Agile Product Lifecycle Management

Agile PLM Variant Management User Guide

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Preface

The Agile PLM documentation set includes Adobe® Acrobat PDF files. The Oracle Technology Network (OTN) Web site http://www.oracle.com/technology/documentation/agile.html contains the latest versions of the Agile PLM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Agile PLM Documentation folder available on your network from which you can access the Agile PLM documentation (PDF) files.

Note	To read the PDF files, you must use the free Adobe Acrobat Reader version 7.0 or later. This program can be downloaded from the Adobe Web site http://www.adobe.com.

The Oracle Technology Network (OTN) Web site http://www.oracle.com/technology/documentation/agile.html can be accessed through Help > Manuals in both Agile Web Client and Agile Java Client. If you need additional assistance or information, please contact My Oracle Support (https://support.oracle.com) for assistance.

Note	Before calling Oracle Support about a problem with an Agile PLM manual, please have the full part number, which is located on the title page.

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Readme

Any last-minute information about Agile PLM can be found in the Readme file on the Oracle Technology Network (OTN) Web site http://www.oracle.com/technology/documentation/agile.html

Agile Training Aids

Go to the Oracle University Web page http://www.oracle.com/education/chooser/selectcountry_new.html for more information on Agile Training offerings.

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Chapter 1

Configuring Agile PLM Variant Management

This chapter includes the following:

- About Agile PLM Variant Management 1
- Admin Settings for Variant Management 1
- Activating 'Internal Configurator' - Instance Manager 2
- External Configurator - Oracle Generic Configurator User Interface 3
- How Agile PLM Variant Management Works 3

Note The information of this chapter is referring to the Web and Java client.

About Agile PLM Variant Management

Variant Management is a patch on top of Agile PLM 9.3 release. It offers the ability to manage the diversity of product variants already in the early phase of the product development process.

Manufacturer of mass productions can use Variant Management to design products to meet individual requirements. A single 'Model Option BOM', which represents all variants of a product line, is defined and managed in Agile PLM.

The Model Option BOM is the basis for deriving an Instance BOM, to validate prototypes and made to stock pre-configurations. The parts for an Instance BOM are selected in the Internal Configurator (Instance Manager), or in the External Configurator (Oracle Generic Configurator User Interface).

Depending on which Configurator you would like to work with, a setting has to be made in the Preferences tab of My Settings.

Note The information of this documentation is describing the Instance Manager in detail. The Oracle Generic Configurator User Interface is only briefly described.

Note Further information about the Oracle Generic Configurator User Interface can be found in the Oracle Configurator Implementation Guide from OTN (http://www.oracle.com/technology/documentation/applications.html).

Admin Settings for Variant Management

Note The following information is referring to the Java client only. To be able to perform these settings you need to have administrative rights.

Privileges for Variant Management User

Note You require Manager privileges to perform the following.

In order to change the preference for the internal or external Configurator for Variant Management, you require the modify privileges with the criteria My User which has to contain users.Preferences.BOMVariantConfigurationPreferences.

Additionally, to be able to create the Instance BOM, you will require the same privileges as are needed for creating a BOM, and the Save As privilege for Parts (Models).

To be able to modify a Model Option BOM, the fields Parts.BOM.Max Qty, Parts.BOM.Min Qty, Part.BOM.Mut Excl, and Parts.BOM.Optional also have to be assigned to the modify privilege.

To create Instances on the Relationships tab, the field Parts.Relationships.Relation Type has to be assigned to the modify privilege.

Duplicate Item Numbers

Variant Management does not support duplicated item numbers on the same BOM level. Therefore, for Variant Management it is strongly recommended to set the smart rule for Duplicate Item Numbers to Disallow.

To set the entry DuplicateItemNumbers to Disallow:

1. Login to the Java client.
2. Select the Admin tab.
3. Open the System Settings entry.
4. Double-click SmartRules.
5. In the General Information tab, find the entry DuplicateItemNumbers.
6. Open the select menu and select Disallow.
7. Click Save.

Note We recommend to set the entries DuplicateFindNumbers and DuplicateRefDes to Warning.

Activating 'Internal Configurator' - Instance Manager

Important To change the preferences of the client, you require administrative rights.

Note To be able to work with the Internal Configurator, it has to be activated.

To activate the 'Internal Configurator':

1. Click the My Settings button.

2. Select the Preferences tab.
3. In the System Preferences section make sure the BOM Variant Configuration Preference is set to Internal Configurator.

External Configurator - Oracle Generic Configurator User Interface

Some basic information about how to use the Oracle Generic Configurator User Interface can also be found in this guide.

Note	When creating a Model Option BOM, please make sure when a BOM item has the same minimum and maximum quantity value, the Quantity has to have the same value as well. If Min Qty = Max Qty <> Qty value, then the ECO, through which this BOM is released, causes an error in the AIA queue and will not be sent to Oracle EBS.

Activating 'External Configurator' - Generic Configurator User Interface

To activate the 'External Configurator':

1. Click the My Settings button.
2. Select the Preferences tab.
3. In the System Preferences section make sure the BOM Variant Configuration Preference is set to External Configurator.

Admin Settings for the External Configurator

Note	This information is referring to the Java client only. To be able to perform these settings you need to have administrative rights.

To transfer Agile 9 data to the external Configurator, settings have to be made in the Java client. For detailed information regarding these settings, please see: Agile PLM Integration Pack for Oracle E-Business Suite - Design to Release 2.5 - Implementation Guide (http://aia.oraclecorp.com/products/agileplm2billPIP.html).

How Agile PLM Variant Management Works

In Agile PLM a BOM is created that contains Models, Option Classes, Parts, Assemblies, and Documents for a product range. This BOM is called Model Option BOM.

Each BOM item can be a mandatory or an optional item. Because a Model Option BOM contains all possible variants, the Internal Configurator (Instance Manager) or the external Configurator (Oracle Generic Configurator User Interface) is used to derive an individually configured product, an Instance BOM.

The creation of the Model Option BOM, and the configuration of the Instance BOM with the internal

or external Configurator depend on rules. Further information about these rules can be found at Combination Rules on page 9.

