Proficy Plant Applications 2023

Product Management

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Product Management

Product Management

 Product Management is where you create and manage products, product properties and characteristics, specifications and cross references.

- From **Product Family:** create and manage product families and products .

- From **Product Property** **:** create and manage product properties, characteristics , which are used to describe related parameters associated with Products, such as color, packaging, or shared recipes, and product specifications. A specification is associated with a characteristic by a specification variable .

- From **Product Group:** create and manage product groups, which are used in searching for products and to assist in analysis of historical data.

- From **Specification Transactions** **:** track and approve the creation of and edits to variables and properties.

- From **Bill of Materials** **:** access the Bill of Materials Editor, which allows the creation and maintenance of BOM families, masters, and formulations.

- From **Administer Cross Reference** **:** create product cross references, which may be needed to cross reference names for products when integrating with Plant Applications.

Organizing Product Information in Plant Applications

There are several "product" relationships to be concerned with in taking advantage of the functionality in the Product Management node. These relationships serve two purposes:

- Streamline the process of maintaining product information.

- Expose product relationships for analysis and troubleshooting.

Product Families

Product families are used as the first grouping of products. A product must be a member of one and only one product family. The product family can be used to control administrative security on one set of products versus another. Sites that have a limited number of products, and no need to divide security, can have only one product family.

Adding Product Families

In order to create a product, you must first create a product family. Product families are used as the first grouping of products. A product must be a member of one and only one product family. The product family can be used to control administrative security on one set of products versus another. Sites that have a limited number of products, and no need to divide security, can have only one product family.

Plant Applications provides a default product family that can not be deleted. When product families are deleted, any products that belong to the deleted product family are automatically moved under the default product family.

To add a new product family

1. On the desired server, click **Product Management**.

2. Right-click **Product Families** and click **Add New Product Family**. A blank new entry field appears.

3. Type the name of the new product family and press **ENTER**.

The name of product families must be unique on a given server.

Adding Comments to a Product Family

Adding comments is a way to provide additional information or instructions.

To add or view comments

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click the desired product family and click **Add Comment to <*product family*>**. The **Comment Editor** dialog box appears.

4. Enter the necessary information and close the dialog box.

Editing External Links

You can create a link to a document on an internal network drive, an external web site or a web page. After you create the link, an additional command, **View External Link**, will be added to the right-click menu allowing you to go to the document, web site or web page.

To add an external link

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click the desired product family and click **Edit External Link**. The **External Link Editor** dialog box appears.

4. Enter the necessary information and close the dialog box.

Deleting a Product Family

When you delete a product family, any products that are part of this product family are automatically moved under the default product family. If you want to delete products, you must delete the individual product.

To delete a product family

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click on the product family you want to delete and click **Delete <*product family*>**. The **Confirm Delete** dialog box appears.

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4. Click **OK**.

Renaming a Product Family

To rename a product family

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click on the product family and click **Rename *<product family>***. The product family name becomes an editable field.

4. Type the new product family name and press ENTER.

Editing Product Family Membership

Editing membership is how you move products to product families. When you remove a product from a product family, it automatically becomes a member of the default product family. Products can be a member of only one product family. In order to change the membership of a product, you must first remove it from one product family and then add it to another product family.

To move a single product from one product family to another, you can click and drag the product from one product family to another product family. If you want to move more than one product, you should use the following procedure.

To move products from one product family to another product family

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click on the product family and click **Edit*<product family>* Membership**. The **Edit *<group name>* Membership** dialog box appears.

4. Edit the membership and close the dialog box.

Changing Product Family Security

You can assign a security group to a product family. By default, no security group is assigned.

A user with Administrator access in the Administrator security group can perform all tasks.

A user with Manager or Read/Write access in the Administrator security group can perform all tasks, except:

- Changing security
- Exporting product family configuration
- Importing product family configuration

A user with Read access in the Administrator security group can only view the product family information.

*You must be a member of the **Administrator security group** to perform any task in the Plant Applications Administrator.*

To assign a security group

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**.

3. Right-click on the product family and click **Change <product family> Security**. The **Object Security** dialog box appears.

4. Assign the security group and close the dialog box.

Exporting Product Families

You can export your product family configuration into an Excel spreadsheet and then use the spreadsheet to import the product families' configuration into another Plant Applications server. When you export from **Product Families**, you export the configuration for all products.

If a product family has no products, a worksheet will be created with the appropriate column headings, but with no data in the cells.

After export, two worksheets are created.

-   ProdFamily contains:
    o   The product code
    o   The product description
    o   The product comments
    o   The product family the product belongs to
    o   The product family comments
    o   The e-signature level for the event
    o   The e-signature level for the product change event
    o   The product is serialized or non-serialized
-   DefaultCharacterisitic contains:
    o   The product code
    o   The product property
    o   The product characteristic

To export product families' configuration

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Right-click Product Families and click Export Product Families. The Export Configuration dialog box appears.

3. Select one or more of the configurations to export. A worksheet will be created for each option selected.

-   All Products

-   All Default Characteristics

4. Click **OK**. Plant Applications will start Excel and a worksheet will be created for each of the options selected in step 3.

Importing Product Families Configuration

After you export product families' configuration, you can import the configuration into another Plant Applications server.

You cannot import product families' configuration back into the originating Plant Applications server because product codes and descriptions must be unique on each server. You can change the product code and description and import the new configuration into the originating Plant Applications server.

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Characteristics can be changed to a different characteristic, as long as the characteristic exists on the Plant Applications server you are importing to.

To import product families' configuration

1. Ensure the workbook containing the product families configuration is open and the configurations you want to import are selected.

2. In the Plant Applications Administrator, expand **Product Management**.

3. Right-click **Product Families** and select **Import Configuration**. The selected configurations are imported.

4. Click **OK** and refresh the server.

Exporting a Product Family

You can export product configuration information by product family. Only the configuration information for the products that belong to the selected product family will be exported. If you want to export the configuration information for all products, see Exporting Product Families.

If a product family has no products, a worksheet will be created with the correct column headings, but with no data in the cells.

After export, three worksheets are created.

- ProdFamily
  - The product code
  - The product description
  - The product comments
  - The product family
  - The product family comments
  - The event e-signature level
  - The product change event e-signature level
  - The product is serialized or non-serialized

- DefaultCharacteristic
  - The product code
  - The product property
  - The product characteristic

- ProdXRef
  - The product code
  - The product cross-reference
  - The production line
  - The production unit

To export product family configuration

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Expand **Product Families**

3. Right-click the product family and click **Export <*product family*>**. The **Export Configuration** dialog box appears.

4. Select one or more of the following options to export. A worksheet will be created for each option selected.

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- Products by Family

- Default Characteristics

- Product Cross Reference

5. Click **OK**. Plant Applications will start Excel and a worksheet will be created for each of the options selected in step 4.

Importing a Product Family Configuration

After exporting product family configuration to an Excel spreadsheet, the configuration can be imported into another Plant Applications server.

You cannot import product family configuration back into the originating Plant Applications server because product codes and descriptions must be unique on each server. You can change the product code and description and import the new configuration into the originating Plant Applications server.

In the DefaultCharacteristics worksheet, characteristics can be changed to a different characteristic, as long as the characteristic exists on the Plant Applications server you are importing to.

In the ProdXRef worksheet, the product cross-reference can be changed and imported back into the originating Plant Applications server.

To import product family configuration

1. Ensure the workbook containing the product families' configuration is open and the configurations you want to import are selected.

2. In the Plant Applications Administrator, expand **Product Management** and expand **Product Families**.

3. Right-click the desired product family and select **Import Configuration**. The selected configurations are imported.

4. Click **OK** and refresh the server.

Products

Products are the materials manufactured on the production lines and can be in-process products or end products. In the pulp and paper industry, products are synonymous with grades. Products are a unique identity of string data relating to the process and quality specifications.

If a gauging, DCS, or other system is used that has a different product code convention, then cross-references can be established.

Adding Products

To access this dialog box: Open the Plant Applications Server Manager tree and expand **Product Management**.

To add a new product

1. Right-click the desired product family folder or product and click **Add New Product**. The **New Product** dialog box appears.

2. Do the following:

   a. In the **Description** box, type a description of the product.

   b. The product description must be unique on a given server.

    c.   In the **Code** box, type the product's code.

The product code must be unique on a given server.

3. Do one of the following:

- To save the new product and add additional products, click **Apply**.

- To save the new product and close the dialog box, click **OK**.

Editing a Product's Properties

Editing a product's properties enables you to:

- Edit the product's description or code

- Require an electronic signature to events or product changes

- Link to an external web page or web site

- Attach documents or type comments

- Assign default characteristics

- Map the product to a production unit

*To access the **Product Properties** dialog box: Open the Plant Applications Administrator tree, expand ▥ **Product Management** and expand **Product Families**.*

To edit a product's properties

1. Expand the desired product family folder.

2. Right-click on the desired product and click **Edit <*product name*> Properties**. The **Product Properties** dialog box appears.

3. On the **General** tab, do one or more of the following:

    a.   In the **Description** box, edit the product's description.

    b.   In the **Code** box, edit the product's code.

    c.   From the **Events** list, select the e-signature level you want to apply to production events.

    d.   From the **Product Changes** list, select the e-signature level you want to apply to product changes.

    e.   To provide a link to a document on an internal network drive, external web site or web page, type the URL in the **URL** box. The link can be opened from the **Comments** dialog box in an Autolog display by clicking the 🖉 **Pencil** icon.

    f.   To attach documents or comments to the product, type any comments or drop documents into the **Comment** box.

4. On the **Characteristics** tab, define a **default characteristic** for a specific product property for this product. If you change the default characteristic value for a product property, the **Characteristic assignment** dialog box will appear, which will enable you to determine how you want to apply the new default value.

    a.   Double-click a property. The **Assign Property Value** dialog box appears.

    b.   From the **Value** list, select a default value.

    c.   Click **OK**.

5. On the **Units** tab, you map, or associate, this product to one or more production units. If you click the **Units** tab after working with characteristics on the **Characteristics** tab, you will be asked if you want to save your current changes. Click **Yes**.

   a. In the **UnAssigned** list, select the production unit to which you want to associate this product and click the [>] **Move Selected** button. The **Pick Transaction** dialog box appears.

   b. Type a descriptive name for the transaction and click **OK**.

Deleting a Product

When you delete a product, you are deleting all historical information associated with the product.

*To access **Product Properties:** Open the Plant Applications Server Manager tree, expand* *Product Management and expand **Product Families**.*

To duplicate a product

1. Expand the desired product family folder.

2. Right-click on the product you want to delete and click **Delete <*product name*>**. The **Confirm Delete** dialog box appears.

