



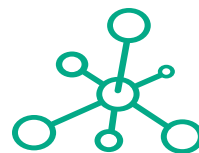
Project and Portfolio Management Center

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Time Management Configuration Guide

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Chapter 1: Getting Started with Time Management Configuration

- ["Introduction to Time Management" below](#)
- ["Overview of Configuring Time Management" on page 14](#)
- ["Related Information" on page 16](#)

Introduction to Time Management

Time Management is an Project and Portfolio Management Center (PPM Center) application that allows users (resources) to use time sheets to report how long they worked on specific "work items." Work items are categorized in Time Management as requests, projects, tasks, packages, or other miscellaneous types of work. Planners or operations managers assign work items to specific resources (users). For more information about work items, see ["Using Work Items in Time Sheets and Work Allocations" on page 12](#).

Resources can also use the My Tasks portlet to report work they have done on tasks in projects.

On an ongoing basis, the time sheets for a resource cover a consistent reporting period, such as weekly or semimonthly. At the end of each reporting period, resources submit their time sheets for approval. Designated approvers then review and approve the reported time. Project managers can compare reported "actuals" to previously estimated time and associated costs.

Depending on your responsibilities, you can use Time Management to do the following:

- Create and manage time sheets (many resources will use Time Management for only this purpose)
- Review and approve time from time sheets
- Freeze and close time sheets
- Create work allocations for packages and miscellaneous items, if needed
- Compare actual time reported by users against estimated time and associated costs
- Configure Time Management in a variety of ways as described in this guide

["Getting Started with Time Management Configuration" above](#) provides the following:

- Overview of the processing of time sheets
- Introductions to using work items, the My Tasks portlet, and integration with Project Management
- Overview of configuring Time Management
- List of other documents related to Time Management

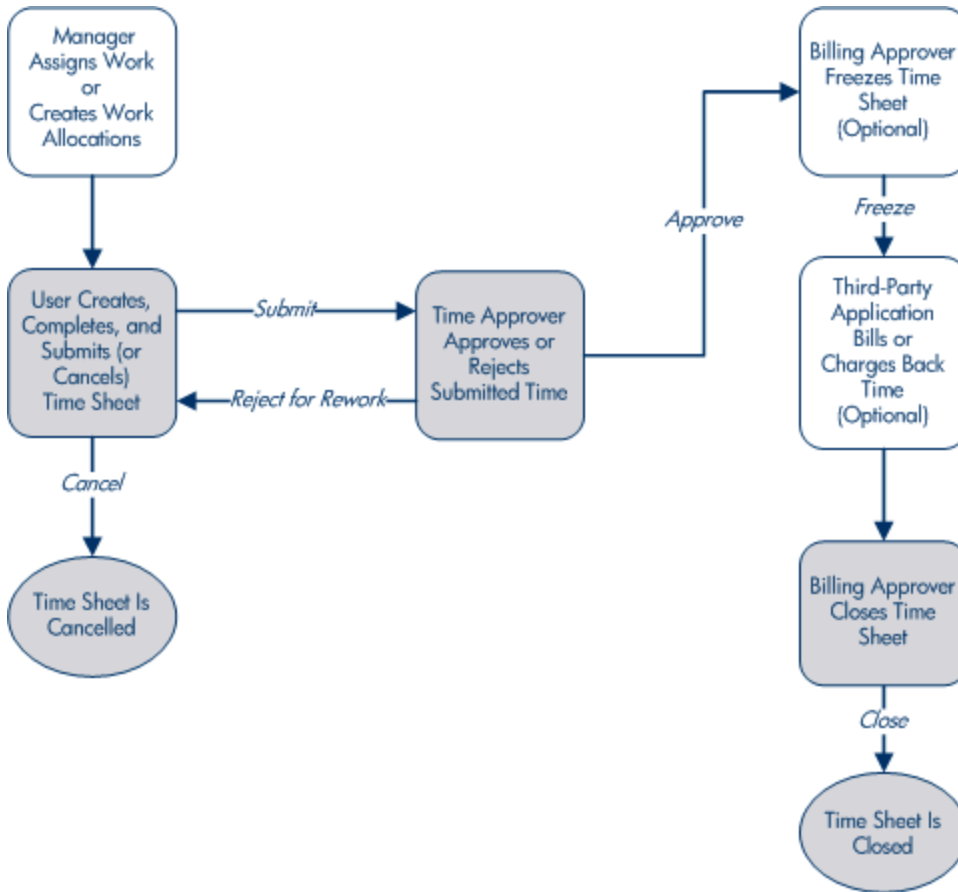
Overview of the Time Management Process

Time Management uses time sheets to efficiently manage the time reporting and approval process.

["Figure 1-1. Time Management process overview" on the next page](#) illustrates the Time Management process, and subsequent sections outline the steps and the people involved in the process, and related information in this guide.

Most Time Management users are resources assigned to specific work items who complete time sheets to report their time, submit their time sheets for approval, and occasionally rework or cancel their time sheets, as described in detail in the *Time Management User's Guide*. However, PPM Center administrators can configure many different aspects of Time Management to meet their business needs, as described in this guide.

Figure 1-1. Time Management process overview



Create Work Allocations

Depending on functional requirements, managers or planners can optionally create work allocations for packages and miscellaneous work items, one per work item, to specify the following:

- The amount of time allocated to be spent on a particular work item.
- Which resources (users) are allowed to spend time on the work item.
- The charge code (or codes with relative percentages) against which the time can be billed. For information about configuring charge codes, see ["Charge Codes" on page 58](#).

The work item must exist before its work allocation is created and specified. The planner can then compare the actual time entered on time sheets to the time specified in the work allocation.

Note: Work allocations for projects and tasks are superseded by the assigned resources and

expected time for projects and tasks when Time Management and Project Management are integrated using the Cost and Effort policy in project settings (see the *Time Management User's Guide*).

Work allocations for requests are superseded by the assigned resources specified in request types (see the *Demand Management Configuration Guide*).

HPE strongly recommends that you *not* use work allocations for projects, tasks, or requests, but only for packages and miscellaneous items as needed.

For more information about work allocations, see the *Time Management User's Guide*.

Create, Complete, and Submit Time Sheets

Resources who use Time Management enter the time they spent on work items by creating time sheets to specify which work items they worked on during the current reporting period, how much time they spent on each one, and, if configured, what types of activities they performed on those work items. Each time sheet spans a predefined time reporting period (such as a particular week or month), as determined by the time sheet policy assigned to each resource. Each work item on the time sheet is represented by a separate line. Resources submit completed time sheets for approval by designated approvers. Their managers or specified delegates can also submit time sheets on their behalf.

An administrator assigns each resource a time sheet policy, which controls many aspects of the creation and processing of time sheets, including such parameters as the time reporting period and whether resources are sent email reminders that their time sheets are due. See ["Time Sheet Policies" on page 22](#).

For details about how users create, edit, submit, and otherwise manage their time sheets, see the *Time Management User's Guide*.

There are many ways an administrator can configure time sheets and related functions, as described in ["Overview of Configuring Time Management" on page 14](#).

Cancel Time Sheets

Users (or their managers or delegates) can cancel their own time sheets. Only unsubmitted time sheets can be cancelled. Once a time sheet has been cancelled, it cannot be reopened or updated.

Approve Time

When a user completes and submits a time sheet, it progresses to a status of Pending Approval. Then the designated time approver can review and approve (or reject) the time reported on the time sheet. Typically, at the end of each time reporting period, time approvers use the Approve Time Sheets portlet or the Approve Time page to keep track of time sheets that await their approval. Each line on the time sheet can be independently approved or rejected, as necessary.

