Version 25 | Trapeze Enterprise Asset Management

Business Process Automation

Administrator & User Guide

Trade Secret | February 2025

Technical Support

Trapeze provides several ways to connect with the Customer Care team. Please provide detailed information to the representative. If you are reporting an issue by e-mail, include any error messages, screen shots of your problem, and steps to replicate the issue.

Customer Care is available Monday through Friday, 8:00 a.m. to 8:00 p.m., Eastern Standard Time.

Toll-Free Telephone:	1-877-411-8727
E-mail:	cc@trapezegroup.com
FTP Site:	https://ftps.trapezegroup.com/
Web Site:	https://collaborate.trapezegroup.com

The website provides access to Trapeze Collaborate which offers resources to implement and operate the software, search knowledge, participate in communities, log/track service requests, sign-up for release alerts, view product health recommendations, and download updates or documentation. For secure access to Collaborate, contact Customer Care through the website or by calling the number above.

Product Compatibility

Refer to the latest Product Compatibility information on Trapeze Collaborate for requirements including operating system information, databases, Crystal reports, network protocol, HTTP servers and browsers that are supported.

Business Process Automation - Administrator and User Guide

Version 25.x

February 2025

Contents

1. Overview

Business Process Automation is not technically a module in and of itself, but rather a grouping of other modules needed for automating key business processes. This being that we create a one-click install for out-of-the-box modules that automate business processes through MAXQueue integrations. Using this process, rather than having to check to install any number of modules in the future, you install the Business Process Automation package, and all the necessary modules are included.

Requirements

Application 25.x

Web Modules 25.x

Assumptions

This guide assumes familiarity with workflows and configuration of the application.

- User-defined required fields that do not appear in the Web Modules will return validation messages.
- Special characters cannot be placed into the Web Modules fields or unanticipated results may occur. This would include any character that cannot be typed with a standard keyboard.
- Do not use the browser's **Back** button in the Web Modules as unanticipated results may occur.
- Do not open or use the same instance of the Web Modules in multiple browser windows or tabs. This can cause errors or unexpected performance issues.

Installation

For information on MAXQueue install, refer to the *MAXQueue Installation, Upgrade, and Configuration Guide*.

2. Required Settings

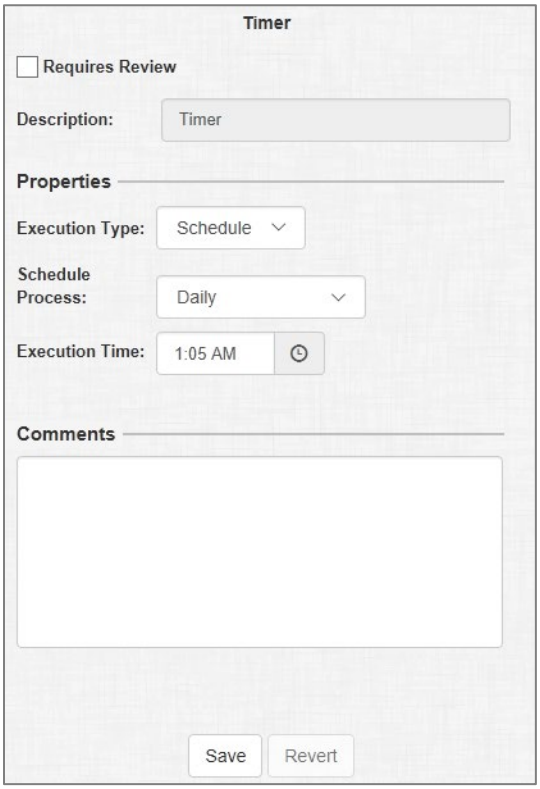
Setting the Timer Adapter

This section explains how to set up the timer adapter for the services. The Timer adapter dictates whether a module service is executed based on a schedule or a frequency. If a service has a timer adapter, it needs to be configured according to your business needs.

To run a process on a schedule:

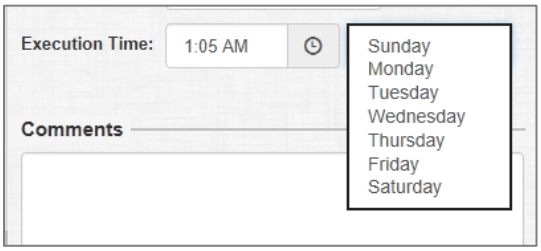
1. Click the Timer adapter.

   The Timer adapter settings display on the right side of the page.



2. Select **Schedule** from the **Execution Type** drop-down list.
3. Select the appropriate **Schedule Process**. Choose from **Hourly**, **Daily**, **Weekly**, **First Day of Month**, or **Last Day of Month**.

4. Set the appropriate **Execution Time**.
    - If the **Schedule Process** field is set as **Weekly**, use the second drop-down menu that displays here to choose the day of the week for the process to run.

