

# HP Project and Portfolio Management Center

Software Version: 9.30

## RESTful Web Services Guide

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# Chapter 1: Introduction

This document describes HP PPM Center RESTful Web services.

## Overview of PPM Center RESTful Web Services

PPM Center includes RESTful Web services support for the following application modules:

- HP Demand Management
- HP Time Management
- PPM Center Solution Integrations

The Web Application Description Language (WADL) descriptor that lists all supported PPM Center RESTful Web services can be found at the following location:

`http(s)://server:port/itg/rest/service.`

## Configuration

Starting from PPM Center version 9.13, the following line is added to the `websecurity.conf` file to enable RESTful web services:

```
/rest=com.kintana.core.web.servlet.AllAccessURLSecurity
```

Check and make sure whether the above line is already there. If not, simply copy and paste it to the `websecurity.conf` file, which is located in the `<PPM_Home>/conf` directory.

## Authentication

All requests to the RESTful Web services interfaces (URLs) must be authenticated. PPM Center supports the following three authentication types for RESTful Web services:

- HTTP Basic Access Authentication

When you use the HTTP Basic Access Authentication, an authorization HTTP header is sent along with the request, containing the base64-encoded username and password.

For example:

```
Authorization: Basic QWxhZGRpbjpvYVUyIHNlc2FtZQ==
```

For more information about HTTP Basic Access Authentication, see RFC 2617.

- HTTP Request Query String

When you use the HTTP Request Query String, you must specify the username and password parameters in the URL.

For example:

```
http://<instance_address>:<port>/itg/rest/dm  
/requestTypes?username=admin&password=admin
```

- Lightweight Single Sign-on (LWSSO)

For details, see the *Installation and Administration Guide*

**Caution:**

- HTTPS is preferred whenever you use RESTful Web services by Basic Access Authentication or Request Query String authentication in order to prevent username and password to be transmitted over the network.
- Since Request Query String authentication requires your username and password as the parameters in the URL, your username and password will be logged in the log file if the web server is configured to log URLs. This will cause a security flaw.

## Messaging Type

PPM Center supports the following two messaging types for RESTful Web services:

- XML (default)
- JSON

To enable JSON messaging type, you have to append the string `alt=application/json` to the parameter list of the URL.

For example:

```
http://<instance_address>:<port>/itg/rest/dm  
/requestTypes?username=admin&password=admin&alt=application/json
```

## Chapter 2: REST APIs

This section includes the RESTful APIs used in HP PPM Center.

### HP Demand Management

These APIs enable you to do the followings in the HP Demand Management module:

- ["Getting Enabled Request Types" below](#)
- [" Getting a Request Type" on the next page](#)
- ["Getting Requests of a Certain Type" on page 19](#)
- ["Getting Details of a Request" on page 20](#)
- ["Creating/Updating a Request" on page 24](#)
- ["Deleting a Request" on page 26](#)

### Getting Enabled Request Types

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requestTypes`

**HTTP Method:** GET

**Description:** Get enabled request types.

**Response entity body:**

- **on success:** Returns an XML object of the enabled request types with the following format:

```
<ns2:requestTypes xmlns:ns2="http://www.hp.com/ppm/dm/">
  <requestType>
    <id>31060</id>
    <name>DEM - Application Bug</name>
    <description> Application bugs should be used to report problems in
      current IT applications.</description>
  </requestType>
  <requestType>
```

```

    <id>31120</id>
    <name>DEM - Database Refresh</name>
    <description> Database refresh requests can be made for all IT Ops
    applications in the testing phase. Standard IT Ops service levels apply.
    </description>
  </requestType>
  <requestType>
    <id>31150</id>
    <name>DEM - Initiative</name>
    <description> Initiative request should be used to request key projects
    for future quarters. Provided approval from key stakeholders,
    Initiative requests will be reviewed in the third week of each quarter.
    </description>
  </requestType>
  <requestType>
    <id>31430</id>
    <name>test</name>
    <description>Bug Request type</description>
  </requestType>
</ns2:requestTypes>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE000	Internal Error	There was an internal error when you executed the operation.	N/A
PPM_WSE001	Cannot Get Internal Server Connection	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE021	You do not have access to view Request Types	The user executing this operation does not have the required access grants.	Verify that the user has the required access grants. For more information, see Function.

## Getting a Request Type

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requestTypes/{id}`



**HTTP Method:** GET**Description:** Get a request type specified by request type ID.**Request path variables:**

Attribute	Description	Required
id	The ID of the request type	Yes

**Response entity body:**

- **on success:** Returns an XML object of the request type with the following format:

```
<ns2:requestType xmlns:ns2="http://www.hp.com/ppm/dm/">
  <id>31430</id>
  <name>test</name>
  <description>Bug Request type</description>
  <referenceCode>TEST</referenceCode>
  <fields>
    <field>
      <token>REQ.REQUEST_ID</token>
      <prompt>Request No.:</prompt>
      <description />
      <section>Summary</section>
      <validationId>1027</validationId>
      <dataType>Text</dataType>
      <maxLength>200</maxLength>
      <defaultValue />
      <required>false</required>
      <multi>false</multi>
      <display>true</display>
      <displayOnly>true</displayOnly>
      <readOnly>true</readOnly>
      <createOnly>false</createOnly>
      <updateOnly>false</updateOnly>
      <migrateOK>false</migrateOK>
      <viewRestricted>false</viewRestricted>
      <editRestricted>false</editRestricted>
    </field>
    <field>
      <token>REQ.REQUEST_TYPE_NAME</token>
      <prompt>Request Type:</prompt>
      <description />
      <section>Summary</section>
      <validationId>2001</validationId>
      <dataType>Text</dataType>
      <maxLength>200</maxLength>
  </fields>
</ns2:requestType>
```

```
<defaultValue />
<required>false</required>
<multi>false</multi>
<display>true</display>
<displayOnly>false</displayOnly>
<readOnly>true</readOnly>
<createOnly>false</createOnly>
<updateOnly>false</updateOnly>
<migrateOK>false</migrateOK>
<viewRestricted>false</viewRestricted>
<editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.CREATED_BY</token>
  <prompt>Created By:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1065</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>true</displayOnly>
  <readOnly>true</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>true</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.DEPARTMENT_NAME</token>
  <prompt>Department:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1156</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>false</displayOnly>
  <readOnly>false</readOnly>
  <createOnly>false</createOnly>
```

```
<updateOnly>false</updateOnly>
<migrateOK>false</migrateOK>
<viewRestricted>false</viewRestricted>
<editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.REQUEST_SUB_TYPE_NAME</token>
  <prompt>Sub-Type:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1068</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>false</displayOnly>
  <readOnly>false</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>false</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.CREATION_DATE</token>
  <prompt>Created On:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1028</validationId>
  <dataType>Date</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>true</displayOnly>
  <readOnly>true</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>true</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.WORKFLOW_NAME</token>
```

```
<prompt>Workflow:</prompt>
<description />
<section>Summary</section>
<validationId>2003</validationId>
<dataType>Text</dataType>
<maxLength>200</maxLength>
<defaultValue />
<required>false</required>
<multi>false</multi>
<display>true</display>
<displayOnly>false</displayOnly>
<readOnly>true</readOnly>
<createOnly>false</createOnly>
<updateOnly>false</updateOnly>
<migrateOK>false</migrateOK>
<viewRestricted>false</viewRestricted>
<editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.STATUS_NAME</token>
  <prompt>Request Status:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1036</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>true</displayOnly>
  <readOnly>true</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>false</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.PRIORITY_NAME</token>
  <prompt>Priority:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1063</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
```

```

    <required>false</required>
    <multi>false</multi>
    <display>true</display>
    <displayOnly>false</displayOnly>
    <readOnly>false</readOnly>
    <createOnly>false</createOnly>
    <updateOnly>false</updateOnly>
    <migrateOK>false</migrateOK>
    <viewRestricted>false</viewRestricted>
    <editRestricted>false</editRestricted>
  </field>
  <field>
    <token>REQ.APPLICATION_NAME</token>
    <prompt>Application:</prompt>
    <description />
    <section>Summary</section>
    <validationId>1064</validationId>
    <dataType>Text</dataType>
    <maxLength>200</maxLength>
    <defaultValue />
    <required>false</required>
    <multi>false</multi>
    <display>true</display>
    <displayOnly>false</displayOnly>
    <readOnly>false</readOnly>
    <createOnly>false</createOnly>
    <updateOnly>false</updateOnly>
    <migrateOK>false</migrateOK>
    <viewRestricted>false</viewRestricted>
    <editRestricted>false</editRestricted>
  </field>
  <field>
    <token>REQ.CONTACT_NAME</token>
    <prompt>Contact Name:</prompt>
    <description />
    <section>Summary</section>
    <validationId>130</validationId>
    <dataType>Text</dataType>
    <maxLength>200</maxLength>
    <defaultValue />
    <required>false</required>
    <multi>false</multi>
    <display>true</display>
    <displayOnly>false</displayOnly>
    <readOnly>false</readOnly>
    <createOnly>false</createOnly>
    <updateOnly>false</updateOnly>

```

