ERP Integration Guide

Version 8.0.

Contents

Chapter 1: Overview 1

Overview 2
About the ERP Integration Database 2
About the ERP Scheduler Service 2
About the ERP Import Service 2
About the ERP Transformation Service 3

Chapter 2: Information Flow 4

About Information Flow 5
Information Flow for New Records 5
Information Flow for In-Process Records 6

Chapter 3: Configure ERP Integration 8

Configure ERP Integration 9
Provide Mapping Details 9
ERP Integration Database Settings 11
Configuration Parameters in the ERP Scheduler Service 12
Configuration Parameters in the ERP Import Service 12

Chapter 4: Reference 14

ERP Integration Database Schema 15
Sample Files for a Work Order 16
Sample Files for a Process Order 56
Sample Files for Material 61
Response Codes 67

Chapter 5: Release Notes 68

Version 8.0 69

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Chapter 1

Overview

Topics:

- Overview
- About the ERP Integration Database
- About the ERP Scheduler Service
- About the ERP Import Service
- About the ERP Transformation Service

Overview

As a system administrator, you can configure integration between Plant Applications and Enterprise Resource Planning (ERP) systems to automatically import the following records from the ERP systems to the Plant Applications database:

- Work orders
- Process orders
- Materials

This integration is implemented by means of an integration database and integration services.

- The integration database: Stores information necessary for the integration, such as messages that contain work orders, process orders, and materials that are sent by ERP systems.
- The integration services: Include the ERP Scheduler service, ERP Transformation service, and ERP Import service, which convert the work orders, process orders, and materials into a JSON file (as needed), import them into Plant Applications, and maintain status information in the integration database.

About the ERP Integration Database

The ERP integration database supports the transfer of data from ERP systems.

Tip: Refer to the database schema for additional information.

The implementation can be a standalone database or a table in the Plant Applications SOADB database, depending on the Plant Applications system setup during initial installation.

About the ERP Scheduler Service

The ERP Scheduler service is a server daemon that executes the import process. The service polls the integration database on a regular interval for the following types of records:

- New records: For each new (that is, unprocessed) work order, process order, or material, the ERP Scheduler service calls the HTTP POST method of the ERP Import service to import the record.
- Records that are already in the process of being imported: For each work order, process order, or material whose import process has started, but not completed, the ERP Scheduler service calls the HTTP GET method of the ERP Import service (by sending the ID of the record as a URI parameter) to receive the status update.

After the ERP Scheduler service receives a response from the ERP Import service regarding the status of the import, the ERP Scheduler service updates the error code, error message, and time stamp of the respective message in the integration database.

About the ERP Import Service

The ERP Import service retrieves information about work orders, process orders, and materials from the integration database, and creates these records in the Plant Applications database.

The ERP Import service is a RESTful microservice that exposes an API consisting of the following methods: POST and GET.

To import files, the following steps are performed:

1. When the ERP Scheduler service sends a request for a new or in-process record, the ERP Import service performs one of the following steps:
   - For a new record, it retrieves the corresponding file from the integration database using the POST method to communicate with the other Plant Applications microservices. This method is asynchronous; as a result, the HTTP response codes and response messages are stored in a table for subsequent retrieval.

     Note: If the record is available in an XML or B2MML format, the ERP Import service sends the data to the ERP Transformation service, where it is converted to a JSON format.
   - For an in-process record, it retrieves the ID of the record from the integration database using the GET method.
2. The ERP Import service updates the status of the import. The ERP Scheduler service then updates the ERP Integration database with this information.

About the ERP Transformation Service

The ERP Transformation service converts an XML or a B2MML file to a JSON file. The supported version on the B2MML file is V0401.

To convert an XML or a B2MML file to a JSON file, the following steps are performed:

1. The XML or B2MML file is converted to a standard B2MML file (compatible with MESA standards) based on the mapping details in the XSL file. The supported version of the XSL file is V1.0.
2. The standard B2MML file is converted to a JSON file, which contains the work order, process order, or material details.
3. The JSON file is sent in the request body using the HTTP POST method of the ERP Import service.

Chapter 2

Information Flow

Topics:

- About Information Flow
- Information Flow for New Records
- Information Flow for In-Process Records

About Information Flow

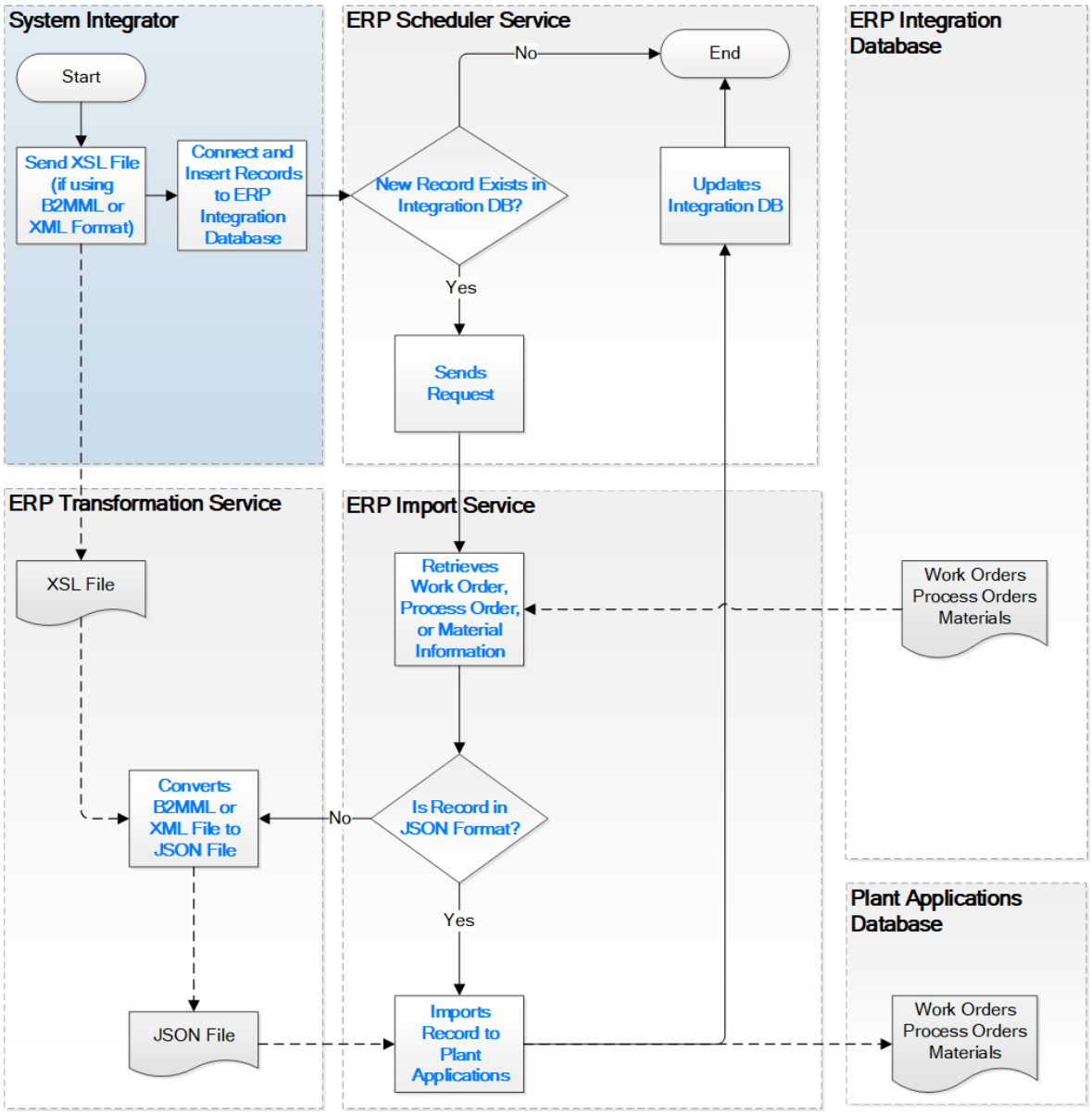
Information flows to and from the ERP Integration database in the form of messages, which contain JSON, B2MML, and XML files. JSON files contain the following types of messages:

- Work orders: Specified in a work order import document (WOID).
- Process orders: Specified in a process order import document (POID).
- Materials: Specified in a material master import document (MMID).

After you connect the ERP system to the ERP Integration database, the ERP systems add the messages to the ERP Integration database. The ERP Integration services then import the messages into the Plant Applications database and update the status of the messages in the ERP Integration database.