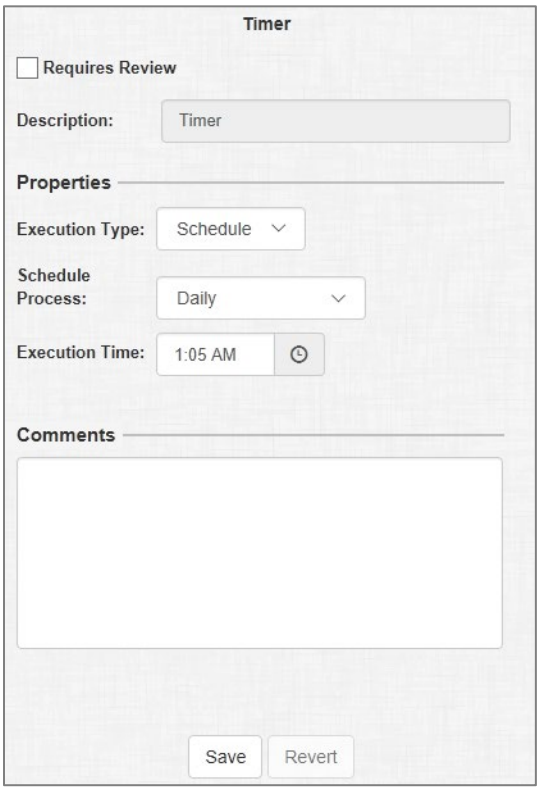


5. Once all required fields have been set, click **Save**.

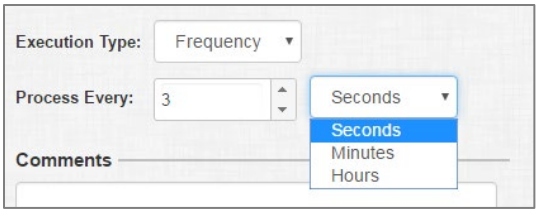
To run a process on a frequency:

1. Click the Timer adapter.

    The Timer adapter settings display on the right side of the page.



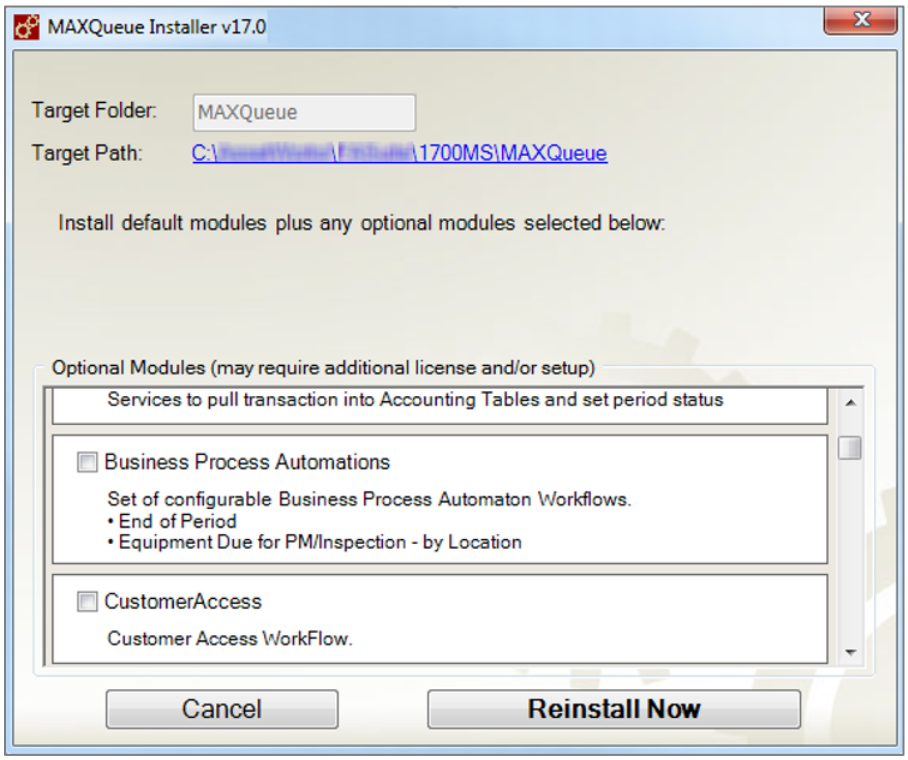
2. Select **Frequency** from the **Execution Type** drop-down list.
3. Input a value for the **Process Every** free form field and from the drop-down list choose to run by **Seconds**, **Minutes**, or **Hours**.



4. Click **Save** once all required fields have been set.

3. Modules Included

All users licensed to use MAXQueue receive the End of Period and Equipment Due For Service Inspection By Location modules with their MAXQueue package from Customer Care. Additional modules included in the Business Process Automation will vary depending on the organization. All modules that could be included in Business Process Automation are described in the sections below.



End of Period

The End of Period module helps you perform end-of-period processing. There are two services associated with End of Period: End of Period Schedule, and End of Period Reset Numbering. Both of these are associated with an automation of the End of Period screen.

The End of Period module helps you perform end-of-period processing. There are two services associated with End of Period: End of Period Schedule, and End of Period Reset Numbering. Both of these are associated with an automation of the End of Period screen which enables organizations to control the processing required at the end of daily, monthly, and annual periods. This allows for automating the following process:

- Prepare the software database for the next period (day, month, quarter, or year)
- Reset accumulator fields to zero
- Compute replacement cost information for each equipment unit (year-end)

- Resets the year-to-date (year-end) total business accumulator or the monthly (month-end) business accumulator values for vendors
- Calculate equipment depreciation, equipment lease rentals for leased units, and rental billing base charges for owned units (monthly)
- Delete old items no longer required (purge) based on Table Management retention levels
    - Purchase order statuses
    - Unused parts
- (FuelFocus only) Posted, reposted, or skipped rows from fuel transactions beyond the retention time specified for fuel tickets

