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PTC Product Focus

Assigning PTC Server Properties to Arbortext Data

Starting with Arbortext version 5.3 M040 the ability to push information from Windchill into an Arbortext document is implemented. It is important to note that much of the information covered in this document will not be fully implemented until Windchill version 9.1. We will cover all of the functionality and show within the Tips of the week section how to implement what is currently available with Arbortext 5.3 M040 and Windchill version 9.0.

In a document-type-specific burst configuration file, the dmsmetadata element is the last child of the createarg element. The dmsmetadata element contains the metadatarule and twowaymetadatarule elements. These elements enable you to use XML attributes or content as values for PTC Server property fields and to use PTC Server property fields as the values for XML attributes or content. You can use both PTC Server instance based attributes (IBA) and system attributes for metadata assignment rules.

Make sure that property assignment rules do not conflict with other PTC Server connection automatic metadata updates. For example, the PTC server might have a template for newly created objects that assigns object property values. Having multiple property update mechanisms might yield unexpected results.

Using PTC Server system attributes

You can use system attributes for metadata assignment rules. If you use PTC Server system attributes, you must use a name for the system attribute in your burst configuration file that the PTC Server connection recognizes. The following table covers the supported PTC server system attributes, the required name for the system attributes in the burst configuration file, and the level of access. System attributes that are read-only can only be used in a `twowaymetadatarule` burst configuration file rule where the mode is `toxml`.

System attribute name	Burst configuration file name	Access level
Created By	WC_CREATEDBY_ATTR	read-only
Created On	WC_CREATEDON_ATTR	read-only
Last Modified	WC_LASTUPDATEDON_ATTR	read-only
Lifecycle state	WC_LIFECYCLE_ATTR	read-only
Modified By	WC_LASTUPDATEDBY_ATTR	read-only
Name	WC_NAME_ATTR	read and write
Number	WC_NUMBER_ATTR	read-only
Version	WC_VERSION_ATTR	read-only

Note that the burst configuration file name is case insensitive. The data type for PTC Server system attributes must be `string`.

Using one-way metadata

The `metadatarule` element enables you to use XML attributes or content to serve as values for PTC Server property fields. When such mappings exist, the XML attribute values will be copied from the source XML document to the PTC Server object properties. Each mapping entry requires an XPath expression and the name of the PTC Server object property. Property assignment rules can be specified by element name, source type, or both.

The `metadatarule` element has the following attributes:

Attribute name	Description	Default value	Required?
Elementname	Name of the element to use for a property assignment rule.	None	No
Sourcetype	Document source type to use for a property assignment rule. Allowed types are <code>text</code> or <code>graphic</code> .	None	No
Metadata	PTC Server property field	None	Yes
Select-multiple	Not currently used.	None	No
Expr	XPath expression to locate the source of the property value in the XML document.	None	Yes

Property assignment rules function as follows:

- If the element name is not specified, the rule applies to all elements of the given type.

```
<dmsmetadata>
<metadatarule sourcetype="graphic"
  metadata="scale"
  expr="@scale"/>
</dmsmetadata>
```

In this case for all graphics the xpath expression @scale will obtain the scale attribute on the xml and write it into a Windchill attribute called scale.

- If the sourcetype is set to text, an elementname must be specified.

```
dmsmetadata>
<metadatarule sourcetype="text"
  elementname="topic"
  metadata="role"
  expr="@role"/>
</dmsmetadata>
```

This case specifies that for topic elements which contain a role attribute the system will obtain the role attribute and pass it on to a Windchill attribute called role.

- If the source type is not specified, a source type of text is assumed and an elementname must be specified.
- Graphic property assignment rules are evaluated using the graphic tag as the context node for the XPath expression.
- Graphic properties are only set during the initial import of a graphic. If you check out the parent object, modify the dependant graphic element, and check the parent back in, the properties on the graphic object are not updated.
- Only one rule is executed for each PTC Server object property on each new object. If an element rule and source type rule both apply and specify the same PTC Server object property, the element rule is used.