3. Click **OK** to delete the product.

Duplicating a Product

When you duplicate a product, all of the original product's properties are replicated, with the exception of any external links and comments.

*To access **Product Properties**: Open the Plant Applications Server Manager tree, expand* *Product Management and expand **Product Families**.*

To duplicate a product

1. Expand the desired product family folder.

2. Right-click on the desired product and click **Duplicate <*product name*>**. The **New Product** dialog box appears.

3. Do the following:

   a. In the **Description** box, type a description of the product.

   b. The product description must be unique on a given server.

   c. In the **Code** box, type the product's code.

   d. The product code must be unique on a given server.

   e. Select a product family from the **Family** list.

4. Click **OK**.

Specification History

Viewing the specification history of a product enables you to see what changes were made to a specification, when the change was made, and, if e-signature is enabled, who made the change.

To view a product's specification history

1. Expand the desired product family folder.

2. Right-click on the desired product and click **Specification History**. The **Specification History Viewer** window appears. There will be no information displayed in the window.

3. On the main **Server Manager** window, click either the **Tile Horizontal** button or the **Tile Vertical** button. The **Specification History Viewer** window and the **Server Manager** window are tiled so that they can both be viewed at the same time.

4. On the **Server Manager** window, open your plant model and select a variable. The specification history for the selected variable will be displayed in the **Specification History Viewer** window.

Product Properties

Product properties are used to describe related parameters associated with products, such as color, packaging, or shared recipes.

Product Characteristics

Within product properties are the product characteristics that the product property takes on. The property of **Color** may take on a characteristic of **Red**. In this way, characteristics are roughly equivalent to products.

Specification Variables

Also, within product properties are the individual parameters that describe the attributes of the property. For example, within the property **Color**, Specification variables may be **Color A Tes**t, **Color B Test**, and so on. Specification variables are used to maintain recipe parameters and specifications that are plant-wide or not equipment specific. See [Specification Properties Dialog Box](#) and [Building a Plant-Level Recipe or Specification](#).

How To Organize Properties and Characteristics?

A good starting point for setting up properties and characteristics is to create a single property (such as "Global") and add a characteristic to this property for each distinct product the plant manufactures. This allows you to manage recipes/specifications at the plant level without having to think about hierarchy, or relationships between products that may not be understood at configuration time.

Taking this a step further may involve creating properties for each type of product and sub-product made. Having a property for **Finished Products** and a property for **Formulas** will allow you to separate finished product parameters from recipes and begin to allow for some hierarchy in the product structure. For example, 1000 finished products may be manufactured from 100 different formulas. Having these as separate properties allows you to manage 100 formulas one time as opposed to 100 formulas ten times across 1000 finished products.

Product Property Introduction

Product properties are not to be confused with a [product's properties](#).

Unlike unit specifications, which are defined directly against the variable for the product in question, central specifications involve the creation of an independent property with variable and specification "equivalents." These equivalents are then associated with variables, products and production units to complete the centralization process.

Central specifications are used in cases where specifications are shared by two or more variables, products, or production units and need only be managed in a single instance. You can also create or modify a single set of specifications and the change will be reflected on all associated instances.

The first step in creating central specifications is to create a new product property. Product properties are used to describe related parameters associated with products, such as color, packaging, or shared recipes.

Creating a Product Property

When you create your product property, you must choose whether to create a **Generic/Quality** property or a **Production Metrics** property. the main difference between the two type of properties is that with the **Production Metrics** property, you can automatically change the values of the specifications according to a time schedule that you specify. **Production Metrics properties** are

used for ramping up a production line, for example, where you need the specification limits to increase as the production process improves.

To create a product property

1. In the Plant Applications Server Manager tree, expand **Product Management**.

2. Right-click on **Product Properties**, point to **New Property**, and click **Generic/Quality** or **Ramp Up Specifications** (in previous version of Plant Applications, this was called **Production Metrics**). An editable field appears under the Product Property folder.

3. Type the name of the new product property and press **ENTER**. Three folders are automatically created for you.

- **Characteristics Groups:** This is used for selecting groups of characteristics in specification management.

- **Characteristics:** Characteristics are the attributes of a product.

- **Specification Variables:** Specification variables contain the recipe parameters and specifications that are plant-wide or not equipment specific.

Replicating Specification Limits

By creating a specification hierarchy, you can enter values in one specification and have those values propagate to all other specifications. Specifications for the subordinate Characteristic are now managed by the top-level Characteristic. Specification changes made higher in the characteristic hierarchy will automatically propagate to lower levels of the hierarchy.

> *NOTE: When entering specs, you cannot modify the flowchart structure; when modifying a flowchart tree structure, you cannot change any specs. it is recommended that you first get the tree structure in place, save it, and then go back to modify the specifications. A dialog is displayed with a notification to approve the transaction before making changes to the tree structure if you have started entering specifications.*

To replicate specifications limits:

1. In the Plant Applications Administrator, click on **Product Management** and then click on **Product Properties**.

2. Right-click on the desired product property and select **Enter Specifications for <*product property name*>** from the pop-up menu.

3. In the **Pick Transaction** dialog box, enter a descriptive name for the transaction and click **OK**.

4. In the **Specification Management** window, click the **Add Products/Characteristics** button.

5. In the **Characteristics** dialog box, under **Unloaded**, select the desired characteristics and click the **Move Selected** button.

6. Click the **Close** button to return to the **Specification Management** window.

7. On the **Specification Management** window toolbar, click the **View Flow Chart** button. The Specification Management window will be divided into two sections. The first section will be the original grid and the new section will be a blank window. The blank window is where the flow chart will be draw.

8. To arrange the characteristics into a hierarchy, right-click one of the cells in the grid and select **ReDraw Flowchart** from the pop-up menu. This will draw the flow chart on the blank section of the window.
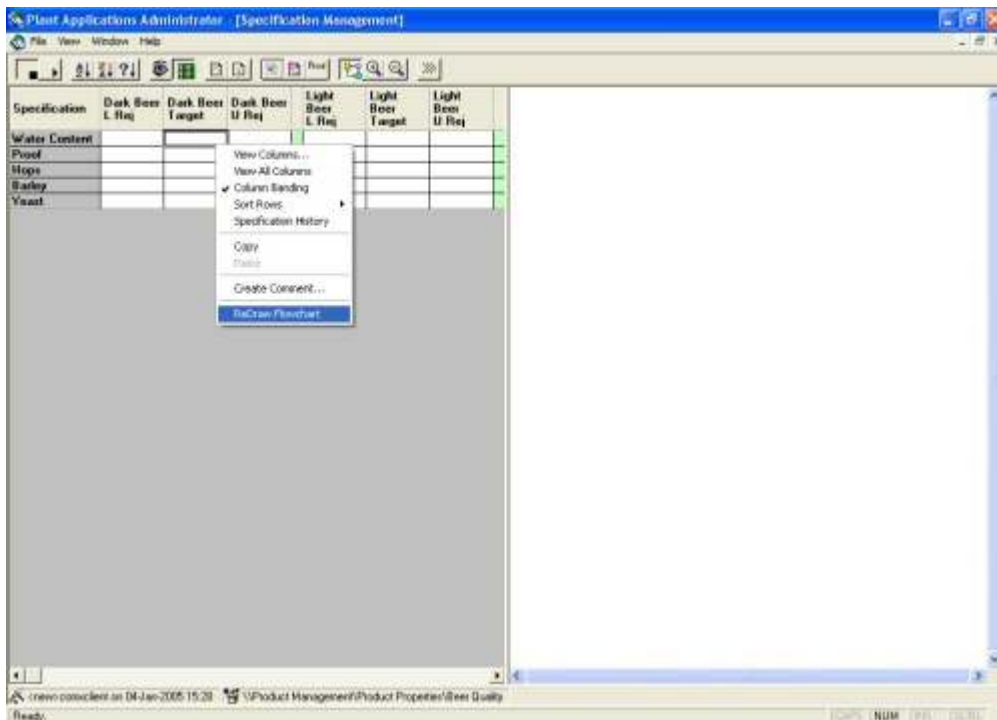
9. In the flow chart, right-click on the characteristic that you want to make subordinate and select **Cut Characteristic** from the pop-up menu.
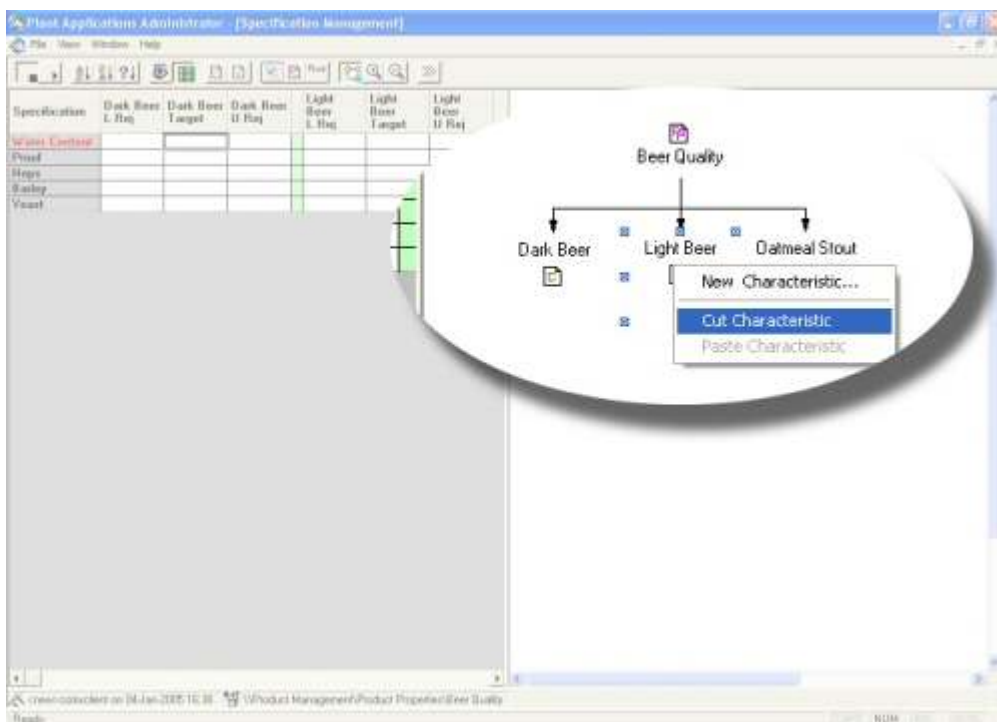
10. Right-click on the characteristic you want the characteristic in step 9 to be subordinate to and select **Paste Characteristic** from the pop-up menu.