Setup Process

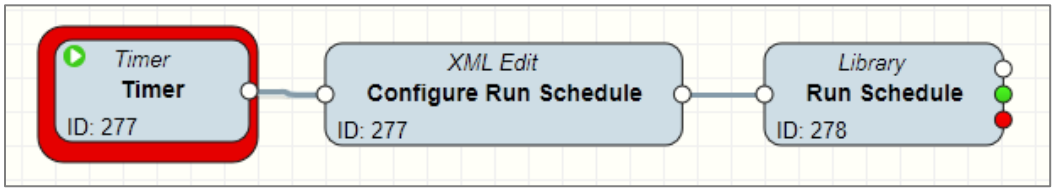
To make sure End of Period is ready to go, set up the following instance variables:

Variable	Description
vars.FAUser	A valid user with rights to log into the application and run End of Period processing
vars.FAPassword	Password for the user set as FAUser.

End of Period Schedule

The End of Period screen gives users access to automate running several End-of type processes (for example, End of Day, End of Quarter, etc.). This workflow allows you to configure a time of day the End of Period will run, and what days each End of Period process will run.

Service



Configuration

Timer Adapter

Select a **Schedule Process** of **Daily** at a time that is appropriate for you. Usually this will be early in the morning; so that End of Period processing has as little impact on production as possible; this time should be outside of prime time hours.

Configuration Run Schedule Adapter

All nodes, or variables, must have a valid value set, or be left blank. For all of the following nodes below (except vars.EndofYearMonthDay, vars.EndOfMonth, and vars.EndOfPeriodMonth), the valid choices are as follows:

Choice	Description
Daily	The service will run each day at the time specified in the timer.
Last Day	The service will run on the last day of the month.
Day of Month	The number of the day on which the service will run each month.
Blank	If this is left blank, the service will not run on a scheduled basis.

Nodes

- **vars.EndofDay:** This sets the schedule to run at end of day.
- **vars.EquipmentUsage:** This runs equipment usage processing, which affects non-pool usage transactions only.
    - For each usage transaction recorded during the month, the system calculates the portion of the monthly base rate to charge.
    - If you do not run equipment usage processing for one or more months, calculations are automatically adjusted to recover the base rental charges for the skipped months, and the allowances for free meter units per month increase appropriately.
- **vars.EndOfMonth:** This setting allows you to choose when to run processing for the end of the month.
- **vars.EndOfQuarter:** This uses the fiscal year month end to determine which month is quarter end, so that depreciation, for all units, is calculated.

  For example: If the value of vars.EndOfQuarter is 15, and the value of fiscal year month end is 12, then end of quarter will run on the 15th of the month following the quarter ends: January, April, July, and October

- **vars.PurgeDatabase:** Set the database to be purged on a scheduled basis. This sets the status of bids, requisitions, and purchase orders to CLOSED if all line items are closed.
- **vars.EndOfYearMonthDay:** Enter the end of the year month and day in the MM/DD format that year-end processing should run. If this is blank, this process will not run.
- **vars.EndOfPeriodMonth:** Set the month that will be used for end of period. The value should be set to CURRENT or PREVIOUS. CURRENT indicates that end of period will be processed for the current month. PREVIOUS indicates that end of period will be processed for the previous month.

Workflow Process

To set up the End of Period Schedule:

1. Open the End of Period Schedule service in the MAXQueue Designer.
2. Set the **Timer** adapter.

   Note: This should be set outside of prime time business hours. Early morning is usually a good time to run so the process will have as little impact on production as possible.

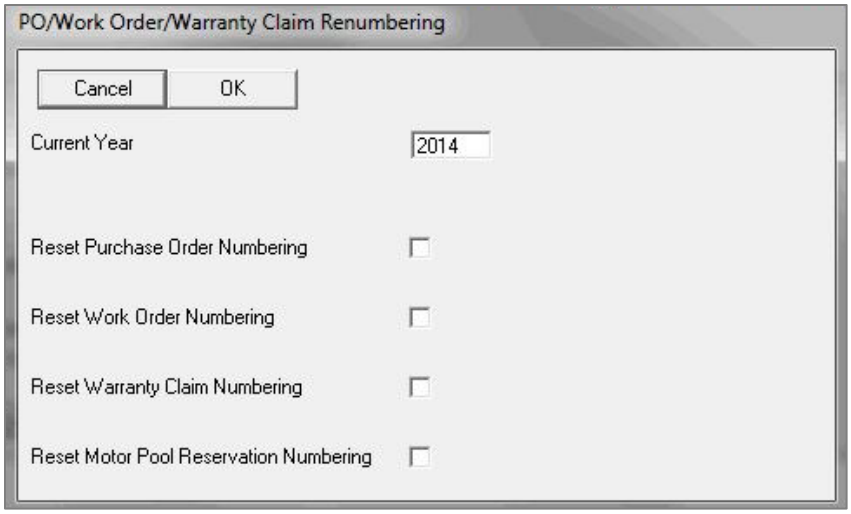
3. Click **Save**.
4. Click the **Configure Run Schedule** adapter, and set the correct node values as needed as described above to set the run schedule.

   Note: The **Library Run Schedule** adapter determines which processes need to run, according to the schedule, and runs those processes.