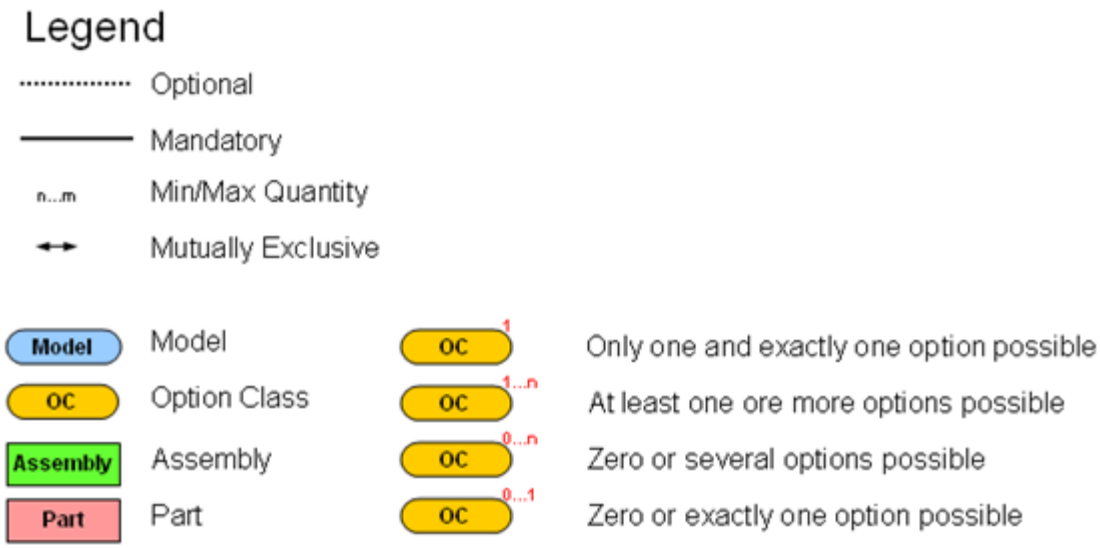
Description of the BOM Items

Item	Description
Model	A Model is denoted by the icon. A Model is used as the top level element of a Model Option BOM, but can also be used as a generic item on lower levels under Models or Option Classes. Models cannot be added to Parts or Documents. The BOM tab of a Model contains the additional fields: ▫ Min Qty (minimum quantity) ▫ Max Qty (maximum quantity) ▫ Optional ▫ Mut Excl (mutually exclusive) A Model can contain items such as Models, Option Classes, Parts, Assemblies, and Documents in its BOM structure. These items can also be components of other objects to define a different product. Note Open the internal or external Configurator only from a Model that contains the Model Option BOM! Note We do not support a site specific BOM for Models.
Option Class	An Option Class is denoted by the icon. An Option Class acts like a placeholder in a BOM which is later replaced by at least one of its options. The BOM tab of an Option Class contains the additional fields: ▫ Min Qty (minimum quantity) ▫ Max Qty (maximum quantity) ▫ Optional ▫ Mut Excl (mutually exclusive) An Option Class can have Models, Option Classes, Parts, Assemblies, and Documents in its BOM structure. Note We do not support a site specific BOM for Option Classes. Note Do not open the Instance Manager from the Relationship tab of an Option Class!
Part	A Part is a final standard item. The BOM tab of a Part contains the additional fields: **Important** The following fields of the BOM tab of a Part should not be used!

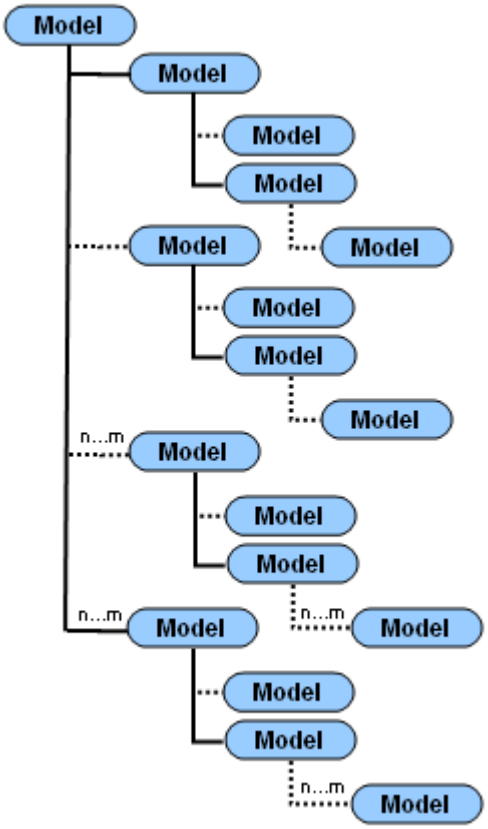
	▫ Min Qty (minimum quantity) ▫ Max Qty (maximum quantity) ▫ Optional ▫ Mut Excl (mutually exclusive) A Part can have Parts and Documents in its BOM structure, thus it is called Assembly. Note Do not open the Instance Manager from the Relationship tab of a Part! Note In the Java Client, Parts subclass should have at least one Autonumber assigned to it and also AutoGenerate set to Yes. Otherwise, an Instance cannot be created.
Assembly	An Assembly is a Part with a BOM. The BOM tab of an Assembly contains the additional fields: **Important** The following fields of the BOM tab of an Assembly should not be used! ▫ Min Qty (minimum quantity) ▫ Max Qty (maximum quantity) ▫ Optional ▫ Mut Excl (mutually exclusive)
Documents	Documents are treated as Parts.

Possible Combinations

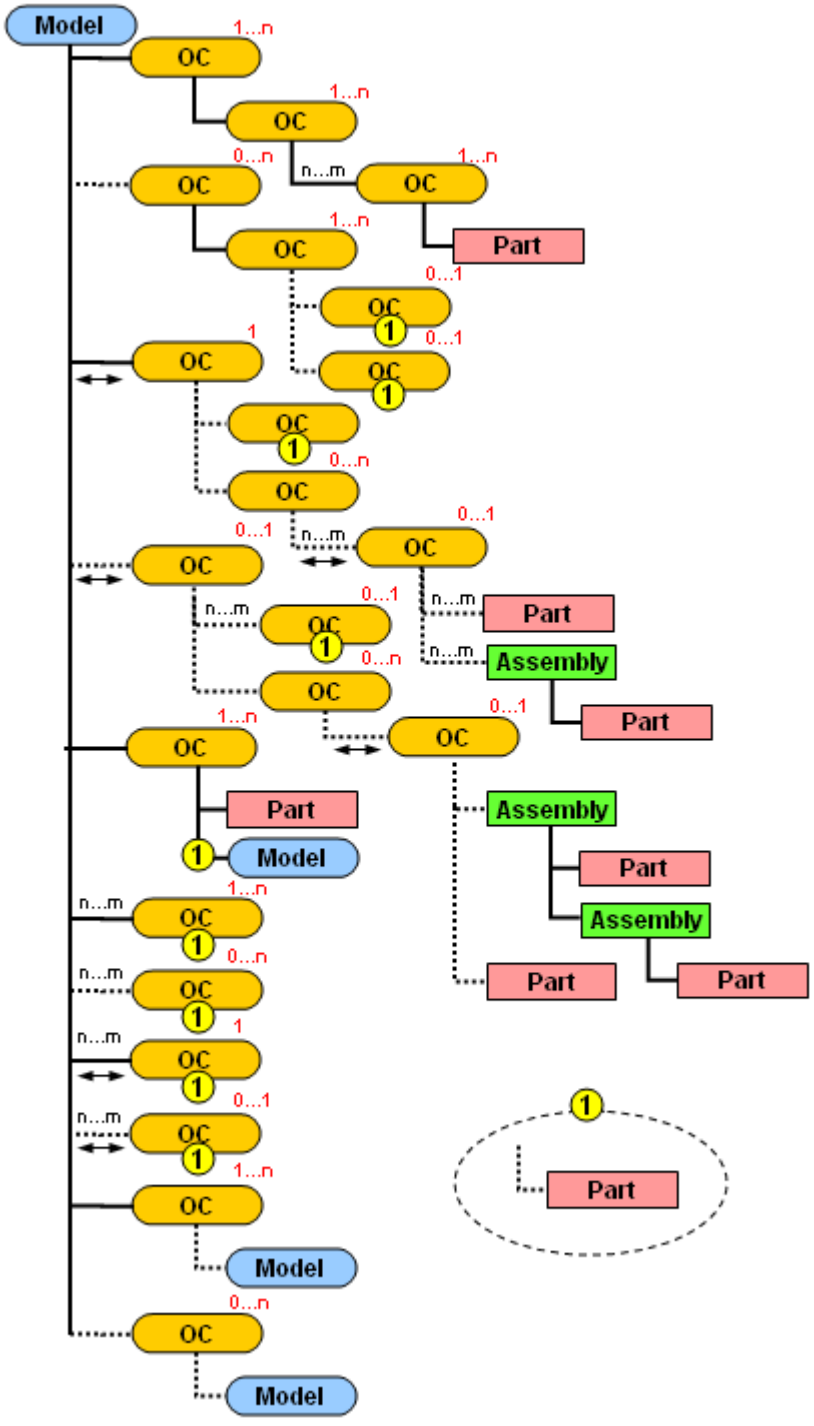
The following diagram show possible combinations of Models, Option Classes, Assemblies, and Parts in the Model Option BOM.



