

Essentials Edition

Version: 1.0

Attributes

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Purpose

Customers may have a vast range of different assets, from air conditioning units to chairs. These assets have distinctive characteristics that you can capture and extend by using attributes. You can manage attributes without requiring extensive configuration.

Requirements

Because this functionality requires advanced database features, you need to comply with the following requirements:

- Your database must match either of the following versions (or later):
 - MSSQL 2016
 - Oracle 12.1.0.2
- You must purchase a license for the use of Attributes. The type of license determines what volume of attributes you can use. You can either purchase a license for unlimited use or a limited volume license.
- In **Improved Features**, you must activate the 'Enable advanced database features for Attributes' feature switch.

Concepts

Attributes features the following concepts:

- [Attribute](#)
- [Attribute set](#)
- [Attribute definition](#)



Attributes' functionality is supported on a number of components on Planon Self-Service (forms):

- Details block
- Info block
- Row expander

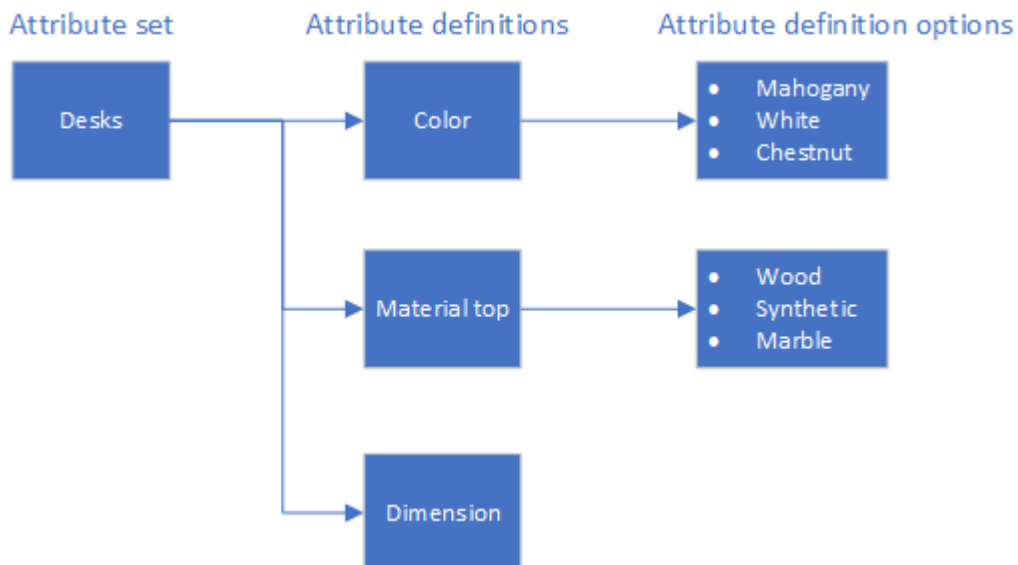
Attribute

An attribute specifies any kind of data that a customer needs to register for an item that is maintained in Planon. This could be a physical property (such as a color or a dimension), or metadata (such as an item's service date).

In Planon, attributes are free-definable and are available to assets and building elements. In order to use attributes, you must specify an attribute structure composed of:

- [Attribute sets](#)
- [Attribute definitions](#)
- Attribute definition options (only for an attribute definition of type **Drop-down**)

Graphically, this hierarchical structure can be represented as follows:





- An attribute set can include as many as 100 attributes.
- A single select attribute can have as many as 500 options.

Restrictions

The following restrictions apply:

- Multiline text definitions cannot exceed 2000 characters (allowed: 100-2000).



You can specify the number of characters in the field: multiline/single line definitions > **Maximum length**. Make sure this field is added to the layout.

- Single line text definition cannot exceed 250 characters (allowed: 1-250).



You can specify the number of characters in the field: multiline/single line definitions > **Maximum length**. Make sure this field is added to the layout.

- You can increase but not decrease the value if the definition is in use.
- The total set of attribute definitions cannot exceed 7500 bytes.