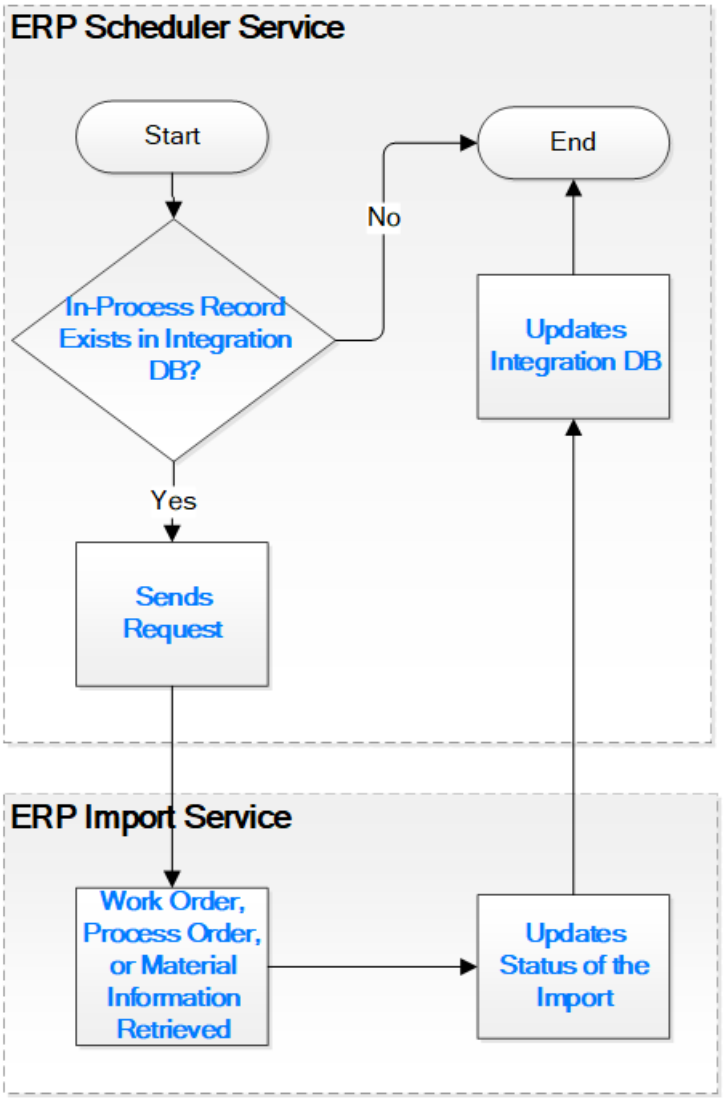
Information Flow for New Records

The following diagram provides the steps that you must perform as a system integrator and the steps performed by the integration services to import a new record.



Information Flow for In-Process Records

The following diagram provides the steps performed by the integration services for an in-process record.


ERP Scheduler Service
Start
End
No
In-Process Record Exists in Integration DB?
Updates Integration DB
Yes
Sends Request
ERP Import Service
Work Order, Process Order, or Material Information Retrieved
Updates Status of the Import

Chapter 3

Configure ERP Integration

Topics:

- Configure ERP Integration
- Provide Mapping Details
- ERP Integration Database Settings
- Configuration Parameters in the ERP Scheduler Service
- Configuration Parameters in the ERP Import Service

Configure ERP Integration

The following table provides the sequence of steps that you must perform to configure ERP integration. You must provide your UAA credentials to perform these steps.

Step Number	Description	Notes
1	Provide mapping details of a work order, process order, or material.	This step is required if the work order, process order, or material details are stored in a B2MML or XML file. It is used by the ERP Transformation service to convert the file to a JSON file.
2	Connect to the ERP Integration database by configuring the database settings, and insert records.	This step is required. After the integration, work orders, process orders, and materials are automatically imported to the ERP Integration database.
3	Configure the ERP Scheduler service parameters.	This step is optional. It is used to change the default value of the time interval at which the ERP Scheduler service polls the ERP Integration database.
4	Configure the ERP Import service parameters.	This step is optional. It is used to change the default values of parameters used in the service (such as names of property categories and groups).

Provide Mapping Details

About This Task

If you want to send work order, process order, or material details in a B2MML or an XML file, you must map the fields using an XSL document. When you install Plant Applications, a default XSL file is provided. The supported XSL version is 1.0.

Procedure

1. Create an XSL file.

   Tip: Create the XSL file based on the standard B2MML or XML file that you want to create. You can also refer to the sample files in the Reference section.
2. Access the [erp].[MappingSpecification] table of the Microsoft SQL database, and perform the following steps as applicable:
   - If you want to provide the mapping details for a work order, replace the following xml code with the xml code from the XSL file that you have created.

```
IF EXISTS (Select 1 from [erp].[MappingSpecification] where
Resource_Type = 'WorkOrder')
BEGIN
       UPDATE [erp].[MappingSpecification]
       SET Specification = '<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
```

```
   <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>'
       where  Resource_Type = 'WorkOrder'
END
ELSE
BEGIN
       INSERT  INTO [erp].[MappingSpecification] (Specification,
Resource_Type)
       VALUES
       ('<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
   <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>', 'WorkOrder')
END
```

- If you want to provide the mapping details for a process order, replace the following xml code with the xml code from the XSL file that you have created.

```
IF EXISTS (Select 1 from [erp].[MappingSpecification] where
Resource_Type = 'ProcessOrder')
BEGIN
       UPDATE [erp].[MappingSpecification]
       SET Specification = '<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
   <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>'
       where  Resource_Type = 'ProcessOrder'
END
ELSE
BEGIN
       INSERT  INTO [erp].[MappingSpecification] (Specification,
Resource_Type)
       VALUES
       ('<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
   <xsl:template match="@* | node()">
    <xsl:copy>
```

```
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>', 'ProcessOrder')
END
```

- If you want to provide the mapping details for a material, replace the following xml code with the xml code from the XSL file that you have created.

```
IF EXISTS (Select 1 from [erp].[MappingSpecification] where
Resource_Type = 'Material')
BEGIN
       UPDATE [erp].[MappingSpecification]
       SET Specification = '<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
   <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>'
       where  Resource_Type = 'Material'
END
ELSE
BEGIN
       INSERT  INTO [erp].[MappingSpecification] (Specification,
Resource_Type)
       VALUES
       ('<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/
1999/XSL/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:fn="http://www.w3.org/2005/xpath-functions">
    <xsl:output method="xml" version="1.0" encoding="UTF-8"
indent="yes"/>
   <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>
</xsl:stylesheet>', 'Material')
END
```

3. Run the script.

Results

When you send a B2MML or XML file, it is converted to a JSON file by the ERP Transformation service using the mapping you have specified, and then imported to Plant Applications.

ERP Integration Database Settings

You must connect the ERP system with the ERP Integration database for work order, process order, and material records to be imported automatically into the ERP Integration database. These records are stored in the erp_integration_inbound_messages table.

Refer to your ERP integration system implementation guide for details on connecting to the integration database. Provide the following details when you integrate the ERP system with the ERP Integration database:

- Database: Microsoft SQL Server 2016
- Default name: SOADB
- Schema name: erp
- Default schema: erp

Configuration Parameters in the ERP Scheduler Service

You can configure the following parameters in the ERP Scheduler service.

Parameter	Description
`erp.scheduler.service.importJobPoll.milliseconds`	The interval (in milliseconds) at which the ERP Schedule service polls the ERP Integration database for new inbound messages. The default value is 30000.
`erp.scheduler.service.importJobStatusPoll.milliseconds`	The interval (in milliseconds) at which the ERP Schedule service polls the ERP Integration database for in-process messages. The default value is 30000.

Configuration Parameters in the ERP Import Service

You can configure the following parameters in the ERP Import service.

Note: Before you configure the parameters related to custom property groups and categories, you must create them in Plant Applications. The maximum number of properties that you can create per property group is 2000. For more information, refer to Property Definition.

Parameter	Description
`Workorder_post_delete_delay`	The duration after which importing a work order of the same name will replace the existing work order. **Note:** This parameter is applicable only for importing work orders.
`Workorder_property_category_name`	The name of the category to which property groups belong. The default value is Route_Workorder_Category.
`Workorder_property_group_name`	The name of the group to which work order properties belong. The default value is Route_Workorder_Group.
`Material_property_category_name`	The name of the category to which material property groups belong. The default value is Route_Material_Category.
`Material_property_group_name`	The name of the group to which material properties belong. The default value is Route_Material_Group.

Parameter	Description
`maximumCacheSize`	The maximum number of entries that the cache can contain. The default value is 100.
`cacheExpireAfterWrite`	Specifies that each entry be removed from the cache after a fixed duration after one of the following events occur: • The entry has been created. • The latest value of the entry has been updated. The default value is 5 minutes.

Chapter 4

Reference

Topics:

- ERP Integration Database Schema
- Sample Files for a Work Order
- Sample Files for a Process Order
- Sample Files for Material
- Response Codes

ERP Integration Database Schema

ERP Integration Database Schema

The ERP Integration database stores messages that specify work orders, process orders, and materials. Messages are stored in the erp_integration_inbound_messages table until they are imported into the Plant Applications database. The following table describes the columns in the erp_integration_inbound_messages table.

Column	Description
Id	A system-generated identity value.
Message_Type	The identifier for the type of the record. This column contains one of the following values: • workOrder • processOrder • material
Media_Type	The MIME type of the message. This column contains one of the following values: • application/json • application/xml
Key_Data	The information added by the ERP Scheduler service when the record is processed (for example, work order number). The data can be used by system administrators for internal purposes, such as to query how many times the order number has been sent for import.
Inserted_Date	The date on which the ERP system added the record to the table.
Process_Start_Date	The date/time on which the ERP Scheduler service started processing the message.
Process_Complete_Date	The date/time on which the ERP Scheduler service completed processing the message.
Response_Code	The HTTP response code from the import process.
Response_Message	The message that contains information about whether the import has been successful.
Message	The record that contains the details of the work order, process order, or material in a JSON, B2MML, or XML format. If the message is in the JSON format, this column contains one of the following files: • work order import document (WOID) • process order import document (POID) • material master import document (MMID)
Inserted_By	The user who created the record.

Sample Files for a Work Order

Message that Contains a Work Order

Inbound messages are added to the integration database using Microsoft SQL.

Message that Contains a Work Order

```
INSERT INTO erp_integration_inbound_messages
(Message_Type, Media_Type, Message, Inserted_By)
                VALUES ('workOrder', 'application/json',
'{WOID}', '<user name>')
```

where {WOID} is a JSON document that specifies the work order.

Work Order Import Document

A JSON work order import document (WOID) contains all the details of a work order, including route and revision or segment definition. The WOID constitutes the body of the HTTP POST request of the ERP Import Service, which posts the work order to Plant Applications.