```
<migrateOK>>false</migrateOK>
<viewRestricted>>false</viewRestricted>
<editRestricted>>false</editRestricted>
</field>
<field>
  <token>REQ.ASSIGNED_TO_NAME</token>
  <prompt>Assigned To:</prompt>
  <description />
  <section>Summary</section>
  <validationId>2004</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>>false</required>
  <multi>>false</multi>
  <display>>true</display>
  <displayOnly>>false</displayOnly>
  <readOnly>>false</readOnly>
  <createOnly>>false</createOnly>
  <updateOnly>>false</updateOnly>
  <migrateOK>>false</migrateOK>
  <viewRestricted>>false</viewRestricted>
  <editRestricted>>false</editRestricted>
</field>
<field>
  <token>REQ.ASSIGNED_TO_GROUP_NAME</token>
  <prompt>Assigned Group:</prompt>
  <description />
  <section>Summary</section>
  <validationId>2005</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>>false</required>
  <multi>>false</multi>
  <display>>true</display>
  <displayOnly>>false</displayOnly>
  <readOnly>>false</readOnly>
  <createOnly>>false</createOnly>
  <updateOnly>>false</updateOnly>
  <migrateOK>>false</migrateOK>
  <viewRestricted>>false</viewRestricted>
  <editRestricted>>false</editRestricted>
</field>
<field>
  <token>REQ.CONTACT_PHONE_NUMBER</token>
  <prompt>Contact Phone:</prompt>
```

```

<description />
<section>Summary</section>
<validationId>2024</validationId>
<dataType>Text</dataType>
<maxLength>200</maxLength>
<defaultValue />
<required>false</required>
<multi>false</multi>
<display>true</display>
<displayOnly>false</displayOnly>
<readOnly>true</readOnly>
<createOnly>false</createOnly>
<updateOnly>false</updateOnly>
<migrateOK>false</migrateOK>
<viewRestricted>false</viewRestricted>
<editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.REQUEST_GROUP_NAME</token>
  <prompt>Request Group:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1440</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>false</displayOnly>
  <readOnly>false</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>false</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.CONTACT_EMAIL</token>
  <prompt>Contact Email:</prompt>
  <description />
  <section>Summary</section>
  <validationId>2022</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>

```

```

    <multi>false</multi>
    <display>true</display>
    <displayOnly>false</displayOnly>
    <readOnly>true</readOnly>
    <createOnly>false</createOnly>
    <updateOnly>false</updateOnly>
    <migrateOK>false</migrateOK>
    <viewRestricted>false</viewRestricted>
    <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.DESCRPTION</token>
  <prompt>Description:</prompt>
  <description />
  <section>Summary</section>
  <validationId>1069</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>true</display>
  <displayOnly>false</displayOnly>
  <readOnly>false</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>false</migrateOK>
  <viewRestricted>false</viewRestricted>
  <editRestricted>false</editRestricted>
</field>
<field>
  <token>REQ.PERCENT_COMPLETE</token>
  <prompt>% Complete:</prompt>
  <description>Percent Complete Field</description>
  <section>Summary</section>
  <validationId>1027</validationId>
  <dataType>Text</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>false</required>
  <multi>false</multi>
  <display>false</display>
  <displayOnly>true</displayOnly>
  <readOnly>false</readOnly>
  <createOnly>false</createOnly>
  <updateOnly>false</updateOnly>
  <migrateOK>false</migrateOK>

```



```

    <viewRestricted>>false</viewRestricted>
    <editRestricted>>false</editRestricted>
</field>
<field>
  <token>REQD.TABLE_TEST</token>
  <prompt>tablecomponent</prompt>
  <description />
  <section>Bug</section>
  <validationId>32863</validationId>
  <dataType>Table</dataType>
  <maxLength>200</maxLength>
  <defaultValue />
  <required>>false</required>
  <multi>>false</multi>
  <display>>true</display>
  <displayOnly>>false</displayOnly>
  <readOnly>>false</readOnly>
  <createOnly>>false</createOnly>
  <updateOnly>>false</updateOnly>
  <migrateOK>>false</migrateOK>
  <viewRestricted>>false</viewRestricted>
  <editRestricted>>false</editRestricted>
  <table>
    <column>
      <token>T.TABLE_TEST.ID</token>
      <prompt>ID</prompt>
      <description />
      <validationId>1027</validationId>
      <dataType>Text</dataType>
      <maxLength>40</maxLength>
      <defaultValue />
      <required>>false</required>
      <multi>>false</multi>
      <display>>true</display>
      <displayOnly>>false</displayOnly>
      <readOnly>>false</readOnly>
      <createOnly>>false</createOnly>
      <updateOnly>>false</updateOnly>
      <migrateOK>>false</migrateOK>
      <viewRestricted>>false</viewRestricted>
      <editRestricted>>false</editRestricted>
    </column>
    <column>
      <token>T.TABLE_TEST.NAME</token>
      <prompt>Name</prompt>
      <description />
      <validationId>1027</validationId>

```

```

        <dataType>Text</dataType>
        <maxLength>40</maxLength>
        <defaultValue />
        <required>>false</required>
        <multi>>false</multi>
        <display>>true</display>
        <displayOnly>>false</displayOnly>
        <readOnly>>false</readOnly>
        <createOnly>>false</createOnly>
        <updateOnly>>false</updateOnly>
        <migrateOK>>false</migrateOK>
        <viewRestricted>>false</viewRestricted>
        <editRestricted>>false</editRestricted>
    </column>
    <column>
        <token>T.TABLE_TEST.GENDER</token>
        <prompt>gender</prompt>
        <description />
        <validationId>32864</validationId>
        <dataType>Text</dataType>
        <maxLength>200</maxLength>
        <defaultValue />
        <required>>false</required>
        <multi>>false</multi>
        <display>>true</display>
        <displayOnly>>false</displayOnly>
        <readOnly>>false</readOnly>
        <createOnly>>false</createOnly>
        <updateOnly>>false</updateOnly>
        <migrateOK>>false</migrateOK>
        <viewRestricted>>false</viewRestricted>
        <editRestricted>>false</editRestricted>
    </column>
</table>
</field>
</fields>
</ns2:requestType>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE000	Internal Error	There was an internal error when you executed the operation.	N/A

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE001	Cannot Get Internal Server Connection	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE020	The Request Type {0} doesn't exist	The request type that the user tried to access does not exist.	Correct the Request Type ID in the URL.
PPM_WSE021	You do not have access to view Request Types	The user executing this operation does not have the required access grants.	Verify that the user has the required access grants. For more information, see Function.
PPM_WSE023	The request type with ID {0} is not enabled	The request type that the user tried to access is not enabled.	Enable the request type.

## Getting Requests of a Certain Type

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requestTypes/{id}/requests`

**HTTP Method:** GET

**Description:** Get requests of a certain request type specified by the request type ID

**Request path variables:**

Attribute	Description	Required
id	The ID of the request type	Yes

**Response entity body:**

- **on success:** Returns an XML object of the requests of a certain type with the following format:

```
<ns2:requests xmlns:ns2="http://www.hp.com/ppm/dm/">
  <request>
    <id>30332</id>
```

```

    <description>WebService Test</description>
  </request>
  <request>
    <id>30182</id>
    <description>Test SOAP web service</description>
  </request>
</ns2:requests>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE000	Internal Error	There was an internal error when you executed the operation.	N/A
PPM_WSE001	Cannot Get Internal Server Connection	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE020	The Request Type {0} doesn't exist	The request type that the user tried to access does not exist.	Correct the Request Type ID in the URL.
PPM_WSE021	You do not have access to view Request Types	The user executing this operation does not have the required access grants.	Verify that the user has the required access grants. For more information, see Function.
PPM_WSE023	The request type with Id {0} is not enabled	The request type that the user tried to access is not enabled.	Enable the request type.

## Getting Details of a Request

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requests/{reqId}`

**HTTP Method:** GET

**Description:** Get a request specified by the request ID.

**Request path variables:**

Attribute	Description	Required
reqId	The ID of the request	Yes

**Response entity body:**

- **on success:** Returns an XML object of the a request with the following format:

```

<ns2:request xmlns:ns2="http://www.hp.com/ppm/dm/">
  <id>30362</id>
  <description>This is a test request</description>
  <requestType>test</requestType>
  <sourceType />
  <source />
  <fields>
    <field>
      <token>REQD.LINK</token>
      <stringValue>17.11.http://www.hp.com.HP web site</stringValue>
    </field>
    <field>
      <token>REQ.REQUEST_GROUP_NAME</token>
      <stringValue />
    </field>
    <field>
      <token>REQ.STATUS_NAME</token>
      <stringValue>New</stringValue>
    </field>
    <field>
      <token>REQ.PERCENT_COMPLETE</token>
      <stringValue>0</stringValue>
    </field>
    <field>
      <token>REQ.PRIORITY_NAME</token>
      <stringValue />
    </field>
    <field>
      <token>REQD.RESOL_SUM</token>
      <stringValue />
    </field>
    <field>
      <token>REQ.DEPARTMENT_NAME</token>
      <stringValue>Finance</stringValue>
    </field>
    <field>
      <token>REQ.WORKFLOW_NAME</token>
      <stringValue>Bug Request Type Workflow</stringValue>
    </field>
    <field>
      <token>REQ.CONTACT_EMAIL</token>
      <stringValue />
    </field>
    <field>

```