Attribute set

An umbrella component that groups attributes for a certain type of asset.

Attribute definition

An attribute definition specifies an [attribute](#). Attribute definitions can be one of multiple types:

- Time
- Single-line text
- Multiline text



Due to reasons of performance, you can only add a maximum of three attribute definitions of type **Multiline text** per attribute set.

- Decimal
- Date-time
- Date
- Drop-down

- Integer

You can link an attribute definition to multiple attribute sets.

Working with Attributes

Here you can find information on how to configure and use attributes.

Configuring attributes

Before you can add attributes to your assets and building elements, you need to configure a structure of attribute sets and attribute definitions in Planon.

1. On the **Attribute sets** level, click **Add** and fill out the **Code** and **Name** in the data panel.



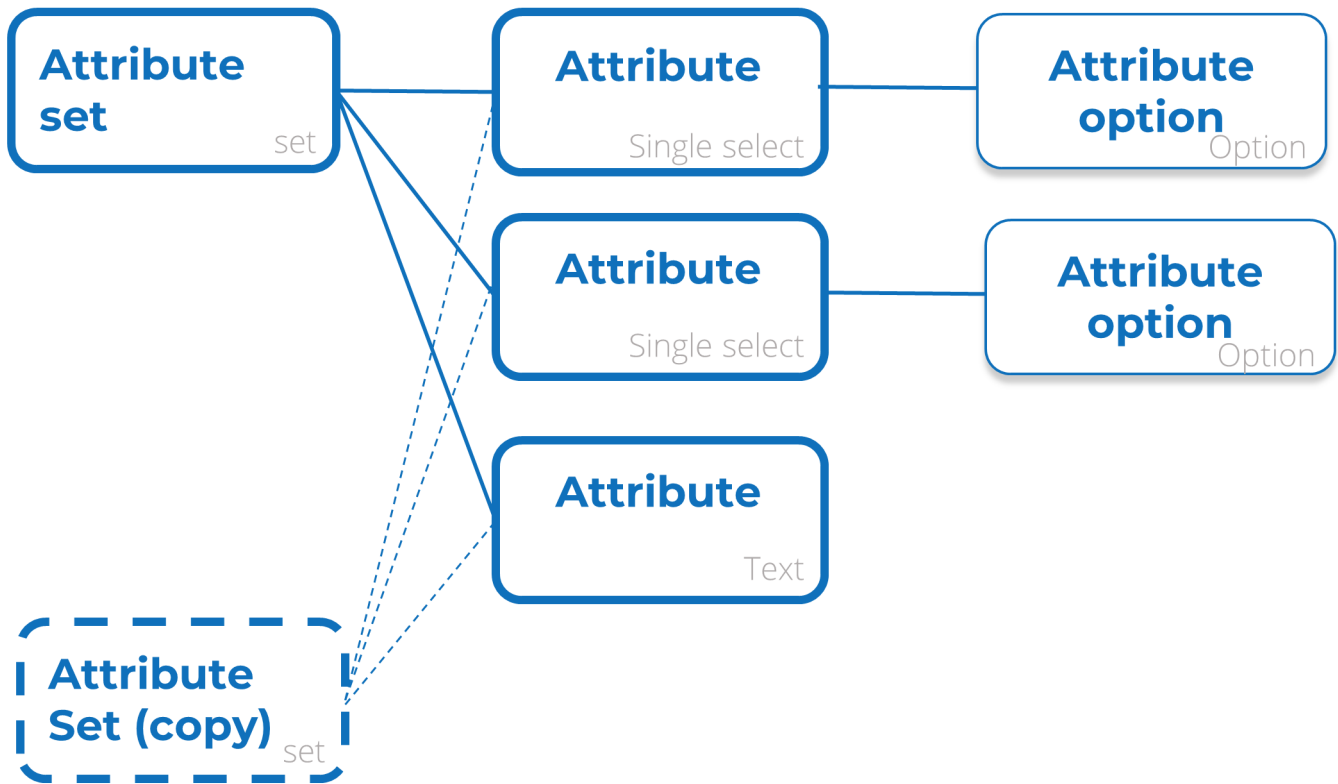
For all three business objects (attribute set, attribute definitions, attribute options), the **Code** field can only contain the characters a-z (case-insensitive) and 0-9 and cannot start with a digit.