Once all the lines on a time sheet are approved, the time sheet moves forward in the process. If an approver rejects any time sheet lines, the user must rework them by, for example, correcting them and resubmitting the time sheet, or providing additional information or justification. For details about the approval process, see the *Time Management User's Guide*.

Some situations require bypassing the approval process. In this case, a time sheet policy can be configured to automatically approve time sheets when they are submitted. Also, depending on the time sheet policy, users might be automatically notified when any of their submitted time is rejected. See ["Time Sheet Policies" on page 22](#).

Freeze Time Sheets

Even after a time sheet is approved, a period of time can be allowed for users to make and submit updates and for approvers to approve the updates. However, at some point, a designated billing approver can optionally "freeze" the time sheet to prohibit further changes and allow reporting of the time sheet information or extraction of the information for a billing or financial system. When a time sheet has been frozen for sufficient time (or if it does not need to be frozen), the billing approver can "close" it.

Bill or Charge with Third-Party Applications

After a billing approver freezes a time sheet, costs can be retrieved to bill an internal or external customer. While Time Management does not explicitly perform this billing function, it does make the costs associated with each line of a time sheet available for billing, broken down by activity and charge code if applicable. For information about configuring charge codes, see ["Charge Codes" on page 58](#). Freezing a time sheet effectively prevents any further changes to that time sheet, facilitating a stable period of time during which time information can be extracted and sent to third-party financial applications.

Close Time Sheets

Once a time sheet has been approved and, if necessary, frozen for data extraction or other external use by a billing or financial system, the billing approver closes the time sheet and final reports can be generated.

Using Work Items in Time Sheets and Work Allocations

Time Management can use the following high-level types of work items:

- **Project.** A project in Project Management. A project can specify whether it tracks time at the project level, at the summary task level, or at the individual task level. For detailed information about projects, see the *Project Management User's Guide*.
- **Task.** A task in a project in Project Management. For detailed information about tasks, see the *Project Management User's Guide*.
- **Request.** A request in Demand Management. For detailed information about requests, see the *Demand Management User's Guide* and the *Demand Management Configuration Guide*.
- **Package.** A package in Deployment Management. For detailed information about packages, see the *Deployment Management User's Guide*.
- **Miscellaneous.** A miscellaneous item in Time Management, such as meetings and vacations. You can configure other miscellaneous work items, as required by the business.

You can enable or disable each of these work item types. This document assumes that all work item types are enabled.

Work items are specified in the following interactions:

- When a resource adds lines to a time sheet, the resource selects which type of work item to add, selects the specific item of that type, and adds that item to the time sheet. Each line on a time sheet represents one work item.
- When a planner creates an allocation for a work item, the planner selects the type of work item and then selects the specific item of that type for which to create the allocation. Work allocations support packages and miscellaneous work items.

A work item can require time and effort from more than one resource, and can span multiple steps of the process shown in "[Figure 1-1. Time Management process overview](#)" on page 9. For example, a request to fix a defect in a software application might involve adding functionality to the application. Several different resources might contribute to this request, each performing a different type of work, such as the following:

- Initial design
- Design review and signoff
- Coding
- Testing
- Release

All involved resources can specify the same request on their time sheets, and log their individual time against that request.

Using the My Tasks Portlet and Project Integration

If a user is licensed to use Project Management, the My Tasks portlet is available on the user's PPM Center default page. The My Tasks portlet allows the user to log time that is then automatically copied to time sheets for tasks in projects that are integrated with Time Management, so that the user does not need to separately access and complete the time sheets.

From this portlet, you can enter the breakdown (in hours per day, for example) of the time worked on each task over the same time period as the time sheet. This portlet is used to report time only for tasks, not for any other types of work items such as requests or packages.

A project manager can integrate Time Management and Project Management on a project-by-project basis. If a project uses this integration capability, users report details of the time they worked on that project's tasks in either Time Management time sheets or in the My Tasks portlet. Then that reported time is automatically reflected in the My Tasks portlet or the time sheets respectively.

For more information about the My Tasks portlet and integration, see the *Time Management User's Guide*.

Overview of Configuring Time Management

Time Management administrators can control many aspects of time sheet creation and processing, depending on business needs. The major configuration items are as follows:

- **Period types and time periods.** A period type specifies the frequency at which resources must submit time sheets, such as weekly, semimonthly, or monthly. A time period is a specific date range of a given period type.

For configuration information, see ["Period Types and Time Periods" on page 18](#).

- **Time sheet policies.** Every resource (user) who completes a time sheet is assigned a time sheet policy. A time sheet policy sets rules in regard to completing time sheets, such as the following:
 - Period type (defined above).
 - By which of the following methods users enter time for each work item:
 - In units of hours, day by day over the time period
 - In units of hours for the entire time period
 - As a percentage of the entire time period
 - In units of days, day by day over the time period
 - In units of days for the entire time period
 - Whether time sheets display expected time for tasks.
 - Whether users are allowed to create multiple time sheets for the same time period.
 - Whether users are required to complete a time sheet for each time period.
 - Whether certain time sheet lines are automatically approved.
 - Whether users are allowed to submit time sheets that have empty lines (lines in which all values are 0).
 - Whether reminder email notifications to submit time sheets are sent to users. Reminders can be sent before unsubmitted time sheets are due, on their due date, or when they become overdue (delinquent).
 - Whether emails are sent to users whose approvers rejected reported time.
 - Maximum time per day and minimum and maximum time that can be reported on a time sheet, and if a user violates the policy, whether to prevent the user from submitting the time sheet or

just warn the user (and the approver) of the violation.

- Default charge codes for the time sheet policy.
- Which work item types (projects, tasks, requests, packages, and miscellaneous items) are enabled and which are disabled for user screens and menus. If the parameter in the `server.conf` configuration file corresponding to the work item type is disabled, it is not available to enable in the time sheet policy.
- Whether users are allowed to specify activities for any work item types and if so, whether they must specify activities for particular work item types.

You can create and specify different time sheet policies for different resources as needed.

For configuration information, see ["Time Sheet Policies" on page 22](#).

- **Resources.** A resource who uses Time Management must have a time sheet policy, a time approver, and a billing approver configured using Resource Management. (Other aspects of resource configuration include, for example, the resource's organization, role, and calendar.)

For configuration information, see ["Resources" on page 42](#).

- **Activities.** You can configure a list of activities the organization uses to categorize work, such as design work or coding (see ["Using Work Items in Time Sheets and Work Allocations" on page 12](#)). Then, in addition to tracking the total time spent on a given work item, Time Management also tracks how much of the time was spent performing different activities. Activities can also be used to classify work as depreciable for financial accounting. (You can require that users specify activities on time sheets for particular work item types, such as requests or packages.)

For configuration information, see ["Activities" on page 51](#).

- **Charge codes.** Charge codes are entities used as links between work items and charge accounts to allow time information to be extracted for a billing system used by an internal customer, external customer, or requestor.

For configuration information, see ["Charge Codes" on page 58](#).

- **Rules.** Three types of rules for Time Management are introduced in this guide.
 - **Override rules.** Override rules allow you to implement specific business rules that govern the approvers or charge codes for specific work items (time sheet lines), overriding an existing time sheet policy or time approvers. For example, you can configure an override rule such that time submitted by any resource toward a particular task is sent for approval to a specific manager, regardless of any default time approver settings.
 - **Rules for the Suggested Items list.** Time Management automatically provides a Suggested

Items list of work items that users are likely to add to their time sheets. This reduces the need for users to search for work items. You can customize the rules that govern which work items are automatically included in the Suggested Items list.

- **Custom Rules for Time Sheets.** These rules are provided by Time Management to supplement the standard configurable time sheet policies described in ["Time Sheet Policies" on page 22](#). For example, you can configure a custom rule that specifies the maximum of hours permitted for a work item in a time sheet.

