

AssetOptics

Quick Start Learning Series

Preventive Maintenance Scheduling

Learning Objectives

1. Understand the Calendar-Based PM Scheduling process
 - Fixed Interval Calendar-Based PMs
 - Floating Interval Calendar-Based PMs
2. Understand the purpose of a Model Work Order
3. How to setup up a new PM Schedule
4. How PM Work Orders are Released
5. Understand the Meter-Based PM Scheduling process
6. Creating PM Schedules using both Calendars and Meters together
7. PM Group Schedules
8. PM Routes

Preventive Maintenance

AssetOptics provides the ability to create preventive maintenance (PM) work orders. These work orders can be manually released or automatically released via a scheduled batch APEX job. PM Work Order release dates can be calendar- or meter-based.

A **PM Schedule** links an **Equipment/Asset** record to a **Model Work Order** (i.e., a predefined work order) and specifies the interval by which the PM Work Orders are generated and released.

Definitions of Key Fields

1. **Asset ID** - Asset linked to the PM Schedule
2. **Model Work Order** – a predefined job plan, typically including instructions, Work Tasks and/or Planned Stock from which PM Work Orders are cloned
3. **Calendar Interval & Calendar Interval UOM** – The number of days, weeks, or months (unit of measure) between PM Work Orders
4. **Release Window** – Defines how many days in advance of the PM Due Date that the Work Order will be generated and released.
5. **Calendar Due Date Override** – Entering a date will override the Due Date for the next Work Order



PM Schedule PM-000001

Asset ID	Asset Description	Model Work Order	Model WO Description	PM Due Date	PM Status
Mash Mixer Pump	Mash Mixer Pump	WO-000001	Weekly Inspection on APV Lobe Pump	5/22/2020	Active

Details Related

Information

PM Schedule #	PM-000001
Model Work Order i 2	WO-000001 i
Model WO Description i	Weekly Inspection on APV Lobe Pump
Asset ID i 1	Mash Mixer Pump i
Asset Description i	Mash Mixer Pump
Space i	

Owner	Admin User
Default Work Order Owner i	Tom Technician
Default Account Assignment i	
PM Status i	Active
Revision i	0

PM Scheduling Information

PM Due Date i	5/22/2020
Release Window i 4	7 i
PM Work Order Release Date i	5/15/2020 i
End Date i	

Auto Release i	<input checked="" type="checkbox"/>
New Work Order Record Type i	
New Work Order Status i	Ready to Schedule

PM Schedule Type

Schedule by Calendar i	<input checked="" type="checkbox"/>
Schedule by Meter i	<input type="checkbox"/>

Floating Interval i	<input type="checkbox"/>
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PM Scheduling - Calendar Based

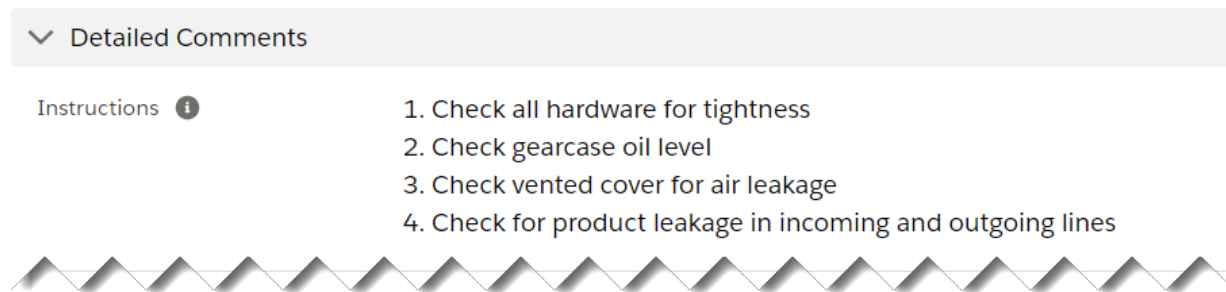
Calendar Interval i	1 i 3
Calendar Interval UOM i	Weeks i

Calendar Due Date i	5/22/2020
Calendar Due Date Override i 5	

Model Work Order

A Model Work Order is a preplanned job used by the PM Schedule to automatically generate Preventive Work Orders.