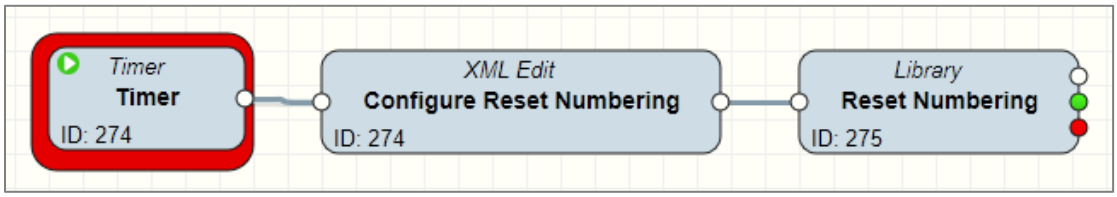
5. Click **Save**.

End of Period Reset Numbering

This workflow automates the process of running the PO/Work Order/Warranty Claim Renumbering screen. This screen gives the user the ability to reset several numbering processes. This workflow allows you to configure a day and time the End of Period Reset Numbers and reset process will run.



Service



Configuration

Timer adapter

The default setting is the best option for this notification. It is recommended to not change this setting.

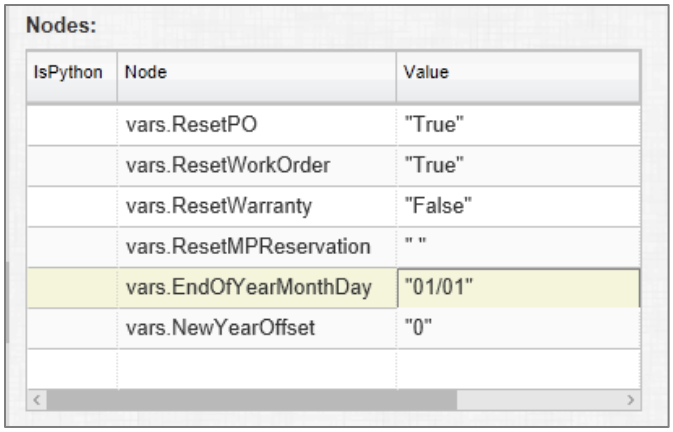
Configure Reset Numbering Adapter

- **vars.ResetPO:** If set as **True**, this process will run. If set as **False** or blank, this process will not run.
- **vars.ResetWorkOrder:** If set as **True**, this process will run. If set as **False** or blank, this process will not run.
- **vars.ResetWarranty:** If set as **True**, this process will run. If set as **False** or blank, this process will not run.
- **vars.ResetMPReservation:** If set as **True**, this process will run. If set as **False** or blank, this process will not run.
- **vars.EndOfYearMonthDay:** Enter the end of the year month and day in MM/DD format.
- **vars.NewYearOffset:** This value must be a number (a negative number is ok).

  When the month and day entered for this variable is reached the following occurs:

- If this field is set as 0, then the new year is assumed to be the current year.
- If a value is entered in this field, then the new year will be the current year adjusted by this value. For example:
  - If the **EndOfYearMonthDay** is 01/01, and the **NewYearOffset** is 0, then when January 1st of 2018 is reached, the year-end process will run, and the current year will be set to 2018.
  - If the **EndOfYearMonthDay** is 07/01, and the **NewYearOffset** is 1, then when July 1st of 2018 is reached, the year-end process will run, and the current year will be set to 2019.

The following example setup will run as follows:



Nodes:

IsPython	Node	Value
	vars.ResetPO	"True"
	vars.ResetWorkOrder	"True"
	vars.ResetWarranty	"False"
	vars.ResetMPReservation	" "
	vars.EndOfYearMonthDay	"01/01"
	vars.NewYearOffset	"0"

- Resets will run on the 1st of January
- When it is the 1st of January:
  - Purchase orders and work order reset processing will run.
  - Warranty and motor pool reservation resets will not run.
- The current year will be set to the year when that process is running.

Workflow Process

To set up the End of Period Reset Numbers service:

1. Open the End of Period Reset Numbers service in the MAXQueue Designer.
2. Set the **Timer** adapter.
3. Click **Save**.
4. Click the **Configure Reset Numbering** adapter to set the run schedule.

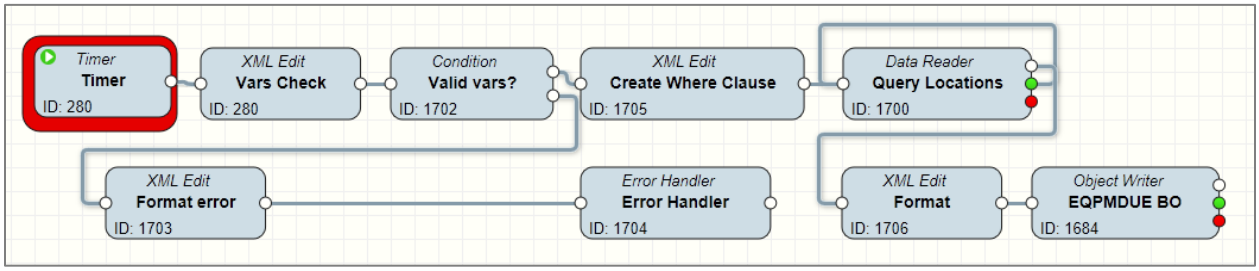
Note: The **Reset Numbering** adapter determines which processes need to run, according to the schedule, and runs those processes.

