Reports

Planon Software Suite

Version: L100

Planon
Building Connections

About this Document

Intended Audience

This document is intended for *Planon Software Suite* users.

Contacting us

If you have any comments or questions regarding this document, please send them to: 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 contains 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.
	Text preceded by this symbol refers users to other parts of the user documentation for more information.

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About Reports

Planon Reports is designed for system administrators and supervisors who will use the tool to create report definitions.

Note:

- End users will use the tool to generate management reports filled with system data. For more information on generating reports, refer to *Fundamentals* documentation.

- When creating reports, check your browser's pop-up blocker settings. The Planon site needs to be a part of the allowed sites of your browser's pop-up blocker otherwise reporting functionality, such as previewing a report, will not work properly.
- Reporting is subject to Authorization. If authorization applies or if content is not displayed on layouts, the data may not appear in reports.

Reports – Concepts

This section describes the concepts available in Reports and how they interact with each other.

See the links below for more information:

- Business object
- Report definitions
- System reports
- Subreports
- Flexible subreports
- Fields and columns
- Field types
- Mail merge reports
- Expression builder

Business object - Reports

In Planon terms, a business object is a logical unit of functionality that refers to a facility management concept. A report definition focuses on one main business object, but may include information on other business objects. Data fields that are linked directly to this business object are stored in the same database table. A few examples of business objects in Planon are: properties, spaces, floors, assets, people, addresses, orders and keys. But there are dozens more.

Additionally, users with sufficient authorizations can create user-defined business objects. In order to be able to use Reports efficiently, it is important to have a clear understanding of the business object for which you are creating a report definition.

Custom report

A user report with a customized layout. A customized layout can include logos, charts, images, etc. This customized layout is created by a specialist and is user-report-specific. Users can view custom reports and save them as PDF.

Expression builder

By using expressions, you can apply specific calculations or operations to the fields in a report definition. The results of these calculations or operations can be included as extra columns in a report.

You can create the expressions triggering these calculations/operations with a built-in tool: the Planon Expression Builder.

For more information on the Planon Expression Builder, refer to Working with Expressions.

Flexible subreports

A flexible subreport is a report definition specifically for mail merge reports and templates that are either in the .doc, .docx or .rtf formats. Contrary to a subreport, in which fixed descriptive text is typically listed above the values of the individual fields comprising the subreport, a flexible subreport allows you to combine fixed descriptive text and field values in the same paragraph. The field values and text for each element in the subreport (for example, for individual contract lines) are then listed consecutively in paragraphs.

Mail merge reports

In addition to regular reports, you can also use mail merge reports in Planon . When mail merging, you combine a report definition with a template file (*.rtf, *.doc, *.docx or *.html).

For more information on mail merge reports, see Mail Merge Report Definitions.

System reports

In addition to creating your own report definitions, Planon also provides several ready-made reports. The definitions of these system reports cannot be altered. You can only change a number of report settings when generating (printing, exporting) the reports.

Report definitions

Reports is designed to enable users to extract specific information from the Planon system and present this information in straightforward management reports.

The content of reports that can be defined and generated with this tool depends on the business object for which reports are created. For example, if you are working in Spaces & Workspaces , on the **Spaces** selection level, you can only define reports that focus on space-related subjects.

Subreports

A subreport is a report definition that is inserted in the main report definition. The main report definition focuses on the central business object of the selection step you are currently working on. The subreport to be defined focuses on an associated business object. For example, the main report may focus on the business object Property, while the subreport focuses on the associated business object Visitors. In a report definition, it is possible to define subreports down to a maximum of 10 levels.

Fields and columns

In Reports TSI, you can select data fields from Planon business objects to be included in your report definition. The selected fields will be represented as columns in the actual report. The column width, column title and other field-related settings can be adjusted. For more information on field settings, refer to Making field settings.

Field types

Reports distinguishes three types of fields that can be included in reports: normal fields, reference fields and association fields. This distinction between field types is based upon the Planon database table in which the field data is stored.

Reporting

The Reports tool is available on all the TSI selection levels and steps. It allows you to create reports for the selected data.

There are ready-made user report definitions available in the **Reports** dialog box > **User reports** tab. You can create three types of user reports: **Report**, **Data only**, **Mail merge**.

On some selection levels and steps, there are also system reports available on the **System reports** tab. System reports are the pre-configured report definitions. These definitions cannot be modified. You can, however, modify the report settings, if required.

Prior to creating a report, you must first select the TSI > selection level > selection step corresponding to the subject of the report. Data corresponding to these elements will be included in the report. For a description of the report field settings, refer to Report settings.

For example, if you want to generate a report on available workspaces, go to Spaces & Workspaces > Workspaces and click **Report**.

- The report settings you configure are stored per report and per individual user. Next time you log in your personal settings are loaded again.
- When using the Web Client for creating reports, check your browser's pop-up blocker settings. The Planon site needs to be a part of the allowed sites of your browser's pop-up blocker otherwise reporting functionality, such as previewing a report, will not work properly.

Saving reports

This topic describes how you can save reports in Planon . Reports can be saved in several formats, such as CSV, PDF, HTML and XLS.

Procedure

1. Select the report you want to generate.
2. On the action menu, click **Save as**.

   The Save as dialog box appears.

   Refer to Save options for reports and select the appropriate options in the dialog box.
3. Click **OK**.

Save options for reports

Complete the following fields when saving a report:

Field	Description
Output	Specify the path where the report must be saved.
Save as	From the list, select the format in which you want to save the report. The available formats depend on the type of report you select. The following file formats are available for user reports: • CSV • HTML • PDF • XLS: Data only • XLSX: Data only The following file formats are available for system reports: • CSV • HTML • PDF • XLS: Data only • XLS: Formatted Single Sheet • XLS: Formatted Multiple Sheet • XLSX: Data only • XLSX: Formatted Single Sheet • XLSX: Formatted Multiple Sheet
Delimiter	Select a special character to separate the fields in the saved report. Semicolon (**;**) and Comma (**,**) are available as delimiters.
Output line break characters as	Allows you to give line break characters such as, Space, LF (Line Feed), CR (Carriage Return), CR\LF, . CR and LF are used to mark a line break in a text file. Windows uses CR/LF, Unix uses only LF and the MacOS (pre-OSX MacIntosh) uses only CR.
Include header	Select **Yes** to include a header.

The **Delimiter** and **Output line break characters as** options are available only for CSV types. The **Include header** option is available for XLS, XLSX and CSV types.

Exporting data to XLS / XLSX

When exporting data from Planon to Excel, the data is exported mapping the system format to Excel. This enables users to perform calculations in Excel without having to first reapply formatting.

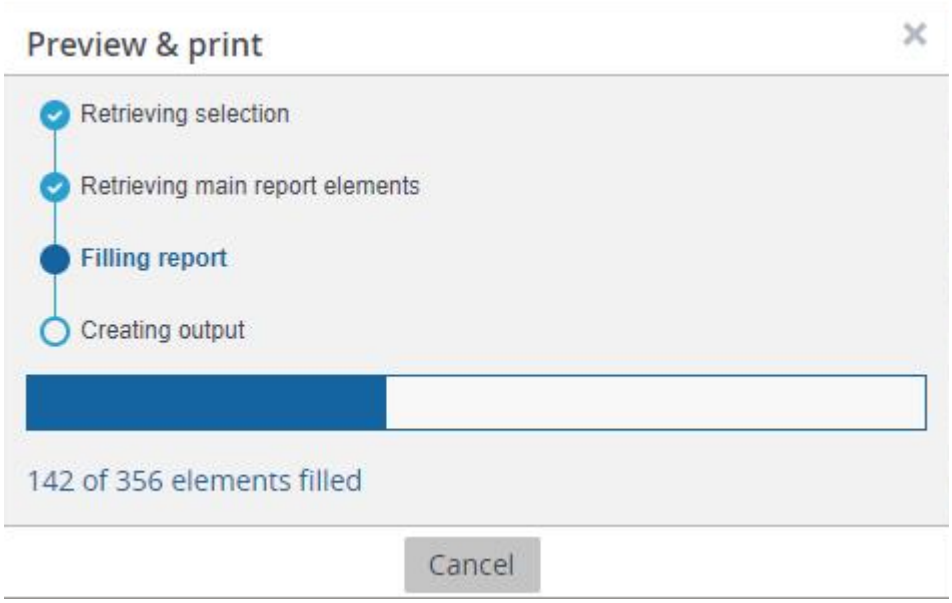
The mapping between Planon and Excel is as follows:

Planon field type	Excel cell format	Remark
Numbers	General	Not taking into account the mask
Dates/date-time/time	Custom	Taking into account the mask

- There is a difference in the way times are treated in Planon and Excel. Times are stored in numbers in Planon and the '0' is defined differently. This may cause unexpected results when comparing times in Planon and in Excel.
- Expressions, if the result is a number, date, date-time or time, will be formatted as specified above.
- Totals and group totals will be formatted as specified above.
- Group headers will not be formatted.
- Expressions, if the result is a number, date, date-time or time, without a mask will be exported with the java mask. This could differ from the Excel mask.
- Separators (date, decimal, thousand) are derived from the Excel user locale.