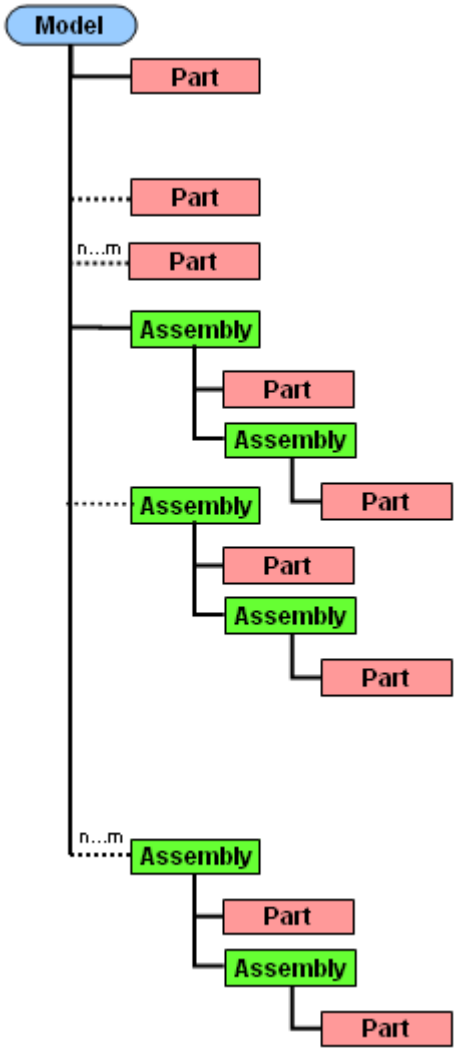
The following diagram shows all possible Model combinations.



The following diagram shows all possible combinations with Option Classes.



The following diagram shows all possible combinations with Parts and Assemblies.



Mandatory

Items that are defined as mandatory Items in the Model Option BOM, will automatically be copied to the Instance BOM. They cannot be deselected in the Instance Manager.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

Note The Mutually Exclusive regulation does not apply to Mandatory Items.

Optional

When defining an Item as an Optional Item in the Model Option BOM, it can be selected or

deselected for the Instance BOM.

By default, this field is set to Null which is equivalent to the setting No.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

Min/Max Quantity

- When defining a minimum and maximum quantity for an Item in the Model Option BOM, it is possible to choose a quantity value of type Floating Point Value within this range (including the minimum and maximum quantity) in the Instance Manager.
- The minimum and maximum quantity value has to be >0. It cannot be a negative value.
- When no Min/Max quantity is defined, the Quantity column in the Instance Manager is read only.
- When entering only a Min quantity, the Max quantity can be up to the biggest possible number.
- When entering only a Max quantity, the Min quantity has to be > 0.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

Mutually Exclusive

Only the BOM entries of an Option Class can be defined as Mutually Exclusive in the Model Option BOM. This defines that exactly one valid option of an Option Class has to be selected for the Instance BOM. In case the Option Class is Optional AND Mutually Exclusive, and is not selected in the Instance Manager, no option of the Option Class has to be selected.

By default, this field is set to Null which is equivalent to the setting No.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

Combination Rules

The following rules influence the behavior of the Instance Manager and are applied when deriving an Instance BOM.

Note Further information about the combination rules for the Oracle Generic Configurator User Interface can be found in the Oracle Configurator Implementation Guide from OTN (http://www.oracle.com/technology/documentation/applications.html).

Note The following screenshots show only possible examples.

Valid Options of an Option Class

1. An Option Class has to have at least one valid option. An empty Option Class is not valid.
2. Options are mandatory or optional items.
3. An Option Class containing only mandatory options is valid.
4. If a mandatory Option Class has only optional options, at least one option has to be selected in the Instance Manager.
5. If an optional Option Class has only optional options and is selected in the Instance Manager, at least one option has to be selected in the Instance Manager.
6. If an optional Option Class is not selected in the Instance Manager, it is not required to select an option in the Instance Manager.

Model Option BOM	Instance BOM

Model Option BOM

Item Numb	It	It	Qty	I	M	2	Optional
OC1			1			0	No
P01			1			0	
OC2			1			0	
P02			1			0	Yes
P03			1			0	Yes
P04			1			0	Yes
OC3			1			0	
P05			1			0	No
P06			1			0	No
OC4			1			0	
P07			1			0	No
P08			1			0	Yes
P09			1			0	Yes
OC5			1			0	Yes
P10			1			0	Yes
P11			1			0	Yes
OC6			1			0	Yes
P16			1			0	Yes
P17			1			0	Yes

Instance BOM

Instance Manager

Model • MOD1

Configuration has been updated

Reset Configuration

	Item Number	I	It	Qty	M	I	F	Optior	M	R	S	B	S	P100 Select	P100 Quantity
1	OC1			1				0 No						☑	1
	P01			1				0						☑	1
4	OC2			1				0						☑	1
	P02			1				0 Yes						☑	1
	P03			1				0 Yes						☐	
	P04			1				0 Yes						☐	
3	OC3			1				0						☑	1
	P05			1				0 No						☑	1
	P06			1				0 No						☑	1
2	OC4			1				0						☑	1
	P07			1				0 No						☑	1
	P08			1				0 Yes						☐	
	P09			1				0 Yes						☐	
5	OC5			1				0 Yes						☑	1
	P10			1				0 Yes						☑	1
	P11			1				0 Yes						☐	
6	OC6			1				0 Yes						☐	
	P16			1				0 Yes						☐	
	P17			1				0 Yes						☐	

Mutually Exclusive BOM Items

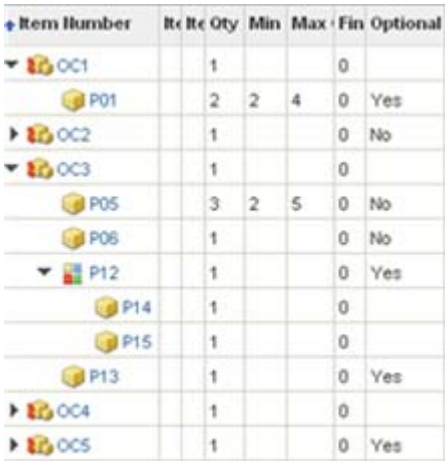
1. Only Option Classes can be mutually exclusive.
2. Mandatory items (Parts, Assemblies, Option Classes, and Models) have no influence on the mutually exclusive behavior.

