



# Planned Maintenance

## Planon Software Suite

Version: L105

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# About this Document

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## Contacting us

If you have any comments or questions regarding this document, please send them to: [support@planonsoftware.com](mailto:support@planonsoftware.com).

## Document Conventions

### **Bold**

Names of menus, options, tabs, fields and buttons are displayed in bold type.



### *Italic text*

Application names are displayed in italics.

### CAPITALS

Names of keys are displayed in upper case.

## Special symbols

	Text preceded by this symbol references additional information or a tip.
	Text preceded by this symbol is intended to alert users about consequences if they carry out a particular action in Planon.

# Table of Contents

About Planned Maintenance.....	11
Planned Maintenance - Concepts.....	12
Activity.....	12
Activity definition.....	12
Activity definition status.....	13
Activity status.....	13
Activity type.....	14
Assets in Planned Maintenance.....	14
Asset classification.....	14
Asset group.....	15
Budget definitions.....	15
Building element.....	15
Clustering.....	16
Condition-based maintenance.....	16
Contract activity definition.....	17
Contract lines.....	18
Contract service plan.....	18
Counters in Planned Maintenance.....	18
Deterioration curve.....	19
Expected costs.....	19
Functional class.....	20
Graphical planner in Planned Maintenance.....	20
Inspection regime.....	21
Order group.....	21
Overruling activity definition.....	21
Maintenance order.....	22

Maintenance planner.....	22
Maintenance plan.....	23
Maintenance plan group.....	23
Maintenance plan status.....	24
Maintenance regime.....	24
Predictive-based maintenance.....	25
Post-maintenance condition.....	26
Properties & contracts.....	26
Schedule.....	26
Scheduling method.....	27
Service plan.....	28
Archiving / de-archiving service plans.....	29
Technical classification.....	30
Trade.....	30
Time-based maintenance.....	30
Unit.....	30
User-definable classifications 1 and 2.....	31
Work type.....	31
Maintenance Library - Concepts.....	32
Asset activity definitions in Planned Maintenance.....	32
Asset service plan.....	32
Checklist items.....	33
Maintenance library.....	33
Standard activity definition.....	34
Survey activity definitions in Planned Maintenance.....	34
Standard service plan.....	34
Getting started with planned maintenance.....	36
Preconditions for setting up a maintenance library.....	37

Preparations in Planned Maintenance.....	38
Preparations in Assets.....	39
Preparing maintenance activity definitions (various regimes).....	39
Condition-based.....	39
Setting an actual condition for an asset.....	39
Predictive-based.....	40
Working with Maintenance Library.....	41
Adding a maintenance library.....	41
Adding a standard service plan to a maintenance library.....	42
Copying a maintenance library.....	42
Deep copying a maintenance library.....	42
Copying a standard service plan.....	43
Deep copying a standard service plan.....	43
Linking standard service plans to assets.....	44
Linking assets to a standard service plan.....	44
Linking standard service plans to a building element.....	45
Linking building elements to a standard service plan.....	46
Adding a standard activity definition to a standard service plan.....	46
Deep copying a standard activity definition.....	47
Linking a defects list to a standard activity definition.....	48
Adding checklist items to a standard activity definition.....	48
Working with Maintenance Planner.....	50
Adding a maintenance plan group.....	50
Adding a maintenance plan to a maintenance plan group.....	51
Linking properties to a maintenance plan.....	51
Linking contracts to a maintenance plan.....	52
Adding a service plan.....	52
Adding an activity definition to a service plan.....	53

Maintenance regime is time-based.....	54
Maintenance regime is predictive-based.....	54
Maintenance regime is non-cyclic.....	55
Maintenance regime is condition-based.....	56
Manually setting a schedule for a time-based activity definition.....	57
Viewing the schedule and activities of an activity definition.....	58
Replacing part of an existing time-based schedule.....	58
Replacing an existing predictive-based schedule.....	60
Setting a condition-based schedule for an activity definition.....	60
Rescheduling condition-based activities.....	63
Deep copying an activity definition.....	63
Copying asset location data to an activity definition.....	64
Adding expected costs to a maintenance activity definition.....	64
Applying the product requisition process.....	66
Manually adding standard activity definition(s) to a property maintenance plan.....	66
Adding the 'Apply standard maintenance activity definition' action to the layout.....	66
Changing field properties.....	67
Adding a standard activity definition to a property maintenance plan.....	67
Executing maintenance plans.....	69
Compiling a property-based maintenance plan.....	69
Compiling a contract-based maintenance plan.....	71
Checking start and end date-times of activity definitions after compiling.....	72
Checking a compiled maintenance plan which includes condition-based activity definitions.....	76
Checking a compiled maintenance plan with survey activity definitions.....	77
Recompiling a maintenance plan.....	78
Checking a recompiled maintenance plan with condition-based activity definitions.....	79
Checking a recompiled maintenance plan with non-cyclic survey activity definitions.....	80
Integrating condition-based and non-cyclic activity definitions.....	80

Moving assets to a new location.....	81
Deep copying a maintenance plan.....	81
Changing the status of a maintenance plan.....	82
Work balancing in the graphical planner.....	84
Opening the graphical planner.....	84
Activity definitions in the graphical planner.....	85
Displaying an activity definition's duration.....	86
Grouping activity definitions in the graphical planner.....	86
Modifying activity definition data in the graphical planner.....	87
Modifying multiple activity definitions in the graphical planner.....	88
Action on selection in the graphical planner.....	88
Customizing the period view of the graphical planner.....	89
Changing the view by clicking column headers.....	90
Graphical display of activities - legend.....	91
Viewing activity details in the graphical planner.....	92
Viewing costs, labor hours and order number in the graphical planner.....	92
Hiding empty rows from the graphical planner.....	94
Hiding disabled / postponed / canceled / overruled activities from the graphical planner.....	94
Adding non-recurring activities in the graphical planner.....	95
Selecting multiple maintenance activities in the graphical planner.....	95
Selecting future activities in the graphical planner.....	96
Outlining an activity's start date-time in the graphical planner.....	96
Moving activities in the graphical planner.....	97
Moving a single activity in the graphical planner.....	97
Moving multiple activities in the graphical planner.....	99
Deactivating activities in the graphical planner.....	99
Modifying an activity status in the graphical planner.....	100
Printing an overview of maintenance activities from the graphical planner.....	100



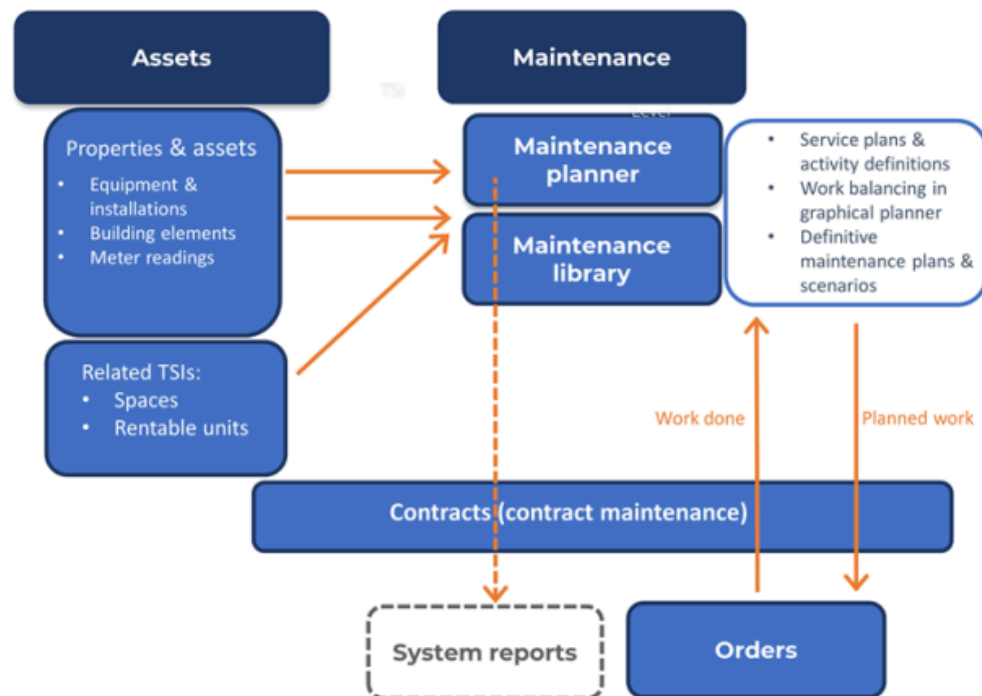
Generating maintenance orders.....	103
Viewing generated maintenance orders.....	104
Generating clustered maintenance orders.....	105
Deleting maintenance activities from clustered orders.....	108
Completing an activity.....	109
Canceling an activity.....	109
Viewing maintenance costs in order lines.....	110
Checking automatically assigned statuses of survey activity definitions.....	112
Scheduling automatic generation of maintenance orders.....	113
PPM profile.....	113
Criteria type.....	114
PPM cluster groups.....	114
Activity definition groups.....	115
Adding and running a PPM profile as a scheduled task.....	116
Reporting in Maintenance Planner.....	118
The Long-range cost survey report.....	118
Settings of the Long-range cost survey report.....	118
Forecasted resources for Maintenance Planner activities.....	122
Settings of the Forecasted resources for maintenance planner activities report.....	123
The Maintenance orders to be generated report.....	125
Settings for the Maintenance orders to be generated report.....	125
The Planned maintenance activities report.....	126
Settings for the Planned maintenance activities report.....	126
The Maintenance activities - schedule & costs report.....	127
Settings for the Maintenance activities - schedule & costs report.....	127
Planned Maintenance – Field Descriptions.....	128
Standard service plan fields.....	128
Checklist item fields.....	128

Maintenance plan group fields.....	129
Maintenance plan fields.....	129
Service plan fields.....	130
Activity definition fields.....	130
Expected costs fields.....	136
PPM profile fields.....	140
Index.....	143

# About Planned Maintenance

Planned Maintenance in Planon ProCenter allows you to plan preventive maintenance for your assets, reducing the unexpected costs of reactive maintenance. Planned Maintenance consists of two TSIs: [Maintenance library](#) and Maintenance planner.

## Overview



# Planned Maintenance - Concepts

Planned Maintenance includes two TSIs: **Maintenance Library** and **Maintenance Planner**. It also shares functionality with the Assets TSI.

In **Maintenance Library** you can add various libraries containing standard service plans and standard activity definitions. These standard service plans and standard activity definitions can subsequently be linked to assets in the Assets TSI. In **Maintenance Planner**, these standard service plans and standard activity definitions can be used to compile a maintenance plan.

## Activity

A scheduled maintenance task to be performed on an asset or building element as part of a maintenance plan. A maintenance order can be generated from each activity. Activities can also be clustered and together be assigned to a single maintenance order.

## Activity definition

An element in Planon ProCenter that defines a maintenance activity and includes detailed data on the preventive maintenance of an asset.

There are five types of activity definitions:

- On a generic level: **standard activity definitions**, which are added and maintained in **Maintenance Library**. Standard activity definitions are typically used for large groups of assets. Activity definitions that are based on standard activity definitions are added to a maintenance plan when it is compiled;
- On a more specific level: **asset activity definitions**, which are linked to an individual asset in **Asset Management**. Activity definitions that are based on asset activity definitions are added to a maintenance plan when it is compiled;
- Also on a specific level: **contract activity definitions**, which are linked to a contract line in **Contract Management**. Activity definitions that are based on contract activity definitions are added to a maintenance plan when it is compiled;
- On another specific level: **survey activity definitions**, which are linked to a survey element in [Survey Management](#) > [Condition Surveys](#). Activity definitions that are based on survey activity definitions are added to a maintenance plan when it is compiled;

- On the most specific level: **maintenance activity definitions** that are added specifically and directly to a maintenance plan in **Maintenance Planner** at the **Definitions & Schedules** selection level.

[Contract activity definition](#)





[Maintenance library](#)

[Maintenance regime is non-cyclic](#)

## Activity definition status

The extent to which activities are scheduled or re-scheduled in an activity definition.

In **Maintenance Planner**, activity definitions can assume four system statuses: **Unbalanced**, **Balanced**, **Postponed** or **Canceled**. These statuses are selected at the **Definitions & schedules** selection level > **Status transitions** action panel and they refer to activity scheduling as described below:

-  = balanced. This status means that the activity definition's activity scheduling is finalized, because its work has been balanced over time and against the linked budget;
-  = unbalanced. This status means that the activity definition's activity scheduling is not finalized, because its work has not been balanced over time and against the linked budget;
-  = postponed. This status means that scheduled activities are postponed. As a result, no maintenance orders can be generated;
-  = canceled. This status means that scheduled activities are canceled. As a result, no maintenance orders can be generated.

## Activity status

The phase a recurring or non-recurring activity is in.

In **Maintenance Planner**, activities can have four system statuses: **Planned**, **In progress**, **Completed** and **Canceled**. These statuses are selected at **Details > Maintenance activities**.

Activity statuses are affected by the statuses of generated maintenance orders.

If a maintenance order is in either the **Technically completed** or the **Administratively completed** status, the corresponding activities are assigned the **Completed** status, with the exception of those that are in the **Canceled** status. If a maintenance order is assigned the **Canceled** status, the corresponding activities are also canceled, with the exception of those that are in the **Completed** status.

[Completing an activity](#)

[Canceling an activity](#)

## Activity type

The type of maintenance associated with the activities generated from an activity definition.

There are four types of activity: routine, statutory, other mandatory and replacement.

- **Routine:** the activity must be carried out, but no specific agreement or regulation is applicable;
- **Other mandatory:** the activity must be carried out due to agreements (e.g. with an insurance company, to comply with warranty conditions, company policy, etc);
- **Statutory:** the activity is mandatory by law;
- **Replacement:** the activity must be carried out in order to replace the relevant asset;

[Adding an activity definition to a service plan](#)

## Assets in Planned Maintenance

Assets are items of value owned by an organization. In Planon ProCenter they are registered in Assets .

The Assets TSI allows you to maintain data on assets and to keep track of their locations and owners. With regard to asset maintenance, this TSI allows you to make the necessary preparations for compiling maintenance plans for assets and building elements in **Maintenance Planner**.

In **Maintenance Planner**, basic functionality for assets and building elements is also available, at **Activity filters > Assets**. This selection level only displays assets and building elements that are linked to the properties and contracts in the selected maintenance plan.

## Asset classification

A functional and hierarchical grouping of assets that require planned preventative maintenance. The individual items in the asset classification have their own descriptions and codes.

Asset classifications are added and maintained in Supporting data > **Asset classification** or in **Asset Management** by the Planon administrator.

They can subsequently be selected in Maintenance Planner > Asset filters. Different methods of asset classification are used for different types of assets. If you select an asset classification at **Asset filters** and subsequently drill down to **Definitions & schedules**, only the activity definitions with assets belonging to that asset classification are displayed in the elements list.

#### Example

An asset classification can include categories such as: Roofs, Ceilings, Walls, Lighting, Security etc.

## Asset group

A functional and hierarchical grouping of assets that require planned preventative maintenance. An asset group is one of three types of item groups an asset can simultaneously belong to. The other two types are purchase item group and catalog item group. The individual items in an asset group have their own descriptions and codes.

Asset groups are added and maintained by the Planon administrator in Supporting data > **Item groups** or in **Asset Management**. They can subsequently be used in Maintenance Planner > Asset filters. If you select an asset group at **Asset filters** and subsequently drill down to **Definitions & schedules**, only the activity definitions with assets belonging to that asset group are displayed in the elements list.

## Budget definitions

The financial resources from which maintenance is financed. Budget definitions for maintenance activities are maintained in Supporting data > **Budget definitions**. In **Maintenance Planner**, budget definitions can be linked to activity definitions. Based on these budget definitions, maintenance budgets can be generated in the Budgets TSI.

## Building element

An essential part of a building that protects the building occupants and affects the indoor environment.

In Planon ProCenter, building elements form a part of the company assets, which are added and maintained in Assets.

#### Examples


- window frames
- outer walls
- inner walls
- roof covering

- floor slabs
- doors

## Clustering

The grouping together of several maintenance activities by applying certain criteria, with the purpose of generating one maintenance order per 'cluster' of activities. Clustering is performed automatically according to several system defined criteria, such as property or contract line. In addition, you can select optional clustering criteria, such as rentable unit, floor, space etc. See [Generating clustered maintenance orders](#) for more information.

In **Maintenance Planner**, activities are clustered by clicking the **Generate clustered orders** toolbar button at **Definitions & schedules**. The generated maintenance order with its clusters of activities becomes available in the Work Orders TSI.

 If you want to schedule the generation of maintenance orders with clustering as an *automated process*, you can implement the settings and use the procedures described in [Scheduling automatic generation of maintenance orders](#) and linked topics.

### [Generating clustered maintenance orders](#)

## Condition-based maintenance

Maintenance that is due when a certain predetermined deterioration of an asset's or building element's condition is reached. Condition-based maintenance is applicable to assets and [building elements](#) (parts of buildings).

Condition-based maintenance is prepared in [Survey Management > Condition Surveys](#) and/or the **Assets** TSI, where condition data is added and updated. In the Assets TSI you can also link a deterioration curve to an asset or building element. A condition-based [maintenance regime](#) is assigned to an asset / building element via a linked standard activity definition or asset activity definition.

### Example

- A surveyor inspects the window frames on the outer walls of a building and assesses their condition by awarding each of them a certain condition score. If the observed condition has passed a certain predefined point, condition-based maintenance is required.
- The surveyor enters survey data, including the observed condition score, directly in Planon ProCenter **Condition Surveys** or in a hand-held surveying device. If he uses a hand-held device, the data can be exported to Planon ProCenter [Survey Management > Condition Surveys](#).
- From **Condition Surveys** a survey manager processes the survey data to update **Asset Management** with the latest condition scores.



- In **Assets** , the asset's or building element's maintenance is prepared in a standard service plan with condition-based standard activity definitions or asset service plan with condition-based asset activity definitions. A [deterioration curve](#) is linked to the asset or building element.
- Subsequently, a maintenance plan is compiled in **Maintenance Planner** based upon the latest information in **Assets** . Maintenance activities are scheduled, using the condition-based maintenance regime and the deterioration curve.
- Maintenance orders can be generated to bring the condition of the surveyed assets and building elements to the required standard.

[Adding an activity definition to a service plan](#)

[Deterioration curve](#)


[Schedule](#)

## Contract activity definition


One of five types of activity definition. This type is directly added to a contract service plan in **Contracts** .

In **Contracts** , contract activity definitions are added to contract lines at SLA scopes & activities > Contract activity definitions. Contracts can be linked to maintenance plans in **Planned Maintenance** .

After a maintenance plan is compiled in **Planned Maintenance** , contract activity definitions are added to the maintenance plan as 'regular' activity definitions. During the compilation process, the contract line linked to the contract is used to identify to which maintenance plan the activity definitions must be added.

 In the maintenance plan, activity definitions that are based on contract activity definitions are not easily recognizable as such. This may cause problems when the maintenance planner edits an activity definition's period and subsequently generates orders in **Planned Maintenance** .

For example: the maintenance planner can manually adjust the start-/ end date of the activity definition to an extent that the linked contractual period (as defined in the contract line) is no longer covered. This would result in orders without a contractual basis. Therefore, maintenance planners can be warned or stopped by the system when making changes to this type of activity definition. Planon administrators can make a setting to either show a warning or actually prevent users to plan outside the contractual period, with the **Prevent activity definition period from falling outside contract line period?** setting in **Field definer** .

 See the *Field definer* user documentation for more information on this setting on the business object settings of the **Base activity definitions** business object.

[Activity definition](#)

[Contract service plan](#)

[Standard activity definition](#)

[Contract lines](#)

## Contract lines

The specific financial agreements associated with a contract. A contract can have multiple contract lines. Each contract line is linked to one specific property, so a contract can be linked to several properties via its contract lines.

Contract lines are added to a contract in the Contracts TSI at **Contract details > Contract lines**. In **Maintenance Planner** you can view the contract lines of the selected contract at **Asset filters > Contract lines**.

[Contract activity definition](#)

## Contract service plan

One of four types of service plan. This type is associated with contractual maintenance and therefore directly linked to a contract line in **Contracts**.

Contract service plans are added and maintained in the Contracts TSI, at the **Contract line details** selection level. They are used to compile maintenance plans in **Maintenance Planner**.



You can archive a Contract service plan. For more information, see [Archiving / de-archiving service plans](#).

[Contract activity definition](#)

[Service plan](#)

[Standard service plan](#)

[Compiling a property-based maintenance plan](#)

## Counters in Planned Maintenance

A counter is a device assigned to an asset that continuously records ascending or descending values. Counters are used in predictive-based maintenance to calculate the relevant moment for an asset's preventative maintenance.

Counters are added and maintained in the Meters TSI.

### Example

Assets, such as copiers, printers, fuel tanks or company cars, are often equipped with one or more counters. For example: counters that measure kilometers, energy or fuel consumption or operational hours.

[Predictive-based maintenance](#)

[Maintenance regime](#)

[Maintenance regime is condition-based](#)

## Deterioration curve

A set of deterioration coordinates that together form a curve which can predict the deterioration period of an asset or building element.

Authorized users can add and maintain deterioration curves in Supporting data > **Deterioration profiles**. A deterioration curve can subsequently be linked to an asset or building element in Assets . When a maintenance plan is compiled in **Maintenance Planner** that includes this asset or building element, maintenance is scheduled on the basis of the linked deterioration curve.

[Condition-based maintenance](#)

[Maintenance regime](#)



[Compiling a property-based maintenance plan](#)

## Expected costs

The costs that are expected to occur for each maintenance activity belonging to a maintenance activity definition. Expected costs can be one of three types: **Additional costs**, **Material costs** and **Labor hour costs**.

In **Maintenance Planner**, expected costs are added to the selected maintenance activity definition at Details > Expected costs. Each type of maintenance costs is represented by its own icon in the elements list:

-  Additional costs

-  Material costs
-  Labor hour costs

When maintenance orders are generated for an activity definition, any associated expected costs are copied to the estimates and order lines of the generated maintenance orders in Work Orders .

For the maintenance activity definition costs you can specify whether the actual price (as defined on the product) should be used.

Select **Yes** in the Details > Expected costs > Use actual prices field.

The actual product price is applied, only if the **Product requisition process** is applied on the **Standard activity definitions** level in the Maintenance library.

However, if the **Product requisition process** is not applied, the **Use actual prices** option is disabled and the prices as defined at the material costs are used.



If an activity definition is deleted, any linked expected costs are also deleted.

## Functional class

The division of a property according to the function of its constituent parts.

In **Maintenance Planner** the functional class of an activity definition can be selected in the **Functional class** field at the **Definitions & Schedules** selection level. Functional classes are maintained in Supporting data > **Pick lists**.

### Example

The functional class for maintenance activities could include items such as inner walls, outer walls, roofs, installations, sanitary facilities, car parks etc.

## Graphical planner in Planned Maintenance

A graphical timetable that depicts the recurring and non-recurring maintenance activities of the selected maintenance plan.

In **Maintenance Planner**, the graphical planner at **Definitions & schedules** supports two important tasks:

- work balancing
- cost planning

Additionally, it facilitates quick (re)scheduling of maintenance activities. By clicking an activity in the schedule, you can easily drag-and-drop it to a more convenient date and time. For more information see [Work balancing in the graphical planner](#).



Like all actions in configurable Planon ProCenter TSIs, actions that can be performed in the graphical planner, such as scheduling, activating, deactivating or moving activities, are

authorizable. Planon administrators can use the **Authorization** TSI to give or deny end users access to these actions in the graphical planner.

## Inspection regime

The necessity to inspect an asset, as specified in official rules and regulations.

### Example

An inspection regime indicates if inspection is needed on a regular basis for a certain purpose, such as legal, insurance or warranty obligations etc.

## Order group

The thematic group to which an order belongs.

Order groups are used to classify orders into meaningful categories. An order group is a hierarchical element which means that you can also add sub order groups.

### Example

You can for example add order groups for Housing, Services, Facilities and ICT.

## Overruling activity definition

If an activity definition is linked to the same [service plan](#) and [asset](#) as another activity definition [and](#) it also includes equivalent activities, but is just linked to a different schedule, you can let it *override* the other activity definition. By letting an activity definition be overruled by another identical activity definition, you avoid generating unnecessary, duplicate maintenance activities.

In **Maintenance Planner**, at **Definitions & Schedules > Activity definitions**, you can select overruling activity definitions in the **Overruled by schedule from...** field. You can specify the margins for overruling in the **Period of overruling schedule** field.