WOID with Route Definition

```
{
  "schemaVersion": 3,
  "workOrderName": "WO Route REG 001",
  "producedMaterialName": "prod1",
  "plannedLineName": "Test Line1",
  "plannedQuantity": 3,
  "priority": 0,
  "plannedStartDate": "2018-09-18T13:28:39.039Z",
  "plannedEndDate": "2018-12-19T13:00:00.000Z",
  "lotIdentifiers": [
    "SERNUM1",
    "SERNUM2",
    "SERNUM3"
  ],
  "routeDefinitionName": "Test Route123",
  "routeDefinitionRevision": 1
}
```

WOID without Route Definition

```
{
  "schemaVersion": 3,
  "workOrderName": "WO1Tue Jun 11 17:03:49 IST 2019",
  "producedMaterialName": "weeles4",
  "plannedLineName": "TestLine1",
  "plannedQuantity": 2,
  "priority": 0,
  "plannedStartDate": "2018-08-18T13:28:39.395Z",
```

```
  "plannedEndDate": "2018-08-19T13:00:00.395Z",
  "lotIdentifiers": [
    "lotA",
    "lotB"
  ],
  "operationsGroup": {
    "route": {
      "billOfMaterials": [],
      "documents": [],
      "propertyValues": [
        {
          "propertyName": "Integer-Property-Name",
          "propertyValue": "90"
        }
      ]
    },
    "operations": [
      {
        "sequenceNumber": 1,
        "name": "SIT Op1",
        "description": "Operation1 Description",
        "plannedUnitNames": [
          "Unit1_Line1"
        ],
        "billOfMaterials": [
          {
            "materialName": "Pr2",
            "unitOfMeasureName": "EA",
            "quantity": 2,
            "requiresConsumptionTracking": true,
            "displayOrder": 1,
            "propertyValues": [
              {
                "propertyName": "Integer-Property-Name",
                "propertyValue": "80"
              }
            ]
          },
          {
            "materialName": "Pr3",
            "unitOfMeasureName": "EA",
            "quantity": 1,
            "requiresConsumptionTracking": true,
            "displayOrder": 1,
            "propertyValues": []
          },
          {
            "materialName": "Pr1",
            "unitOfMeasureName": "EA",
            "quantity": 3,
            "requiresConsumptionTracking": true,
            "displayOrder": 1,
            "propertyValues": []
          }
        ],
        "documents": [
          {
            "displayName": "Document1",
            "link": "http://google.com"
          }
        ],
```

```
        "propertyValues": [
          {
            "propertyName": "Integer-Property-Name",
            "propertyValue": "901"
          }
        ]
      },
      {
        "sequenceNumber": 20,
        "name": "op20",
        "description": "Operation20",
        "plannedUnitNames": [
          "Unit1_Line1"
        ],
        "billOfMaterials": [
          {
            "materialName": "pr_2",
            "unitOfMeasureName": "EA",
            "quantity": 6,
            "requiresConsumptionTracking": true,
            "displayOrder": 1,
            "propertyValues": []
          },
          {
            "materialName": "pr_1",
            "unitOfMeasureName": "EA",
            "quantity": 7,
            "requiresConsumptionTracking": true,
            "displayOrder": 1,
            "propertyValues": []
          }
        ],
        "documents": [
          {
            "displayName": "Document1",
            "link": "http://google.com"
          }
        ],
        "propertyValues": []
      }
    ]
  }
}
```

B2MML File that Contains a Work Order

Instead of a JSON work order import document (WOID), you can send all the details of a work order, process order, or material in a B2MML file.

If you want to send a B2MML document, you must also provide an XSL file with the mapping details. The ERP Transformation service uses this XSL file to convert the B2MML document to a JSON file.

Note: When an XML file is processed, some of the special characters are omitted. To prevent this issue, use the escape strings as specified in the following table.

Special Character	Escape String
&	&
<	<
>	>
“	"
‘	'

B2MML File that Contains a Work Order

```
<?xml version="1.0" encoding="UTF-8"?>

-<ProductionSchedule xmlns="http://www.wbf.org/xml/B2MML-
V0401" xmlns:inp2="http://www.wbf.org/xml/B2MML-V0401">

<inp2:PublishedDate>2017-04-15T09:30:00</
inp2:PublishedDate>


-<inp2:ProductionRequest>

<inp2:ID>32847248</inp2:ID>

<inp2:Description>32847248</inp2:Description>

<!-- 1st ProductProductionRuleID is for
RouteDefinitionName and 2nd ProductProductionRuleId is
for Revision. Commented to avoid conflict between route
and operations -->


<!-- <inp2:ProductProductionRuleID>50488731</
inp2:ProductProductionRuleID><inp2:ProductProductionRuleI
D>1</inp2:ProductProductionRuleID> -->



-<inp2:Location>

<inp2:EquipmentID>OU_D86085_US</inp2:EquipmentID>

<inp2:EquipmentElementLevel>Site</
inp2:EquipmentElementLevel>

</inp2:Location>


-<inp2:SegmentRequirement>

<inp2:ID>000</inp2:ID>

<inp2:EarliestStartTime>2017-04-22T00:00:00</
inp2:EarliestStartTime>

<inp2:LatestEndTime>2014-04-22T00:00:00</
inp2:LatestEndTime>
```

```
-<inp2:ProductionParameter>

-<inp2:Parameter>
<inp2:ID>ProductCategory</inp2:ID>

-<inp2:Value>
<ValueString>CAPACITORSA</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</inp2:Value>
</inp2:Parameter>
</inp2:ProductionParameter>

-<inp2:ProductionParameter>

-<inp2:Parameter>
<inp2:ID>RouteTemplate</inp2:ID>

-<inp2:Value>
<ValueString>CapacitorRoute</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</inp2:Value>
</inp2:Parameter>
</inp2:ProductionParameter>

-<inp2:MaterialProducedRequirement>
<inp2:MaterialDefinitionID>GEEC3MA0025EMZI </
inp2:MaterialDefinitionID>
<inp2:MaterialLotID>SERNUM1</inp2:MaterialLotID>
<inp2:MaterialLotID>SERNUM2</inp2:MaterialLotID>
<inp2:MaterialLotID>SERNUM3</inp2:MaterialLotID>

-<inp2:Quantity>
```

```
<inp2:QuantityString>3</inp2:QuantityString>
<inp2:DataType>float</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Quantity>

-<inp2:MaterialProducedRequirementProperty>
<inp2:ID>WOStatus</inp2:ID>

-<inp2:Value>
<inp2:ValueString>Released</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialProducedRequirementProperty>

-<inp2:MaterialProducedRequirementProperty>
<inp2:ID>MaterialAvailabilityDate</inp2:ID>

-<inp2:Value>
<inp2:ValueString>2017-04-22T00:00:00</inp2:ValueString>
<inp2:DataType>DateTime</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialProducedRequirementProperty>

-<inp2:MaterialProducedRequirementProperty>
<inp2:ID>ParentOrder</inp2:ID>

-<inp2:Value>
<inp2:ValueString>SO2367523</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialProducedRequirementProperty>
```