5. Click **Save**.

Equipment Due for Service/Inspection – By Location

This integration is responsible for running the Equipment Due for Service/Inspection – by Location screen through MAXQueue. It then generates PM work orders for the set amount of days using the defined settings.

Service



Configuration

Timer adapter

Define a time when the interface should run based on internal business process needs.

Service Variables

- **vars.PMDueFAUser:** The user ID that can log in to the application.
- **vars.PMDueFAPassword:** The vars.PMDueFAUser user's password. Check the Encrypt field to the right of this field if you want to encrypt the password.
- **vars.LocationsDefined:** A list of locations to validate against. Locations must be separated by a pipe, such as **LocA|LocB|LocC**.
- **vars.LocationsFlag:** Valid options include **Y** or **N**. Set this as **Y** to include the entered locations in the LocationsDefined field, or N to exclude the locations.
- **vars.AssetsDefined:** A list of assets to validate against. Assets must be separated by a pipe, such as **LocA|LocB|LocC**.
- **vars.AssetsFlag:** Valid options include **Y** or **N**. Set this as **Y** to include the supplied assets, or **N** to exclude the assets.

- **vars.DepartmentsDefined:** A list of departments to validate against. Departments must be separated by a pipe, such as **LocA|LocB|LocC**.
- **vars.DepartmentsFlag:** Valid options include **Y** or **N**. Set this as **Y** to include the supplied assets, or **N** to exclude the departments.
- **vars.DateDue:** The date the system will check against for date due. If this is empty, the system does not check for due date.
- **vars.DateOfLastYardCheck:** The date the system will check against for the last yard check. If this is empty, the system does not check for last yard check date.
- **vars.DepartmentToNotifyForPM:** The department set to receive the notification for the PM.
- **vars.ExcludeServicesOnOpenWorkOrder:** Valid options include **Y**, **N**, or blank. Set this as **Y** or leave blank to exclude the services on open work orders, or **N** to include the services.
- **vars.IncludeEligiblePMExtension:** Valid options include **Y**, **N**, or blank. Set this as **Y** or leave blank to include eligible PM extensions, or **N** to exclude the extensions.
- **vars.IncludeOutOfServiceEquipment:** Valid options include **Y**, **N**, or blank. Set this as **Y** or leave blank to include out of service equipment, or **N** to exclude the equipment.
- **vars.IncludeServicesToBeSoonDueByMeter:** Valid options include **Y**, **N**, or blank. Set this as **Y** or leave blank to include services due soon (by meter), or **N** to exclude the services.
- **vars.NumberOfDaysToProject:** The number of days forward to open PM due work orders. Leave this empty for no filter.
- **vars.PMService:** The PM Service to filter on. Leave this empty for no filter.
- **vars.PMShift:** The PM shift to filter on. Leave this empty for no filter.
- **vars.ProgramType:** The program type to filter on. Leave this empty for no filter.

Setup Process

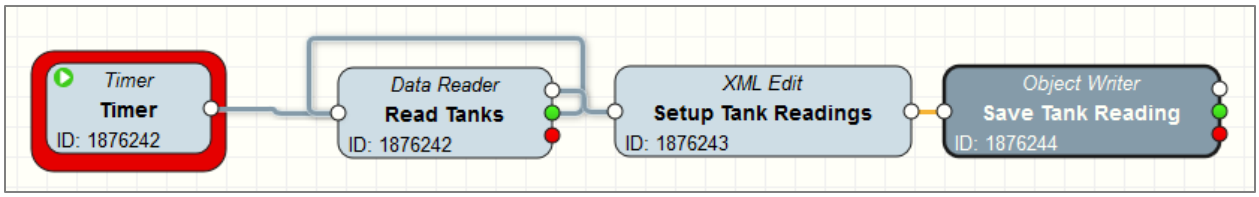
To set up the Equipment Due for Service/Inspection – By Location process:

1. Open the Equipment Due for Service/Inspection – by Location service in the MAXQueue Designer.
2. Set the **Timer** adapter.
3. Set the service variables.
4. Click **Save**.

Fuel Tank Adjustment

All Fleet license and Transit license users with MAXQueue have access to the Fuel Tank Adjustment module. This module is designed for users that are tracking asset types that require fueling. This service is designed to run once per month. When this service runs, it takes every active fuel site and creates a tank reading against the Tank Readings screen. This gives a snapshot of how much fuel is available at the time the interface is ran, and is useful for populating start fuel quantity for calculating fuel reconciliation.