In the following example, the inline property will be set to yes for inlinegraphic elements and to no for all other graphic elements:

```
<dmsmetadata>
<metadatarule sourcetype="graphic"
  metadata="inline"
  expr="'no'"/>
<metadatarule sourcetype="graphic"
  elementname="inlinegraphic"
  metadata="inline "
```

```
    expr="'yes'"/>
</dmsmetadata>
```

- Rules specifying an `elementname` take precedence over rules that do not specify an `elementname`.
- If conflicting property assignment rules are specified, the last rule listed in the burst configuration file is used.

The content of the XML attribute is converted to the data type of the associated PTC Server property. Depending on the data type, the content of the XML attribute needs to be in a specific format to support the conversion. For all data types besides string, leading and trailing spaces are ignored. The following data types are supported:

- string

No conversion is necessary for the string data type. Leading and trailing spaces are retained.

- integer number

For the integer number data type, the XML content must be all decimal digits. An exception is that first character in the attribute can be an ASCII minus sign (-) or plus sign (+) to indicate a negative value.

- real number

For the real number data type, the XML content must be a real number.

- boolean

For the boolean number data type, if the content of the XML attribute is `true` or `false` (case insensitive), then that value is stored in the associated PTC Server property.

- date & time

For the date & time data type, the content of the XML attribute must be consistent with the format a particular locale uses to represent date and time values as a string. The locale is based on the default locale of the JRE used by Arbortext Editor.

The PTC Server connection supports the full XPath 1.0 specification for specifying property values. This allows combinations of element content, attribute values, and static text. XPath expressions are evaluated to strings. If multiple elements or attributes match, the first occurrence is returned. This is consistent with the XPath specification.

Following is an example of burst configuration file syntax that stores the value of the `authcode` attribute in the authorization object property:

```
<dmsmetadata>
<metadatarule elementname="chapter"
  metadata="authorization"
  expr="@authcode"/>
```

</dmsmetadata>

Using two-way metadata

The `twowaymetadatarule` element enables you to either use PTC Server property fields as the value for an XML element or attribute or to have the exchange of values work in both directions. In the latter case, the value of a PTC Server property field is used as the value for an XML element or attribute when a document is checked out, then the value of the XML element or attribute is used for the PTC Server property field when a document is created or checked into the repository.

The `twowaymetadatarule` element has the following attributes:

Attribute name	Description	Default value	Required?
<code>bndryelemname</code>	The bursting object boundary XML element	None	No
<code>metadataelemname</code>	Name of the XML element to use for a property assignment rule	None	Yes
<code>Attrname</code>	Name of the XML attribute to use for a property assignment rule	None	No
<code>Sourcetype</code>	Document source type to use for a property assignment rule (currently, only the <code>text</code> type is supported)	<code>text</code>	No
<code>Metadata</code>	PTC Server property field	None	Yes
<code>Mode</code>	The mode for the property assignment rule – supported modes are <code>twoway</code> (update the value on both document check out and check in) and <code>toxml</code> (update the value only on document check out)	<code>twoway</code>	No

Property assignment rules function as follows:

Both `metadataelemname` and `metadata` must be specified.

- Only one rule is executed for each PTC Server object property on each new object. If an element rule (`metadataelemname`) and source type rule (`sourcetype`) both apply and specify the same PTC Server object property, the element rule is used.
- If conflicting property assignment rules are specified, the last rule listed in the burst configuration file is used.
- If both a `metadatarule` and a `twowaymetadatarule` with the `mode` attribute set to `twoway` specify the same PTC Server object property, the `twowaymetadatarule` is used.
- The same PTC Server object property can be assigned to multiple XML elements and attributes. In this case, it is recommended that you develop a single `twowaymetadatarule` with the `mode` attribute set to `twoway` and then set the `metadata` for the other rules associated with this property. The other `mode` attributes

should be set to `toxml`. Multiple `twoway` mappings can cause rule conflicts that are resolved by selecting one rule.

```
<dmsmetadata>
<twowaymetadatarule bndryelemname="book"
  metadataelemname="copyright"
  metadata="copyrightYear"
  mode="twoway"/>
<twowaymetadatarule bndryelemname="chapter"
  metadataelemname="chapter"
  attrname="copyright"
  metadata="copyrightYear"
  mode="toxml"/>
</dmsmetadata>
```

- If an error occurs during the evaluation of a rule where the mode attribute is set to `toxml`, the associated check out is not canceled. However, the user receives an error message.
- If a target element has both text and child elements, all of the text in the element is replaced with the value from the specified PTC Server property. The new text precedes the child elements.