Model Option BOM	Instance Manager

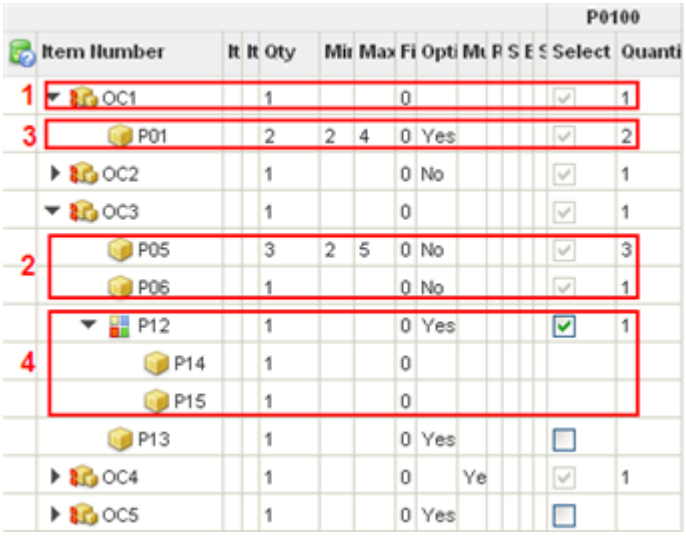
Mandatory BOM Items

1. Mandatory items are always selected and cannot be deselected in the Instance Manager.
2. All mandatory child items of a selected parent item are automatically selected.
3. An optional item that is the only valid option of an Option Class is automatically selected and cannot be deselected.
4. Child items of a Part are mandatory items. The system considers this Part as an Assembly.

Model Option BOM	Instance Manager



Item Number	It	It	Qty	Min	Max	Fin	Optional
OC1			1			0	
P01			2	2	4	0	Yes
OC2			1			0	No
OC3			1			0	
P05			3	2	5	0	No
P06			1			0	No
P12			1			0	Yes
P14			1			0	
P15			1			0	
P13			1			0	Yes
OC4			1			0	
OC5			1			0	Yes

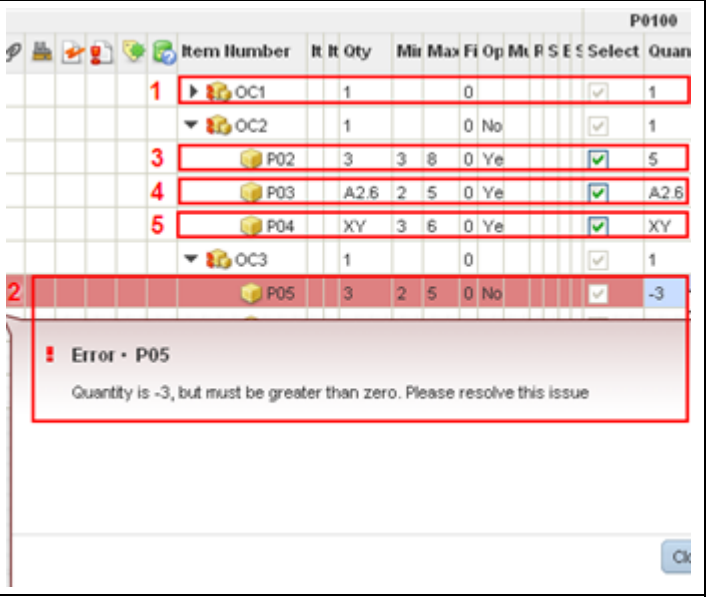


	P0100											
	Item Number	It	It	Qty	Mi	Max	Fi	Opti	Mu	R	S	E	S	Select	Quanti
1	OC1			1			0							☑	1
3	P01			2	2	4	0	Yes						☑	2
	OC2			1			0	No						☑	1
	OC3			1			0							☑	1
2	P05			3	2	5	0	No						☑	3
2	P06			1			0	No						☑	1
	P12			1			0	Yes						☑	1
4	P14			1			0								
4	P15			1			0								
	P13			1			0	Yes						☐	
	OC4			1			0		Ye					☑	1
	OC5			1			0	Yes						☐	

Quantities of BOM Items

Note Quantities are not calculated during the configuration. The entered quantity is independent of other quantities in upper or lower levels. The quantity does not change automatically during a configuration. The quantity of an item is relative.

1. For every selected item a default quantity is automatically assigned.
2. Entered quantities have to be >0. Otherwise, an error message is displayed.
3. If a Min/Max quantity has been defined for an item, the quantity can be entered manually, however, the quantity entered must be within the defined parameters.
4. If a predefined quantity value is not a valid number, the system ignores the Min/Max values and copies this predefined value into the quantity column.
5. The default quantity can have alphanumeric quantity values, thus the quantity is not changeable in the Instance Manager.

Model Option BOM	Instance Manager
	

Selecting BOM Items

1. When selecting a child item, the parent item is automatically selected.

   Note When deselecting an optional parent item, all selected child items will be deselected as well.

   Note When clearing the Quantity field of an entry with minimum and maximum values, this entry will be deselected.

2. Every item with a valid quantity (>0) in the Quantity column of the Instance Manager is selected.

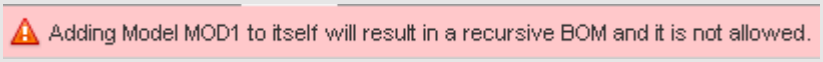
Documents as BOM Items

Note	Documents and their structure are treated like Parts and Assemblies.

Model Option BOM

When you create the Model Option BOM you have to make sure that all entries are created correctly. E.g. an Option Class should always have valid options assigned to it.

Note	Variant Management does not support temporary items that are added to the Model Option BOM as placeholders.

Warning	Recursive structures are not supported in Variant Management. When you create a recursive structure, an error message like the following one is displayed.
Warning	

Further information about possible combinations in the Model Option BOM can be found at Possible Combinations on page 5.

Note	Further regulations about combinations (e.g. only Parts can be children of Parts) can be found in the Smart Rules in the Agile PLM Administrator Guide.

Important	Recommendation for Model Option BOMs with more than 2500 entries: By default, Agile A9 allows to create BOMs with maximum 2500 entries. To be able to create BOMs with more than 2500 entries, the preference value can be updated via the following SQL statement: update propertytable set value = 2500 where PARENTID = 5004 and PROPERTYID = 811; commit; Setting the value to 0, allows expanding BOMs with unlimited entries. You require Administrator rights to update the SQL statement!

Quantities

For every BOM item, quantity values can be defined. Either as a constant value or selectable between minimum and maximum values.

Note	For further information about minimum and maximum quantities see: Min/Max Quantity on page 9

Quantity fields are restricted to 20 characters and can be either Integer or Floating Point Values.

Important	When working with the external configurator, make sure Models and Option Classes have only Integer Values assigned for Quantity. Floating Point Values are not supported for Models and Option Classes. Otherwise, the external configurator produces warnings and sets it to an invalid configuration.

Quantity values cannot be negative values, they have to be >0.

The Quantity field in the Instance Manager is a read-only field for BOM items with a constant quantity value and editable when a minimum and maximum value is defined. Unless, alphanumerical quantity values are defined.

Note	For further information about alphanumerical quantity values, see: Alphanumerical Quantity Values on page 16

Alphanumerical Quantity Values

When defining a minimum and maximum value range for a Part, an alphanumerical quantity value (e.g. xy) can be entered into the Qty field as placeholder. This placeholder can be replaced with a real value at any time.

Note	The Quantity field in the Instance Manager shows the entered alphanumerical value and is read-only.

Reference Designator

Note	For detailed information about the Reference Designator, see: Agile Product Lifecycle Management Product Collaboration User Guide.