```
    <token>REQ.REQUEST_ID</token>
    <stringValue>30362</stringValue>
</field>
<field>
    <token>REQ.DESCRPTION</token>
    <stringValue>This is a test request</stringValue>
</field>
<field>
    <token>REQ.ASSIGNED_TO_NAME</token>
    <stringValue />
</field>
<field>
    <token>REQ.CREATED_BY</token>
    <stringValue>Admin User</stringValue>
</field>
<field>
    <token>REQ.STATUS_CODE</token>
    <stringValue>IN_PROGRESS</stringValue>
</field>
<field>
    <token>REQ.LAST_UPDATE_DATE</token>
    <dateValue>2012-08-29T15:41:55.000+08:00</dateValue>
</field>
<field>
    <token>REQD.MODULE</token>
    <stringValue>Module B</stringValue>
</field>
<field>
    <token>REQ.ASSIGNED_TO_GROUP_NAME</token>
    <stringValue />
</field>
<field>
    <token>REQ.REQUEST_TYPE_NAME</token>
    <stringValue>test</stringValue>
</field>
<field>
    <token>REQ.REQUEST_SUB_TYPE_NAME</token>
    <stringValue />
</field>
<field>
    <token>REQ.CONTACT_NAME</token>
    <stringValue />
</field>
<field>
    <token>REQ.CONTACT_PHONE_NUMBER</token>
    <stringValue />
</field>
```

```
<field>
  <token>REQ.ENTITY_LAST_UPDATE_DATE</token>
  <dateValue>2012-08-29T15:41:55.000+08:00</dateValue>
</field>
<field>
  <token>REQ.CREATION_DATE</token>
  <dateValue>2012-08-29T15:41:54.000+08:00</dateValue>
</field>
<field>
  <token>REQ.APPLICATION_NAME</token>
  <stringValue />
</field>
<field>
  <token>REQD.TABLE_TEST</token>
  <tableValue>
    <columnTokens>
      <columnToken>T.TABLE_TEST.ID</columnToken>
      <columnToken>T.TABLE_TEST.NAME</columnToken>
      <columnToken>T.TABLE_TEST.GENDER</columnToken>
    </columnTokens>
    <row>
      <columns>
        <column>
          <stringValue>1000</stringValue>
        </column>
        <column>
          <stringValue>Alexander</stringValue>
        </column>
        <column>
          <stringValue>male/man</stringValue>
        </column>
      </columns>
    </row>
    <row>
      <columns>
        <column>
          <stringValue>1001</stringValue>
        </column>
        <column>
          <stringValue>Beetle</stringValue>
        </column>
        <column>
          <stringValue>male/man</stringValue>
        </column>
      </columns>
    </row>
  </tableValue>
```

```

    </field>
  </fields>
<notes />
<references />
</ns2:request>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE000	Internal Error	There was an internal error when you executed the operation.	N/A
PPM_WSE001	Cannot Get Internal Server Connection	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE101	Error when trying to read request with id {0}	There was some error when the system tried to read the request.	N/A
PPM_WSE108	The request {0} does not exist	The request ID you entered does not exist.	Correct the request ID in the URL
PPM_SWE209	No eligible actions for this request	The request you tried to access does not have any eligible actions for the you.	Add the user to the workflow step security.

**Limitation:**

This operation returns the visual field values instead of the parameter values. It does not return all the types fields, such as financial summary, staffing profile, attachment, and etc.

## Creating/Updating a Request

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requests`

**HTTP Method:** POST for creating a request, and PUT for updating a request.

**Description:** Create a request if you do not specify a request ID, and update a request if you specify the request ID.

**Response entity body:**



- **on success:** Return an XML object of the created or updated request, depending on whether you specify the request ID, with the following format.

```
<tns:request xmlns:tns="http://www.hp.com/ppm/dm/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.hp.com/ppm/dm/Request.xsd ">
  <id>32412</id>
  <description>description</description>
  <requestType>Project Issue</requestType>
  <sourceType>sourceType</sourceType>
  <source>source</source>
  <fields>
    <field>
      <token>REQ.DESCRPTION</token>
      <stringValue>My Sample</stringValue>
    </field>
    <field>
      <token>REQ.PRIORITY_NAME</token>
      <stringValue>Normal</stringValue>
    </field>
  </fields>
</tns:request>
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPM_WSE001	Cannot Get Internal Server Connection	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE107	This request already exists in PPM	There was an error when you tried to create a request.	N/A
PPM_WSE109	The request type of request cannot be empty	The request type of request is empty.	Specify a request type for the request.
PPM_SWE117	Invalid workflow step	The workflow step is not valid.	N/A

**Limitation:**

This operation supports field security check, but it ignores user interface (UI) rules or status dependency. Such constraints have to be validated and enforced on the client side before this operation is invoked.

## Deleting a Request

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/dm/requests/{reqId}`

**HTTP Method:** DELETE

**Description:** Delete a request with a specific ID. To perform this operation, you must be in one or more of the authorized security groups for the create/update action.

**Request path variables:**

Attribute	Description	Required?
reqId	Request ID. Indicates which request will be deleted.	Yes

**Response entity body:**

- on success:** When the operation is successfully executed, no message is returned. However, the REST API automatically calls the GET operation (see ["Getting Details of a Request" on page 20](#)) and returns the following message in Response Header (with empty message body):

```
Status Code: 204 No Content
Cache-Control: no-cache
Date: Mon, 26 Aug 2013 09:20:29 GMT
Expires: -1
Pragma: no-cache
```

- on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPMC_WSE108	Not Found	The quest is not found.	The request ID is not passed or the request of this ID doesn't exist.
PPMC_WSE001	Internal Server Error	There was an error when you tried to delete a request.	N/A
PPMC_WSE116	Internal Server Error	There was an error when you tried to delete a request.	N/A

**Limitation:**

This operation supports field security check, but it ignores user interface (UI) rules or status dependency. Such constraints have to be validated and enforced on the client side before this operation is invoked.

## HP Time Management (Time Sheets)

These APIs enable you to do the followings in the HP Time Management module:

- ["Getting Time Sheets" below](#)
- ["Getting a Time Sheet" on page 30](#)
- ["Getting Time Periods" on page 32](#)
- ["Getting a Time Period" on page 34](#)
- ["Getting Work Items" on page 35](#)
- ["Getting Time Sheet Lines" on page 36](#)
- ["Getting a Time Sheet Line" on page 42](#)
- ["Getting Time Sheet Policies" on page 45](#)
- ["Creating a Time Sheet" on page 48](#)
- ["Updating a Time Sheet" on page 54](#)
- ["Submitting a Time Sheet" on page 59](#)

### Getting Time Sheets

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/timeSheets`

**HTTP Method:** GET

**Description:** Get time sheets.

**Query Parameters:**

Attribute	Description
ownerUserId	ID of the time sheet owner

periodId	The time period ID
----------	--------------------

**Response entity body:**

- **on success:** Return an XML object of the time sheets with the following format:

```
<ns2:timesheets xmlns:ns2="http://www.hp.com/ppm/tm/">
  <timeSheet>
    <id>446363</id>
    <periodId>30277</periodId>
    <resourceId>1</resourceId>
    <sequence>1</sequence>
    <status>1</status>
    <description>User, Admin - 11/5/12 - 11/11/12
    </description>
    <policies>
      <policy>
        <name>AllowMultipleTimeSheets</name>
        <value>>false</value>
      </policy>
      <policy>
        <name>MaximumHoursPerDay</name>
        <value>>false</value>
      </policy>
      <policy>
        <name>BucketShowLevel</name>
        <value>DAY</value>
      </policy>
      <policy>
        <name>BucketReportMethod</name>
        <value>HOURL</value>
      </policy>
      <policy>
        <name>HourInPeriodType</name>
        <value>Fixed</value>
      </policy>
      <policy>
        <name>ReqActivitiesRequiredFlag</name>
        <value>>true</value>
      </policy>
    </policies>
    <notes>
      <note>
        <id>30180</id>
        <description>test11111</description>
        <type>TS</type>
        <createdBy>1</createdBy>
      </note>
    </notes>
  </timeSheet>
</ns2:timesheets>
```

