakes

None

Further Exploration

Below are additional topics related to the section. They are not required to be completed but can provide additional understanding of TrakSYS' capabilities. Unlike the core Labs, these smaller modules will be less detailed. Please ask your trainer if you need any assistance.

Historian Configuration (Part 1 of 2) | Service and Database.

In order to utilize the TrakSYS Historian capabilities, three things need to be completed. First, the **Historian Database** needs to be created. Second, the **Historian Service** needs to be configured. Third, a **Tag History Definition** needs to be configured and assigned. This **Further Exploration** will complete the first two, with the last step being completed on the next lab.

First, create the **Historian Database**. To do so, open the **Installation Manager** and navigate to the **Database** tab. On the right-side menu, select the **Create Historian** option. Using the same credentials and the default options, create your **Historian Database**.

Second, install and configure the **Historian Service**. Still in the Installation Manager, navigate to the **Services** tab. Install the Historian Service. Then, in the TS Web, navigate to **Configuration | Services | Historian Services**. Create a **New** Historian Service, naming it **OCV** and setting the **Computer Name** to your Server's name (ie T01).

That is the first part of the Historian Configuration. The rest will be completed after the next lab.

Lab 02 | Tags

Overview

Tags are an essential part of any TrakSYS implementation. **Tags** represent real-time data points in the configuration which can originate from multiple different sources such as the automation layer (PLCs and devices via OPC), virtual values, or internal variables used to store important data like business rule calculation inputs.

Tags are entities in TrakSYS that are used to map to and store these data points and calculations, making the reported/calculated values available for consumption to other parts of the TrakSYS configuration.

In this assignment you will configure **Tags** that will be responsible for connecting to the OCV factory automation, making logical decisions, triggering **Events**, and holding other real-time production statuses. The **Tags** you configure in this lab will be integrated into future parts of the OCV implementation.

Estimated Time to Complete This Lab

30 Minutes

Details

The following sections describe the detailed steps to be completed for this lab.

1. Configure Virtual Tags

There is a pre-existing **Tag Group** structure defined in the training database under **Packaging / Line 1**. There is a Tag Group beneath **Line 1** called **[Product]** which is designed to hold Tags related to the current product being produced. Create **Virtual Tags** with the following properties in the **[Product]** folder.

- Navigate to **Configuration | Tags**.
- Select the appropriate **Tag Group, Packaging/Line 1/[Product]** from the tree in slice 1 to reveal the list of child **Tags** in slice 2.
- Select the **+ New** menu option under **Tags** and select **Virtual Tag** from the **New Tag** type list.
- Add new **Tags** with properties specified in the table below.

Name	Data Type
PA.L1.PRODUCT.BOTTLES_PER_MINUTE	Integer
PA.L1.PRODUCT.BOTTLE_SIZE	String
PA.L1.PRODUCT.BOTTLES_PER_CASE	Integer
PA.L1.PRODUCT.BOTTLE_SUPPLIER	String

2. Configure an OPC Access Name

To read data from **OPC Tags**, an **OPC Access Name** must be configured to define the connection information required by the **Logic Service**. In this training scenario, there is no real PLC to attach to, but TrakSYS will be run in a "simulation mode" to mimic Tag value changes.

Configure a new **OPC Access Name** to connect to the **Packaging Line 1** PLC using a Matrikon OPC server.

- Navigate to **Configuration | Tags | Access Names**.
- Select the **Packaging** Access Name Group in slice 1 to reveal the list of child **Access Names** in slice 2.
- Select the **+ New** menu option under **Access Names** and add a new Access Name (of **OPC Access Name** type) with the following properties…

Name	Packaging 1 PLC
OPC Server	Matrikon.OPC.Simulation.1
Simulation Mode	Checked

3. Configure OPC Tags

After an OPC Access Name is created, **OPC Tags** can be configured and attached to the new Access Name.

There is a pre-existing **Tag Group** structure defined in the training database under **Packaging / Line 1**. There are 3 **Tag Groups** defined for the **Filler**, **Labeler** and **Caser**. Create the following **OPC Tags** in the appropriate folders.