```
</inp2:MaterialProducedRequirement>

</inp2:SegmentRequirement>


-<inp2:SegmentRequirement>

<inp2:ID>10</inp2:ID>

<inp2:Description>Wind Pack</inp2:Description>


-<inp2:Location>

<inp2:EquipmentID>WIND</inp2:EquipmentID>

<inp2:EquipmentElementLevel>WorkCenter</
inp2:EquipmentElementLevel>

</inp2:Location>

<inp2:EarliestStartTime>2017-04-15T12:00:00</
inp2:EarliestStartTime>

<inp2:LatestEndTime>2017-04-15T12:15:00</
inp2:LatestEndTime>


-<inp2:EquipmentRequirement>


-<inp2:Location>

<inp2:EquipmentID>FIX_LT_ADJ</inp2:EquipmentID>

<inp2:EquipmentElementLevel>WorkCell</
inp2:EquipmentElementLevel>

</inp2:Location>


-<inp2:Quantity>

<inp2:QuantityString>1</inp2:QuantityString>

</inp2:Quantity>

</inp2:EquipmentRequirement>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>Priority</inp2:ID>


-<inp2:Value>
```

```
<ValueString>10</ValueString>

<DataType>integer</DataType>

<UnitOfMeasure/>

</inp2:Value>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>LaborTime</inp2:ID>


-<inp2:Value>

<ValueString>210</ValueString>

<DataType>integer</DataType>

<UnitOfMeasure/>

</inp2:Value>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>WorkInstruction</inp2:ID>


-<inp2:Value>

<ValueString>http:/grid.ge.com/485765/abc.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</inp2:Value>

<inp2:Description>Document 1</inp2:Description>

</inp2:Parameter>

</inp2:ProductionParameter>
```

```
-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>WorkInstruction</inp2:ID>


-<inp2:Value>

<ValueString>http:/grid.ge.com/485765/abc2.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</inp2:Value>

<inp2:Description>Document 2</inp2:Description>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:MaterialConsumedRequirement>

<inp2:MaterialDefinitionID>308A2463BD067</
inp2:MaterialDefinitionID>


-<inp2:Quantity>

<inp2:QuantityString>1</inp2:QuantityString>

<inp2:DataType>float</inp2:DataType>

<inp2:UnitOfMeasure>EA</inp2:UnitOfMeasure>

</inp2:Quantity>


-<inp2:MaterialConsumedRequirementProperty>

<inp2:ID>GEDS_Drawing_Reference</inp2:ID>


-<inp2:Value>

<inp2:ValueString>1</inp2:ValueString>

<inp2:DataType>string</inp2:DataType>

<inp2:UnitOfMeasure/>

</inp2:Value>

</inp2:MaterialConsumedRequirementProperty>
```

```
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_BOM_Sequence</inp2:ID>
-<inp2:Value>
<inp2:ValueString>1</inp2:ValueString>
<inp2:DataType>integer</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_Position</inp2:ID>
-<inp2:Value>
<inp2:ValueString>POS A</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_IsRequired</inp2:ID>
-<inp2:Value>
<inp2:ValueString>true</inp2:ValueString>
<inp2:DataType>boolean</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_IsPickable</inp2:ID>
-<inp2:Value>
```

```
<inp2:ValueString>true</inp2:ValueString>
<inp2:DataType>boolean</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>

-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_BOM_Location</inp2:ID>

-<inp2:Value>
<inp2:ValueString>A123</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>

-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_JumperSetting</inp2:ID>

-<inp2:Value>
<inp2:ValueString>PL01</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
</inp2:MaterialConsumedRequirement>

-<inp2:MaterialConsumedRequirement>
<inp2:MaterialDefinitionID>308A309800048</
inp2:MaterialDefinitionID>

-<inp2:Quantity>
<inp2:QuantityString>1</inp2:QuantityString>
<inp2:DataType>float</inp2:DataType>
```

```
<inp2:UnitOfMeasure>EA</inp2:UnitOfMeasure>
</inp2:Quantity>

-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_Drawing_Reference</inp2:ID>

-<inp2:Value>
<inp2:ValueString>3</inp2:ValueString>
<inp2:DataType>string</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>

-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_BOM_Sequence</inp2:ID>

-<inp2:Value>
<inp2:ValueString>2</inp2:ValueString>
<inp2:DataType>integer</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>

-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_IsRequired</inp2:ID>

-<inp2:Value>
<inp2:ValueString>false</inp2:ValueString>
<inp2:DataType>boolean</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
</inp2:MaterialConsumedRequirement>
```

```
</inp2:SegmentRequirement>


-<inp2:SegmentRequirement>

<inp2:ID>20</inp2:ID>

<inp2:Description>Ultrasonic Weld</inp2:Description>


-<inp2:Location>

<inp2:EquipmentID>WIND_WELD</inp2:EquipmentID>

<inp2:EquipmentElementLevel>WorkCenter</
inp2:EquipmentElementLevel>

</inp2:Location>

<inp2:EarliestStartTime>2017-04-15T12:00:00</
inp2:EarliestStartTime>

<inp2:LatestEndTime>2017-04-15T12:15:00</
inp2:LatestEndTime>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>Priority</inp2:ID>


-<inp2:Value>

<ValueString>20</ValueString>

<DataType>integer</DataType>

<UnitOfMeasure/>

</inp2:Value>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>LaborTime</inp2:ID>


-<inp2:Value>

<ValueString>100</ValueString>
```

```
<DataType>integer</DataType>

<UnitOfMeasure/>

</inp2:Value>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>WorkInstruction</inp2:ID>


-<inp2:Value>

<ValueString>http:/grid.ge.com/485765/abc.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</inp2:Value>

<inp2:Description>Document 1</inp2:Description>

</inp2:Parameter>

</inp2:ProductionParameter>


-<inp2:ProductionParameter>


-<inp2:Parameter>

<inp2:ID>WorkInstruction</inp2:ID>


-<inp2:Value>

<ValueString>http:/grid.ge.com/485765/abc2.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</inp2:Value>

<inp2:Description>Document 2</inp2:Description>

</inp2:Parameter>

</inp2:ProductionParameter>
```

```
-<inp2:MaterialConsumedRequirement>
<inp2:MaterialDefinitionID>ACCR</
inp2:MaterialDefinitionID>
-<inp2:Quantity>
<inp2:QuantityString>33.78</inp2:QuantityString>
<inp2:DataType>float</inp2:DataType>
<inp2:UnitOfMeasure>LB</inp2:UnitOfMeasure>
</inp2:Quantity>
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_BOM_Sequence</inp2:ID>
-<inp2:Value>
<inp2:ValueString>1</inp2:ValueString>
<inp2:DataType>integer</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
-<inp2:MaterialConsumedRequirementProperty>
<inp2:ID>GEDS_IsRequired</inp2:ID>
-<inp2:Value>
<inp2:ValueString>false</inp2:ValueString>
<inp2:DataType>boolean</inp2:DataType>
<inp2:UnitOfMeasure/>
</inp2:Value>
</inp2:MaterialConsumedRequirementProperty>
</inp2:MaterialConsumedRequirement>
</inp2:SegmentRequirement>
</inp2:ProductionRequest>
```

```
</ProductionSchedule>
```