```

        <createdDate>2013-01-23T21:02:42.000-8:00
        </createdDate>
        <lastUpdatedBy>1</lastUpdatedBy>
        <lastUpdatedDate>2013-01-23T21:02:42.000-8:00
        </lastUpdatedDate>
    </note>
</notes>
<createdBy>1</createdBy>
<lastUpdatedBy>1</lastUpdatedBy>
</timeSheet>
<timeSheet>
    <id>30222</id>
    <periodId>102463</periodId>
    <resourceId>1</resourceId>
    <sequence>1</sequence>
    <status>0</status>
    <description>User, Admin-11/5/12-11/11/12
</description>
    </policy>
    <policy>
        <name>BucketShowLevel</name>
        <value>DAY</value>
    </policy>
    <policy>
        <name>BucketReportMethod</name>
        <value>HOURL</value>
    </policy>
    <policy>
        <name>HourInPeriodType</name>
        <value>Fixed</value>
    </policy>
    <policy>
        <name>ReqActivitiesRequiredFlag</name>
        <value>>true</value>
    </policy>
</policies>
<createdBy>1</createdBy>
<lastUpdatedBy>1</lastUpdatedBy>
</timeSheet>
</ns2:timesheets>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPM_WSE507	400	Error when trying to get time sheets. The operation to get time sheets is supported by two APIs: (1) get a time sheet by id (URL: itg/rest/tm/timeSheets/id); (2) get time sheets by periodId and ownerId (URL: itg/rest/tm/timeSheets?periodId=1&ownerId=1).	Query parameters are incorrect.	Input correct query parameters.
PPM_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the access grant.
PPM_WSE007	403	The user does not have access to this resource.	The user has no access to this resource.	N/A

## Getting a Time Sheet

**Request:** http://<PPM\_Server\_IP>:<port>/itg/rest/tm/timeSheets/id

**HTTP Method:** GET

**Request path variables:**

Attribute	Description	Required
id	The id of the time sheet	Yes

**Response entity body:**

- **on success:** Return an XML object of a time sheet specified by the request ID with the following format:

```
<ns2:timesheet xmlns:ns2="http://www.hp.com/ppm/tm/">
  <id>446363</id>
  <periodId>30277</periodId>
  <resourceId>1</resourceId>
  <sequence>1</sequence>
```

```
<status>1</status>
<description>User, Admin - 11/5/12 - 11/11/12</description>
<policies>
  <policy>
    <name>AllowMultipleTimeSheets</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>BucketShowLevel</name>
    <value>DAY</value>
  </policy>
  <policy>
    <name>BucketReportMethod</name>
    <value>HOURS</value>
  </policy>
  <policy>
    <name>HoursInPeriodType</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>MaximumHoursPerTimeSheet</name>
    <value>20.0</value>
  </policy>
  <policy>
    <name>EnforcementLevelError</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>ReqActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>TskActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>PrjActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>PkgActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>MiscActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
</policies>
```

```

</policies>
<notes>
  <note>
    <id>159463</id>
    <description>wwwww</description>
    <type>TS</type>
    <createdBy>1</createdBy>
    <creationDate>2012-12-24T00:00:00.000-08:00
  </creationDate>
    <lastUpdatedBy>1</lastUpdatedBy>
    <lastUpdatedDate>2012-12-24T00:00:00.000-08:00
  </lastUpdatedDate>
  </note>
</notes>
</ns2:timeSheet>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPM_WSE507	400	Error when trying to get time sheets. The operation to get time sheets is supported by two APIs: (1) get a time sheet by id (URL: itg/rest/tm/timeSheets/id); (2) get time sheets by periodId and ownerId (URL: itg/rest/tm/timeSheets?periodId=1&ownerId=1).	Query parameters are incorrect.	Input correct query parameters.
PPM_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the access grant.
PPM_WSE007	403	The user does not have access to this resource.	The user has no access to this resource.	N/A

## Getting Time Periods

**Request:** http://<PPM\_Server\_IP>:<port>/itg/rest/tm/timePeriods



**HTTP Method:** GET

**Description:** Get time periods

**Request path variables:**

Attribute	Description
type	The type of the time period
date	The date you want to check. The format of the date should be yyyy-MM-ddTHH:mm:ssZ

**Response entity body:**

- **on success:** Return an XML object of the time periods with the following format:

```
<ns2:periods xmlns:ns2="http://www.hp.com/ppm/tm/">
  <period>
    <id>102321</id>
    <preId>102320</preId>
    <nexId>102322</nexId>
    <sequence>131</sequence>
    <type>2</type>
    <startDate>2012-12-24T00:00:00.000-08:00</startDate>
    <endDate>2013-01-06T23:59:59.000-08:00</endDate>
  </period>
</ns2:periods>
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPM_WSE000	500	Internal Error	There was an internal error when you executed the operation.	N/A
PPM_WSE001	503	Cannot Get Internal Server Connection.	There was an error when you tried to connect to the PPM server.	N/A
PPM_WSE506	400	The input date or type is invalid, for the data supports the format yyyy-MM-ddTHH:mm:ssZ, and the type is defined as 1, 2, 3, or 4.	The input date or type is invalid	Input correct query parameters.

## Getting a Time Period

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/Periods/id`

**HTTP Method:** GET

**Description:** Get a time period specified by the time period ID.

**Request path variables:**

Attribute	Description	Required
id	The id of the time period	Yes

**Response entity body:**

- **on success:** Return an XML object of the time period with the following format:

```
<ns2:period xmlns:ns2="http://www.hp.com/ppm/tm/">
  <id>30274</id>
  <preId>30273</preId>
  <nexId>30275</nexId>
  <sequence>275</sequence>
  <type>1</type>
  <startDate>1350230400000</startDate>
  <endDate>1350835199000</endDate>
</ns2:period>
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPM_WSE000	500	Internal Error	There was an internal error when you executed the operation.	N/A

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPM_WSE001	503	Cannot Get Internal Server Connection.	There was an error when you tried to connect to PPM Server.	N/A
PPM_WSE506	400	The input date or type is invalid, for the data supports the format yyyy-MM-ddTHH:mm:ssZ, and the type is defined as 1, 2, 3, or 4.	The input date or type is incorrect.	Input correct query parameters.

## Getting Work Items

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/workItems`

**HTTP Method:** GET

**Description:** Get work items.

**Query Parameters:**

Attribute	Description
type	The type of the work items. The types of the work items are as follows: REQUEST, PACKAGE, TASK, PROJECT, MISC.
ownerUserId	The user ID of the work items owner

**Response entity body:**

- **on success:** Return an XML object of the work items with the following format:

```
<ns2:workItems xmlns:ns2="http://www.hp.com/tm/">
  <workItem>
    <id>217037</id>
    <type>TASK</type>
    <setId>31600</setId>
    <name>IPS - Interest Rate Risk Management Processing System (R20)(D791)
    </name>
    <description>ESO PBS GMGI BB-Flexi Loan R20 &gt; IPS -Interest Rate Risk
    Management Processing System (R20) (D791)</description>
```

```

</workItem>
<workItem>
  <id>3282935</id>
  <type>PROJECT</type>
  <setId>60000</setId>
  <name>MS Mail Strategy</name>
  <description>MS Mail Strategy</description>
</workItem>
</ns2:workItems>
    
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE502	400	The owner user id is invalid. Please input correct owner user id.	The owner user ID should be more than 0.	Input correct owner user ID.
PPMC_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the required access grant.
PPMC_WSE007	403	The user does not have access to this resource.	The user does not have access to this resource.	N/A
PPMC_WSE508	400	Cannot find the resource with the owner user id.	The owner user ID is not correct.	Correct the owner user ID.
PPMC_WSE000	500	Internal error	There was an internal error when you executed this operation.	N/A

## Getting Time Sheet Lines

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/timeSheets/id/timeSheetLines`

**HTTP Method:** GET

**Description:** Get time sheet lines of a time sheet.

**Request path variables:**

Attribute	Description	Required
id	The id of the time sheet	Yes

**Response entity body:**

- on success: Return an XML object of the time sheet lines with the following format:

```
<ns2:timeSheetLines xmlns:ns2="http://www.hp.com/ppm/tm/">
  <timeSheetLine>
    <id>1468301</id>
    <workItemId>3282935</workItemId>
    <workItemType>PROJECT</workItemType>
    <workItemName>MS Mail Strategy</workItemName>
    <workItemDescription>MS Mail Strategy</workItemDescription>
    <status>1</status>
    <approver>
      <id>33877</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>31448</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>31476</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>31446</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>31702</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>103632</id>
      <type>UsersTimeApprover</type>
    </approver>
    <approver>
      <id>31777</id>
      <type>UsersTimeApprover</type>
    </approver>
    <actuals>
      <actual>
        <activityId>30067</activityId>
        <activityName>Execute - Benefits Realisation</activityName>
      </actual>
    </actuals>
  </timeSheetLine>
</ns2:timeSheetLines>
```

```

    <efforts>
      <dayNum>10</dayNum>
      <effort>4.0</effort>
    </efforts>
    <efforts>
      <dayNum>15</dayNum>
      <effort>6.0</effort>
    </efforts>
    <activityType>added</activityType>
  </actual>
<actual>
  <activityId>30076</activityId>
  <activityName>Execute - Performance Management</activityName>
  <efforts>
    <dayNum>7</dayNum>
    <effort>10.0</effort>
  </efforts>
  <activityType>added</activityType>
</actual>
<actual>
  <activityId>30131</activityId>
  <activityName>914 upgrade act1</activityName>
  <activityType>added</activityType>
</actual>
  <actualsType>activity</actualsType>
</actuals>
<workUnit>
  <id>171904</id>
  <actualStart>1368514800000</actualStart>
  <actualFinish>0</actualFinish>
  <actualEffort>2508.0</actualEffort>
  <percentComplete>50.0</percentComplete>
  <estimatedFinish>0</estimatedFinish>
  <effortModified>true</effortModified>
</workUnit>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100002</id>
      <name>Fixed Price</name>
      <description>Time for activities billed at Fixed Rate</description>
      <enabled>true</enabled>
      <chargeCodeCategory>BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>