For configuration information, see ["Rules" on page 63](#)

- **Filters.** Filters for Time Management limit the search results for work items users can add to time sheets and work allocations.

For configuration information, see ["Work Item Filters" on page 90](#).

- **Validations.** Validations determine the acceptable input values for fields. You can add custom items to certain fields. For example, you can supplement the default set of miscellaneous work items that can be included on a time sheet—Meetings, Other, and Vacation—with additional validations appropriate for your business, such as Business Travel.

For configuration information, see ["Time Management Validations" on page 99](#).

- **User data.** User data comprises a set of custom fields that can be defined as needed by your business. Time Management uses the user data type named Time Sheet Line User Data, where you can define additional fields for users to complete on the **User Data** tab of the Work Items Details window for their time sheet lines. Optionally, you can configure user data fields such that users must specify values for them on each time sheet line before they can save the time sheet. For example, you might require that users select either **Internal** or **External** from a drop-down list for a field you call **Initiative Type**, and that users specify a text field you call **# Staff Affected**.

For configuration information, see ["Time Management User Data" on page 103](#).

In addition, administrators can run a script provided by HPE to import large volumes of time sheet data from external applications into the database of PPM Center. For more information, see ["Importing Time Sheet Data from External Applications " on page 110](#).

Related Information

The following documents also include information related to configuring Time Management:

- *Time Management User's Guide*
- *Time Management Configuration Guide*
- *Demand Management Configuration Guide*
- *Deployment Management User's Guide*
- *Deployment Management Configuration Guide*
- *Project Management User's Guide*
- *Financial Management User's Guide*
- *Commands, Tokens, and Validations Guide and Reference*
- *Security Model Guide and Reference*
- *Reports Guide and Reference*
- *HPE-Supplied Entities Guide* (includes descriptions of all Time Management portlets, reports, and request types)

Other more general information of interest is available in the *Getting Started* guide.

Chapter 2: Period Types and Time Periods

- ["Overview of Period Types and Time Periods" below](#)
- ["Enabling and Disabling Period Types" on the next page](#)
- ["Creating Time Periods" on page 21](#)

Overview of Period Types and Time Periods

This section details how to configure Time Management period types and time periods.

A period type specifies the frequency at which resources must submit time sheets. A time period (period) is a specific date range of a given period type.

The available period types are as follows:

- **Weekly.** Resources submit time sheets every week. Each period starts on a Monday by default. To change which day of the week each period starts on, see ["Enabling and Disabling Period Types" on the next page](#).
- **Bi-Weekly.** Resources submit time sheets every two weeks. Each period starts on a Monday by default. For example, 8/29/10 – 9/11/10 is a biweekly time period in August and September 2010. To change which day of the week each period starts on, see ["Enabling and Disabling Period Types" on the next page](#).
- **Semi-Monthly.** Resources submit time sheets twice a month. The first time period always starts on the 1st and ends on the 15th of the month. For example, the two semimonthly time periods of September 2010 are 9/1/09 – 9/15/10 and 9/16/10 – 9/30/10.
- **Monthly.** Resources submit time sheets once a month. Each time period covers one full calendar month, such as 9/01/10 – 9/30/10 for September 2010.

Note: When period types are shorter, users experience faster response times as they use their time sheets.

Enabling and Disabling Period Types

Up to four period types can be enabled. Enabling period types makes them available to Time Management. For information about selecting an enabled period type to use in a time sheet policy, see ["Time Sheet Policies" on page 22](#).

Enabling or disabling period types requires knowledge of SQL and DBA privileges. See your application administrator regarding selecting and enabling period types. The supported period types are listed in ["Table 2-1. Period types and supported duration_code values" below](#). Supported values for the associated duration_code are case-sensitive.

Table 2-1. Period types and supported duration_code values

Period Type	Supported duration_code Values
Weekly	WEEKLY
Bi-Weekly	BI_WEEKLY
Semi-Monthly	SEMI_MONTHLY
Monthly	MONTHLY

By default, only the Semi-Monthly period type is enabled.

To enable or disable a period type:

1. Connect to the database schema containing the PPM Center installation (using SQL*Plus or your choice of SQL editor).
2. Run the following query to check the supported options:

```
SQL> SELECT * FROM KTMG_PERIOD_TYPES
```

This query should return the four period types.

3. To enable a period type, set the enabled flag to **Y** for the period types.

For example:

```
SQL> UPDATE ktmg_period_types
```

```
SQL> SET enabled_flag = 'Y'
```

```
SQL> WHERE duration_code = '<Supported Value>'
```

where *<Supported Value>* is one of the supported values listed in ["Table 2-1. Period types and supported duration_code values" above](#).

Each period type can be enabled or disabled. For example, to enable Weekly and Monthly period types and disable Bi-Weekly and Semi-Monthly period types, use the following:

```
SQL> UPDATE ktmg_period_types
SQL> SET enabled_flag = 'Y'
SQL> WHERE duration_code = 'WEEKLY'

SQL> UPDATE ktmg_period_types
SQL> SET enabled_flag = 'N'
SQL> WHERE duration_code = 'BI_WEEKLY'

SQL> UPDATE ktmg_period_types
SQL> SET enabled_flag = 'N'
SQL> WHERE duration_code = 'SEMI_MONTHLY'

SQL> UPDATE ktmg_period_types
SQL> SET enabled_flag = 'Y'
SQL> WHERE duration_code = 'MONTHLY'
```

4. For the Weekly and Bi-Weekly period types, you can change the day of the week that starts the time period, as specified by `start_day_code`. By default, the start day is Monday, but you can use SQL to change it to any day of the week. For example, to set `start_day_code` to Sunday for the Weekly period type, use the following:

```
SQL> UPDATE ktmg_period_type
SQL> SET start_day_code = 'SUNDAY'
SQL> WHERE duration_code = 'WEEKLY'
```

The possible values for `start_day_code` are as follows:

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

Creating Time Periods

This section details how to create time periods. When you create time periods, you specify the number of time periods to create. For example, if the period type is set to Weekly and 52 time periods are created, a one-year supply of time periods becomes available to users for time sheet creation. You can add other time periods at any time. Period types must be configured before creating time periods (see ["Enabling and Disabling Period Types" on page 19](#)).

To create time periods, you must have administrative access to the PPM Server such that you can run scripts under the home directory of the PPM Center application suite. The following steps outline how to use the tools provided on the PPM Server to create the required time periods:

1. Log on to the PPM Server as the application administrator.
2. Navigate to the `<PPM_Home>/bin` directory, where `<PPM_Home>` is the location where PPM Center was installed.
3. Run the `kGenTimeMgmtPeriods.sh` command as follows:

```
sh ./kGenTimeMgmtPeriods.sh <number_of_periods> <start_date>
```

where `<number_of_periods>` is the number of time periods to create for a specific period type; and `<start_date>` is the starting date of time periods (date format: MM/DD/YY) to create for a specific period type.

A prompt is displayed for you to choose the period type.

For example, if you want to create 20 time periods starting from January 2, 2012, run the command as follows:

```
sh ./kGenTimeMgmtPeriods.sh 20 01/02/12
```

Executing the script with no parameters and selecting **Help**, you can get the information about the usage of this command and the format of time periods as follows:

```
USAGE: java com.kintana.tmg.util.GenTimePeriod [-h] number_of_periods star_date
number_of_periods - an integer value; specify the number of periods to create
start_date       - MM/dd/yy; create periods starting from this date
```

4. Repeat [step 3](#) for each enabled period type.

Chapter 3: Time Sheet Policies

- ["Overview of Time Sheet Policies" below](#)
- ["Creating a Time Sheet Policy" on the next page](#)
- ["Configuring the Global Time Sheet Policy" on page 40](#)

Overview of Time Sheet Policies

Time sheet policies are rules designed to control the creation and operation of time sheets. You can configure different time sheet policies and apply them to different resources (one by one) as needed. For example, you might want different time sheet policies to apply to different resources depending on their business units or whether they are employees or contractors.