For example, suppose you have the following two-way metadata rule that extracts the content of the metadata XML element and assigns it to a PTC Server property named `topic_metadata`:

```
<twowaymetadatarule bndryelemname="topic"
  metadataelemname="metadata"
  metadata="topic_metadata"
mode="twoway"/>
```

You import the following document:

```
<topic>
<metadata>
some values
<othermeta>Other values</othermeta>
some more values
</metadata>
</topic>
```

The `topic_metadata` PTC Server property will be assigned the following value:

some values some more values

Note that the content of the child element is ignored. Suppose you change the value of the `topic_metadata` property to Updated values in the PTC Server. The next time the XML document is checked out, it will have the following content:

```
<topic>
```

```
<metadata>
Updated values
<othermeta>Other values</othermeta>
</metadata>
</topic>
```

The supported data types for passing attribute values from an XML attribute to a PTC Server property are the same as those supported for the `metadatarule` element.

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Tips of the Month

Dealing with Backshells in Cabling

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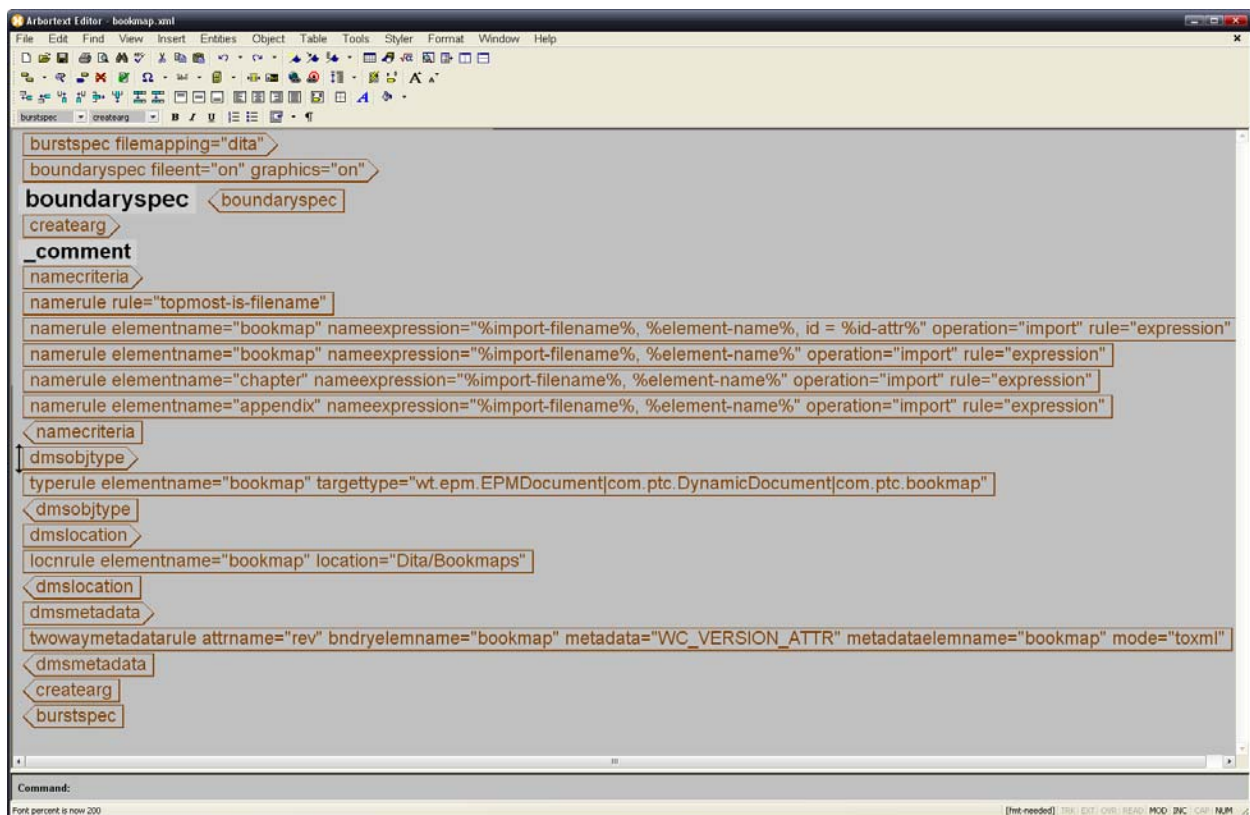
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Tips of the Month