Previewing & printing reports

For user reports, when selecting the **Preview & Print** option, a dialog box indicating a step by step progress of report generation is displayed. The generation process also displays the number of elements being retrieved and filled. You can cancel the preview of a report while it is in progress by clicking **Cancel** or by just closing the dialog box.



Warning When a report contains more than 500 records, generating it may take a long time. When this happens, a warning message will be displayed notifying the user about this possible performance issue.

Report settings

The following table lists the fields available for report settings.

Field	Description
Print only selected element(s)	Using this option, you can narrow down the number of elements to be printed. Only elements that have been specifically selected from the list will be printed in the report.
Print user name	This option enables you to have your login name printed in the footer of the report.
Name	This option enables you to enter a name for the report.
Print drill down route	If you enable this option, the drill-down route displayed at the top of the elements list on your screen will also be printed in the header of your report.

Field	Description
Print titles and drill-down route on each page	By enabling this option, you have the report title and drill-down route printed on each page of the report.
Subtitle	If you would like to add a subtitle to your report, you can specify one in this field. The subtitle will be placed immediately below the report's main title.
Preview all documents as one file	The preview will be shown in one file for Word mail merge reports.

Report types and fields

When opening the **Report definitions and settings** dialog box, you can create your own report (user report), or run a system report, if available. The following overviews list the icons/fields available for report definitions and describe their meaning.

Report types

Icon Type	Description
Custom	Indicates a user report with a customized layout. A custom report uses altered styling on the report. See also Custom report.
Report	Indicates a regular Planon report.
Mail merge	Indicates a mail merge report.
Data only	Indicates a data-only report.

Report definition and settings

Icon Field	Description
normal field	Indicates a field that is immediately available (selectable) for a report definition and belongs to the active business object.
association field	Indicates a field on another business object that references the active business object. These fields are only visible if you select **Show business objects that refer to the active business object**.

Icon	Field	Description
	reference field	Indicates a field that is referred to from the current business object.
	system field	Indicates a read-only field that contains data that is populated by the application.

User Report Definitions

This section explains how you can create your own user report definitions. The purpose is to hand you the information you need to create report definitions, which include all required business data in a smart layout.

Prerequisites:

- You must have the appropriate authorization.
- You must first open the Planon TSI and drill down to the selection step that contains the business object for which you want to create a report definition.

  For more information on mail merge reports, refer to Mail Merge Report Definitions.
  Depending on the selection step you are working on, you will find a second tab in this window, the **System reports** tab. This tab contains predefined reports of Planon .

  Depending on the business object you have selected, Report Manager will present all data fields related to it in the **Report definitions and settings** window.
  As the number of fields in the list is usually very large, it is recommended that you carefully consider which information (Planon data fields) should be included in your report definition, before actually making the report definition.

  Since Planon system reports are linked to a particular business object, information on their function will be given in the user manual and help topic that focuses on that business object. For example: information on the Space analysis system report is given in the Spaces & Workspaces documentation.

Adding a new user report definition

If you want to add a new user report definition for a specific business object, proceed as follows:

Procedure

1. Select the appropriate selection step in the appropriate TSI.
2. Click **Reports** option in the action menu.

   The **Reporting** window opens, displaying existing reports on the **User reports** tab.
   New definitions can be initiated here, while old ones can be edited or deleted.
3. Click **Add** in the action menu to start a new report definition.

The **Report definitions and settings** window opens.

4. Make the necessary settings for your report.

   For example, specify a name and title for the new report, or choose another page size or orientation.

   For more information on report settings, refer to Making report settings.

5. From **Available fields**, select the normal fields you want to include in your report definition by double-clicking them or by using the arrows.

   Normal fields are recognizable by the  symbol.

A filter option enables you to easily find fields. By default, the filter is set on the Name field, which you can change to any other field in the list. The filter operator is set to Contains, which cannot be changed. After entering the search criteria and pressing ENTER or clicking the search icon, the search result is displayed. When the result is displayed, the filter box changes color from blue to yellow. This feature also works for expressions.

   The fields concerned are transferred to the **Selected fields** section.

6. Select any reference fields you want to include in your report definition by double-clicking the required reference field in the list. Reference fields are recognizable by the  symbol.

   The referenced business object is opened, which in its turn also contains reference fields. The path above the **Available fields** indicates the route through which you descended. Use the **Show upper business object** icon to go up one level.

7. Transfer reference fields from the selected reference table to **Selected fields**.

   For more information on reference fields, refer to Field types.

8. If required, include subreports (reports within a report) in your report definition by following the procedure described in, Including sub reports in your report definition.

9. Click **OK** to save your report definition.

   Consequently, you return to the **Report** window where you can generate a print preview of the new report definition by clicking **Preview & print**.

You can export and import report definitions from one Planon environment to another using the Configuration transfer feature. This is useful if you want to add or update report definitions in another Planon environment.

For more information, refer to *Configuration Transfer*.

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10. Click **OK** to save your report definition and have another preview.

    When you are satisfied with the results you can proceed with actually generating the report.

Show additional field information

At the top of the **Report definitions and settings** window, the **Show additional information** option is available. By enabling this option, the various field names of the fields belonging to the active business object will become visible in **Available fields**.

- The **Name** column displays the field names chosen by your organization (your own 'translation');
- The **System name** column displays the field names given by Planon ;
- The **Database name** column displays the field names used in the database;
- The **Field type** column displays the technical characterizations of the fields, for example a String (text) field or a Boolean (yes/no) field.

You can also include system fields in your report definition. These fields are recognizable by the  symbol.

If fields have been transferred to **Selected fields**, the complete field information becomes visible in **Settings**, once you select the field concerned. The complete field information of the selected field is displayed here if the **Show additional information** option is enabled.

Including sub reports in your report definition

It may be that the business object for which you want to create a report definition is linked to another business object. The data of the linked business object can also be included in the report. If a report on a specific business object contains a subsection with data from another business object, this is called a subreport.

For example: orders are linked to a property. You could make a report on properties, including a subreport with orders per property.

Procedure

1. Open the TSI and selection level or step corresponding to the subject of the report, for example the **Properties** selection level of the Work Orders TSI if you want to create a report with properties, including a subreport on orders for each property.

2. From the **Report** action menu, select the **Report** option.

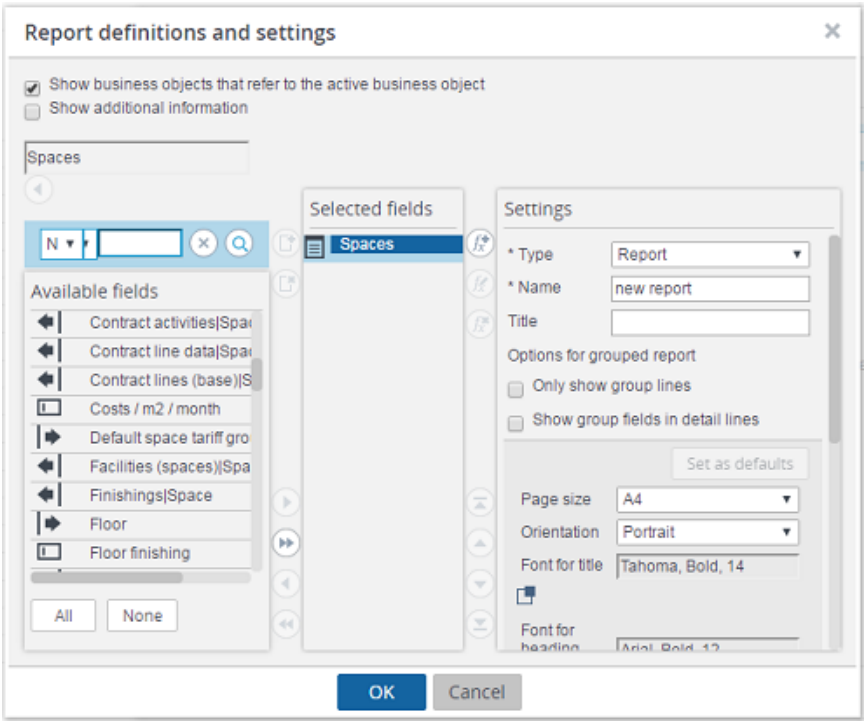
   The **Reporting** window opens.

3. Click **Add**.

   The **Report definitions and settings** window opens. In this window you can select the fields you want to include in your report definition.

   For more information on including 'normal' fields, refer to To add a new user report definition.

   For subreports, you can use either association fields or reference fields. For more information on these field types, refer to Field types.



4. Select the association (or reference) field you want to include in your subreport, for example the **Orders|Property** field if you want to include a subreport with orders for each property.

5. Click  button to add a subreport.

In a report definition, it is possible to define subreports down to a maximum of 10 levels.

A subreport is added to your definition. In the **Settings** section of the window, you can make some settings for the subreport, such as font type and background color.

For more information on this subject, refer to Making report settings.

From the **Available fields** section, select the fields you want to include in your subreport, for example **Number** and **Description**, and move them to the **Selected fields** section.

6. Make the required field settings for the selected fields, such as column width or alignment.

   For more information on field settings, refer to Making field settings.

7. Click **OK** to save your report definition.
8. To save the report in the required output format, click **Save as.**

Tip For more information on **Save as** settings, refer to **Basics** > **Saving reports**.

It is possible to copy a user report so that you can reuse and configure it.