2. Go to the **Attribute definitions** level and click **Add** to add an attribute definition.
3. On the action panel, link attribute definitions to attribute sets, or vice versa.

On **Attribute sets** level, the specifics of the linked attribute definition are displayed. On **Attribute definitions** level, the linked attribute sets are displayed.



- On **Attribute definition** level, the **Show unlinked attribute definitions** button is available to check for attribute definitions that are not yet linked to a attribute set.
- By clicking **Copy** on **Attribute sets** level, you can (deep) copy attribute sets. When you do, you need to specify a new code for the copy. The new copy will link to the existing definitions & options:



Attribute options

When adding a drop-down attribute definition, you can further specify its options.

1. On **Attribute definitions** level, create a new attribute definition of type **Drop-down**.
 2. Select the newly created attribute definition and go to **Attribute definition options** level.
 3. Add the options you require for this attribute definition and click **Save**.
- If you select two attribute definitions at once and then go to **Attribute definition options** and proceed to add options, you must select the definition for which you are adding options.
 - You can add as many as 500 options to your attribute definition.

After specifying your options, you can proceed to [attach your attribute definition](#) to an asset or building element and your options can then be selected.

Attaching/detaching attributes

After configuring the attribute set, you can continue to link these to assets or building elements. You can also unlink attributes.

In Assets , you can link the attribute set to building elements or to assets.

1. Select the asset/building element to which you want to link attributes and click **Attach attribute set** on the action panel.

You can only link a single attribute set.

After linking the attribute set, the characteristics specified in the attribute definition are displayed in the elements panel. You can even fill out the specifics by directly entering them here.



To unlink an attribute set, simply click **Detach attribute set** on the action panel.

- If the attributes are still empty, simply **Proceed**.
- If the attributes contain a value, a warning message will appear, prompting you to confirm the change. Click **Proceed**.

2. Click **OK** to save your changes.

In Field definer and Layouts , attributes appear as a single field: **Attributes**. Here, you will find the regular reference to the attribute set.

Making attributes standard available

You can make attributes default available to assets or building elements by linking an attribute set to a standard asset or standard building element.

1. Go to **Maintenance libraries > Standard assets** and click **Add > Standard assets / building elements**.
2. Create a standard asset / building element and link an attribute set to it.

By doing so, you make the attributes available for whomever creates a new asset based on the standard asset / building element. In **Assets**, when you click **Add standard asset** or **Add standard building element**, these attributes will be displayed.

Reporting on attributes

In **Assets**, you can also create a report on attributes.

You can either create a report on:

- The whole **Attribute** field (see [Creating a report on all attributes](#)).
- Individual attribute entries (see [Reporting on a single attribute](#)).

Creating a report on all attributes

In **Assets**, you can make a report on all attributes.

Prerequisite

Make sure you have preconfigured a report containing the **Attributes** field.

1. Go to **Assets** and select a number of assets in the elements list on which you want to create a report.
2. Click **Report**

The **Reporting** window opens.

3. Select the report you configured previously (under **Print options**, make sure that you select **Print only selected elements**).
4. Click **Preview & print**.

Your report including all attributes is shown on the screen.

Reporting on a single attribute

In **Assets**, you can create a report on a single attribute.

Creating reports including single attributes requires a little bit more configuration.

1. Create a report and add an expression
2. Add a function. In the **Functions** list, three new entries are available:
 - attributeDateTime
 - attributeNumber
 - attributeString

The data type of the attribute included in the report determines which of these functions you must select:

- attributeDateTime can be used for attributes of the type Date, Time or DateTime.
- attributeNumber can be used for attributes of the type Integer or Decimal.
- attributeString can be used for attributes of the type Single-line text, Multiline text and Drop-down.