- Navigate to **Configuration | Tags**.
- Select the appropriate **Tag Group, Packaging/Line 1/<SubSystem>** from the tree in slice 1 to reveal the list of child **Tags** in slice 2.
- Select the **+ New** menu option under **Tags** and add new **Tags** with properties specified in the table above.
- Select **OPC Tag** from the **New Tag** type list.
- Set the **Access Name** by using the picker, can be opened by clicking the picker icon next to the **Access Name** label.
- Finish creating the **Tags** using the properties below.

Tag Group	Name	Data Type	Access Name	Item Name
Filler	PA.L1.FILLER.MOTOR_RUNNING	Discrete	Packaging 1 PLC	N7:11/1
Filler	PA.L1.FILLER.TIPPED_BOTTLE	Discrete	Packaging 1 PLC	N7:11/2
Filler	PA.L1.FILLER.TEMP	Float	Packaging 1 PLC	F1:10/1
Labeler	PA.L1.LABELER.LABEL_JAM	Discrete	Packaging 1 PLC	N7:11/3
Caser	PA.L1.CASER.MISPLACED_TRAY	Discrete	Packaging 1 PLC	N7:11/4

4. Configure a Compare Tag

A trigger condition is needed to determine when the **Filler** temperature is higher than normal. Create a **Compare Tag** to monitor the Filler temperature and return a discrete value of 1 when the temperature is higher than **85** degrees.

- Create the **Compare Tag** in **Tag Group** called **Packaging/Line 1/Filler**.
- To select a **Tag** for the **Left Operand**, change the picker icon from **123** to the **Tag** symbol to open the **Tag Picker** in the right margin. Type any part of the **Tag** name in the search box (for instance "PA.L1.FILLER") and select the **Find Tags** button to filter the existing **Tags** to the list below. Select the **PA.L1.FILLER.TEMP** entry in the list to assign it.

Name	PA.L1.FILLER.TEMP_HIGH
Data Type	Discrete
Left Operand	PA.L1.FILLER.TEMP
Operation	>
Right Operand	85

5. Configure a Script Tag

A more complex trigger condition is needed to determine when an event should be recorded indicating that the **Filler** stopped due to overheating. Create a **Script Tag** to monitor the Filler running **Tag**, as well as the temperature **Tag** and return a Discrete 1 when the Filler is running, and the temperature is higher than **85** degrees.

- Create the **Script Tag** in **Tag Group** called **Packaging/Line 1/Filler**.
- Create the **Tag** using **Simple** for the **Script Type**. This means that the script will be created using a **VB.NET** syntax.
- The **Script Tag** must be created first, then the actual script can be added using the **</> Script** Action in the slice 3 menu.
- **Tag** values can be inserted into the script by surrounding the **Tag Name** with curly braces {}. They can also be inserted using the **Tag Picker** tool (look for the **Tag** icon) from the scripting menu.

Name	PA.L1.FILLER.OVERHEATED
Data Type	Discrete
Script Type	Simple
Script **(This part is added after tag is created)**	{PA.L1.FILLER.MOTOR_RUNNING} AND {PA.L1.FILLER.TEMP} > 85.00

6. Start the Logic Service using the Windows Services Applet

The **Windows Services** applet allows for control of locally installed services. Start the **TrakSYS Logic Service** using Windows.

- The Windows Services applet can be launched by accessing the Windows Start menu and typing “Services”. The **Services** shortcut should appear in the filtered list of applications. Click and open the applet.
- Locate and select the **TrakSYS Logic Service** in the list.
- Right-click and choose **Start/Restart** from the menu.

The **TrakSYS Logic Service** status should change to **Running** (after a few seconds). If it does not, you may have incorrectly configured the **Logic Service**’s **Computer Name** property in Lab 1.

7. Verify that the Logic Service has Started

The TrakSYS Web interface can be used to monitor the real-time state of the **Logic Service**. Open the **Logic Service Hub** and verify that it shows a **Running** (green) state.

- Navigate to **Administration | Services | OCV [Logic]**.
- The Status and Scan tiles should both be green.