```

```

</tslChargeCodes>
<tslChargeCodes>
  <chargePercent>10.0</chargePercent>
  <chargeCode>
    <id>100003</id>
    <name>Non Billable</name>
    <description>Non Billable Activity</description>
    <enabled>true</enabled>
    <chargeCodeCategory>NON_BILLABLE</chargeCodeCategory>
  </chargeCode>
</tslChargeCodes>
<tslChargeCodes>
  <chargePercent>90.0</chargePercent>
  <chargeCode>
    <id>100001</id>
    <name>Billable T&M</name>
    <description>Time billed at T&M daily rate</description>
    <enabled>true</enabled>
    <chargeCodeCategory>BILLABLE</chargeCodeCategory>
  </chargeCode>
</tslChargeCodes>
</chargeCodes>
<workItemSetId>60000</workItemSetId>
<notes>
  <note>
    <id>159986</id>
    <description>time sheet restful notes sample. it is used for sample only -
update12334
    </description>
    <type>TSL</type>
    <createdBy>1</createdBy>
    <createdDate>2013-04-25T00:09:26.000-07:00</createdDate>
    <lastUpdatedBy>1</lastUpdatedBy>
    <lastUpdatedDate>2013-04-25T00:09:26.000-07:00</lastUpdatedDate>
  </note>
</notes>
</timeSheetLine>
<timeSheetLine>
  <id>1468302</id>
  <workItemId>217037</workItemId>
  <workItemType>TASK</workItemType>
  <workItemName>IPS - Interest Rate Risk Management Processing System (R20)(D791)
</workItemName>
  <workItemDescription>ESO PBS GMGI BB-Flexi Loan R20 > IPS - Interest Rate Risk Management
Processing System (R20) (D791)
  </workItemDescription>
  <status>1</status>

```

```
<approver>
  <id>30772</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>30968</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31791</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31476</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31446</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>30897</id>
  <type>UsersTimeApprover</type>
</approver>
<actuals>
  <actual>
    <efforts>
      <dayNum>7</dayNum>
      <effort>9.0</effort>
    </efforts>
    <efforts>
      <dayNum>10</dayNum>
      <effort>7.0</effort>
    </efforts>
    <efforts>
      <dayNum>15</dayNum>
      <effort>8.0</effort>
    </efforts>
  </actual>
  <actualsType>common</actualsType>
</actuals>
<workUnit>
  <id>172244</id>
  <actualStart>1368514800000</actualStart>
  <actualFinish>0</actualFinish>
  <actualEffort>2482.8</actualEffort>
  <percentComplete>80.0</percentComplete>
```



```

    <estimatedFinish>0</estimatedFinish>
    <effortModified>>true</effortModified>
</workUnit>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100002</id>
      <name>Fixed Price</name>
      <description>Time for activities billed at Fixed Rate</description>
      <enabled>true</enabled>
      <chargeCodeCategory>BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100003</id>
      <name>Non Billable</name>
      <description>Non Billable Activity</description>
      <enabled>true</enabled>
      <chargeCodeCategory>NON_BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>100.0</chargePercent>
    <chargeCode>
      <id>100001</id>
      <name>Billable T&M</name>
      <description>Time billed at T&M daily rate</description>
      <enabled>true</enabled>
      <chargeCodeCategory>BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>
<workItemSetId>31600</workItemSetId>
<notes />
</timeSheetLine>
</ns2:timeSheetLines>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE005	404	Not found	The time sheet does not exist.	N/A
PPMC_WSE000	500	Internal error	There was an internal error when you executed the operation.	N/A
PPMC_WSE509	500	Error when trying to convert the time sheet attributes.	There was a data issue when converting the time sheet attributes.	Fix the data issue

## Getting a Time Sheet Line

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/timeSheetLines/id`

**HTTP Method:** GET

**Description:** Get a time sheet line of a time sheet, specified by the time sheet line ID.

**Request path variables:**

Attribute	Description	Required
id	The id of the time sheet line	Yes

**Response entity body:**

- **on success:** Return an XML object of the time sheet line with the following format:

```
<ns2:timeSheetLine xmlns:ns2="http://www.hp.com/ppm/tm/">
  <id>1468301</id>
  <workItemId>3282935</workItemId>
  <workItemType>PROJECT</workItemType>
  <workItemName>MS Mail Strategy</workItemName>
  <workItemDescription>MS Mail Strategy</workItemDescription>
  <status>1</status>
  <approver>
    <id>33877</id>
    <type>UsersTimeApprover</type>
  </approver>
```

```
<approver>
  <id>31448</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31476</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31446</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31702</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>103632</id>
  <type>UsersTimeApprover</type>
</approver>
<approver>
  <id>31777</id>
  <type>UsersTimeApprover</type>
</approver>
<actuals>
  <actual>
    <activityId>30067</activityId>
    <activityName>Execute - Benefits Realisation</activityName>
    <efforts>
      <dayNum>10</dayNum>
      <effort>4.0</effort>
    </efforts>
    <efforts>
      <dayNum>15</dayNum>
      <effort>6.0</effort>
    </efforts>
    <activityType>added</activityType>
  </actual>
  <actual>
    <activityId>30076</activityId>
    <activityName>Execute - Performance Management</activityName>
    <efforts>
      <dayNum>7</dayNum>
      <effort>10.0</effort>
    </efforts>
    <activityType>added</activityType>
  </actual>
```

```
<actual>
  <activityId>30131</activityId>
  <activityName>914 upgrade act1</activityName>
  <activityType>added</activityType>
</actual>
<actualsType>activity</actualsType>
</actuals>
<workUnit>
  <id>171904</id>
  <actualStart>1368514800000</actualStart>
  <actualFinish>0</actualFinish>
  <actualEffort>2508.0</actualEffort>
  <percentComplete>50.0</percentComplete>
  <estimatedFinish>0</estimatedFinish>
  <effortModified>>true</effortModified>
</workUnit>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100002</id>
      <name>Fixed Price</name>
      <description>Time for activities billed at Fixed Rate</description>
      <enabled>true</enabled>
      <chargeCodeCategory>BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>10.0</chargePercent>
    <chargeCode>
      <id>100003</id>
      <name>Non Billable</name>
      <description>Non Billable Activity</description>
      <enabled>true</enabled>
      <chargeCodeCategory>NON_BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>90.0</chargePercent>
    <chargeCode>
      <id>100001</id>
      <name>Billable T&M</name>
      <description>Time billed at T&M daily rate</description>
      <enabled>true</enabled>
      <chargeCodeCategory>BILLABLE</chargeCodeCategory>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>
```

```

        </chargeCode>
    </tslChargeCodes>
</chargeCodes>
<workItemSetId>60000</workItemSetId>
<notes>
    <note>
        <id>159986</id>
        <description>time sheet restful notes sample. it is used for sample only -
update12334</description>
        <type>TSL</type>
        <createdBy>1</createdBy>
        <createdDate>2013-04-25T00:09:26.000-07:00</createdDate>
        <lastUpdatedBy>1</lastUpdatedBy>
        <lastUpdatedDate>2013-04-25T00:09:26.000-07:00</lastUpdatedDate>
    </note>
</notes>
</ns2:timeSheetLine>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE005	404	Not found	The time sheet does not exist.	N/A
PPMC_WSE000	500	Internal error	There was an internal error when you executed the operation.	N/A
PPMC_WSE509	500	Error when trying to convert the time sheet attributes.	There was a data issue when converting the time sheet attributes.	Fix the data issue.