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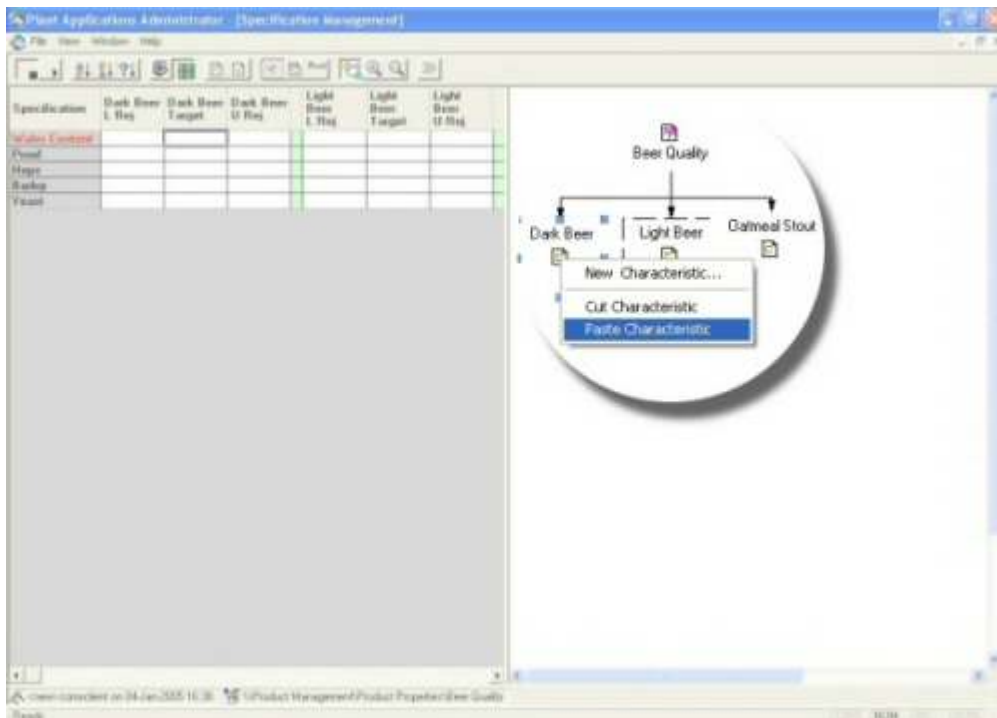
The pasted characteristic will become subordinate and any changes made to the higher-level characteristic will propagate down to the subordinate characteristic.
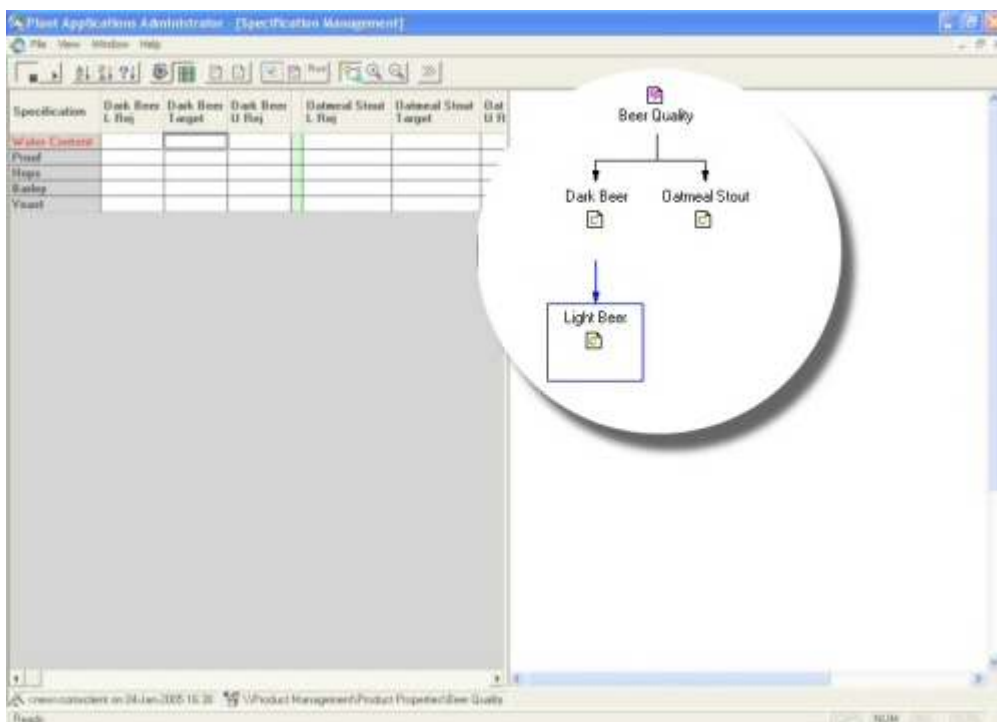
11. Click the **Close** button, and then click **OK** to approve the transaction.

An Example:

For example, if you have three characteristics, **Char A**, **Char B**, and **Char C**, and you **paste Char B** onto **Char A**, **Char B** becomes **subordinate** to **Char A** and any changes you make to the

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specification limits of **Char A** flow down to **Char B**. If, then, you paste **Char C** onto **Char A**, then any changes to **Char A** flow down to **Char B** and **Char C**. On the other hand, if you paste **Char B** onto **Char A**, and then paste **Char C** onto **Char B**, then any changes you make to **Char A** will flow down to **Char B** and **Char C**. Furthermore, if you make changes to **Char B**, those changes will flow down to **Char C**, but will not flow up to **Char A**.

Be aware that making a change to a subordinate characteristic breaks the connection to any higher-level characteristics. In the example above, if you make a change to one of the specification limits for **Char B**, *then you "break" the connection to* **Char A** *for that specification.*

Replicating Specification Limits Across Products or Characteristics

You can replicate specification limits across multiple products or characteristics. You can open the **Specification Management** window either by right-clicking on a product property or by right-clicking on the desired production unit.

NOTE: Unit variables associated with specification variables do not appear in the Multi-Product Variable drop-down list.

1. Do one of the following:

- Right-click on a product property (**Product Management > Product Properties**) and select **Enter Specifications For <product property>**.

- Right-click on a production unit (**Plant Model > Department > Production Line > Production Unit**) and select **Enter Specifications For <production unit>**.

   The **Pick Transaction** dialog box opens.

2. Enter a descriptive name for the transaction and click **OK**. The **Specification Management** window opens.

TIP: The variables are color-coded. Central specifications have a <mark>green</mark> *background. Unit-level specifications have a* **grey** *background. Corporate specifications have an* **orange** *background. If a specification value has been overridden, it will be* **yellow**.

3. Click the ⬜Prod **Multi-Product Update** button. The list of specifications or variables will become a drop-down list. Unit variables with an assigned specification variable do not appear in the drop-down list.

4. Click the 🅿️**Add Products/Characteristics** button. The **Products** or **Characteristics** dialog box opens.

5. Move the products or characteristics from the **Unloaded** list to the **Loaded** list and click the ❌**Close** button.

6. From the list of **Variables** or **Specifications**, select the desired variable or specifications and type the value for the desired limit.

7. Right-click on the value and select **Replicate Value**. The value will be replicated for all selected products or characteristics.

Exporting Product Property Configuration

You can export your product property configuration into an Excel worksheet. After the export is complete, you can:

- Use the worksheet to import the information into another Plant Applications server.

- Make changes to the worksheet and then import the changes into your current server.

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When you export **Product Properties**, you export the configuration for all product properties. The following worksheets are created.

- ProductProperties
- Characteristics
- CharacteristicGroups
- SpecVariables
- CentralSpecs

When you export an individual product property, a worksheet is created for:

- Characteristics
- CharacteristicGroups
- SpecVariables
- CentralSpecs

To export product property configuration

1. In the Plant Applications Server Manager tree, expand **Product Management**.
2. Do one of the following.

- To export all product properties, right-click **Product Properties** and select **Export Product Properties**.

- To export a single product property, expand **Product Properties**, right-click the product property and select **Export *<product property>***.

   The **Configuration Export** dialog box appears.

3. Select one or more of the options to export. A worksheet will be created for each option selected.
4. Click **OK**. Plant Applications will start Excel and a worksheet will be created for each option selected in step 3.

Importing Product Property Configuration

After exporting your product property configuration, you can either use the worksheets to import the configuration into another Plant Applications server or edit the data and import the changes into the originating Plant Applications server.

If you are importing the configuration into a new Plant Applications server or into a Plant Applications that does not have product properties configured, you can change all of the exported information.

If you are importing the configuration into a Plant Applications server that has configured product properties, you can change the following:

- ProductProperties: You can edit External Link or Security User Group. However, if you edit the Security User Group, you must use an existing security group. Editing the product property will create a new product property.

- Characteristics: You can edit any of the configuration on this worksheet and import the changes. If you change the product property, a new product property is created.

- CharacteristicGroups: You can edit the Characteristic Group and Characteristic and import the changes. You can edit the product property, but only if you have made created the new product property in the ProductProperties worksheet.

- SpecVariables: You can edit any of the information in this worksheet. If you change an existing product property, a new product property is created.

- CentralSpecs: You cannot edit the product property, specification variable, or characteristic, unless the corresponding worksheets have been edited. You can edit any of the specification limits for an existing specification variable.

To import product property configuration

1. Ensure the workbook containing the product families' configuration is open and the configurations you want to import are selected.

2. In the Plant Applications Administrator, expand **Product Management** and expand **Product Families**.

3. Right-click the desired product family and select **Import Configuration**. The selected configurations are imported.

4. Click **OK** and refresh the server.

Specification Properties Dialog Box

The **Specification Properties** dialog box is used to configure parameters for specification variables, and to assign specification variables to process variables in the Plant Model. Access this dialog box by right-clicking on a specification variable node in the Product Management section of the Server Manager tree and choosing **Edit <specification variable> Properties**.

Specification tab

- **Description**: The name of the specification variable.

- **Data Type**: The type of data used by the variable. For more information, see Variable Property Definitions.

- **Precision**: If **Data Type** is Float, the number of decimal places stored by the variable.

- **Array Size**: Size of the array if **Data Type** is Array Float, Array Integer, or Array String (range: 2 to 999). For more information, see Multi-Element Specification Variables.

- **Eng. Unit**: A description of the data (for example, lbs., ft., liters). This information is shown as **UOM** (unit of measure) in other dialog boxes, such as the **Specification Variables** dialog box.

- **Tag**: Information such as the name of a tag with which this variable is associated (this field has no functionality beyond storing information for review in this dialog box).