8. Lab Check

As a final check, navigate to **Training | Day 1 | Lab 2**. This page will function as a small **Lab Check** to ensure your database is properly configured. You should not see anything marked in red on this screen.

Conclusion

In this exercise, you have learned how create and configure several types of **Tags**. There are several different types of **Tags**, but all **Tags** return a single, typed value. **Tags** are used/consumed by other configuration elements within TrakSYS and can also be used as inputs to other more complex logic and script **Tags**.

Some of the **Tags** that you have created in this lab for **Packaging Line 1** will be used in later exercises as states and conditions to trigger events and other real-time business rules.

Common Mistakes

None

Further Exploration

Additional Information | Tags

This module does not require any configuration, it simply provides some visualizations for the information learned in this section.

Navigate to **Training | Day 1 | Lab 2 | Additional Info**. This page provides examples of tag values being displayed in a custom interface. Ensure that your **Logic Service** is still running, then explore the examples provided.

Historian Configuration (Part 2 of 2) | Tag History Definition

This module builds off a **Further Exploration** module from the previous Lab. Please ensure you have completed those steps first before completing these.

The last step for **Historian Configuration** is to create a **Tag History Definition**. To create one, navigate to **Configuration | Tags**. You can select any tag in any group to Historize, but the **Training | Tag Examples | TE.HISTORIAN_EXAMPLE** has been configured to provide the best example. This tag will randomly change between 0 and 100 every 30 seconds.

Once your tag is selected, select the **Tag History Definitions** option from the **Related** menu options in slice 3. Create a new Tag History Definition. Set the **Historian Service** to **OCV**. All other properties can be adjusted to your preference with one exception, **do not** set **Mode** to **Manual** or you will not see any results.

Now that all configuration has been completed, restart the **Historian Service** to begin recording historian data. To view the data collected, navigate to **Training | Day 1 | Lab 2 | FE: Historian Configuration**.

Lab 03 | System Definitions

Overview

In this assignment you will learn to configure **Event Definition** entities that define how TrakSYS monitors real-time status values to start and end stoppage **Event** records related to physical assets (**Systems**).

Whenever new configuration is added or changed, the **Logic Service** must be restarted (for data collection to occur). For the lab exercises, **Tag** values will have to be manipulated manually (since there is no connection to a PLC). You will be practicing the restart of the **Logic Service** and viewing/manipulating **Tag** values that will in turn trigger the configured **Event Definitions**.

Estimated Time to Complete This Lab

30 Minutes

Details

The following sections describe the detailed steps to be completed for this lab.

1. Configure Event Definitions

Event Definitions must be created under the **Packaging Line 1 System** to track time spent during breaks and changeover. These definitions will be triggered from **Virtual Tags** that will be manipulated manually.

- Navigate to **Configuration | Systems**.
- Select the **Packaging | Packaging A** in slice 1 to reveal the list of child **Systems** in slice 2.
- Select the **Packaging Line 1** in slice 2 to show the **System** details in slice 3.
- Select the **Event Definitions** option in the **Related** menu in slice 3. The item details for the **Packaging Line 1 System** should shift to slice 1 and slice 2 should contain an empty list of **Event Definitions**.
- Select the **+ New** menu option under **Event Definitions** and add new **Event Definitions** with the following properties…

Name	Key	Trigger Tag
Break	Break	PA.L1.EVENT.BREAK
Changeover	CO	PA.L1.EVENT.CHANGEOVER

2. Configure Event Definitions for Sub-Systems

Event Definitions must be created under the various **Sub-Systems** under **Packaging Line 1**. These definitions will be triggered from **OPC Tags** holding machine status from the automation layer.

- Navigate to **Configuration | Systems**.
- Select the **Packaging | Packaging A** in slice 1 to reveal the list of child **Systems** in slice 2.
- Select the **Packaging Line 1** in slice 2 to show the **System** details in slice 3.