XSL File to Map a Work Order

This topic provides a sample XSL file that is used to map a work order.

XSL File to Map a Work Order

```
<?xml version="1.0" encoding="UTF-8"?>

-<xsl:stylesheet xmlns:erp="http://sample.data"
xmlns:inp2="http://www.wbf.org/xml/B2MML-V0401"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
version="1.0">

<xsl:output indent="yes" method="xml" omit-xml-
declaration="yes"/>

<xsl:strip-space elements="*"/>

<!-- For external lookup table -->


<!-- <xsl:variable name='unitOfMeasure'
select='document("lookup.xml")/uoms/unit'/> -->


<xsl:variable select="document("")/xsl:stylesheet/
erp:uoms/unit" name="unitOfMeasure"/>


-<xsl:template match="/inp2:ProductionSchedule">


-<ProductionSchedule>

<Description/>


-<Location>

<EquipmentID/>

<EquipmentElementLevel/>

</Location>


-<PublishedDate>

<xsl:value-of select="inp2:PublishedDate"/>

</PublishedDate>


-<ProductionRequest>
```

```
<xsl:variable select="inp2:ProductionRequest"
name="ProductionRequest"/>

<xsl:variable select="$ProductionRequest/inp2:ID"
name="ProductionRequestID"/>

<xsl:variable select="$ProductionRequest/
inp2:Description" name="ProductionRequestDescription"/>

<xsl:variable select="$ProductionRequest/inp2:Location"
name="ProductionRequestLocation"/>

<xsl:variable select="$ProductionRequest/
inp2:SegmentRequirement" name="SegmentRequirement"/>


-<ID>

<xsl:value-of select="$ProductionRequestID"/>

</ID>


-<Description>

<xsl:value-of select="$ProductionRequestDescription"/>

</Description>


-<xsl:for-each select="$ProductionRequest/
inp2:ProductProductionRuleID">


-<ProductProductionRuleID>

<xsl:value-of select="."/>

</ProductProductionRuleID>

</xsl:for-each>


-<Location>


-<EquipmentID>

<xsl:value-of select="$ProductionRequestLocation/
inp2:EquipmentID"/>

</EquipmentID>


-<EquipmentElementLevel>

<xsl:value-of select="$ProductionRequestLocation/
inp2:EquipmentElementLevel"/>

</EquipmentElementLevel>
```

```
</Location>

-<xsl:for-each select="$SegmentRequirement[inp2:ID =
'000']">

-<StartTime>

<xsl:value-of select="inp2:EarliestStartTime"/>

</StartTime>

-<EndTime>

<xsl:value-of select="inp2:LatestEndTime"/>

</EndTime>

</xsl:for-each>

-<Priority>

-<xsl:choose>

-<xsl:when test="not($ProductionRequest/inp2:Priority)">

<xsl:text>0</xsl:text>

</xsl:when>

-<xsl:otherwise>

<xsl:value-of select="$ProductionRequest/inp2:Priority"/>

</xsl:otherwise>

</xsl:choose>

</Priority>

-<xsl:for-each select="$SegmentRequirement">

-<SegmentRequirement>

-<ID>

-<xsl:choose>

-<xsl:when test="inp2:ID = 000">
```

```
<xsl:text>ROUTE</xsl:text>

</xsl:when>


-<xsl:otherwise>

<xsl:value-of select="inp2:ID"/>

</xsl:otherwise>

</xsl:choose>

</ID>

<ProductSegmentID/>

<ProcessSegmentID/>


-<Description>

<xsl:value-of select="inp2:Description"/>

</Description>


-<Location>


-<EquipmentID>

<xsl:value-of select="inp2:Location/inp2:EquipmentID"/>

</EquipmentID>


-<EquipmentElementLevel>

<xsl:value-of select="inp2:Location/
inp2:EquipmentElementLevel"/>

</EquipmentElementLevel>

</Location>


-<EarliestStartTime>

<xsl:value-of select="inp2:EarliestStartTime"/>

</EarliestStartTime>


-<LatestEndTime>

<xsl:value-of select="inp2:LatestEndTime"/>

</LatestEndTime>
```

```
-<xsl:for-each select="inp2:ProductionParameter">


-<ProductionParameter>

<xsl:variable select="inp2:Parameter" name="Parameter"/>

<xsl:variable select="$Parameter/inp2:Value"
name="ParameterValue"/>


-<Parameter>


-<ID>

<xsl:apply-templates select="$Parameter/inp2:ID"/>

<!-- <xsl:value-of select="$Parameter/inp2:ID" /> -->


</ID>


-<Value>


-<ValueString>

<xsl:value-of select="$ParameterValue/inp2:ValueString"/>

</ValueString>


-<DataType>


-<xsl:choose>


-<xsl:when test="not($ParameterValue/inp2:DataType)">

<xsl:text>string</xsl:text>

</xsl:when>


-<xsl:otherwise>

<xsl:value-of select="$ParameterValue/inp2:DataType"/>

</xsl:otherwise>

</xsl:choose>

</DataType>


-<UnitOfMeasure>

<xsl:value-of select="$ParameterValue/
```

```
inp2:UnitOfMeasure"/>

</UnitOfMeasure>

</Value>


-<Description>

<xsl:value-of select="$Parameter/inp2:Description"/>

</Description>

</Parameter>

</ProductionParameter>

</xsl:for-each>


-<xsl:for-each select="inp2:EquipmentRequirement">


-<EquipmentRequirement>


-<Location>


-<EquipmentID>

<xsl:value-of select="inp2:Location/inp2:EquipmentID"/>

</EquipmentID>


-<EquipmentElementLevel>

<xsl:value-of select="inp2:Location/
inp2:EquipmentElementLevel"/>

</EquipmentElementLevel>

</Location>

</EquipmentRequirement>

</xsl:for-each>


-<MaterialProducedRequirement>

<xsl:variable select="inp2:MaterialProducedRequirement"
name="MaterialProducedRequirement"/>

<xsl:variable select="$MaterialProducedRequirement/
inp2:Quantity" name="Quantity"/>

<xsl:variable select="$MaterialProducedRequirement/
inp2:MaterialProducedRequirementProperty"
name="MaterialProducedRequirementProperty"/>
```

```
<MaterialClassID/>


-<MaterialDefinitionID>

<xsl:value-of select="$MaterialProducedRequirement/
inp2:MaterialDefinitionID"/>

</MaterialDefinitionID>


-<xsl:for-each select="$MaterialProducedRequirement/
inp2:MaterialLotID">


-<MaterialLotID>

<xsl:value-of select="."/>

</MaterialLotID>

</xsl:for-each>

<MaterialSubLotID/>

<Description/>


-<Quantity>


-<QuantityString>

<xsl:value-of select="$Quantity/inp2:QuantityString"/>

</QuantityString>


-<DataType>


-<xsl:choose>


-<xsl:when test="not($Quantity/inp2:DataType)">

<xsl:text>string</xsl:text>

</xsl:when>


-<xsl:otherwise>

<xsl:value-of select="$Quantity/inp2:DataType"/>

</xsl:otherwise>

</xsl:choose>

</DataType>
```

```
-<UnitOfMeasure>
<xsl:value-of select="$Quantity/inp2:UnitOfMeasure"/>
</UnitOfMeasure>
</Quantity>

-<xsl:for-each
select="$MaterialProducedRequirementProperty">

-<MaterialProducedRequirementProperty>

-<ID>
<xsl:value-of select="inp2:ID"/>
</ID>
<Description> </Description>

-<xsl:for-each select="inp2:Value">

-<Value>

-<ValueString>
<xsl:value-of select="inp2:ValueString"/>
</ValueString>

-<DataType>
<xsl:value-of select="inp2:DataType"/>
</DataType>

-<UnitOfMeasure>
<xsl:value-of select="inp2:UnitOfMeasure"/>
</UnitOfMeasure>
</Value>
</xsl:for-each>
<!-- <Quantity></Quantity> -->

</MaterialProducedRequirementProperty>
```

```
</xsl:for-each>
</MaterialProducedRequirement>

-<xsl:for-each select="inp2:MaterialConsumedRequirement">

-<MaterialConsumedRequirement>
<MaterialClassID/>

-<MaterialDefinitionID>
<xsl:value-of select="inp2:MaterialDefinitionID"/>
</MaterialDefinitionID>

-<xsl:for-each select="inp2:MaterialLotID">

-<MaterialLotID>
<xsl:value-of select="."/>
</MaterialLotID>
</xsl:for-each>
<MaterialSubLotID/>
<Description/>

-<Quantity>

-<QuantityString>
<xsl:value-of select="inp2:Quantity/
inp2:QuantityString"/>
</QuantityString>

-<DataType>

-<xsl:choose>

-<xsl:when test="not(inp2:Quantity/inp2:DataType)">
<xsl:text>string</xsl:text>
</xsl:when>
```

```
-<xsl:otherwise>

<xsl:value-of select="inp2:Quantity/inp2:DataType"/>

</xsl:otherwise>

</xsl:choose>

</DataType>


-<UnitOfMeasure>

<xsl:value-of select="inp2:Quantity/inp2:UnitOfMeasure"/>

</UnitOfMeasure>

</Quantity>


-<xsl:for-each
select="inp2:MaterialConsumedRequirementProperty">

<xsl:variable select="inp2:Value" name="value"/>

<xsl:variable select="$value/inp2:UnitOfMeasure"
name="uomname"/>

<xsl:variable select="$unitOfMeasure[@name=$uomname]/
@abbr" name="mapped-uom"/>


-<MaterialConsumedRequirementProperty>


-<ID>

<!-- <xsl:value-of select="inp2:ID" /> -->


<xsl:apply-templates select="inp2:ID"/>

</ID>

<Description/>


-<Value>


-<ValueString>

<xsl:value-of select="$value/inp2:ValueString"/>

</ValueString>


-<DataType>


-<xsl:choose>
```

```
-<xsl:when test="not($value/inp2:DataType)">
<xsl:text>string</xsl:text>
</xsl:when>

-<xsl:otherwise>
<xsl:value-of select="$value/inp2:DataType"/>
</xsl:otherwise>
</xsl:choose>
</DataType>

-<UnitOfMeasure>
<xsl:value-of select="$mapped-uom"/>

-<xsl:if test="not($mapped-uom)">
<xsl:value-of select="$uomname"/>
</xsl:if>
</UnitOfMeasure>
</Value>
</MaterialConsumedRequirementProperty>
</xsl:for-each>
</MaterialConsumedRequirement>
</xsl:for-each>
</SegmentRequirement>
</xsl:for-each>
</ProductionRequest>
</ProductionSchedule>
</xsl:template>

-<erp:uoms>
<unit name="EACH" abbr="EA"/>
<unit name="CENTIMETERS" abbr="CM"/>
<unit name="KILOGRAMS" abbr="KG"/>
```

```
</erp:uoms>

<xsl:template match="inp2:ID/text()
[.='GEDS_IsRequired']">IS_REQUIRES_CONSUMPTION </
xsl:template>

<xsl:template match="inp2:ID/text()
[.='GEDS_BOM_Sequence']">BOM_SEQUENCE </xsl:template>

<xsl:template match="inp2:Parameter/inp2:ID/text()
[.='WorkInstruction']">DOCUMENTS </xsl:template>

</xsl:stylesheet>
```

Standard B2MML File for a Work Order

This topic provides an example of a standard B2MML file that contains the details of a work order.