Making report settings

When creating or editing a report definition, you can make a number of settings that apply to the report as a whole. These settings become visible in the **Report definitions and settings** window if you select the top node in the **Selected fields** section.

After changing the report settings, you can click **Set as defaults** to retain these settings. These will then be default for subsequent user reports. This is true for all settings, except for grouped report options:

- Only show group lines
- Show group field in detail lines

For a description of the report settings, refer to Report settings fields.
The grouped report settings are described in Options for grouped reports.

Options for grouped reports

The **Only show group lines** and **Show group fields in detail lines** options only apply to report definitions that contain group fields. In report definitions, group fields are fields for which the **Group by this column** option has been enabled.

For more information on this option, refer to Group by this column.

Only show group lines

If you enable this option, the resulting report will be a concise list without details.

Items that are displayed in concise reports include:

- Group headers;
- Group totals (=subtotals);
- Totals (= grand totals);
- Any field for which the **Group by this column** option has been enabled.

Show group fields in detail lines

If you enable this option, the names of fields that were selected as group fields will be printed in each detail line. For example, in a report on properties, if the property name is a group field, this name is repeated in each detail line.

Warning To save a group report, always select **CSV** in the **Save as** option. The .xls format is not recommended for a group report because the output will not be properly formatted.

Report definition field settings

The selected fields will be represented as columns in the actual report. The column width, column title and other settings can be adjusted in the **Settings** section of the **Report definitions and settings** window.

Depending on the field type and the report type there are several variants of the **Settings** section. The different field settings are described in the following sections.

Column text

The column text indicates the name given to the column in the **Selected fields** section. In addition, the column text is also printed above the respective column in the report itself.

The field description is specified as the default. By enabling the **Alternative column text** option, you can type a different text in the **Column text** box, if required.

Full name

This read-only field displays the complete name of the selected field.

Width

This is the column width, measured in centimeters. Specify the required value in the **Width** text box.

Align

By selecting the relevant option in the **Align** field, you can specify whether to left align, right align, or to center the text in a report.

Mask

For date/time fields, numeric fields, dimension fields and money fields a mask can be specified. Masks help you to specify the way in which field values are displayed in a report. For example, a date can be shown in various formats, such as 01#05-2017, 1-5-17 or 1 May 2017.

Depending on the field type, different mask pick lists are available from which you can select an example. The mask pick list can be opened by clicking the pick list button in the **Mask** field. However, the contents of the **Mask** field can also be entered or modified manually.

Numeric fields

By using a mask you can determine how a number in a numeric field is displayed in a report. You can select an example from the **Select a numeric mask** pick list.

You can also enter or modify a mask manually in the **Mask** field. For a description of these fields, refer to Numeric fields.

Dimension fields

You can use a mask to determine how a value in a dimension field is displayed in a report. Select the required mask from the pick list to display the unit of measurement (for length, area, volume or amount/area) after the value.

&LENGTH, **&AREA**, **&VOLUME** and **&AMOUNT/AREA** can also be used as macros in other masks.

Money fields

By using a mask you can determine how an amount in a money field is displayed in a report. You can select an example from the **Select a mask for amounts** pick list.

You can also enter or modify a mask manually in the **Mask** field.

Date-time fields

You can specify the way the date and time is included in a report in the date and time fields. In some cases this depends on the **Regional settings** specified in your Microsoft Windows operating system. For more information, refer to your Windows documentation.

You can select an example from the **Select a mask for dates** pick list.

You can also enter or modify a mask manually in the **Mask** field. For a description of these fields, refer to Date-time fields.

Text placed between single quotation marks is included in a report. For example: 'the date is' d MMMM yyyy → the date is 7 September 2017.

Group by this column

This option can be used to group and sort data according to a specific field. If you select this option, the data will automatically be grouped. A heading is created for each new group.

Sort by this column

This function can be used to sort (alpha) numerical data. You can set the sorting of data in ascending or descending order.

Display each group on a separate page

This option is only available if the **Group by this column** option is enabled. If this option is enabled, each group is started on a new page.

Example of final report: each group starts on a new page

	Properties
Name	**Year of construction**
Birmingham	
Latham Circle, Birmingham	1972
Fort Payne Road, Birmingham	1993
Main building Fort Payne	1993
Parking Fort Payne	1994

Name	Year of construction
Leeds	
Arlington Road, Leeds	1930
Building 1 Jasper Lane	1930
Residence 1 Park Avenue	1930
Jasper Lane, Leeds	1930
Park Avenue, Leeds	1930
Ashville Road, Leeds	1946
Residence 2 Ashville Road	1946
Residence 3 Ashville Road	1946
Residence 1 Ashville Road	1946
Eagle Road, Leeds	1981

Group totals under this column

If this option is enabled a subtotal per group is placed at the end of a column. This applies to numeric fields and money fields.

To enable grouping totals, the following conditions must be met:

1. **Print** field should be selected.
2. The field should be numeric.
3. **Show group fields in detail line** option must be selected.
4. **Group by this column** option must be selected.
5. Any grouped fields must be selected.

Example of final report: a report on order costs, subtotaled per group

	Work order costs
Description	**Actual costs incl. VAT**
Airport Boulevard, London	
Broken Window	160.00
Window Cleaning	45.00
Serve coffee	25.00
Airport Boulevard, London	**230.00**
Arlington Road, Leeds	
Renovation	205000.00
Tap is leaking	3455.00
Remove furniture	1200.00
Arlington Road, Leeds	**209655.00**

Totals under this column

If this option is enabled, a grand total is placed at the bottom of a column. This applies to numeric fields and money fields.

To enable grouping under this column, the following conditions must be met:

1. **Print** field should be selected.
2. The field should be numeric.
3. **Show group fields in detail line** must be selected.
4. **Group by this column** must be selected.

Example of final report: a report on order costs, with subtotals per group and grand total

Work order costs	
Description	**Actual costs incl. VAT**
Airport Boulevard, London	
Broken Window	160.00
Window Cleaning	45.00
Serve coffee	25.00
Airport Boulevard, London	**230.00**
Arlington Road, Leeds	
Renovation	205000.00
Tap is leaking	3455.00
Remove furniture	1200.00
Arlington Road, Leeds	**209655.00**
	209885.00

Print column

This option can be used to specify whether to print a column. Under certain circumstances you may not want to print a column.

Example

You have created an expression for a name. The expression is as follows: Initials + Prefix + Surname. You decide to sort by Surname. You can add an additional column for the surname, which you do **not** want to print.

Example of the final report

Development Department

R.R. Adams
Mark A. Allen
David R. Anders
James Austen
Colleen H. Baker
Leslie M. Banks
Don J. Barnett
Valerie Becker
Jacky L. Brown
Keith Burns
Virginia W. Cameron
Catherine M. Coldwell
Ron S. Curtis
Stefanie Davis
Tina L. Edwards
Andrew J. Ellis
Ronald G. Ewing
Diana Fields
Ellis Fitzgerald

For more information on expressions, refer to Working with Expressions.

Creating a report customization

Planon enables you to create a custom report which you can customize using external tools.

Proceed as follows to create a custom report:

1. Create a user report definition as described in Adding a new user report definition.
2. Under **Settings**, in the **Type** field, select **Custom** and save your changes.
3. On the action menu, click **Export report definition**.

   Your report definition is downloaded to your computer. The report definition is a zip file containing one or more jrxml files of the main report (and - if applicable- subreports).

- In order to edit the report definition, you need to have JasperSoft Studio installed on your computer. You can download the software from the JasperSoft website.
- The JasperSoft software is distributed under an EPL license, which is included in the download.

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4. Extract the jrxml file(s) from the zip file and edit it/them in JasperSoft Studio.

If you are using a subreport, note that the main report refers to it so it is best to open both in JasperSoft Studio.

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5. After tweaking the report definition, add it to a zip file and upload this file by clicking **Import report definition** on the action menu.

   The Upload file dialog box appears.

6. Browse to and select your zip file and click **OK**.

   You have completed creating a customized report. After uploading a customized report, the:

   - **Customization uploaded?** field is set to **Yes**.
   - **Type** field becomes read only so you can no longer change it.

There are various operations possible on custom reports:

- **Delete customization** removes the customizations from the report definition so you can start again. This also changes the value of the **Customization uploaded?** field to **No**.
- **Delete** completely removes the custom report definition.
- **Save as** allows you to save the report as a PDF, which is the only option available for custom type reports.
- **Copy** allows you to copy a customized report; the **Customization uploaded?** field will be set to **Yes**.
- Update an existing report (export the report definition and import it again):
  - If fields are removed from Planon and the report definition is not updated, they will appear empty in the report result.
  - Fields can only manually be removed from the report definition in JasperSoft Studio.
  - Fields added to the report definition in Planon will not appear in the report result until they are added to the definition in JasperSoft Studio.

Creating a report on available workspaces

Prior to defining a report, you select the TSI, selection level and step corresponding to the subject of the report. For example, if you want to create a report on available workspaces, complete the following steps:

1. Open the Spaces & Workspaces TSI.

2. Select the **Workspaces** selection step.
3. Open Reports from the action menu.
4. Add a new report definition.

The fields that are immediately available (i.e. selectable) for the new report definition, belong to the business object for which you have opened Reports .

In terms of report definitions, these are normal fields. They can be recognized by the  symbol. However, Planon also enables you to include fields from other, related business objects in your report definition. These are reference fields and association fields.