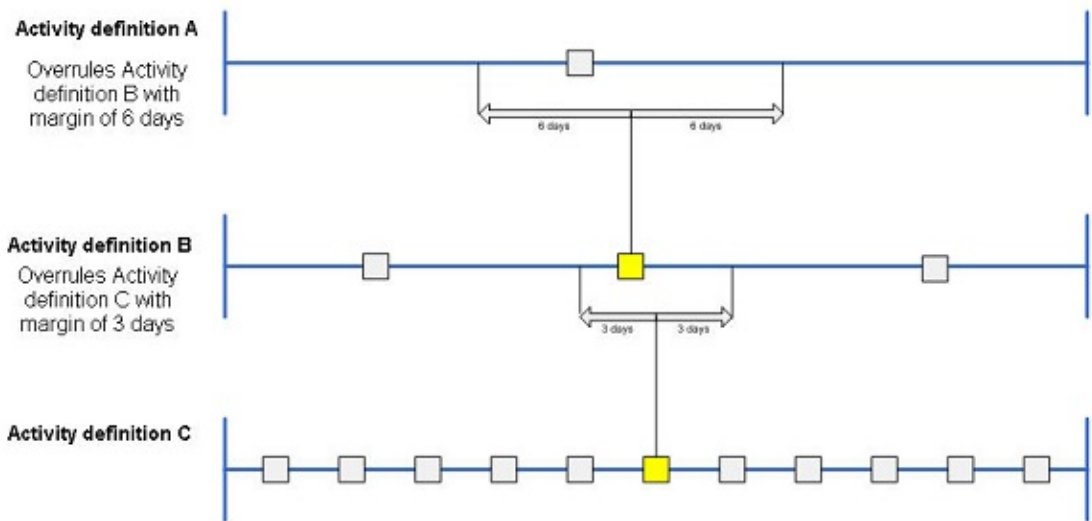
Activity definitions with different maintenance regimes can also overrule each other, with one exception: activity definitions with a **Non-cyclic** maintenance regime cannot be overruled.

### Example

Three activity definitions, A, B and C are linked to the same asset and service plan:

Activity definition B is overruled by Activity definition A, within a margin of plus or minus six days.

Activity definition C is overruled by Activity definition B, within a margin of plus or minus three days. If Activity definition B is deactivated, Activity definition A will overrule Activity definition C.



[Adding an activity definition to a service plan](#)

[Deep copying a standard service plan](#)

[Maintenance regime is time-based](#)

## Maintenance order

A (*planned*) maintenance order or **PPM order** is generated in **Maintenance Planner** and added in **Work Orders** for a single maintenance activity or cluster of activities in a definitive maintenance plan.

In **Maintenance Planner**, you can generate maintenance orders are generated at **Definitions & Schedules**. These orders can subsequently be monitored and their statuses updated in **Work Orders**.

It is also possible to schedule the generation of maintenance orders as an *automated process*. As part of this functionality, you have to create a **PPM profile**, which defines the parameters for the scheduled, automated PPM order generation. Generating maintenance orders as an automated, scheduled task (for example on a monthly basis), reduces human intervention and errors to a minimum.

[Generating maintenance orders](#)

[Scheduling automatic generation of maintenance orders](#)

## Maintenance planner

A TSI designed to plan all preventative maintenance for the assets and building elements associated with properties or contracts. Preparations for populating this TSI with data can be made in the [Maintenance Library](#) TSI.

[Working with Maintenance Library](#)

[Working with Maintenance Planner](#)

## Maintenance plan

A scheme containing all preventative maintenance for the assets and building elements that are linked to one or more properties or contracts in a specific period, usually a year. A maintenance plan is often based on a maintenance plan from the previous year.

Maintenance plans can be part of a group of maintenance plans. A 'blank' maintenance plan is first added in **Maintenance Planner** at the **Maintenance plans** selection level. A maintenance plan is subsequently populated with content by compiling it: this means including the standard service plans, asset service plans, contract service plans, specific service plans and all corresponding activity definitions that are available for the properties and contracts linked to the maintenance plan. Maintenance plans can be assigned various statuses: **In preparation**, **Active** and **Closed**.

[Maintenance plan group](#)

[Maintenance plan status](#)

[Adding a maintenance plan to a maintenance plan group](#)

[Linking properties to a maintenance plan](#)

## Maintenance plan group

A group of maintenance plans, for one or more properties and for a specific period of time.

Initially, all the maintenance plans in the group are just scenarios. If these scenarios fall within the same period of time, only one of them can be selected to become the definitive maintenance plan, for which activities and maintenance orders are generated. The other maintenance plans in the group remain scenarios which are only used for reference purposes.




[Maintenance plan](#)

[Maintenance plan status](#)

## Maintenance plan status

The phase a maintenance plan is in.

In **Maintenance Planner**, maintenance plans are assigned the following system statuses:

-  : In preparation
-  : Active
-  : Closed

If assigned the **Active** status, the maintenance plan must be made definitive by selecting **Yes** in the **Definitive (Y/N)** field, in order to be able to generate maintenance orders.



If you make a maintenance plan definitive that has linked asset condition details, Planon ProCenter will check other definitive maintenance plans with activity definitions in the **Unbalanced** or **Balanced** status for the same asset condition details. If such activity definitions exist, Planon ProCenter will change the status of the activity definitions in the current plan to **Cancelled** and display a warning.

[Maintenance plan](#)

[Maintenance plan group](#)

[Changing the status of a maintenance plan](#)

## Maintenance regime

A rule which determines how often maintenance activities are to be performed for an asset or building element.

An asset's maintenance regime is specified in its linked [activity definition](#). Maintenance regimes can be:

- Time-based → where preventative maintenance is repeated at predefined intervals;
- Predictive-based → where maintenance is performed on a piece of equipment whenever its counter reaches a certain value;
- Condition-based → where maintenance is performed on an asset or building element after its condition has deteriorated to a certain, predetermined level;



- Non-cyclic → where a building's condition survey reveals that one or more non-repetitive (maintenance) activities are required, aimed at instantly improving the condition of building elements or assets.

[Counters in Planned Maintenance](#)

[Deterioration curve](#)

[Adding an activity definition to a service plan](#)

[Moving activities in the graphical planner](#)

[Compiling a property-based maintenance plan](#)

[Predictive-based maintenance](#)

[Time-based maintenance](#)

[Adding a standard activity definition to a standard service plan](#)

[Maintenance regime is non-cyclic](#)

## Predictive-based maintenance

If you need a scheduling method based on assets reaching a certain, predefined 'consumption', for example based a number of operational hours, kilometers etc, you can schedule predictive maintenance. To be able to work with predictive maintenance, it is necessary to regularly enter counter readings in the **Meters** TSI for the relevant assets. With these counter readings, the asset's consumption can be calculated. Each time new counter readings are added, the asset's consumption is updated and the predictive-based maintenance activities in the maintenance plan are adjusted accordingly.

If an asset requires predictive-based maintenance, the schedule and maintenance regime specified in the activity definition must also be predictive-based. Additionally, the scheduling method must be **Variable**.

See also [Maintenance regime - predictive-based](#).

[Counters in Planned Maintenance](#)

[Scheduling method](#)

[Maintenance regime](#)

[Time-based maintenance](#)

[Schedule](#)

## Post-maintenance condition

The condition that an asset is required to be in after planned maintenance has taken place.

In **Maintenance Planner**, you can assign a post-maintenance condition to an activity definition at **Definitions & Schedules** in the **Post-maintenance condition** field. Post-maintenance conditions are added and maintained in Supporting data .

## Properties & contracts

A selection level in **Maintenance Planner** showing the properties and contracts that are linked to a maintenance plan.

**Properties & Contracts > Properties** displays:

- Properties that you linked directly to a maintenance plan;
- Properties and their subproperties that belong to the contract lines that are linked to the maintenance plan;
- Properties belonging to the assets or building elements (via their asset locations) that are linked to the contract service plans in a compiled maintenance plan;
- Properties that belong to existing activity definitions from previous compiled contract-based maintenance plans.

**Properties & Contracts > Contracts** displays:

- Contracts that you linked directly to a maintenance plan.

## Schedule

The **schedule** is the timetable linked to an activity definition. The graphical planner shows a representation of the schedule, displaying all the maintenance activities that are scheduled for the activity definition.

The timetable of an activity definition can contain activities that are either purely time-based, condition-based or predictive-based:

- A **time-based** schedule allows a maintenance activity to be set to occur hourly, daily, weekly, monthly, yearly or on specific dates.
- A **predictive-based** schedule allows maintenance activities to be planned for the asset after a specific consumption of material or energy is estimated in Planon ProCenter **Assets > Meters** .

- A **condition-based** schedule allows maintenance activities to be planned for the asset or building element after their condition scores indicate a certain, predefined deterioration.


For activity definitions, time-based, condition-based and predictive-based schedules can be selected in **Maintenance Planner** at **Definitions & schedules**.

For standard activity definitions, time-based, condition-based and predictive-based schedule can be selected in the **Maintenance Library** at **Standard activity definitions**.

For asset activity definitions, time-based, condition-based or predictive-based schedules can be selected in **Assets** at **Activities / registrations**.

#### Schedule examples

1. Time-based schedule: Daily -> every 2 days
2. Time-based schedule: Weekly on Monday, Tuesday and Wednesday
3. Time-based schedule: Monthly on day 5
4. Predictive-based schedule: The asset is a company car. It is linked to an activity definition with a predictive-based schedule and maintenance regime. This car requires an overhaul after every 12,000 miles. Based on the data entered in **Meters** for the car's counter, Planon ProCenter calculates when the next overhaul should take place and schedules a maintenance activity on the graphical planner.
5. Condition-based schedule: see [Condition-based maintenance](#).

 Regarding time-based-scheduling, it is good to know that if you select **Monthly, Every month, on day 31**, Planon will *automatically* schedule activities on the last day of each specific month. So this could also be day 28, 29 or 30.

[Time-based maintenance](#)

[Predictive-based maintenance](#)

[Condition-based maintenance](#)

## Scheduling method

A method assigned to an activity via its activity definition, which determines how the start dates of future activities are affected if an end user modifies the start date-time of the activity, or sets the status of a previous activity to completed.

In **Maintenance Planner** a scheduling method is selected at **Definitions & Schedules > Activity definitions** in the **Scheduling method** field.

There are three methods available in the scheduling method field:

- **Variable** method: Changing the start date of an activity scheduled via the selected activity definition *does not change the start and end dates of future activities* scheduled in the same activity definition.

- **Fixed** method: Changing the start date of an activity scheduled in the selected activity definition *changes the start dates of future activities* scheduled via the same activity definition accordingly. For example, if you put the start date back by two days, the start dates of other activities are also put back by two days.
- **Fixed completion** method: Changing the completion date of an activity scheduled via the selected activity definition *causes the start date of the next activity scheduled via the same activity definition to change accordingly*. For example, if you put the completion date back by one month, the start date of the next scheduled activity is also put back by one month.



If an activity definition is assigned the **Fixed completion** scheduling method, only 1 maintenance order can be manually generated at a time and only if the previous maintenance order is in **Technically completed** / **Administratively completed** status. If relevant, the start dates of future activities are moved forward or put back in accordance with the changes to the intervals between the activities.



If a maintenance activity in a **Fixed completion** sequence has already been executed, but setting this activity to the **Completed** status takes longer than anticipated, the actual completion is moved to a later date. As a result, future activities are also delayed. If this is not what you want, you can *antedate* the completion of this latest maintenance activity, by giving it a completion date prior to that of the order. You do this via the **Actual completion date** field of the maintenance activity. Antedating the activity will not affect the **Technically completed** date of the related maintenance order. However, it will make sure that the start date of next activity in line is based on the correct **Actual completion date** of the previous maintenance activity.

#### Predictive-based maintenance

## Service plan

A group of associated activity definitions which together constitute a plan towards maintaining specific assets or building elements.

Service plans are added to a maintenance plan in Maintenance Planner > Activity filters > Service plans.



- Planon administrators can add, copy, delete, modify or archive standard assets or standard building elements in Maintenance Library > Standard Assets.
- You can archive a Service plan. For more information, see [Archiving / de-archiving service plans](#).

#### Contract service plan

#### Asset service plan

## Archiving / de-archiving service plans

You can archive any type of service plans in the following TSI's:

- [Standard service plan](#) can be archived in **Maintenance library**.
- [Asset service plan](#) can be archived in **Assets** and Assets Pro .
- [Contract service plan](#) can be archived in Contracts .
- [Service plan](#) can be archived in Planned Maintenance

When a service plan is archived, all related activity definitions are also archived.

### Facts about archiving:

- You cannot add activity definitions to an archived service plan.
- You cannot link archived service plans to assets. If the service plan is first linked to an asset and then archived, the asset will no longer be visible in the linked service plan.
- If you archive an asset service plan for a particular asset and then deep copy the asset, the archived service plan is not included in the deep copy.
- If a contract service plan is created and archived in Addresses , and the contract-based maintenance plan is compiled in Planned Maintenance , service plans cannot be created for the archived contract service plan.
- If a standard service plan is created and archived in **Maintenance library** , and the property-based maintenance plan is compiled in Planned Maintenance , the service plan cannot be created for the archived standard service plan (the archived standard service plans and archived asset service plans are not included.)

### Facts about updating archived activity definitions

The **End date-time** field of activity definitions will be updated in the following scenarios:

- If an activity definition or a service plan of any asset is archived in Assets Pro and the field **Is planned maintenance required?** is set to **No** for that asset, the activity definitions that have no orders will be removed and the **End date-time** field of maintenance activity definitions that have orders will be updated.
- If an activity definition or service plan is archived in Assets Pro and the assets **Property** field is edited, the activity definitions of that asset will be ended and the **End date-time** field is filled.
- If the **Property** in the activity definition is edited in Planned Maintenance and compiled, the following happens:
  - If you archive an activity definition and then compile the maintenance plan, the activity definition is ended and a new activity definition is created, which is not archived (because the service plan is not archived).
  - If you archive a service plan and then compile the maintenance plan, it will end the activity definition and create a new activity definition that is archived, because the service plan is archived.

### Facts about de-archiving (retrieving):

- If a (standard) service plan is de-archived, the application will ask for confirmation to also retrieve the service plan related activity definitions. If you select **Yes**, all related (compiled) activity definitions are also de-archived. If you select **No**, only the (standard) service plan is de-archived.

- You cannot de-archive the activity definitions if the service plan remains archived.

## Technical classification

A technical and hierarchical grouping of assets that require planned preventative maintenance. The individual items in the technical classification have their own descriptions and codes.

Technical classifications are added and maintained in **Asset Management** by the Planon administrator. They can subsequently be selected in **Maintenance Planner > Asset filters**. Different methods of technical classification are used for different types of assets. If you select a technical classification at **Asset filters** and subsequently drill down to **Definitions & schedules**, only the activity definitions with assets belonging to that technical classification are displayed in the elements list.

## Trade

In **Maintenance Planner**, maintenance activities can be filtered according to the trade with which they are associated, such as heating, plastering, painting, electrical, etc.

In **Maintenance Planner** trades are added or selected at **Activity filters > Trades**.

## Time-based maintenance

Maintenance that is required to take place at certain predefined intervals.

If an asset / building element requires time-based maintenance, the corresponding schedule and maintenance regime laid down in the activity definition must also be time-based.

[Predictive-based maintenance](#)

[Schedule](#)

[Maintenance regime](#)

## Unit

A unit of measurement on which cost calculations are based. For example: pieces, dozen, m2, m3 or kilo.

You can maintain units in **Supporting data > Pick lists**.

## User-definable classifications 1 and 2

Selection steps and corresponding reference fields that refer to customized maintenance activity classifications in maintenance planning. These selection steps and reference fields can be named as desired.

In **Maintenance Planner** you can filter according to a user-definable classification of maintenance activities at **Activity filters > User-definable classification 1** or **User-definable classification 2**. User-definable classifications are maintained in Supporting data > **Pick lists**.

## Work type

In **Maintenance Planner**, maintenance activities can be filtered according to the type of maintenance (work) with which they are associated, such as deferred maintenance, preventive maintenance or maintenance connected with a renovation.

In **Maintenance Planner** work types can be selected at **Activity filters > Work types**. Work types are maintained in Supporting data > **Pick lists**.

# Maintenance Library - Concepts

This section describes the concepts available in **Maintenance Library** and how they interact with each other.

See the links below for more information:

- [Asset activity definition](#)
- [Asset service plan](#)
- [Maintenance library](#)
- [Standard activity definition](#)
- [Survey activity definition](#)
- [Standard service plan](#)

## Asset activity definitions in Planned Maintenance

One of five types of activity definition. This type is directly added to an asset service plan in the **Assets** TSI.

In **Assets**, asset activity definitions are added to assets at **Activities / registrations > Asset activity definitions**.

In **Maintenance Planner**, asset activity definitions are used to compile maintenance plans. The asset location that is linked to the asset is used to identify the maintenance plan to which must be compiled.



Asset activity definitions cannot have a **non-cyclic maintenance regime!**

[Asset service plan](#)

## Asset service plan

One of three types of service plan, this type is directly linked to an asset in the **Assets** TSI.

Asset service plans are added and maintained in **Assets** at the **Asset details** selection level and are used to compile maintenance plans in **Maintenance Planner**.

You can archive an asset service plan. For more information, see [Archiving / de-archiving service plans](#).



[Asset activity definitions in Planned Maintenance](#)

[Service plan](#)

[Standard service plan](#)

## Checklist items

Additional technical or other information on a maintenance activity, intended for the tradesperson carrying out the maintenance.

Checklist items can be viewed and added to standard activity definitions in **Maintenance Library > Details**. When maintenance orders are generated in the **Work Orders** TSI, the checklist information can be included in a report (form) for the person carrying out the maintenance. For field engineers working with Planon Mobile Field Services / Planon AppSuite, checklist information becomes available on their mobile devices.

[Adding checklist items to a standard activity definition](#)

## Maintenance library

A collection of standard service plans with standard activity definitions, often created and supplied by an external party carrying out the maintenance. The use of maintenance libraries is not mandatory, but they are useful for the compilation of comprehensive maintenance plans in **Maintenance Planner**.

In **Maintenance Library**, maintenance libraries are added and maintained at the **Maintenance Libraries** selection level. The standard service plans and standard activity definitions that are included in a maintenance library can be linked to assets in **Assets**.

### Example

Each internal or external party that is responsible for the maintenance of assets can add its own maintenance library with standard service plans to the **Maintenance Manager > Maintenance Library** TSI. So the party in charge of servicing the air-conditioning units may add one library, while the company contracted to do the paintwork may add another library.

[Activity definition](#)

[Standard service plan](#)

[Standard activity definition](#)

## Standard activity definition

A 'template' for a maintenance activity to be performed on assets that require planned preventative maintenance.

Standard activity definitions cannot be added separately: they must be added to a selected standard service plan in **Maintenance Library** at the **Standard activity definitions** selection level. Standard activity definitions are linked to assets in the Assets TSI via their corresponding standard service plan. After being linked to an asset, they are used to compile maintenance plans in **Maintenance Planner**.



Planon ProCenter ensures that field changes are automatically implemented in all types of activity definition. Thus, the fields of standard activity definitions and other activity definitions remain identical. Example: if a field attribute for one type of activity definition is changed, an identical field change is automatically implemented in all standard activity definitions.

[Contract activity definition](#)

[Maintenance library](#)

[Adding a standard activity definition to a standard service plan](#)

## Survey activity definitions in Planned Maintenance

Survey activity definitions are used to generate maintenance activities that ensue from a condition survey. This type of activity definition includes detailed data on the condition of an asset or building element.

In Planon ProCenter, survey activity definitions are added in the **Condition Surveys** TSI, at **Observations**. Survey activity definitions can only have one type of:

- Maintenance regime - **Non-cyclic**;
- Scheduling method - **Variable**.



The maintenance regime of a survey activity definition is read-only and cannot be modified. After a survey is processed and included in a compiled maintenance plan in Maintenance Planner, survey activity definitions become regular activity definitions, whose maintenance regime can be modified. As soon as orders have been generated for these activity definitions, their maintenance regime becomes read-only again.

## Standard service plan

A standard service plan is a 'template' service plan that is designed for a specific type of asset or building element, containing a set of standard activity definitions. Standard

service plans are linked to assets/building elements in Assets and used to compile maintenance plans in **Maintenance Planner**.

Standard service plans are part of a maintenance library. In **Maintenance Library**, standard service plans can be added to maintenance libraries and also copied at the **Standard service plans** selection level.



You can archive a Standard service plan. For more information, see [Archiving / de-archiving service plans](#).

[Contract service plan](#)

[Asset service plan](#)

[Maintenance library](#)

[Compiling a property-based maintenance plan](#)

# Getting started with planned maintenance

The following preparations should be made to set up an operational maintenance plan in Planon ProCenter :

- [Preparations in Planned Maintenance](#)
- [Preparations in Assets](#)
- [Preparing maintenance activity definitions \(various regimes\)](#)

## Preconditions for setting up a maintenance library

A maintenance library should include the following:

1. At least one **Standard service plan**.
2. At least one scheduled **Standard activity definition**.
3. Links between the service plan(s) you created and the assets that you want to maintain.

## Preparations in Planned Maintenance

The following preparatory steps have to be made in Planned Maintenance in order to set up planned maintenance in Planon ProCenter :

1. Add a maintenance plan for a certain time frame.
2. If you want to generate planned maintenance orders for your activities, make sure that the following values are set for your maintenance plan:

**Status: Active**

**Is definitive: Yes**

3. Link all the properties that you need to maintain within your maintenance plan (via Link properties) or link all contracts which are part of the Maintenance plan (via Link contracts).
4. Compile your maintenance plan for the properties and/or contracts you have linked.

## Preparations in Assets

For all assets and building elements that require maintenance, the **Is planned maintenance required?** field must be set to **Yes**. Also, a standard service plan must be linked to the asset(s) or an asset specific service plan created with at least one activity. To do so, refer to [Working with Maintenance Library](#).

## Preparing maintenance activity definitions (various regimes)

- Time-based: define a time-based schedule on the relevant maintenance activity definition(s).
- Predictive-based: see [Predictive-based](#)
- Condition-based: see [Condition-based](#)

## Condition-based

For condition-based maintenance, you must make the following preparations:

### Procedure

1. Set a required (minimal technically accepted) condition on the asset.
2. Set an actual condition on the asset.
3. Create a deterioration curve with deterioration coordinates in Supporting data .
4. Set the deterioration curve on the asset.
5. Add a maintenance activity definition with a *condition-based* maintenance regime and add a condition-based schedule for it.
6. Specify the *condition after maintenance* on the maintenance activity definition.

## Setting an actual condition for an asset

In **Asset Management**, you can add an actual condition manually on:

1. On **Asset details** level, add a **condition**.
2. On the **Activities / Registrations** level, add a **condition detail**.



If you use **Condition Survey**, the asset condition and condition detail information are added by the system.

## Predictive-based

For predictive-based maintenance, you need a certain threshold and a counter with counter readings to be able to calculate the next needed maintenance date.

Adding a meter for an asset (only simple assets are supported):

1. Add a counter definition.
2. Add a counter.
3. Add at least two counter readings to have an average consumption for the counter or manually add an user estimated consumption with a corresponding time period.
4. Now you will be able to add a maintenance activity definition in your maintenance plan with this counter and a threshold (use Schedule predictive-based activities).
5. To define predictive-based activities in the maintenance library, link the counter definition and threshold to the predictive schedule. By creating a plan, the system automatically links the real counter (as defined in the counter definition) to the predictive schedule.



# Working with Maintenance Library

This section describes the processes and tasks that can be performed with the **Maintenance Library**.

See the links below for more information:

- [Adding a maintenance library](#)
- [Adding a standard service plan to a maintenance library](#)
- [Copying a maintenance library](#)
- [Deep copying a maintenance library](#)
- [Copying a standard service plan](#)
- [Deep copying a standard service plan](#)
- [Linking standard service plans to assets](#)
- [Linking assets to a standard service plan](#)
- [Linking standard service plans to a building element](#)
- [Linking building elements to a standard service plan](#)
- [Adding a standard activity definition to a standard service plan](#)
- [Deep copying a standard activity definition](#)
- [Linking a defects list to a standard activity definition](#)
- [Adding checklist items to a standard activity definition](#)

[Maintenance planner](#)

## Adding a maintenance library

You can create a maintenance library by adding a set of standard service plans with standard activity definitions. These standard service plans and their standard activity definitions can subsequently be linked to assets. Once a link is established between an asset and one or more standard service plans, they are ready to be used to compile a maintenance plan in **Maintenance Planner**.