Service



Configuration

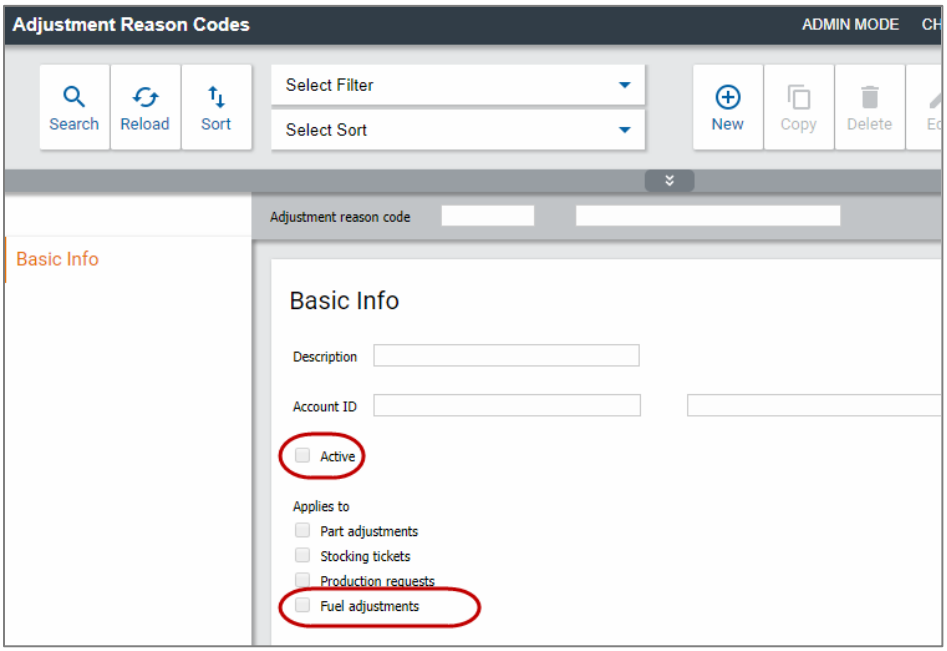
Timer adapter

- This service is designed to run once per month; by default it is set to run shortly after midnight on the first day of the month. If the default time does not meet your business needs, define a time when the interface should run based on internal business process needs.

Service Variables

- **vars.AppUser:** The user ID that can log into the application.
- **vars.AppUserPassword:** The password for the specified user ID. Check the Encrypt field to the right of this field if you want to encrypt the password.
- **vars.CurrentDateOverride:** If entering a date, this must be a valid date using the MM/DD/YYYY format. This will override the current date and set the fuel tank adjustment readings to the date defined in this variable. It is recommended to leave this blank to always use the current date. If this value is set to a time in the past, the interface will record today's reading, but with the read date to what is set in this variable.
- **vars.AdjustmentType:** This defaults to **NO ADJUSTMENT**. The value used in this field determines the tank reading adjustment type.
- **vars.AdjustmentReasonCode:** Default value of **AUTOMATED**. This will be the adjustment reason code the interface will use for this tank reading adjustment. Any value used here must be a valid and active value defined on the Adjustment Reason Codes screen.

Note: If you use the default setting of AUTOMATED, this adjustment reason code needs to be created on the Adjustment Reason Codes screen, set to Active, and applicable to fuel adjustments.



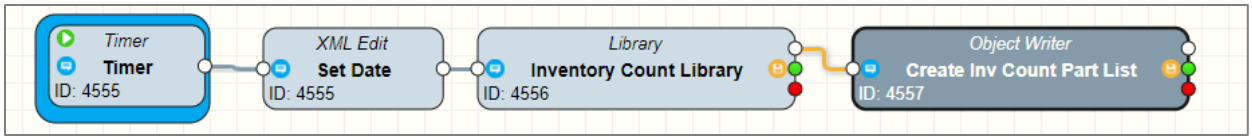
Setup Process

To set up the Fuel Tank Adjustment process:

1. Open the Fuel Tank Adjustment service in the MAXQueue Designer.
2. Set the **Timer** adapter. This is set by default to run shortly after midnight on the first day of the month.
3. Set the variables needed for this service.
4. Click **Save**.

Inventory Count

If you are licensed for MAXQueue and using the Enterprise Asset Management system, the Inventory Count module is an optional module for automating the process of creation of Inventory Count Lists in the Inventory Count Management screen. The Inventory Count Management screen gives the user the ability to create Inventory Count lists for locations and dates then add lines to the list with counts for parts. This workflow allows users to configure a time of day to run the Inventory Count service that will create the empty Inventory Count lists then users will need to add line items to the lists.



Configuration

Timer adapter

Usually this will be early in the morning; this time should be outside of prime-time hours.

Instance Variables

- **vars.FAUser:** The user ID.
- **vars.FAPassword:** The password for the specified user ID. Check the Encrypt field to the right of this field if you want to encrypt the password.
- **vars.WeeksInYr:** 52 (likely stays the same).
- **vars.DebugOn:** N (unless troubleshooting is needed)
- **vars.MaximumCountListSize:** 1000 (adjust as needed, but be aware of EAM limitations)

Setup Process

To set up the Inventory Count process:

1. Open the Inventory Count service in MAXQueue Designer.
2. Set the instance variables.

To set up inventory count list filtering based on location the integration will do the following:

1. Filtering of the line items added to the inventory count list for a location is done in three stages.
    i. First identify Part Location records (unique Part ID, Part Suffix, and Bin combinations) at the location.
    ii. Filter out parts that have been counted within the range created by the current date and the number of workdays scheduled per year divided by the ABC Value (Counts Per Year) before the current date.
    iii. Finally, the size of the inventory line items list is limited by the vars.MaximumCountListSize variable. If this value is left blank the default app

functionality will decide the number of parts to be added to the list so that all the parts at the location can be counted in a year.

2. Finding the number of items that need to be counted each day.

    i. Calculate the sum of the counts that need to be performed per year at the location and divide that by the number of workdays in the schedule for the year.

    ii. The sum of the counts that need to be performed per year is the number of Part Location records with an A ABC Value times the A counts per year at the location plus the number of Part Location records with a B ABC Value times the B counts per year at the location plus the number of Part Location records with a C ABC Value times the C counts per year at the location plus the number of Part Location records without an A, B or C ABC Value times the counts per year at the location for those values.