- Select the **Sub-Systems** option in the **Related** menu in slice 3. The item details for the **Packaging Line 1 System** should shift to slice 1 and slice 2 should contain a list of **Sub-Systems**.
- Select a **Sub-System** in slice 2 to show the **Sub-System** details in slice 3.
- Select the **Event Definitions** option in the **Related** menu in slice 3. The item details for the **Sub-System** should shift to slice 1 and slice 2 should contain an empty list of **Event Definitions**.
- Select the **+ New** menu option under **Event Definitions** and add new **Event Definitions** with the properties specified above.

Sub-System	Name	Key	Trigger Tag
Filler	Tipped Bottle	Tipped	PA.L1.FILLER.TIPPED_BOTTLE
Filler	Overheated	OH	PA.L1.FILLER.OVERHEATED
Labeler	Label Jam	Jam	PA.L1.LABELER.LABEL_JAM
Caser	Misplaced Tray	MisTray	PA.L1.CASER.MISPLACED_TRAY

3. Restart the Logic Service using the Installation manager

Start the **TrakSYS Logic Service** using the Installation Manager.

- Open the **Installation Manager**. Navigate to the **Services** tab.
- Locate and select the **TrakSYS Logic Service** in the list.
- Click the **Restart** from the menu. Close the dialogue.

The **TrakSYS Logic Service** status should say **Running**.

4. Monitor Real-Time Tag Values

Often, it is useful to view the real-time values for **Tags** being monitored by the **Logic Service**. Since there are sometimes thousands of **Tags** in an implementation, TrakSYS allows the **Tag** list to be filtered to the relevant items before displaying the real-time values. Use the **Tags** page under the **Logic Service Hub** to view the real-time values for all **Filler Tags**.

- Navigate to **Administration | Services | OCV [Logic]**.
- Select the **Tags** option in the **Related** menu. The Tags page should be displayed in **Filter** mode.
- Enter “PA.L1.FILLER” for the **Tag Filter 1** value. Click the **Refresh** button to preview the **Tag** list and ensure the desired **Tags** are displayed.
- Click the **Updating** option from the top left menu.
- The page should change to **Updating** mode and is now refreshing every few seconds.

5. Modify a Tag Value Manually

In order to trigger Events and other data collection during testing and simulation, the **Tags** page can also be used to manually modify the value of any **Virtual** or **OPC Tag**. Using the **Tags** page in **Updating** mode, modify the value of the **PA.L1.FILLER.TEMP Tag** to **97**.

- Locate **PA.L1.FILLER.MOTOR_RUNNING Tag** and click the **Edit Value** button in it row.

- Modify the **Tag** value to **1** and click **Save**.
- While in Updating mode, locate the **PA.L1.FILLER.TEMP Tag** and click the **Edit Value** button in its row.
- Modify the **Tag** value to **97** and click **Save**.

Tag values that are recently changed should be displayed as green in the Tag list.

6. View Event Records

After modifying the Tag values, the Logic Service will process the changes and create **Event** records that match the corresponding Event Definition configuration. These can be viewed from the Lab 3 training interface.

- Navigate to **Training | Day 1 | Lab 3**.
- View the Event records under the Lab Check on the right margin.
- Once you are done viewing the records, go back and reset the values of **PA.L1.FILLER.TEMP** & **PA.L1.FILLER.MOTOR_RUNNING** to **0** by following **Step 5.**

Additional events can be created through further manipulation of the Tag values.

Conclusion

In this exercise, you have learned how and configure some examples of **System** functionality to capture **Events**. **KPI Intervals, Task**, **Sample** and **Function Definitions** are configured in a similar way and will be explored in future lab modules.

In addition to learning about these new configuration entities, you have had more practice in navigating through the configuration hierarchy and user interfaces. The patterns of item slices, lists and **Action**/**Related** menus, will be the same used throughout the rest of the TrakSYS application and training exercises.

You have also been introduced to the techniques for monitoring real-time **Tag** value changes, restarting the **Logic Service**, as well as manually changing **Virtual** and **OPC Tag** values for simulation and testing.

Common Mistakes

None

Further Exploration

None

Lab 04 | Production Information

Overview

In this assignment you will configure entities and properties that will add additional context to the basic data (Event, KPI, Task, Quality, etc…) collected from the plant floor. Adding dimensions such as **Shift**, **Team**, **Job** (Process Order) and **Product** (SKU) to collected production data makes the TrakSYS implementation more effective by increasing reporting/analysis options, improving traceability, and supporting root cause analysis.