Every resource is assigned a time sheet policy. You can designate one time sheet policy as the global time sheet policy (see ["Configuring the Global Time Sheet Policy" on page 40](#)). By default every resource is assigned this time sheet policy.

After you create new time sheet policies, you can assign them to specific resources as needed. If necessary, you can also edit existing time sheet policies, and the changes will apply to their assigned resources.

Note: Most changes to existing time sheet policies affect only time sheets that are created after the policy change. Exceptions are noted in following sections where appropriate.

The Time Sheet Policy window consists of the following sections and tabs:

- **General information section.** This section appears above the Time Sheet Policy window tabs and shows the **Name** of the time sheet policy and the **Period Type**—**Weekly**, **Bi-Weekly**, **Semi-Monthly**, or **Monthly**—that is to be used to log time.
- **Time Sheet Policy tab.** This tab is the default tab displayed when the Time Sheet Policy window opens. On this tab, you specify how resources who are assigned this policy are to enter time worked on their time sheets—by **Day in Hours**, **Period in Hours**, **Period in Percent**, **Day in Days**, or **Period in Days**. You specify whether resources view expected time for tasks on their time sheets. You can also allow a resource to create multiple time sheets for the same time period, require resources to submit a time sheet for each time period, and set up automatic time sheet approval. Finally, you can specify whether resources who are assigned this policy are allowed to

submit time sheets that have empty lines (lines in which all values are 0).

- **Notifications tab.** On this tab, you can specify when email notifications should be sent to resources and what they should say. Notifications can be used to remind resources to submit time sheets (before or after they are due, or both). Notifications can also be used to tell resources that an approver has rejected time they submitted.
- **Min/Max Enforcement tab.** On this tab, you can set the maximum time that resources can report on a time sheet for one day, and the minimum and maximum total time they can report on a time sheet (or the minimum and maximum percentages they can report if time is entered by **Period in Percent**). You can also set the level of enforcement to only warn resources and approvers of policy violations, or to prevent resources from submitting time sheets that have violations.
- **Charge Codes tab.** On this tab, you set the default charge code or apportioned charge codes for the time sheet policy. For information about creating charge codes and how Time Management prioritizes time sheet policies among other factors in determining which charge codes to apply to the time logged by a resource, see "[Charge Codes](#)" on page 58.
- **Work Items tab.** On this tab, you specify, in any combination, the work item types against which users are allowed to log time.
- **Activities tab.** This tab allows you to control whether users are allowed to specify activities for any work items at all. If allowed, you can require that users specify activities for any of the work item types—projects, tasks, requests, packages, or miscellaneous items—on their time sheets. For information about creating activities, see "[Activities](#)" on page 51.

Creating a Time Sheet Policy

To create a time sheet policy, open the Time Sheet Policy Workbench for configuration as follows:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Time Sheet Policies**.
The Time Sheet Policy Workbench opens.
4. Click **New Time Sheet Policy**. (If you want to revise an existing policy, click **List**, and open the desired policy in the **Results** tab.)
The Time Sheet Policy window opens.

5. Configure the time sheet policy as described in the following sections:
 - ["Configuring General Information and the Time Sheet Policy Tab" below](#)
 - ["Configuring the Notifications Tab" on page 28](#)
 - ["Configuring the Min/Max Enforcement Tab" on page 33](#)
 - ["Configuring the Charge Codes Tab" on page 37](#)
 - ["Configuring the Work Items Tab" on page 39](#)
 - ["Configuring the Activities Tab" on page 40](#)

Configuring General Information and the Time Sheet Policy Tab

To complete the general information section of the time sheet policy:

1. Make sure that the required period types and time periods are configured, as described in ["Period Types and Time Periods" on page 18](#).
2. At the top of the Time Sheet Policy window, in the **Name** field, enter the name of the new time sheet policy. (The examples in this section use the time sheet policy name **Contractors**.)
3. In the **Period Type** field, select the period type to use for this policy.

To complete the **Time Sheet Policy** tab:

1. In the **Enter Time by** field, specify how resources will enter time in their time sheets. The options are as follows:
 - **Day in Hours.** Resources will report time for each work item in units of hours, with one column for each day of the time period. The number of columns depends on the period type (7 for weekly, 14 for biweekly, and so on).
 - **Period in Hours.** Resources will report time for each work item as the total number of hours over the entire time period. There is only one column for the entire time period.
 - **Period in Percent.** Resources will report time for each work item as a percentage of the entire time period. There is only one column for the entire time period. If you select this option, the **Hours in a time period** options appear below it, as described in [step 2](#).

Note: Unless you specify a maximum of 100 percent and a minimum of 100 percent per time sheet on the **Min/Max Enforcement** tab, resources who enter time by **Period in Percent** can submit a time sheet with lines that total more than or less than 100 percent. See "[Configuring the Min/Max Enforcement Tab](#)" on page 33.

- **Day in Days.** Resources will report time for each work item in units of days, with one column for each day of the time period. The number of columns depends on the period type (7 for weekly, 14 for biweekly, and so on). If you select this option, the **Hours in a day** option appears below it, and you must specify the number of hours in a full workday for resources who have this policy.
- **Period in Days.** Resources will report time for each work item as the total number of days over the entire time period. There is only one column for the entire time period. If you select this option, the **Hours in a day** option appears below it, and you must specify the number of hours in a full workday for resources who have this policy.

Note: When users enter data for an entire period (**Period in Hours**, **Period in Percent**, or **Period in Days**) rather than for a day at a time (**Day in Hours** or **Day in Days**), they experience faster response times as they use their time sheets.

2. If you choose to have resources enter time by **Period in Percent** in [step 1](#), the **Hours in a time period** options appear and you must perform this step; if you choose a different option in [step 1](#), proceed to [step 3](#).

If you choose **Period in Percent**, select one of the following options and specify a number of hours so that Time Management can convert the percentages that resources enter into actual hours for each work item for the time period:

- **(Number of workdays in the time period) X Hours in a day ____**, where **X** denotes multiplication and you enter the number of work hours in a day in the numeric text box. With this selection, the number of hours in a time period—the product of the multiplication—varies among time periods according to the number of workdays each time period has.

Note: When you specify that resources are to enter time by **Period in Percent** with this variable number of hours in a time period, there are subtleties to consider. The basis (denominator) of the percentage a resource specifies is intended to be the total time in the time period. Assuming five workdays every week, time periods for a **Monthly** period type vary in length from 20 to 23 workdays, and time periods for a **Semi-Monthly** period type vary from 9 to 12 workdays.

Additionally, for the numerator of the percentage, if a work item of fixed duration is performed repeatedly, for example if a two-hour meeting is held every Tuesday, there are four occurrences (four Tuesdays) in some months and five in others, or two occurrences in some semimonthly time periods and three in others.

If time sheets must be precise, resources who work on more than one work item might need to recalculate for each time sheet the *percentages* of the time they report for each work item. HPE recommends using this option only if it is acceptable for resources to report approximate percentages.

- **Fixed number of hours** ___ for a time period. With this selection, every time period has the same number of hours. Even the effect of specifying any normal working days as non-working days in calendars is overridden.

For example, assume the following:

- The **Period Type** is **Monthly**.
- Time is entered by **Period in Percent**.
- The **(Number of workdays in the time period) X Hours in a day** ___ option is chosen, with **Hours in a day** specified as **8**.
- The user creates a time sheet for a month that has 22 working days.

If the user enters 10 percent for a particular work item, Time Management displays and reports that time as 10% of 22 * 8 hours, or 17.60 hours.

