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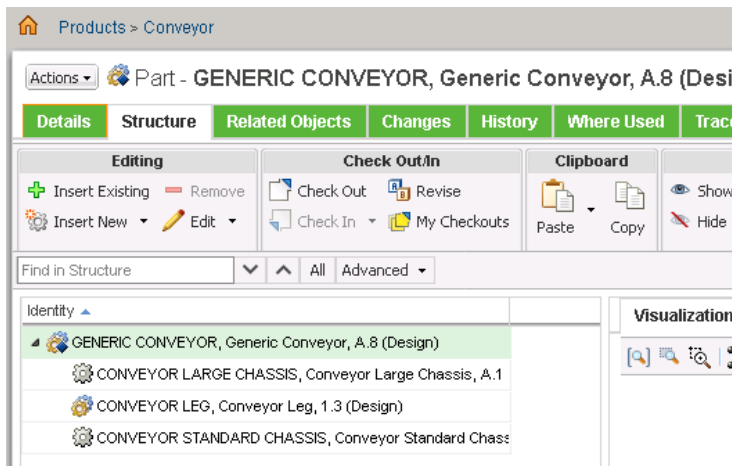
Objectives:

After successfully completing this set of exercises, you will be able to:

- Create a configurable structure supporting Configure to Order strategy
- Define Parameter and case table constraint
- Drive the number of occurrences of a component with the logic
- Drive the selection of a component by a parameter
- Combine option and variant and advanced selection logic
- Generate product variants

Scenario:

In this exercise series you take the role of Mike Jones, the Conveyor product manager as he creates a new generic conveyor structure.



This structure will support the configure to order strategy allowing to create new part if no matching one is found.

The product variants will be dependent on the maximum supporting weight which will impact the number of conveyor legs required, and on the conveyor height.

The configured advanced selection logic will allow to determine if a leg with the required height exist, if this is the case it will be reused in the product variant, else a new one will be created.

The conveyor width will be driven by option and choices which will require to link the two logics with a constraint expression.

Exercise 1 - Create Conveyor configurable structure, parameters, and constraints

Objectives:

After completing this exercise, you will be able to:

- Create a configurable structure to be used with Advanced Logic Selection
- Create parameters used to specify the product variant
- Constraint multiple parameters with a case table

Scenario:

Mike Jones the Conveyor product manager knows the generic Conveyor product structure, he is now ready to create this structure.

In this exercise you take the role of Mike and create the conveyor configurable product structure.

You also create a weight and quantity parameter used to define a conveyor product variant.

And finally, you create case table to drive the leg quantity depending of the maximum supported weight.

Initial conditions:

- Start an Internet Explorer session and log on to Windchill as Mike Jones (mjones/ptc).
- Start on the home page
- Browse the list of containers and select the Conveyor container

Task 1 Create a structure including the Generic leg part and the frame component

- Create the Conveyor Generic configurable part and set it as an end item
- Add the Generic Conveyor Leg
- Add the Conveyor Standard Chassis
- Add the Conveyor Large Chassis
- Checkin the Generic Conveyor

Task 2 Create the ConvLeg Qty and ConvWeight

- Select the generic Conveyor in the product structure
- Select the Parameter Tab
- Add a parameter for the conveyor maximum supported weight

Name ConvMaxWeight, Description Maximum Weight, no IBA mapping, Type Integer, required value, Prompt « Select Max Supporting Weight in Kg »

Define a list of value as constraint : 100, 200, 400

No equivalency, and no User Interface.

- Add a parameter for the leg quantity

Name ConvLegQty, Description Number of legs, no IBA mapping, Type Integer, no input enabled

Task 3 Create a Constraint to drive the number legs depending on the supporting weight

- Select the Constraints tab
- Create a new case table

Name LegQty, description Leg quantity case table driver

Select ConvMaxWeight and ConvLegQty and click OK

- Edit the created case table within the case table editor
Add the following possible combinations

| ConvLegQty | ConvMaxWeight |
|------------|---------------|
| 4 | 100 |
| 6 | 200 |
| 8 | 400 |

Exercise 2 - Specify the parameters order of input and drive the leg quantity in the structure

Objectives:

After completing this exercise, you will be able to:

- Adjust the order of input of the parameters driving the conveyor definition
- Adjust the order of resolution of the parameters driving child components
- Configure the Uses table view with the columns required to drive the structure
- Drive the leg component quantity with a parameter

Scenario:

Mike Jones the Conveyor product manager is working on the Logic driving the conveyor.