- A **simple** Model Work Order might include only Instructions entered in free format text (or no instructions at all).



Model Work Order

- A **complex** Model Work Order might include one or more Work Tasks any or all which may include Work Task Steps with Planned Hours and Crafts specified.

The screenshot displays a software interface for a Work Order. At the top, the work order is identified as 'WO-0000060' with a description of 'Annual Pump Refurb', a type of 'Preventive', and an asset group of 'APV Lobe Pump'. Below this, there are tabs for 'Details', 'Related', 'Lookup BOM', 'Create SIR', and 'Issue'. A section titled 'Work Tasks (3)' shows a list of three tasks:

Work Task ID	Description	WO
1 WT-0000059	Input Shaft Replacement	In
2 WT-0000060	Pump Seal Overhaul	In
3 WT-0000061	Valve Adjustment (Series 20x Lobe Pumps)	In

A modal window titled 'Work Task Steps' is open, showing a list of steps for a task. The modal includes a 'Complete Steps' section with a 'Mark All As Completed' toggle. The steps listed are:

- > Check condition of V-Belts
- > Check bearing and oil seals for wear
- > Check pump interior and cover for wear
- > Check rotors for wear
- > Check driven and drive pulleys for wear
- > Check overall condition of drive units
- > Make sure oil is changed regularly in drive units
- > Check shafts and rotor hubs for wear

Each step has a corresponding toggle switch, all of which are currently turned off. The modal also features 'Save' and 'Cancel' buttons at the bottom right.

Calendar-Based PM Scheduling Process

- **Fixed Interval PM Schedules:** The Due Date for the next Work Order is based on the Current Work Due Date + Scheduling Interval

Example: Monthly generator testing is due on the 1st of the month. June's Work Order was completed a week late, on 8 June. July's generator test (Work Order) is still due on July 1st. 12 Work Orders will be generated annually according to this PM Schedule regardless of when (or if) they are completed.

- **Floating Interval PM Schedules:** The Due Date for the next Work Order is based on the Last Work Order Completion Date + Scheduling Interval

Example: The monthly generator test is due on 15 October. The Work Order was completed on 24 October. The next preventive Work Order will be due a month later, on 24 November (not 15 November).

Calendar-Based PM Scheduling Process (cont'd)

- **Fixed Interval PM Schedules**

- Can have multiple Work Orders open at a time. The automated release process will continue to release Work Orders.
- Best suited for daily checklists and weekly/bi-weekly Work Orders.

- **Floating Interval PM Schedules**

- Will only have one Work Order open at a time. If the Work Order is not Completed, no further Work Orders will be released.

Setup a New PM Schedule

Three minimum (3) requirements to setup a new PM Schedule:

1. A Model Work Order
 - Setup a new, or use an existing Model Work Order
2. An Equipment/Asset tag (or Space)
3. Define the Scheduling Interval
 - How frequent to create a PM work order

New PM Schedule – Key Fields

New PM Schedule

Information

PM Schedule #

Owner

* Model Work Order WO-0000001

Default Work Order Owner Tom Technician

Model WO Description This field is calculated upon save

Default Account Assignment AAA Pump Service

Asset ID Mash Mixer Pump

Asset Description This field is calculated upon save

Space Search Spaces...