Reference fields are fields that have a one-to-one relationship with the main business object in the report definition. A property (building), for example, can only be located in one city.

So, if you are defining a report that focuses on the **Property** business object, reference fields from the related **City** business object can also be included in your report definition.

Reference fields can be approached by double-clicking the item preceded by the  symbol.

Association fields are fields that have a one-to-many relationship with the main business object in the report definition. For example, numerous orders may be linked to one particular property. So, if you are defining a report that focuses on the **Property** business object, association fields from the related **Orders** business object can also be included in your report definition. Association fields can be approached by double-clicking the item preceded by the  symbol.

It is recommended to include association fields as subreports in your report definition.

For more information on subreports, refer to To include sub reports in your report definition.

Creating Data only reports

The **Data only** report type allows you to:

- Create definitions for the texts and tooltips that are displayed in **CAD Integrator drawings.**
- Create reports that can be used as a basis for user-defined space mapping in **CAD Integrator drawings.**

  Similar to regular report definitions, you can select the fields you want to include in your definition.

Creating reports for texts and tooltips

You can create text and tooltip definitions for floors, spaces, flexible workspaces, assets and people. Once created, the definitions can be selected as texts or tooltips for floors, spaces, flexible workspaces, assets and people from the relevant pick lists in the **Settings** dialog box of CAD Integrator .

By default, some basic information is already displayed in texts and tooltips if no report is linked. For example, for spaces the space number and space name are displayed as text and tooltip in the CAD Integrator drawing.

For details on how to select the texts that are displayed in CAD Integrator drawings, see the CAD Integrator section of the Planon user documentation.

Procedure

1. Select the appropriate selection level or step in the appropriate TSI.

   For a description of these fields, refer to Report for texts and tooltips fields.

2. Click **Reports** on the action menu.

   The **Reporting** dialog box opens, displaying existing reports on the **User reports** tab.

3. Click **Add** in the action menu to start a new report definition.

   The **Report definitions and settings** dialog box opens.

4. In **Settings**, in the **Type** field, select **Data only**.

Furthermore, specify a name for the new report. Select the **Include field names** check box if you also want to display the field names of the selected fields in the texts and tooltips.

If required, you can also include subreports.

---

5. From **Available** > **fields**, select the fields you want to include in your report.
6. Click **OK** to save your report definition.

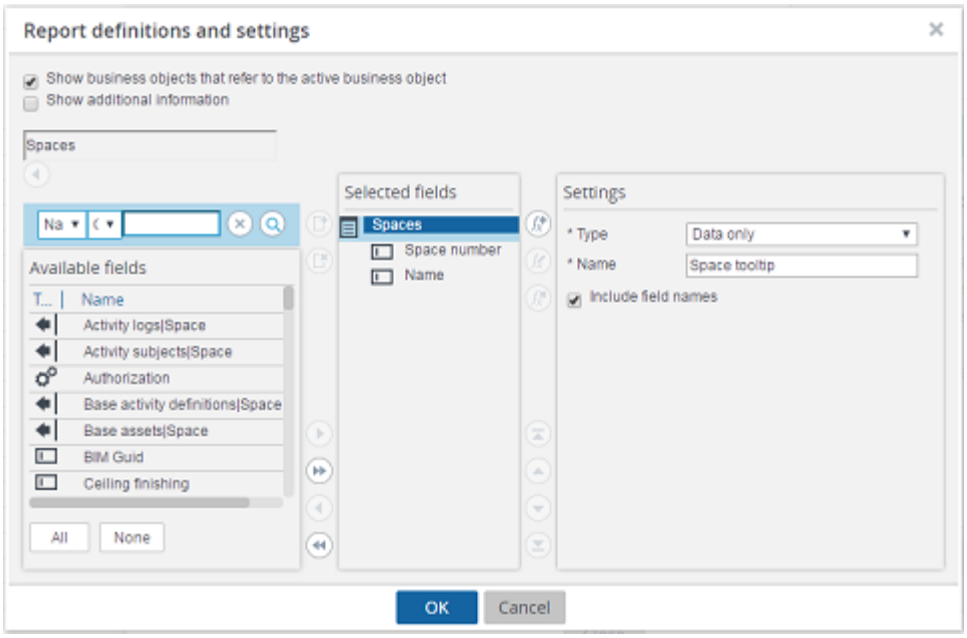
After your report definition has been saved, you can select it from the relevant pick list in the **Settings** dialog box of CAD Integrator .

Example

Assuming you want to display the following information in the spaces tooltip:

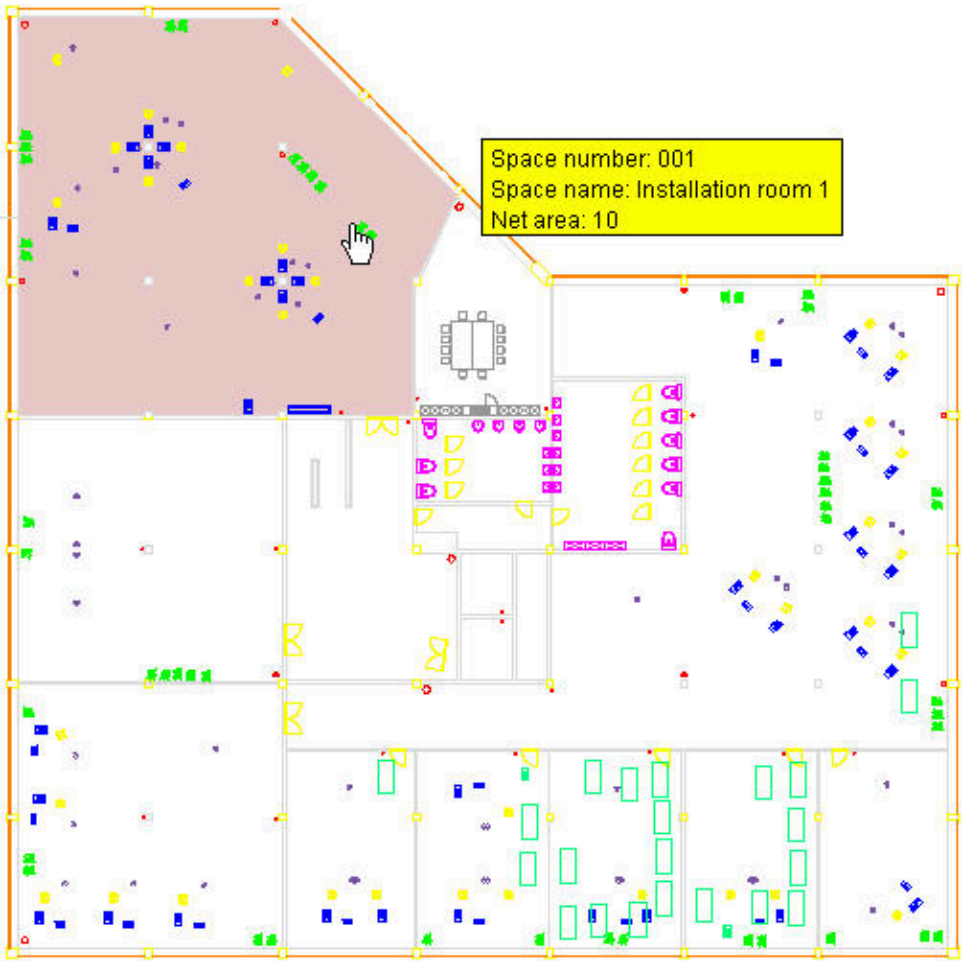
- Space number
- Space name
- Net area

  Furthermore, you also want to display the field names of selected fields in the tooltip.



In the CAD Integrator settings dialog box, in the **Tooltips - spaces** field, select the tooltip definition you created for spaces:

You can see the result in the following CAD Integrator drawing:



Creating reports for space mappings

In addition to the system-defined space mappings on Department, Space category, Cost center, Space standard and Space usage, you can also create your own user-defined space mappings. For this purpose, you must define a report in which you indicate the fields to be used to create a space mapping. All the available fields for the business objects Space and Space usage can be used for this purpose. For details on creating a report, follow the procedure described in Creating reports for texts and tooltips.

Warning In order for the report to be available in the CAD Integrator menu> Space mapping > **User-defined space mapping** > **User reports** dialog, first select a field to group data on and then select the **Group by this column** check box.

After you have defined the required report, you can use it to generate your user-defined space mapping in CAD Integrator .