3. If you want resources who are assigned this policy to view the **Expected Hours** or **Expected Days** column on their time sheets, select the **Show Expected Time on Time Sheet** check box. If not, clear the check box.
4. If you want to allow resources who are assigned this policy to create multiple time sheets for any given time period, select the check box with text that begins with **Resources are allowed to create multiple Time Sheets for the same time period**. Selecting this option disables the **Min/Max Enforcement** tab. Since time is approved at the time sheet line level, you might not need to allow multiple time sheets in a period.

Note: For projects that use integration of Time Management and Project Management, a user's My Tasks portlet shows the total time the user reported for a project or task in all the user's time sheets from all time periods, whether or not multiple time sheets for any one time period are allowed. The My Tasks portlet provides the user with links to each of the user's time sheets. For details about integration, see the *Time Management User's Guide*.

5. If you want all of the following results to occur, select the check box with text that begins with **Resources are expected to fill out a Time Sheet for each time period:**
 - Resources who are assigned this policy (or their managers or delegates) are required to complete a time sheet for each time period, even if they are on vacation or performed no work that is tracked.
 - Overdue time sheets for those resources appear in the Delinquent Time Sheets report.
 - Email notifications can be sent to resources to remind them to submit their time sheets. These notifications can be sent before unsubmitted time sheets are due, on their due date, or when they become delinquent. For information about configuring these notifications, see "[Configuring the Notifications Tab](#)" on the next page.
6. If you want time to be approved automatically when submitted by resources who are assigned this policy, select the check box with text that begins with **Auto-Approve time**. This option is useful when detailed approvals are not important to the organization.

Changes to automatic approval take effect when currently unsubmitted or new time sheets are submitted.

Note: If a project is integrated with Time Management and explicitly requires time approval by a project representative (as specified in the **Cost and Effort** policy of the Project Settings page), the time logged against tasks in that project is not automatically approved, regardless of the setting of this option.

For more information about configuring time approval in the **Cost and Effort** policy of the Project Settings page, go to the *Time Management User's Guide* for integrating Time Management and Project Management.

7. In the **Specify the level of enforcement for empty lines (lines on which no time is entered) in the Time Sheet** section, specify the desired option to do one of the following:
 - Allow resources to submit time sheets that include empty lines (lines in which all values are 0), with no warning message.
 - Allow resources to submit time sheets that include empty lines, but only after displaying a warning that lists the empty lines and gives the user the option to update the time sheets before submitting them. Options are available to the user to delete all the empty lines at once or move all the empty lines to the user's My Items list.
 - Prevent resources from submitting time sheets that include empty lines and display a message that lists the empty lines the resources must either delete or update before submitting the time

sheets. Options are available to the user to delete all the empty lines at once or move all the empty lines to the user's My Items list.

Note: The default value of this option for a new time sheet policy corresponds to the setting of the `ENABLE_TM_ALLOW_EMPTY_ITEM` parameter in the `server.conf` configuration file, but the option you choose in this step controls the operation when resources submit time sheets with empty lines.

To improve PPM Center performance and to make it easier for approvers to review submitted time sheets, HPE strongly recommends that you prevent resources from submitting time sheets that have empty lines.

If empty lines are allowed or have been allowed in the past, HPE recommends that you run the Purge Empty Time Sheet Lines to keep data growth under control. For more information, see the ["Purge Empty Time Sheet Lines Report" on page 106](#).

8. At the bottom of the Time Sheet Policy window, click **OK**.

The time sheet policy is created.

9. Double-click the new time sheet policy in the list to reopen it.

As described in the following sections, complete the other tabs of the time sheet policy as needed.

Configuring the Notifications Tab

In the **Notifications** tab, you can specify that resources with this time sheet policy will be sent the following types of email notifications:

- Reminders to submit their time sheets, if the resources assigned this policy are required to complete time sheets for each time period. You specify when the reminders are to be sent and what to say in them. See ["Sending Reminders to Users to Submit Time Sheets" on the next page](#).
- Email messages, if whatever time sheets the resources have submitted for approval get rejected. See ["Sending Notifications of Rejected Time to Users" on page 32](#).

Changes to notification configuration take effect within the time specified for the `EMAIL_NOTIFICATION_CHECK_INTERVAL` parameter in the `server.conf` file (set to 20 seconds by default), for both open and new time sheets. Open time sheets are time sheets that have not been closed.

Note: You can enable or disable all notifications for individual resources, which overrides any configuration of the **Notifications** tab of the time sheet policy for those individuals. For example,

you might not want to send notifications to certain executives. See "[Configuring a Resource's Time Sheet Policy and Default Approvers](#)" on page 44.

Sending Reminders to Users to Submit Time Sheets

Time sheets are due when their time periods end. You can send users who are required to submit time sheets one or more email reminders to do so. You specify how many days before or after the due date a reminder is to be sent. You can configure multiple reminders. Each user is sent emails per time sheet per configured reminder. The number of the emails is decided by the running frequency of Time Sheet Notifications Service.

If a user has already submitted a time sheet when a reminder for that time sheet is scheduled to be sent, the reminder is not sent.

Reminders are sent soon after midnight the day after the day you specify. Examples are provided later in this procedure.

To send reminders to submit time sheets to all the users with this time sheet policy:

1. Reminders are allowed only for users whose time sheet policies require submitting a time sheet for each time period. On the **Time Sheet Policy** tab, select the check box with text that begins with **Resources are expected to fill out a Time Sheet for each time period**.
2. In the Time Sheet Policy window, select the **Notifications** tab.
3. In the **Notifications** tab, click **New**.

The Add Notifications window opens, with the following two tabs:

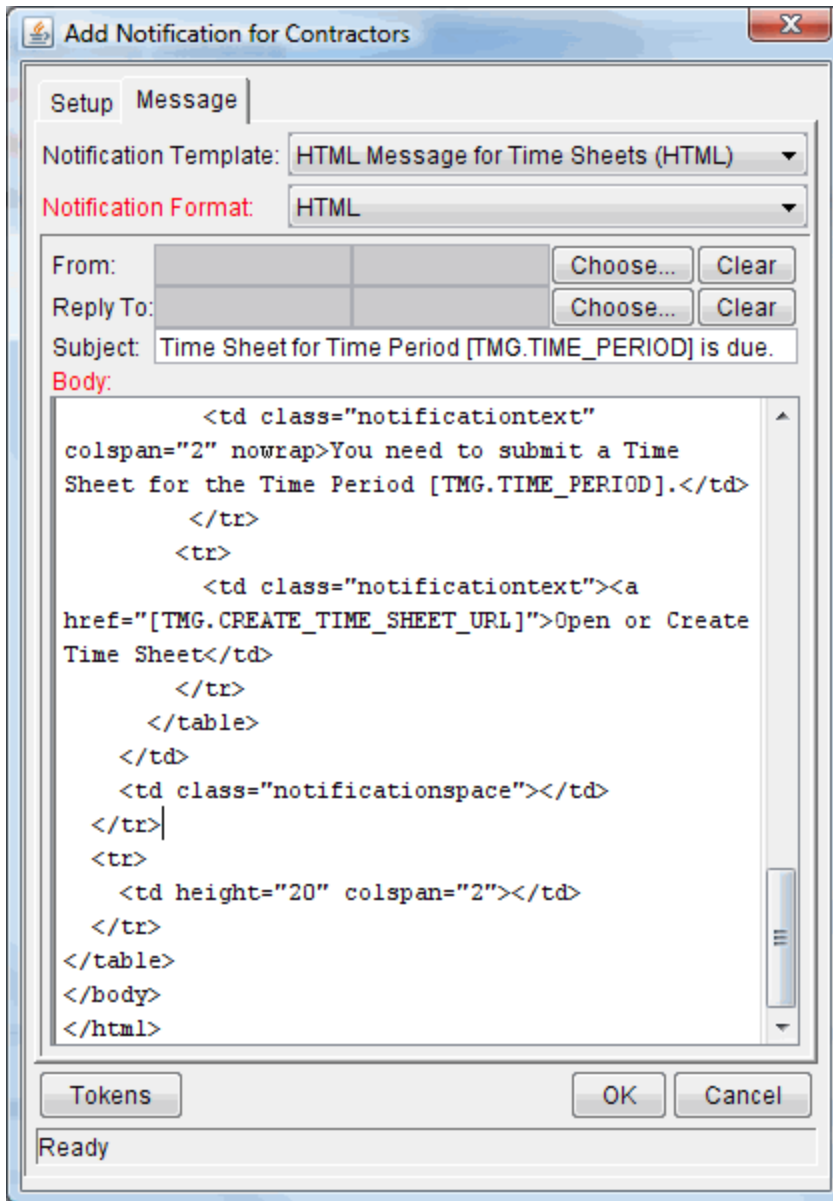
- o **Setup** tab (displayed by default)
- o **Message** tab