PM Status Active

Revision 0

PM Scheduling Information

PM Due Date This field is calculated upon save

Auto Release

Release Window 10

New Work Order Record Type Preventive

PM Work Order Release Date This field is calculated upon save

New Work Order Status Ready to Schedule

End Date

PM Schedule Type

Schedule by Calendar

Floating Interval

Schedule by Meter

PM Scheduling - Calendar Based

Calendar Interval 1

Calendar Due Date This field is calculated upon save

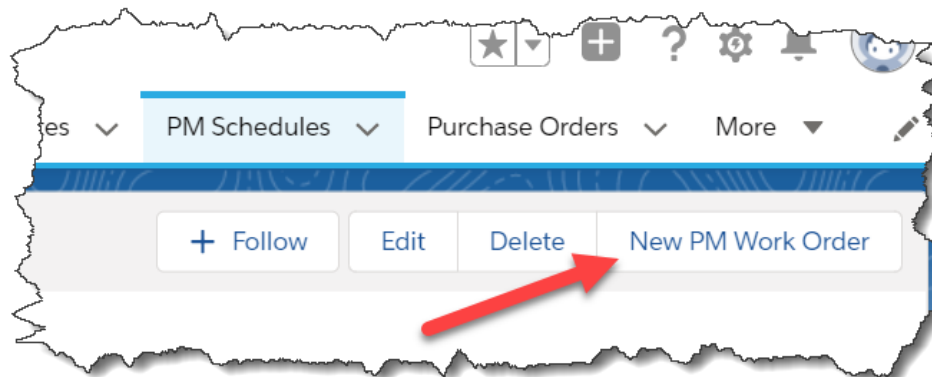
Calendar Interval UOM Months

Calendar Due Date Override 2/1/2021

PM Scheduling - Meter Based

Releasing PM Work Orders

- If the Auto Release field is checked (default), the PM Work Order will be automatically created on the **PM Work Order Release Date** via batch APEX (PM Work Order Release Date = PM Due Date – Release Window)
- A work order can be manually released by clicking the **New PM Work Order** button (The Permission Set “PM Schedules - Manually Release Work Orders” must be enabled for your userid)



Pausing a Calendar-Based PM Schedule

There are multiple approaches to stop the release of future Work Orders from a PM Schedule.

1. To permanently Stop, set the PM Schedule Status = “Inactive” to stop the automatic release of future Work Orders. If you desire to restart, set the Status back to Active and enter a Calendar Due Date override.
2. To temporarily Stop with a known restart date, simply enter a Calendar Due Date Override.

Meter-Based PM Schedules

- AssetOptics gives you the option of creating a PM Schedule based on a meter rather than a calendar.
- Like a Calendar-Based PM Schedule, a Meter-based PM Schedule requires a Model Work Order and Asset ID. It also requires you to specify the Meter associated with the Asset.
- Check the box for Schedule by Meter to create a Meter-Based PM Schedule. All Meter-Based PM Schedules are Floating Interval.

PM Schedule Type			
Schedule by Calendar	<input type="checkbox"/>		Floating Interval
Schedule by Meter	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Meter-Based PM Schedules (Cont'd)

- In the following example a 400-hour **Meter Schedule Interval** is specified on the PM Schedule. The **Meter Reading at Last Work Order Completion** was 150, therefore the **Meter Due Value** is 550.
- Average Use is calculated based on Meter Readings, and a **Projected Meter Due Date** is estimated.
- The user specifies a **Meter Release Threshold**, which is the minimum **Meter Interval % Complete** at which a PM Work Order can be generated.

PM Scheduling - Meter Based	
Meter ID ⓘ	M-000000
Meter Schedule Interval ⓘ	400.00
Meter UOM ⓘ	Hours
Last Meter Reading Value ⓘ	400.00
Last Meter Reading Date ⓘ	4/3/2020
Meter Reading at Last WO Completion ⓘ	150.00
Meter Due Value	550.00
Meter Due Value Override	
Meter Release Threshold ⓘ	90.00%
Meter Interval % Complete ⓘ	62.50%
Projected Meter Due Date	5/14/2020


PM Group Schedules

- **PM Group Schedule:** A special type of PM schedule wherein the user defines a hierarchy of fixed-interval PM schedules. The larger interval PMs override the smaller interval PMs, effectively suppressing the creation of work orders that would have otherwise fallen on the same date.
- **PM Group Detail:** The child record of the PM Group Schedule where you select the Model Work Orders and Monthly Intervals that define the Group Schedule.