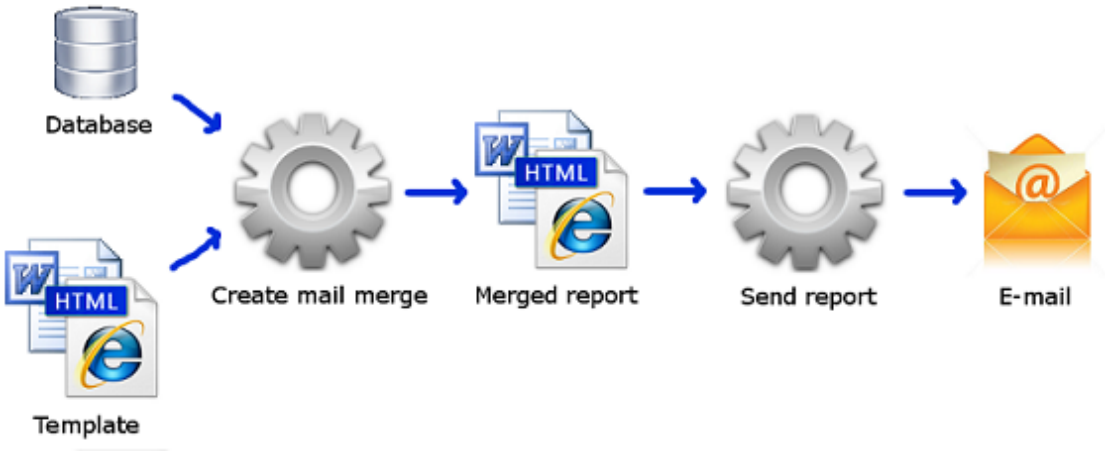
For details on generating user-defined space mappings in **CAD Integrator**, see the CAD Integrator documentation.

Warning To save a group report, always select **CSV** in the **Save as** options. .xls format is not recommended for group report as the output will not be properly formatted.

Mail Merge Report Definitions

This section explains the process of using mail merge definitions and corresponding template files. The purpose is to hand you the information you need to create mail merge reports that include all required business data.

In the examples given, it is assumed that you have already opened the Planon TSI which contains the business object for which you want to create a mail merge report.



This picture illustrates the role of templates as input and the merged report as output in the Create mail merge process.

Generating mail merge report

Once you have a complete mail merge definition and template file, you can choose between different kinds of mail merge output. We recommend generating a print preview before you actually print or export your mail merge documents.

When previewing a report, in the **Reporting** dialog box, if **Preview all documents as one file** is set to **No**, the reports are displayed as individual documents. Conversely, if **Preview all documents as one file** is set to **Yes**, all reports are displayed in a single document.

Creating bulk mail merge reports

It is possible to generate bulk mail merge reports for an order. The reports can have both HTML and DOC/DOCX templates. The mail merge report will be downloaded as a single zip file.

1. Go to Work Orders > Orders.

2. Select the order for which you want to create a mail merge report.
3. Click **Report** in the action menu. A dialog box will appear.

Warning You can process mail merges only for less than 1000 records. An error will appear if there are more than 1000 records.

4. Type a **Name** for the report. The download .zip file will be created with this name.
5. To customize the extracted file names, select **Edit user report**.
6. In the **Custom file name** field, click the button to use the **Expression builder** to specify an expression on which the file name is to be based.

For details on how to use the Expression builder, see Working with expressions.

7. To preview all the reports in a single HTML file, set the **Preview all documents as one file** field to **Yes**.
8. Select **Preview & Print** to preview the report.

A preview of all the reports in a single HTML file will be displayed.

9. Click **Save as** to download the file.

A single HTML file with all the mail merge reports will be created in your browser's download location.

Emailing a form to multiple recipients

If you would like to enter multiple email recipients for a form, proceed as follows:

Procedure

1. Select the item for which you want to send a form.
2. Click **Add form** on the action panel.

The Forms dialog box appears.

3. Select the template on the left and click **Edit email** on the action panel.
4. In the **To** field, next to the recipient's email address type a comma and enter the next recipient's email address (or as many as required).
5. Click **OK** to close the dialog box.

Working with Expressions

By using expressions you can apply specific calculations or operations to the fields in a report definition. The results of these calculations or operations can be included as extra columns in a report. The expressions triggering these calculations/operations should be created with Planon Expression builder.

Adding an expression to your report definition

You can use the following procedure to add an expression to your report definition.

Procedure

1. Add a new report definition or open an existing report definition to which you want to add an expression.

   For more information on creating report definitions, refer to Creating User Report Definitions.

2. Click the **Add expression** button.

   Expression builder is launched and you can start building an expression.

3. Build an expression.

   For more information on building expressions, refer to Building expressions. This section gives a number of detailed examples for expressions.

Warning In Expression Builder, there is one operator with a notation that deviates from the standard notation: != stands for NOT EQUAL.

Building expressions - Adding an operator

In Expression Builder, you can include a calculation between (the values of) two numeric fields in an additional column.

When you include string field (alphanumeric) values in your expression, enclose them with double quotes to make your expression valid. See the AND operator for an example.

Numeric values do not require double quotes, see the OR operator for an example. For a description of these fields, refer to Operator fields.

After completing building an expression, click **Check** to validate it.
You can combine multiple operators to build complex expressions.

The ‘if() then else’ operator uses the ‘if, then’ part to determine what the numeric output of the expression will be.

Example 1

If you use the following expression:

(If (Orders.'Actual costs incl. VAT' - Orders.'Cum. estimated amount incl. VAT' < 0) then 0 else (Orders.'Actual costs incl. VAT' - Orders.'Cum. estimated amount incl. VAT')).

The output will be rounded to whole numbers, because “0” is treated as an integer output. This is true even when the mask is applied to the field. For example, if the output of the calculation is 14223.75, the expression result will be rounded to 14223.00

Example 2

If you use the following expression:

(If (Orders.'Actual costs incl. VAT' - Orders.'Cum. estimated amount incl. VAT' < 0) then 0.00 else (Orders.'Actual costs incl. VAT' - Orders.'Cum. estimated amount incl. VAT')).

The output will be rounded to two decimals, because "0.00" is treated as a decimal output. So, the expression result for the value 14223.75 will be shown as 14223.75.

In the following example, an expression is built showing you how to calculate the difference between the purchase amount and the sales revenue of a property.

Procedure

1. Add a report for the properties business object.
2. Click the **Add expression** button to open the **Expression builder** window.
3. In the **Available fields** section, select the **Sales revenue** field and click the **Add** button in that section.
   Or
   In the **Available fields** section, double-click the **Sales revenue** field.
4. In the **Operators** section, click the [**-**] function and click the **Add** button in that section.
   Or
   In the **Operators** section, double-click the [**-**] function.
5. In the **Available fields** section, double-click the **Acquisition amount** field.

   The expression has now been completed.
6. In the **Expression** section, click the **Check** button.

   Planon will now check whether the expression you have built is correct.
7. Click **OK** to save the expression and to close the **Expression builder** window.

You will now return to the **Report definitions and settings** window. Your expression has been added to the **Selected fields** section.

8. In the **Selected fields** section, select the expression you have just created.
9. In the **Settings** section, specify the required field settings. For more information on field settings, refer to Making field settings.
10. View the result in the print preview of the report.

	Property data
	Profit
Airport Boulevard, London	
	499,780
Apple Tree Road, Bridgwater	
	-900,000
Church Street, Oxford	
	1,000,000

Adding a text constant

The name of a person usually consists of multiple fields, for example **First name** and **Surname**. If each field is included in a report individually, a fixed column width is used for each field. Without the use of an expression, the report might look like this:

First name	Surname
Valerie	Becker
Leslie	Banks
Ron	Curtis
Abraham	Johnson
Alice	Jones
Brenda	Smith
Ronald	Adams
Frank	Sheppard
Terry	Newman
Ronald	Wilson

The following example explains how an expression can be built to include multiple fields separated by a space, instead of being placed in individual columns.

Procedure

1. Add a report for the people business object.
2. Click the **Add expression** button to open the **Expression builder** window.
3. In the **Available fields** section, double-click the **First name** field.

4. In the **Operators** section, double-click the [**+**] function.
5. In the **Constants** section, select the **Text** option.
6. In the **Constants** section, enter a space in the box.
7. In the **Constants** section, click the **Add** button.

   The space is displayed as [" "] in the **Expression** section.
8. In the **Operators** section, double-click the [**+**] function.
9. In the **Available fields** section, double-click the **Surname** field.

   The expression has now been completed as you can see from the following example.

10. In the **Expression** section, click the **Check** button.

    Planon checks whether the expression you have built is correct.
11. Click **OK** to save the expression and to close the **Expression builder** window.

    You will now return to the **Report definitions and settings** window. Your expression has been added to the **Selected fields** section.
12. In the **Selected fields** section, select the expression you have just created.
13. In the **Settings** section, specify the required field settings.

    For more information on field settings, refer to Making field settings.
14. View the result in the print preview of the report.

If you want to make your expression appear over multiple lines (line_feed) in the report, then enter the expression as shown in the following screenshot:

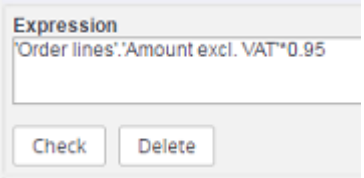
Adding a numeric constant

A field can be edited by using a constant. If, for example, a 5% discount applies to orders that are paid within three weeks, you can create a report showing the amounts before and after the discount has been deducted. The following example shows how to build this type of expression.

Procedure

1. Add a report for the order business object.
2. Include the **Number** and **Description** order fields.
3. Add a subreport and include the **Description** and **Amount excluding VAT** fields from the **Order lines|Order** in your subreport.
4. Click the **Add expression** button to open the **Expression builder** window.
5. In the **Available fields** section, double-click the **Amount excluding VAT** field.
6. In the **Operators** section, double-click the [*****] operator.
7. In the **Constants** section, select the **Numeric** option.
8. In the **Constants** section, type the value **0.95** in the box.
9. In the **Constants** section, click the **Add** button.