Asset service plans and Asset activity definitions can also be used to compile a maintenance plan. They are added and maintained in *Assets*. Refer to the *Assets* documentation for more information.

### Procedure

1. At Maintenance libraries, click Add.

2. In the data section, complete the Code and Description fields.
3. Click Save.

You can now add standard service plans to this maintenance library at **Standard service plans**.

#### Compiling a property-based maintenance plan

## Adding a standard service plan to a maintenance library

Use the following procedure to add a standard service plan to a maintenance library.

### Procedure

1. On the Maintenance Library > Standard service plans selection level, click Add.
2. In the data section, complete the relevant fields. For a description of these fields, refer to Standard service plan fields
3. Click Save.
4. If required, add more standard service plans to the selected maintenance library by repeating steps 1 to 3 above.

Once you have finished adding standard service plans, you can start adding standard maintenance activities to a selected standard service plan at the **Standard maintenance activities** selection level.

## Copying a maintenance library

You can make a duplicate of an existing maintenance library, excluding linked standard service plans and standard activity definitions.

### Procedure

1. Go to Maintenance Library > Maintenance libraries.
2. Select the maintenance library you want to copy.
3. On the action panel, click Copy.

**A copy of the maintenance library is made.**

## Deep copying a maintenance library

You can duplicate an existing maintenance library, including linked standard service plans, standard activity definitions and schedules. Copying linked expected costs and check list items is optional.

### Procedure

1. Go to Maintenance Library > Maintenance libraries.
2. Select the maintenance library you want to deep copy.
3. In the Maintenance libraries action panel, click Deep copy.

The **Copying** dialog box is displayed.

4. Select the relevant options to copy checklist items and/or any linked costs.
5. Click OK.

**A comprehensive copy of the maintenance library is made.**

## Copying a standard service plan

Use the following procedure to duplicate a standard service plan in a maintenance library, excluding linked standard activity definitions, expected costs, checklist items and schedules.

### Procedure

1. Go to Maintenance Library > Standard service plans.
2. Select the standard service plan you want to copy.
3. On the action panel, click Copy.

**A copy of the standard service plan is made.**

## Deep copying a standard service plan

You can duplicate a standard service plan in a maintenance library, including linked standard activity definitions, expected costs, checklist items, schedules.

### Procedure

1. Go to Maintenance Library > Standard service plans.
2. Select the standard service plan you want to deep copy.
3. On the action panel, click Deep copy.

The **Copying** dialog box is displayed.

4. To copy Standard checklist items, Labor hour costs, Material costs, Additional costs and/or Linked assets, select the relevant options.
5. If required, modify the copy's data, such as its Description.

6. Click OK.

A comprehensive copy of the standard service plan is made.



If the standard service plans include standard activity definitions that overrule other standard activity definitions, the deep copy will mirror that.

#### Overruling activity definition

## Linking standard service plans to assets

You can link standard service plans to an asset.



For more information on assets, see the [Assets](#) user documentation.

### Procedure

1. In Maintenance Planner go to Activity filters > Assets and select the asset to which you want to link standard service plans.
2. On the Links action panel, click Link standard service plans.

The **Link standard service plans** dialog box appears.

3. In Available, select the standard service plans you want to link to the selected asset.



If a large number of standard service plans is shown in **Available**, you can find the required standard service plans quicker by applying *filter options*:

- Technical classification,
- Classification group,
- Asset classification.

Select the relevant option. Specify any additional filter criteria in the search filter as required.

4. Click the right arrow button to transfer the standard service plans you selected to In use.
5. Click OK.

The standard service plans are now linked to the selected asset.

## Linking assets to a standard service plan

You can link several assets to a standard service plan.

### Procedure

1. At the Maintenance Library > Standard service plans selection level, select the standard service plan to which you want to link assets.
2. On the action panel, click Link assets. The Link assets dialog box appears. The Available section lists the assets available in Planon ProCenter to be linked to the selected standard service plan. The In use section lists the assets already linked to the standard service plan.



Use the filter options to filter out assets in the context that you require:

**All:** filters out all assets that are in use and not archived;

**Technical classification:** filters out all assets with the same technical classification as the standard service plan;

**Classification group:** filters out all assets with the same classification group as the standard service plan.

3. Click the arrow buttons to move assets from Available to In use or vice versa as required and then click OK to close the dialog box.

The assets listed in **In use** are now linked to the standard service plan.

## Linking standard service plans to a building element

You can link standard service plans to a building element.

### Procedure

1. In Maintenance Planner go to Activity filters > Assets and select the building element to which you want to link standard service plans.
2. On the Links action panel, click Link standard service plans.

The **Link standard service plans** dialog box appears.

3. In Available, select the standard service plans you want to link to the selected building element.



If a large number of standard service plans are shown in **Available**, to locate the required standard service plans more efficiently, you can choose to only display those service plans belonging to a specified technical classification, classification group or asset classification by selecting the appropriate option in conjunction with criteria you can specify in the search filter.

4. Click the right arrow button to transfer the standard service plans you selected to In use.
5. Click OK.

The standard service plans are now linked to the selected building element.

# Linking building elements to a standard service plan

You can link one or more building elements to a standard service plan.

## Procedure

1. At the Maintenance Library > Standard service plans selection level, in the elements list, select the standard service plan to which you want to link building elements.
2. On the action panel, click Link building elements. The Link building elements dialog box appears in which Available lists the building elements available in Planon ProCenter to be linked to the selected standard service plan and In use lists the building elements already linked to the standard service plan.



Use the filter options to filter out building elements in the context that you require:

**All:** filters out all building elements that are in use and not archived;

**Technical classification:** filters out all building elements with the same technical classification as the standard service plan;

**Classification group:** filters out all building elements with the same classification group as the standard service plan.

3. Click the arrow buttons to move building elements from Available to In use or vice versa as required and then click OK to close the dialog box.

The building elements listed in **In use** are now linked to the standard service plan.

# Adding a standard activity definition to a standard service plan

To add a standard activity definition to a standard service plan, refer to the procedure for [Adding an activity definition](#).

Subsequently, you can proceed setting a schedule for the standard activity definition.

## Good to know:

- If you select a **Condition-based** maintenance regime for a standard activity definition, the **Overruled by schedule from ...** field must be empty, since such a standard activity definition cannot be overruled.
- If you set a predictive-based [schedule](#) for the asset of a standard activity definition, you must select a counter definition and enter a threshold value to be able to set the schedule. However, if multiple [counters](#) belong to this selected counter definition, a dialog box is displayed during the [compilation of your maintenance plan](#), stating

that it is impossible to set the schedule. You can subsequently choose to proceed and manually set a predictive-based schedule afterwards for this particular standard activity definition.

When you are done setting the schedule, go to **Details**, to add expected costs or checklist items to the standard activity definition.



If relevant - and if standard activity definitions are linked to an asset / building element via their standard service plan - new, divergent data can be added simultaneously to standard activity definitions that are linked to the selected asset. This is done in **Assets**, by selecting the asset, descending to its linked standard service plan at **Asset details > Linked standard service plans** and then adding the new data in the available fields. When compiling a maintenance plan, this new data will overwrite the data in the standard activity definitions of the asset's standard service plan.

[Standard activity definition](#)

[Maintenance regime](#)

[Predictive-based maintenance](#)

[Adding expected costs to a maintenance activity definition](#)

## Deep copying a standard activity definition

You can make a comprehensive duplicate of a standard activity definition in a standard service plan.

### Procedure

1. Go to Maintenance Library > Standard activity definitions.
2. Select the standard activity definition you want to deep copy.
3. On the action panel, click Deep copy.

In the **Copying** dialog box, select the expected costs and / or checklist items that you want to include in the deep copy.

4. If required, modify the copy's data, such as its Description.

The standard activity definition is copied. The following elements are included in the copy:

- Selected expected costs;
- If selected: checklist items;
- Linked schedule.



If you only want to make a regular copy of the standard activity definition – that is excluding linked schedule or expected costs - select the **Copy** option in the action panel instead of the **Deep copy** option.

## Linking a defects list to a standard activity definition

You can link possible defects that can occur in an asset or building element to a standard activity definition. This standard activity definition with linked defects list is subsequently used by a surveyor in the **Condition Surveys** TSI. It facilitates data entry during a building survey.

### Procedure

1. In Maintenance Library > Standard activity definitions, select the standard activity definition to which you want to link defects lists.
2. On the action panel, click Link defects lists.

The **Link defects lists** dialog box appears.

3. In Available, select the defects list(s) you want to link to the selected standard activity definition.
4. Click the right arrow button to transfer the defects lists you selected to In use.
5. Click OK.

The selected defects lists are now linked to the selected standard activity definition.

## Adding checklist items to a standard activity definition

You can add checklist items to a standard activity definition. After a maintenance plan is compiled, standard activity definitions are transferred to it, including any available checklist information. Once maintenance orders are generated from the maintenance plan, the checklist items are transferred to the **Order subdetails** selection level in the Work Orders TSI. The checklist information is used by the tradesperson carrying out the maintenance orders generated from a maintenance plan. Using the **Report Manager**, a form (job ticket) can be created with the checklist information. For field engineers, checklist information becomes available on their mobile devices.

### Procedure

1. At Standard activity definitions, select the standard activity definition to which you want to add checklist items.
2. Go to Details > Checklist items.
3. On the action panel, click Add.
4. In the data section, complete the relevant fields.

For a description of these fields, refer to [Checklist item fields](#).



5. Click Save.

**The checklist item is now added to the selected standard activity definition.**

6. If required, repeat steps 3 to 5 to add more checklist items.

[Checklist items](#)

[Generating maintenance orders](#)

[Compiling a property-based maintenance plan](#)

# Working with Maintenance Planner

This section describes the processes and tasks that can be performed in **Maintenance Planner**.

See the links below for more information:

- [Adding a maintenance plan group](#)
- [Adding a maintenance plan to a maintenance plan group](#)
- [Linking properties to a maintenance plan](#)
- [Linking contracts to a maintenance plan](#)
- [Adding a service plan](#)
- [Adding an activity definition to a service plan](#)
- [Manually setting a schedule for a time-based activity definition](#)
- [Viewing the schedule of an activity definition](#)
- [Replacing part of an existing time-based schedule](#)
- [Replacing an existing predictive-based schedule](#)
- [Setting a condition-based schedule for an activity definition](#)
- [Deep copying an activity definition](#)
- [Copying asset location data to an activity definition](#)
- [Adding expected costs to a maintenance activity definition](#)
- [Adding standard maintenance activity definition\(s\) to a property maintenance plan](#)

[Maintenance planner](#)

## Adding a maintenance plan group

### Procedure

1. Go to Maintenance plan groups.
2. In the action panel, click Add.
3. In the data section, complete the relevant fields.

For a description of these fields, refer to [Maintenance plan group fields](#).

4. Click Save.

One maintenance plan group can include multiple maintenance plans. Repeat this procedure as required.

## Adding a maintenance plan to a maintenance plan group

You can add a new maintenance plan to the selected maintenance plan group.

### Procedure

1. Go to Maintenance plan groups and select the relevant maintenance plan.
2. Go to Maintenance plans.
3. On the action panel, click Add.
4. In the data section, complete the relevant fields.

For a description of these fields, refer to [Maintenance plan fields](#).

5. Click Save.

[Maintenance plan](#)

[Maintenance plan group](#)

## Linking properties to a maintenance plan

Use the following procedure to link one or more properties to a maintenance plan.

### Procedure

1. Go to Maintenance plans and select a maintenance plan.
2. On the action panel, click Link properties.

The **Link properties** dialog box opens.

3. At Available, select the property or properties containing the assets that you want to link to the maintenance plan.
4. Click the right arrow button to transfer the properties to In use.
5. Click OK.

The selected properties are now linked to the maintenance plan. You can verify this by keeping the maintenance plan selected and descending to **Properties & Contracts**.



To unlink properties from the maintenance plan again: select the relevant properties at **In use** and click the left arrow button to move them back to **Available**. If you unlink a

property for which activity definitions have already been created, you will delete these corresponding activity definitions!

## Maintenance plan

# Linking contracts to a maintenance plan

You can link one or more contracts to a maintenance plan.

## Procedure

1. Go to Maintenance plans and select a maintenance plan.
2. On the action panel, click Link contracts.

**The Link contracts dialog box opens.**

3. At Available, select the contract or contracts associated with the assets or building elements that you want to link to the maintenance plan.
4. Click the right arrow button to transfer the contracts to In use.
5. Click OK.

The selected contracts are now linked to the maintenance plan. You can verify this by keeping the maintenance plan selected and navigating to **Properties & Contracts**.



To unlink contracts from the maintenance plan again: select the relevant contracts at **In use** and click the left arrow button to move them back to **Available**. If you unlink a contract for which activity definitions have already been created, you will delete these corresponding activity definitions!

# Adding a service plan

You can add a specific, individual service plan to your maintenance plan. This is useful if there is no relevant standard service plan, asset service plan or contract service plan available in **Maintenance Library**, **Assets** or **Contracts** respectively.

## Procedure

1. Go to Maintenance Planner > Activity filters > Service plans.
2. On the action panel, click Add.
3. In the data section, complete the relevant fields.

For a description of these fields, refer to [Service plan fields](#)

4. Click Save.

# Adding an activity definition to a service plan

In addition to the generated activity definitions in a compiled maintenance plan, you can also add separate, specific activity definitions to a service plan in **Maintenance planner**. In short, a specific activity definition is any activity definition other than a standard activity definition, asset activity definition or contract activity definition, which are all added by *compiling a maintenance plan*.

This feature is useful if:

- you do not use the **Maintenance library** functionality
- you want to add an incidental activity definition to your existing maintenance plan

Start **Maintenance Planner** and go to **Maintenance plans**. Select the maintenance plan to which you want to add activity definitions. Link the relevant properties to this plan before navigating to Definitions & Schedules > Activity definitions.

## Procedure

1. At Activity definitions, click Add on the action panel.
2. In the data section, complete the relevant fields.

For a description of these fields, refer to [Activity definition fields](#).

3. Click Save.

You have now added an activity definition to the selected service plan and can proceed to setting a schedule for the activity definition.

4. Click Schedule [...] activities.

Setting a schedule depends on your maintenance regime:

[Activity type](#)

[Condition-based maintenance](#)

[Overruling activity definition](#)

[Maintenance regime](#)

[Maintenance regime is time-based](#)

[Maintenance regime is predictive-based](#)

[Maintenance regime is non-cyclic](#)

[Maintenance regime is condition-based](#)

[Viewing generated maintenance orders](#)

## Maintenance regime is time-based

A time-based schedule allows a maintenance activity to be set to occur hourly, daily, weekly, monthly, yearly or on specific dates.

You selected a time-based maintenance regime. The **Schedule** dialog box appears.

### Procedure

1. At Frequency select one of the following options:  
**Hourly, Daily, Weekly, Monthly, Yearly or Calendar.**
2. In Occurrences, specify how often and if relevant, on what day maintenance activities should recur within this frequency.

#### Examples:

- Hourly schedule, every 4 hours;
- Daily schedule, every 3 days;
- Weekly schedule, every 2 weeks on a Monday;
- Monthly schedule, every 3rd month, on day 2;
- Monthly schedule, every 12 months, on the first Tuesday;
- Yearly schedule, every 2 years;
- On a specific date that can be picked from the calendar.

[Adding an activity definition to a service plan](#)

[Overruling activity definition](#)

## Maintenance regime is predictive-based

A predictive-based maintenance regime is using consumption thresholds as a criterion for scheduling maintenance.

You selected a predictive-based maintenance regime. The **Predictive-based schedule** dialog box appears:

### Procedure

1. In the Counter field, select the counter that is linked to the asset of the activity definition.

2. In the Consumption threshold field, enter the threshold value at which maintenance activity scheduling must start.

**Example:**

In **Meters** , the **Planon-estimated consumption** for the linked asset is 70 for a period of 365 days.

Let us assume you want to start scheduling maintenance activities for the linked asset at a **Consumption threshold** of 35.

Planon ProCenter calculates the period (in seconds) needed to reach a consumption of 35. One year = 365 days = 31536000 sec. The following calculation is executed, to establish how many seconds are needed to reach the **Consumption threshold** of 35:

$(31536000 / 70) * 35 = 15768000$  sec (this is 182.5 days, which is a half a year)



If there are insufficient readings in **Meters** to calculate a **Planon-estimated consumption**, the value specified in the **User-estimated consumption** field is used in the above calculation.

In the graphical planner, the maintenance activities will recur every 182.5 days.

3. Click OK.

Depending on the entered values, one or more maintenance activities are now scheduled for the selected activity definition.

[Adding an activity definition to a service plan](#)

[Maintenance regime is condition-based](#)

## Maintenance regime is non-cyclic

Non-cyclic (= not repetitive) maintenance activities are aimed at instantly improving the condition of building elements or assets. You can apply a non-cyclic maintenance regime to an activity definition, to create *non-cyclic* (maintenance) activities.

### Procedure

1. Create an maintenance activity definition.
2. Select a non-cyclic maintenance regime.

A non-cyclic maintenance regime can only apply to:

- Activity definitions that were manually added to a service plan in **Maintenance Planner**
- Standard activity definitions from the **Maintenance Library**.
- Survey activity definitions from **Condition Surveys**.

The **Enter values** dialog box appears.

3. From the date-picker that is available in the Start date-time field, select a date on which the non-cyclic maintenance activity must be scheduled.
4. Click OK.

**A non-cyclic activity is scheduled on the specified date-time.**

#### **Good to know:**

- You cannot link a non-cyclic maintenance regime to asset activity definitions in **Assets** !
- For a standard activity definition, the **Enter values** dialog box is not displayed. You can set a start date on the standard activity definition itself, but cannot specify a date for the non-cyclic maintenance regime. When the maintenance plan is compiled, the start of the non-cyclic activity is either based on this start date of the standard activity definition or on the start date of the maintenance plan, whichever is the latest.

[Adding an activity definition to a service plan](#)

[Maintenance regime](#)

[Activity definition](#)

## Maintenance regime is condition-based

You selected a condition-based maintenance regime. The **Enter values** dialog box appears.

### **Procedure**

1. In the Asset condition details field, select the latest condition details associated to the asset.
2. From a period-picker that is available in the Deterioration period field, select a period of time to which the deterioration curve applies.
3. From the period-picker in the Min. period between activities field, select the shortest distance in time to be scheduled between activities.
4. Click OK.



Depending on the entered values, one or more maintenance activities are now scheduled for the selected activity definition.

[Adding an activity definition to a service plan](#)

[Counters in Planned Maintenance](#)

[Maintenance regime is predictive-based](#)

## Manually setting a schedule for a time-based activity definition

You can manually set a schedule for an existing activity definition whose **Maintenance regime** is time-based. Consequently, recurring maintenance activities are created for the activity definition, which are displayed in the graphical planner.

Activity definitions can be saved without setting a schedule. The scheduling functionality can be started manually from the action panel in Maintenance Planner > Definitions & Schedules.

### Procedure

1. At Definitions & Schedules, select the activity definition for which you want to set a schedule. Make sure that the selected Maintenance regime is Time-based.
2. On the Maintenance activity definitions action panel, click Schedule time-based activities.

The **Schedule** dialog box appears.

3. In Frequency select one of the following options:  
**Hourly, Daily, Weekly, Monthly, Yearly or Calendar.**
4. In Occurrences, specify how often and if relevant, on what day activities should recur within this frequency.

#### Examples:

- Hourly schedule, every 4 hours;
- Daily schedule, every 3 days;
- Weekly schedule, every 2 weeks on a Monday;
- Monthly schedule, every 3rd month, on day 2;
- Monthly schedule, every 12 months, on the first Tuesday;
- Yearly schedule, every 2 years;

- On a specific date that can be picked from the calendar.

**i** Regarding time-based-scheduling, it is good to know that if you select **Monthly, Every month, on day 31**, Planon will *automatically* schedule activities on the last day of each specific month. So this could also be day 28, 29 or 30.

5. Click OK.

The specified schedule is now set for the selected activity definition. Consequently, recurring activities are placed in the graphical planner on the **Definitions & schedules** selection step, taking into account the linked schedule and the start date-time and end date-time of the activity definition.

**i** If you select an activity definition that already has a schedule, and then click **Schedule time-based activities** on the action panel, you can partly or fully replace the schedule with a new schedule. Refer to [Replacing part of an existing schedule](#) for more information.

[Viewing the schedule and activities of an activity definition](#)

## Viewing the schedule and activities of an activity definition

You can view a read-only schedule of a selected activity definition at:

- Maintenance Planner > Definitions & Schedules;
- Maintenance Library > Standard activity definitions;
- **Assets** > **Activities/registrations**.

Procedure

1. At Definitions & Schedules, select the activity definition whose schedule and activities you want to view.
2. Click View schedule & activities on the action panel and view the information.
3. Click Cancel to close the dialog box.

[Manually setting a schedule for a time-based activity definition](#)

## Replacing part of an existing time-based schedule

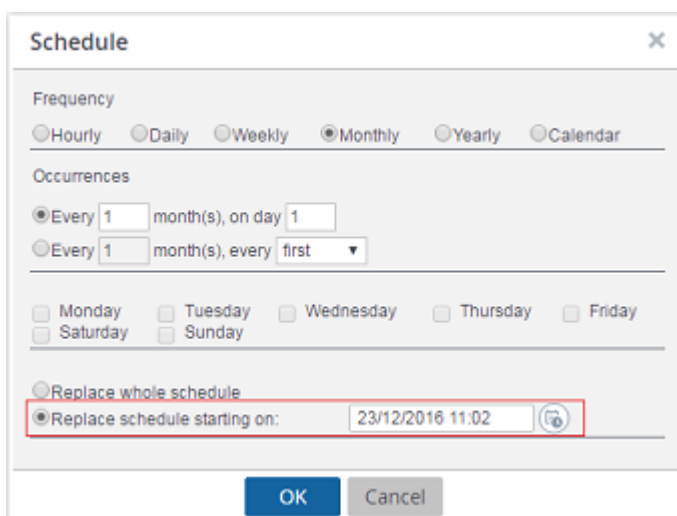
You can partly replace an existing schedule of a selected activity definition. The part of the schedule which includes time-based maintenance activities for which maintenance orders are already generated, is not replaced and remains unaffected.

This feature is available for the activity definitions that exist in a compiled maintenance plan. You can partly replace the schedule of a selected activity definition in Maintenance Planner > Definitions & Schedules.

## Procedure

1. At Definitions & Schedules, select the activity definition whose existing schedule you want to partly replace.
2. On the action panel, click Schedule time-based activities.

The **Schedule** dialog box appears:



3. Select a start date-time for the new schedule in Replace schedule starting on.



You can only set a new schedule for recurring activities within the sequence for which no maintenance orders are generated. So the start date-time of the new schedule must be later than either:

- the start date-time of the selected activity definition;
- the start date-time of the last generated maintenance order;
- the system date-time;
- depending on which of these three date-times is latest.

4. In Frequency, select a frequency for the new schedule.
5. In Occurrences, specify how often and, if relevant, on what day activities should recur in the new schedule.
6. Click OK.

A new schedule is applied to the selected activity definition as of the selected start date.



Use the **Action on selection > Schedule time-based activities** option or **Schedule predictive-based activities** option to simultaneously modify the schedules of multiple-selected activity definitions.

## Replacing an existing predictive-based schedule

You can partly replace an existing schedule of a selected activity definition.

This feature is available for the activity definitions that exist in a compiled maintenance plan. You can replace the schedule of a selected activity definition in Maintenance Planner > Definitions & Schedules.

### Procedure

1. At Definitions & Schedules, select the activity definition whose existing predictive-based schedule you want to replace.
2. On the action panel, click Schedule predictive-based activities.
3. In the Predictive-based schedule dialog box, make the relevant changes.

The schedule cannot be replaced if maintenance orders are already generated.

## Setting a condition-based schedule for an activity definition

You can set a schedule for an activity definition that is based on the predicted deterioration of the linked asset or building element.

The following criteria are taken into account during the process of scheduling condition-based activity definitions:

- Start date-time of the activity definition
- Asset / building element
- Maintenance regime (must be condition-based)
- Condition after maintenance
- Minimal period
- Deterioration period
- Required condition
- Asset condition details



If any one of these variables is absent, the schedule cannot be calculated and no activities will be scheduled.

For the procedure, refer to:

[Adding an activity definition to a service plan](#)

[Compiling a property-based maintenance plan](#)

During the compilation of the maintenance plan, maintenance activities with the same asset condition details are grouped and rescheduled.



When condition-based activities are scheduled, the **Quantity** and **Unit of measurement** fields are automatically updated according to the associated **Asset condition details**.