When you enter a Reference Designator for a BOM item, the quantity value in the Qty field should match the quantity of the Ref Des field. Otherwise, a warning is displayed which can be ignored or resolved.

If the Model Option BOM contains BOM items with a Reference Designator and they are selected for the Instance BOM, the Instance Manager is multiplying the quantity of this item with the quantity of its parent item. Therefore, the quantity value for a BOM item with a Reference Designator is displayed wrong in the Instance BOM and no warning is displayed.

Instance

To configure an Instance BOM in the Instance Manager, you have to attach a so called Instance (a Part) to the Relationships tab of the top level Model of the Model Option BOM.

Note	The created Part, which is the Instance, has to be in a state in which it still can be modified (e.g. a released part cannot be used as an Instance).

Several Instances can be compared with each other in the Instance Manager, but only one can be configured at a time.

A derived Instance cannot be loaded into the Instance Manager again, unless to compare the configuration of the derived Instance with a new Instance.

Instance Manager

Important	To be able to work with the Instance Manager, the setting 'Internal Configurator' needs to be activated in the Preferences.
Important	To activate it, see: Activating 'Internal Configurator' - Instance Manager on page 2

The Instance Manager is launched from the Relationships tab of the Model containing the Model Option BOM. It shows the complete Model Option BOM and allows to configure the entries to derive the Instance BOM.

Note	Here, quantities are displayed with their relative value and not with their absolute value.

Important	Before continuing to work in the main Agile 9 window, make sure the Instance Manager window is closed.

Configuration Graph

In the Instance Manager, when you click the Save as Draft or Create Instance button, a Configuration Graph is stored as an XML file in the Configuration Graph field of the Relationships tab of the top level Model of the Model Option BOM.

Note	Only when the Model Option BOM is validated, the Configuration Graph is stored.

This XML file contains information about all configurations that you made in the Instance Manager.

Derivation

Once you have configured the Instance in the Instance Manager, you can derive the Instance BOM. For the derivation process, the Model Option BOM and the Configuration Graph are considered.

The derivation process starts when you click the Create Instance button and no error message is returned for the configuration of the Instance.

Note	For further information about allowed combination rules, see: Combination Rules on page 9.

During the derivation the Instance is created, the configuration graph is stored, and the Instance BOM is saved.

The following is performed during the derivation:

- Models are replaced by a Part
- Option Classes are replaced by their options

- The correct quantity is calculated for parts, considering the quantities of all parent Option Classes.

Instance BOM

The Instance BOM describes a specific configuration derived from a Model Option BOM and contains only those options that have been selected in the Instance Manager. In addition, all mandatory BOM items of a Model Option BOM are also part of the Instance BOM.

Note Once the Instance BOM is derived, Models are replaced by Parts or Assemblies and Option Classes are replaced by the chosen option.

Note Once the Instance BOM is derived, the Instance BOM as well as the Model Option BOM can be modified independent of each other.

The Instance BOM shows every Part with its correctly calculated quantity. To display the correct quantity for a Part that replaced an Option Class, the quantity of the Part is multiplied with the quantity of its parent Option Classes. The quantity calculation for Assemblies is done at top level, thus the quantity for children of Assemblies is not calculated. The quantity for an Assembly in the Instance BOM is the same as defined in the Model Option BOM.

Note If the quantity shows an alphanumeric value, no calculation is performed with this value. The Quantity field in the Instance BOM will show the alphanumeric value.

If the Model Option BOM has not been created according to the rules mentioned under Combination Rules on page 9, error messages are displayed when trying to open the Instance Manager.

Note No error message is displayed when opening the Instance Manager for a Model without a BOM.

The Instance Manager, after clicking the Create Instance button, shows a preview of the derived Instance BOM. Do not modify the Instance BOM preview in the Instance Manager. Modifications to the Instance BOM can be made in the BOM tab of the respective Instance.

Message - Instance BOM is in use

An Instance can only be configured by one user at a time. When you try to configure an Instance that is in use by a different user, a message like the following is displayed.

Message - This BOM is invalid

Before an Instance BOM is derived from a Model Option BOM, a validation check is carried out. If the Model Option BOM doesn't comply with the Combination Rules on page 9, the error message "*This BOM is invalid"* is displayed.

Chapter 2

Working with Agile PLM Variant Management

This chapter includes the following:

- Creating a Model Option BOM 21
- Deriving an Instance BOM with the Internal Configurator 24
- Importing / Exporting Variant Management Information 29

Note Unless otherwise stated, the information of this chapter is referring to the Web and Java client!

Creating a Model Option BOM

The top level element of a Model Option BOM is always a Model. For a detailed description of possible combinations see the chapter Configuring Agile PLM Variant Management.

A Model Option BOM can contain Models, Option Classes, Parts, Assemblies, and Documents.

To simplify the following examples, only Option Classes are added to the Model Option BOM.

Creating a Model

The Model is the top level element of a Model Option BOM.

To create a Model:

1. Select Create New > Items > Parts.

   The Create New Parts dialog box is opened.
2. In the new window, select the Type Model.
3. Enter a unique identification number (unique identifier for the Model) in the Number field, or click 123 for the system to generate a number based on the Auto Numbering functionality defined for Models.
4. Click Save.

   The new Model appears with the Title Block tab showing.
5. Fill in information as desired.
6. Click Save.

Creating a BOM Entry with Min/Max Value

You can define a minimum and maximum value for a BOM entry. The concrete value for this item is then selected in the Instance Manager for the Instance BOM.

To create a BOM Entry with Min/Max Value

1. Open the newly created Model.
2. Open the BOM tab.
3. Click the Add button.
4. Select an Option Class.

   Note If no Option Class is selectable, create a new one.

5. Click the Add button.

   The Option Class is added to the Model BOM list.
6. To edit the Min Qty field double click it.
7. Enter a value for the minimum quantity and hit the enter key.
8. To edit the Max Qty field double click it.
9. Enter a value for the maximum quantity and hit the enter key.

   Note The maximum quantity value has to be bigger than the minimum quantity value.

10. To save the changes click the Save button.

Creating an Optional BOM Entry

You can define optional BOM entries. Such entries CAN be selected for the Instance BOM.

To create an Optional BOM Entry

1. Open the newly created Model.
2. Open the BOM tab.
3. Click the Add button.
4. Select an Option Class.

   Note If no Option Class is selectable, create a new one.

5. Click the Add button.

   The Option Class is added to the Model BOM list.
6. To edit the Optional field, double click it.

   A select menu is opened.
7. Select Yes.
8. To save the changes click the Save button.

Creating a Mutually Exclusive BOM Entry

You can define mutually exclusive Option Class BOM entries. This means that only one valid BOM entry of this Option Class has to be selected for the Instance BOM.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

To create a Mutually Exclusive BOM Entry

1. Open the newly created Model.
2. Open the BOM tab.
3. Click the Add button.
4. Select an Option Class.

   Note If no Option Class is selectable, create a new one.

5. Click the Add button.

   The Option Class is added to the Model BOM list.
6. To edit the Mut Excl field, double click it.

   A select menu is opened.
7. Select Yes.
8. To save the changes click the Save button.

Creating an Optional Mutually Exclusive BOM Entry

You can define mutually exclusive Option Class BOM entries that are optional. If selecting this optional Option Class for the Instance BOM, only one valid BOM entry of this Option Class has to be selected for the Instance BOM as well.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

To create a Mutually Exclusive BOM Entry

1. Open the newly created Model.
2. Open the BOM tab.
3. Click the Add button.
4. Select an Option Class.

   Note If no Option Class is selectable, create a new one.