Standard B2MML File for a Work Order

```
<?xml version="1.0"?>

-<ProductionSchedule xmlns:erp="http://sample.data"
xmlns:inp2="http://www.wbf.org/xml/B2MML-V0401">

<Description/>


-<Location>

<EquipmentID/>

<EquipmentElementLevel/>

</Location>

<PublishedDate>2017-04-15T09:30:00</PublishedDate>


-<ProductionRequest>

<ID>32847248</ID>

<Description>32847248</Description>


-<Location>

<EquipmentID>OU_D86085_US</EquipmentID>

<EquipmentElementLevel>Site</EquipmentElementLevel>

</Location>

<StartTime>2017-04-22T00:00:00</StartTime>

<EndTime>2014-04-22T00:00:00</EndTime>
```

```
<Priority>0</Priority>

-<SegmentRequirement>

<ID>ROUTE</ID>

<ProductSegmentID/>

<ProcessSegmentID/>

<Description/>

-<Location>

<EquipmentID/>

<EquipmentElementLevel/>

</Location>

<EarliestStartTime>2017-04-22T00:00:00</
EarliestStartTime>

<LatestEndTime>2014-04-22T00:00:00</LatestEndTime>

-<ProductionParameter>

-<Parameter>

<ID>ProductCategory</ID>

-<Value>

<ValueString>CAPACITORSA</ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

<Description/>

</Parameter>

</ProductionParameter>

-<ProductionParameter>

-<Parameter>

<ID>RouteTemplate</ID>
```

```
-<Value>
<ValueString>CapacitorRoute</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</Value>
<Description/>
</Parameter>
</ProductionParameter>

-<MaterialProducedRequirement>
<MaterialClassID/>
<MaterialDefinitionID>GEEC3MA0025EMZI </
MaterialDefinitionID>
<MaterialLotID>SERNUM1</MaterialLotID>
<MaterialLotID>SERNUM2</MaterialLotID>
<MaterialLotID>SERNUM3</MaterialLotID>
<MaterialSubLotID/>
<Description/>

-<Quantity>
<QuantityString>3</QuantityString>
<DataType>float</DataType>
<UnitOfMeasure/>
</Quantity>

-<MaterialProducedRequirementProperty>
<ID>WOStatus</ID>
<Description/>

-<Value>
<ValueString>Released</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
```

```
</Value>
</MaterialProducedRequirementProperty>

-<MaterialProducedRequirementProperty>
<ID>MaterialAvailabilityDate</ID>
<Description/>

-<Value>
<ValueString>2017-04-22T00:00:00</ValueString>
<DataType>DateTime</DataType>
<UnitOfMeasure/>
</Value>
</MaterialProducedRequirementProperty>

-<MaterialProducedRequirementProperty>
<ID>ParentOrder</ID>
<Description/>

-<Value>
<ValueString>SO2367523</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</Value>
</MaterialProducedRequirementProperty>
</MaterialProducedRequirement>
</SegmentRequirement>

-<SegmentRequirement>
<ID>10</ID>
<ProductSegmentID/>
<ProcessSegmentID/>
<Description>Wind Pack</Description>
```

```
-<Location>
<EquipmentID>WIND</EquipmentID>
<EquipmentElementLevel>WorkCenter</EquipmentElementLevel>
</Location>
<EarliestStartTime>2017-04-15T12:00:00</
EarliestStartTime>
<LatestEndTime>2017-04-15T12:15:00</LatestEndTime>

-<ProductionParameter>

-<Parameter>
<ID>Priority</ID>

-<Value>
<ValueString>10</ValueString>
<DataType>integer</DataType>
<UnitOfMeasure/>
</Value>
<Description/>
</Parameter>
</ProductionParameter>

-<ProductionParameter>

-<Parameter>
<ID>LaborTime</ID>

-<Value>
<ValueString>210</ValueString>
<DataType>integer</DataType>
<UnitOfMeasure/>
</Value>
<Description/>
</Parameter>
```

```
</ProductionParameter>


-<ProductionParameter>


-<Parameter>

<ID>DOCUMENTS</ID>


-<Value>

<ValueString>http:/grid.ge.com/485765/abc.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

<Description>Document 1</Description>

</Parameter>

</ProductionParameter>


-<ProductionParameter>


-<Parameter>

<ID>DOCUMENTS</ID>


-<Value>

<ValueString>http:/grid.ge.com/485765/abc2.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

<Description>Document 2</Description>

</Parameter>

</ProductionParameter>


-<EquipmentRequirement>


-<Location>

<EquipmentID>FIX_LT_ADJ</EquipmentID>
```

```
<EquipmentElementLevel>WorkCell</EquipmentElementLevel>
</Location>
</EquipmentRequirement>

-<MaterialProducedRequirement>
<MaterialClassID/>
<MaterialDefinitionID/>
<MaterialSubLotID/>
<Description/>

-<Quantity>
<QuantityString/>
<DataType>string</DataType>
<UnitOfMeasure/>
</Quantity>
</MaterialProducedRequirement>

-<MaterialConsumedRequirement>
<MaterialClassID/>
<MaterialDefinitionID>308A2463BD067</
MaterialDefinitionID>
<MaterialSubLotID/>
<Description/>

-<Quantity>
<QuantityString>1</QuantityString>
<DataType>float</DataType>
<UnitOfMeasure>EA</UnitOfMeasure>
</Quantity>

-<MaterialConsumedRequirementProperty>
<ID>GEDS_Drawing_Reference</ID>
<Description/>
```

```
-<Value>
<ValueString>1</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>BOM_SEQUENCE</ID>
<Description/>

-<Value>
<ValueString>1</ValueString>
<DataType>integer</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>GEDS_Position</ID>
<Description/>

-<Value>
<ValueString>POS A</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>IS_REQUIRES_CONSUMPTION</ID>
<Description/>
```

```
-<Value>
<ValueString>true</ValueString>
<DataType>boolean</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>GEDS_IsPickable</ID>
<Description/>

-<Value>
<ValueString>true</ValueString>
<DataType>boolean</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>GEDS_BOM_Location</ID>
<Description/>

-<Value>
<ValueString>A123</ValueString>
<DataType>string</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>GEDS_JumperSetting</ID>
<Description/>

-<Value>
```

```
<ValueString>PL01</ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

</MaterialConsumedRequirementProperty>

</MaterialConsumedRequirement>


-<MaterialConsumedRequirement>

<MaterialClassID/>

<MaterialDefinitionID>308A309800048</
MaterialDefinitionID>

<MaterialSubLotID/>

<Description/>


-<Quantity>

<QuantityString>1</QuantityString>

<DataType>float</DataType>

<UnitOfMeasure>EA</UnitOfMeasure>

</Quantity>


-<MaterialConsumedRequirementProperty>

<ID>GEDS_Drawing_Reference</ID>

<Description/>


-<Value>

<ValueString>3</ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

</MaterialConsumedRequirementProperty>


-<MaterialConsumedRequirementProperty>

<ID>BOM_SEQUENCE</ID>
```

```
<Description/>

-<Value>
<ValueString>2</ValueString>
<DataType>integer</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>IS_REQUIRES_CONSUMPTION</ID>
<Description/>

-<Value>
<ValueString>false</ValueString>
<DataType>boolean</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>
</MaterialConsumedRequirement>
</SegmentRequirement>

-<SegmentRequirement>
<ID>20</ID>
<ProductSegmentID/>
<ProcessSegmentID/>
<Description>Ultrasonic Weld</Description>

-<Location>
<EquipmentID>WIND_WELD</EquipmentID>
<EquipmentElementLevel>WorkCenter</EquipmentElementLevel>
</Location>
<EarliestStartTime>2017-04-15T12:00:00</
EarliestStartTime>
```

```
<LatestEndTime>2017-04-15T12:15:00</LatestEndTime>

-<ProductionParameter>

-<Parameter>

<ID>Priority</ID>

-<Value>

<ValueString>20</ValueString>

<DataType>integer</DataType>

<UnitOfMeasure/>

</Value>

<Description/>

</Parameter>

</ProductionParameter>

-<ProductionParameter>

-<Parameter>

<ID>LaborTime</ID>

-<Value>

<ValueString>100</ValueString>

<DataType>integer</DataType>

<UnitOfMeasure/>

</Value>

<Description/>

</Parameter>

</ProductionParameter>

-<ProductionParameter>

-<Parameter>

<ID>DOCUMENTS</ID>
```

```
-<Value>

<ValueString>http:/grid.ge.com/485765/abc.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

<Description>Document 1</Description>

</Parameter>

</ProductionParameter>


-<ProductionParameter>


-<Parameter>

<ID>DOCUMENTS</ID>


-<Value>

<ValueString>http:/grid.ge.com/485765/abc2.pdf</
ValueString>

<DataType>string</DataType>

<UnitOfMeasure/>

</Value>

<Description>Document 2</Description>

</Parameter>

</ProductionParameter>


-<MaterialProducedRequirement>

<MaterialClassID/>

<MaterialDefinitionID/>

<MaterialSubLotID/>

<Description/>


-<Quantity>

<QuantityString/>

<DataType>string</DataType>
```

```
<UnitOfMeasure/>
</Quantity>
</MaterialProducedRequirement>

-<MaterialConsumedRequirement>
<MaterialClassID/>
<MaterialDefinitionID>ACCR</MaterialDefinitionID>
<MaterialSubLotID/>
<Description/>

-<Quantity>
<QuantityString>33.78</QuantityString>
<DataType>float</DataType>
<UnitOfMeasure>LB</UnitOfMeasure>
</Quantity>

-<MaterialConsumedRequirementProperty>
<ID>BOM_SEQUENCE</ID>
<Description/>

-<Value>
<ValueString>1</ValueString>
<DataType>integer</DataType>
<UnitOfMeasure/>
</Value>
</MaterialConsumedRequirementProperty>

-<MaterialConsumedRequirementProperty>
<ID>IS_REQUIRES_CONSUMPTION</ID>
<Description/>

-<Value>
<ValueString>false</ValueString>
```

```
<DataType>boolean</DataType>

<UnitOfMeasure/>

</Value>

</MaterialConsumedRequirementProperty>

</MaterialConsumedRequirement>

</SegmentRequirement>

</ProductionRequest>

</ProductionSchedule>
```

Sample Files for a Process Order

Message that Contains a Process Order

Inbound messages are added to the integration database using Microsoft SQL.

Message that Contains a Process Order

```
INSERT INTO erp_integration_inbound_messages
(Message_Type, Media_Type, Message, Inserted_By)
VALUES ('processOrder', 'application/json', '{POID}',
'<user name>')
```

where {POID} is a JSON document that specifies the process order.

Process Order Import Document

A JSON process order import document (POID) contains all the details of a process order, including route and revision or segment definition. The POID constitutes the body of the HTTP POST request of the ERP Import service, which posts the process order to Plant Applications.

POID

```
{
  "schemaVersion": 1,
  "plannedQuantity": 10,
  "plannedLineName": "Line1",
  "producedMaterialName": "weebles1",
  "processOrderName": "PO_AUTO_Json_1172",
  "bomFormulation": "Bomformulation1",
  "plannedStartDate": "2017-04-08T09:22:17.825Z",
  "plannedEndDate": "2019-04-08T09:22:17.825Z"
}
```

B2MML File that Contains a Process Order

Instead of a JSON process order import document (POID), you can send all the details of a work order, process order, or material in a B2MML file.

If you want to send a B2MML document, you must also provide an XSL file with the mapping details. The ERP Transformation service uses this XSL file to convert the B2MML document to a JSON file.

Note: When an XML file is processed, some of the special characters are omitted. To prevent this issue, use the escape strings as specified in the following table.

Special Character	Escape String
&	&
<	<
>	>
“	"
‘	'