### Example

Suppose there is an asset, 'Brick wall' for which you want to add an activity definition 'Painting a wall'. Based on the selected deterioration curve, Planon ProCenter calculates a deterioration period for the paint on the brick wall. Thus it is determined when repainting is required.



Deterioration curves are added in Supporting data . See the **Maintaining deterioration profiles** for more information.

The following table shows an example of a deterioration curve based on the condition score of an asset:

Deterioration Factor (x)	Condition Score (y)
0	1
0.5	2
0.75	3
0.875	4
0.9375	5
1	6

This deterioration curve is used to calculate the date when this brick wall needs maintenance.

Item	Field	Value
Activity definition	Activity	Painting the wall
	Start date-time	1-6-2010
	Asset/building element	Brick wall
	Maintenance regime	Condition-based

Item	Field	Value
	Condition after maintenance	1
Schedule condition-based activities action	Deterioration period	2 years
	Minimal period	3 months
	Asset condition detail	100 m <sup>2</sup> , 2
Asset	Description	Brick wall
	Required condition	4
	Deterioration curve	DC01
Asset condition	Survey date	1-1-2010
Asset condition detail	Quantity	m <sup>2</sup>
	Quantity	100
	Observed condition	2

Suppose a survey took place on 1/1/2010 and the **Observed condition** of the asset is 2. At this point of time, no maintenance of the brick wall is required, as the **Observed condition** does not match the **Required condition** 4. Now, you can calculate how long it will take to reach condition score 4, which is the moment maintenance is required to bring the wall back to a better condition. In this case, the maintenance activity will bring it back to **Condition after maintenance** score 1. Planon ProCenter schedules the date-time of the first activity on the graphical planner.

The **Deterioration period** of activity 'Painting the wall' is 2 years. This means that the paint has completely deteriorated after 2 years.

Calculating the time it takes to reach condition 4 is done as follows:

The factor of the (**Required condition**) - (**Observed condition**) =

Deterioration factor (0.875 - 0.5) = 0.375

Remaining deterioration period = **Deterioration period** \* 0.375 = 0.75 years.

Therefore, after 0.75 years (9 months i.e. 1/9/2010) the first maintenance activity is required.

If the **Observed condition** has a higher value than the **Required condition**, the activity is scheduled on the current date.

On 1st August 2010, the asset's condition is brought back to condition 1 and subsequently Planon ProCenter calculates how long the same asset will take to deteriorate to condition 4.

All subsequent maintenance activities will have the same recurrence.

## Rescheduling condition-based activities

In **Maintenance Planner**, maintenance activities based on condition-based activity definitions can be rescheduled if:

- the activity of an associated survey activity definition is completed;
- the date of a maintenance activity is changed;
- the status of the maintenance activity is changed.

## Deep copying an activity definition

You can duplicate an activity definition in a service plan, including any linked schedules and expected costs. The following procedure for deep copying is described for the **Planned Maintenance** TSI, but it is the same in the **Maintenance library** for standard activity definitions, in the **Assets** TSI for asset activity definitions or in the **Contracts** TSI for contract activity definitions.



If you only want to make a basic copy of an activity definition – without the linked schedule, expected costs and any checklist items - use the **Copy** option on the action panel.

### Procedure

1. Go to Maintenance Planner > Activity definitions.
2. Select the activity definition you want to deep copy.
3. On the action panel, click Deep copy.
4. In the Number of copies field, fill in how many deep copies you want to make.
5. To copy any expected costs, select the relevant options (Hour -, Material - and / or Additional costs).
6. Click OK.

A comprehensive copy is made of the activity definition. The following elements are included in the deep copy:

- The selected expected costs;
  - Linked checklist items (if applicable);
  - Linked schedule (with recurring and non-recurring activities).
7. If required, modify the deep copy's data, such as its Description or Translated names.
  8. Click Save.

## Copying asset location data to an activity definition

You can copy an asset's or building element's most recent location data from the Assets TSI to the selected activity definition. This functionality is useful to speed up data entry or to update data after an asset / building element is moved to a new location. Copying location data can result in modifications to the **Space**, **Property** and **Quantity** fields.

Go to Maintenance Planner > Definitions & Schedules.

### Procedure

1. Select the activity definition to which you want to copy asset location data.
2. On the action panel, click Copy data from asset location.
3. From the dialog window, select the relevant asset location and click OK.

The most recent data is now copied from the Assets TSI.  
If applicable, the **Space**, **Property** and **Quantity** fields are updated.

## Adding expected costs to a maintenance activity definition

You can specify the expected maintenance costs in a maintenance activity definition. There are three types of expected maintenance costs: additional costs, material costs and labor hour costs. The expected costs of the selected activity definition are copied to the estimates of the generated maintenance orders in **Work Orders**.

Go to Maintenance Planner > Definitions & Schedules. Select the activity definition to which you want to add expected costs, before going to Details > Expected costs.

### Procedure

1. At Details > Expected costs, select the activity definition to which you want to add expected costs.
2. On the action panel, click Add material costs, Add additional costs or Add labor hours.
3. In the data section, complete the relevant fields.

For a description of these fields, refer to [Expected costs fields](#)

4. Click Save.

The expected costs are now added to the selected activity definition. When maintenance orders are generated, the



expected costs are transferred to the order lines and estimates of the generated maintenance orders.



Expected costs can be linked to only one of the three types of activity definition: either to an asset activity definition, to a standard activity definition or to a specific activity definition.

[Adding a standard activity definition to a standard service plan](#)

## Applying the product requisition process

You can add the material costs of products (on the requisition lines) directly to maintenance jobs. This is made possible by adding a product requisition process to the maintenance activity definition.

*Planon ProCenter* supports two types of product requisition processes.

- **Informal process:** via order lines. You select the purchase item (purchase information record) to add the material costs when completing the planned maintenance order.
- **Formal process:** via requisition lines. The products must be acquired via the product requisition process, either to obtain the required materials from stock or to purchase them.  
At Definitions & planning > Activity definitions, click **Yes** in the **Apply product requisition process** field, if you want to apply the formal process. When adding material costs, select the product that you require. The actual costs involved are automatically added to the maintenance order. If you click **No**, the informal process is applied.

### Note

The product requisition process can be applied to all maintenance activity definition types (standard/asset/contract and survey maintenance activity definitions).

## Manually adding standard activity definition(s) to a property maintenance plan

Use the following procedure to manually add standard activity definitions to a property maintenance plan.

Some configuration steps are required before you can manually add standard activity definition(s) to a property maintenance plan.

### Procedure

1. Adding the 'Apply standard maintenance activity definition' action to the layout
2. Changing field properties
3. Adding a standard activity definition to a property maintenance plan

## Adding the 'Apply standard maintenance activity definition' action to the layout

This section describes the steps required to add the 'Apply standard maintenance activity definition' action to a layout.

This is a first step in adding standard maintenance activity definition(s) to a property maintenance plan.

1. Go to TSI Manager and select Maintenance Planner.

Adding the 'Apply standard maintenance activity definition' action to the layout

2. Go to the TSI level and expand the TSI structure.
3. Under Definitions & Schedules, expand Activity definitions and select the MaintenanceActivityDefinition layout.
4. On the action menu, click Jump to Layout Manager.  
**You navigate to the correct layout.**
5. Set the layout Under construction and on the Links menu, click Actions.
6. In the dialog box that appears, select Apply standard maintenance activity definition and move it to the In use panel.
7. Click OK and set the layout to Completed.

## Changing field properties

This section describes the steps required to change field properties.

This is the second step in adding standard maintenance activity definition(s) to a property maintenance plan.

1. Go to FieldDefiner, and select Base activity definitions from the list.
2. Set this business object Under construction and descend to Details level.
3. Select the Asset/building element field (BaseAssetRef) from the list.
4. In the data section, set the Mandatory field to No.
5. Return to Business objects level, and switch the business object to Completed.

## Adding a standard activity definition to a property maintenance plan

This is a final step in adding standard maintenance activity definition(s) to a property maintenance plan.

1. In Maintenance Planner, go to Maintenance Plans and select a plan from the list.
2. Go to Definitions & Schedules level.
3. On the action panel, click Apply standard maintenance activity definitions. Planon ProCenter will list the applicable standard activity definitions from the Maintenance Library.
4. In the dialog box, select one or more standard activity definitions that you want to add to your maintenance plan.

**The dialog box will only list standard activity definitions with one of the following maintenance regimes:**

- Non-cyclic
  - Time-based
  - Not defined
5. In the Property field, select the property to which this maintenance plan applies.
  6. Click the check boxes (optional) to copy the various cost components and click OK.

**The activity definitions and their cost components (optional) are copied to the maintenance plan.**

7. Press F5 or click Refresh list to update the list.

# Executing maintenance plans

This section lists the processes and tasks that can be performed to execute maintenance plans.

See the links below for more information:

- [Compiling a property-based maintenance plan](#)
- [Compiling a contract-based maintenance plan](#)
- [Checking start and end date-times of activity definitions after compiling](#)
- [Checking a compiled maintenance plan which includes condition-based activity definitions](#)
- [Checking a compiled maintenance plan with survey activity definitions](#)
- [Recompiling a maintenance plan](#)
- [Checking a recompiled maintenance plan with condition-based activity definitions](#)
- [Checking a recompiled maintenance plan with non-cyclic survey activity definitions](#)
- [Integrating condition-based and non-cyclic activity definitions through automatic rescheduling of activity definitions](#)
- [Moving assets to a new location](#)
- [Deep copying a maintenance plan](#)
- [Changing the status of a maintenance plan](#)
- [Generating maintenance orders](#)
- [Viewing maintenance orders](#)
- [Generating maintenance orders for clustered activities](#)
- [Deleting Maintenance activities from clustered orders](#)
- [Viewing maintenance costs in order lines in Service Manager](#)
- [Completing an activity](#)
- [Canceling an activity](#)
- [Checking automatically assigned statuses of survey activity definitions in a compiled maintenance plan](#)

## Compiling a property-based maintenance plan

- A relevant maintenance plan is available in Maintenance Planner  
> Maintenance plans, (see [Adding a maintenance plan to a](#)

[maintenance plan group](#)). This maintenance plan is linked to one or more properties;

- Relevant standard service plans / standard activity definitions are available in **Maintenance Library**;  
**and / or**  
Asset service plans / asset activity definitions are available in **Asset Management**. These particular service plans and activity definitions are linked to one or more [assets](#) or [building elements](#);  
**and / or**  
Survey activity definitions exist for survey elements in **Survey Management > Condition Surveys**.

You can populate the selected maintenance plan with both the [standard service plans](#) / [standard activity definitions](#), the [asset service plans](#) / [asset activity definitions](#) and the [contract service plans](#) / [contract activity definitions](#) that are linked to properties in the maintenance plan. Any costs and schedules specified in the standard activity definitions or asset activity definitions are also included in the maintenance plan.

## Procedure

1. At Maintenance Planner > Maintenance plans, select the relevant maintenance plan.
2. On the action panel, click Compile property-based plan.

If you linked several properties or a building complex to the maintenance plan, the **Properties** dialog box appears.

3. Select the property or properties that contain the assets / building elements for which you want to compile the maintenance plan.



If there are many properties, apply column sorting or use the filtering options to find the property(-ies) you want to include.



If you only select the top hierarchical level of a property (property complex), no compilation takes place.

4. Check the result at Activity filters > Service plans and Definitions & schedules > Activity definitions.

All standard service plans / standard activity definitions, asset service plans / asset activity definitions and contract service plans / contract activity definitions that are linked to the properties in the maintenance plan are added to the maintenance plan.



If one or more standard activity definitions with a predictive-based schedule are included in your maintenance plan, you can receive a message that you have to manually set schedules, because there are multiple counters available for the associated asset.

## Contract service plan

[Deterioration curve](#)

[Maintenance regime](#)

[Standard service plan](#)

[Adding a maintenance library](#)

[Adding checklist items to a standard activity definition](#)

## Compiling a contract-based maintenance plan

Prerequisites:

- A relevant maintenance plan is available in Maintenance Planner > Maintenance plans, (see [Adding a maintenance plan to a maintenance plan group](#)). This maintenance plan is linked to one or more contracts.
- Relevant contract service plans / contract activity definitions are available in the **Contracts** TSI. These particular service plans and activity definitions are linked to contracts and contract lines which prescribe the maintenance of assets or building elements.

You can populate the selected maintenance plan with [contract service plans](#) and [contract activity definitions](#) that are linked to contracts in the maintenance plan. Any costs and schedules specified in the contract activity definitions are also included in the maintenance plan.

### Procedure

1. At Maintenance plans, select the relevant maintenance plan.
2. On the action panel, click Compile contract-based plan.

**The Contracts dialog box opens, listing the contracts linked to this maintenance plan.**

3. Select the contract(s) that are associated with the assets / building elements for which you want to compile the maintenance plan.

**If there are many contracts, apply column sorting or use the filtering options to find the contract(s) you want to include.**

4. Click OK.

**The action is executed as a background action.**

5. Check the result at Activity filters > Service plans and Definitions & schedules > Activity definitions.

**All contract service plans / contract activity definitions**

- that are linked to the contracts in the maintenance plan, and

- whose contract lines fall within the time span of the maintenance plan  
are added to the maintenance plan.



Contract service plans linked to **Inactive** contract lines are not included in the compilation. If a contract line in a contract service plan is renewed (if the end date of the contract line changes) after the compilation of a maintenance plan, the end date-time of the associated activity definition is adjusted accordingly. If maintenance orders are already generated, the date-time of the last generated order is also taken into account.

## Checking start and end date-times of activity definitions after compiling

You can view the influence of an [activity type](#) on automatically populated fields by *Planon ProCenter* after a maintenance plan is compiled. The following criteria are applied to determine the values with which these fields are populated. For example: the start and end date-times of standard activity definitions and asset activity definitions, once they are transferred to a compiled maintenance plan.

Activity type of asset activity definition or standard activity definition	Available start & end date-times of asset activity definition or standard activity definition before compiling	Results in the following start & end date-times of activity definitions after compiling
Other than <b>Replacement</b>	If no start date-time is specified in either the relevant asset activity definition or standard activity definition, and no value is specified in the <b>Maintenance start date</b> field of a linked asset /building element:	The start date of the activity definition is set to be the same as the start date of the maintenance plan.
Other than <b>Replacement</b>	If start date-times are specified in both the <b>Maintenance start date</b> field of the linked asset (or building element) and in the asset activity definition / standard activity definition:	The latest start date-time of the two is set to be the start date-time in the compiled maintenance plan.



Activity type of asset activity definition or standard activity definition	Available start & end date-times of asset activity definition or standard activity definition before compiling	Results in the following start & end date-times of activity definitions after compiling
Other than <b>Replacement</b>	If end date-times are specified in both the <b>Maintenance end date</b> field of the linked asset (or building element) and in the asset activity definition / standard activity definition:	The earliest end date-time of the two is set to be the end date-time in the compiled maintenance plan.
Activity type of asset activity definition or standard activity definition	Available date-times of linked asset before compiling:	Results in the following start & end date-times of activity definitions after compiling
Replacement	In <b>FieldDefiner</b> , if the business object setting <b>Set expected technical end date of asset as start date of activity definition</b> is set to <b>Yes</b> ; or if the <b>Expected economic end date</b> is unspecified:	The <b>Expected technical end date</b> of the linked asset (or building element) is set to be the start date-time in the compiled maintenance plan.
Replacement	In <b>FieldDefiner</b> , if the business object setting <b>Set Expected technical end date of asset as start date of activity definition</b> is set to <b>No</b> ; or if the <b>Expected technical end date</b> is unspecified:	The <b>Expected economic end date</b> of the linked asset (or building element) is set to be the start date-time in the compiled maintenance plan.
Replacement	If no <b>Expected economic end date</b> or <b>Expected</b>	The start date of the activity definition is the sum of the value in the <b>Date first used</b> field of

Activity type of asset activity definition or standard activity definition	Available start & end date-times of asset activity definition or standard activity definition before compiling	Results in the following start & end date-times of activity definitions after compiling
	<b>technical end date</b> is available:	the asset (or building element) and the <b>Frequency</b> specified in the schedule of the asset activity definition / standard activity definition.
<b>Replacement</b>	If no <b>Date first used</b> is available for the linked asset (or building element):	The start date of the activity definition is the sum of the value in the <b>Date of manufacture / construction</b> field of the asset (or building element) and the <b>Frequency</b> specified in the schedule of the asset activity definition / standard activity definition.
<b>Replacement</b>	If no <b>Date of manufacture / construction</b> is available for the linked asset (or building element):	The start date of the activity definition is the sum of the value in the <b>Maintenance start date</b> field of the asset (or building element) and the <b>Frequency</b> specified in the schedule of the asset activity definition / standard activity definition.
<b>Replacement</b>	If date-times are available in one of the above-mentioned fields of the linked asset (or building element):  - Expected technical end date	The latest date-time of the two is set to be the start date-time of the activity definition in the compiled maintenance plan.

Activity type of asset activity definition or standard activity definition	Available start & end date-times of asset activity definition or standard activity definition before compiling	Results in the following start & end date-times of activity definitions after compiling
<b>Replacement</b>	<ul style="list-style-type: none"> <li>- Expected economic end date</li> <li>- Date first used</li> <li>- Date of manufacture / construction</li> </ul> and in the asset activity definition / standard activity definition:  If no date-times are available in one of the above-mentioned fields of the linked asset (or building element), nor in the asset activity definition / standard activity definition or if the above-mentioned dates are earlier than the start date of the maintenance plan:	The start date of the activity definition is set to be the same as the start date of the maintenance plan.

See also Field definer > [Settings for the Base Activity Definitions business object](#).

**Example:**

*Airco Unit* (with a maintenance start date of 1-4-2015)

*Maintenance activity definition 1:* three monthly service check

*Maintenance activity definition 2:* annual legal check

*Suppress first activity* field value = YES

This results in the following schedule: *Maintenance activity definition 1:* 1-7-2015, 1-10-2015, 1-1-2016 etc. *Maintenance activity definition 2:* 1-4-2016, 1-4-2017 etc. The first activity, scheduled on 1-4-2015 is skipped in both cases. Since this setting can be applied per maintenance activity definition, it is possible to deviate between maintenance activity definitions within a maintenance service plan.

# Checking a compiled maintenance plan which includes condition-based activity definitions

You can verify how [standard activity definitions](#), [asset activity definitions](#) and [contract activity definitions](#) with a condition-based maintenance regime are included in a compiled maintenance plan. You can use the obtained information for work-balancing purposes.

For general information on compiling a maintenance plan, see [Compiling a property-based maintenance plan](#).

After compilation one or more service plans with activity definitions are added to the maintenance plan. The service plans added are based on asset service plans, standard service plans and/or contract service plans.

You can check how many activity definitions are created and how specific field values of condition-based activity definitions are based on data in the Assets TSI:

Field of the activity definition after compiling	Source of field value
Quantity	This value is taken from the <b>Condition details</b> in the Assets TSI.
Start date	This value is the <b>Latest survey date</b> taken from <b>Condition data</b> in the Assets TSI.
Asset condition detail	This value comes from the <b>Condition data</b> in the Assets TSI.

If multiple conditions details exist for an asset that is linked to a condition-based standard activity definition / asset activity definition / contract activity definition, then one activity definition is added to the maintenance plan per condition detail. The number of activity definitions added to the compiled maintenance plan is equal to the number of asset condition details that exist per standard activity definition/ asset activity definition / contract activity definition, linked to the asset or building element.

## Example

For asset **A** there are:

3 asset condition details in the Assets TSI;

1 standard activity definition;

2 asset activity definitions;

**Result:**  $(1 \times 3) + (2 \times 3) = 9$  activity definitions are created.

# Checking a compiled maintenance plan with survey activity definitions

You can verify how a selected maintenance plan is populated with non-cyclic survey activity definitions that come from survey elements in **Condition Surveys**. Any costs, quantities and asset condition details specified in the survey activity definitions are copied to the new activity definitions in the compiled maintenance plan.

After a survey is processed in **Condition Surveys**, the survey activity definitions associated with identical survey elements are used to create one set of asset condition details in **Asset Management**. Subsequently, during the compilation of a maintenance plan, Planon ProCenter picks one of the survey elements to serve as the basis for creating activity definitions in **Maintenance Planner**. The number of created activity definitions is equal to the number of survey activity definitions associated with that survey element. The following data is copied to the activity definitions:

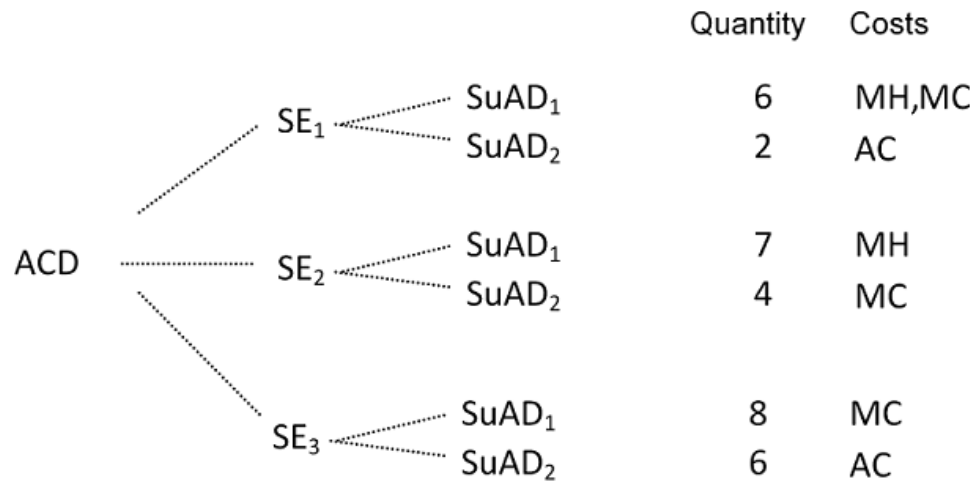
- **Quantity** - Total quantity for all survey activity definitions associated to each asset condition detail.
- **Expected costs** - All costs associated to the asset condition details are copied.
- **Asset condition details** – These are copied from **Condition details** in **Asset Management**.

## Example

To understand how quantities and various types of expected costs related to survey activity definitions are copied to activity definitions in a compiled maintenance plan, see the following example:

- SE = survey element
- SuAD = survey activity definition
- ACD = asset condition details
- AD = activity definition (after compilation)
- MH = labor hours
- MC = material costs
- AC = additional costs

Data in Condition Surveys / Asset Management:



Planon ProCenter picks one survey element (SE1) as the basis for creating 2 activity definitions when compiling a maintenance plan in **Maintenance Planner**. The **Quantity** and **Costs** values from the survey activity definitions of the other survey elements are added to the values of SuAD 1 & 2.



**i** If you compile a maintenance plan with a non-cyclic activity that is based on a survey maintenance activity definition, then the latest date or the date on when the condition scores are effective, is considered as the start date of the activity.

## Recompiling a maintenance plan

You can update a previously compiled maintenance plan with new or updated

- service plans (asset ... /standard ... / contract ...),
- activity definitions (asset ... / standard ... / contract ...).

This functionality can be useful if associated standard service plans, asset service plans or contract service plans were updated since the current maintenance plan was compiled.



By default, any changes made to the translated names and descriptions of the associated service plans / activity definitions will not overwrite the ones in the maintenance plan upon recompiling. If you want to update the translated names and descriptions in the maintenance plan, you must enable a setting for the **Maintenance plans** business object. See *Field definer > Settings for the Maintenance Plans business object*.

## Procedure

1. At Maintenance plans, select the relevant maintenance plan.
2. On the action panel, click Compile property-based maintenance plan or Compile contract-based maintenance plan.
3. Select the relevant properties / contracts.
4. If a maintenance plan has already been compiled previously, a warning message is displayed.
5. Select OK.

**The maintenance plan is recompiled in the background.**

6. Click Close.
7. Go to System info > Background actions to check if the compilation process has been completed successfully.

**When the background action is completed, the plan is updated with the additional service plans and corresponding activity definitions.**

## Checking a recompiled maintenance plan with condition-based activity definitions

You can check how [standard activity definitions](#) and [asset activity definitions](#) with a condition-based maintenance regime are included in a recompiled maintenance plan.

Planon ProCenter uses the most recent survey date of the asset or building element from the **Condition data** selection step in **Asset Management** to perform the following actions:

If the survey date of the condition data from Asset details > Condition data in **Asset Management** is the most recent survey date, Planon ProCenter will delete all existing activity definitions in the maintenance plan that are related to outdated asset condition details (those prior to the survey date). In addition, new activity definitions are created based on the corresponding asset condition details.