Pushing Windchill Version Information into an Arbortext Document

Arbortext 5.3 M040 + Windchill Version 9.0 now allows you to push Windchill version information into an Arbortext XML document. This tip shows a simple way to enable this feature.

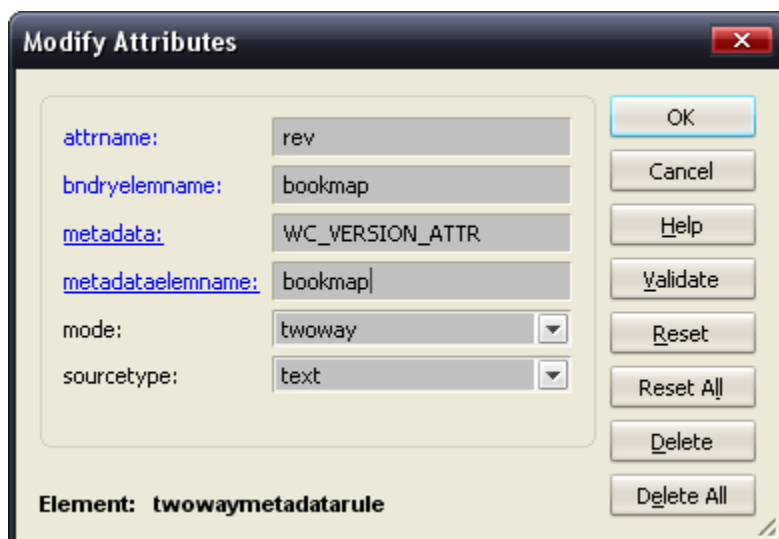
- Start Arbortext Editor
- Go to the Object Menu and select Connect
- Enter your Windchill Username and Password
- Pick your workspace (The library containing your Burst Specifications)
- Use the Object Browser window to navigate to the Doctypename Burst Specification file that will designate which XML attribute will house the Windchill Version attribute.
- Check Out the Doctypename Burst Specification File.
- Modify the Doctypename Burst Specification File:



The Modifications to the Doctype name Burst Specification File are as follows:

Pick an element which contains a metadata attribute suitable for storage of the Windchill version attribute. In this case, we have checked out the Dita Bookmap burst specification and have identified the “rev” attribute on the bookmap element as the attribute which will hold the Windchill version information.

Once the element/attribute combination within the burst specification file have been identified the next step is to add a twowaymetadatarule to the dmsmetadata section within the burst specification.