- **External Links**:

    -

    - **URL**: An external URL with which this variable is associated (this field has no functionality beyond storing information for review in this dialog box).

    - **Info**: Any additional information regarding this specification variable (this field has no functionality beyond storing information for review in this dialog box).

- **Comment**: Comments regarding this specification variable. Links to external documents can be pasted (or dragged and dropped) into this field.

Variables Tab

- **Available Variables**: Process variables available for association with this specification variable. Only production lines and units containing variables with the same **Data Type** as selected in the **Specification** tab are listed. For help in locating variables, click **Search** to open the **Search Variable** dialog box. Child nodes of array type specification variables may be assigned to corresponding "single value" data type process variables. For example, the

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children of specification variables with Array Float data types can be mapped to variables with Float data types.

- **Selected Variables**: Process variables associated with this specification variable. Click **>** or **<** to move selected variables between **Available Variables** and **Selected Variables**.

Characteristics

A characteristic is an attribute of a product property that can be managed regardless of the production unit. The property of **color** may take on a characteristic of **red**.

Before you create characteristics, you must create products and product properties.

Creating Characteristics

To manage characteristics: In the Plant Applications Server Manager tree, expand **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To add a characteristic

1. Expand the desired product property folder.

2. Right-click on **Characteristics** and click **Add New Characteristic**. A blank new entry field appears.

3. Type the name of the new characteristic and press ENTER.

Adding a Comment

You can type comments or create shortcuts to documents that will provide additional information or instructions.

To manage characteristics: In the Plant Applications Server Manager tree, expand ***Product Management**, expand **Product Properties**, and expand the specific product property folder.*

To add a comment or link to a document

1. Expand the **Characteristics** folder.

2. Right-click on the characteristic and click **Add Comment to <*characteristic name*>**. The **Comment Editor** dialog box appears.

3. Enter the necessary information and close the dialog box.

Editing External Link / Information

You can create a link to a web site or web page. After you create the link, an additional command, **View External Link**, will be added to the pop-up menu which will allow you to go to the web site or web page.

To manage characteristics: In the Plant Applications Server Manager tree, expand ***Product Management**, expand **Product Properties**, and expand the specific product property folder.*

To add an external link

1. Expand the **Characteristics** folder.

2. Right-click on the characteristic and click **Edit External Link / Information**. The **External Link Editor** dialog box appears.

3. Enter the necessary information and close the dialog box.

Deleting a Characteristic

To delete a characteristic

1. Expand the **Characteristics** folder.

2. Right-click on the characteristic and click **Delete <*characteristic name*>**. The **Confirm Delete** dialog box appears.

3. Click **OK** to delete the characteristic.

Renaming a Characteristic

To rename a characteristic

1. Expand the **Characteristics** folder.

2. Right-click on the characteristic and click **Rename <*characteristic name*>**. The characteristic name becomes an editable field.

3. Type the new name of the characteristic and press ENTER.

Viewing Specification History

Viewing the specification history of a characteristic enables you to see what changes were made to a specification, when the change was made, and, if e-signature is enabled, who made the change.

To view a characteristic's specification history

1. Expand the desired characteristics folder.

2. Right-click on the desired characteristic and click **Specification History**. The **Specification History Viewer** window appears. There will be no information displayed in the window.

3. On the main **Server Manager** window, click either the **Tile Horizontal** button or the **Tile Vertical** button. The **Specification History Viewer** window and the **Server Manager** window are tiled so that they can both be viewed at the same time.

4. On the **Server Manager** window, expand **Specification Variables** and click on a specification variable. The specification history for the selected variable will be displayed in the **Specification History Viewer** window.

Characteristic Assignment Dialog Box

Product Management

The **Characteristic assignment** dialog box enables you to determine how you want to apply changes to a default characteristic value.

The following three options are available:

- **Assign To All Units Now (override if different):** Click this option to apply the change to all production units to which this product as been associated. If the current default value is different, the new value will be applied.

- **Only Assign To Units That Have No Assignment Now:** Click this option to apply the change to only productions units that have no default value assigned. Existing values will not be changed.

- **Only Assign To Units Added In the Future:** Click this option to apply the change only to production units that are added from this point on. Existing values will not be changed.

After you select an option, click **OK**.

Characteristic Groups

Characteristic grouping enables you to group or categorize characteristics. For example, you might have characteristics representing the different weights of your paper products, such as 20#, 30#, 40#, 50# and 60#. You could then create a Light Weight group, a Medium Weight group, and a Heavy Weight group. The 20# and 30# weight paper products could be made members of the Light Weight group, the 40# and 50# weight paper products could be made members of the Medium Weight group, and so on.

Creating Characteristic Groups

To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand 🗂 **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To create a characteristic group

1. Right-click on **Characteristic Groups** and click **Add Characteristic Group**. An blank text field appears.

2. Type the name of the characteristic group and press **ENTER**.

Commenting a Characteristic Group

You can type comments or create shortcuts to documents that will provide additional information or instructions.

To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand 🗂 **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To comment a characteristic group

1. Expand **Characteristic Groups**.

2. Right-click on the desired characteristic group and click **Create Comment**. The **Comment Editor** dialog box appears.

3. Enter the necessary information and close the dialog box.

Editing External Link Information

You can create a link to a web site or web page. After you create the link, an additional command, **View External Link**, will be added to the pop-up menu which will allow you to go to the web site or web page.

To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To add an external link

1. Expand the **Characteristic Groups** folder.

2. Right-click on the characteristic group and click **Edit External Link**. The **External Link Editor** dialog box appears.

3. Enter the necessary information and close the dialog box.

Deleting a Characteristic Group

To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To delete a characteristic group

1. Expand the **Characteristic Groups** folder.

2. Right-click on the characteristic group and click **Delete Characteristic Group**. The **Confirm Delete** dialog box appears.

3. Click **OK** to delete the characteristic group.

Editing the Characteristic Group Membership

You can add or remove members of a characteristic group. A characteristic can be a member of more than one characteristic group as long as the characteristic groups are all in the same product property.

To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand the specific product property folder.

To edit the characteristic group membership

1. Expand **Characteristic Groups**.

2. Right-click on the characteristic group and click **Edit Characteristic Group Membership**. The **Edit *<group name>* Membership** dialog box appears.

3. Edit the membership and close the dialog box.

Renaming a Characteristic Group

*To manage characteristic groups: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand the specific product property folder.*

To rename a characteristic

1. Expand the **Characteristic Groups** folder.

2. Right-click on the characteristic group and click **Rename Characteristic Group**. The characteristic group name becomes an editable field.

3. Type the new name of the characteristic group and press **ENTER**.

Specification Variables

A specification defines the target value and various upper and lower quality and alarm limits for a variable and a product combination. It can be used to define the amounts of materials in a batch process, measure the actual value of a quality variable against a target and set of limits, or compare the current values of a set of process-related variables against the average of a number of past sets.

Specifications are defined for a specific product. They can be as general or detailed as needed and can be specific to a production line and unit, or they can be shared across many production lines and units.

Unit Variables

Variables are attached to a specific piece of equipment and describe the individual parameters controlled or measured on that piece of equipment. Unit variables can be attached to specification variables if their recipe is not machine / equipment specific.

Recipes

Within Plant Applications, a broad definition of a **recipe** is employed. Within the scope of the plant, a **recipe** or **product specification** can take on many meanings. Plant Applications models product information in a generic way to allow for all types of product information to be stored.

A recipe is a concept that describes and details the attributes of a product. A product's attributes provide knowledge about the product, such as:

- The production unit to which the product is assigned

- The steps to manufacture the product

- The materials used to manufacture the product

- When to accept or reject a product

- The process control settings used

- The test procedures to use

- When to test a product or measure its attributes

Plant-Level Recipe Maintenance

Plant-level recipe maintenance can be performed by entering specifications for properties and characteristics. Specifications entered at this level are automatically propagated to the individual products and units (equipment) that are associated with that property and characteristic. It is common to maintain quality specifications at the plant level because, in most situations, these specifications are not equipment specific. It is also common for quality specifications to have a one-to-one relationship between characteristics and actual products.

Unit-Level Recipe Maintenance

Unit-level recipe maintenance can be performed by entering specifications for a production unit or variable group. Specifications maintained at this level are equipment specific. Specifications maintained at the plant level may be overridden at the unit level to handle specific exceptions.

How To Decide Between Plant Level And Unit Level Recipe Maintenance

Those variables that require an equipment specific recipe / specification, will need to be maintained at the unit level. All other variables may be maintained at the plant level. Good candidates for plant-level

maintenance are quality specifications, bill of materials type specifications, and batch recipes. Good candidates for unit-level maintenance are control parameters, and some types of operating instructions

Creating Central-Level Specification Variables

The specification variable is the variable or quality test variable that is represented on a central or facility-wide basis. For example, the specification variables associated with the basis weight property could be **BW**, **tear**, **tensile**, **burst**, and so on.

To manage central specification variables: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand a specific product property.

To add a new specification variable

1. Right-click on **Specification Variables** and click **Add New Specification**. An new entry text field appears.

2. Type the name of the specification and press ENTER.

Editing Specification Variable Properties

Editing specification variable properties enables you to configure parameters for specification variables, and to assign specification variables to process variables in the Plant Model.

To manage central specification variables: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand a specific product property.

To edit specification variable properties

1. Expand **Specification Variables**.

2. Right-click on a specification variable and click **Edit <*specification variable*> Properties**. The **Specification Properties** dialog box appears.

3. Edit the specification variable's properties and close the dialog box.

Specification Variable Specification History

Viewing the specification history of a specification variable enables you to see what changes were made to a specification, when the change was made, and, if e-signature is enabled, who made the change.

To manage central specification variables: In the Plant Applications **Server Manager** tree, expand **Product Management**, expand **Product Properties**, and expand a specific product property.

To view a specification variable's specification history

1. Expand **Specification Variables**.

2. Right-click on the desired specification variable and click **Specification History**. The **Specification History Viewer** window appears. There will be no information displayed in the window.

3. On the main **Server Manager** window, click either the **Tile Horizontal** button or the **Tile Vertical** button. The **Specification History Viewer** window and the **Server Manager** window are tiled so that they can both be viewed at the same time.

Product Management

4. On the **Server Manager** window, expand the **Characteristics** folder and click a characteristic. The specification history for the selected characteristic will be displayed in the **Specification History Viewer** window.

Deleting Specification Variables

To delete a specification variable

1. Expand **Specification Variables**.

2. Right-click on the specification variable and click **Delete <*specification variable*>**. The **Confirm Delete** dialog box appears.