Estimated Time to Complete This Lab

30 Minutes

Details

The following sections describe the detailed steps to be completed for this lab.

1. Assign Job Tags to a System

In order to capture the current **Job** that is executing on **Packaging Line 1**, the real-time **Job**-information **Tags** must be associated with the **Packaging Line 1 System**.

- Navigate to and select **Configuration | Systems | Packaging | Packaging A | Line 1.**
- Select **Line 1** and select **Edit** in slice 3. Click the **Job Tab** to reveal Job-related properties.
- Assign the following (pre-existing) **Job Tags** to the appropriate properties…

Job Tag (Job Tab)	PA.L1.JOB.NAME
Planned Size Tag (Job Tab)	PA.L1.JOB.PLANNED_SIZE

2. Configure a Shift Schedule

To understand any data trend relationships to the operators running the line, a personal **Schedule** must be configured that designates a repeating pattern of **Shifts** and **Teams**.

- Navigate to **Configuration | Schedules**.
- Select **Packaging** in slice 1 to reveal a list of child **Schedules** in slice 2.
- Select the **Packaging A** in slice 2 to show the **Schedule** details in slice 3.
- Select the **Schedule Patterns** option in the **Related** menu in slice 3. The item details for the **Packaging A Schedule** should shift to slice 1 and slice 2 should contain an empty list of **Schedule Patterns**.
- Select the **+ New** menu option under **Schedule Patterns** and add a new **Schedule Pattern** with the following properties…

Name	Standard
Start Date/Time	<todays date> 8:00:00 AM
Duration	7
Effective Date/Time	<todays date> 8:00:00 AM -07:00
Calendar Tick Marks	60

3. Configure a Shift Schedule

Once the **Pattern** entity is created, the actual calendar of **Shift/Team** assignment to work on the process must be created.

There are 2 **Shift** times in the **OCV Packaging** area, **Day** and **Night**.

- The **Day Shift** should be scheduled to work Monday through Friday from **8:00 AM to 5:00 PM**.
- The **Night Shift** should be scheduled to work Monday through Friday from **5:00 PM to 2:00 AM** the following day.

In addition, there are 2 different **Teams** of users that are assigned to work during these time periods on Packaging Line 1, **Team A** and **Team B**.

- **Team A** should be assigned to work on the **Day Shift** every day it exists.
- **Team B** should be assigned to work on the **Night Shift** every day it exists.

The following tips will assist in configuring the calendar pattern…

- Navigate to and select the **Standard Schedule Pattern** in slice 2 to reveal details in slice 3.
- Select the **Calendar** menu option in slice 3 to open the calendar editor screen.
- Using the mouse cursor, **drag and highlight** an area in the calendar to create a new **Schedule Pattern Item** (click OK to confirm).
- If the timeframe (**Start and End Date/Time**) highlighted is not accurate it can be adjusted manually in the properties form.
- Select the desired **Shift** and **Team** to be assigned to the **Schedule Pattern Item**.
- Click **OK** to save the item and repeat as needed.
- Once the first **Schedule Pattern Item** is created, the **Copy** menu item can be used (in the right-side menu on the calendar page) to duplicate the exact item one day in the future.

4. Take the Shift Schedule out of Edit Mode

Each Schedule contains a property called **Allow Schedule Edits (Edit Mode)**. Since the Logic Service is constantly evaluating real-time data collection against the configuration, a **Schedule** should be switched into **Edit Mode** while it is being changed or created. This prevents the Logic Service from loading an incomplete version of a **Schedule**.

Before a **Schedule** can be used for real-time data collection, it must be switched **out of Edit Mode**. Navigate to the **Packaging A Schedule** and uncheck the **Allow Schedule Edits (Edit Mode)** property.

- Navigate to the **Packaging A Schedule** and enter the properties form by clicking the **Edit**.
- Un-check the **Allow Schedule Edits (Edit Mode)** property and **Save**.