If orders were already generated for existing activity definitions, those activity definitions are not deleted. Instead, the end date-time of those activity definitions is set to the end date-time of the generated order. These activity definitions continue to exist alongside newly created activity definitions.

If there is no latest survey date, no activity definitions are created for that asset condition.

## Checking a recompiled maintenance plan with non-cyclic survey activity definitions

You can check how a selected maintenance plan is repopulated with non-cyclic activity definitions that come from survey elements in **Condition Surveys**. The new data is based on the latest condition details of the associated asset or building element in the Assets TSI. The **survey activity definitions** on which the new activity definitions are based have a non-cyclic maintenance regime.

Planon ProCenter uses the most recent survey date of the asset or building element from the **Condition data** selection step in the Assets TSI to perform the following actions:

If the survey date of the condition data from **Asset details > Condition data** in the Assets TSI is the most recent survey date, Planon ProCenter deletes all existing activity definitions in the maintenance plan that are related to outdated asset condition details (those prior to the survey date). In addition, new activity definitions are created based on the corresponding asset condition details.

If orders were already generated for existing activity definitions, none of the activity definitions are deleted. Instead, these activity definitions continue to exist alongside newly created activity definitions.

If there is no latest survey date, no activity definitions are created for that asset condition.

## Integrating condition-based and non-cyclic activity definitions

You can prevent the scheduling of duplicate or unnecessary activity definitions in a maintenance plan, which are linked to the same asset condition details in the Assets TSI.

Automatic integration of activity definitions is required if an asset's or building element's condition details refer to a survey activity definition with a non-cyclic maintenance regime and an activity definition with a condition-based maintenance regime. The non-cyclic activity definition can affect the schedule of the condition-based activity definitions. Therefore, Planon ProCenter will automatically reschedule these activity definitions.

### Example

To understand how survey activity definitions can affect the scheduling of condition-based activity definitions with the same asset condition details, see the following example:

[Setting a condition-based schedule for an activity definition](#)



In this example, the first condition-based activity definition was planned 9 months after the most recent survey date. Also, a non-cyclic survey activity definition is added in **Maintenance Planner** for the same asset after compiling a maintenance plan.

Suppose a survey took place on 1/1/2010 and the maintenance activity that was based on the survey activity definition brings the asset's condition back to the **Condition after maintenance** score 1.5. The **Condition after maintenance** of this activity definition will affect the first scheduled activity of the condition-based activity definition.


Planon ProCenter calculates the time it takes to reach condition 4. Refer to the table displaying the Deterioration > factor in [Setting a condition-based schedule for an activity definition](#).

The factor of the **(Required condition) - (Observed condition) =**

Deterioration factor  $(0,875 - 0,25) = 0,625$ .

Remaining deterioration period = Deterioration > period \* 0,625 = 1,25 years.

Therefore, after 0,75 years (after 15 months after 1/1/2010 i.e. 1/11/2012) the first possible condition-based activity is scheduled. This in turn, will reschedule the subsequent maintenance activities.

 If there is only one survey activity definition associated to the **asset condition details**, it is assigned the **Balanced** status. If there are multiple associated survey activity definitions they are assigned the **Canceled** status. In that case, you need to manually change the survey activity definition's status to **Balanced**.

## Moving assets to a new location


Assets can be moved to another location within a property. It is also possible that some assets are moved to a different property completely.

If an asset is moved to a new location, on compiling the service plan /generating the maintenance activity definitions, the corresponding activity definitions of this asset in the plan are updated with the new asset location information.

For example, when assets have moved to another space in the building, any related work orders will refer to the new location(s).

However, generated orders are not updated.

If the new property is not within the maintenance plan, nothing is changed.

 For more information about the fields of an activity definition, refer to [Adding an activity definition to a service plan](#).

## Deep copying a maintenance plan

You can duplicate an existing maintenance plan in order to avoid repetitive data entry. Copying maintenance plans can either be used to create various scenarios for your maintenance plan or to make future maintenance plans. The deep copy includes:

- service plans (all types),
- activity definitions (all types),
- expected costs and schedules (recurring and non-recurring activities)
- optional: PPM profiles

## Procedure

1. At Maintenance plans, click Deep copy on the action panel.
2. The Enter values dialog box appears.
3. Enter a start date and an end date for the deep copy.
  - If you also want to include [PPM profiles](#) in your deep copy, select the **Copy PPM profiles** checkbox.
  - To be included in the deep copy, the start and end date-times of copied activity definitions must be between the start and end date of the new maintenance plan. However, activity definitions with a start date-time later than the end date of the new maintenance plan are copied too. The main reason for this is *asset replacement*. Suppose an asset must be replaced on July 1st 2010. An activity definition regarding the replacement already exists in the maintenance plan of 2008. If this plan is copied to 2009, the activity to replace the asset must also become available in the 2009 plan, although it will not be carried out within the time span of that plan.
4. Click OK.

**The maintenance plan, together with all its contents (linked properties, contracts, service plans and activity definitions) is copied.**

If you deep copy a maintenance plan that is final, because the **Definitive** field is set to **Yes**, any copies of the maintenance plan become *scenarios*, with the **Definitive** field value set to **No**. To make a copy final, change the setting of the **Definitive** field to **Yes**.



If you deep copy a maintenance plan, survey activity definitions whose **Asset condition detail** field contains a value are not copied. When you recompile a maintenance plan, the survey activity definitions are added again.

## Changing the status of a maintenance plan

You can indicate that a maintenance plan has entered another phase.

## Procedure

1. At Maintenance plans, select the maintenance plan whose status you want to change.
2. On the Status transitions action menu, select the relevant status (In preparation, Active, or Closed).

The maintenance plan is now assigned the selected status.

3. In order to be able to generate maintenance orders, select Active and make the maintenance plan definitive by selecting Yes in the Definitive (Y/N) field.



Once maintenance orders are generated for the selected maintenance plan, you cannot change its status back from **Active** to **In preparation**.

[Maintenance plan status](#)

# Work balancing in the graphical planner

This section describes the Maintenance Management processes and tasks that can be performed by applying *work balancing* in the graphical planner.

See the links below for more information:

- [Opening the graphical planner](#)
- [Customizing the view of the graphical planner](#)
- [Visual presentation of activities in the graphical planner](#)
- [Viewing activity details in the graphical planner](#)
- [Hiding empty rows from the graphical planner](#)
- [Hiding disabled / postponed / canceled / overruled activities from the graphical planner](#)
- [Adding non-recurring activities in the graphical planner](#)
- [Selecting future activities in the graphical planner](#)
- [Outlining an activity's start date-time in the graphical planner](#)
- [Moving activities in the graphical planner](#)
- [Deactivating activities in the graphical planner](#)
- [Modifying activity definition data in the graphical planner](#)
- [Modifying multiple activity definitions in the graphical planner](#)
- [Action on selection in the graphical planner](#)
- [Modifying an activity status in the graphical planner](#)
- [Viewing costs and labor hours in the Graphical planner](#)
- [Grouping activity definitions in the graphical planner](#)
- [Printing an overview of maintenance activities from the graphical planner](#)



The graphical planner does not support browser zooming. Zooming can affect the functionality of the graphical planner, such as not being able to move items.

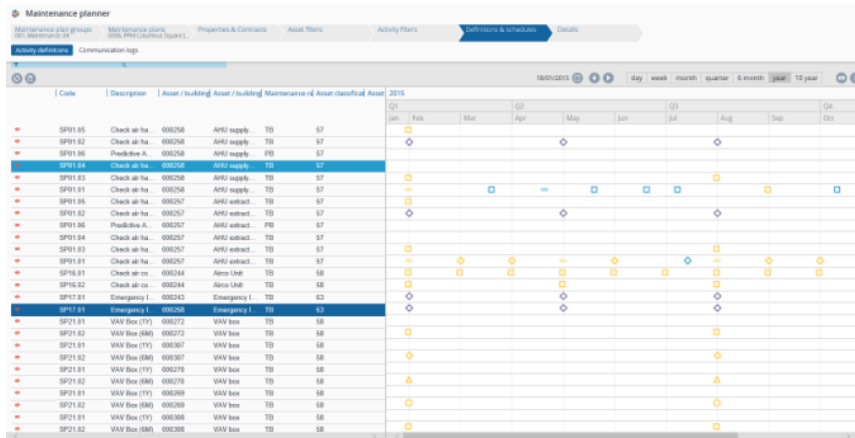
## Opening the graphical planner

Use the following procedure to open the graphical planner in Maintenance Planner:

## Procedure

1. Select a *compiled* maintenance plan and the relevant activity filters and asset filters on the foremost selection levels in Maintenance Planner.
2. Go to the Definition & schedules selection level.
3. Click the Graphical planner button.

The graphical planner opens, displaying all activities planned for the corresponding activity definitions.



'Pagination' is applied in the graphical planner, to ensure that large numbers of activities can be loaded quickly and switching between views (day, week, month etc.) will proceed adequately. Attention: pagination between the data view and the graphical view is not synchronized.

## Activity definitions in the graphical planner

If you open the **Graphical planner** view in Maintenance Planner > Definitions & schedules, the activity definitions are loaded and displayed on the left side of your screen. Which activity definitions are displayed in the list, depends on the selections you made on previous selection levels (drill-down behavior) and on filtering. If there are many activity definitions in your selection, pagination is applied to the list. You can customize the list further, for example by changing the sorting order of the list, by applying grouping criteria or by showing / hiding columns.

It is also possible to edit the data of one or more activity definitions from within the graphical planner.

Refer to the following topics for more information:

[Grouping activity definitions in the graphical planner](#)

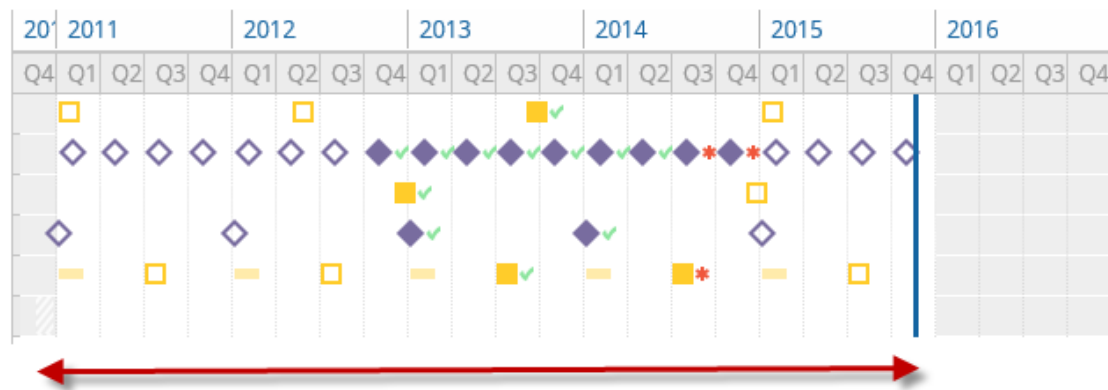
[Modifying activity definition data in the graphical planner](#)

[Modifying multiple activity definitions in the graphical planner](#)

[Action on selection in the graphical planner](#)

## Displaying an activity definition's duration

In Maintenance Planner > Definitions & schedules, selected activity definitions are displayed in the element list. The **Graphical planner** grid displays the various maintenance activities that are planned for these activity definitions. The duration of the corresponding activity definition is indicated in the grid by a white background color. The gray background color marks the time before and after the activity definition's duration. These background colors are just a visual aid for planning. Plotting / moving activities in the gray area is allowed.



## Grouping activity definitions in the graphical planner

You can group activity definitions in the graphical planner.

### Procedure

1. Go to Maintenance Planner and select the relevant maintenance plan.
2. Make relevant selections on other levels, such as Asset filters and Activity filters and then go to Definitions & schedules.
3. Click the Graphical planner button on the right.
4. In the header area of the element list, point to the column header you want to use for grouping the list of activity definitions and click the drop-down symbol next to it.

**For example, to group the activity definitions by their codes, you point to the Code column and click the drop-down symbol.**

5. Select the Group by this field option.

Code	Description	Asset / build...	Asset / build...	Maintenanc...	Asset classifi...	Total costs e...
<b>Annual insurance check (1Y) (2)</b>						
SP22.04	Annual insur...	Electrical pa...	TB	71	€ 0.00	
SP22.04	Annual insur...	Electrical pa...	TB	71	€ 0.00	
<b>Extensive check (18W) (2)</b>						
SP22.02	Extensive ch...	000234	Electrical pa...	TB	71	€ 0.00
SP22.02	Extensive ch...	000235	Electrical pa...	TB	71	€ 0.00
<b>General check (3W) (2)</b>						
SP22.01	General che...	000234	Electrical pa...	TB	71	€ 0.00
SP22.01	General che...	000235	Electrical pa...	TB	71	€ 0.00

The list of activity definitions in the graphical planner is grouped by the selected criterion.

## Modifying activity definition data in the graphical planner

You can edit the data of a maintenance activity definition from within the graphical planner, for example field data, status, maintenance regime and so on.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. In the element list, select the activity definition whose data you want to change.
5. Right-click and select Edit maintenance activity definition,

or

6. Double-click the activity definition.

**The Maintenance activity definitions dialog box appears.**

7. Make the relevant changes in the data fields or on the action panel of this dialog box and click Save > Exit.

**The activity definition is changed.**



If you edit the **start and/or end date** of a maintenance activity definition that is based on a **contract activity definition**, your changes may conflict with the contractual period (start and end date of the contract line). Since you cannot directly recognize contract activity definitions on the planboard, Planon will warn you when such conflicts occur. Depending

on the business object settings made for **Base activity definitions** in Field definer , you are then either allowed to ignore the warning and proceed anyway or you are prohibited to modify the dates to beyond the contractual period. In all cases it is strongly recommended to select start / end dates for the activity definition that remain within the contractual period. Tip: in Maintenance Planner, you can filter on contract service plans and contract activity definitions by drilling down to Asset filters > Contract lines. You can also see the data of the contractual period there.

## Modifying multiple activity definitions in the graphical planner

You can edit the data of multiple maintenance activity definitions in one go, from within the graphical planner.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. In the elements panel, select the activity definitions whose data you want to change in one go.



If there are many activity definitions in your selection, the elements panel will consist of **multiple pages**, as indicated at the bottom of the screen. To retain your selection over multiple pages, use **CTRL+click** to select elements.

5. Right-click and select Modify within selection.

**The Modify within selection dialog box opens.**

6. Check the check boxes of the relevant fields.
7. Make the relevant changes in those fields and click OK.

**The Question dialog box is displayed, warning you how many fields will be affected by the change.**

8. If you agree with the changes, click OK to proceed.

**The changes are applied to the selected activity definitions.**

You may receive error messages if any conflicts arise because of the changes. You can now either select:

- **Skip** to skip individual changes
- **Skip all** to skip all changes with conflicts
- **Stop**, to stop implementing the changes altogether

## Action on selection in the graphical planner



You can perform actions on multiple maintenance activity definitions in one go, from within the graphical planner.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. On the elements panel, select the activity definitions whose data you want to change in one go.



If there are many activity definitions in your selection, the elements panel will consist of **multiple pages**, as indicated at the bottom of the screen. To retain your selection over multiple pages, use **CTRL+click** to select elements.

5. Right-click and select Action on selection.

**The Action on selection dialog box appears.**

6. Select the action or status transition you want to apply to the selected activity definitions.

**The Question dialog box is displayed, warning you how many activity definitions will be affected by the selected action.**

7. Click OK to proceed.

**Depending on the action selected, other dialog boxes may be displayed, prompting you to enter additional data, such as dates.**

8. Enter the relevant additional data and click OK.

**The action is applied to the selected activity definitions.**

## Customizing the period view of the graphical planner

The graphical planner facilitates work balancing in **Maintenance Planner**. The graphical planner is displayed upon clicking the **Graphical planner** button at the **Definitions & schedules** selection level.

The graphical planner contains a number of toolbar controls enabling you to customize the period view. The view settings are retained and applied next time you log on to Planon ProCenter.

### Setting a date

By default, the activities are shown as of the current system date. A date picker enables you to select a different date.

01/06/2016



The graphical planner's header displays the selected date on the left of the **Select a date** button.

### Setting a period

The period buttons enable you to specify the period shown in the graphical planner. You can select the following values:

- 1 day
- 1 week
- 1 month
- 1 quarter
- 6 months
- 1 year
- 10 years



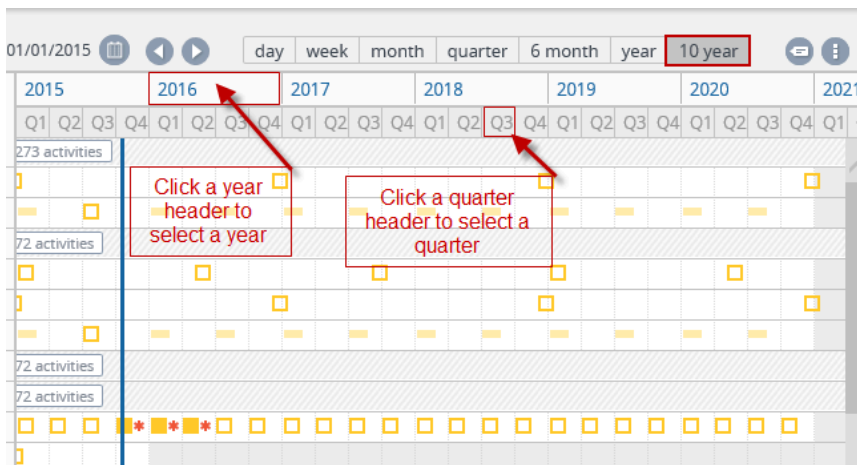
The navigation buttons allow you to move back and forth in accordance with the selected time unit.

## Changing the view by clicking column headers

You can quickly zoom in to a smaller unit of time in the graphical planner by clicking a relevant column header. The following example starts with the **10 year** view selected.

### Procedure

1. In the graphical planner, with the 10 year view selected, click on the column header of a specific year or quarter.



The graphical planner zooms in to that specific year or quarter.

2. If required, change the view to smaller units of time, such as specific months, week numbers and days by clicking on the relevant column headers.

The graphical planner will adjust the view accordingly.

## Graphical display of activities - legend

The following image shows the various shapes and colors that maintenance activities on the graphical planner can have. The shapes, colors and shades denote the activity type, scheduling method, status and so on:

Click the **Legend** button in the header to retrieve a legend explaining the meaning of the various shapes and colors:



### Shape

- ◇ Statutory
- △ Other mandatory
- Replacement
- Routine
- Overruled
- ✕ Canceled/Deactivated/Postponed

### Color

- Variable method
- Fixed method
- Fixed completion method
- Single or moved activity

### Fill

- Linked to order
- Planned, no order linked

### Other

- Current date

In the graphical planner, a shape represents the **Activity type** and the color represents the **Scheduling method**:

- Flat rectangle: indicates that an activity is **Overruled**.
- Cross: indicates that an activity is **Canceled / Deactivated / Postponed**.

- Solid fill: indicates that orders are generated for a maintenance activity definition.

The various **Status** icons of generated maintenance activities are also explained in the legend:

#### Activity statuses

- ▶ In progress
- \* Planned
- ✕ Cancelled
- ✓ Completed

## Viewing activity details in the graphical planner

You can check an activity's details before performing an action in the graphical planner.

### Procedure

1. Go to Maintenance Planner > Definitions & schedules.
2. Click the Graphical planner button.
3. In the graphical planner, hover over the activity whose details you want to view.
4. A tooltip with the relevant details is displayed.

## Viewing costs, labor hours and order number in the graphical planner

You can view an activity's expected labor hours and costs in the graphical planner by:


- checking the tooltip information on expected costs, labor hours and order number by hovering over an individual activity
- displaying labels on the activities with the data of the total costs (including or excluding tax) / labor hours
- displaying a bar chart with various cost / labor hour totals at the bottom of your screen

The procedure is about using the last two options.

### Procedure

1. After making relevant selections on previous selection levels, go to Maintenance Planner > Definitions & schedules.
2. Click the Graphical planner button and select the relevant period view.

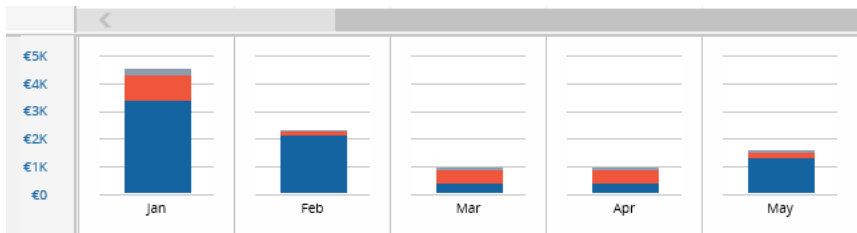
3. In order to display labels on activities and display the bar chart, click the

Select label options button in the graphical planner's header .

4. Select one of the options: Total costs excl. VAT, Total costs incl. VAT, Total labor hours (in hours). The graphical planner shows *labels* on the activities, displaying the rounded cost amounts or, if you selected the Total labor hours option, the number of labor hours.



A bar chart at the bottom of your screen shows the *totals* of the expected costs (including or excluding tax) or the expected total labor hours, for the selected period. Hover your cursor over the chart to summon tooltips with information on the individual layers of the stacked bars.



5. Use the check boxes in the bar chart's legend to show / hide specific types of expected costs from the totals. The following options are available: Display total additional costs, Display total material costs or Display total labor hour costs.

<input checked="" type="checkbox"/>	Display total additional costs
<input checked="" type="checkbox"/>	Display total material costs
<input checked="" type="checkbox"/>	Display total man-hour costs

The totals are displayed as follows for the selected period views:

- 10 years: totals per year
- 1 year: totals per month
- 6 months: totals per month
- 1 quarter: totals per week
- 1 month: totals per week
- 1 week: totals per week

6. To switch off the labels and bar chart, click Select label options > No details.

## Hiding empty rows from the graphical planner

You can hide rows without activities from the graphical planner, in order to compress the selected view and only display those activity definitions for which activities are planned.

### Procedure

1. Go to Maintenance Planner > Definitions & Schedules.
2. Click the Graphical planner button.
3. Select a relevant period view, for example 10 years, 1 year, 6 months etc.

**If any activity definitions occur for which no activities are planned, empty rows are displayed on the graphical planner.**

4. To hide these empty rows, click the Hide empty rows button on the

element section header .

**Empty rows are no longer displayed.**

5. To show the empty rows again, disable the Hide empty rows button.

## Hiding disabled / postponed / canceled / overruled activities from the graphical planner

You can hide disabled / postponed / canceled / overruled activities from the graphical planner.

### Procedure

1. Go to Maintenance Planner > Definitions & Schedules.
2. Click the Graphical planner button.
3. Select a relevant period view, for example 10 years, 1 year, 6 months etc.
4. To hide disabled / postponed / canceled / overruled activities, click the Hide disabled / postponed / canceled / overruled activities button on the

element section header .

**Disabled / postponed / canceled / overruled activities are no longer displayed.**

5. To show the disabled / postponed / canceled / overruled activities again, disable the Hide disabled / postponed / canceled / overruled activities button.

## Adding non-recurring activities in the graphical planner

You can add individual, non-recurring maintenance activities and facilitate easy scheduling and rescheduling of these maintenance activities in the graphical planner.



You cannot add an activity manually for the activity definitions with a **Fixed completion** scheduling method.

### Procedure

1. Go to Maintenance Planner > Definitions & schedules.
2. Click the Graphical planner button.
3. On the graphical planner, point to the time line of the activity definition to which you want to add a non-recurring activity.
4. Right-click the date-time where you want to add a non-recurring activity.
5. Click Add activity.

A non-recurring activity is added to the graphical planner.  
You can now generate a maintenance order from this activity.

### Generating maintenance orders

## Selecting multiple maintenance activities in the graphical planner

You can select multiple maintenance activities in the graphical planner.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. In the graphical planner, in the time line of the relevant activity definition, press CTRL + click and select multiple maintenance activities.

Multiple activity occurrences are selected. You can now apply options from the context menu, such as (de)activating or outlining.

See [Moving multiple activities in the graphical planner](#) for information about moving a sequence of activities on the planner.

## Selecting future activities in the graphical planner

You can select an activity and all its future occurrences in the graphical planner.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. In the graphical planner, select the activity whose future activities you want to select.
5. Right-click and from the context menu select Select future activities in current view or press CTRL + SHIFT.

The activity and the future occurrences that are currently displayed on the planner are selected. **Note:** Any future occurrences that are not visible in the current view are not selected! You can now apply options from the context menu to the selection, such as (de)activating or outlining.

See [Moving multiple activities in the graphical planner](#) for information about moving a sequence of activities on the planner.