5. Click the Add button.

   The Option Class is added to the Model BOM list.
6. To edit the Mut Excl field, double click it.

   A select menu is opened.
7. Select Yes.
8. To edit the Optional field, double click it.

A select menu is opened.

9. Select Yes.
10. To save the changes click the Save button.

Adding Manufacturer Sites to a Model Option BOM

We do not support site-specific information for Models and Option Classes, and thus the Site tab is disabled for Models and Option Classes.

Deriving an Instance BOM with the Internal Configurator

Note The information of this section is referring to the Web client only.

Once all BOM items have been added to the Model Option BOM, the different product variants can be derived to an Instance BOM.

The Instance BOM is referenced in the Relationships tab of the Model containing the Model Option BOM. For every product variant an Instance (a Part) has to be created here. The Instance BOM, which will be derived with the help of the Instance Manager, is then added to the BOM tab of this Instance. Once the Instance BOM is derived, the Instance is displayed as an Assembly.

Creating an Instance

To Create an Instance:

1. Open the top level Model of the Model Option BOM.
2. Open the Relationships tab.
3. Click the Add button.
4. Click the Create to Add button.
5. Create a new Part.

   This Part is then called Instance.

   Note The created Part, which is the Instance, has to be in a state in which it still can be modified (e.g. a released part or a part with a pending change cannot be used as an Instance).

6. Click the Add button.

   The Part is added to the Relationships tab.

   Note To be able to derive an Instance BOM, the relation type of the added part has to be set to Instance BOM.

   Note The relation type Instance BOM is only allowed to be assigned to a Part to be able to open the Instance Manager.

7. To edit the Relation Type field, double click it.

A select menu is opened.

8. Select Instance BOM.
9. To save the changes click the Save button.

Configuring One Instance

To configure one Instance:

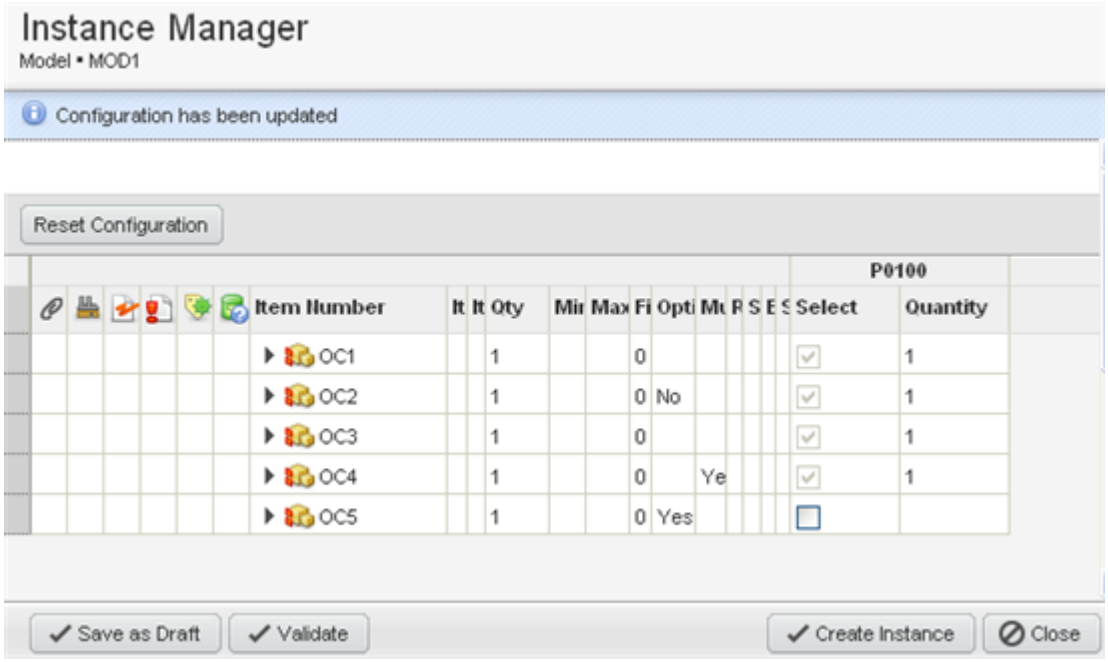
1. In the Relationships tab select the Instance of the respective product variant.

   Note Only Instances with no BOM assigned to it can be configured.

2. Click More > Launch Configurator.

   The Instance Manager is opened, showing all entries of the Model Option BOM.

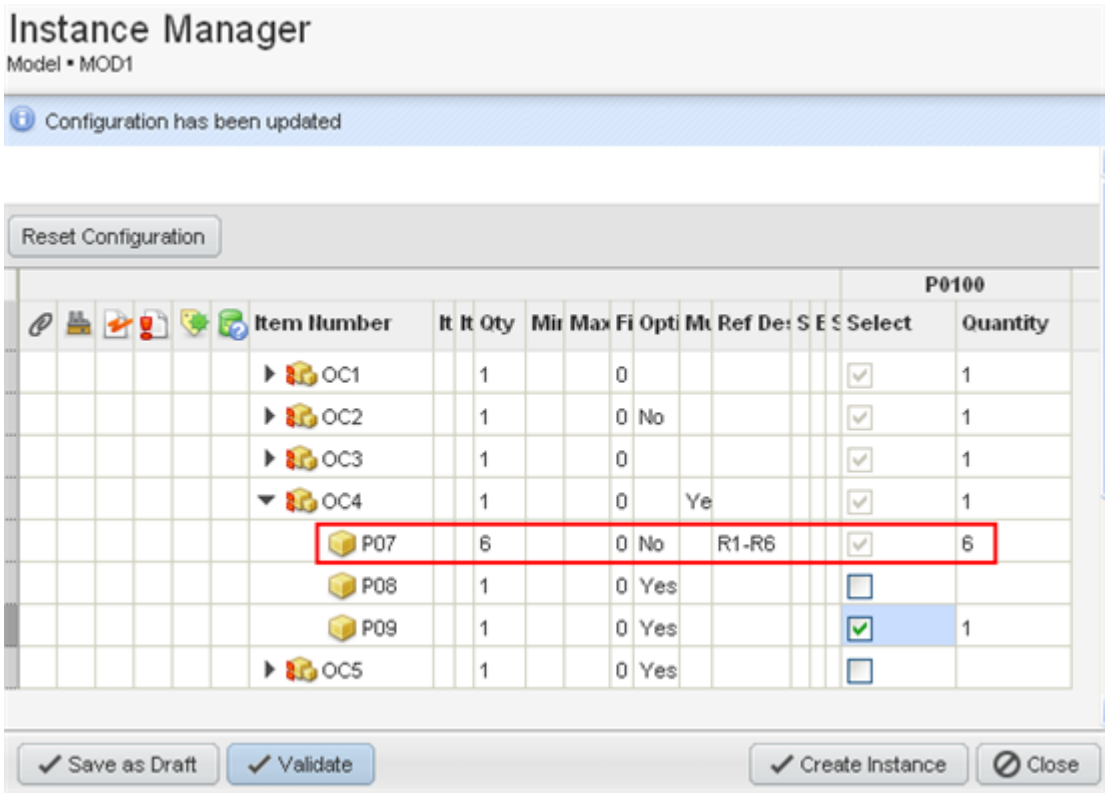
   Note Only if the Model Option BOM has been created with valid entries, the Instance Manager is opened. Otherwise, an error message is displayed.