5. Assign a Shift Schedule to a System

Once the **Schedule** and **Pattern** have been created, the **Schedule** must be assigned/associated to the **Packaging Line 1 System**.

- Navigate to and edit **Configuration| System | Packaging A | Packaging Line 1** and assign the **Packaging A Schedule** to the **Schedule** property.
- Use the **picker** icon to the right of the **Schedule** field to open the **Schedule** picker in the right margin.

Schedule (General Tab)	Packaging A

6. Create Products for a Product Set

A list of **Products** that can be made on the **Packaging Line 1 System** must be created to store **Product** specific attributes that will be used during real-time data collection. The new **Products** can be added beneath the pre-existing **Product Set** called **Packaging A**. The **Packaging A Product Set** has also been pre-associated with the **Packaging Product Scheme** which defines 3 attributes for…

- Bottle Size (BSZ)
- Bottles per Case (BPC)
- Bottle Supplier (BSP)

Add 2 new **Products** to the **Packaging A Product Set**.

- Navigate to **Configuration | Products**.
- Select **Packaging A** in slice 1 to reveal an empty list of child **Products** in slice 2.
- Select the **+ New** menu option under **Products** and add new **Products** with the following properties…

Name	Product Code	Theoretical Rate	Target Rate	BSZ	BPC	BSP
Adravil	ADRA	360	300	200	32	ABC Bottles
Prospirim	PROS	240	200	150	24	Bottle Mart

7. Assign a Product Set and Product Tag to a System

Once **Products** are created in the **Packaging A Product Set**, the **Product Set** must be assigned/associated to the **Packaging Line 1 System**. In addition, the real-time **Tag** holding the current **Product Code** for the line must be assigned/associated.

- Navigate to **Configuration | Systems | Packaging | Packaging A | Packaging Line 1**, select **Packaging Line 1** and click **Edit** in slice 3 to the **Product Set** property.
- Click the **Product** tab on the left to reveal the **Product** related properties.

Product Set (Product Tab)	Packaging A
Product Code Tag (Product Tab)	PA.L1.PRODUCT.CODE

8. Set Tags for Packaging Line 1 Map

In order for the System to use the Attributes of the Product it is running, the values from the Product need to be pushed to Tags. This is completed through a Product Map. Navigate to and edit the **Packaging Line 1 Map** and each Item to its matching tag.

- Navigate to **Configuration | Products | Maps | Packaging Line 1 Map.**
- Select **Packaging Line 1 Map** to reveal the **Edit** option in slice 3.
- Click **Edit** and **assign** the following tag using the picker.

Theoretical Rate Calculation Units Per Minute Tag	PA.L1.PRODUCT.BOTTLES_PER_MINUTE

- With **Packaging Line 1 Map** selected, Items will appear in slice 2.
- Select and edit each **Item** in slice 2, mapping each **Attribute** to their related **Tag**.

Bottle Size (BSZ)	PA.L1.PRODUCT.BOTTLE_SIZE
Bottles per Case (BPC)	PA.L1.PRODUCT.BOTTLES_PER_CASE
Bottle Supplier (BSP)	PA.L1.PRODUCT.BOTTLE_SUPPLIER

Conclusion

In this exercise, you have configured and assigned **Job Tags**, **Shift Schedules** and **Products**. Moving forward, any data collected against **Packaging Line 1** will now be recorded with the context of which **Job** and **Product** was running at the time, as well as which **Shift**/**Team** were working on the process.

Collecting data with these additional dimensions allows for more complex analysis, more detailed traceability, and improved decision making.

In addition to learning about these new configuration entities, you have had more practice in navigating through the configuration hierarchy and user interfaces. The patterns of item slices, lists and **Action**/**Related** menus, will be the same used throughout the rest of the TrakSYS application and training exercises.

Common Mistakes

None

Further Exploration

Additional Information | Product Mapping

This module does not require any configuration, it simply provides some visualizations for the information learned in this section.

Navigate to **Training | Day 1 | Lab 4 | Additional Info**. This page provides examples of Product Mapping in action, displayed in a custom interface. Ensure that your **Logic Service** has been restarted, then explore the examples provided.