4. On the **Setup** tab, do the following:
 - a. In the **Event** field, select **Reminder**.
 - b. In the **Description** field, enter a description of the reminder.
 - c. In the **Send the reminder** section, specify when to send the reminder.

Each user with this time sheet policy will be sent this reminder per time sheet, soon after the *end* of the day you select. You may receive the reminder several times per day, which depends on the running frequency of Time Sheet Notifications Service.

For example, if a Weekly time period ends on Friday, September 3, and the reminder is configured to be sent the last day of a time period, it could be sent at about 12:05 a.m. on Saturday, September 4. And if Time Sheet Notifications Service is scheduled to run every 2 hour, you would receive 12 reminders per day per time sheet until you submit your time sheet. If you want each user to receive a reminder each Friday in this example, configure the reminder to be sent each Thursday, 1 day before the end of the time period.

5. Select and complete the **Message** tab as follows:



The screenshot shows a dialog box titled "Add Notification for Contractors" with a close button (X) in the top right corner. The dialog has two tabs: "Setup" and "Message". The "Message" tab is selected. The "Notification Template" dropdown is set to "HTML Message for Time Sheets (HTML)". The "Notification Format" dropdown is set to "HTML". Below these are fields for "From:", "Reply To:", and "Subject:". The "Subject" field contains the text "Time Sheet for Time Period [TMG.TIME_PERIOD] is due.". Below the subject field is a "Body:" label and a large text area containing HTML code. The code is as follows:

```
<td class="notificationtext"
colspan="2" nowrap>You need to submit a Time
Sheet for the Time Period [TMG.TIME_PERIOD].</td>
</tr>
<tr>
<td class="notificationtext"><a
href="[TMG.CREATE_TIME_SHEET_URL]">Open or Create
Time Sheet</td>
</tr>
</table>
</td>
<td class="notificationspace"></td>
</tr>
<tr>
<td height="20" colspan="2"></td>
</tr>
</table>
</body>
</html>
```

At the bottom of the dialog, there are buttons for "Tokens", "OK", and "Cancel". The status bar at the very bottom of the window shows "Ready".

- a. In the **Notification Template** field, select the notification template.
- b. In the **Notification Format** field, select the notification format.

Notifications can be in plain text or HTML.

- c. Click the **Choose** button to the right of the **From** field, which specifies the sender of the email notification as seen by its recipients.

The Email Header Field window opens, with the following options:

- **Enter a Username.** Use this option to specify a particular user to receive the notification. The user must have an email address.
- **Enter an Email Address.** Use this option to enter an email address for the notification.
- **Enter a Standard Token.** Use this option to select from a list of system tokens that correspond to a user, security group, or email address.
- **Enter a User Defined Token.** Use this option to enter any field token that corresponds to a user, security group, or email address.

Select one of these options. The other fields of the Email Header Field window are automatically updated accordingly.

- d. Complete the other fields in the Email Header Field window and click **OK**.
- e. Repeat [step c](#) and [step d](#) for the **Reply To** field, which specifies where user replies will be sent.
- f. Complete the **Subject** field for the reminder notification.

The default **Subject** field is as follows:

```
Time Sheet for Time Period [TMG.TIME_PERIOD] is due.
```

The token [TMG.TIME_PERIOD] displays the time period for which the notification is being sent. You can use the default **Subject** field entry or enter your own subject line to be used in the email notification. You might want the **Subject** field to reflect when the reminders will be sent relative to when the time sheets are due.

- g. In the **Body** field, complete the text of the notification that reminds users to submit time sheets. Use or revise the default entry, or enter your own message. You might want the text to reflect when the reminders will be sent relative to when the time sheets are due.
- h. Click **OK**.

The changes are added to the **Notifications** tab.

6. If you want to send email reminders to users with this time sheet policy on multiple days before or

after their time sheets are due, repeat [step 3](#) through [step 5](#).

7. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved. For details about when reminder notifications are sent, see [step 4](#).

Sending Notifications of Rejected Time to Users

To immediately notify users who are assigned this policy if some of their submitted time (that is, some of the time sheet lines on their time sheets) has been rejected by an approver:

1. In the Time Sheet Policy window, select the **Notifications** tab.
2. In the **Notifications** tab, click **New**.

The Add Notifications window opens, with the following two tabs:

- o **Setup** tab (displayed by default)
- o **Message** tab

3. On the **Setup** tab, do the following:
 - a. In the **Event** field, select **Time Rejection**.
 - b. In the **Description** field, enter a description of the notification.
4. Select and complete the **Message** tab as follows:
 - a. In the **Notification Template** field, select the notification template.
 - b. In the **Notification Format** field, select the notification format.

Notifications can be in plain text or HTML.

- c. Click the **Choose** button to the right of the **From** field, which specifies the sender of the email notification as seen by its recipients.

The Email Header Field window opens, with the following options:

- **Enter a Username.** Use this option to specify a particular user to receive the notification. The user must have an email address.
- **Enter an Email Address.** Use this option to enter an email address for the notification.
- **Enter a Standard Token.** Use this option to select from a list of system tokens that correspond to a user, security group, or email address.

- **Enter a User Defined Token.** Use this option to enter any field token that corresponds to a user, security group, or email address.

Select one of these options. The other fields of the Email Header Field window are automatically updated accordingly.

- d. Complete the other fields in the Email Header Field window and click **OK**.
- e. Repeat [step c](#) and [step d](#) for the **Reply To** field, which specifies where user replies will be sent.
- f. Complete the **Subject** field for the notification.

The default **Subject** field is as follows:

Your time sheet [TMG.TIME_SHEET_DESCRIPTION] was rejected.

The token [TMG.SHEET_DESCRIPTION] displays the current time sheet description. You can use the default **Subject** field entry or enter your own subject line to be used in the email notification.

- g. In the **Body** field, complete the body of the notification that tells users that time they submitted has been rejected, and that rework is required. Use or revise the default entry, or enter your own message.
- h. Click **OK**.

The changes are added to the **Notifications** tab.

5. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved. Users are notified whenever time on their submitted time sheets gets rejected.

Configuring the Min/Max Enforcement Tab

In the **Min/Max Enforcement** tab, you can do the following:

- If resources enter their time in hours per day, you can specify the maximum number of hours you allow them to enter for any one day, and the maximum and minimum number of hours you allow them to enter for an entire time sheet.
- If resources enter their time in hours per period (that is, hours per time sheet), you can specify the maximum and minimum number of hours you allow them to enter for a time sheet.

- If resources enter their time as a percentage of the period, you can specify the maximum and minimum percentage of the period you allow them to enter for a time sheet.
- If resources enter their time in fractions of each day, you can specify the maximum number of days you allow them to enter for any one day, and the maximum and minimum number of days you allow them to enter for an entire time sheet.
- If resources enter their time in total number of days, you can specify the maximum and minimum number of days you allow them to enter for an entire time sheet.
- You can specify an enforcement level for the limits you specify.