B2MML File that Contains a Process Order

```
<?xml version="1.0" encoding="UTF-8"?>
<ProductionSchedule><ID>0000000112841171</
ID><Location><EquipmentID>0288</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel><Location><EquipmentID>193</
EquipmentID><EquipmentElementLevel>Area</
EquipmentElementLevel></Location></
Location><ProductionRequest><ID>000900826215</
ID><ProductProductionRuleID>0501</
ProductProductionRuleID><StartTime>2005-02-25T21:50:58</
StartTime><EndTime>2005-02-26T00:00:00</
EndTime><SegmentRequirement><ID>1</
ID><EarliestStartTime>2005-02-25T21:50:58</
EarliestStartTime><LatestEndTime>2005-02-26T00:00:00</
LatestEndTime><EquipmentRequirement><EquipmentID>GGMB05</
EquipmentID></
EquipmentRequirement><MaterialProducedRequirement><Materi
alDefinitionID>000000000095052698</
MaterialDefinitionID><MaterialLotID>0000429633</
MaterialLotID><Description>COM PST MILDMINT 3 STRIPE -
WHT BLUE SPEC</Description><Location><EquipmentID>0288</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel><Location><EquipmentID>LDFM</
EquipmentID><EquipmentElementLevel>StorageZone</
EquipmentElementLevel></Location></
Location><Quantity><QuantityString>3000</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></
Quantity><Quantity><QuantityString>3000</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></
Quantity><MaterialProducedRequirementProperty/
><MaterialProducedRequirementProperty><ID>InspectionLotID
</ID><Description/><Value><ValueString>000000000000</
ValueString><DataType>string</DataType></
```

```
Value><Quantity/></MaterialProducedRequirementProperty></
MaterialProducedRequirement><MaterialConsumedRequirement>
<MaterialDefinitionID>0000000000111100613</
MaterialDefinitionID><Description>CARBOMER 956</
Description><Location><EquipmentID>0288</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel><Location><EquipmentID>0088</
EquipmentID><EquipmentElementLevel>StorageZone</
EquipmentElementLevel></Location></
Location><Quantity><QuantityString>1.500</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></
Quantity><MaterialConsumedRequirementProperty><ID>Materia
lReservationID</ID><Description/
><Value><ValueString>0033739080</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>MaterialReservationSequence</
ID><Description/><Value><ValueString>0016</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>ScrapPercent</ID><Description/
><Value><ValueString>0.00</ValueString><DataType>float</
DataType><UnitOfMeasure>percent</UnitOfMeasure></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty/><MaterialConsumedRequirementProperty/
><MaterialConsumedRequirementProperty/></
MaterialConsumedRequirement><MaterialConsumedRequirement>
<MaterialDefinitionID>0000000000011614647</
MaterialDefinitionID><Description>TRICLOSAN 50%
SOLUTION</Description><Location><EquipmentID>0288</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel><Location><EquipmentID>0088</
EquipmentID><EquipmentElementLevel>StorageZone</
EquipmentElementLevel></Location></
Location><Quantity><QuantityString>16.800</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></
Quantity><MaterialConsumedRequirementProperty><ID>Materia
lReservationID</ID><Description/
><Value><ValueString>0033739080</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>MaterialReservationSequence</
ID><Description/><Value><ValueString>0015</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>ScrapPercent</ID><Description/
><Value><ValueString>0.00</ValueString><DataType>float</
DataType><UnitOfMeasure>percent</UnitOfMeasure></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty/><MaterialConsumedRequirementProperty/
><MaterialConsumedRequirementProperty/></
MaterialConsumedRequirement><MaterialConsumedRequirement>
<MaterialDefinitionID>0000000000011614523</
```

```
MaterialDefinitionID><Description>BFG 51 HYDRATED SILICA
& CI 74160</Description><Location><EquipmentID>0288</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel><Location><EquipmentID>0088</
EquipmentID><EquipmentElementLevel>StorageZone</
EquipmentElementLevel></Location></
Location><Quantity><QuantityString>6.750</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></
Quantity><MaterialConsumedRequirementProperty><ID>Materia
lReservationID</ID><Description/
><Value><ValueString>0033739080</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>MaterialReservationSequence</
ID><Description/><Value><ValueString>0014</
ValueString><DataType>string</DataType></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty><ID>ScrapPercent</ID><Description/
><Value><ValueString>0.00</ValueString><DataType>float</
DataType><UnitOfMeasure>percent</UnitOfMeasure></
Value><Quantity/></
MaterialConsumedRequirementProperty><MaterialConsumedRequ
irementProperty/><MaterialConsumedRequirementProperty/
><MaterialConsumedRequirementProperty/></
MaterialConsumedRequirement></SegmentRequirement></
ProductionRequest></ProductionSchedule>
```

XSL File to Map a Process Order

This topic provides a sample XSL file that is used to map a process order.

XSL File to Map a Process Order

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/
Transform" version="1.0"><xsl:output method="xml"
indent="yes" omit-xml-declaration="yes"/><xsl:strip-
space elements="*"/><xsl:template
match="ProductionSchedule"><ProductionSchedule><Productio
nRequest><xsl:variable select="ProductionRequest"
name="ProductionRequest"/><xsl:variable
select="Location" name="ProductionRequestLocation"/
><xsl:variable select="$ProductionRequest/
SegmentRequirement" name="SegmentRequirement"/
><ID><xsl:value-of select="$ProductionRequest/ID"/></
ID><ProductProductionRuleID><xsl:value-of
select="$ProductionRequest/ProductProductionRuleID"/></
ProductProductionRuleID><Location><EquipmentID><xsl:value
-of select="$SegmentRequirement[ID = 1]/
EquipmentRequirement/EquipmentID"/></
EquipmentID><EquipmentElementLevel><xsl:value-of
select="$ProductionRequestLocation/
EquipmentElementLevel"/></EquipmentElementLevel></
Location><Priority>0</
Priority><SegmentRequirement><ID><xsl:value-of
```

```
select="ID"/></ID><xsl:if test="$SegmentRequirement/
EarliestStartTime"><EarliestStartTime><xsl:value-of
select="$SegmentRequirement/EarliestStartTime"/></
EarliestStartTime></xsl:if><xsl:if
test="$SegmentRequirement/
LatestEndTime"><LatestEndTime><xsl:value-of
select="$SegmentRequirement/LatestEndTime"/></
LatestEndTime></
xsl:if><EquipmentRequirement><EquipmentID><xsl:value-of
select="$SegmentRequirement/EquipmentRequirement/
EquipmentID"/></EquipmentID></
EquipmentRequirement><MaterialProducedRequirement><xsl:va
riable select="$SegmentRequirement/
MaterialProducedRequirement"
name="MaterialProducedRequirement"/><xsl:variable
select="$SegmentRequirement/MaterialProducedRequirement/
Quantity" name="Quantity"/><xsl:variable
select="$MaterialProducedRequirement/
MaterialProducedRequirementProperty"
name="MaterialProducedRequirementProperty"/
><MaterialDefinitionID><xsl:value-of
select="$MaterialProducedRequirement/
MaterialDefinitionID"/></
MaterialDefinitionID><Quantity><QuantityString><xsl:value
-of select="$Quantity/QuantityString"/></
QuantityString><DataType><xsl:value-of select="$Quantity/
DataType"/></DataType><UnitOfMeasure><xsl:value-of
select="$Quantity/UnitOfMeasure"/></UnitOfMeasure></
Quantity></MaterialProducedRequirement><xsl:for-each
select="$SegmentRequirement/
MaterialConsumedRequirement"><MaterialConsumedRequirement
><xsl:variable select="$SegmentRequirement/
MaterialConsumedRequirement"
name="MaterialConsumedRequirement"/><xsl:variable
select="$MaterialConsumedRequirement/Quantity"
name="Quantity"/><xsl:variable
select="$MaterialConsumedRequirement/
MaterialConsumedRequirementProperty"
name="MaterialConsumedRequirementProperty"/
><MaterialDefinitionID><xsl:value-of
select="$MaterialConsumedRequirement/
MaterialDefinitionID"/></
MaterialDefinitionID><Quantity><QuantityString><xsl:value
-of select="$Quantity/QuantityString"/></
QuantityString><DataType><xsl:value-of select="$Quantity/
DataType"/></DataType><UnitOfMeasure><xsl:value-of
select="$Quantity/UnitOfMeasure"/></UnitOfMeasure></
Quantity></MaterialConsumedRequirement></xsl:for-each></
SegmentRequirement></ProductionRequest></
ProductionSchedule></xsl:template></xsl:stylesheet>
```

Standard B2MML File for a Process Order

This topic provides an example of a standard B2MML file that contains the details of a process order.

Standard B2MML File for a Proces Order

```
<?xml version="1.0"?>
<ProductionSchedule><ProductionRequest><ID>1680481</
ID><ProductProductionRuleID>B101</
ProductProductionRuleID><Location><EquipmentID>ZXBD</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel></Location><Priority>0</
Priority><SegmentRequirement><ID>224392962</
ID><EarliestStartTime>2007-10-03T07:20:00</
EarliestStartTime><LatestEndTime>2007-10-04T00:00:00</
LatestEndTime><EquipmentRequirement><EquipmentID>ZXBD</
EquipmentID></
EquipmentRequirement><MaterialProducedRequirement><Materi
alDefinitionID>15886327</
MaterialDefinitionID><Quantity><QuantityString>5000.000</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></Quantity></
MaterialProducedRequirement><MaterialConsumedRequirement>
<MaterialDefinitionID>10000001</
MaterialDefinitionID><Quantity><QuantityString>3000.000</
QuantityString><DataType>float</
DataType><UnitOfMeasure>KG</UnitOfMeasure></Quantity></
MaterialConsumedRequirement></SegmentRequirement></
ProductionRequest></ProductionSchedule>
```

Sample Files for Material

Message that Contains a Material

Inbound messages are added to the integration database using Microsoft SQL.

Message that Contains a Material

```
INSERT INTO erp_integration_inbound_messages
(Message_Type, Media_Type, Message, Inserted_By)
VALUES ('material', 'application/json', '{MMID}', '<user
name>')
```

where {MMID} is a JSON document that specifies the material.

Material Master Import Document

A JSON material master import document (MMID) contains all the details of a material, including route and revision or segment definition. The MMID constitutes the body of the HTTP POST request of the ERP Import service, which posts the material to Plant Applications.

MMID