## Getting Time Sheet Policies

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/policies`

**HTTP Method:** GET

**Description:** Get time sheet policies.

**Query Parameters:**

Attribute	Description
ownerUserId	User ID of the time sheet owner

**Response entity body:**

- **on success:** Return an XML object of the time sheet policies with the following format:

```
<ns2:policies xmlns:ns2="http://www.hp.com/ppm/tm/">
  <policy>
    <name>BucketShowLevel</name>
    <value>DAY</value>
  </policy>
  <policy>
    <name>BucketReportMethod</name>
    <value>HOURL</value>
  </policy>
  <policy>
    <name>HourInPeriodType</name>
    <value>FIXED</value>
  </policy>
  <policy>
    <name>AllowMultipleTimeSheets</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>NotifyDelinquentTimeSheet</name>
    <value>>true</value>
  </policy>
  <policy>
    <name>MaximumHourPerTimeSheet</name>
    <value>20.0</value>
  </policy>
  <policy>
    <name>EnforcementLevelError</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>OverrideWorkAllocationFlag</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>AutoApprovalFlag</name>
    <value>>false</value>
  </policy>
  <policy>
    <name>ReqActivitiesRequiredFlag</name>
    <value>>true</value>
  </policy>
</ns2:policies>
```

```
</policy>
<policy>
  <name>TskActivitiesRequiredFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>PrjActivitiesRequiredFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>PkgActivitiesRequiredFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>MiscActivitiesRequiredFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>ActivitiesDisplayFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>ExpHrsDisplayFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>ReqWorkItemEnabledFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>TskWorkItemEnabledFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>PrjWorkItemEnabledFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>PkgWorkItemEnabledFlag<name>
  <value>>true</value>
</policy>
<policy>
  <name>MiscWorkItemEnabledFlag<name>
  <value>>true</value>
</policy>
<type>Global</type>
</ns2:policies>
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE502	400	The owner user id is invalid. Please input the correct owner user id.	The owner user ID is invalid.	Input the correct owner user id
PPMC_WSE508	500	Cannot find the resource with the owner user id.	The owner user ID does not exist.	N/A

## Creating a Time Sheet

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/timeSheets`

**HTTP Method:** POST

**Description:** Create a time sheet.

**Request entity body:** The body of this operation needs to include an XML object with the following format:

```
<TimeSheet>
  <periodId>100099</periodId>
  <resourceId>1</resourceId>
  <sequence>1</sequence>
  <status>1</status>
  <description>User, Admin - 13-5-1 - 13-5-15 - sample for document
</description>
  <policies>
    <policy>
      <name>AllowMultipleTimeSheets</name>
      <value>>true</value>
    </policy>
    <policy>
      <name>MaximumHoursPerDay</name>
      <value />
    </policy>
    <policy>
      <name>BucketShowLevel</name>
      <value>DAY</value>
    </policy>
    <policy>
      <name>BucketReportMethod</name>
      <value>HOURS</value>
  </policies>
</TimeSheet>
```



```
</policy>
<policy>
  <name>HoursInPeriodType</name>
  <value>WORKDAY</value>
</policy>
<policy>
  <name>HoursInPeriod</name>
  <value>0.0</value>
</policy>
<policy>
  <name>NotifyDelinquentTimeSheet</name>
  <value>>false</value>
</policy>
<policy>
  <name>MaximumHoursPerDay</name>
  <value />
</policy>
<policy>
  <name>MaximumHoursPerTimeSheet</name>
  <value />
</policy>
<policy>
  <name>MinimumHoursPerTimeSheet</name>
  <value />
</policy>
<policy>
  <name>MaximumPercentPerTimeSheet</name>
  <value />
</policy>
<policy>
  <name>MinimumPercentPerTimeSheet</name>
  <value />
</policy>
<policy>
  <name>EnforcementLevelError</name>
  <value>>false</value>
</policy>
<policy>
  <name>PeriodHoursCalcTypeCode</name>
  <value />
</policy>
<policy>
  <name>WorkdayHours</name>
  <value />
</policy>
<policy>
  <name>ReqActivitiesRequiredFlag</name>
  <value>>false</value>
</policy>
<policy>
  <name>TskActivitiesRequiredFlag</name>
  <value>>false</value>
</policy>
```

```
</policy>
<policy>
  <name>PrjActivitiesRequiredFlag</name>
  <value>>false</value>
</policy>
<policy>
  <name>PkgActivitiesRequiredFlag</name>
  <value>>false</value>
</policy>
<policy>
  <name>MiscActivitiesRequiredFlag</name>
  <value>>false</value>
</policy>
<policy>
  <name>ReqWorkItemEnabledFlag</name>
  <value>>true</value>
</policy>
<policy>
  <name>TskWorkItemEnabledFlag</name>
  <value>>true</value>
</policy>
<policy>
  <name>PrjWorkItemEnabledFlag</name>
  <value>>true</value>
</policy>
<policy>
  <name>PkgWorkItemEnabledFlag</name>
  <value>>true</value>
</policy>
<policy>
  <name>MscWorkItemEnabledFlag</name>
  <value>>true</value>
</policy>
<policy>
  <name>AllowEmptyLineFlag</name>
  <value>1</value>
</policy>
</policies>
<notes>
  <note>
    <id>159842</id>
    <description>document sample - time sheet notes sample for the document
    </description>
    <type>TS</type>
  </note>
</notes>
<timeSheetLines>
  <workItemId>3282935</workItemId>
  <workItemType>PROJECT</workItemType>
  <actuals>
    <actual>
      <activityId>30067</activityId>
```

```

    <efforts>
      <dayNum>10</dayNum>
      <effort>4.0</effort>
    </efforts>
    <efforts>
      <dayNum>15</dayNum>
      <effort>6.0</effort>
    </efforts>
    <activityType>added</activityType>
  </actual>
  <actual>
    <activityId>30076</activityId>
    <efforts>
      <dayNum>7</dayNum>
      <effort>10.0</effort>
    </efforts>
    <activityType>added</activityType>
  </actual>
  <actual>
    <activityId>30131</activityId>
    <activityType>added</activityType>
  </actual>
  <actualsType>activity</actualsType>
</actuals>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100002</id>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>10.0</chargePercent>
    <chargeCode>
      <id>100003</id>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>90.0</chargePercent>
    <chargeCode>
      <id>100001</id>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>
<workItemSetId>60000</workItemSetId>
<notes>
  <note>
    <id>159841</id>
    <description>time sheet restful notes sample. it is used for sample only -
update12334</description>

```

```

        <type>TSL</type>
    </note>
</notes>
</timeSheetLines>
<timeSheetLines>
    <workItemId>217037</workItemId>
    <workItemType>TASK</workItemType>
    <status>1</status>
    <actuals>
        <actual>
            <efforts>
                <dayNum>7</dayNum>
                <effort>9.0</effort>
            </efforts>
            <efforts>
                <dayNum>10</dayNum>
                <effort>7.0</effort>
            </efforts>
            <efforts>
                <dayNum>15</dayNum>
                <effort>8.0</effort>
            </efforts>
        </actual>
        <actualsType>common</actualsType>
    </actuals>
<workUnit>
    <percentComplete>80</percentComplete>
</workUnit>
<chargeCodes>
    <updateChargeCodeFlag>true</updateChargeCodeFlag>
    <requireChargeCodeFlag>false</requireChargeCodeFlag>
    <tslChargeCodes>
        <chargePercent>0.0</chargePercent>
        <chargeCode>
            <id>100002</id>
        </chargeCode>
    </tslChargeCodes>
    <tslChargeCodes>
        <chargePercent>0.0</chargePercent>
        <chargeCode>
            <id>100003</id>
        </chargeCode>
    </tslChargeCodes>
    <tslChargeCodes>
        <chargePercent>100.0</chargePercent>
        <chargeCode>
            <id>100001</id>
        </chargeCode>
    </tslChargeCodes>
</chargeCodes>
<workItemSetId>31600</workItemSetId>
<notes />

```

```
</timeSheetLines>
</TimeSheet>
```

**Response Entity body:**

- **on success:** Return an XML object of the created time sheet with the following format:

```
<ns2:createTimeSheetResponse>
  <timeSheetId>30291</timeSheetId>
  <timeSheetLineIds>30527</timeSheetLineIds>
</ns2:createTimeSheetResponse>
```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the access grant.
PPMC_WSE007	403	The user does not have access to this resource.	The user has no access to this resource.	N/A
PPMC_WSE513	400	Field {0} cannot be null or empty.	Field {0} is or empty.	Fill the field with a value.
PPMC_WSE514	400	Field {0} should be greater than {1}.	Field {0} is less than {1}.	Correct the field value.
PPMC_WSE515	400	Field {0} should be greater than or equal to {1}.	Field {0} is less than {1}.	Correct the field value.
PPMC_WSE516	400	Field {0} should be less than {1}.	Field {0} is not less than {1}	Correct the field value.
PPMC_WSE517	400	Field {0} should be less than or equal to {1}.	Field {0} is greater than {1}.	Correct the field value.
PPMC_WSE518	400	Field {0} should be greater than {1} and less than {2}.	Field {0} is not greater than {1} and less than {2}	Correct the field value.
PPMC_WSE519	400	Field {0} should be greater than or equal to {1} and less than or equal to {2}.	Field {0} is not greater than or equal to {1} and less than or equal to {2}.	Correct the field value.

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE520	400	The status can only be UNSIBMITTED when a time sheet is created.	The status is not UNSIBMITTED when a time sheet is created.	Correct the field value.
PPMC_WSE521	400	Fail to pass business restriction.	Fail to pass business restriction.	N/A
PPMC_WSE522	500	Time Management service internal error.	There was an internal error when you executed this operation.	N/A
PPMC_WSE523	400	Total actual effort cannot be less than 0.	Total actual effort is less than 0.	Correct the total actual effort.
PPMC_WSE524	400	The day number exceeds the time period duration, and the day number {0} cannot be greater than {1}.	The day number exceeds the time period duration, and the day number {0} is greater than {1}.	Correct the day number.
PPMC_WSE525	400	Work item type must be one of the following types: [TASK, PROJECT, REQUEST, PACKAGE, MISC].	Work item type is undefined.	Choose the work item type from the [TASK, PROJECT, REQUEST, PACKAGE, MISC] list.
PPMC_WSE526	400	The work item [{0}:{1}] is invalid for resource {2} and time period {3}.	The work item [{0}:{1}] is invalid for resource {2} and time period {3}.	Choose a valid work item for resource {2} and time period {3}.

## Updating a Time Sheet

**Request:** [http://<PPM\\_Server\\_IP>:<port>/itg/rest/tm/timeSheets/timeSheetId](http://<PPM_Server_IP>:<port>/itg/rest/tm/timeSheets/timeSheetId)

**HTTP Method:** PUT

**Description:** Update a time sheet.

**Request path variables:**

Attribute	Description
timesheetId	The id of the time sheet

**Request entity body:** The body of this operation needs to include an XML object with the following format:

```
<TimeSheet>
  <id>447943</id>
  <periodId>100099</periodId>
  <resourceId>1</resourceId>
  <sequence>1</sequence>
  <status>1</status>
  <description>User, Admin - 13-5-1 - 13-5-15</description>
  <notes>
    <note>
      <id>159842</id>
      <description>updated time sheet note</description>
      <type>TS</type>
    </note>
    <note>
      <id>159842</id>
      <description>add time sheet note</description>
      <type>TS</type>
    </note>
  </notes>
  <timeSheetLines>
    <id>1467788</id>
    <workItemId>3282935</workItemId>
    <workItemType>PROJECT</workItemType>
    <actuals>
      <actual>
        <activityId>30067</activityId>
        <efforts>
          <dayNum>10</dayNum>
          <effort>20.0</effort>
        </efforts>
        <efforts>
          <dayNum>15</dayNum>
          <effort>6.0</effort>
        </efforts>
        <activityType>added</activityType>
      </actual>
      <actual>
        <activityId>30076</activityId>
        <efforts>
          <dayNum>7</dayNum>
          <effort>10.0</effort>
        </efforts>
    </actuals>
  </timeSheetLines>
</TimeSheet>
```

```

    <activityType>added</activityType>
  </actual>
</actual>
  <activityId>30131</activityId>
  <activityType>added</activityType>
</actual>
<actualsType>activity</actualsType>
</actuals>
<workUnit>
  <id>171904</id>
  <percentComplete>50.0</percentComplete>
</workUnit>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>0.0</chargePercent>
    <chargeCode>
      <id>100002</id>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>90.0</chargePercent>
    <chargeCode>
      <id>100003</id>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>
<workItemSetId>60000</workItemSetId>
<notes>
  <note>
    <id>159841</id>
    <description>updated tsl notes</description>
    <type>TSL</type>
  </note>
  <note>
    <id>159841</id>
    <description>add tsl notes</description>
    <type>TSL</type>
  </note>
</notes>
</timeSheetLines>
<timeSheetLines>
  <id>1467791</id>
  <workItemId>217037</workItemId>
  <workItemType>TASK</workItemType>
  <status>1</status>
  <actuals>
    <actual>

```



```

    <efforts>
      <dayNum>7</dayNum>
      <effort>9.0</effort>
    </efforts>
    <efforts>
      <dayNum>10</dayNum>
      <effort>7.0</effort>
    </efforts>
    <efforts>
      <dayNum>15</dayNum>
      <effort>8.0</effort>
    </efforts>
  </actual>
  <actualsType>common</actualsType>
</actuals>
<workUnit>
  <percentComplete>60</percentComplete>
</workUnit>
<chargeCodes>
  <updateChargeCodeFlag>true</updateChargeCodeFlag>
  <requireChargeCodeFlag>false</requireChargeCodeFlag>
  <tslChargeCodes>
    <chargePercent>80.0</chargePercent>
    <chargeCode>
      <id>100002</id>
    </chargeCode>
  </tslChargeCodes>
  <tslChargeCodes>
    <chargePercent>20.0</chargePercent>
    <chargeCode>
      <id>100001</id>
    </chargeCode>
  </tslChargeCodes>
</chargeCodes>
  <workItemSetId>31600</workItemSetId>
  <notes />
</timeSheetLines>
</TimeSheet>

```

**Response entity body:**

- **on success:** Return an XML object of the updated time sheet with the following format:

```

<ns2:updateTimeSheetResponse>
  <timeSheetId>30291</timeSheetId>
  <timeSheetLineIds>30527</timeSheetLineIds>
</ns2:updateTimeSheetResponse>

```

- **on failure:** The following message codes are returned if the operation fails:

<b>Message Code</b>	<b>HTTP Return Code</b>	<b>Message</b>	<b>Cause</b>	<b>Possible Corrective Action</b>
PPMC_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the access grant.
PPMC_WSE007	403	The user does not have access to this resource.	The user has no access to this resource.	N/A
PPMC_WSE513	400	Field {0} cannot be null or empty.	Field {0} is empty.	Fill the field with a value.
PPMC_WSE514	400	Field {0} should be greater than {1}.	Field {0} is less than {1}.	Correct the field value.
PPMC_WSE515	400	Field {0} should be greater than or equal to {1}.	Field {0} is less than {1}.	Correct the field value.
PPMC_WSE516	400	Field {0} should be less than {1}.	Field {0} is not less than {1}	Correct the field value.
PPMC_WSE517	400	Field {0} should be less than or equal to {1}.	Field {0} is greater than {1}.	Correct the field value.
PPMC_WSE518	400	Field {0} should be greater than {1} and less than {2}.	Field {0} is not greater than {1} and less than {2}	Correct the field value.
PPMC_WSE519	400	Field {0} should be greater than or equal to {1} and less than or equal to {2}.	Field {0} is not greater than or equal to {1} and less than or equal to {2}.	Correct the field value.
PPMC_WSE520	400	The status can only be UNSIBMITTED when a time sheet is created.	The status is not UNSIBMITTED when a time sheet is created.	Correct the field value.
PPMC_WSE521	400	Fail to pass business restriction.	Fail to pass business restriction.	N/A
PPMC_WSE522	500	Time Management service internal error.	There was an internal error when you executed this operation.	N/A

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE523	400	Total actual effort cannot be less than 0.	Total actual effort is less than 0.	Correct the total actual effort.
PPMC_WSE524	400	The day number exceeds the time period duration, and the day number {0} cannot be greater than {1}.	The day number exceeds the time period duration, and the day number {0} is greater than {1}.	Correct the day number.
PPMC_WSE525	400	Work item type must be one of the following types [TASK, PROJECT, REQUEST, PACKAGE, MISC].	Work item type is undefined.	Choose the work item type from the [TASK, PROJECT, REQUEST, PACKAGE, MISC] list.
PPMC_WSE526	400	The work item [{0}:{1}] is invalid for resource {2} and time period {3}.	The work item [{0}:{1}] is invalid for resource {2} and time period {3}.	Choose a valid work item for resource {2} and time period {3}.

## Submitting a Time Sheet

**Request:** `http://<PPM_Server_IP>:<port>/itg/rest/tm/timesheets/timeSheetId/actions/submit`

**HTTP Method:** POST

**Description:** Submit a time sheet without policy validation.

**Request path variables:**

Attribute	Description
timesheetId	The id of the time sheet

**Response Status Code:**

- **on success:**

Code	Meaning	Returned When
200	Submitted	The time sheet is submitted successfully.

- **on failure:** The following message codes are returned if the operation fails:

Message Code	HTTP Return Code	Message	Cause	Possible Corrective Action
PPMC_WSE000	500	Internal error	There was an internal error when you executed this operation.	N/A
PPMC_WSE006	403	The user does not have the access grant to perform this action.	The user does not have the required access grant.	Get the access grant.
PPMC_WSE007	403	The user does not have access to this resource.	The user has no access to this resource.	N/A
PPMC_WSE510	400	Error when submitting time sheets, for the time sheet does not contain any time sheet line.	The time sheet does not have any time sheet lines.	Add a time sheet line to the time sheet.
PPMC_WSE511	400	Error when submitting time sheets, for the status of the time sheet lines are not REWORK or UNSUBMITTED.	The time sheet lines status are not correct.	Correct the time sheet lines status.
PPMC_WSE512	400	Error when submitting time sheets, for the time sheet is missing approvers.	There is no approver for the time sheet.	Appoint an approver for the time sheet.

## PPM Center Solution Integrations

These APIs enable you to do the followings in the PPM Center Solutions Integration module:

- ["Creating/Updating a MACConfig" below](#)
- ["Getting MACConfigs" on the next page](#)

## Creating/Updating a MACConfig

**Request:** `http://<PPM_Server_IP>:<Port>/itg/rest/integration/MACConfigurations`

**HTTP Method:** POST/PUT

**Description:** Create a request if you do not specify a configuration key; update a request if you specify a configuration key.

**Response entity body:**

- **on success:** Return an XML object of the created or updated MACConfig with the following format:

```
<mACConfig>
  <configurationKey>43824eeb-26de-4ad9-b0fd-4b6974373c11</configurationKey>
    <serverURL>http://ppmvm48:8080/qcbin/</serverURL>
    <userName>admin</userName>
    <password>admin</password>
    <timeZone>28800000</timeZone>
    <domain>LBC</domain>
    <project>LBC_PRJ1</project>
    <enabled>>false</enabled>
    <qcMajorVersion>11</qcMajorVersion>
    <qcMinorVersion>2</qcMinorVersion>
    <requestTypeId>31420</requestTypeId>
    <entityType>Requirement</entityType>
    <dominateCenter>PPM</dominateCenter>
    <syncHierarchy>>false</syncHierarchy>
    <defaultFolder>a</defaultFolder>
    <normalNotificationEnabled>>false</normalNotificationEnabled>
    <errorNotificationEnabled>>false</errorNotificationEnabled>
    <consolidateNormalNotification>>false</consolidateNormalNotification>
    <consolidateErrorNotification>>false</consolidateErrorNotification>
    <fieldMappings>
      <fieldMapping>
        <qcFieldName>name</qcFieldName>
        <qcFieldLabel>Name</qcFieldLabel>
        <ppmfieldToken>REQ.DESCRPTION</ppmfieldToken>
        <ppmfieldPrompt>RFC Summary:</ppmfieldPrompt>
        <fieldControl>Bidirectional</fieldControl>
        <allowValueMap>>false</allowValueMap>
      </fieldMapping>
    </fieldMappings>
  </mACConfig>
```

```

        <ppmToQCValueMaps/>
        <qcToPPMValueMaps/>
    </fieldMapping>
    <fieldMapping>
        <qcFieldName>req-comment</qcFieldName>
        <qcFieldLabel>Description</qcFieldLabel>
        <ppmfieldToken>REQD.RFC_DESCRIPTION</ppmfieldToken>
        <ppmfieldPrompt>RFC Description:</ppmfieldPrompt>
        <fieldControl>Bidirectional</fieldControl>
        <allowValueMap>>false</allowValueMap>
        <ppmToQCValueMaps/>
        <qcToPPMValueMaps/>
    </fieldMapping>
    <fieldMapping>
        <qcFieldName>dev-comments</qcFieldName>
        <qcFieldLabel>Comments</qcFieldLabel>
        <ppmfieldToken>REQD.RFC_EFFECT_NO_CHANGE</ppmfieldToken>
        <ppmfieldPrompt>Effect of no change:</ppmfieldPrompt>
        <fieldControl>Bidirectional</fieldControl>
        <allowValueMap>>false</allowValueMap>
        <ppmToQCValueMaps/>
        <qcToPPMValueMaps/>
    </fieldMapping>
</fieldMappings>
</mACConfig>

```

- **on failure:** The following message codes are returned if the operation fails:

Message Code	Message	Cause	Possible Corrective Action
PPMC_WSE401	ALM MAC configuration validation error	Invalid parameter	Check parameters
PPMC_WSE402	The MAC configuration does not exist	The mac config you try to update does not exist	Check configuration key
PPMC_WSE400	Internal error	Unknown Error	N/A

## Getting MACConfigs

**Request:** [http://<PPM\\_Server\\_IP>:<Port>/itg/rest/integration/MACConfigurations](http://<PPM_Server_IP>:<Port>/itg/rest/integration/MACConfigurations)

**HTTP Method:** GET

**Description:** Get MACConfigs

**Response entity body:**

- **on success:** Return an XML object of the MACConfigs with the following format:

```

<ns2:mACConfigs>
  <mACConfig>
    <configurationKey>43824eeb-26de-4ad9-b0fd-4b6974373c11</configurationKey>
    <serverURL>http://ppmvm48:8080/qcbin/</serverURL>
    <userName>admin</userName>
    <password>#!#6{P?~oJ}o1Lc3xR*-A_8I|?s0vO_*)p*FBx{Sfb+&iE@Z)A5Iz(h7wa$=0
    HatC31/dM4d_i_d.m>=<Z(T||j6x&WDb=+/,bPvJ@8aRN`+iaCHdc$P(S?Dh343BbW+(3q
    h+5&O1(f@_@3z ( q&=FgN_i28>zL<OBj4|=nA_>mZ:~DvsAc9cTG.9JJ<Ev#!#
    </password>
    <timeZone>28800000</timeZone>
    <domain>LBC</domain>
    <project>LBC_PRJ1</project>
    <versioning>>false</versioning>
    <enabled>>false</enabled>
    <qcMajorVersion>11</qcMajorVersion>
    <qcMinorVersion>2</qcMinorVersion>
    <requestTypeId>31420</requestTypeId>
    <entityType>Requirement</entityType>
    <dominateCenter>PPM</dominateCenter>
    <syncHierarchy>>false</syncHierarchy>
    <defaultFolder>a</defaultFolder>
    <normalNotificationEnabled>>false</normalNotificationEnabled>
    <errorNotificationEnabled>>false</errorNotificationEnabled>
    <consolidateNormalNotification>>false</consolidateNormalNotification>
    <consolidateErrorNotification>>false</consolidateErrorNotification>
    <fieldMappings>
      <fieldMapping>
        <qcFieldName>name</qcFieldName>
        <qcFieldLabel>Name</qcFieldLabel>
        <ppmfieldToken>REQ.DESCRPTION</ppmfieldToken>
        <ppmfieldPrompt>RFC Summary:</ppmfieldPrompt>
        <fieldControl>Bidirectional</fieldControl>
        <allowValueMap>>false</allowValueMap>
        <ppmToQCValueMaps/>
        <qcToPPMValueMaps/>
      </fieldMapping>
      <fieldMapping>
        <qcFieldName>req-comment</qcFieldName>
        <qcFieldLabel>Description</qcFieldLabel>
        <ppmfieldToken>REQD.RFC_DESCRIPTION</ppmfieldToken>
        <ppmfieldPrompt>RFC Description:</ppmfieldPrompt>
        <fieldControl>Bidirectional</fieldControl>
        <allowValueMap>>false</allowValueMap>
        <ppmToQCValueMaps/>
        <qcToPPMValueMaps/>
      </fieldMapping>
    </fieldMappings>
  </mACConfig>
</ns2:mACConfigs>

```

```

</fieldMapping>
<fieldMapping>
  <qcFieldName>dev-comments</qcFieldName>
  <qcFieldLabel>Comments</qcFieldLabel>
  <ppmfieldToken>REQD.RFC_EFFECT_NO_CHANGE</ppmfieldToken>
  <ppmfieldPrompt>Effect of no change:</ppmfieldPrompt>
  <fieldControl>Bidirectional</fieldControl>
  <allowValueMap>>false</allowValueMap>
  <ppmToQCValueMaps/>
  <qcToPPMValueMaps/>
</fieldMapping>
</fieldMappings>
</mACConfig>
<mACConfig>
  <configurationKey>0e262c3d-0c24-4a15-9fab-d7fd4f374eac
</configurationKey>
  <serverURL>http://16.186.74.187:8888/qcbin/</serverURL>
  <userName>beta</userName>
  <password>#!#7MZueENT}E5DaAa8-Mw:<:/zOs/Cm16KprC:|P*OrR< 1V?RsmR*EHxy
a 4Gm3DTSu&1aptWfGd7:@pzNzV_1r2KEBjH:9,bU}BoG<F:QsmXQ.x ~SNPF:-o/
(L`fb1/-mWy9n+qZ11c NMn 5XORb/lPLJ@gF&-?WaVluL@PvD4MtFQgVbnY4dya3U
m>#!#</password>
  <timeZone>Etc/GMT+12</timeZone>
  <domain>BETA</domain>
  <project>beta1</project>
  <versioning>>false</versioning>
  <enabled>>false</enabled>
  <qcMajorVersion>11</qcMajorVersion>
  <qcMinorVersion>5</qcMinorVersion>
  <requestTypeId>31420</requestTypeId>
  <entityType>Requirement</entityType>
  <dominateCenter>PPM</dominateCenter>
  <syncHierarchy>>true</syncHierarchy>
  <defaultFolder>P</defaultFolder>
  <normalNotificationEnabled>>false</normalNotificationEnabled>
  <errorNotificationEnabled>>false</errorNotificationEnabled>
  <consolidateNormalNotification>>false</consolidateNormalNotification>
  <consolidateErrorNotification>>false</consolidateErrorNotification>
  <fieldMappings>
    <fieldMapping>
      <qcFieldName>name</qcFieldName>
      <qcFieldLabel>Name</qcFieldLabel>
      <ppmfieldToken>REQ.DESCRPTION</ppmfieldToken>
      <ppmfieldPrompt>RFC Summary:</ppmfieldPrompt>
      <fieldControl>Bidirectional</fieldControl>
      <allowValueMap>>false</allowValueMap>
      <ppmToQCValueMaps/>
      <qcToPPMValueMaps/>
    </fieldMapping>
  </fieldMappings>
</mACConfig>

```



```
        </fieldMapping>  
    </fieldMappings>  
</mACConfig>  
</ns2:mACConfigs>
```

# Send Documentation Feedback

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

**Feedback on RESTful Web Services Guide (Project and Portfolio Management Center 9.30)**

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to [HPSW-BTO-PPM-SHIE@hp.com](mailto:HPSW-BTO-PPM-SHIE@hp.com).

We appreciate your feedback!