At the end of the table, the columns Select and Quantity have been added to an Instance.

Note An entered Reference Designator in the Model Option BOM is copied into the Ref Des field of the Instance Manager. Its value of the Qty field in the Model Option BOM is copied into the Quantity field of the Instance Manager.

Note For complete information about Reference Designator, see Agile Product Lifecycle Management Product Collaboration User Guide.



3. In the Select column, select all entries for the Instance BOM.
4. In the Quantity column, - where possible - enter the quantity for the Instance BOM.
5. Click Save as Draft to save the configured Instance BOM.

Note As soon as the Instance is saved, the Configuration Graph is created and shown in the Configuration Graph column in the Relationship tab of the Model.

Validating the Instance

Before you can create the Instance BOM, you have to validate the configured Instance.

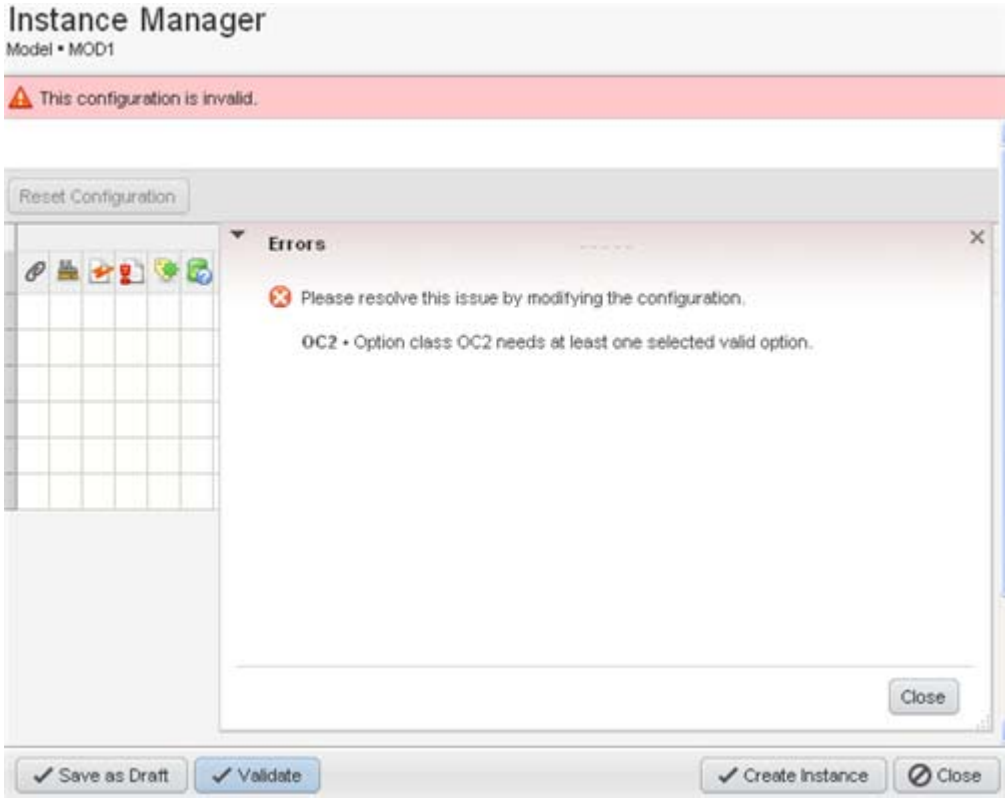
To validate the Instance:

1. Open the Instance.
2. Click Validate.

   This checks if the Configuration complies with all combination rules.

Note A detailed description of combination rules and their impact on the Instance BOM can be found under Combination Rules on page 9.

If the validation returns errors, a message like the following can be displayed.



In this case, you have to resolve the listed errors first.

Note The same validation is carried out when clicking the Create Instance button.

Comparing the Configuration of Instances

The Instance Manager allows you to select more than one Instance. With this option you can compare the configuration of Instances with each other.

Although, more than one Instance can be selected and displayed, only one Instance can be configured in the Instance Manager.

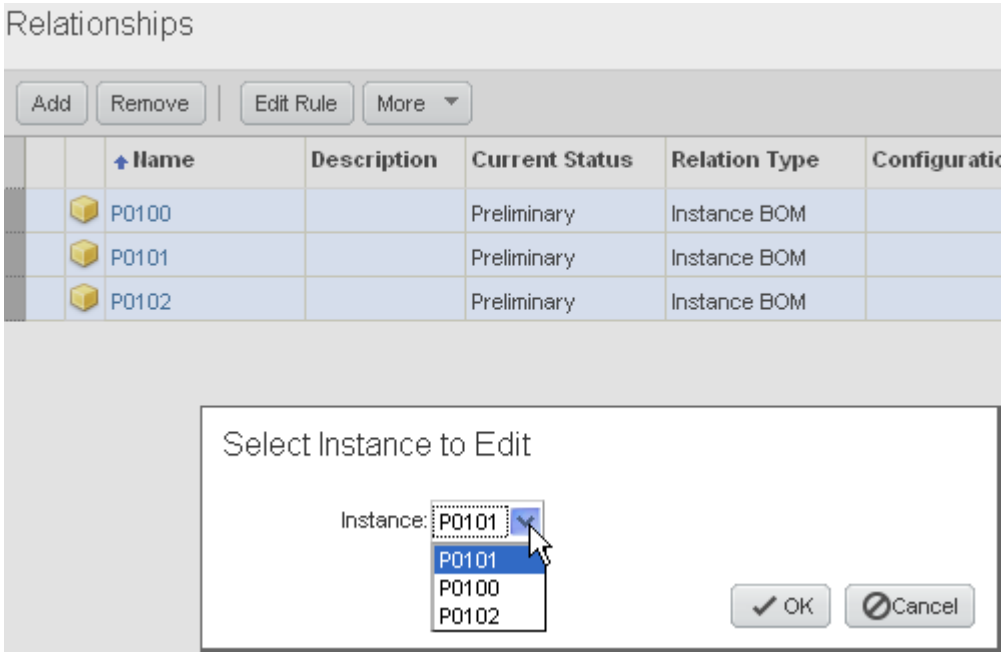
To compare the configuration of Instances:

1. In the Relationships tab select all Instances that you wish to compare.

   Note The Relation Type has to be set to Instance BOM for all of them. Items without the Relation Type Instance BOM will not be considered when launching the Instance Manager, even if selected before.

2. Click More > Launch Configurator.

The *Select Instance to Edit* pallet is opened.