Note: The **Min/Max Enforcement** tab is disabled if resources are allowed to enter multiple time sheets per time period as specified on the **Time Sheet Policy** tab. See "[Configuring General Information and the Time Sheet Policy Tab](#)" on page 24.

Note: Before you configure the **Min/Max Enforcement** tab, you must enable the desired period types and create time periods as described in "[Period Types and Time Periods](#)" on page 18.

In all entries of minimum and maximum hours, users can specify partial hours to two decimal places, such as 8.25. In all entries of minimum and maximum days, users can specify partial days to three decimal places, such as 0.125, which is equivalent to one hour for an 8-hour day.

To configure this tab:

1. In the Time Sheet Policy window, select the **Min/Max Enforcement** tab.

The options and associated text that appear in the **Enforce the Following Policies** section depend on the values specified for the period type and for how resources enter time. The configuration of the options in the **Enforce the Following Policies** section varies accordingly, as described in [step 2](#).

2. Use the procedure in one of the following major bullets to complete the check boxes and numeric fields in the **Enforce the Following Policies** section:
 - If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Hours** or **Period in Hours**, and if the **Period Type** specified above the tabs is **Monthly** or **Semi-Monthly** (where, for both cases, time periods have a variable number of workdays), do the following:
 - If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Hours**, as needed select the **Maximum hours allowed per day** check box and specify the highest number of work hours to allow a resource to enter for any one workday.

This check box is not present if the **Time Sheet Policy** tab specifies that resources enter time by **Period in Hours**.

- As needed, select the **Maximum hours allowed per Time Sheet** check box and specify the maximum number of hours to allow a resource to enter for any one workday. Time Management will multiply this value by the (variable) number of workdays in a time period.
- As needed, select the **Minimum hours allowed per Time Sheet** check box and specify the minimum number of hours to allow a resource to enter for any one workday. Time Management will multiply this value by the (variable) number of workdays in a time period.

Proceed to [step 3](#).

- If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Hours** or **Period in Hours**, and if the **Period Type** specified above the tabs is **Bi-Weekly** (where there are 14 days and ten workdays in every period) or **Weekly** (where there are seven days and five workdays in every time period), do the following:

- If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Hours**, as needed select the **Maximum hours allowed per day** check box and specify the highest number of work hours to allow a resource to enter for any one workday.

This check box is not present if the **Time Sheet Policy** tab specifies that resources enter time by **Period in Hours**.

- As needed, select the **Maximum hours allowed per Time Sheet** check box and specify the maximum total number of work hours to allow a resource to enter for any one time sheet.
- As needed, select the **Minimum hours allowed per Time Sheet** check box and specify the minimum total number of work hours to allow a resource to enter for any one time sheet.

Proceed to [step 3](#).

- If the **Time Sheet Policy** tab specifies that resources enter time by **Period in Percent**, do the following:
 - As needed, select the **Maximum percent allowed per Time Sheet** check box and specify the maximum percentage of work time to allow a resource to enter for any one time sheet, using the total time in each particular time period as a basis.
 - As needed, select the **Minimum percent allowed per Time Sheet** check box and specify the minimum percentage of work time to allow a resource to enter for any one time sheet, using the total time in each particular time period as a basis.

Note: Unless you specify a maximum of 100 percent and a minimum of 100 percent per

time sheet, resources with this time sheet policy can submit a time sheet with lines that total more than or less than 100 percent. If, for example, you specify a maximum of 110 percent and a resource specifies time sheet lines with a total of 105 percent on a time sheet, the resource reports working 105 percent of the total time nominally covered by the time period for that particular time sheet.

Proceed to [step 3](#).

- If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Days** or **Period in Days**, and if the **Period Type** specified above the tabs is **Monthly** or **Semi-Monthly** (where, in both cases, time periods have a variable number of workdays), do the following:
 - If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Days**, as needed select the **Maximum days allowed per day** check box and specify the highest number of days (such as 0.75 or 1.1) to allow a resource to enter for any one workday.
This check box is not present if the **Time Sheet Policy** tab specifies that resources enter time by **Period in Days**.
 - As needed, select the **Maximum days allowed per Time Sheet** check box and specify the maximum total number of days to allow a resource to enter for any one time sheet. Time Management will multiply this value by the (variable) number of workdays in a time period.
 - As needed, select the **Minimum days allowed per Time Sheet** check box and specify the minimum total number of days to allow a resource to enter for any one time sheet. Time Management will multiply this value by the (variable) number of workdays in a time period.

Proceed to [step 3](#).

- If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Days** or **Period in Days**, and if the **Period Type** specified above the tabs is **Bi-Weekly** (where there are 14 days and ten workdays in every period) or **Weekly** (where there are seven days and five workdays in every time period), do the following:
 - If the **Time Sheet Policy** tab specifies that resources enter time by **Day in Days**, as needed select the **Maximum days allowed per day** check box and specify the highest number of days (such as 0.75 or 1.1) to allow a resource to enter for any one workday.
This check box is not present if the **Time Sheet Policy** tab specifies that resources enter time by **Period in Days**.
 - As needed, select the **Maximum days allowed per Time Sheet** check box and specify the maximum total number of days to allow a resource to enter for any one time sheet.
 - As needed, select the **Minimum days allowed per Time Sheet** check box and specify the minimum total number of days to allow a resource to enter for any one time sheet.

3. If you selected any of the check box options in the appropriate procedure in [step 2](#), select one of the following options in the **Choose the Level of Enforcement** section:
 - Option to warn the resource and approver that a minimum or maximum time requirement is not met, but still allowing the time sheet to be submitted or approved
 - Option to prevent the resource from submitting the time sheet until the requirements are met
4. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved.

Configuring the Charge Codes Tab

Charge codes are created and maintained from the Charge Code Workbench. See "[Charge Codes](#)" on [page 58](#) for the following:

- Detailed information about creating charge codes.
- Detailed information about precedence of charge codes as specified in work allocations, the time sheet policy, and override rules.
- Information about how users specify charge codes. (Also see the *Time Management User's Guide*.)

In the following procedure, you select one or more existing charge codes.

When you specify charge codes for a time sheet policy, they (and their percentage breakdown if you specify more than one charge code) apply to all the time sheet lines for all the resources assigned to that time sheet policy, except for lines that are subject to override rules.

Again with that exception, changes to charge code configuration take effect immediately, for both open and new time sheets. Open time sheets are time sheets that have not been closed. (If a charge code is being deleted, but it is used for work items on an open time sheet, its usage thus far on the time sheet is retained.)

To set the charge codes in the time sheet policy:

1. In the Time Sheet Policy window, select the **Charge Codes** tab.
2. Click **Add**.

The Charge Code Selection window opens.

3. Search for existing charge codes by completing the fields as desired in the Charge Code Selection

window, as described in the following table. To display all charge codes, do not enter search criteria and skip to [step 4](#).

Field Name	Description
Query	Limits the search to the selected saved query
Charge Code Name	Limits the search to a charge code with the specified name
Enabled	Limits the search to enabled or disabled charge codes
Description	Limits the search to charge codes having the specified text in their descriptions
Charge Code Category	Limits the search to charge codes with the specified charge code category
Department	Limits the search to charge codes for the specified department
Client	Limits the search to charge codes for the specified client name

4. Click **List**.

The results of the query are listed in the Charge Code Selection window. Charge codes that are already listed on the **Charge Codes** tab of the time sheet policy are shown in bold.

5. Select one or more charge codes and click **OK**.

The Charge Code Selection window closes, and the selected charge codes are added to the **Charge Codes** tab.

