Methods of Selecting BOM Variant Parts in Variant Configuration

Applies to:
SAP R/3 and ECC 6.0
For more information, visit the Product Lifecycle Management homepage.

Summary
This document explains in detail about the methods of selecting BOM Variant Parts (BOM Items) in Variant configuration.

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# Methods of Selecting BOM Variant Parts in Variant Configuration

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Overview

This document explains in detail about the three ways of selecting variant parts in the Bill of Material (BOM) of a configurable material.

Options available in Standard SAP are given below.

Option 1: By entering the variant part as a BOM item and assign selection conditions to it
Option 2: By classifying the variant part in a class & entering the class as class item in the BOM.
Option 3: By using classification data of a material as a selection condition.

Approach

Under each option, required master data settings are specified.

Next, Simulation of configuration, its result etc. for each option is illustrated.

Option 1: By Entering the Variant Part as a BOM Item with Selection Conditions

Master data required and Simulation of configuration for Option 1 is explained with an example below.

Maintain following master data for the scenario.

Characteristics

Create characteristics HD_MAKE & HD_MEMORY using Transaction code CT04 with following data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HD_MAKE</th>
<th>HD_MEMORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char. Desc.</td>
<td>Hard Disc Make</td>
<td>Hard Disc Memory In GB</td>
</tr>
<tr>
<td>Data type</td>
<td>Char</td>
<td>Char</td>
</tr>
<tr>
<td>Length</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Values</td>
<td>MAKE-A 160</td>
<td>MAKE-B 320</td>
</tr>
<tr>
<td></td>
<td>MAKE-C</td>
<td></td>
</tr>
</tbody>
</table>

Variant Class - Class type 300

Create Class HD_CLASS of Class type 300 using Transaction Code CL02. Assign Characteristics HD_MAKE and HD_MEMORY to this class.

Material Master - Variant Parts

Create following 6 materials with Material type ROH in plant 1000

<table>
<thead>
<tr>
<th>Material</th>
<th>Material Desc</th>
<th>Material</th>
<th>Material Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAKE-A160</td>
<td>Hard disc MAKE-A 160 GB</td>
<td>MAKE-B320</td>
<td>Hard disc MAKE-B 320 GB</td>
</tr>
<tr>
<td>MAKE-A320</td>
<td>Hard disc MAKE-A 320 GB</td>
<td>MAKE-C160</td>
<td>Hard disc MAKE-C 160 GB</td>
</tr>
<tr>
<td>MAKE-B160</td>
<td>Hard disc MAKE-B 160 GB</td>
<td>MAKE-C320</td>
<td>Hard disc MAKE-C 320 GB</td>
</tr>
</tbody>
</table>
Material Master - Configurable Material
Create Configurable material PC_SC01 with Material type FERT in plant 1000 and Mark as Configurable.

Configuration Profile
Create Configuration profile for the following configurable materials using Transaction code CU41.
Assign Variant Class HD_CLASS (class type 300). Maintain configuration profile settings for material PC_SC01, as shown below.

BOM with Dependencies
Create BOM in plant 1000 for Configurable material PC_SC01 using Transaction code CS01.

Select each Variant item and click on dependency button.
Similarly create dependencies for each variant part as explained above. Observe that OD (object dependency) field gets checked for those items which have dependency.
Configuration Simulation

Simulate the configuration using Transaction code CU50

Click on **Engineering** button and then click on Result button. Configuration Result is displayed with variant part. As characteristic values selected are 'MAKE-A' and '320', variant part selected is MAKE-A320.
Option 2: By Classifying the Variant Part in a Class & Entering the Class as Class Item in the BOM

Master data required and Simulation of configuration for Option 2 is explained with an example below:
Maintain following master data for the scenario.

**Characteristics**

Create characteristics HD_MAKE & HD_MEMORY using Transaction code CT04 with following data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HD_MAKE</th>
<th>HD_MEMORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char. Desc.</td>
<td>Hard Disc Make</td>
<td>Hard Disc Memory In GB</td>
</tr>
<tr>
<td>Data type</td>
<td>Char</td>
<td>Char</td>
</tr>
<tr>
<td>Length</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Values</td>
<td>MAKE-A 160</td>
<td>MAKE-B 320</td>
</tr>
<tr>
<td></td>
<td>MAKE-C</td>
<td></td>
</tr>
</tbody>
</table>

**Variant Class - Class type 300**

Create Class HD_CLASS of Class type 300 using Transaction Code CL02. Assign Characteristics HD_MAKE and HD_MEMORY to this class.

**Material Master - Variant Parts**

Create following 6 materials with Material type ROH in plant 1000

<table>
<thead>
<tr>
<th>Material</th>
<th>Material Desc</th>
<th>Material</th>
<th>Material Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAKE-A160</td>
<td>Hard disc MAKE-A 160 GB</td>
<td>MAKE-B320</td>
<td>Hard disc MAKE-B 320 GB</td>
</tr>
<tr>
<td>MAKE-A320</td>
<td>Hard disc MAKE-A 320 GB</td>
<td>MAKE-C160</td>
<td>Hard disc MAKE-C 160 GB</td>
</tr>
<tr>
<td>MAKE-B160</td>
<td>Hard disc MAKE-B 160 GB</td>
<td>MAKE-C320</td>
<td>Hard disc MAKE-C 320 GB</td>
</tr>
</tbody>
</table>

**Material Master - Configurable Material**

Create Configurable material PC_SC02 with Material type FERT in plant 1000 and Mark as Configurable.