The expression has now been completed as you can see from the following example.



10. In the **Expression** section, click the **Check** button.

    Planon will now check whether the expression you have built is correct.

11. Click **OK** to save the expression and to close the **Expression builder** window.

    You will now return to the **Report definitions and settings** window. Your expression has been added to the **Selected fields** section.

12. In the **Selected fields** section, select the expression you have just created.
13. In the **Settings** section, specify the required field settings.

    For more information on field settings, refer to Making field settings.

14. View the result in the print preview of the report.

Orders

Description

24.01

Order office supplies

Article	Amount excluding VAT	Amount after discount
Marking pens	330.00	313.5
Pens	200.00	190
Post-it notes	138.00	131.1
Suspension files	600.00	570
Writing pads	500.00	475

Warning When specifying a date-time format, the format specified must be identical to one of those listed in the **Select a mask for dates** dialog box shown in Date-time fields. This includes the case (uppercase and lowercase).

Adding functions

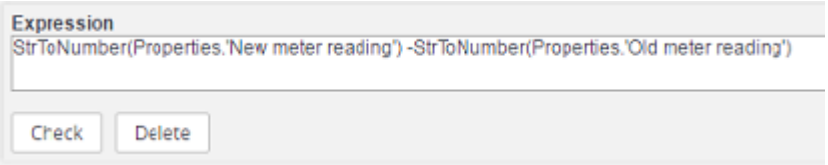
Functions are predefined set of commands that perform a specific operation on data.

1. Add a report or open (edit) an existing report.
2. Click the **Add expression** button to open the **Expression builder** window.
3. In the **Functions** section, double-click the desired function.

   The function is added to the **Expression** section. Possibly the function needs parameters.
4. When the function needs parameters (as specified in the explanation and in General functions, Date-time functions, String functions, Numeric functions), place the cursor between the brackets behind the function at the correct parameter position.
5. It is possible to populate the parameter now either by:
   - Adding a text constant.
   - Adding a numeric constant.
   - Adding an operator.
   - Double-clicking the field in the **Available fields** section. If this field is a reference to another business object, the fields of this business object are shown.
   - Typing in text manually into the **Expression** section.
6. Complete all parameters as described above

   Data is now added to the **Expression** section, between the brackets of the function.

   The expression has now been completed as you can see from the following (**StrToNumber** function) example.



7. In the **Expression** section, click the **Check** button.

   Planon will now check whether the expression you have built is correct.
8. Click **OK** to save the expression and to close the **Expression builder** window.

   You will now return to the **Report definitions and settings** window. Your expression has been added to the **Selected fields** section.
9. In the **Selected fields** section, select the expression you have just created.

10. In the **Settings** section, specify the required field settings.

    For more information on field settings, refer to, Making field settings.

11. View the result in the print preview of the report.

    If the report looks fine you can print or save it.

General functions

count

The **count** function adds a column to number the lines.

Example: count()

Properties UK	
Number	Name
Birmingham	
1	Main building Fort Payne
2	Parking Fort Payne
3	Latham Circle, Birmingham
4	Smith Street, Birmingham
5	Fort Payne Road, Birmingham
Boston	
6	Copperhead Road, Boston
Bridgwater	
7	Apple Tree Road, Bridgwater
Cambridge	
8	College Avenue, Cambridge
Canterbury	
9	Forest Lane, Canterbury

---

isEmpty

The **isEmpty** function returns 'Yes' if the field is empty.

Example: isEmpty(Orders.'Actual completion date-time')

Number	Order not closed
35.00	Yes
36.00	Yes
37.00	Yes
38.01	Yes

For an additional example, see also Combining functions.

Date-time functions

The following functions can be used for date-time fields.

currentDate

The **currentDate** function returns the current date.

Example: currentDate()

Current date
Oct 16, 2014 12:00:00 AM

---

currentDateTime

The **currentDateTime** function returns the current date and time as a date value.

By using this function you can calculate the difference of current date and time based on the application server's time zone compared to the requested end date and time of an order.

The **currentDateTime** function returns the current date and time of the application server. You can use it to compare "now" with all date–time fields, because the expressions are evaluated on the application server. So the application server compares both values in its own time zone. You cannot use this function to show the CurrentDateTime of the end user in a multi-time zone environment.

Example: currentDateTime()

Current date-time
Oct 16, 2014 3:20:59 PM

---

currentTime

The **currentTime** function returns the current time.

Example: currentTime()

Current time
01/01/1970 15:21

---

dateDiff

The **dateDiff** function calculates the difference (in minutes) between two dates.

Example: dateDiff(Visitors.'Expected time of departure', Visitors.'Expected arrival time')

Arrival	Departure	Duration (min.)
09:58	12:57	179
09:58	12:57	179
09:01	12:01	180
09:00	12:00	180

---

calcDate

The **calcDate** function is used to add or subtract numbers to or from a selected date-time field. To subtract numbers, add a negative number.

The **calcDate** function adds <D> days, <M> months, <Y> years, <H> hours, <M> minutes and <S> seconds to a specified date-time, date or time <DT>.

In the following example, a column is created to subtract two days from the arrival date of a visitor to get a list of expected visiting dates. (This example can be extended to compare the result with the current date).

Example: calcDate(Visitors.'Visiting date',0,0,-2,0,0,0)

	Visitors expected
Preparation date	Visiting date
Sep 22, 2009 12:00:00 AM	Thu 24 Sep 09
Sep 28, 2009 12:00:00 AM	Wed 30 Sep 09
Oct 5, 2009 12:00:00 AM	Wed 7 Oct 09
Oct 5, 2009 12:00:00 AM	Wed 7 Oct 09
Oct 19, 2009 12:00:00 AM	Wed 21 Oct 09

---

extractDay

The **extractDay** function extracts the day from a date (as a number).

Example: extractDay(Visitors.'Visiting date')

Day	Visiting date
7	Wednesday, October 7, 1998
4	Tuesday, February 4, 2003
9	Thursday, November 9, 2006
9	Thursday, November 9, 2006
9	Thursday, November 9, 2006

---

extractDayOfWeek

The **extractDayOfWeek** function extracts the day of the week from a given date. It returns a number where Monday = 1, Tuesday = 2, etc. It returns 0 if the date field is empty. This function can only be used for date fields.

Example: extractDayOfWeek(Visitors.'Visiting date')

Upcoming Visits by Weekday

Department.	Name visitor	Expected
1		
Productie	Peters	09:00
Afdeling Verkoop	Dunhill	09:00
	SR Externe bezoeker SUB	09:00
	Somelder bezoeker	09:00
3		
Afdeling Technische dienst	Dhr. Pietersen	09:00
Productie	Urkewhich	08:00
Afdeling Produktie	Gireg	08:00
Afdeling Facility Management	De Witt	10:00
4		
Afdeling Logistiek	Dhr. Klaasen	14:45
Productie	Spink	08:00

---

extractMonth

The **extractMonth** function extracts the month from a date (as a number).

Example: extractMonth(Orders.'Start date & time')

Month	Start date & time
12	Sun Dec 10, 06
12	Sun Dec 10, 06
11	Fri Nov 10, 06
11	Fri Nov 10, 06
9	Mon Sep 10, 07

---

extractYear

The **extractYear** function extracts the year from a date (as a number).

Example: extractYear(Orders.'End date & time')

Year	End date & time
2014	30/09/2014
2014	22/07/2014
2014	12/08/2014
2014	29/10/2014

---

formatDate

The **formatDate** function changes a specified date-time into text according to a specified format.

Example: formatDate(Orders.'Start date & time', "yyyy/MM/dd HH:mm")

Date
1997/08/26 00:00
2004/08/17 20:25
2004/08/17 20:25
2004/08/17 20:25
2004/09/03 09:00
2004/09/06 09:00

See also Mask.

---

parseDate

The **parseDate** function converts a text string into a date-time according to the specified format.

Example: parseDate("31-12-2014", "dd-MM-yyyy")

parseDate
Dec 31, 2014 12:00:00 AM

---

weekOf

The **weekOf** function returns the week number of the specified date-time.

Example: weekOf(Orders.'Start date & time')

Week No.	Start date & time
48	26/11/2004
39	21/09/2004
52	21/12/2004

String functions

The following functions can be used for string fields.

formatString

The **formatString** function links a given number of text strings with a given separator. If one of the text strings is empty, the first non-empty string is returned.

Example: formatString(", ", Personnel.Initials, Personnel.Prefix, Personnel.Surname)

Name
G., Janssen
M., de, Jong
A.M., de, Jong

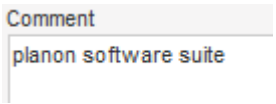
---

pretty

The **pretty** function is used to automatically capitalize the first word of a sentence.

Example: pretty(Personnel.Comment)

Text in the application:



Text in the report:

Comment
Planon software suite

---

strToNumber

Free fields are by definition non-numerical with the exception of the free numerical fields. However, free fields can hold numeric values. By using the **strToNumber** function the contents of the field can be converted into numeric values, enabling you to use the value in a calculation in a report. The **strToNumber** function will not affect the database and is only used to compile reports.

The following example describes how an expression is built enabling you to calculate the difference between the **Old meter reading** and **New meter reading** free fields of a property.