## Outlining an activity's start date-time in the graphical planner

Instead of dragging and dropping an activity to reschedule it, you can also manually enter an activity's start date-time and thus *outline* it on the graphical planner. This method provides greater accuracy. You can also select multiple activities within the same iteration and outline their start date-times in one go. In that case, the selected activities must have the same maintenance regime and scheduling method. Also, there should be no orders generated yet for these activities.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.



4. In the graphical planner, select the single activity (click), multiple activities (CTRL+click) or activity sequence (right-click, followed by clicking Select future activities) whose start date-time(s) you want to adjust.

Refer to [Selecting future activities in the graphical planner](#) for information on selecting an activity's future sequence.

5. Right-click and select Outline activities.

**This option is not available if orders have been generated for the activity.**

6. From the date picker, select a new start date-time for the activity. If you selected a sequence of activities, the first activity is the reference. All future occurrences are rescheduled with the same interval as the first activity in the sequence.

The activity is rescheduled to the new date-time.

See [Moving multiple activities in the graphical planner](#) for information about moving a sequence of activities on the planner.

## Moving activities in the graphical planner

You can change the start date-time and end date-time of recurring or non-recurring activities by moving them in the graphical planner.



In the graphical planner, both recurring activities and non-recurring activities can be scheduled. Moving one recurring activity may affect the other activities in the same iteration. Within an iteration, you cannot move activities to a date that is earlier than the start date of activities for which orders are already generated. Furthermore, the scheduling method also influences how activities can be moved in the graphical planner.

See the following topics for the procedures:

[Moving a single activity in the graphical planner.](#)

[Moving multiple activities in the graphical planner](#)

[Maintenance regime](#)

## Moving a single activity in the graphical planner

You can move a single activity (non-recurring or recurring) in the graphical planner.

### Procedure

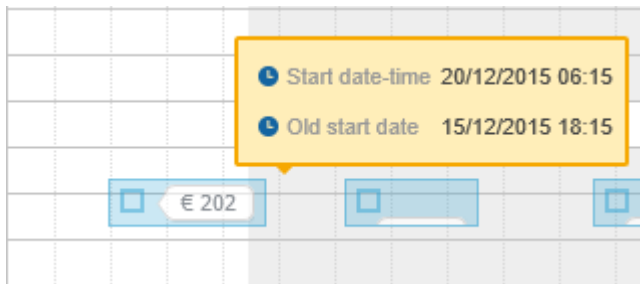
1. Go to Maintenance Planner > Definitions & schedules.
2. Click the Graphical planner button.

3. Select the activity you want to move in the graphical planner.

In this case the following applies:

- If you move a non-recurring activity in the graphical planner, only this non-recurring activity is moved and it does not affect other activities.
  - If a recurring activity starts at the same time as a non-recurring activity belonging to the same activity definition, the latter will always remain in place on the planner. However, this results in only one order being generated.
4. Drag and drop the activity on the required date-time in the graphical planner.

A tooltip displays the activity's 'old' start date-time and the 'new' start date-time. The new start-date-time is dynamic, so it is adjusted while you are scrolling.



The graphical planner also indicates whether you are plotting activities within the range of the maintenance activity definition. The activity definition's duration is marked by a white background. A gray background indicates the periods beyond the activity definition's duration: before its start date-time or after its end date-time.

Depending on the activity's scheduling method the following applies:

- If the corresponding activity definition belongs to the **Fixed** scheduling method: moving a recurring activity in the graphical planner will cause only future recurring activities to be moved along, with the same interval.
- If the corresponding activity definition belongs to the **Variable** scheduling method: moving a single recurring activity in the graphical planner will have no effect on other recurring activities.
- If the corresponding activity definition belongs to the **Fixed completion** scheduling method: recurring activities cannot be moved in the graphical planner. However, any adjustments to a maintenance order's completion date (a delay or an advance) will have consequences for the start dates of future activities that are planned for this activity definition.

## Moving multiple activities in the graphical planner

You can move multiple activities (belonging to the **Fixed** or **Variable** scheduling method) on the time line of an activity definition.

### Procedure

1. To move an horizontal sequence of activities (iteration), select the activity on the graphical planner whose future sequence you want to move.
2. Press CTRL+SHIFT.

**The whole sequence is selected, from that activity until the end of the time line.**

3. Drag the whole sequence forward or backward to the required date-time and release the mouse button.

**All recurring and non-recurring activities within the selection are moved.**



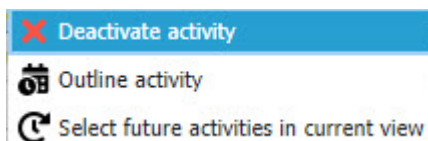
In order to move multiple, individually selected activities in time, press the CTRL key while clicking these activities. In this way, you can also make vertical selections and move the activities forward or backward to the required date-time. You can also use the **CTRL +** click operation to deselect activities.

## Deactivating activities in the graphical planner

You can exclude an activity from order generation.


### Procedure

1. Go to Maintenance Planner > Definitions & schedules.
2. Click the Graphical planner button.
3. In the graphical planner, right-click the activity you want to deactivate:



4. Click Deactivate activity.

The activity is now deactivated. The symbol will be faded.  
If you generate maintenance orders for the corresponding activity definition, no maintenance order will be generated for this particular activity.

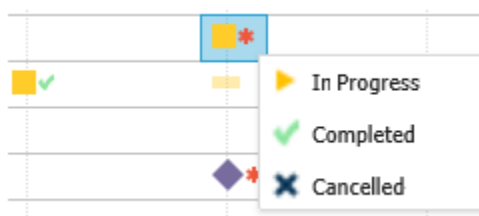
 Deactivated activities can be activated again by right-clicking them and selecting **Activate**.

## Modifying an activity status in the graphical planner


If orders have been generated for a maintenance activity, you can change this activity's status in the graphical planner. You can recognize activities for which orders have been generated by their symbols, as they are filled solid.

### Procedure

1. Go to Maintenance Planner.
2. Make relevant selections on the various preceding levels and then go to Definitions & schedules.
3. Click the Graphical planner button.
4. In the time line of the relevant activity definition, select the activity whose status you want to change.
5. Right-click and select one of the available statuses: Planned, Completed, Canceled, In progress.



The symbol for the activity's status is updated.

 If the *last* maintenance activity belongs to a series (activity definition) that has a **Fixed completion** scheduling method, it is possible to change its status from **Completed** to any other status. By doing so, you can 'undo' the activity's completion and thus correct a mistakenly completed maintenance activity. The scheduling pattern of future activities will be reverted to the one that existed before you completed the activity. If required, you can even remove the maintenance activity and corresponding PPM order. Note that maintenance activities that were completed before L74 do not have this 'Undo' information, so they still cannot be undone.

## Printing an overview of maintenance activities from the graphical planner

After having set all relevant filters and views, you can print out the maintenance activity overview and detailed information as displayed on your screen. The maximum number of maintenance activities that can be printed is 2,000.

### Good to know:

- In the Microsoft Internet Explorer browser, you must enable *Print Background Colors and Images* in the **Print > Page set-up** settings, otherwise you will not see the activities on the print.
- Microsoft Edge does not support headers / footers / CSS.

### Procedure

1. Go to Maintenance Planner and select the relevant maintenance plan.
2. Make the required selections on subsequent levels, such as Asset filters and Activity filters and then go to Definitions & schedules.
3. Click the Graphical planner button at the top right.

**The graphical planner displays the maintenance activities matching your selection criteria and display settings.**

4. In the header area of the graphical planner, click the Print chart button.

**The Print settings dialog is displayed.**

5. In the dialog, make the relevant settings.

---

<b>Export title</b>	<b>The code and description of the maintenance plan are entered by default, but you can edit the title.</b>
<b>Schedule range</b>	<p>Set the timespan that must be visible on the printed document. The following options are available:</p> <ul style="list-style-type: none"><li>• <b>Complete schedule:</b> the timespan selected on the planner is included in the print.</li><li>• <b>Complete schedule (for all events):</b> the current timespan is adjusted to only print the selected period in as far as activities are scheduled.</li><li>• <b>Date range:</b> limit the timespan to be printed even further, by providing <b>Export from</b> and <b>Export to</b> dates.</li><li>• <b>Visible schedule:</b> the currently visible horizontal part of the schedule is printed.</li></ul>
<b>Select columns</b>	Select the columns you want to print.
<b>Paper format</b>	Select a relevant ISO paper size. The default is A3.
<b>Orientation</b>	Select either <b>Landscape</b> or <b>Portrait</b> .

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<b>Export title</b>	<b>The code and description of the maintenance plan are entered by default, but you can edit the title.</b>
<b>DPI (dots per inch)</b>	Enter the required DPI value in relation with the selected paper format.
<b>Show header</b>	Mark the check box to display the header on the print.

---

6. Click Print.
7. On the Print page, make the relevant print settings and click Change to select a printing destination:
  - select a printer or application and click **Print**;
  - select Save as PDF > Save, if you want to save the overview as PDF.

# Generating maintenance orders

You can generate a PPM / maintenance order for each recurring or non-recurring activity of an activity definition. The linked standard order is used as a template for order generation. When generating (clustered) orders for a maintenance plan, the period between the start and end date of the activity definition is binding. Depending on your order generation settings in Field definer there may be further restrictions.



In **Field definer**, Planon administrators can make *business object settings for order generation*. On the **Base activity definitions**, settings can be made with regard to:

- Selection of a start date-time in the past (this setting affects the default start date-time in the **Enter values** dialog box. The end date-time can never be later than either the end date of the maintenance plan or the end date of the activity definition, depending on which of these two comes first.),
- Additional clustering criteria,
- Using the asset's technical end date as start date of the activity,
- Order generation on non-working days
- Order generation outside the applicable contractual period
- Activity definition planning outside the applicable contractual period.

See [Settings for the Base Activity Definitions business object](#) and its subtopics, for more information on the settings in Field definer .

## Procedure

1. At Maintenance Planner > Definitions & schedules > Activity definitions, select the activity definition(s) for which you want to generate orders.

**Ensure that a relevant schedule is linked to the activity definition.**

2. On the action panel, click Generate orders (or, if you selected multiple activity definitions select Action on selection Generate orders).

**The Enter values dialog box appears, with default start date-time *today, 00:00*.**

3. Enter a relevant start date-time and end date-time between which you want to generate maintenance orders.
4. Click OK.

**Maintenance orders are now generated in the Work Orders TSI for each recurring and non-recurring activity in the graphical planner from the selected start date until the selected end date, and in accordance with the frequency specified in the linked schedule. Any existing default addresses and default persons are applied while generating maintenance orders. For more information on maintaining defaults and preferences, refer to Supporting data > [Defaults and preferences](#).**



- If you do not want to generate a maintenance order for each individual activity, you can **cluster** activities by certain criteria and generate only one clustered order, or a few (depending on the criteria). See [Generating maintenance orders for clustered activities](#).
- If you want to schedule the generation of maintenance orders as an **automated process**, you can implement the settings and use the procedure described in [Scheduling automatic generation of maintenance orders](#).



**Products (materials) & order generation:** If the formal product requisition process applies ( **Apply product requisition process** field = **Yes** on the maintenance activity definition) and if material costs are defined, these costs are added to the generated order(s), as requisition lines. There are two methods to include the material costs in requisition lines:

- Use a standard maintenance order without subrequisition as the basis for order generation. In that case, any material costs are included as requisition lines directly under the generated maintenance order.
- Use a standard maintenance order with one subrequisition as the basis for order generation. In that case, any material costs are included as requisition lines in a subrequisition, under the generated maintenance order.

Please note that the first method is the newer, preferred method. If you are already working with the older method, but want to start using the preferred method, it is recommended that you transfer the subrequisition of the standard order to the archive.

[Maintenance order](#)

[Adding checklist items to a standard activity definition](#)

[Adding non-recurring activities in the graphical planner](#)

## Viewing generated maintenance orders

It is possible to view the maintenance orders generated from recurring or non-recurring activities.

### Procedure

1. Go to Work Orders .
2. At Properties, select the property whose orders you want to view.
3. At Orders, view the elements list.

The maintenance orders that you generated are available in the elements list. Any expected costs that are linked to the activity definition are copied to the maintenance order's estimates and order lines.



You can only delete maintenance orders with a **Canceled** status. If you delete a maintenance order, then the corresponding maintenance activities (in Maintenance Planner > Definitions & schedules > Activity definitions > Maintenance activities) are also deleted.



For **Fixed completion method** activity definitions, you can only delete the last maintenance activity.



In Work Orders you can add suborders to a generated maintenance order.



For maintenance activities that are deactivated in the graphical planner, no maintenance orders are generated.  
For maintenance activity definitions that are linked to contracts with the **Blocked** status, no maintenance orders are generated.  
After maintenance orders are generated, the linked schedule can no longer be changed.  
If the start date-time of a recurring activity coincides with the start date-time of a non-recurring activity within the same activity definition, a maintenance order is generated for the recurring activity only. The non-recurring activity is deleted.

### Adding an activity definition to a service plan

## Generating clustered maintenance orders

It may be efficient to generate a limited number of maintenance orders for related maintenance activities, instead of generating one maintenance order per maintenance activity. For this purpose, you can make settings to *cluster* maintenance activities during the order generation, by specifying certain *fixed criteria* and optional *additional criteria*, and an end date.

### Steps

- In the **Standard orders** TSI, special standard orders must be configured that can be used to generate maintenance orders with clustered activities.
- In Maintenance Planner > Definitions & schedules orders can be generated, based on clustered activities. Once maintenance orders are generated, they become available in Work Orders .



If you want generate maintenance orders with clustered activities, the following preconditions apply: the corresponding maintenance plan is set to **Definitive** and has the **Active** status. The field **Clustering allowed (Y/N)** of the selected activity definitions must be set to **Yes**.

### Fixed clustering criteria

The activities of selected activity definitions are automatically clustered according to the following *fixed* criteria:

- **Standard order**
- **Property**
  - Default: **Property** - maintenance activities are clustered per property

- optional: **Property level 1** - clustering by the property's main level: all activities related to properties on the first level, related second level and related third level in the property tree are clustered
- optional: **Property level 2** - clustering by the property's second level: all activities related to properties on the second level and related third level in the property tree are clustered
- **Contract line**
- **Budget definition**
- **Outsourced assignment** (this is a subcontractor contract line, which is only applicable in *Service providers > Subcontractors*) See *Service Providers > Subcontractors > [Generating outsourced assignments](#)* for more information.

#### Example

The activities of four selected activity definitions share the same **standard order** and **property**. They are consequently clustered under one maintenance order. However, if one of the four activity definitions in the selection has a different trade than the other three, its activities are clustered under a separate maintenance order and thus two maintenance orders will be generated instead of one.

### Additional criteria

Apart from the automatic clustering criteria, you can also select additional criteria:

- Trade
- Order group
- Floors
- Item groups
- Main asset - the maintenance activities of the main asset and all subassets are clustered together
- Work type
- Maintenance activity definitions



Planon administrators can add to this list of additional clustering criteria. These configurable criteria are available in **Field definer** as business object settings for **Base activity definitions**. Example: your administrator adds **Work type**, **Asset classification**, **Service plan**, **Rentable unit**, **Asset** and **Space** as additional clustering criteria.

• If you select reference fields such as rentable unit, space or asset as a clustering criteria, the corresponding field in a generated order is automatically populated.

For more information on making these settings see *Field definer > [Adding additional clustering criteria for Maintenance Planner](#)*.

### Procedure

1. At *Definitions & schedules*, select the *activity definitions* whose activities you want to cluster into one or more maintenance orders.

2. On the toolbar, click Generate clustered orders.

The **Generate clustered maintenance orders** dialog box appears.

**Generate clustered maintenance orders** X

Generate maintenance orders until

\* Start date-time 8/3/2020 11:00

\* End date-time 12/31/2020 11:00

Time span for clustering

☐ by day

☐ by week

☒ by month

☐ by year

Property level criteria

Property

Additional clustering criteria (see online help about fixed criteria)

☐ Floors

☐ Item groups

☐ Asset classification

☐ Asset / building element

☐ Maintenance activity definition

☐ Service plan

☒ Order group

☒ Trade

☒ Main asset (level 1)

Intermediate logging ☐ Yes ☒ No

OK Cancel

3. At Generate maintenance orders until specify the end date-time until which you want to generate maintenance orders for the selected activity definitions.

**By default, the end date-time is set to the current date, 23:59. In the date picker, you can edit this date-time as required.**

4. At Property level criteria, select the property level by which you want to cluster.
5. In Time span for clustering and Additional clustering criteria select criteria by which you want to cluster the activities. For example: if you select by month, by Order group, by Main asset level and by Trade, activities are clustered by month of execution, by order group, main asset and by trade. Each cluster that is subsequently formed is assigned to a single maintenance order.

**Depending on the selected criteria, one or more maintenance orders will be generated.**

6. In the Intermediate logging field, select whether you want to activate intermediate logging during the order generation.

**Intermediate logging is set to No by default, to prevent the system's performance from potentially being adversely affected. This means that log results are only stored when the**

background action for order generation has ended. If you want to monitor the background action's progress more closely, you can set intermediate logging to Yes, but bear in mind that this may slow down the system's performance. The same setting is also available for scheduled PPM order generation via a PPM cluster profile. For more information on that topic, see [PPM profile](#) and [PPM profile fields](#).

7. Click OK to start the order generation as a background action.

See [Supporting data](#) > [Background actions](#) for more information.

8. Once the order generation is completed, the generated maintenance orders become available in the Work Orders TSI > Orders.

**The individual activities of a selected maintenance order are displayed as read-only items at Order details > Maintenance activities.**

9. At Order details > Maintenance activities, on the Status transitions action panel, you can change the status of individual activities. If the maintenance order status is changed to Technically completed or Administratively completed the corresponding activities are also assigned the Completed status.

If a planned maintenance order is completed (administratively or technically), the open subrequisition for materials is also set to **Administratively completed** or **Technically completed**.

If a planned maintenance order is canceled, any open subrequisitions for materials are also set to **Canceled**.

## Clustering

# Deleting maintenance activities from clustered orders

It is possible to delete maintenance activities from clustered orders, in case there was a mistake at the time of generating the maintenance order. The deleted maintenance activity will again be added in the next order generation phase. This feature is useful to complete the maintenance orders in time.

## Procedure

1. On the Maintenance plan > Definitions & schedules > Details, select the maintenance activity(-ies) you want to delete.
2. On the action panel, click Delete.
  - The activity must have the **Canceled** status.
  - More than one maintenance activity must be linked to the clustered order.



If you delete a maintenance activity that is based on a maintenance activity definition *with costs*, the related order lines are also deleted.

## Completing an activity

You can change the status of an activity to **Completed** when it has been carried out.

### Procedure

1. At Maintenance Planner > Details > Maintenance activities, select the activity you want to complete.
2. On the action panel, click Completed.

The maintenance activity now has the **Completed** status.

The **Completed** status is also assigned if the corresponding maintenance order is either **Administratively completed** or **Technically completed**. The **Actual completion date-time** field of the activity is automatically filled. After completing the activity, you can no longer change the status of an activity definition with a **Fixed completion** scheduling method.



If an activity definition is assigned the **Fixed completion** scheduling method, only 1 maintenance order can be manually generated at a time and only if the previous maintenance order is in **Technically completed** / **Administratively completed** status. If relevant, the start dates of future activities are moved forward or put back in accordance with the changes to the intervals between the activities.



If a maintenance activity in a **Fixed completion** sequence has already been executed, but setting this activity to the **Completed** status takes longer than anticipated, the actual completion is moved to a later date. As a result, future activities are also delayed. If this is not what you want, you can *antedate* the completion of this latest maintenance activity, by giving it a completion date prior to that of the order. You do this via the **Actual completion date** field of the maintenance activity. Antedating the activity will not affect the **Technically completed** date of the related maintenance order. However, it will make sure that the start date of next activity in line is based on the correct **Actual completion date** of the previous maintenance activity.

### Activity status

## Canceling an activity

You can prevent an activity from being executed.

### Procedure

1. At Maintenance Planner > Details > Maintenance activities, select the activity that you want to cancel.
2. On the action panel, click Cancel.

The **Enter values** dialog box is displayed.

3. Enter relevant text in the Reason for cancellation field.
4. Click OK.

The text is also displayed in the **Reason for cancellation** field of the activity.



If a maintenance order is canceled, the corresponding maintenance activity is also canceled.

### Activity status

## Viewing maintenance costs in order lines

For each generated maintenance order, order lines are automatically created and populated in **Work Orders**. They are based on the expected costs linked to the activity definition. One order line is created for each item in the list of expected costs linked to an activity definition.



If the maintenance activities of an activity definition are clustered, one order line is created per expected costs item of the activity definition. Example: you have created an activity definition with two expected costs items and a daily schedule. The activities in this activity definition are clustered per week. After the order generation, seven activities are clustered per maintenance order, and each maintenance order has 14 order lines.

Go to Work Orders > **Orders**. Select the maintenance order whose order lines you want to view. Then go to Order details > Order lines.

Each order line of a maintenance order displays the type of the expected costs it is based upon in the **Expected costs from activity definition** field.

For detailed information on how expected costs are used to calculate the order line costs, see [Expected costs fields](#).

The following tables specify how various types of expected costs of a maintenance activity definition are inherited by order line fields in Work Orders :

### Labor hour costs

If the [scheduling method](#) of the activity definition is **Variable**:

#### Expected costs fields

Produced quantity \* Required quantity

#### Order line fields

Quantity

Expected costs fields	Order line fields
Hourly wage	Price excl. tax / VAT
Tax / VAT	Tax / VAT tariff

If the [scheduling method](#) of the activity definition is **Fixed**:

Expected costs fields	Order line fields
Required quantity	Quantity
Hourly wage	Price excl. tax / VAT

#### Material costs

The following fields of material costs are inherited to an order line field or used to calculate a value in an order line field:

If the scheduling method of the activity definition is **Variable**:

Expected costs fields	Order line fields
Produced quantity * Required quantity	Quantity
Price per unit	Price excl. tax / VAT

If the scheduling method of the activity definition is **Fixed**:

Expected costs fields	Order line fields
Required quantity	Quantity
Price per unit	Price excl. tax / VAT

#### Additional costs

The following fields of additional costs are inherited to an order line field or used to calculate a value in an order line field:

If the scheduling method of the activity definition is **Variable**:

Expected costs fields	Order line fields
Produced quantity * Required quantity	Quantity
Price per unit	Price excl. tax / VAT

If the scheduling method of the activity definition is **Fixed**:

Expected costs fields	Order line fields
Required quantity	Quantity
Price per unit	Price excl. tax / VAT

## Checking automatically assigned statuses of survey activity definitions

You can verify which status Planon ProCenter has assigned to a survey activity definition after the compilation of a maintenance plan.

If, in a definitive maintenance plan, multiple survey activity definitions are generated for assets with the same asset condition details, all these survey activity definitions will be assigned the **Canceled** status. You can manually change their status for work balancing purposes.

If only one survey activity definition is generated, Planon ProCenter will assign a status according to the following criteria:

The **Unbalanced** status is assigned to a survey activity definition if:

- Its asset condition details do not match the asset condition details of corresponding activity definitions in other **Definitive** maintenance plans.
- Its asset condition details match the asset condition details of corresponding activity definitions with the **Canceled** / **Postponed** status in other **Definitive** maintenance plans.

The **Canceled** status is assigned to the survey activity definition if:

- Its asset condition details match the asset condition details of corresponding activity definitions with the **Unbalanced** / **Balanced** status in other **Definitive** maintenance plans.

If multiple, subsequent definitive maintenance plans exist: - for example because you change the status of a survey activity definition from **Postponed** / **Canceled** to **Balanced** / **Unbalanced**, all corresponding activity definitions in **Definitive** maintenance plans that are linked to the same asset condition details, will get the **Canceled** status.

Within a maintenance plan that is not definitive: if you change the status of an activity definition from **Postponed** / **Canceled** to either **Balanced** / **Unbalanced**, all other activity definitions that are linked to the same asset condition details will get the **Canceled** status.



# Scheduling automatic generation of maintenance orders

Generating maintenance orders as an automated, scheduled task (for example on a monthly basis), reduces human intervention and errors to a minimum.

If you use this feature, verify that newly added maintenance activities are included without users having to modify the criteria set for the scheduled task. Modifications to the maintenance plan, such as canceled or postponed activities are also reckoned with.

Each time a 'batch' of maintenance jobs has been generated, these can be assigned to teams / tradespeople / field engineers through Resource Planner and subsequently picked up and executed via a Planon app (Planon AppSuite > My jobs module or **PMFS Live app** > **Work assignments**). For more information, see [Resource planner](#).