3. The MAXQueue Integration will do this by obtaining the time it is running (today) and will identify the locations with inventories that need to be counted today by checking which locations have a calendar with scheduled hours today and do not have a holiday scheduled for today, then Inventory Count objects are created for the identified locations and are created in EAM (InventoryCountManagement).

MRU Calculator

All Fleet and Transit users with MAXQueue have access to the MRU Calculator. The MRU calculator is for calculating maintenance and repair units (MRU). This service should run once per month. When this service runs, it calculates for the 12 months from the first day of the current month of the previous year through the first day of the current month of this year.

A Maintenance and Repair Unit (MRU) is a measure, given in hours per vehicle per year, of the average amount of work a certain type of equipment requires on a yearly basis. Among other things, it is used to estimate the number of maintenance employees that are necessary to maintain a fleet of a given size.

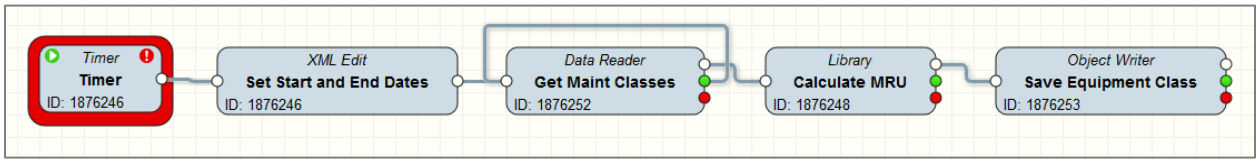
Calculated Information

The following items are calculated with the MRU calculator:

- Each maintenance class has its own MRU calculated for the equipment assigned to that maintenance class.
    - An equipment weight is calculated and given to the equipment (this is prorated for the time period in the given year that the item has been active).
    - The labor hours for all work orders for the equipment

- The final MRU calculation for the maintenance class is as follows:
    - Total number of labor hours divided by the total equipment weight, then divided by the years in the time period, then divided by the baseline MRU value in the vars.BaselineMRU.

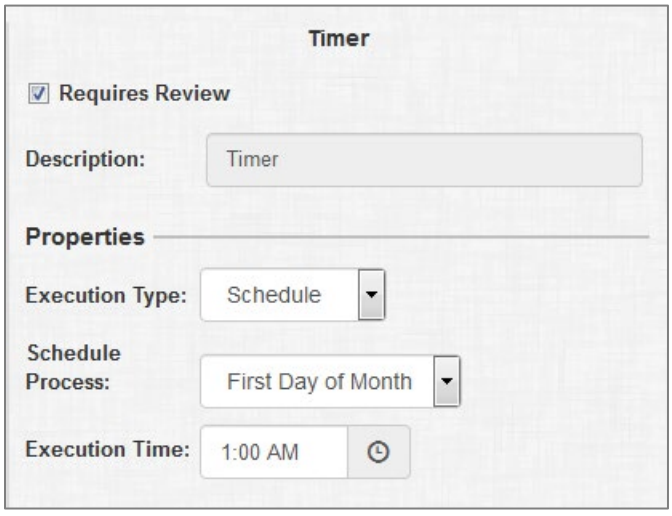
Service



Configuration

Timer adapter

Define a time when the interface should run, based on internal business process needs. This adapter defaults to having **Requires Review** checked. Once the time is defined based on the business needs of your organization, uncheck the **Requires Review** checkbox and save.



Service Variables

- **vars.BaselineMRU:** The default value is 20. This is the value the calculation will compare to. This means the baseline MRU is 20 hours per vehicle per year. Set this value based on the baseline as defined by your organization.

Setup Process

To set up the MRU Calculator process:

1. Open the MRU Calculator service in the MAXQueue Designer.
2. Set the Timer adapter. This is set, by default, to run shortly after midnight on the first day of the month.
3. Set the variables needed for this service.
4. Click **Save**.

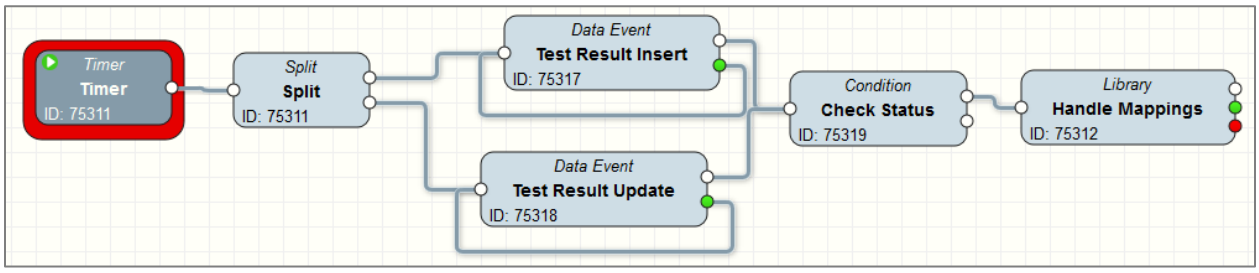
Asset Attribute

If you are licensed for MAXQueue and using the Enterprise Asset Management system, the Asset Attribute module is an optional module for managing additional asset types such as hydrants, light poles, etc. This is a by-request module, and can be used by those who are using the GIS module, and managing large amounts of data that is not rolling stock.