Example: strToNumber(Properties.'New meter reading') -strToNumber(Properties.'Old meter reading')

Power consumption per property	
Power consumption 2005	
Airport Boulevard, London	
	11,400
Apple Tree Road, Bridgwater	
	7,978
Church Street, Oxford	
	224,188
City Hall Plaza, Liverpool	
	9,979

---

substring

The **substring** function renders part of the text <S>, starting at position <Start> with a length of <Length> characters.

Example: substring(Personnel.Comment,7,8)

Text in the application:

Comment
Planon Software Suite

Text in the report:

Comment
Software

---

toLower

The **toLower** function converts a text into lower case.

Example: toLower(Personnel.Comment)

Text in the application:

Comment
UPPERCASE changed to lowercase

Text in the report:

Comment
uppercase changed to lowercase

---

toUpper

The **toUpper** function converts a text into upper case.

Example: toUpper(Properties.City.Location)

Properties UK
City
Airport Boulevard, London
LONDON
Apple Tree Road, Bridgwater
BRIDGWATER
Church Street, Oxford
OXFORD
City Hall Plaza, Liverpool
LIVERPOOL

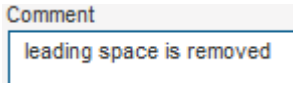
---

trim

The **trim** function removes leading and trailing spaces from a given text.

Example: trim(Personnel.Comment)

Text in the application:



Text in the report:

Comment (trimmed)
leading space is removed

Special functions

You can use special functions to add details of who printed the report.

To understand the functions, consider the following example:

Person linked to the account:

- First name - John
- Last name - Williams
- Initial(s) - J.

Logged in user's account:

- User name - JW@Planon
- Description - John Williams

The special functions work as follows:

loggedInPerson()

The **loggedInPerson()** function returns the value of the name of the linked person as a string. The string is returned in the format -“**Firstname”**space**“Last name”**. You can also append parameters related to the person details like **First name**, **Last name** or **Surname** to the function.

The **loggedInPerson()** works only if there is a person linked to the logged in account, otherwise, it will not return any value.

Example	Result
loggedInPerson()	John Williams
LoggedInPerson(“LastName“)	Williams

loggedInUser()

The **loggedInUser()** function returns the value of the user name and the description field of the account as a string. You can also append parameters related to the user account details or person details like **Account name** to the function.

Example	Result
loggedInUser()	JW@Planon, John Williams
loggedInUser(“Accountname”)	JW@Planon

Numeric functions

The following functions can be used for numeric fields.

abs

The **abs** function returns the absolute value of a number.

Example: abs('Financial commitments'.'Amount incl. VAT')

Value in the application:

€5,000.00

€4,335.00

€2,895.00

€-1,327.24

Value in the report:

Amount
5,000
4,335
2,895
1,327.24

----

formatNumeric

The **formatNumeric** function changes a numeric value into text according to a specified format.

Example: formatNumeric('Financial commitments'.'Amount incl. VAT', "####")

Value in the application:

€5,000.00

€4,335.00

€2,895.00

Value in the report:

Amount incl. VAT
5000
4335
2895

See also Mask.

----

frac

The **frac** function returns the decimal part of a fraction.

Example: frac('Order lines'.'Total costs incl. VAT')

Value in the application:

4770,02

2120,25

Value in the report:

Decimal
0.02
0.25

- -

int

The **int** function renders the natural part of a fraction.

Example: int('Order lines'.'Total costs incl. VAT')

Value in the application:

4770,02

2120,25

Value in the report:

VAT (int)
4771
2120

----

m a x

The **max** function renders the maximum value of two numbers.

Example: max('Order lines'.'Total costs incl. VAT', 'Order lines'.'Total costs excl. VAT')

incl. VAT	excl. VAT	Max.
4771.02	4500.96	4,771.02
2120.25	2000.24	2,120.25

----

min

The **min** function renders the minimum value of two numbers.

Example: min('Order lines'.'Total costs incl. VAT', 'Order lines'.'Total costs excl. VAT')

incl. VAT	excl. VAT	Min.
4771.02	4500.96	4,500.96
2120.25	2000.24	2,000.24

- -

numToString

The **numToString** function converts a numeric value into text.

Example: numToString('Order lines'.'Total costs incl. VAT')

numToString
4,771.02
2,120.25

See also Combining functions.

----

round

The **round** function is used to round a number up or down.

In the example the **round** function is used to round the purchase amount of a property.

Example: Round(Properties.'Acquisition amount')

Without round function:

Acquisition amount
Airport Boulevard, London
310585.35
Apple Tree Road, Bridgwater
450877.59
Church Street, Oxford
210995.99
City Hall Plaza, Liverpool
255224.51

With round function:

Acquisition amount
Airport Boulevard, London
310585
Apple Tree Road, Bridgwater
450878
Church Street, Oxford
210996
City Hall Plaza, Liverpool
255225

If-then-else expressions

In this section you will find an example of a more complex expression.

If-then-else operator

The **If-then-else** operator enables you to build extensive expressions. In the following example, the **If-then-else** operator is used to display the number of people for a reservation and - if no people are registered for a reservation - to display the text: "No people".

Procedure

1. Add a report for the **Reservations** business object.

2. Include the **Start date**, **Reservation unit** and **Description** fields in the report.
3. Click the **Add expression** button to open the **Expression builder** window.
4. In the **Operators** section, double-click the **(if ( ) then else)** operator.

   The **(if ( ) then else)** operator is added to the **Expression** section.
5. In the **Expression** section, place your cursor between parenthesis after 'if'.
6. In the **Available fields** section, double-click the **Number of people** field. The expression will look like this:

```
( if (Orders.'Number of people') then else)
```

7. In the **Expression** section, place your cursor after the field 'Orders.'Number of people''.
8. In the **Operators** section, double-click the **>** operator and enter a **zero** (**0**) directly behind this operator. The expression will look like this:

```
( if (Orders.'Number of people'>0) then else )
```

9. In the **Expression** section, place your cursor between 'then' and 'else'.
10. In the **Functions** section, double-click the **NumToString** function. The expression will look like this:

```
( if (Orders.'Number of people'>0) then numToString() else )
```

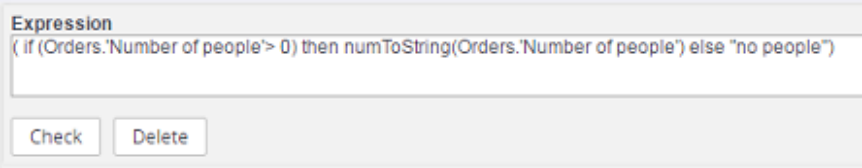
11. In the **Expression** section, place your cursor between parenthesis of 'numToString' function.
12. In the **Available fields** section, double-click the **Number of people** field. The expression will look like this:

```
( if (Orders.'Number of people' >0) then numToString(Orders.'Number of people') else )
```

13. In the **Expression** section, place your cursor after 'else'.
14. In the **Constants** section, select the **Text** option.
15. In the **Constants** section, enter the text "no people".

16. In the **Constant** section, click the **Add** button.

    The expression has now been completed as you can see from the following example.



17. In the **Expression** section, click the **Check** button.

    Planon will now check whether the expression you have built is correct.

18. Click **OK** to save the expression and to close the **Expression builder** window.

    You will now return to the **Report definitions and settings** window. Your expression has been added to the **Selected fields** section.

19. In the **Selected fields** section, select the expression you have just created.
20. In the **Settings** section, specify the required field settings.

    For more information on field settings, refer to

21. View the result in the print preview of the report.

Reservations			
Date	**Reservation unit**	**Description**	**Number of people**
16/06/2006	Orion	Department Meeting	10
03/05/2006	Southern Cross	Sales Meeting	4
06/06/2006	Jupiter	Development Meeting	34
04/05/2006	Mars	Planon Training	No people
28/04/2006	Mars	Planon Training	7

    For more examples of if-then-else expressions, see Boolean fields in if-then-else expressions and Combining functions.

Boolean fields in if-then-else expressions

When using a Boolean field in an expression, the construction of this expression should adhere to the following format:
(if (<field of type Boolean>) then xxx else yyy)

Example: (if (Personnel.'Transferred to archive (Y/N)') then "Yes" else "No")

Code	Surname	Archived Y/N
0000000002	Grootens	Yes
SO PERS1	Somelder	No

Combining functions

This section lists some examples of expressions combining multiple functions.

Example 1

if (isEmpty(Personnel.'First Name')) then toUpper(substring(Personnel.Initials,0,1)) + "." else Personnel.'First Name'

Example data	Result
First Name = Adrian, Initials = “A.P.”	Adrian
First Name = “ “, Initial = “a”	A.

Example 2

if (Orders.'Number of people' > 8) then "Extra staff (" + numToString(Orders.'Number of people') + " visitors)" else ""

Example data	Result
Number of people = 8	“ “
Number of people = 10	Extra staff (10 visitors)

Using slashes in expressions

In **Expression builder** there is a way for using slashes in expressions.

Your configurations includes the fields:

Field name	Value
Server	server
Directory	directory
File name	filename.pdf

Suppose you want to include a file path reference in your report including the server name, the server directory, and the file name, separated by a single backslash.

1. Select the business object for which you want to generate a report.

2. Select a record in the element list and click **Report** on the action menu.

   The Reporting window appears.