When you add such a function, in the **Expression** panel at the bottom, the function is added including the **Attributes** field.

3. You can then add the individual attributes, for example: `attributeString('Base assets'.Attributes, "color")`

The code of the attribute is case insensitive (in this example: "color" could well be "Color").

4. Save your report and click **Preview & print**.

Your report including the individual attribute is shown on the screen.



For more information on using expressions, see Reports .

Searching for attributes

In **Assets**, you can create a filter to search for attributes.

1. Select a number of assets in the elements list.
2. In the **Filter** bar, click **Add filter**.
3. In the filter list, select **Attributes**.

The drop-down list becomes available.

4. Select the attribute, or type the three characters for (auto)suggestions, and search on that specific attribute.

Transferring data and configuration

When you want to transfer data or configuration from or into Planon, take into account the following remarks.

Enterprise Talk

Data can be exported from or imported into Planon by using Enterprise Talk. For assets and building elements, all attributes are stored in the database in a single JSON string. To import data into this record, the Enterprise Talk definition needs to include the **Attributes** field.

See also:

- [Enterprise Talk - Export.](#)
- [Enterprise Talk - Import](#)

Configuration Transfer

A new step is introduced in Configuration Transfer called **Attribute sets**. On this step you can select all or a subset of the attribute sets (their linked attribute definitions are automatically included).



For more information, see Enterprise Talk or Configuration Transfer.

Enterprise Talk - Export

This topic lists an excerpt of an export file including attributes.

When you export the **Attributes** field, all values will be exported.

- All data in between the **<Attributes>** tag is interpreted as Attributes data.
- The **<Version>** tag contains the version of the Attributes structure. This number is required to make sure the data within the **<Attributes>** tag is compliant with the implementation.
- The **<AttributeDefinitionSetCode>** tag contains the link to the attribute set.
- The **<Values>** tag contains the individual attributes.
- The **type** property inside the **<Values>** tag contains the system type of the attribute.

Example

```
<Attributes>
<Version type="string">1.0.0</Version>
<AttributeDefinitionSetCode type="string">01</AttributeDefinitionSetCode>
<Values>
<serviceDate type="date">2018-03-31</serviceDate>
<precision type="decimal">1.33</precision>
<purchaseDateTime type="datetime">2018-03-31T14:59:00+02:00</purchaseDateTime>
<score type="integer">1</score>
<alarmTime type="time">13:30:00</alarmTime>
</Values>
```

```
</Attributes>
```

Enterprise Talk - Import

This topic lists an excerpt of an import file including attributes.

- All data in between the **<Attributes>** tag is interpreted as Attributes data.
- The **<Version>** tag contains the version of the Attributes structure. This number is required to make sure the data within the **<Attributes>** tag is compliant with the implementation.
- The **<AttributeDefinitionSetCode>** tag contains the link to the attribute set.
- The **<Values>** tag contains the individual attributes.
- The **type** property inside the **<Values>** tag contains the system type of the attribute.

Your Enterprise Talk import definition must include the **Attributes** field, as shown in the following example:

Example

```
<Attributes>
<Version type="string">1.0.0</Version>
<AttributeDefinitionSetCode type="string">01</AttributeDefinitionSetCode>
<Values>
<serviceDate type="date">2018-03-31</serviceDate>
<precision type="decimal">1.33</precision>
<purchaseDateTime type="datetime">2018-03-31T14:59:00+02:00</purchaseDateTime>
<score type="integer">1</score>
<alarmTime type="time">13:30:00</alarmTime>
</Values>
</Attributes>
```



The type property is currently not used during import, but might be used in the future for data validation. Currently, you do not need to specify it in the import file.

In the following two cases, an error is displayed:

- If an attribute definition name cannot be found.
- If the combination of attribute definition name / attribute set code cannot be found.

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