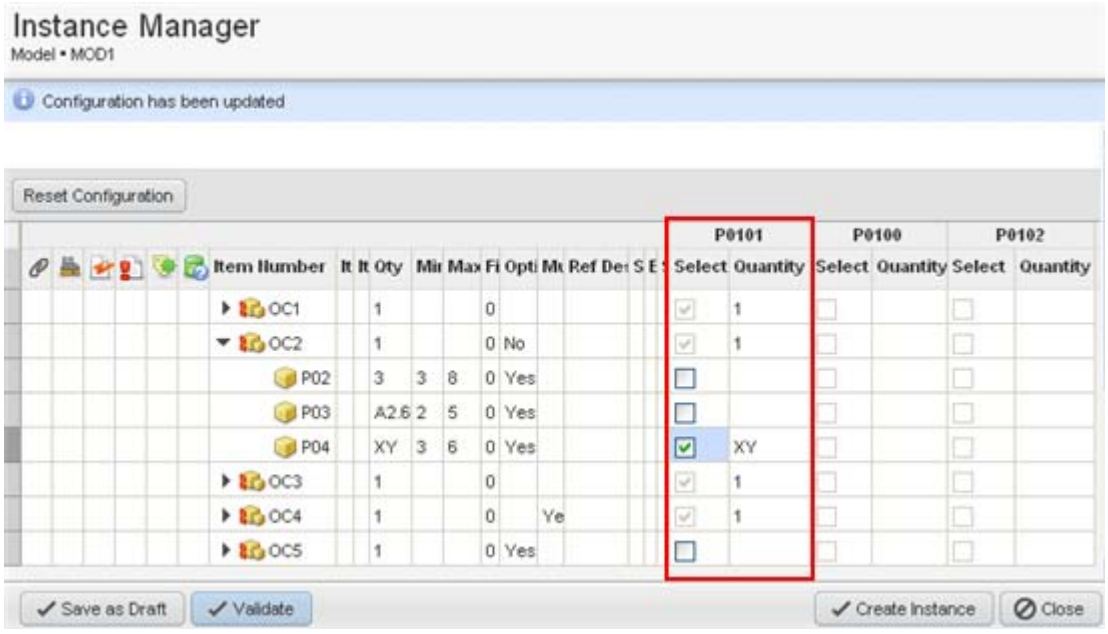


Note The option to select the Instance to edit is only available if more than one instance can be configured. If only one Instance can be configured, the Instance Manager is opened straight away.

3. Select one instance you wish to configure.
4. Click OK.

   The Instance Manager is opened, showing all entries of the Model Option BOM, and the configuration of each Instance.

Note Only if the Model Option BOM has been created with valid entries, the Instance Manager is opened. Otherwise, an error message is displayed.



Note You can configure only that Instance which you selected in the *Select Configuration to Edit* pallet. This Instance is displayed before the other selected Instances in the table.

Creating the Instance BOM

Once you have done all configurations and resolved possible errors, the Instance BOM can be created.

To create the Instance BOM:

1. Open the Instance.
2. Click Create Instance.

   The Instance BOM is created.

   Note In the Relationship tab of the Model, the previously created Part for the Instance is now displayed with the Icon of an Assembly.

   The BOM tab of the Assembly shows the result of the configured Instance.

Importing / Exporting Variant Management Information

All items and their subclasses can be imported into, and exported from Agile PLM.

Note For complete information about how to import/export, see Agile Product Lifecycle Management Import/Export User Guide.

Importing/Exporting aXML Files

Important The Configuration Graph of an Instance BOM is not imported from, or exported into an aXML file.

Importing/Exporting PDX Files

Note The import from and export to PDX files is not supported for Variant Management.

Exporting into Text (csv) or Excel (xls) Files

To export into Text (csv) or Excel (xls) files:

1. Open the model you would like to export.
2. Click Actions.
3. Select Export.

   The *Export - Select Objects to Export* window is opened.
4. From the Format field, select either Text (csv) or Excel (xls).
5. Click Next.
6. Select Create custom filter.
7. Click Next.

   The *Export - Select Item content to export* window is opened.
8. Select Instances.

Important Make sure the selection Instances is selected. Otherwise, it is not included in the exported file.

9. Click Next.

   The *Export - Specify Export Properties* window is opened.
10. Enter your information.
11. Click Export.

Importing Text (csv) or Excel (xls) Files

Note For detailed information on how to import Text (csv) or Excel (xls) files, please see the Agile Product Lifecycle Management Import/Export User Guide.

To import Text (csv) or Excel (xls) files:

1. Prepare the file to be imported.
2. Open the Import Wizard.
3. Browse for the file to be imported.
4. Click Next.

   The *File Selection* window is opened.
5. Specify the import source.
6. Click Next.

   The *Specify File Content* window is opened.
7. In the Item section, select the Relationships radio button.
8. Click Next.

   The *Select Content Options* window is opened.
9. Select your desired mapping and data transformation method.

   The *Specify Attribute Mapping* window is opened.
10. Map the fields to be imported to the Agile Fields.
11. Click Next.

    The *Review Import Definition* window is opened.
12. Review the summary of your import definition.
13. Click Import.

Note Repeat these steps to import the information from any other tab of a Model.

Chapter 3

Working with Agile PLM Variant Management - External Configurator

This chapter includes the following:

- Deriving an Instance BOM with the External Configurator 33

The following section describes how to derive an Instance BOM with the Oracle Generic Configurator User Interface.

Deriving an Instance BOM with the External Configurator

Note	Settings, as described in the section External Configurator - Oracle Generic Configurator User Interface on page 3 have to be done prior to working with the Oracle Generic Configurator User Interface.
Note	After creating the Model Option BOM like described in this document, the Oracle Generic Configurator User Interface can be used to derive an Instance BOM.

Creating an Instance BOM with the External Configurator

Note	For further information about how to create an Instance, please see: Creating an Instance on page 24.

To create an Instance BOM:

Before the instance can be configured in the Oracle Generic Configurator User Interface, a Change Order with the respective workflow assigned to it has to be created first.

For further information about how to set up the respective workflow, please see: Agile PLM Integration Pack for Oracle E-Business Suite - Design to Release 2.5 - Implementation Guide.

1. Select the Model that contains the Model Option BOM.
2. Select Actions > Create New > Change.
3. From the Type field select ECO.
4. Click Save.
5. On the Cover Page tab in the Workflow field select the respective workflow.
6. Open the Affected Item tab.
7. Add all items of the Model Option BOM.
8. Add a new revision in the NewRev column for all entries (e.g. A).

9. In the Lifecycle Phase column select Prototype for all entries.
10. Set the Status of the ECO to Released.

    Note In EBS, the released ECO has to be set to Implemented. The Oracle Generic Configurator User Interface can only show those BOM items that have been set to Implemented.

11. In the Relationships tab of the Model select the Instance of the respective product variant.

    Note Only Instances with no BOM assigned to it can be configured.

    Note The created Part, which is the Instance, has to be in a state in which it still can be modified (e.g. a released part or a part with a pending change cannot be used as an Instance).

12. Click More > Launch Configurator.

    The Oracle Generic Configurator User Interface window is opened. A login is required for it.

    Note Only if the Model Option BOM has been created with valid entries, the Oracle Generic Configurator User Interface is opened. Otherwise, an error message is displayed.

    Note The Oracle Generic Configurator User Interface shows only optional BOM items. Mandatory BOM items are not displayed.

    Note As soon as the Oracle Generic Configurator User Interface is opened, the Configuration Graph is created and shown in the Configuration Graph column in the Relationship tab of the Model.

13. In the Select column, select all entries for the Instance BOM.
14. In the Quantity column, - where possible - select the quantity for the Instance BOM.

    Note The Oracle Generic Configurator User Interface always shows the absolute quantity values.

    Note When changing the quantity of a child item, consider that the new value has to be a multiple of its default quantity. Further information about Quantity Cascade Calculations can be found in the Oracle Configurator Developer User Guide on OTN (http://www.oracle.com/technology/documentation/applications.html).

15. In the Generic Configurator User Interface click Finish to save the configured Instance BOM back to Agile A9.

    Note In Agile A9 the Configuration Graph calculates the absolute quantity values back to relative quantity values.