3. Add a new report, and click **Add expression**.

   The Expression panel appears.

4. Construct your expression:
   - Enter ***"\\" +*** and double-click on the **Server** field to add it to the expression.
   - Enter ***+ substring("\\", 1, 1)+*** and double-click on the **Directory** field to add it to the expression.
   - Enter ***+ substring("\\", 1, 1)+*** and double-click on the **File name** field to add it to the expression.

   The complete expression (built on Communication logs) is:

   ```
   "\\" + 'Communication logs'.Server + substring("\\", 1, 1)
   + 'Communication logs'.Directory + substring("\\", 1, 1) +
   'Communication logs'.File name
   ```

5. Close the **Expression builder**, and click **Preview** in the **Reporting** window.

   The report preview displays the following output: \\server\directory \filename.pdf

Troubleshooting

The following topic(s) may help resolve issues.

Cannot save or preview reports

When you have issues with reports, for example not being able to save or preview reports, this may be caused by the way your SQL server language has been configured.

The suggested solution for this is to add the following lines to the tomcat-wrapper-default.conf.

Procedure

(This procedure needs to be done by your system administrator or someone who has the required skill and access level).

1. Go to ..\Server\tanuki\webserver\conf\tomcat-wrapper-default.conf and open the file in a text editor.
2. Add the following lines:

```
wrapper.java.additional.<n>=-Duser.language=en

wrapper.java.additional.<n+1>=-Duser.country=US
```

Replace the <n> and <n+1> with the correct sequence numbers.

Tip It is also recommended to keep the default language settings of the SQL server.

Reports – Field Descriptions

Report settings fields

Complete this field / enable this option	to…
Type	Displays the report definition type: • Report • Mail merge • Data only • Custom
Name	Specify a suitable name for your report. The default name given by Planon is <new report>. You can overwrite this name with a meaningful name of your own.
Title	Specify a suitable title for your report.
Page size	Select the preferred paper size from the list. You may want to check in advance whether the selected size is also supported by your printer.
Orientation	Select the required paper orientation for the report: portrait or landscape.
Font for title	Select an appropriate font type and size for the title of the report.
Font for heading	Select an appropriate font type and size for the headings in the report.
Font for detail lines	Select an appropriate font type and size for the detail lines in the report.
Background color	Set a background color for the title bars in your report.
Include date/time	Print the current date in the footer of your report.
Mask	Set a mask (=notation format) for date/time fields included in your report definition. You can either select a mask from the list or compose one of

Complete this field / enable this option	to…
	your own. For more information on masks, refer to Mask.
Include page number	Print page numbers in the footer of your report.
Specify company name	Print the company name in the footer of your report.
Company name	Enter the company name to be displayed in the footer of the report.
Only show group lines	Only include in the report those fields that were designated as group fields. This option will result in a concise list. If no group fields have been included in the report, this option is disabled.
Show group fields in detail lines	Insert an extra column for each group field. The name of the group will be repeated in each detail line. This option is disabled if no group fields have been included in the report.
Column width setting	Indicate how the width of a column should be determined for subreports: • **Autofit**: the column width is determined by the text width. If the width of the text exceeds the available space, the column will be adjusted to the maximum available space. • **Fixed column**: the text width is fixed. If the width of the columns exceeds the available space, the text will be hidden. This setting is only available for report type mail merge (and for document type doc, docx, ttf).

Numeric fields

Format	View	Example
0	If the character in the position of the 0 is a number, the number is used. If not, a zero is used.	0#### → 01350

Format	View	Example
#	If the character in the position of the # is a number, the number is used. If not, no value is placed in this position. If the number of # and 0 that is placed before the decimal point is lower than the value to be shown, the complete value is shown.	##### → 1350 ## → 1350
.	A decimal point. This is used to indicate that you want to include numbers after the decimal point in the report. The decimal point is used depending on the locale of the Planon language used by the logged in user. If the number of # or 0 placed after the decimal point is less than the number of decimal places to be shown, the value is rounded up or down. This also applies if no numbers are used after the decimal point.	####.#00 → 1350.45 #.## → 0.26 0.26 →rounded up to 0.3
,	For numbers over 999 a separation mark is used. The grouping symbol is determined by the locale of the Planon language used by the logged in user.	#,### → 1,350
‘ ’	Text placed between single quotation marks is included in a report.	‘The United Kingdom has’ #.### ‘points.’ → The United Kingdom has 1.350 points.
;	This enables you to specify that you want to use different masks for positive values, negative values or the value zero. The different formats are separated by a semicolon (;). The first format applies to positive values, the second to negative values and the third to the value zero.	####; -0####;0000 1350 → 1350 –1350 → -01350 0 → 0000

Date-time fields

Letter	Date or time component	Examples
G	Era designator	**AD**
y	Year	**yyyy** →2017, **yy** → 17
M	Month in year	**M** → 1 If you use the format **MM**, months 1 to 9 are preceded by a zero: **MM** → 01 If you use the format **MMM**, the month is shown as an abbreviation: **MMM** → Jan If you use the format **MMMM**, the complete names of the months are shown: **MMMM** → January
w	Week in year	**W**, yyyy → 9, 2017 If you use the format **ww**, weeks 1 to 9 are preceded by a zero: **ww**, yyyy → 09 2017
W	Week in month	MMMM, **W** → September, 2 If you use the format **WW**, the week number is preceded by a zero: MMMM, **WW** → September, 02
D	Day in year	**D**, yyyy → 250, 2017 If you use the format **DDD**, the days 1 to 99 are preceded by a zero: **DDD**, yyyy→ 025, 2017
d	Day in month	**d** MMMM yyyy → 7 Sep 2017 If you use the format **dd**, days 1 to 9 are preceded by a zero: **dd** MMMM yyyy → 07 Sep 2017
F	Day of week in month	**F** → 2
E	Day in week	**E** dd MMMM yyyy → Thu 07 September 2017 If you use the format **EEEE**, the complete names of the days are shown: **EEEE** dd MMMM yyyy →

Letter	Date or time component	Examples
		Thursday 07 September 2017
a	Am/pm marker	h:mm **a** → 12:08 PM
H	Hour in day (0-23)	**H**:mm → 0:00
k	Hour in day (1-24)	**k**:mm → 24:00
K	Hour in am/pm (0-11)	**K**:mm → 0:00
h	Hour in am/pm (1-12)	**h**:mm → 12:00
m	Minute in hour	H:**m** → 7:45 If you use the format **mm**, minutes 1 to 9 are preceded by a zero: H:**mm** → 10:05
s	Second in minute	H:mm:**s** → 10:08:55 If you use the format **ss**, seconds 1 to 9 are preceded by a zero: H:mm:**ss** → 10:08:05
z	Time zone	HH:mm **z** → 10:08 CEST If you use the format **zzzz**, the complete names of the time zones are shown: HH:mm **zzzz** → 10:08 Central European Summer Time
Z	Time zone	HH:mm **Z** → 10:08 +0200

Report for texts and tooltips fields

Texts and tooltips for…	Create report in
Floors	Spaces & Workspaces , Components > Floors
Spaces	Spaces & Workspaces , Spaces

Texts and tooltips for…	Create report in
Assets	Assets > Assets
Flexible workplaces	Reservations, Graphical planner > Flexible workspaces
Personnel	Personnel > Personnel
Visitors	Personnel > Visitors

Operator fields

Operator	Description	Example
+	Addition (numeric) Adds one value to another	Budgets.'Total invoiced/actual costs' +Budgets.'Remaining budget'
	Concatenation (strings) Appends strings See Text constant for an example.	Personnel.'First name' + Personnel.Surname
-	Subtraction Subtracts one value from another	Budgets.Budget - Budgets.'Total invoiced/ actual costs'
*	Multiplication Multiplies one value by another	Budgets.'% of budget category' * 0.95
/	Division Divides one value by another	Budgets.'Remaining budget'/ 12
%	Modulo or remainder operator. This operator returns the remainder of a division. Example 5 % 2 = 1	Orders.Workplace.'Surface area' % Orders.'Number of people'
=	Equals	Orders.'User-defined status'.Code = "O1"

Operator	Description	Example
	Returns items that match the value following the equal sign	
<	Less than Returns items that are less than a specified value	Orders.'User-defined status'.Code < "O2"
>	Greater than Returns items that are greater than a specified value	Orders.'User-defined status'.Code > "O1"
!=	Does not equal Returns items that are not equal to a specified value	Orders.'User-defined status'.Code != "O1"
<=	Less than or equal Returns items that are less than or equal to a specified value	Orders.'User-defined status'.Code<="O2"
>=	Greater than or equal Returns items that are greater than or equal to a specified value	Orders.'User-defined status'.Code >= "O2"
and	Logical AND Results in an expression that checks on both parameters	Orders.Property.'Property code' = "41008" and Orders.'Requested completion date' = currentDate()
or	Logical OR Returns items for which one of the parameters is true	Orders.'Number of people' = 8 or Orders.'Number of people' = 9
not	Logical NOT Returns items for which none of the parameters is true	not (Orders.'Number of people' = 8 or Orders.'Number of people' = 9)
If () then else	If then else	(if (not(Orders.'Transferred

Operator	Description	Example
	Returns items matching the query as 1 and other items as 0	to archive (Y/N)'))then (Orders.Number))

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