3. Click **OK** to delete the specification variable.

Multi-Element Specification Variables

Specification variables that are configured with an array data type are called "multi-element specifications." Different specifications can be assigned to the elements of these variables. These specifications can then be output, as an array or as single values, to the factory control layer via OPC. This feature is especially useful when you have equipment executing multiple phases or steps on the same product, requiring different specifications depending on changing process requirements.

Since individual elements of a multi-element specification variable can be assigned to process variables in much the same manner as "single-value" specification variables, this feature is also useful in organizing and assigning specifications in general.

Three array data types—Array Float, Array String, and Array Integer—are available when configuring multi-element specification variables.

For information on creating and configuring specification variables, see the topics on Building a Plant-level Recipe or Product Specification, Specification Properties Dialog Box, and Creating a Bill of Materials. You should also be familiar with the topics under Preparing for Product Management in the Contents tab of this Help system.

Assigning multiple elements to a specification variable

A specification variable is assigned multiple elements in the Specification Properties dialog box when you choose an array data type (Array Float, Array Integer, Array String), and specify an **Array Size**.

Multi-element specification variables appear in the Server Manager (in the Product Management\Product Properties\<property>\Specification Variables folder) as parents with the same number of children as specified in **Array Size**. For example, creating a variable called `Multi-Spec Variable` and then entering an array size of 4 results in the following structure:

The children in a multi-element specification variable are automatically assigned the name of the parent, with colons and three-digit numbers appended. The parent retains the array data type, while the individual children each have the corresponding "non-array" version of the same data type. For example, if `Multi-Spec Variable` in the above illustration is of the Array Float data type, the children are all of the Float data type.

Entering specification values for multi-element specification variables

Enter product specification values for each child variable in the **Specification Management** dialog box. To do this:

1. Right-click on the product properties node under which you have created the specification variable, and then choose **Enter Specifications for <property name>**. Enter a name for the transaction when prompted, and then click **OK**. The **Specification Management** dialog box appears, listing all specifications configured for the product property.

2. Choose the specifications you wish to enter or view by clicking the chevron and then clicking the specification buttons that appear in the toolbar. (For more information, see Creating a Bill of Materials.)

3. Click **Add Products/Characteristics**, and then use the arrow buttons to add characteristics and/or characteristic groups to the **Loaded** windows in the **View Characteristics** and/or **View Characteristic Groups** tabs. Parent specification variables now appear as title rows (i.e., they do not accept inputs), with the child variables beneath them.

4. Enter specification values for the child variables in the appropriate cells, and then close the **Specification Management** dialog box.

Assigning multi-element specification variables to process variables

To map an array of specifications to a process variable (for example, for output via OPC), assign the parent of the multi-element specification variable to a process variable of the same array data type. Individual array elements, or children, may also be assigned to process variables with the corresponding non-array data type (if the parent specification variable is Array Float, then its children are Float).

To assign specification variables to process variables, use either the **Variables** tab in the **Specification Properties** dialog box, or the **Specification Variable** column in the **Variable Sheet** dialog box (see Configuring Variables).

OPC export of specifications

You can write an array of specifications, or a single value within an array, to a tag for OPC export. In either case, the specification variable is assigned to a process variable with tags defined for each specification.

For information on OPC server/client configuration, see Adding an OPC Historian and Connecting to Plant Applications with an OPC Client.

Array output:

1. After creating and configuring a multi-element specification variable, create a process variable with the same array data type as the parent specification variable. For more information, see Configuring Variables.

2. In the Variable Sheet, choose the **Specification Variable** containing the specifications you wish to export.

3. Enter tags for each specification in the array (e.g., **Target Tag**, **Upper Warning Tag** and **Lower Warning Tag**, etc.).

*You can browse to a tag by right-clicking and choosing **Tag Search**, but you must specify the array manually. Check your OPC server's documentation for correct tag syntax. In* RSLogix*, for example, the format is:*

```
n254;0,L5
```

> *...where* `n254` *specifies the tag, and* `;0,L5` *specifies the starting position and number of elements in the array.*

Single value output:

Follow the steps as above for array output, but assign the same non-array data type to the process variable as that of the child specification variable. Also, the tags will now specify a single location in the server, rather than an array.

Product Groups

Product groups are used to group products as well, however a single product may be a member of any number of product groups. Product groups are used in searching for products, and more importantly to assist in analysis of historical data.

Managing Product Groups

Product Groups are used to group products. A single product may be a member of any number of product groups. For example, 80# Gloss paper could be grouped under Gloss Products and grouped under 80# Products. Product groups are used to search for products and, more importantly, to assist in analysis of historical data.

To manage Product Groups:

1. On the desired server, click **Product Management**.

2. Right-click **Product Groups** and choose **Add New Product Group**. A new, editable field appears under the Product Groups folder.

3. Type the name of the new product group and press ENTER.

> *Product groups must be unique on a given server.*

4. Right-click the new product group and select **Edit <product group name> Membership** from the pop-up menu. The **Product Groups** dialog box appears.

5. Do one of the following:

- To move all products into the product group, click the **Move All** button ⟩⟩ .

- To move specific products into the product group. select the product(s) and click the **Move Selected** button ⟩ .

> *A single product may be a member of more than one group, so adding a product to a new group will not remove it from any groups it was previously added to.*

6. Click the **Close** button to close the dialog box.

Exporting Product Group Configuration

You can export your product group configuration into an Excel worksheet. After you export the configuration, you can use the Excel worksheet to import the product group configuration into another Plant Applications server.

If you export from **Product Groups**, a ProductGroups worksheet is created containing:

- Each product group

- The product code for each product belonging to the product group

- Comments attached to the product group

If you export from a specific product group, the following worksheets are created.

- ProductGroups

    o   Each product group
    o   The product code for each product belonging to the product group
    o   Comments attached to the product group

- ProdXRef

    o   Each product code
    o   The master product cross reference and unit-level cross reference for each product
    o   The production line for each product code with a unit-level cross reference.
    o   The production unit for each product code with a unit-level cross reference.

To export product group configuration

1. In the Plant Applications Administrator, expand **Product Management**.

2. Do one of the following.

- Right-click **Product Groups** and select **Export Product Groups**.

- Expand **Product Groups**, right-click a specific product group and select **Export <*product group*>**.

    The **Configuration Export** dialog box appears.

3. Select one or more of the options to export. A worksheet will be created for each option selected.

4. Click **OK**. Plant Applications will start Excel and a worksheet will be created for each option selected in step 3.

Importing Product Groups Configuration

After exporting your product group configuration into an Excel worksheet, you can use the worksheet to import the product group configuration into another Plant Applications server.

> **IMPORTANT:** *Before you import product group configuration, the products must first be configured on the Plant Applications server.*

In the ProductGroups worksheet, you can edit the Product Group and Product Group Comments. You cannot change the Product Code unless the product currently exists on the Plant Applications server.

In the ProdXRef worksheet, you can edit Cross Reference, Product Line and Product Unit. The production line and production unit must currently exist on the Plant Applications server. You cannot use this import to create a new production line and production unit.

To import product group configuration

1. Ensure the workbook containing the product groups configuration is open and the configurations you want to import are selected.

2. In the Plant Applications Administrator, expand **Product Management** and expand **Product Groups**.

3. Right-click the desired product group and select **Import Configuration**. The selected configurations are imported.

4. Click **OK** and refresh the server.

Specifications

Approving the Specification Transaction

Once the specification transaction has been created on the **corporate** server, a pending transaction is created on the site server. This pending transaction must be approved on the site server before the specifications become active.

To approve the transaction

1. At the site server, right-click the server and choose **Refresh Server**.

2. Expand **Product Management**.

3. Expand **Specification Transactions** and **Pending**.

4. Right-click the appropriate pending transaction and select **Approve** <transaction name>. The **Approve Transaction** dialog box appears.

5. Click **OK**. The **Reload Service(s)** dialog box appears.

6. Click **OK** to reload the Alarm Manager service. The pending transaction will be moved to the **Approved** folder.

Attaching Documents to Product Specifications

How To Attach Documents To Products

1. Browse into Product Management, Families, and then browse into the appropriate Product Family.

2. Select a product to receive the attachment, right-click and select Create Comment.

3. Add comments and drop documents into the comment editor window. Shortcuts or document links simply store the shortcut to a document, otherwise the document itself is stored in the Plant Applications Database. Remember to use UNC (Universal Naming Convention) for the shortcut filename to avoid any drive letter conflicts when the comment is viewed from a different client machine.

4. Additional document links may be added to the External Link on a Product. To Access the External Link, right-click on a Product and select Edit External Link.

5. Type in a URL, or UNC path to a document. When finished select the Save icon.

How To Attach Documents To Specification Variables

1. Browse into Product Management, Properties, and then browse into the Property which contains the Specification Variable that will receive the document.

2. Browse into Specification Variables and select the Specification Variable.

3. To make the Specification Variable a comment only type, right-click and select Edit Specification. All Specification Variables may be commented, however it may be beneficial to designate specific ones to attach documents of a given purpose.

4. Select Comment from the Data Type drop-down and close the Edit Specification dialog.

5. Select the Specification Variable, right-click and select Create Comment.

6. Add comments and drop documents into the comment editor window. Shortcuts or document links simply store the shortcut to a document, otherwise the document itself is stored in the Plant Applications Database. Remember to use UNC (Universal Naming Convention) for the

shortcut filename to avoid any drive letter conflicts when the comment is viewed from a different client machine.

How To Attach Documents To Product Specifications

1. Browse into Product Management, and Properties.

2. Select a Property that contains the Specification Variables and Characteristics (AKA Products) for which comments will be added.

3. Right-click on the selected property and select Specification Entry.

4. Enter in a name for the Transaction and select OK to go to the Specification Management window.

5. From the Specification Management window select the Add Products and Characteristics.

6. Load Characteristics in the Specification Management window by selecting one or more Characteristics from the Characteristics dialog and selecting >

7. Select an appropriate Specification Variable and Characteristic column, right-click and select Create Comment.

8. Add comments and drop documents into the comment editor window. Shortcuts or document links simply store the shortcut to a document, otherwise the document itself is stored in the Plant Applications Database. Remember to use UNC (Universal Naming Convention) for the shortcut filename to avoid any drive letter conflicts when the comment is viewed from a different client machine.

9. Approve the transaction and the comments will take effect.

Building a Central-level Recipe or Product Specification

To build a central-level recipe or product specification

1. Create a new property.

2. Expand the new property, right-click **Specification Variables** and select **Add New Specification**. A new, editable field appears under **Specification Variables**.