In this exercise you take the role of Mike to configure the processing order of the logic and to connect the structure with the leg quantity parameter

Notice that the leg height parameter is not constraint with a set of values, user will set a value within a defined range.

Advanced logic will be used to find an existing leg component matching the selected height, if there is no existing leg for the selected height it will be created.

Note:

The Leg component has parameter set (ConvHeight) which is mapped to a Windchill IBA (OVConvHeight).

There is no need to associate the IBA with the object type. This IBA is used by the logic to identify the matching component.

Initial conditions:

- Start an Internet Explorer session and log on to Windchill as Mike Jones (mjones/ptc).
- Start on the home page

Task 1 Edit the parameter order of input in the parameter form. This will be done by adding a page break and a child resolution to add a page for setting the conveyor height value.

- In the Recently Accessed drop-down list select the generic Conveyor
- Select the Structure tab in the product structure
- Within the Structure select the Parameter Tab
- Select the Insert Page Break button to add a page break below the last parameter listed
- In the Parameter Actions drop-down menu select the Insert a child resolution action and locate it after the page break. Select the child Generic Conveyor Leg component

Task 2 Drive the Number of Legs within the Conveyor product structure with the ConvLegQty parameter defined

- Select the Uses tab in the Conveyor product structure
- Click the table view drop-down and select Manage Table views arrow and Select the manage Table Views option
- Click on the Save-As button for the default view
- Name the new view Advanced Selection and click Next
- Add the Inclusion Option and Quantity Option
- Move up these columns to be displayed after the Version column and click Finish
- Set the Advanced Selection view to be the active view and click OK
- Click on the Quantity Option cell for the Conveyor Leg component and select the ConvLegQty parameter to drive the number of leg occurrences.
- Checkin the Generic Conveyor product structure

Exercise 3 - Linking Advanced logic parameter with Options to drive the conveyor chassis selection

Objectives:

After completing this exercise you will be able to:

- Link the Advanced Logic Selection logic with the Option and Variant logic by using option choices to drive component selection.
- Create an expression constraint
- Drive component selection in the structure with a boolean parameter

Scenario:

Mike Jones the Conveyor product manager is working on the Logic driving the conveyor.

Options have already been defined for the Chassis width. There are two choices for the width Standard and Large. Mike will use the option definition as an additional element to drive the Conveyor product structure.

In this exercise you take the role of Mike Jones to link the Chassis Width choice with the Conveyor generic product structure.

You use a constraint expression to pass the option choice value to a parameter that will be used to drive the chassis selection.

And you also connect the structure with the parameters driving the chassis selection.

Note:

The purpose of this exercise is to show how the Option and Variant and Advanced Selection Logic approaches can be used in conjunction. Another solution would have been to modify the structure to add a Chassis module containing the two possible variants and use Options choices to drive directly the chassis component using configurable module and assigned usage expression.

Initial conditions

- Start an Internet Explorer session and log on to Windchill as Mike Jones (mjones/ptc).
- Start on the home page

Task 1 Use existing option and choices to configure parameters used for selecting the various chassis

- In the Recently Accessed drop-down list select the generic Conveyor
 - Select the Structure tab in the product structure
 - Within the Structure select the Parameter Tab
 - Create a parameter AskChassisType of type String with no input required, with no constraint, equivalency, and user interface setting
 - Create an expression constraint named OptionLinking «Linking of chassis width option with advanced logic » in the Constraints Tab
 - Edit the expression AskChassisType == optionSet.ConveyorWidth to pass the choice value to the AskChassisType parameter.
 - Add a ConvStdChass boolean parameter for standard chassis selection with no input and finish
 - Add a ConvLrgChass boolean parameter for large chassis selection with no input and finish.
- Note:** Parameters with Boolean type are required to trigger the selection of a component within the structure.

Task 2 Define a case table constraint to drive the chassis selection boolean parameters.