Example: A maintenance team lead wants to schedule auto-generated PPM orders for all three-monthly *Lift maintenance* activities. This should be done until the end date of the maintenance plan, so there will be no need to rely on human intervention to generate these orders every three months.



The setting **Max. no. of maintenance activities per PPM order** in Field definer allows Planon administrators to limit the number of maintenance activities generated per PPM order. See [Specifying a maximum number of maintenance activities per PPM order](#)

## Maintenance order

## PPM profile

It is possible to schedule the generation of maintenance orders as an *automated process*. As part of this functionality, you can create a **PPM profile**, which defines the parameters for scheduled, automated PPM order generation.

PPM profiles can be created on the **PPM profiles** selection step in the **Maintenance planner** TSI.

The following criteria in the PPM profile will determine which activity definitions are included in PPM order generation:

- Linked **Maintenance plan**
- Linked **Properties**
- Linked **Contracts** (this link is not available if the PPM profile's **Criteria type** is **Property-based**).
- Linked **Activity definition groups**

- Activity definition's status (must be **Balanced** to be included in the profile)

Other important settings in the PPM profile fields:

- **Criteria type** field: activity definitions are filtered either by **Property-based** or **Contract-based** criteria, to prevent the generation of duplicate orders or orders that have a time overlap.
- Settings for order generation, for example to allow overlapping runs in future or past periods, or selecting a specific language for the descriptions of orders, order lines and order costs.
- Schedule (the actual scheduling action, its timetable and its activation)

If you create a PPM profile *with clustering*, the following is also required:

- Link a **Cluster group** with clustering criteria (fixed and optional)
- Set a **Timespan for clustering** (by day, week, month, year)



The available clustering criteria depend on business object settings made in **Field definer** for **Base activity definitions** and its user-defined variants.

Also see [Scheduling automatic generation of maintenance orders](#), [Adding and running a PPM profile as a scheduled task](#) and [PPM profile fields](#).

## Criteria type

The **Criteria type** on a PPM profile determines whether the PPM profile is **Contract-based** or **Property-based**, in order to prevent the generation of duplicate orders.

A PPM profile must either be contract-based or property-based. You can select a profile criteria type in the **Criteria type** field.

The selected profile criteria type is the basis for:

- the filters that can be applied
- the activity definitions that will be included in the order generation

When orders are generated, a contract-based type will only pick up activity definitions that at least have a link to the selected contracts via their service plan. A property-based type will only pick up activity definitions that at least have a link to the selected properties and that do not have a link to contracts via their service plan. See [PPM profile](#) and [PPM profile fields](#) for more information.

## PPM cluster groups

As part of scheduled PPM order generation, you can create PPM cluster groups, which enable you to re-use the same cluster criteria in multiple PPM scheduling profiles.

If you want to apply clustering to the scheduled order generation, it is mandatory to define a **PPM cluster group**. The PPM cluster group sets the criteria that should be

applied to clustered order generation. You can create PPM cluster groups in the **PPM cluster groups** TSI.

Some cluster criteria that are set via a cluster group are *fixed*, such as:

- **Standard order**
- **Contract line**
- **Budget definition**
- **Outsourced assignment** (this is a subcontractor contract line, which is only applicable in Service providers > Subcontractors)

Other cluster criteria in the cluster group are *optional*. Which optional clustering criteria are shown as **Criteria fields** via the **Links** action panel of the **PPM cluster groups** TSI, depends on the fields selected as optional clustering criteria in the business objects setting made on **Base activity definitions** in **Field definer**.



See **Settings for the Base Activity Definitions business object** in the *Field definer* user documentation for more information.

A PPM cluster group can be linked to more than one [PPM profile](#), but a PPM profile can only be linked to one PPM cluster group. Ultimately, it is the PPM profile that ensures that the scheduled PPM order generation / clustered PPM order generation actually takes place.

See [PPM profile](#) and [Adding and running a PPM profile as a scheduled task](#) for more information on defining and running PPM profiles.

## Activity definition groups

As part of scheduled PPM order generation, you have the option to group together maintenance activity definitions from different *service plans*, to be included in scheduled order generation.

**Activity definition groups** are basically just 'containers' that make it possible to bring together a wide range of activity definitions under a common denominator.

You can define activity definition groups in the **Activity definition groups** TSI. Subsequently, you can link maintenance activity definitions from various service plans to these groups on the any **Activity definition** layout where the **Activity definition group** reference field is available.



It is not possible to group maintenance activity definitions from different maintenance plans into the same PPM profile.

In Maintenance planner > PPM profiles, you can link on or more **Activity definition groups** to a PPM profile. The PPM profile defines the scheduled PPM order generation, with or without clustered activities.

See [PPM profile](#) for more information on defining PPM profiles.


# Adding and running a PPM profile as a scheduled task

In the **Maintenance Planner** TSI, you can add a [PPM profile](#) that enables you to define a scheduled task for PPM order generation.

Before you can add and activate a PPM profile to define and run an automated task for PPM order generation, the following conditions must be met:

- The **PPM profiles** selection step must be available in the **Maintenance Planner** TSI.
- Cluster groups must be defined if you want to create a PPM profile with clustering.
- Activity definition groups must be defined if you want to link various activity definitions from different service plans to the PPM profile.
- The **Activity definition group** reference field must be available on any relevant **Activity definition** layouts (standard activity definitions, maintenance activity definitions, asset activity definition etc.).
- The activity definitions must have the **Balanced** status to be included in the PPM profile.

Tip: on the **Definitions & schedules** selection level, there is a toggle button

at the top of the elements list. . When activated, this button will display the activity definitions that are not covered by a PPM profile. This includes all **Unbalanced** activity definitions. Any PPM profile selected on the **PPM profiles** level is ignored. Other filters are taken into account. When deactivated, the button will display the activity definitions in accordance with selections made on previous levels and steps.

- After a PPM profile has been added, the `SYSPPM_SCHEDULED_PROFILES` task must be activated in System settings > Scheduled tasks.

## Procedure

1. Go to Maintenance Planner > PPM profiles.
2. Click Add PPM profile or, if you want to apply clustering criteria, Add PPM profile with clustering.
3. Enter the relevant data on the data panel.

See [PPM profile fields](#) for more information on the PPM profile fields.

4. On the Links action panel, link the PPM profile to the relevant property/-ies, contract(s) and/or activity definition group(s).

Keep in mind that the three Link actions work according to the 'AND/AND' principle. The more links you add to the PPM profile, the less activity definitions will be included in the scheduled task, because they have to match all links.

5. Set the PPM profile's status to Active.

You can only select this status if the start and end date of the PPM profile remain within the start and end date of the maintenance plan. Also, at least one of the three available Links actions should be performed.

6. In System settings > Scheduled tasks > , set SYSPPM\_SCHEDULED\_PROFILES to Active.

The scheduled task for PPM order generation will be picked up by Planon at the set date-time. It will pick up any PPM profiles whose Next run date-time is in the past. A **background action** is created for each PPM profile that is picked up. When the run is finished, the Next run date-time is set in accordance with the schedule.

# Reporting in Maintenance Planner

You can use **Report Manager** in Planon ProCenter to create, edit and print reports. The various action panels in **Maintenance Planner** give access to the **Report** feature which enables you to report on selected items.

In the **Reporting** dialog box, the **User reports** tab provides functionality you can use to create your own report definitions or use pre-defined report definitions.



For details on creating user report definitions, see [Reports](#).

The **System reports** tab gives access to system reports that are pre-programmed by Planon. It is possible for Planon administrators to create report settings for system report business objects in Field definer .

Additionally, in the **Reporting** dialog box, you can make several settings regarding the presentation and output of a system report.



Note that totals in the report do not always match the sum of the individual amounts. This is due to amount rounding.

## The Long-range cost survey report

At Maintenance Planner > Definitions & schedules > Activity definitions, you can access the **Long-range cost survey** system report, via **Report** on the action panel.

The **Long-range cost survey** report enables you to forecast the total cost of a selection of activity definitions over a given period, starting from a given start date.



Note that amounts in the report are always rounded up or down to the nearest whole number.

## Settings of the Long-range cost survey report

You can make a number of report settings in the **Reporting** window, on the **System reports** tab. Select the **Edit report settings** option from the action menu to open the **Report settings** dialog box. The various settings are described in the following sections.



Planon administrators can configure the layout of this **Report settings** dialog box in **Layouts**.

## Title

The field **Title** allows you to specify your own title for the report. If you leave this field unspecified, the default Planon-defined title "Long-range cost survey" is used. If you specify your own title, this title will be used instead of the Planon-defined title.

## Subtitle

The field **Subtitle** allows you to specify a subtitle for the report.

## Start date

The field **Start date** allows you to specify the date on which the reporting should start.

## Period

The field **Period** allows you to select the type of period to be covered in the report: **Week**, **Month** or **Year**.

## Number of periods

The field **Number of periods** allows you to select the number of periods to be printed in the report. You may specify any value between 1 and 12.

## Details

There are three possible values for the read-only field **Details**: **Whole report**, **Hide details** and **Totals only**. The displayed read-only value is a default value that can be set in **Field definer** for the **Report settings —Long-range cost survey** business object.



Refer to the *Field definer* for more information on setting default values for a business object's fields.

## Grouping options

There are four levels on which you can group the report data:

- **Main grouping**

The field **Main grouping** allows you to specify the way in which activity costs are to be grouped in the report.

Example: Property

- **Subgrouping**

The field **Subgrouping** is used to make a subdivision in the classification selected in the field **Main grouping**.

Example: Budget

- **Detailed grouping**

The field **Detailed grouping** is used to make yet another subdivision in the classifications selected in the fields **Main grouping** and **Subgrouping**.

Example: Trade

- **Maintenance activity definition details**

If **Y** (yes) is selected in the **Maintenance activity definition details** field, even more details are shown about individual maintenance activity definitions within the selected grouping of the report. The information on the maintenance activity definitions includes: code, description, asset ID, asset description, quantity, dimension code, percentage to be completed.



Report settings - long-range cost survey

×

General

Title

Subtitle

Reporting period

★ Start date

1/1/2020

📅

★ Number of periods

12

★ Period

Year

📅

Grouping options

Page break group

▼

★ Main grouping

1, Asset classification

📅

★ Subgrouping

0, No grouping

📅

★ Detailed grouping

0, No grouping

📅

Display options

★ Maintenance activity definition de...

☐ Yes
☒ No

★ Only print lines that contain costs

☐ Yes
☒ No

★ Including VAT

☒ Yes
☐ No

★ Include activities starting after re...

☐ Yes
☒ No

Index percentage

★ Start date cost index

1/1/2020

📅

Index %

Provisional sum

Description 1

Percentage 1

OK

Cancel

For the first three grouping levels, a pick list is available with the following options:

- No grouping
- Asset classification
- Trade
- Work type
- Budget
- Property
- Property (Level 1)
- Property (Level 2)
- Property (Level 3)
- Technical classification
- Asset
- Activity



If you wish to start each classification group on a new page, set the **Page break per group** option to **Yes**.

## Only print lines that contain costs

In the field **Only print lines that contain costs** you can specify whether you want to print maintenance activities with empty cost lines or not.

## Include activities starting after reported period

In the field **Include activities starting after reported period**, you can specify whether you want to print maintenance activities that have a start date *after* the reported period. By default, this setting is set to **No**, to exclude these activities from the report. If you want to include them, you must select **Yes**. Maintenance activities with later start dates will be printed in the report with empty cost lines. If the setting **Only print lines that contain costs** is set to **Yes** and this setting is also set to **Yes**, this setting takes precedence, to allow the printing of empty cost lines.

## Including VAT

In the field **Including VAT** you can specify whether the costs in the report should be including or excluding VAT (tax).

## Index percentage

In the **Index %** field you can specify by which percentage indexation should take place in the report.

If the field **Start date cost index** is configured on the layout of this pop-up, you can specify the date on which cost indexation should start in the report. This start date is independent of the start date entered at **Reporting period**. Example: you can set the start date for indexation at 1-1-2021 and set the start date for printing maintenance costs on 1-1-2026 for 10 years. If you leave this field empty, the start date at **Reporting period** is used for indexing.

# Forecasted resources for Maintenance Planner activities

In **Maintenance Planner**, at **Definitions & schedules**, you can access the **Forecasted resources for Maintenance Planner activities** system report via the **Report** option on the action panel.

The **Forecasted resources for Maintenance Planner activities** system report enables you to forecast the resources, i.e. total costs and labor hours, needed for maintenance planning for a specific period.

## Settings of the Forecasted resources for maintenance planner activities report

You can make a number of report settings in the **Reporting** window on the **System reports** tab. Select the **Edit report settings** option from the action menu to open the **Settings** dialog box. The various settings are described in the following sections.



The Planon administrator can configure the layout of the **Settings** dialog box in **Layout Manager**.

The various settings are described in the following sections.

### Main grouping

The field **Main grouping** allows you to specify the way in which forecasted activity costs are to be grouped in the report. The options are:

- Property
- Asset
- Property and asset
- Asset and property

### Group by activities

If the **Group by activities** option is set to **Yes**, activities related to the same maintenance activity definition in one period are grouped. If set to **No**, all activities are displayed separately.

### Period

The field **Period** allows you to select the type of period to be printed in the report: **Day** or **Week**.

## Number of periods

The field **Number of periods** allows you to select the number of periods to be printed in the report.

## Page break per group

If you wish to start each group (period) on a new page, set the **Page break per group** option to **Yes**.

## Only print lines that contain costs

The field **Only print lines that contain costs** allows you to specify whether you want to print maintenance activity cost lines without costs.

## Including VAT

The field **Including VAT** allows you to specify whether the costs in the report should be including or excluding VAT (tax).

## Display [...] costs

The **Display additional costs**, **Display labor hour costs** and **Display material costs** fields allow you to select the cost type you want to be displayed in your report. Note that at least one cost type should be selected.

## Start date

The field **Start date** allows you to specify the date on which the report should start.

## Title

The field **Title** allows you to specify your own title for the report. If you leave this field unspecified, the default Planon defined title "Forecasted resources for Maintenance

Settings of the Forecasted resources for maintenance planner activities report

Planner activities" is used. If you specify your own title, this title will be used instead of the Planon defined title.

## Subtitle

The field **Subtitle** allows you to specify a subtitle for the report.

# The Maintenance orders to be generated report

At Maintenance Planner > Definitions & schedules, you can access the **Maintenance orders to be generated** system report via the action panel, by clicking Report > System reports.

The **Maintenance orders to be generated** report enables you to view maintenance activity definitions for which maintenance orders are yet to be generated. If you select a period in the past, you can see which orders may have been overlooked that should have been generated.

## Settings for the Maintenance orders to be generated report

1. In the **Reporting** dialog box, on the **System reports** tab, select **Maintenance orders to be generated**.
2. On the **System reports** action menu, click **Edit report settings**. The **Report settings – Maintenance orders to be generated** dialog box appears.

The settings you can make in this dialog box are as follows:

Field	Description
Grouping Options- Main grouping	Allows you to specify the way in which activity definitions are grouped in the report.  Example: Property
Grouping Options - Subgrouping	Use this field to subgroup the classification selected in the field <b>Main grouping</b> .  Example: Budget
Start date	Specify the report's start date.
Period type	Select the type of period to be covered in the report: <b>Day, Week, Month</b> or <b>Year</b> .
Number of periods	Select the number of periods to be printed in the report.

Field	Description
Title	Specify the title of the report. If you leave this field unspecified, the default Planon-defined title
Subtitle	"Maintenance orders to be generated" is used.  Specify a subtitle for the report, if required.

## The Planned maintenance activities report

At Maintenance Planner > Definitions & schedules, you can access the **Planned maintenance activities** system report by clicking Report > System reports.

The **Planned maintenance activities** report enables you to view all planned maintenance activity definitions. This includes those for which orders are yet to be generated and those for which orders are already generated.

### Settings for the Planned maintenance activities report

1. In the **Reporting** dialog box, on the **System reports** tab, select **Planned maintenance activities**.
2. On the **System reports** action menu, click **Edit report settings**. The **Report settings – Planned maintenance activities** dialog box appears.

The settings you can make in this dialog box are as follows:

Field	Description
Grouping Options- Main grouping	Allows you to specify the way in which activity definitions are grouped in the report.  Example: Property
Grouping Options - Subgrouping	Use this field to subgroup the classification selected in the field <b>Main grouping</b> .  Example: Budget
Start date	Specify the report's start date.
Period type	Select the type of period to be covered in the report: <b>Day, Week, Month</b> or <b>Year</b> .
Number of periods	Select the number of periods to be printed in the report.
Title	Specify the title of the report. If you leave this field unspecified, the default Planon-defined title "Planned maintenance activities" is used.
Subtitle	

Field	Description
	Specify a subtitle for the report, if required.

## The Maintenance activities - schedule & costs report

At Maintenance Planner > Definitions & schedules, you can access the **Maintenance activities - schedule & costs** system report by clicking Report > System reports on the action panel. This *data-only* report has no styling and is especially designed for the export of maintenance activity data.

You can save the **Maintenance activities - schedule & costs** report in various file formats. To export the data including their expected costs to a spreadsheet, use the available **Save as ... > XLS:[...]** and **XSLs:[...]** options. You can use the exported data for Business Intelligence analytics.

## Settings for the Maintenance activities - schedule & costs report

In the Reporting dialog box, on the System reports tab, select **Maintenance activities - schedule & costs**. On the System reports action panel, click Edit report settings. The Report settings – Maintenance activities - schedule & costs dialog box appears. The settings you can make in this dialog box are as follows:

Field	Description
Title	Enter a title for the report.
Subtitle	Enter a subtitle for the report, if required.
Start date	Enter a start date for the report.
Number of periods	Enter the number of days, weeks, months or year you want to include in the report.
Period type	Select the type of period you want to report about: Day, Week, Month, Year.

# Planned Maintenance – Field Descriptions

## Standard service plan fields

Field	Description
Code	Enter a code for the standard service plan.
Description	Enter a description of the standard service plan.
Classification group	Click the pick list button in this field to open the <b>Classification group</b> dialog box in which you can specify the asset classification group (as defined in <b>Asset Management</b> ) to which the new service plan applies.
Technical classification	Click the pick list button in this field to open the <b>Technical classification</b> dialog box in which you can specify the asset technical classification (as defined in <b>Asset Management</b> ) to which the new service plan applies.

## Checklist item fields

Field	Description
Code	Enter a code for the checklist item.
Standard activity definition	Select a relevant standard activity definition from the dialog box.
Description	Enter a relevant description for the checklist item.
Sequence	Enter a number that reflects the order in which the checklist item must be carried out.
Comment	If relevant, enter comments to the checklist item. Information entered in this field, in either the Maintenance Library (standard activity definition) or by back-office personnel in Service Manager (on a maintenance activity) is not displayed on the mobile devices of field engineers, but remains visible only to the back-office. However, if a field



Field	Description
	engineer enters comments to the corresponding <b>Comment</b> field on the PMFS app, the information is uploaded periodically to the back-office and added incrementally to any existing comments.
Mandatory?	Select <b>Yes</b> to make the checklist item a mandatory part of completing the order.



Additional checklist item fields are shown on maintenance activities for which orders are generated. Refer to *Service Manager > Checklist item fields on orders* for more information.

## Maintenance plan group fields

Field	Description
<b>Code</b>	Enter a code for the maintenance plan group.
<b>Description</b>	Enter a description for the new maintenance plan group.
<b>Parent level</b>	If a sub-maintenance plan group is added to a main maintenance plan group, this field automatically inherits the name of the main maintenance plan group.

## Maintenance plan fields


Field	Description
<b>Maintenance plan group</b>	Displays the maintenance plan group to which the maintenance plan belongs. You can edit this field.
<b>Code</b>	Enter a code for the maintenance plan.
<b>Description</b>	Enter a description of the maintenance plan.
<b>Translated name</b>	After adding a new maintenance plan, you can enter translated names for this record in five languages.
<b>Responsible person</b>	Select the person who is responsible for the maintenance plan.
<b>Start date</b>	Enter a start date for the maintenance plan. The start date can no longer be changed



Field	Description
	after maintenance orders are generated for a maintenance plan.
End date	Enter an end date for the maintenance plan. After maintenance orders are generated for a maintenance plan, its end date can only be modified to a date that is identical to or later than the start date of the last generated maintenance order.
Definitive (Y/N)	The default value in this field is <b>No</b> . As long as the field value is <b>No</b> , your maintenance plan is only a <i>scenario</i> . To finalize the selected maintenance plan, select <b>Yes</b> in this field. After you have selected <b>Yes</b> , the maintenance plan is official. Other maintenance plans linked to the same properties or contracts within the same period can now no longer be finalized.
System status	This field displays the current status of the maintenance plan: <b>In preparation</b> , <b>Active</b> or <b>Closed</b> .
Contract details	This field displays detailed information on the contract(s) linked to a contract-based maintenance plan and its most recent compilation date.
Property details	This field displays detailed information on the property / properties linked a the property-based maintenance plan and its most recent compilation date.

## Service plan fields


Field	Description
Code	Enter a code for the service plan.
Maintenance plan	Displays the selected maintenance plan. You can select another maintenance plan, if required.
Description	Enter a description of the service plan.




## Activity definition fields

Field	Description
<b>General</b>	
<b>Maintenance plan</b>	Displays the selected maintenance plan. You can select another maintenance plan, if required.
<b>Service plan</b>	Displays the selected service plan. You can select another service plan, if required.
<b>Standard service plan</b>	Select a relevant standard service plan.
	<div>  Only Standard service plans with <b>Activity service plan?</b> set to <b>No</b> can be selected. </div>
<b>Property</b>	<p>Displays the property where the asset, for which the maintenance activity definition is created, is located. When the asset is moved to a different property on compiling the plan / generating the PPM order, the maintenance activity definitions of this asset are updated with the new property.</p> <p>If the new property is not within the maintenance plan, nothing is changed.</p>
<b>Space</b>	<p>Select a relevant space.</p> <p>If the asset is moved to a different location within the same property on compiling the plan or on generating the PPM order, the corresponding maintenance activity definitions in the plan are updated with the new space.</p>
<b>Rentable unit</b>	<p>Select a relevant rentable unit.</p> <p>If the asset in this rentable unit is already linked to a space on compiling the maintenance plan, this field is automatically populated. You can use both 'Rent-to' and 'Rent-from' units in planned maintenance. If the space usage linked to a rentable unit is updated, the activity definition is also updated with this information.</p>
<b>Asset / building element</b>	<p>Select an asset or building element for which you want to schedule maintenance activities. If this field is left empty, the maintenance activity definition will apply to the entire property instead of to a specific asset or building element.</p> <p>However, under the following conditions, this field becomes mandatory:</p> <ul style="list-style-type: none"> <li>• If the maintenance activity definition is <i>condition- based</i>.</li> </ul>

Field	Description
	<ul style="list-style-type: none"> <li>If the maintenance activity definition is based on a <i>survey activity definition</i> (from <b>Condition Survey</b>).</li> </ul> <p>If you click the browse button next to the field, you can only select assets / building elements whose <b>Is planned maintenance required? (Y/N)</b> field in Assets is set to <b>Yes</b> and which do not have the <b>Disposed of</b> status.</p> <div>  Use the filter options to quickly find the relevant asset or building element. </div>
<b>Asset classification</b>	Select an asset classification.
<b>Activity</b>	
<b>Code</b>	Enter a code for the activity definition.
<b>Description</b>	Enter a description of the activity definition.
<b>Maintenance regime</b>	<p>Enter the type of maintenance that applies to the base asset (asset or building element) in this activity definition: Time-based, Condition-based, Non-cyclic or Predictive-based.</p> <p>If you are not sure yet what maintenance regime to enter, select <b>Not defined</b>.</p> <p>After saving the activity definition, you can still manually select a relevant maintenance regime via the <b>Schedule</b> actions in the action menu.</p> <p>If you select the maintenance regime directly on adding a new activity definition, proceed with either A, B, C or D of this procedure.</p> <div>  The <b>Scheduling method</b> must be <i>Fixed</i> if you select a condition-based maintenance regime. The scheduling method must be <i>Variable</i> if you select a <b>Non-cyclic</b> or <b>Predictive-based</b> maintenance regime. </div>
<b>Activity details</b>	
<b>Activity type</b>	Enter the type of maintenance that applies to the activities generated from an activity definition: routine, statutory, other mandatory or replacement.
<b>System status</b>	Displays the current status of the activity definition.
<b>Scheduling method</b>	Select a scheduling method for the activity definition.