Add “rev” as the attrname

Add “bookmark” as bndryelemname

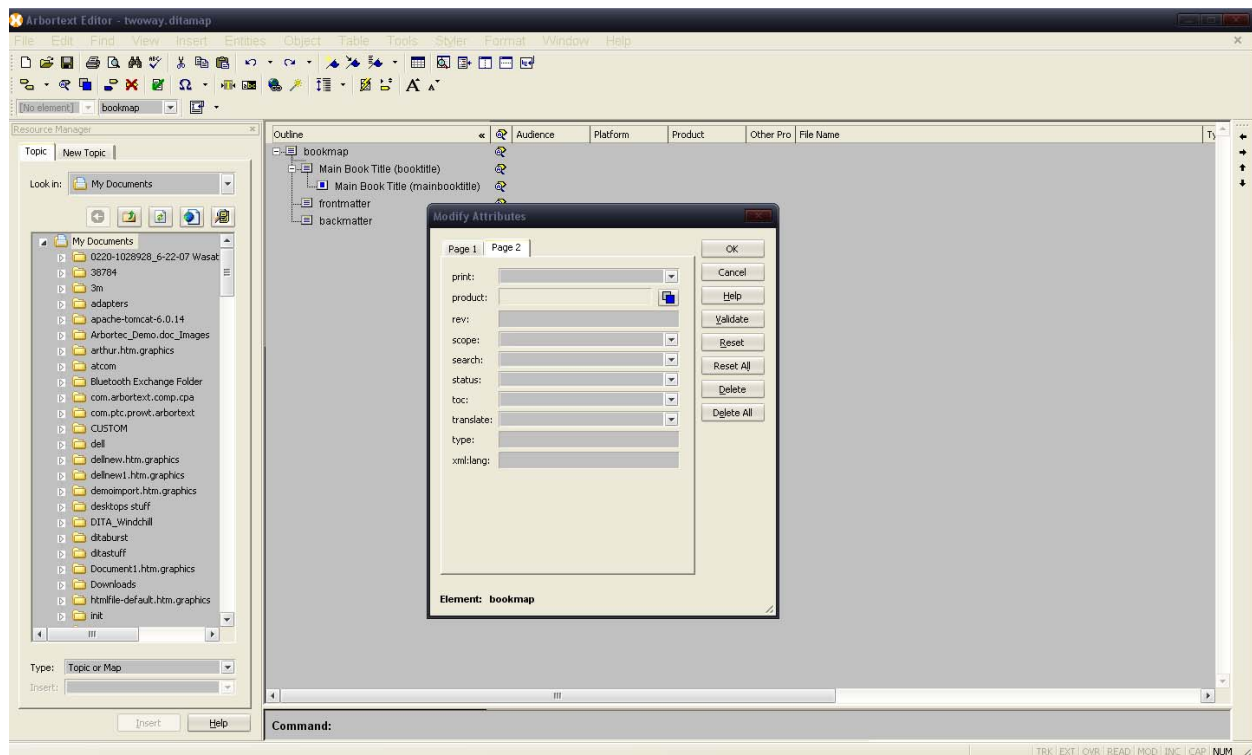
Add “WC_VERSION_ATTR” as metadata

Add “bookmark” as metadataelemname

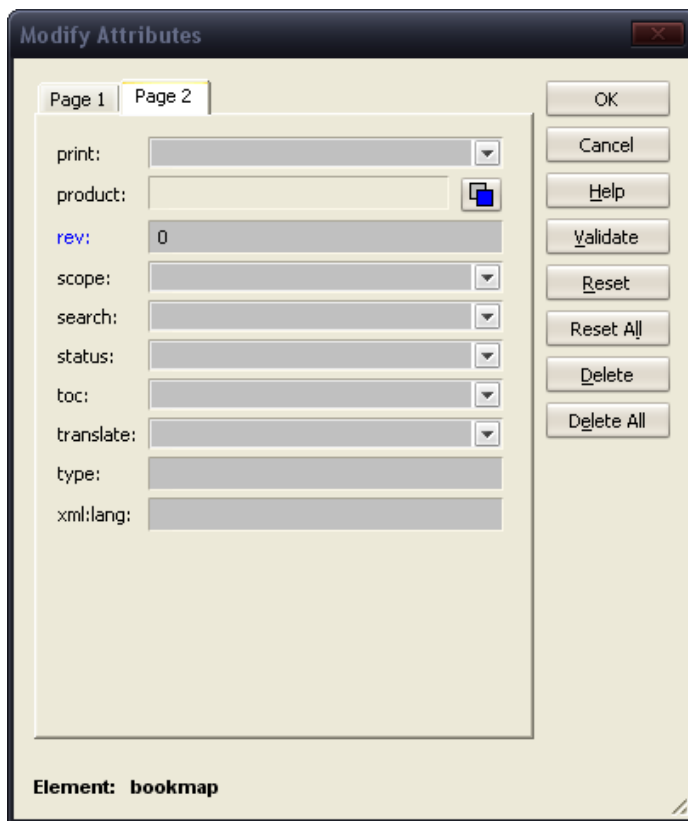
Leave sourcetype set to “text”

After making these attribute entries to the twowaymetadatarule, check the doctypename burst specification back into Windchill and open a new or existing bookmark file from Windchill or the File→New Menu.