**Configuration Profile**

Create Configuration profile for the following configurable materials using Transaction code CU41.
Assign Variant Class HD_CLASS (class type 300). Maintain configuration profile settings for material PC_SC02.
Material (Configurable Objects) class – Class type 200

Create Class HD_CLASS of Class type 200 using Transaction Code CL02. Assign Characteristics HD_MAKE and HD_MEMORY to this class. Mark field Allowed in BOMs. Maintain Default base Unit of Measure and Resulting Item Category.

<table>
<thead>
<tr>
<th>Class</th>
<th>HD_CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class type</td>
<td>200</td>
</tr>
<tr>
<td>Change Number</td>
<td></td>
</tr>
<tr>
<td>Valid from</td>
<td>09.07.2009</td>
</tr>
</tbody>
</table>

Assignment of above class to Variant Parts

Assign Class HD_CLASS (class type 200) to all 6 variant part materials and maintain respective characteristic values as shown below.
BOM with Class Item

Create BOM in plant 1000 for Configurable material PC_SC02 using Transaction code CS01. Specify item category as ‘K’ and quantity for item 0010. Maintain Class type, Class, Res. Item Cat. as shown below.

Configuration Simulation

Simulate the configuration using Transaction code CU50

Click on button and then click on Result button. Configuration Result is displayed with variant part. As characteristic values selected are ‘MAKE-A’ and ‘320’, variant part selected is MAKE-A320.
Option 3: By Using Classification Data of a Material as a Selection Condition

Master data required and Simulation of configuration for Option 3 is explained with an example below:

Maintain following master data for the scenario.

**Characteristics**

Create characteristics HD_MAKE & HD_MEMORY using Transaction code CT04 with following data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HD_MAKE</th>
<th>HD_MEMORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char. Desc.</td>
<td>Hard Disc Make</td>
<td>Hard Disc Memory In GB</td>
</tr>
<tr>
<td>Data type</td>
<td>Char</td>
<td>Char</td>
</tr>
<tr>
<td>Length</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Values</td>
<td>MAKE-A 160</td>
<td>MAKE-B 320</td>
</tr>
<tr>
<td></td>
<td>MAKE-C</td>
<td></td>
</tr>
</tbody>
</table>

**Variant Class - Class type 300**

Create Class HD_CLASS of Class type 300 using Transaction Code CL02. Assign Characteristics HD_MAKE and HD_MEMORY to this class.

**Material Master - Variant Parts**

Create following 6 materials with Material type ROH in plant 1000

<table>
<thead>
<tr>
<th>Material</th>
<th>Material Desc</th>
<th>Material</th>
<th>Material Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAKE-A160</td>
<td>Hard disc MAKE-A 160 GB</td>
<td>MAKE-B320</td>
<td>Hard disc MAKE-B 320 GB</td>
</tr>
<tr>
<td>MAKE-A320</td>
<td>Hard disc MAKE-A 320 GB</td>
<td>MAKE-C160</td>
<td>Hard disc MAKE-C 160 GB</td>
</tr>
<tr>
<td>MAKE-B160</td>
<td>Hard disc MAKE-B 160 GB</td>
<td>MAKE-C320</td>
<td>Hard disc MAKE-C 320 GB</td>
</tr>
</tbody>
</table>

**Material Master - Configurable Material**

Create Configurable material PC_SC03 with Material type FERT in plant 1000 and Mark as Configurable.


**Configuration Profile**

Create Configuration profile for the following configurable materials using Transaction code CU41. Assign Variant Class HD_CLASS (class type 300). Maintain configuration profile settings for material PC_SC03.

**Material class – Class type 001**

Create Class HD_CLASS of Class type 001 using Transaction Code CL02. Assign Characteristics HD_MAKE and HD_MEMORY to this class.

**Assignment of Above Class to Variant Parts**

Assign Class HD_CLASS (class type 001) to all 6 variant part materials and maintain respective characteristic values as shown below.

![Classification Table](image)

```
Object: Material  Make: Hard Disk 320
Class Type: 001  Material Class

Assignments

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD_CLASS</td>
<td>Hard Disk class</td>
</tr>
</tbody>
</table>

Values for Class HD_CLASS - Object MAKE-C320

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Disk Make</td>
<td>MAKE-C</td>
<td></td>
</tr>
<tr>
<td>Hard Disk Memory</td>
<td>320 GB</td>
<td></td>
</tr>
</tbody>
</table>
```
BOM with Selection Condition

Create BOM in plant 1000 for Configurable material PC_SC03 using Transaction code CS01.

Select each variant part item and click on [ ]. Specify class type 001 and check 'as selection cond.' field.
Configuration Simulation

Simulate the configuration using Transaction code CU50

**Configuration: Initial Screen**

- Material: PC_5003
- Plant: 1800 Sunnyvale Plant

**Configuration: Characteristic Value Assignment**

- Material: PC_5003
- Date: 08/27/2009
- Quantity: 1.000

<table>
<thead>
<tr>
<th>Characteristic Value Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char. description</td>
</tr>
<tr>
<td>Hard Disk Make</td>
</tr>
<tr>
<td>Hard Disk Memory</td>
</tr>
</tbody>
</table>

Click on the Engineering button and then click on Result button. Configuration Result is displayed with variant part. As characteristic values selected are 'MAKE-A' and '320', variant part selected is MAKE-A320.

**Configuration: Result**

- Material: PC_5003
- Date: 08/27/2009
- Quantity: 1.000

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Mat</th>
<th>MRP</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>PC_5003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>MAKE-A320</td>
<td>1.000</td>
<td>PC</td>
<td></td>
<td></td>
<td>1.000</td>
</tr>
</tbody>
</table>

Make-A Hard Disk 320 GB

The object was selected by Classification data
Conclusion

By using any of the above three options, variant parts can be selected in the BOM of configurable materials. Each method has its own advantages and limitations in their application; however, final result of variant selection will be same.

Related Content

Selecting BOM Items

The Configuration Simulation

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