Field	Description
	There are three methods available: <b>Variable method</b> , <b>Fixed method</b> and <b>Fixed completion method</b> . The <b>Scheduling method</b> can only be changed if a maintenance order has not yet been generated, or if all corresponding maintenance activities are in either the <b>Completed</b> or the <b>Canceled</b> status.
<b>Quantity</b>	Enter a quantity for the value that you entered in the <b>Unit</b> field. For example the number of square feet of an asset that needs to be painted.
<b>Unit</b>	Select a unit of measurement. This field refers to the value specified in the <b>Quantity</b> field.
<b>Percentage to be completed</b>	Enter a value that represents the percentage of work planned to be completed in the selected maintenance plan.
<b>Clustering allowed?</b>	Specify if the clustering of scheduled activities is permitted or not.
<b>Suppress first activity?</b>	You can use this setting to suppress the first activity in the schedule's sequence, preventing it from starting directly on the asset's maintenance start date-time. The setting applies to: Standard maintenance activity definitions, Asset activity definitions and Contract activity definitions. If you select <b>Yes</b> in this field, an extra iteration is added to the start date-time of the activity definition upon compiling the maintenance plan, which results in the first activity (on the maintenance start date) being skipped.
<b>Apply product requisition process</b>	Click <b>Yes</b> , to apply the formal requisition process. If you click <b>No</b> , the informal requisition process is carried out. See <a href="#">Applying the product requisition process</a> .
<b>Condition after maintenance</b>	Enter the score that represents the asset's or building element's condition after maintenance has taken place.
<b>Assessment definition</b>	If you want to plan and perform assessments in the same way as regular maintenance activities, select a relevant assessment definition in this field. By linking an assessment definition to the selected activity definition you can prompt field staff to perform the assessment via PMFS. See: <a href="#">Planning and</a>

Field	Description
	performing (mobile) assessments via a maintenance plan.
<b>Maintenance period</b>	
<b>Start date-time</b>	Enter a start date-time for the activity definition.
<b>End date-time</b>	Enter an end date-time for the activity definition.
	 A warning message appears if you change the <b>End date-time</b> of the maintenance activity while the <b>Asset</b> is set to the <b>Disposed of</b> status.
<b>Override offset</b>	
<b>Overruled by schedule from...</b>	<p>If you linked several activity definitions to the same asset, which include equivalent work (activities), but which have a different schedule, it is possible to let the activities of the selected activity definition be overruled (for a specific period) by activities of another activity definition within the same service plan.</p> <p>You can select an overruling activity definition in this field.</p> <p><b>Example:</b></p> <p>The asset is a lease car. It is linked to activity definitions A and B.</p> <p>Activity definition A, 'Annual motor vehicle inspection', has a yearly schedule.</p> <p>Activity definition B, 'Check tire pressure', has a monthly schedule.</p> <p>Both activity definitions involve an activity in which the tire pressure is checked. Each time activities from A and B overlap, you can choose to have activity B overrule activity A. This prevents the same task from being carried out twice.</p>
<b>Period of overruling schedule</b>	Specify a period of time to be deducted from the start date-time and added to the end date-time of the selected activity definition, to define a period within which the overruling activity definition is valid.
<b>Budget definition</b>	Select a budget definition. The budget definitions specified in <b>Supporting data</b> are displayed. After you have linked a budget definition, you can generate maintenance budgets in <b>Supporting data</b> for the maintenance activities of a specific

Field	Description
	property and for a specific financial year. For details on this subject, see Supporting data .
Contract line	<p>Select the relevant contract line for the activity definition. The contract line data is inherited by any maintenance orders that are generated.</p> <div>  <p>If this field is populated after the compilation of a maintenance plan and the activity definition is based on a contract activity definition, the contract line field becomes read-only.</p> </div>
Functional class	Select a functional class.
Inspection regime	Select an inspection regime.
User-definable classification 1 & 2	Select a user-definable classification.
Order group	<p>Select an order group. This field must be completed to generate orders.</p> <div>  <p>For activity definitions with a <b>Fixed completion</b> scheduling method, this field must remain unspecified, because such activity definitions cannot be overruled.</p> </div>
Service agreement service	<p>If relevant, select a service that belongs to a service agreement (Service Providers solution) and apply it to the activity definition. All types of activity definition can be linked to service agreement services. If you enter a service in this field, it is taken into account when compiling maintenance plans and generating orders. A service agreement service can also be used as optional clustering criterion when generating clustered ppm orders. For more information on <i>service agreement services</i>, see the <i>Service Providers - data setup</i> user documentation.</p>
Standard order	<p>Select a relevant standard maintenance order. This field must be completed to generate orders.</p> <div>  <p>If you selected <b>Yes</b> in the <b>Apply product requisition process</b> field and if material costs are present, the standard PPM order used to generate planned maintenance orders and the material costs are added directly as requisition line(s) under the generated PPM order. The standard order does not require a suborder. See <a href="#">Generating maintenance orders</a> for more information.</p> </div>

Field	Description
<b>Total additional costs excl. VAT</b>	This read-only displays the total of the additional costs per generated activity, excluding tax / VAT.
<b>Total additional costs incl. VAT</b>	This read-only displays the total of additional costs per generated activity, including tax / VAT.
<b>Total costs excl. VAT</b>	This read-only displays the total of all material, additional and labor hour costs per generated activity, excluding tax / VAT.
<b>Total costs incl. VAT</b>	This read-only displays the total of all material, additional and labor hour costs per generated activity, including tax / VAT.
<b>Total labor hours</b>	This read-only displays the total number of labor hours spent per generated activity.
<b>Total labor hour cost excl. VAT</b>	This read-only displays the total labor hour cost per generated activity, excluding tax / VAT.
<b>Total labor hour cost incl. VAT</b>	This read-only displays the total labor hour cost per generated activity, including tax / VAT.
<b>Total material cost excl. VAT</b>	This read-only displays the total material cost per generated activity, excluding tax / VAT.
<b>Total material cost incl. VAT</b>	This read-only displays the total material cost per generated activity, including tax / VAT.
<b>Trade</b>	Displays the selected trade. You can select another trade from the dialog box available in this field.
<b>Work type</b>	Displays the selected work type. You can select another work type from the dialog box available in this field.


## Expected costs fields

Field	Description
<b>General</b>	
<b>Type</b>	Displays the type of expected costs: <b>Material</b> , <b>Additional</b> or <b>Labor hours</b> .
<b>Description</b>	Enter an appropriate description of the expected costs.




Field	Description
<b>Required quantity</b>	<p>Enter the quantity referring to the purchase item or number of labor hours which is needed to complete the activity on one asset.</p> <p>Example: replacing 2 filters per air conditioning unit</p> <p><i>Activity definition:</i></p> <p><b>Asset</b> = air conditioning unit</p> <p><b>Quantity</b> = 3 (air conditioning units)</p> <p><i>Expected costs:</i></p> <p><b>Purchase item</b> = filter</p> <p><b>Unit</b> = pieces</p> <p><b>Required quantity</b> = 2</p> <p><b>Price per unit</b> = \$50</p>
<b>Produced quantity</b>	<p>Enter the same value as the value in the <b>Quantity</b> field in the activity definition. This is the quantity that must be produced by means of the value specified in <b>Required quantity</b>.</p> <p><b>Example:</b> 3 (air conditioning units).</p>
<b>Unit of required quantity</b>	<p>Select a relevant unit of measurement from the dialog box available in this field. The selected unit applies to the value in the <b>Required quantity</b> field.</p>
<b>Unit of produced quantity</b>	<p>This read-only field displays the unit that applies to the value in the <b>Produced quantity</b> field.</p>
<b>Standard cost category</b>	<p>Select a standard cost category from the dialog box available in this field. A standard cost category is a classification of the costs according to function.</p>
<b>Standard cost type</b>	<p>Select a standard cost type from the dialog box available in this field. A standard cost type is a classification of the costs according to type.</p>
<b>Cost type</b>	<p>Select a cost type. There are two options: <b>Fixed</b> costs or <b>Variable</b> costs.</p> <p>If you select <b>Variable</b>, the costs are calculated taking into account the quantity specified on the maintenance activity definition.</p> <p>If you select <b>Fixed</b>, costs are calculated <i>without</i> taking into account the quantity specified on the maintenance activity definition.</p> <p><i>Fixed cost calculation</i></p>


Field	Description
	<p>Fixed costs (excluding tax / VAT) are calculated as follows:</p> $\frac{(\text{Percentage to be completed (of the activity)} / 100) * (\text{Required Quantity} * \text{Price per Unit})}{1}$ <p>The price including VAT is calculated by multiplying the result * ((100 + VAT percentage) / 100)</p> <p><i>Variable cost calculation</i></p> <p>Variable costs (excluding VAT) are calculated as follows:</p> $\frac{(\text{Percentage to be completed (of the activity)} / 100) * \text{Quantity (of the activity)} * (\text{Required Quantity} / \text{Produced Quantity} * \text{Price per Unit})}{1}$ <p>The price including VAT is calculated by multiplying the result * ((100 + VAT percentage) / 100)</p> <p><b>Example</b></p> <ul style="list-style-type: none"> <li>Percentage to be completed = 75%</li> <li>Required quantity = 0.25</li> <li>Produced quantity = 1</li> <li>Quantity (of the activity) = 2</li> <li>Price per unit = 10</li> <li>VAT = 21%</li> </ul> <p>--- Fixed cost calculation ---</p> <p>Excluding VAT: <math>(75 / 100) * (0,25 * 10) = 1,88</math></p> <p>Including VAT: <math>1,88 * (100 + 21) / 100 = 2,27</math></p> <p>--- Variable cost calculation ---</p> <p>Excluding VAT: <math>(75 / 100) * 2 * (0,25 / 1 * 10) = 3,75</math></p> <p>Including VAT: <math>3,75 * (100 + 21) / 100 = 4,54</math></p>
<b>Tax / VAT</b>	Select the appropriate tax rate / VAT rate.
<b>Activity definition</b>	If you want to link the expected costs to a specific activity definition in <b>Maintenance Planner</b> , select an activity definition from the dialog box available in this field.
<b>Standard activity definition</b>	If you want to link the expected costs to a standard activity definition from the <b>Maintenance Library</b> , select a standard activity definition in this field.

Field	Description
<b>Asset activity definition</b>	If you want to link the expected costs to an asset activity definition from <b>Asset Management</b> , select an asset activity definition from the dialog box available in this field.
<b>Material</b>	
<b>Product</b>	<p>Select a product to add its material costs to the maintenance activity definition. The product related fields on the maintenance activity definition material costs are automatically updated.</p> <p>This field becomes available only when you select <b>Yes</b> in the Definitions &amp; schedules &gt; Apply product requisition process field. If <b>No</b> is selected in this field, the <b>Product</b> field is cleared and the <b>Purchase item</b> field (the default product on the Purchase information record) is considered for calculating the material costs.</p>
<b>Purchase item</b>	<p>Select the product you want to order from the dialog box.</p> <p>If you select <b>Yes</b> in the Definitions &amp; schedules &gt; Apply product requisition process field, this field is cleared and becomes read-only.</p>
<b>Use actual price</b>	<p>Decide which price should be used to create planned maintenance orders. Select <b>Yes</b> if you want to use the actual price as defined on the product. Select <b>No</b> if you want to use the price on the material costs.</p> <div data-bbox="600 1266 1317 1486" data-label="Text"> <p> The actual price can only be used if the <b>Apply product requisition process</b> is enabled on the Definitions &amp; schedules &gt; Activity definitions level. If the product requisition process is not applied, the <b>Use actual price</b> field is disabled and the price as defined on the material costs is used.</p> </div>
<b>Price per unit</b>	<p>Enter the price per unit of the product that you entered in the <b>Purchase item</b> field.</p> <p><b>Example:</b> \$50 for an air conditioning filter.</p>
<b>Purchase item group</b>	If you are adding material costs, select a relevant purchase item group from the dialog box available in this field. A purchase item group is a classification of the items that can be purchased within an organization.

Field	Description
Standard order quantity	This read-only field displays the prescribed number of purchase items that must be ordered.
<b>Labor hours</b>	
Hourly wage	If you are adding labor hour costs, enter the relevant hourly wage in this field.
Tariff group	If you are adding labor hour costs, select the tariff group that applies to the hourly wage.

## PPM profile fields

Field	Description
<b>General PPM profile fields</b>	
Code	Enter a unique code for the PPM profile.
Name	Enter a relevant name for the PPM profile.
Type	Displays the type of PPM profile that was added: a PPM scheduling profile <i>with clustering</i> or <i>without clustering</i> .
Language	<p>Select the language in which the <i>descriptions</i> of generated PPM orders, order lines and order costs, from this profile should be shown.</p> <p>The generated PPM orders and related order costs and order lines will take their descriptions from the related <b>Translated name</b> field in the selected language.</p> <p>If you do not select a language in this field, the language from the SCHEDULERENGINEADMIN user account is used for PPM order generation.</p>
<div>  You can set up PPM profiles for specific areas / regions, each with their own language and their own PPM order scheduling. </div>	
Maintenance plan	Select the maintenance plan to which the PPM profile applies.
System status	Displays the selected status of the PPM profile: <b>Active</b> or <b>Inactive</b> .
Start date of schedule	Enter a start date for running the scheduled PPM profile.

Field	Description
End date of schedule	Enter an end date for running the scheduled PPM profile.
Schedule	Define the frequency and number of intervals at which the schedule should be run. You can also select specific dates for running the schedule.
Future period	In this field, select a period in the future for which to generate PPM orders, starting on the next scheduled run date. Example: if you select <i>1 month</i> , each scheduled run generates PPM orders for the next monthly period.
Past period	In this field you can select a period in the past until the next scheduled run date. This period is used to generate orders for activities that were 'missed' in a previous scheduled run. Typically, these are activities that were added to the schedule after the previous run date. With this setting, you can include the 'missed' activities from a past period in the next run. This setting is especially useful for <b>Condition-based</b> or <b>Predictive-based</b> activities that have dynamic scheduling behavior. Example: if you select <i>1 Month</i> , the PPM profile will include activities from the previous month in the order generation, upon each scheduled run.
Next run date-time of schedule	Initially: enter the first date-time on which the schedule should be run to generate PPM orders. After the first run, this field will display the next calculated run date-time according to the schedule.
<div>  This date-time refers to the timezone of the Planon database. </div>	
Criteria type	<p>The purpose of this <i>mandatory</i> field is to prevent duplicate orders being generated from the PPM profile. Select the criteria by which activity definitions should be filtered and picked up for order generation: <b>Property-based</b> or <b>Contract-based</b>.</p> <ul style="list-style-type: none"> <li>• <b>Property-based</b> type: only picks up activity definitions that at least have a link to the selected properties and no link to a contract-based maintenance plan. With this type, no links can be made to contracts on the PPM profile.</li> <li>• <b>Contract-based</b> type: only picks up activity definitions that at least have a link to the selected contracts via their service plan (with a contract-based maintenance plan reference). With</li> </ul>

Field	Description
	<p>this type, you can link both properties and contracts to the PPM profile.</p> <p>See <a href="#">Criteria type</a> and <a href="#">PPM profile</a> for more information.</p>

**Links** - perform at least one of the three **Link** actions on a PPM profile:

<b>Linked contracts</b>	This field displays the contracts that are linked to the PPM profile via the <b>Links</b> action on the action panel.
<b>Linked properties</b>	<ul style="list-style-type: none"> <li>• If the <a href="#">criteria type</a> of your PPM profile is property-based, this field enables you to select the properties that are linked to the maintenance plan.</li> <li>• If the criteria type of your PPM profile is contract-based, this field enables you to select the properties that are linked to the contracts and properties from a contract-based maintenance plan.</li> </ul>
<b>Linked activity definition groups</b>	This field displays the activity definition groups that are linked to the PPM profile via the <b>Links</b> action on the action panel.

#### Additional fields for PPM profiles with clustering:

<b>Cluster group</b>	Select the cluster group that applies to the PPM profile. This cluster group defines the criteria for clustering the maintenance orders during the scheduled run.
<b>Timespan for clustering</b>	Select the timespan that should apply to the <i>clustering</i> : day, week, month or year.
<b>Intermediate logging?</b>	Specify whether you want to activate intermediate logging on the background action, during the order generation. By default, this field is set to <b>No</b> , to prevent the system from slowing down. This means that log results are only stored when the background action for order generation has ended. If you want to monitor the background action's progress more closely, set intermediate logging to <b>Yes</b> , but bear in mind that this may affect the system's performance.

# Index

## A

- Activity definition
  - add 53
  - avoid duplicate maintenance activities 21
  - deep copy 63
  - overruled by another 21
  - status 13
  - view schedule and activities 58
- Activity definition in graphical planner
  - change maintenance regime 87
  - change status 87
  - edit field data
    - edit period of contract activity definition 87
- Activity definition: add expected costs 64
- Activity definitions
  - action on selection in graphical planner 88
  - edit multiple in graphical planner 88
  - group in graphical planner 86
  - modify within selection in graphical planner 88
  - pagination & action on selection 88
  - pagination & modify within selection 88
- Apply standard activity definition: add action to layout 66
- Asset
  - link standard service plans 44
- Asset location
  - update activity definition 81
- Asset location data
  - copy 64
- Asset Management: maintenance regime 24
- Assets
  - link to standard service plan 44
- Assets: preparations for planned maintenance 39

## B

- Building element
  - link standard service plans 45

## C

- Checklist item
  - Comment by back-office 128
  - Comment via PMFS app 128
- Clustering allowed? 130
- Clustering criteria
  - fixed 105
  - optional 105
- Clustering maintenance activities
  - generate orders 105
- Condition after maintenance 130
- Condition-based activities: reschedule 63
- Contract activity definition
  - Validation of contract line 17
- Criteria type
  - contract-based 114
  - property-based 114

## D

- Deactivate activities
  - in graphical planner 99
- Deep copy activity definition
  - asset activity definition 63
  - contract activity definition 63
  - standard activity definition 63

## E

- Expected costs
  - inherited by order lines 110

## F

- Fixed completion
  - antedating a maintenance activity 27

## G

- Generate clustered PPM orders
  - background action 105
  - intermediate logging 105
- Generate PPM orders
  - clustering 103
  - manually 103
  - within contract line period 103
- Generated maintenance order

- view 104
- Graphical planner
  - Activity definitions 85
  - activity shapes/symbols 91
  - change period view via column headers 90
  - context menu 96
  - Duration of activity definition 86
  - export to PDF 100
  - future activities in current view 96
  - Hide disabled / postponed / canceled / overruled activities 94
  - Hide empty rows 94
  - legend 91
  - Maintenance Planner 94, 94
  - manually adjust activity start date-time 96
  - move activities 97
  - Move activity sequence 99
  - Move multiple activities 99
  - open 84
  - outline activities' start date-times 96
  - pagination 84, 85
  - print maintenance activities 100
  - print settings 100
  - select future activities 96
  - selecting multiple maintenance activities 95
- Graphical planner: Maintenance Planner
  - Customize period view 89
  - Toolbar controls 89

## L

- Link building elements to a standard service plan 46
- Long-range cost survey report settings 118

## M

- Maintenance activities - schedule & costs
  - data-only export 127
  - settings 127
  - system report 127
- Maintenance activity

- antedate a Fixed completion activity 109
- cancel 109
- change status for 'fixed completion' 100
- change status in graphical planner 100
- completed 109
- delete from clustered orders 108
- Maintenance activity definition
  - fields 130
  - group 115
  - link to PPM profile 115
  - MAD 130
  - MAD group 115
  - scheduling profile 115
- Maintenance activity definition: preparations per regime 39
- Maintenance costs
  - order line calculation 110
- Maintenance library
  - checklist item 33
  - copy 42
  - deep copy 42
  - link assets to standard service plan 44
- Maintenance library: add standard activity definition 46
- Maintenance library: description 33
- Maintenance Library: overview of concepts 32
- Maintenance Library: preconditions library set-up 37
- Maintenance library: standard activity definition 34
- Maintenance Library: standard service plan 34
- Maintenance library:add 41
- Maintenance Manager
  - condition-based maintenance 16
- Maintenance Manager: asset service plan 32
- Maintenance Manager: deterioration curve 19



- Maintenance Manager: time-based maintenance 30
- Maintenance order
  - planned maintenance order 22
  - PPM order 22
- Maintenance order generation
  - PPM profile 113
  - scheduled task 113
- Maintenance orders
  - clustering 103
  - generate manually 103
  - start/-end date 103
- Maintenance orders to be generated report: settings 125
- Maintenance plan 23
  - add 51
  - add standard activity definitions 67
  - background action 78
  - business object setting 78
  - change status 82
  - check automatically assigned statuses 112
  - check compiled maintenance plan 76
  - check maintenance plan with survey activity definition 77
  - check start and end time 72
  - compile contract-based 71
  - compile property-based 69
  - contract-based 78
  - deep copy 81
  - link contracts 52
  - link properties 51
  - property-based 78
  - recompile 78
  - recompiled with condition-based activities 79
  - recompiled with non-cyclic activities 80
- Maintenance plan group 23
- Maintenance plan: add standard activity definitions 66
- Maintenance plan: status 24
- Maintenance planner 22
- Maintenance Planner
  - activity 12
  - activity clustering
    - cluster criteria 16
  - add maintenance plan group 50
  - automatic integration of activity definitions 80
  - contract lines 18
  - contract service plan 18
  - graphical planner 20
  - move single activity 97
  - partly replace time-based schedule 58
  - replace predictive-based schedule 60
  - reporting 118
  - scheduling method 27
  - view costs / labor hours / order number in graphical planner 92
- Maintenance Planner activities report
  - forecasted resources 123
- Maintenance Planner: activity definition 12
- Maintenance Planner: Activity status 13
- Maintenance Planner: activity type 14
- Maintenance Planner: apply condition-based schedule 60
- Maintenance Planner: asset classification 14
- Maintenance Planner: asset group 15
- Maintenance Planner: assets 14
- Maintenance Planner: budget definitions 15
- Maintenance Planner: building element 15
- Maintenance Planner: execute maintenance plan 69
- Maintenance Planner: functionality class 20
- Maintenance Planner: inspection regime 21
- Maintenance Planner: maintenance regime 24
- Maintenance Planner: order group 21
- Maintenance Planner: survey activity definitions 34
- Maintenance Planner: technical classification 30

- Maintenance Planner: trade 30
- Maintenance Planner: unit of measurement 30
- Maintenance Planner: user-definable classification 31
- Maintenance Planner: work type 31
- Maintenance regime 130
  - condition-based 56
  - non-cyclic 55
  - predictive-based 54
  - time-based 54
- Maintenance report
  - Long-range cost survey 118
  - Maintenance orders to be generated 125
  - Planned maintenance activities 126
- Maintenance: expected costs 19
- Material costs: add product requisition 66
- Meters TSI
  - predictive-based maintenance 25
- Moving activities on planboard
  - horizontally 99
  - vertically 99

## N

- Non-recurring activity
  - add in graphical planner 95

## P

- Planned maintenance
  - predictive-based 25
  - preparations 36
- Planned maintenance activities report
  - settings 126
- Post-maintenance condition 26
- PPM cluster group
  - fixed cluster criteria 114
  - optional cluster criteria 114
  - scheduled PPM order generation 114
- PPM order generation and product requisition lines
  - material costs 103
- PPM profile
  - add 116
  - Criteria type 113

- define scheduled PPM order generation 116
  - parameters 113
  - run as scheduled task 116
  - scheduled PPM order generation 113
- PPM profile fields
  - logging on background action 140
  - with clustering 140
  - without clustering 140
- Prepare maintenance: condition-based maintenance 39
- Prepare maintenance: predictive maintenance 40
- Prepare maintenance: set condition for asset 39
- Product requisition: add to maintenance activity definition 66
- Properties & contracts: selection level 26

## R

- Report: Forecasted resources for Maintenance Planner activities 122

## S

- Schedule
  - condition-based 26
  - predictive-based 26
  - time-based 26
- Scheduling method 130
  - Fixed 27
  - Fixed completion 27
  - Variable 27
- Service plan 28
  - add 52
  - archive 29
  - de-archive 29
- Standard activity definition
  - add checklist items 48
  - checklist item 33
  - deep copy 47
  - link defects lists 48
- Standard activity definition: change field properties 67
- Standard order
  - Apply product requisition process 130

Standard service plan  
copy 43  
deep copy 43  
Standard service plan:add 42

## T

Time-based activities  
manually set schedule 57

## V

View activity tooltips  
in maintenance planner 92

## W

Work balancing: graphical planner  
Overview 84

## Symbols

: Asset activity definitions 32  
: counters 18  
: overview 11  
: preparations 38