This interface is used to map data from equipment Test Results screen to the asset detail or subsystems screens. It retrieves inserted or updated test result data and uses that data to update the asset information or subsystems based on a user-defined data mapping. This interface processed test results where the result is PERFORMED, PASS, or PASS CORRECTED. The Asset Attribute interface can update assets through the Asset – Primary Information, or Linear Assets – Primary Information screens, and create or update subsystems and subsystem properties through the Equipment Subsystems or Equipment Subsystems and Parts screens.

This integration supports workflows for keeping a history of asset related values, while updating a given asset detail or subsystem property. This is accomplished by feeding test result information to mapped asset detail or equipment subsystem properties.

Service



Configuration

Timer adapter

The default setting of a five-second frequency is the best option for this interface. It is recommended to not change this setting.

Instance Variables

- **vars.FAUser:** The user ID.
- **vars.FAPassword:** The password for the specified user ID. Check the Encrypt field to the right of this field if you want to encrypt the password.

Setup Process

Asset Attributes

To set up the Asset Attributes process:

1. Open the Asset Attribute service in the MAXQueue Designer.
2. Set the instance variables.

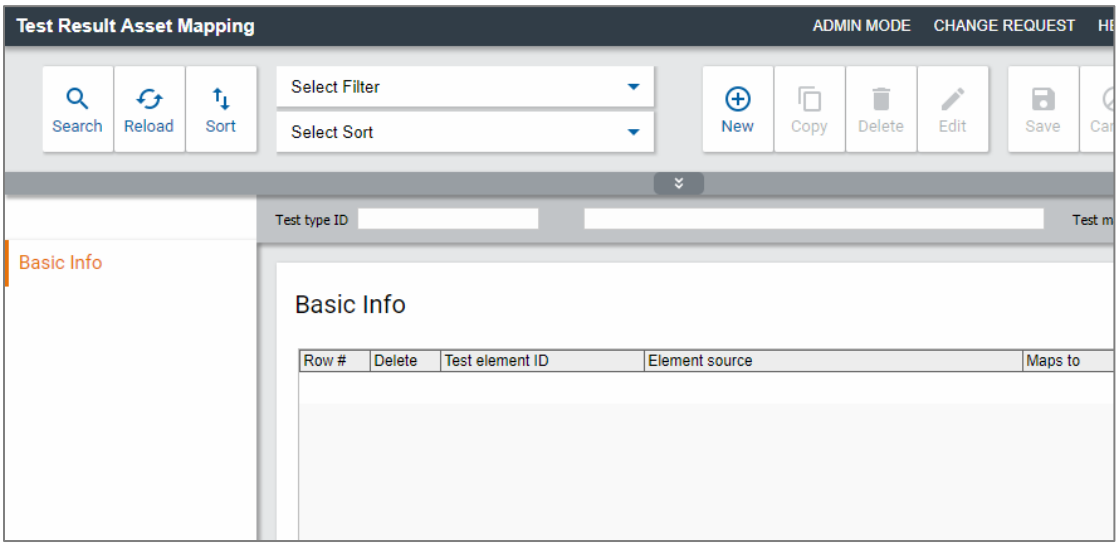
Test Results Asset Mapping

To set up asset attribute mapping, you must set up test result asset mapping first. This setup allows the system to know which test results will be mapped to which asset.

For more details on each field on this screen, refer to the help page for this screen.

To set up tests for mapping:

1. Open the Test Result Asset Mapping screen.



2. Create a new record and enter the test type ID that needs mapping in the **Test type ID** field.

3. Enter a **Test element ID** to be mapped. This can be created and defined on the Test Elements screen.

4. Enter the **Element Source**.

5. Enter the type of item to map to in the **Maps to** field. Each test element for a test type ID can be mapped to either the asset detail or a subsystem property.

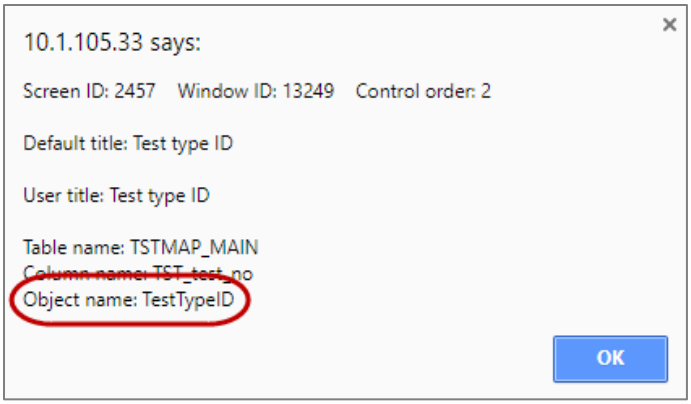
    - **Asset Detail:** If the mapping value is set to **ASSET DETAIL**, the **Object Name** field must be identified.

      To find the object name:

      a. Enable UI control in the web modules.

      b. Press and hold **Shift**, and click in the field where the value should go.

      c. The object name is displayed with other information about the field.



- **Subsystem Property:** If the mapping value is **SUBSYSTEM PROPERTY**, enter the required information in the **Subsystem**, **Property**, and **Value type** fields.
  - The Value type must match the configuration of the subsystem property. If this is not specified, this field is set as the value entered in the **Default value if not set** field. This is a choice-list with the options of **Numeric**, **Date**, and **Text**.
- **Default value if not set:** The value the system inputs into the related field if a value is not set.