Once you have opened your file, proceed by moving your cursor to the “bookmark” element and hit CTRL-D to open the modify attributes window.

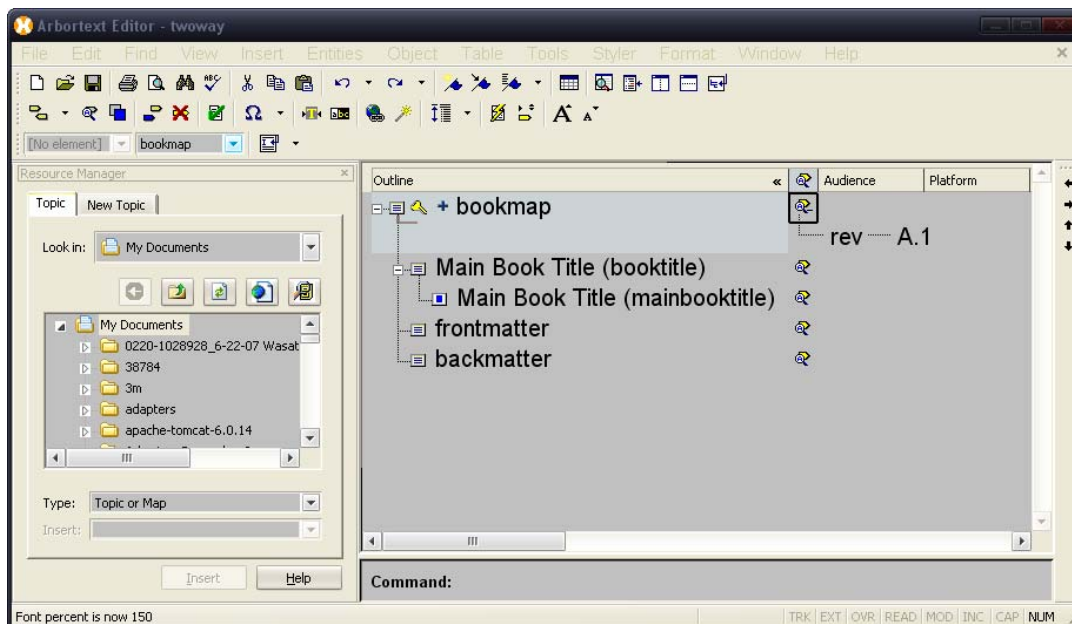


Modify the “rev” attribute and add a character to the “rev” attribute. It does not matter what character you add as long as you put something into the field. If the attribute field remains blank, the Windchill version attribute will not populate the “rev” attribute. The application is designed to populate the field only if the user places a character in the field.



Click “OK” and then File→Save as Server Object.

The next time you check out the file or publish the file, the “rev” attribute within the “bookmap” element will contain the current WIndchill maintained version attribute.



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provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

<http://profilesmagazine.com/>

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Upcoming Events & Training Class Schedules

Upcoming, 2008 Your local Pro/Engineer User Groups
<http://www.ptcuser.org/rugs/>

June 1 – 4, 2008 Long Beach, CA USA
PTC/USER World Event
<http://www.ptcuser.org/>

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Sessions are performed just like a traditional ILT (including interactive exercises where you and the instructor can work on lab exercises together) and feature some of our most popular ILT courses. These sessions cover the exact same material as the traditional ILT in-center courses. Also look for some of our most frequently requested mini-topics delivered in the same format that are only an hour - two hours in duration.

If you have any questions about these sessions or would like to see getting other courses, not on this list, on the schedule please feel free to contact me for more details. They are a great way to bring training to you without you having to worry about location or being out from work for long stretches.

You can register for these sessions just as you would for any normal ILT class either by:

1. calling order admin at <http://www.ptc.com/services/edserv/training/registra.htm> or
2. you can go to PTC University directly at <http://www.ptc.com/learning> and submit a registration request directly. All you have to do is search the catalog by typing in “virtual” in the search field and you will see a listing.

PTC

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- 1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)
- 2) Educate you on solutions that are available at PTC
- 3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

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