- Select the Constraints tab
- Create a new case table

Name ChassisSelect, description Chassis selection case table driver

Select askChassisType, ConvStdChass, and ConvLrgChass and click OK

- Edit the created case table within the case table editor
Add the following possible combinations

| ConvLrgChass | AskChassisType | ConvStdChass |
|--------------|----------------|--------------|
| yes | Large | no |
| no | Standard | yes |

Note: Column order can be modified by dragging and dropping the column header to a different position.

Task 3 Drive the chassis selection in the structure

- Click on the Uses Tab
- Select the Advanced Selection table view
- Select Inclusion Option cell for the Conveyor Standard Chassis and choose the ConvStdChass boolean parameter.
- Select Inclusion Option cell for the Conveyor Large Chassis and choose the ConvLrgChass boolean parameter.
- Checkin the Generic Conveyor top node

Exercise 4 – Generate different product variants and compare them

Objectives:

After completing this exercise, you will be able to:

- Generate product variant using the Configure action by creating new variant parts when there are no available parts satisfying the logic
- Compare variant solutions

Scenario:

Mike Jones the Conveyor product manager is working on the Logic driving the conveyor.

Mike has completed the Conveyor logic, he can now create multiple Conveyor product variants

In this exercise you take the role of Mike Jones to generate and compare the prodcut variant.

Initial conditions:

- Start an Internet Explorer session and log on to Windchill as Mike Jones (mjones/ptc).
- Start on the home page

Task 1 Generate product variants for a standard chassis width 100 Kg maximum supporting weight and 1 meter height legs

- Select Action drop down menu on the Generic Conveyor and select Configure.
- Select the option filter
- Select for the Conveyor Width the Standard choice and click Next

- Select 100 the maximum supporting Weight in Kg and click Next for the next parameter setting page
- Select 1 m for the conveyor height and click Next
- Review the structure, inputs and driven parameter values by expanding left panel and click Next. Note: The Standard chassis is selected and that the proper leg quantity is calculated.
- Review the variant solution 1 and click Next
- The Create New Variant Specification is selected as this is the first created for this structure. Click Next.
- Enter « Conveyor Std 100 1 » for the name and « Standard Conveyor for 100 kg and 1m height » Description and click Finish.
- The Variant Spec page is displayed
- Review the Variant solution by selecting Actions > View Variant Solution. The popup window displays all the parameters driven and entered taken into account for the Product Variant generation and click Close
- Refresh the page, the resulting Product variant is created under the Completed Deliverable section
- Click the View Information icon on the created product variant.

Note:

A new Leg part has been created the numbering is driven by the Object initialization rule applying for this object type. A parameter value could have been used to set the leg component Name value.

- Select the Structure tab, and the Uses tab below
- Display the default uses table view. The proper leg component quantity has been set.

Task 2 Generate product variants for large chassis width 400 Kg maximum supporting weight and 1,2 meter height legs

- Click on the Recently Accessed object list and select the Generic Conveyor
- Select Action drop down menu on the Generic Conveyor and select Configure.
- Select the option filter
- Select for the Conveyor Lrg Width the Standard choice and click Next
- Select 400 the maximum supporting Weight in Kg and click Next for the next parameter setting page
- Select 1.2 m for the conveyor height and click Next
- Review the inputs and click Next
- Review the variant solution 1 and click Next
- The Create New Variant Specification is selected as this is the first created for this structure. Click Next.
- Enter « Conveyor 400 1.2 » for the name and « Conveyor for 100 kg and 1.2m height » Description and click Finish.
- The Variant Spec page is displayed

- Click the View Information icon on the created product variant
- Select the Structure tab, and the Uses tab below
Display the default uses table view. Note :
The proper leg component quantity has been set based on the maximum supporting weight specified, and a new leg component has been created for 1.2 m height.

Task 3 Review and compare the resulting product variants and variant solutions

- Click on the Recently Accessed object list and select the Generic Conveyor
- Select the Variant Infos tabs created in the previous exercise and review the listed Variant specifications and Module Variants
- Select the two variant specification created and click on the Compare Variant Solution Button.
- A popup Window appears listing the parameter used. The differences are identified in the Equal ? column. Click Close close the popup Window.

Task 4 (Optional) create a conveyor with a standard width , supporting 200 Kg maximum and with a leg height of 1m

- Redo the same steps that for task 2 selecting different parameters. You will notice that a new Product variant will be created reusing the Leg component created in the task 1