3. Type in the name of the new specification variable and press ENTER. Specification variable names must be unique within a given property.

4. Repeat steps 2 and 3 for each new specification variable.

5. Right-click **Characteristics** and select **Add New Characteristic**. Characteristics are roughly equivalent to products or formulas. A new, editable field appears under **Characteristics**.

6. Type in the name of the new characteristic and press ENTER. Characteristics must unique within a given property.

7. Right-click the new property and select **Enter Specifications for <*property name*>**. The **Pick Transaction** dialog box appears.

8. Type in the name of the new Transaction. Transactions are used to document specification changes so it is a good idea to provide a descriptive name.

9. Click **OK**. The **Specification Management** window appears.

10. Click the ![button] **Add Products and Characteristics** button. The **Characteristics** dialog box appears.

11. Select one or more characteristics from the **Unloaded** list and click the ![>] **Move Selected** button to load the selected characteristics.

12. Close the **Characteristics** dialog to return to the **Specification Management** window.

Product Management

INFORMATION: *The variables are color-coded. Central specifications have a* <mark>*green*</mark> *background. Unit-level specifications have a* *grey* *background. Corporate specifications have an* *orange* *background. If a specification value has been overridden, it will be* *yellow*.

13. Type in appropriate specification values. Changes to specifications are highlighted with a blue foreground color.

NOTE: *To expose limits other than the target, select the* ≫ *Specification Toolbar* *button.*

14. Select the appropriate toolbar icon to show or hide a particular limit. Note also the Testing Frequency can be exposed with the f_x **Test Frequency** button.

15. After the appropriate specification values have been entered, close the **Specification Management** window. The **Confirmation** dialog box appears.

16. Click **Yes** to approve the transaction. You may approve the transaction later by clicking **No**. Pending transactions can be found in the **Pending** folder within the **Transactions** folder.

17. Enter a date for the transaction to take effect in the **Effective Date** field.

18. Click **OK** to approve the transaction, and put specification changes into effect.

Maintaining Central-Level Product Specifications

To maintain central-level product specifications

1. Expand Product Management and then Product Properties.

2. Right-click the property for which product specifications will be changed and select **Enter Specifications for <***product property***>**. The **Pick Transaction** dialog box appears.

3. If desired, type a name for the transaction, and click **OK**. The **Specification Management** window appears.

4. Click the **Add Products and Characteristics** button. The **Characteristics** dialog box appears.

5. Select one or more characteristics from the **Unloaded** list and click the **Move Selected** button to load the selected characteristics.

6. Close the **Characteristics** dialog to return to the **Specification Management** window.

INFORMATION: *The variables are color-coded. Central specifications have a* <mark>*green*</mark> *background. Unit-level specifications have a* *grey* *background. Corporate specifications have an* *orange* *background. If a specification value has been overridden, it will be* *yellow*.

7. Type in appropriate specification values. Changes to specifications are highlighted with a blue foreground color.

8. When finished, close the **Specification Management** window. The **Confirmation** dialog box appears.

9. Click **Yes** to approve the transaction. The **Approve Transaction** dialog box appears.

NOTE: *Click* *No* *if you want to approve the transaction at a later time. To approve a pending transaction, expand* *Product Management*, *Specification Transactions* *and then* *Pending*.

10. **optional:** In the **Transaction** box, type a descriptive name for this transaction.

11. **optional:** In the **Effective Date** box, enter a date and time the transaction will take effect.

NOTE: Specifications cannot be made effective for times in the past. Setting a past Effective Date will make the change effective at the time it is approved.

12. **optional:** Select a group from the **Approved Group** list.

13. Click **OK**.

Bill of Materials Administration

Bills of Materials allow you to track consumption of batch orders against total orders, and you can create and track lists of items and the quantities of each item needed to produce a product.

Bill of Materials functionality in Plant Applications is closely aligned with the structure found in most ERP systems. To facilitate communications between the Proficy Server and external data sources such as ERP systems, subscriptions and triggers can be configured, as well as cross references between external systems IDs and Plant Applications items. For more information, see Data Source Types and Subscription Information.

Bills of materials are supported per product as well as per process order. You can create one or more formulations (for example, batch recipes) for a given product.

When a reservation against a specific process order is required, using the Bill of Materials Editor you can create and/or edit a derived formulation as a copy of the appropriate product-based master formulation. The quantities for each item (ingredient) in the derived formulation can then be modified as needed, specific lots can be assigned, and additional formulation items can be specified as required. Both master formulations and derived formulations can be associated with production plans (process orders).

Formulations are based on standard quantities, with which all formulation items (ingredients) are defined. Defining products with standard quantities allows for easy conversion to larger or smaller production quantities. Since quantities must be entered for each bill of materials, engineering units must be defined prior to creating bills of materials. For more information, see Engineering Units.

Prerequisites for Creating a Bill of Materials

Several areas in Plant Applications must be addressed prior to entering the first bill of materials:

Plant Model

> Configure the Plant Model to represent your manufacturing equipment. See The Plant Model.

Products

> In Product Management, create products for both finished products and the formulation items that are used in making them. "FreshFace Toothpaste," for example, is a product, but baking soda (one of the many formulation items that go into the toothpaste) is also handled as a product.

> After they are configured, associate the products to appropriate units in the plant model. See Mapping Products To Units.

Production Events and Genealogy

> In order to generate consumption against formulation items that are associated with product or process orders, genealogy must occur between production events and raw material events. See Configuring Placeholder Production Events On A Unit and Creating and Configuring The Genealogy View Display.

> *When creating a BOM, you determine how consumption is tracked by setting the Use Event Component check box in the Bill of Materials Editor (Formulation Items tab).*

Execution paths

> Configure production execution paths in the plant model. See Defining Execution Paths.

External Data Sources & Cross References, Subscriptions & Triggers

If required—for example, if you want to retrieve process orders from an ERP system—configure external data sources, cross references, subscriptions and triggers as required for Plant Applications to interact with an external applications. See Data Source Types and Subscription Information.

Engineering Units

Engineering Units must be created before working with bills of materials. See Engineering Units.

Working with Bills of Materials

Working with a Bill of Materials in Plant Applications involves:

- Configuring the Bill of Materials in the Plant Applications Administrator

- Configuring a Schedule View display in the Plant Applications Administrator

- Generating a process order in the Schedule View display

- Associating a process order with a Bill of Materials, in either the Administrator or the Schedule View display

- Using the Materials tab in the Schedule View display Details view

Prerequisites for Creating a Bill of Materials

Display Configuration

Create and Configure the Schedule View Display

Define a Master Bill of Materials Formulation

A. Create a family, master, and formulation in the tree view pane

1. In the Plant Applications Administrator Server Manager tree, expand **Product Management**.

2. Double-click **Administer Bill of Materials** to open the Bill of Materials Editor.

3. In the tree view pane on the left side of the Bill of Materials Editor, right-click an empty area (or right-click on an existing family) and then choose **Add New BOM Family**. A new entry with a flashing cursor appears in the tree view pane.

4. Enter a description for the new BOM family and then press **ENTER**.

5. Right click the new family and then choose Add New Master Bill of Material. A new entry with a flashing cursor appears below the family.

6. Enter a description for the new master BOM and then press ENTER.

7. Right click the new master and then choose Add New BOM Formulation. A new entry with a flashing cursor appears below the master.

8. Enter a description for the new formulation, and then press ENTER. In the main section of the editor, the Formulation Editor tab opens, with the description displayed in the top section.

B. Enter details for the master formulation in the Formulation Editor tab

1. Change the Effective and Expiration dates as required.

2. Enter a Quantity that the master formulation will produce, and the Engineering Units in which this quantity is measured.

3. In the Associated Products tab in the lower section of the editor, click Add to choose one or more products to associate with this formulation (for details on using the Product Search dialog box, click here). After completing this step, the Formulation Items tab becomes available. To remove an associated product, select it in the list and then click Remove.

4. Enter Extended Attributes, Cross References, and Comments as required.

The Associated Production Plan tab is used for associating production plans (process orders) to either derived or master formulations.

5. Click Save to save the master formulation before proceeding. You can now click the Formulation Items tab to add items for this formulation.

C. Add formulation items in the Formulation Items tab

1. In the top section of the tab, click Add to add a new line item.

Select an item and use the Up and Down buttons to move it within the list.

2. In the Item Detail tab (in the bottom section of the Formulation Items tab), click the ellipsis ··· button next to Product to search for the product you wish to add to the formulation (for details on using the Product Search dialog box, click here). The product you select appears as an item in the list in the top section.

3. Enter a Quantity of this item to be used in this formulation (this is a target amount, used in conjunction with Lower Tolerance and Upper Tolerance).

4. Choose the Engineering Units used for the quantity specified.

5. Enter a Scrap Factor for this formulation item and quantity.

6. In Quantity Precision, enter the number of decimal places to which quantities of this item will be displayed and tracked.

This precision also becomes the default for Lower and Upper Tolerances.

After this step, you can click Save to save this formulation item, as long as the entries are also present in Upper Tolerance Precision and Lower Tolerance Precision.

7. Enter the Event Number for the event associated with consumption of this item.

8. Select or clear Use Event Component depending upon how consumption of this formulation item is calculated during execution of the schedule.

9. Enter the Upper Tolerance and Lower Tolerance for the quantity of this item to used in the formulation.

10. In Upper Tolerance Precision and Lower Tolerance Precision, enter the number of decimal places to which tolerances will be displayed. After this step, you can click Save to save this formulation item.

11. Enter the Storage Unit and/or Storage Location of this item, if required.

12. Enter a Comment for this formulation item, if required.

13. Click Save to save the current item configuration.

Create a Derived Bill of Materials Formulation from a Master

You can select a production plan for either a master or derived formulation. You can either select a production plant through the BOM Editor or you can select a BOM formulation by editing the process order in the Schedule View display.

1. In the Plant Applications Administrator Server Manager tree, expand Product Management.

2. Double-click Administer Bill of Materials to open the Bill of Materials Editor.

3. Select the master formulation in the tree view pane (if necessary, use the Master Bill of Materials Filter to locate the formulation). When selected, identifying details appear in the top section (Master BOM Formulation) of the BOM Formulation tab in the editor.

4. At the bottom of the Bill of Materials Editor, in the Derived BOM Formulations section, click Add.

5. In the dialog box that appears, enter a description for the new derived bill of materials, and then click OK. The Formulation Editor tab opens with the description of the derived formulation displayed at the top of the tab.

In terms of item details, the derived formulation is an exact copy of the master with the exception of its unique identifier.

6. If required, enter and edit details for the derived formulation following the guidelines in B and C of Define a Master Bill of Materials above.