PM Group Schedules (cont'd)

Example of the Group Details from a 24-month PM Group Schedule. In month 12, for instance, only the Annual PM Service is due; the Semi-Annual, Quarterly, and Monthly are suppressed.

Details **Related**

 PM Group Details (5) Settings Refresh New

5 items • Sorted by Monthly Interval • Updated a few seconds ago

	PM Group Det... ▾	Monthly Int... ↓ ▾	Model Work O... ▾	Model WO Description ▾	Next Due Date ▾	Release Wind... ▾	Next Release ... ▾	Cu
1	PMGD-002460	24	WO-0013727	Bi-Annual PM Service on Air Handler Unit	12/31/2021	3	9/30/2021	
2	PMGD-002459	12	WO-0013726	Annual PM Service on Air Handler Unit	12/31/2020	2	10/31/2020	
3	PMGD-002458	6	WO-0013725	Semi-Annual PM Service on Air Handler Unit	6/30/2021	1	5/31/2021	
4	PMGD-002457	3	WO-0013722	Quarterly PM Service on Air Handler Unit	9/30/2020	1	8/31/2020	
5	PMGD-002456	1	WO-0013724	Monthly PM Service on Air Handler Unit	10/31/2020	1	9/30/2020	

[View All](#)

PM Group Schedules (cont'd)

- Specify a day of the month or a week/weekday on which the work orders are due (e.g., second Tuesday of the month, last day of the month).
- Starting Month on a PM Group Schedule is the point in the preventive maintenance cycle at which the Status is set to Active.

PM Group Schedule
PMGS-000000

Day/Weekday Of Month	Day of the Month	On	Weekday	Asset ID	Asset Description
Day of the Month	last			Mash Mixer Pump	Mash Mixer Pump

Details Related

Information

PM Group Schedule ID	PMGS-000000	Owner	
Asset ID <i>i</i>	Mash Mixer Pump	Status <i>i</i>	Active
Asset Description <i>i</i>	Mash Mixer Pump	Starting Month <i>i</i>	5
Space		End Date <i>i</i>	

PM Work Order Due On

Day/Weekday Of Month <i>i</i>	Day of the Month	
Day of the Month <i>i</i>	last	
On <i>i</i>		
Weekday <i>i</i>		

PM Routes

- A PM Route enables the user to assign one Work Task to multiple Assets (or Spaces) and to specify a sequence of Route Stops, each corresponding to the individual Assets.
- The User has only to interact with a Route Work Order (Parent), but maintenance history is maintained for each Route Stop Work Order (Child).
- Useful when simple, repetitive preventive maintenance needs to be performed on a group of similar assets.
- It is recommended that the number of Route Stops be limited to the amount of work that a single user could complete in a single work event.

PM Routes (cont'd)

A typical use case might be the monthly inspection of a building's fire extinguishers. One PM Route can be used instead of eight PM Schedules. The Inspector can complete the Work Task Steps using a smart phone or tablet running the Salesforce mobile app.

	Route Stop ID	Equipment/Asset	Space	Standard Work Task	Planned Hours	Sequence
1	RS-000007	FEX-01		Monthly Fire Extinguisher Inspection	0.20	10
2	RS-000008	FEX-02		Monthly Fire Extinguisher Inspection	0.20	20
3	RS-000009	FEX-03		Monthly Fire Extinguisher Inspection	0.20	30
4	RS-000010	FEX-04		Monthly Fire Extinguisher Inspection	0.20	40
5	RS-000011	FEX-05		Monthly Fire Extinguisher Inspection	0.20	50
6	RS-000012	FEX-06		Monthly Fire Extinguisher Inspection	0.20	60
7	RS-000013	FEX-07		Monthly Fire Extinguisher Inspection	0.20	70
8	RS-000014	FEX-08		Monthly Fire Extinguisher Inspection	0.20	80