```
{
  "schemaVersion" : 1,
  "productionLines" : [ Test Line1],
```

```
  "storageZone" : "Line1",
  "storageUnit" : "unit1",
  "material" : {
    "productCode" : "Material demo 001",
    "productDescription" : "Material import with json",
    "productFamily" : "Automation_Products",
    "propertyValues" : [ {
      "propertyName" : "SERIALIZED",
      "propertyValue" : "5"
    }, {
      "propertyName" : "ITEM_CREATION_DATE",
      "propertyValue" : "2019-02-14T14:34:22.666Z"
    }, {
      "propertyName" : "ITEM_DRAWING",
      "propertyValue" : "http://www/google.com/document1"
    }, {
      "propertyName" : "STORAGELOCATION",
      "propertyValue" : "890"
    } ]
  }
}
```

B2MML File that Contains a Material

Instead of a JSON material master import document (MMID), you can send all the details of a work order, process order, or material in a B2MML file.

If you want to send a B2MML document, you must also provide an XSL file with the mapping details. The ERP Transformation service uses this XSL file to convert the B2MML document to a JSON file.

Note: When an XML file is processed, some of the special characters are omitted. To prevent this issue, use the escape strings as specified in the following table.

Special Character	Escape String
&	&
<	<
>	>
“	"
‘	'

B2MML File that Contains a Material

```
<?xml version="1.0"?>
<ProductInformation xmlns="http://www.wbf.org/xml/B2MML-
V0401" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:Extended="http://www.wbf.org/xml/B2MML-V0401-
AllExtensions"><ID>Internal from MiddleWare</
ID><Description>ITEM_MASTER</
Description><Location><EquipmentID>C86</
EquipmentID><EquipmentElementLevel>Site</
EquipmentElementLevel></
Location><PublishedDate>2016-04-06T12:43:56-04:00</
PublishedDate><ProductDefinition><ID>105D6043P008</
```

```
ID><Version>100</Version><Description>INDEX TUBE</
Description><ProductSegment><ID>000</
ID><Description>HEADER</
Description><Parameter><ID>UNIT_OF_MEASURE</
ID><Value><ValueString>EA</ValueString><DataType>string</
DataType><UnitOfMeasure/></Value></
Parameter><Parameter><ID>PRODUCT_CATEGORY</
ID><Value><ValueString>Capacitor</
ValueString><DataType>string</DataType><UnitOfMeasure/></
Value></Parameter><Parameter><ID>SERIALIZED</
ID><Value><ValueString>TRUE</
ValueString><DataType>boolean</
DataType><UnitOfMeasure/></Value></
Parameter><Parameter><ID>REVISION_DATE</
ID><Value><ValueString>2/20/2016 11:52:44 AM</
ValueString><DataType>DateTime</
DataType><UnitOfMeasure/></Value></
Parameter><Parameter><ID>ITEM_CREATION_DATE</
ID><Value><ValueString>2/19/2016 4:08:05 PM</
ValueString><DataType>DateTime</
DataType><UnitOfMeasure/></Value></
Parameter><Parameter><ID>ITEM_DRAWING</
ID><Value><ValueString>http://www/google.com/document1</
ValueString><DataType>string</DataType><UnitOfMeasure/></
Value><Description>Document 1</Description></
Parameter><Parameter><ID>ITEM_DRAWING</
ID><Value><ValueString>http://www/google.com/document2</
ValueString><DataType>string</DataType><UnitOfMeasure/></
Value><Description>Document 2</Description></
Parameter><Parameter><ID>STORAGELOCATION</
ID><Value><ValueString>STK</
ValueString><DataType>string</DataType><UnitOfMeasure/></
Value></Parameter><EquipmentSpecification><EquipmentId/
><EquipmentSpecificationProperty><ID>ProductionLine</
ID><Value><ValueString>Line1</ValueString></Value></
EquipmentSpecificationProperty><EquipmentSpecificationPro
perty><ID>StorageZone</
ID><Value><ValueString>StorageZone</ValueString></
Value></
EquipmentSpecificationProperty><EquipmentSpecificationPro
perty><ID>StorageUnit</
ID><Value><ValueString>StorageUnit</ValueString></
Value></EquipmentSpecificationProperty></
EquipmentSpecification></ProductSegment></
ProductDefinition></ProductInformation>
```

XSL File to Map a Material

This topic provides a sample XSL file that is used to map a material.

XSL File to Map a Material

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:h="http://www.wbf.org/xml/B2MML-
V0401" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
version="1.0"><xsl:output indent="yes" method="xml" omit-
xml-declaration="yes"/><xsl:strip-space elements="*"/
><xsl:template match="/"><xsl:apply-templates
```

```
select="h:ProductInformation"/></
xsl:template><xsl:template
match="h:ProductInformation"><ProductInformation><ID><xsl
:value-of select="h:ID"/></ID><Description><xsl:value-of
select="h:Description"/></
Description><Location><EquipmentID><xsl:value-of
select="h:Location/h:EquipmentID"/></
EquipmentID><EquipmentElementLevel><xsl:value-of
select="h:Location/h:EquipmentElementLevel"/></
EquipmentElementLevel></
Location><PublishedDate><xsl:value-of
select="h:PublishedDate"/></
PublishedDate><ProductDefinition><xsl:apply-templates
select="h:ProductDefinition"/></ProductDefinition></
ProductInformation></xsl:template><xsl:template
match="h:ProductDefinition"><ID><xsl:value-of
select="h:ID"/></ID><Version><xsl:value-of
select="h:Version"/></Version><Description><xsl:value-of
select="h:Description"/></
Description><Location><EquipmentID/
><EquipmentElementLevel/></
Location><ProductProductionRule/><BillOfMaterialsID/
><BillOfResourcesID/><ManufacturingBill><ID/
><Description/><MaterialClassID/
><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/></Quantity><BillOfMaterialID/></
ManufacturingBill><ProductSegment><xsl:apply-templates
select="h:ProductSegment"/></ProductSegment></
xsl:template><xsl:template
match="h:ProductSegment"><ID><xsl:value-of
select="h:ID"/></ID><Description><xsl:value-of
select="h:Description"/></Description><ProcessSegmentID/
><xsl:for-each select="h:Parameter"><Parameter><ID>
<!--<xsl:value-of select="h:ID" /> -->
<xsl:apply-templates select="h:ID"/></
ID><Value><ValueString><xsl:value-of select="h:Value/
h:ValueString"/></
ValueString><DataType><xsl:choose><xsl:when
test="not(h:Value/h:DataType)"><xsl:text>string</
xsl:text></xsl:when><xsl:otherwise><xsl:value-of
select="h:Value/h:DataType"/></xsl:otherwise></
xsl:choose></DataType><UnitOfMeasure/></
Value><Description/></Parameter></xsl:for-
each><PersonnelSpecification><PersonnelClassID/
><PersonID/><Description/><Quantity><QuantityString/
><DataType>string</DataType><UnitOfMeasure/></
Quantity><PersonnelSpecificationProperty><ID/
><Description/><Value><ValueString/><DataType>string</
DataType><UnitOfMeasure> </UnitOfMeasure></
Value><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/></Quantity></
PersonnelSpecificationProperty></
PersonnelSpecification><xsl:for-each
select="h:EquipmentSpecification"><EquipmentSpecification
><EquipmentClassID/><EquipmentID><xsl:value-of
select="h:EquipmentId"/></EquipmentID><Description> </
Description><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/></Quantity><xsl:for-each
select="h:EquipmentSpecificationProperty"><EquipmentSpeci
ficationProperty><ID><xsl:value-of select="h:ID"/></
ID><Description/><Value><ValueString><xsl:value-of
```

```
select="h:Value/h:ValueString"/></
ValueString><DataType>string</DataType><UnitOfMeasure/></
Value><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/><Key/></Quantity></
EquipmentSpecificationProperty></xsl:for-each></
EquipmentSpecification></xsl:for-
each><MaterialSpecification><MaterialClassID/
><MaterialDefinitionID/><Description/
><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/></
Quantity><MaterialSpecificationProperty><ID/
><Description/><Value><ValueString/><DataType>string</
DataType><UnitOfMeasure/></
Value><Quantity><QuantityString/><DataType>string</
DataType><UnitOfMeasure/></Quantity></
MaterialSpecificationProperty></MaterialSpecification></
xsl:template><xsl:template match="h:ID/text()
[.='PRODUCT_CATEGORY']"> PRODUCT_FAMILY </xsl:template></
xsl:stylesheet>
```

Standard B2MML File for a Material

This topic provides an example of a standard B2MML file that contains the details of a material.

Standard B2MML File for a Material

```
<?xml version="1.0"?>
<ProductInformation xmlns:h="http://www.wbf.org/xml/
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Response Codes

Response Codes

The ERP Integration database contains HTTP response codes and response messages returned by the ERP Import service. The responses provide the status of the import process. This topic provides the response codes, messages, and their description for each type of response.

Table 1: Success Messages

Response Code	Response Message	Description
200	OK	The record (that is, the work order, process order, or material) was successfully imported.
202	Accepted	The record has been accepted for import processing. The final status is pending.

Table 2: Error Messages from the Client

Response Code	Response Message	Description
400	Bad Request	The inbound message could not be validated or could not be converted into a format suitable for importing.
401	Unauthorized	The import failed because the request lacked valid authentication credentials.
404	Not Found	The import service was unable to retrieve the status of the record.
422	Unprocessable Entity	The import service is attempting to create a record for materials that are not in the Plant Applications system.

Table 3: Error Messages from the Server

Response Code	Response Message	Description
500	Internal Server Error	A server error occurred while importing a record or while retrieving the status of a record.
503	Service Unavailable	The connection was refused or the server was unable to import a record or retrieve the status of a record due to a temporary server overload or other transitory condition.

Chapter 5

Release Notes

Topics:

- Version 8.0

Version 8.0

This topic provides a list of product changes for ERP integration for this release.

Table 4: Enhancements and New Features

The following enhancements and new features have been added.

Description	Tracking ID
In addition to work orders, you can now import process orders and materials to Plant Applications.	F43913
In addition to a JSON format, you can now send work order, process order, or material information in an XML or B2MML format. To facilitate this enhancement, a new service, ERP Transformation, has been introduced, which converts the XML or B2MML file to a JSON file before it is imported to Plant Applications.	• F37772 • F37770