Associate a Derived Bill of Materials with a Process Order

1. In the Plant Applications Administrator Server Manager tree, expand Product Management.

2. Double-click Administer Bill of Materials to open the Bill of Materials Editor.

3. Select the master formulation in the tree view pane (if necessary, use the Master Bill of Materials Filter to locate the formulation). When selected, identifying details appear in the top section (Master BOM Formulation) of the BOM Formulation tab in the editor.

4. Create a new derived formulation from the master, or locate an existing one associated with the master. To locate an existing derived formulation, enter identifying parameters (or choose them from the drop-down lists) at the top of the Derived BOM Formulations section of the Bill of Materials Editor, and then click Search. Leave all fields blank to return all derived BOMs currently associated with the selected master.

For searches, the Description field functions only with exact entries, including capitalization.

5. In the Derived BOM Formulations list, select a cell in the row of the formulation you wish to associate with a process order. Click Edit to open the derived formulation in the Formulation Editor tab.

6. In the bottom section of the Formulation Editor tab, click the Associated Production Plans tab.

7. Click Add. In the Search dialog box that appears, enter in Path Pattern the code for the production path with which the production plan is associated, or leave the default asterisk (*) to return all existing production paths, and then click Search. Paths matching the search parameter appear in the pane below.

Use asterisks as wildcards and question marks as placeholders.

8. Select a path and then in Order Pattern, enter a process order identifier and then click Search. Orders matching the search parameters appear in the pane below.

Use asterisks as wildcards and question marks as placeholders.

9. Select the order (that is, the path and the order combined) you wish to associate with the formulation and then click OK. The Search dialog box close.

10. Click Save.

Bill of Materials Editor

The Bill of Materials Editor allows the creation and maintenance of BOM families, masters, and formulations.

Product Management

To open the Bill of Materials Editor, in the Server Manager window of the Plant Applications Administrator expand the Product Management node, and then double click on the Administer Bill of Materials node (alternatively, right click the node and choose Administer Bill of Materials).

Before you can open the editor, you must have at least one engineering unit configured. For more information, see Engineering Units.

The Bill of Materials Editor consists of:

- a tree view pane on the left side, in which formulations are created and stored

- a series of tabs and controls in the main part of the window, in which formulations are developed and maintained

Bill of Materials Editor Elements

- Tree View Pane

- BOM Formulation Tab

- Formulation Editor Tab

- Formulation Items Tab

Bill of Materials Editor: Tree View Pane

The tree on the left side of the Bill of Materials Editor is where you create and organize Bills of Materials in a three-level hierarchy consisting of families, masters, and formulations.

Click on a formulation to see, enter, or edit its parameters in the main window of the editor. Master formulations from which derived formulations have been created are displayed in bold text in the tree.

The Filter button opens the Master Bill of Materials Filter dialog box, enabling you to perform advanced searches for existing BOM formulations within the tree. For more information, see Master Bill of Materials Filter dialog box.

Right-click menu commands differ slightly at each level of the tree.

Commands: Family

The following commands are available when you right-click an object at the family level in the tree:

- **Add New BOM Family:** When you choose this command, a text entry box appears into which you can enter the name of the BOM family. This choice is also available when you right-click in a blank area of the tree window.

- **Comment Family:** Use this command to enter a comment on the selected family.

- **Rename/Delete Family:** These commands allow you to rename or delete the selected family.

- **Family Security**: This command lets you assign security group access to the selected family.
- **Add New Master Bill of Material:** When you choose this command, a text entry box appears into which you can enter the name of the Master BOM.
- **Export BOM Family/Import Configuration:** This command lets you export configurations, or import them from Excel files.

Commands: Master

The following commands are available when you right-click an object at the master level in the tree:

- **Add New BOM Formulation:** When you choose this command, a text entry box appears into which you can enter the name of a new BOM formulation.
- **Comment:** Use this command to enter a comment on the selected BOM.
- **Rename/Delete BOM:** Use these commands to rename or delete the selected BOM.
- **BOM Security:** This command lets you assign security group access to items.
- **Export BOM/Import Configuration:** This command lets you export configurations, or import them from Excel files.

Commands: Formulation

The following commands are available when you right-click an object at the formulation level in the tree:

- **Delete Formulation:** Use this command to delete formulations.

Master Bill of Materials Filter Dialog Box

Access this dialog box by clicking the **Filter** button above the tree view pane in the [Bill of Materials Editor].

Depending on the size and complexity of your operations, you may have a very large number of Bill of Materials families, masters, and formulations displayed in the tree view pane. The Bill of Materials Filter dialog box allows you to perform advanced searches for existing formulations, with the result being the families containing the formulations displayed in the tree view pane.

Search parameters are organized by tab, with the results of each tab's search further delimiting your results. It is recommended that you proceed through the tabs in sequence to logically narrow your search. That is, search for products, then search for the process orders and/or foreign keys associated with those products, then search for BOM's associated with those process orders, and so on. While you can advance through the tabs by clicking Next at the bottom right of the dialog box in order to use the parameters in only one of the tabs (for example, if you already know the name or part of the name of a BOM family, master, or formulation), bear in mind that you cannot then make an adjustment in a *previous* tab without losing the parameters that you have already entered or selected.

Products Tab

- **Description:** Designates the string you enter in the text box below as being part of a product description.
- **Code:** Designates the string you enter in the text box below as being part of a product code.
- **Starts With/Contains/Ends With:** Further refines the search to match the string you enter in the text box below.
- **Path:** Choose from the drop-down list the code for the execution path with which the product that you are searching for is associated.

- **Prod Unit:** Opens the Search Production Unit dialog box, allowing you to locate the production unit to which the product you are searching for is assigned.

- **Family:** Choose from the drop-down list the product family with which the product that you are searching for is associated.

- **Prod Group:** Choose from the drop-down list a product group with which the product is associated.

- **Search Button:** Click Search to return products, matching your search criteria, in Available Products.

- **Clear Button:** Return all selections to default entries.

- **Available Products:** All products associated with existing Bills of Materials, and matching your search criteria to this point, appear here after you click Search. Use the arrow buttons to move products into Selected Products for further search refinement in subsequent tabs.

- **Selected Products:** Products moved from Available Products for further search refinement in subsequent tabs.

- **Restart/Next Buttons:** Click Restart to clear Available Product and Selected Products; click Next to advance to the next tab to further search for formulations associated with products displayed in Selected Products.

Process Order Tab

- **PO Number:** Designates the string you enter in the text box below as being part of a process order number.

- **Starts With/Contains/Ends With:** Further refines the search to match the string you enter in the text box below.

- **Path:** Choose from the drop-down list the code for the execution path with which the PO that you are searching for is associated.

- **PO Status:** Choose from the drop-down list the Status of the PO that you are searching for.

- **From/To:** Date range containing the process order.

- **Search Button:** Click to return process orders, matching your search criteria, in Available P.O.'s.

- **Clear Button:** Click to return all selections to default entries.

- **Available P.O.s:** All process orders associated with existing Bills of Materials, and matching your search criteria to this point, appear here after you click Search. Use the arrow buttons to move products into Selected P.O.'s for further search refinement in subsequent tabs.

- **Selected P.O.s:** Process orders moved from Available P.O.'s for further search refinement in subsequent tabs.

- **Back/Next Buttons:** Click Back to return to the previous tab; click Next to advance to the next tab to further refine the search for formulations associated with POs displayed in Selected Products.

Foreign Keys Tab

- **Foreign Key/Process Order:** Designates the string you enter in the text box below as being either part of a process order number, or part of a system ID cross referenced from an external data source. For more information on data sources, see Data Source Types.

- **Starts With/Contains/Ends With:** Further refines the search to match the string you enter in the text box below.

- **Available Keys:** All foreign keys associated with existing Bills of Materials, and matching your search criteria to this point, appear here after you click Search. Use the arrow buttons to move products into Selected P.O.'s for further search refinement in subsequent tabs.

- **Selected Keys:** Foreign keys moved from Available P.O.'s for further search refinement in subsequent tabs.

- **Search Button:** Click to return foreign keys, matching your search criteria, in Available Keys.

- **Clear Button:** Click to return all selections to default entries.

- **Back/Next Buttons:** Click Back to return to the previous tab; click Next to advance to the next tab to further refine the search for formulations associated with keys displayed in Selected Keys.

Bill of Material Tab

- **Family:** Designates the string you enter in the text box below as being part of a BOM Family.

- **Master BOM:** Designates the string you enter in the text box below as being part of a Master BOM.

- **Formulation:** Designates the string you enter in the text box below as being part of a Formulation.

- **Starts With/Contains/Ends With:** Further refines the search to match the string you enter in the text box below.

- **Family:** Choose from the drop-down list the name of the BOM Family containing the formulation for which you are searching. Available only when the Master BOM or Formulation radio buttons are selected.

- **Master BOM:** Choose from the drop-down list the name of the Master BOM containing the formulation for which you are searching. Available only when the Formulation radio button is selected.

- **From/To:** Date range containing the BOM Family or Master BOM for which you are searching.

- **Search Button:** Click to return Bill of Materials formulations, matching your search criteria, in Available Formulations.

- **Clear Button**: Click to return all selections to default entries.

- **Available Formulations:** All formulations associated with existing Bills of Materials, and matching your search criteria to this point, appear here after you click Search. Use the arrow buttons to move products into Selected Formulations.

- **Selected Formulations:** Formulations moved from Available Formulations.

- **Back Button:** Click Back to return to the previous tab.

- **Finish Button:** Click this button to execute the search using parameters configured in all tabs of the Master Bill of Materials Filter dialog box. The dialog box closes, and all families containing formulations matching your search criteria appear in the tree view pane of the Bill of Materials Editor.

Bill of Materials Editor: BOM Formulation Tab

Master BOM Formulation

This area shows high-level details of the master formulation selected in the tree on the left.

- **Edit button:** Opens the Formulation Editor tab, allowing you to edit the selected master formulation.

Product Management

Derived BOM Formulations

This bottom section of this area shows high-level details of derived formulations based on the master selected in the tree. The upper section lets you enter criteria and execute a search in order to limit the number of derived formulations displayed. Click Search with no parameters entered or chosen in order to view all formulations derived from this master. Create new derived formulations by clicking Add.

- **Path Code:** This search parameter allows you to choose an execution path configured on a production unit.

- **Process Order:** This search parameter allows you to enter a process order number.

- **PO Status:** This search parameter allows you to choose a process order number.

- **Start Time:** This search parameter allows you to enter a process order start time.

- **End Time:** This search parameter allows you to enter a process order end time.

- **Description:** This search parameter allows you to enter a description.

- **Search button:** Click to return derived formulations, matching your search criteria, in the window below.

- **Add button:** Click this to create a new derived formulation based on the selected master. A dialog box appears, asking you to enter a description for the derived formulation. After you enter the description and click OK, the Formulation Editor tab opens with the description displayed.

- **Edit button:** Click this to open the Formulation Editor tab and edit the selected derived formulation.

Bill of Materials Editor: Formulation Editor Tab

Access this tab by clicking the Edit button for either the selected master or derived formulation in the [BOM Formulation tab](). The Formulation Editor tab contains basic information for the selected master or derived formulation, and it is where you associate products, execution paths, and extended (user-defined) attributes. You can also create cross references for the formulation to foreign (external) systems.

- **Description:** Description of the master formulation selected in the tree, or of the derived BOM based on this master.

- **Effective:** Effective date and time of the formulation.

- **Expiration:** Date and time at which the formulation will expire.

- **Quantity:** Quantity this formulation produces.

- **Eng Units:** Units of measure used in Quantity.

- **Comment:** Comments associated with this formulation or derived formulation.

Associated Products Tab

Use this tab to associate finished products with this formulation.

- **Add Button:** Opens the Product Search dialog box for searching for the product to associate with the formulation.

- **Remove Button:** Removes the selected product from the list.

- **Unit Button(s):** Opens the units associated the product "ProdCode(ProdDesc)" Search dialog box for searching for the unit or units to associate with the product.

Associated Production Plans Tab

Use this tab to associate production paths/process orders with this formulation.

- **Add Button:** Opens the Production Plan Search dialog box, where you search for and select path/process order combinations.

- **Remove Button:** Removes the selected production plan from the list.

Extended Attributes Tab

Use this tab to add user-defined attributes and values to this formulation.

Cross Reference Tab

Use this tab to view or add cross references between the current formulation and foreign (external) systems such as SAP. For more information on foreign systems and cross references, see Data Source Types.

- **Add button:** Adds a new row, allowing you to choose a foreign system and enter a cross reference ID for this formulation.

- **Remove button:** Removes the row containing the currently active cell.

Bill of Materials Editor: Formulation Items Tab

In this tab, you enter products—and details of products such as quantities—that make up the formulation. The upper section of the tab lists the products you have added, while the tabs in the lower section allow you to choose products and enter details for new formulation items.

- **Add:** Adds a new row.

- **Delete:** Deletes the row containing the active cell.

- **Up/Down:** Moves the row containing the active cell up or down.

Item Detail Tab

- **Product:** Click the ellipsis button to open the Product Search dialog box, where you search for the product you wish to add to the formulation.

- **Quantity:** Quantity of selected product used in this formulation.

- **Eng Units:** Engineering units used to measure Quantity.

- **Scrap Factor:** Percentage of this formulation item that is expected to be lost during production of the formulation. For example, if 100 units of Product XYZ is required with a scrap factor of 1%, then you should have a 101 units on hand when preparing to produce the product.

- **Quantity Precision:** The number of decimal places to which the Quantity will be displayed.

- **Event Number:** ID of the event with which this formulation item is associated.

- **Use Event Component:** In the Bill of Material tab in the Schedule View display, the total amount of formulation items that have been consumed against an order are tracked. This check box determines how consumption of this formulation item is calculated during execution of the schedule.
  - If Use Event Component is not selected, then the quantity shown for this formulation item is used as the amount consumed.
  - If the Use Event Component is selected, then all events that are linked to the production event (records in the Event Components table that link the production event to a raw material event) are searched, and the Dimension X field from the Event Component record, where the field Report_As_Consumption is set to 'r;1', is used as the amount of product consumed.

Product Management

- **Lower Tolerance:** The minimum quantity, measured in the selected engineering units, of the formulation item that must be used in the formulation.

- **Upper Tolerance:** The maximum quantity, measured in the selected engineering units, of the formulation item that can be used in the formulation.

- **Lower Precision:** The number of decimal places to which the Lower Tolerance will be displayed.

- **Upper Precision:** The number of decimal places to which the Upper Tolerance will be displayed.

- **Storage Unit:** Unit currently storing the selected product.

- **Storage Location:** Inventory unit storing the selected product.

- **Comment**: Comments relating to this formulation item.

- **Save:** Saves current entries in the Formulation Items tab.

- **Cancel:** Cancels current entries in the Formulation Items tab.

Extended Attributes Tab

Extended Attributes are additional information that you may want to store with a BOM formulation. They are the same as the User Defined Properties found in the Production Unit Properties Configuration dialog box.

Cross Reference Tab

Use this tab to view or add cross references between the current formulation and foreign (external) systems such as SAP. For more information on foreign systems and cross references, see Data Source Types.

- **Add button**: Adds a new row, allowing you to choose a foreign system and enter a cross reference ID for this formulation.

- **Remove button:** Removes the row containing the currently active cell.

How To Establish A Product Cross Reference?

A product cross reference may be needed to cross reference names for products when integrating with Plant Applications. A common usage of the product cross reference is to allow Product Change detection models translate a numeric product code read from a control system into the "real" product code which is likely alphanumeric.

1. Open **Product Management** and double-click **Administer Cross Reference**.

2. In the **Product Cross Reference** window, click the **Product Family** icon in the toolbar to load products.

3. Load one or more Product Families by selecting them in the **Unloaded** list and then clicking the **Move Selected** button .

4. Close the **Product Families** dialog box to return to the **Product Cross Reference** window.

5. Type in the value to cross reference in the **Default Master Unit** column. The value for the **Default Master Unit** will be used on a plant wide basis unless a different value is placed into the column for a particular Unit. Models applied to that Unit will use the cross reference value applied to the Unit as opposed to the Default.

Configuring Automatic Product Changes

A product cross reference may be needed to cross reference names for products when integrating with Plant Applications. A common usage of the product cross reference is to allow Product Change detection models to translate a numeric product code read from a control system into the product code used by Plant Applications, which is may be alpha-numeric. For example, assume that your plant makes **Product A**. In Plant Applications, the product code for Product A is **XZY**. You are integrating Plant Applications with another application and, in that application, the product code for Product A is **123**. You can create a cross reference, so that when Plant Applications reads product code **123**, it will automatically know that the product code is **XYZ** and that the product is Product A.

To Establish a Product Cross Reference

1. Click on **Product Management**

2. Right-click on **Administer Cross Reference** and select **Product Cross Reference** from the pop-up menu.

3. In the **Product Cross Reference** dialog box, click the **Product Family** button in the toolbar to add products.

4. In the **Product Families** dialog box, select one or more product families from the **Unloaded** list and click the **Move Selected** ___>___ button.

5. Close the **Product Families** dialog box.

6. In the **Product Cross Reference** dialog box, a column is added for each master unit in your plant model.

- If you want to use the same product code across all units, type the product code in the **Default Master Unit** column for each product. This is the product code coming in to Plant Applications from another application or system.

- If you want to create a different cross reference specific to a unit, type the product code in the column for the particular unit.

The value for the Default Master Unit will be used plant-wide unless a different value is placed into the column for a particular unit. Models applied to that unit will use the cross reference value applied to the unit rather than the value in the Default Master Unit column.

Administer Corporate Specifications

NOTE: Administer Corporate Specifications is not visible unless it has been enabled. See *Enabling Corporate Specifications.*

Plant Applications enables you to manage specifications across multiple sites from a corporate server, independent of individual plant operations. In other words, you can enter and manage specifications on one server (the corporate server) and create a transaction that automatically downloads the specifications to the site server.

At the site server, a pending transaction is created. This provides the site the opportunity to review the specifications before allowing the change. However, once the pending transaction is approved, the site cannot override the specifications. Any necessary changes must be made on the corporate server and another transaction must be created.

Requirements

To manage specifications at the corporate level:

- The option to manage corporate specifications **must** be enabled

- The variable's alias name **must** be identical on all servers

- The variable's data type **must** be identical on all servers

Product Management

- The product's product code **must** be identical on all servers

- The product **must** be attached to the production unit

- The corporate server and the individual site servers must be running the same version of Plant Applications and SQL Server

- You must have a license for the Product Management module

Enabling Corporate Specifications

If you have purchased the Product Management module, you can enable corporate specifications in the Plant Applications Administrator. Enabling corporate specifications must be done using SQL commands.

To enable corporate specifications

1. Start Microsoft SQL Server Management Studio, connect to the **corporate** server and select the Plant Applications database.

2. In the Management Studio window, run the following script. This will enable corporate specifications on the corporate server and create a new folder called **Administer Corporate Specifications** under **Product Managemen**t.

   ```
   update site_parameters set value=1 where parm_id=61
   ```

3. In the Management Studio window, run the following script for each server you need to link to. This script populates the Linkable_Remote_Servers table on the corporate server with the individual site server names.

   ```
   insert into
   linkable_remote_servers(linked_server_desc,linked_server_islinked,lin
   ked_server_desc_alias)values('server name',0,'server alias name')
   ```

4. On the **corporate** server, log in to Plant Applications Administrator.

5. Expand ![icon] **Product Management** and verify that ![icon] **Administer Corporate Specifications** is visible.

Configure Corporate Specifications

Specifications must first be created on the corporate server before the corporate specification transaction can be created.

To configure corporate specifications

1. On the **corporate** server, log in to the Plant Applications Administrator.

2. Create unit-level specifications.

3. Expand ![icon] **Product Management**.

4. Double-click ![icon] **Administer Corporate Specifications**. The **Corporate Specifications** dialog box appears.

5. Click the **New Transaction** tab.

6. At the bottom of the **Selected Variables** box, click **Add**. The **Search Variable** dialog box appears.

7. Select the variables and click **OK**. The variables are listed in the **Selected Variables** box.

*NOTE: Only variables with variable aliases appear in the **Search Variable** dialog box.*

8. At the bottom of the **Selected Products** box, click **Add**. The **Product Search** dialog box appears.

9. Select the product(s) and click **OK**. The products are listed in the **Selected Products** box.

10. Under **Servers**, click to select the servers to which you want to download the specifications.

11. Click **Build New**. The **Transaction Rename** dialog box appears.

12. Type a new name for the transaction and click **OK** or accept the default name and click **OK**. The **Transactions** tab becomes active.

13. Select the transaction and click **Send**. The transaction's icon is changed to .

14. Click the **View Results** tab to view information about the specification that was sent to the site server(s).

15. Close the **Corporate Specifications** dialog box.

Under the **Pending** folder in **Specifications Transactions**, there will be a pending transaction. Pending corporate specification transactions are identified with .