6. On the **Charge Codes** tab, specify values in the **Percent** column that add up to 100 percent.

7. In addition to the charge codes specified on the time sheet policy to be applied to all time logged under this policy, a work allocation can specify separate charge codes, with percentages, that are to be specifically applied to a particular work item. (For more information, see the *Time Management User's Guide*.)

On the **Charge Codes** tab of the time sheet policy, you can specify whether policy-level charge codes take precedence over charge codes specified on individual work allocations. If you select **Yes** for the **Override Work Allocation Charge Codes** option, the charge codes in the time sheet policy override (prevail over) the charge code settings in any work allocations specified for the same work items. If you select **No**, the work allocation charge code settings prevail, and the policy-level charge codes are applied to only work items for which no charge codes are specified on a work allocation or for which no work allocation exists.

For more information about configuring charge codes and how Time Management prioritizes time sheet policies in determining them, see ["Charge Codes" on page 58](#).

8. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved.

Configuring the Work Items Tab

On the **Work Items** tab, you specify which types of work items (projects, tasks, requests, packages, or miscellaneous items) users are allowed to log time against. By default, all work item types are allowed, however you will probably want to allow time to be logged against projects or tasks but not both, depending on whether most or all projects are configured to have time logged at the project level, or at the task or some summary task level.

To specify which work item types users are allowed to log time against:

1. In the Time Sheet Policy window, select the **Work Items** tab.
2. Allow or disallow users with this time sheet policy to log time for each of the work item types. The work item types you disallow do not appear in menus that are used to add items to time sheets.

Note: The administrator can specify five parameters in the `server.conf` configuration file as `true` (the default) or `false` to indicate whether or not the functionality of corresponding work item types is available in Time Management at all. If set to `false`, the work item type is not listed on the **Work Items** tab. The parameters, all of which have a prefix of `com.kintana.core.server.`, are as follows:

- `ENABLE_TM_WORK_ITEM_PROJECTS`
- `ENABLE_TM_WORK_ITEM_TASKS`
- `ENABLE_TM_WORK_ITEM_REQUESTS`
- `ENABLE_TM_WORK_ITEM_PACKAGES`
- `ENABLE_TM_WORK_ITEM_MISC`

For more information, see the *Installation and Administration Guide*.

3. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved.

Configuring the Activities Tab

You use the **Activities** tab to specify whether resources can specify activities for any work item types at all, and if so, the types of work items—requests, tasks, packages, and miscellaneous items—for which they must specify one or more activities when logging time.

When you require users to specify activities for any particular work item type, make sure the appropriate set of activities is configured for them to select, otherwise they will not be able to submit their time sheets.

See ["Activities" on page 51](#) for the following:

- Detailed information about creating activities.
- Information about how users specify activities. (Also see the *Time Management User's Guide*.)

To set the activity requirements in the time sheet policy:

1. In the Time Sheet Policy window, select the **Activities** tab.
2. If you want to *allow* users to specify activities for *any* of the work items types, select the **Resources with this policy can specify activities for work items on their Time Sheets** check box.
3. Use the check boxes to indicate the types of work items for which users with this policy will be *required* to break down time by activity.
4. Click **OK** or, to configure other tabs, click **Save**.

The changes to the time sheet policy are saved.

For information about configuring request types to require users to specify activities for all requests of those types, see ["Requiring Users to Specify Activities Based on Request Type" on page 53](#).

Configuring the Global Time Sheet Policy

Time Management provides one predefined time sheet policy that is set as the global time sheet policy. After you create other time sheet policies, you can make any of them the new global time sheet policy. Then, when a resource is added to the system, the resource is automatically assigned the current global time sheet policy by default (but can be assigned another policy as needed). When you change which time sheet policy is the global one, previously assigned time sheet policies for other resources

are not changed. (For information about assigning a specific time sheet policy to a resource, see ["Configuring a Resource's Time Sheet Policy and Default Approvers" on page 44](#)).

To make a time sheet policy the global time sheet policy:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Time Sheet Policies**.
The Time Sheet Policy Workbench opens.
4. Click **Set Global Time Sheet Policy**.
The Set Global Time Sheet Policy window opens.
5. In the **Time Sheet Policy** field, select the time sheet policy that is to become the global one.
6. Click **OK**.

The selected time sheet policy becomes the global time sheet policy, and it is automatically assigned to new resources by default.

Chapter 4: Resources

- ["Overview of Time Management Settings for Resources"](#) below
- ["Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates"](#) on page 44

Overview of Time Management Settings for Resources

A resource is an individual user who can be assigned to specific work items and can log time against them on time sheets. Resources are configured with fields such as their roles, departments, and managers.

Each resource uses Time Management–related features (time sheet policies, approvers, and delegations) that are configured in the standard interface on the **Time Management** tab of the Modify Resource window.

Note: Time sheet policies are applied to resources. If you plan to use time sheet policies other than the global policy, create them before configuring the resources. See ["Time Sheet Policies" on page 22](#).

Determining Time Approvers

When a time sheet is saved or submitted, Time Management determines (derives) the approvers of each time sheet line.

Only people who are identified as time approvers (or their delegates) and who also have the Time Mgmt: Approve Time Sheets access grant can approve a given time sheet line. Default time approvers can be specified for individual resources (users). In fact, time approvers are determined several ways and they are derived according to priorities described as follows, depending on whether the work item type is a request, package, or miscellaneous item, or whether it is a project or task.

- For requests, packages, and miscellaneous items, note the following:
 - If the resource's time sheet policy specifies automatic approval, approval is automatic. For information about configuring a time sheet policy to allow automatic approval, see ["Configuring General Information and the Time Sheet Policy Tab" on page 24](#).
 - Otherwise, if there is an override rule that specifies a time approver and if its dependencies (filters) are met, that person is the time approver. For information about override rules, see ["Rules" on page 63](#).
 - Otherwise, the approver is the resource's default time approver as specified on the **Time Management** tab for the resource. See ["Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates" on the next page](#).
- For projects and tasks, note the following:
 - If there is an override rule that is *specific to the task* and that specifies a time approver, and if the override rule dependencies (filters) are met, that person is the time approver. For information about override rules, see ["Rules" on page 63](#).
 - Otherwise, if the project (in the **Cost and Effort** policy of the Project Settings page) requires approval by a project representative, that person (or persons) is the time approver. For information about configuring time approval in the **Cost and Effort** policy of the Project Settings page, go to the *Time Management User's Guide* for integrating Time Management and Project Management.
 - Otherwise, if the resource's time sheet policy specifies automatic approval, approval is automatic. For information about configuring a time sheet policy to allow automatic approval, see ["Configuring General Information and the Time Sheet Policy Tab" on page 24](#).
 - Otherwise, if there is an override rule that is *not* specific to the task and that specifies a time approver, and if the override rule dependencies (filters) are met, that person is the time approver. For information about override rules, see ["Rules" on page 63](#).
 - Otherwise, the approver is the resource's default time approver as specified on the **Time Management** tab for the resource. See ["Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates" on the next page](#).

Whenever multiple approvers can approve submitted time (for example, when the resource's time approver is a resource group, or when both a delegator and an associated delegate can approve a resource's time), only one of the approvers needs to approve or reject the submitted time.

Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates

You can specify a resource's time sheet policy, default approvers, and delegates on the **Time Management** tab for the resource. To access this tab:

1. From the menu bar in the standard interface, select **Open > Resource Management > Resources > Search Resources**.

The Search Resources window opens.

2. Complete the search criteria for the resource whose time sheet policy or approvers you want to set, and click **Search**.

The resources who meet your criteria are added in the **Select Resource to View** section of the Search Resources window.

3. Click the link for the desired resource in the **Username** column.

The Modify Resource window for that resource opens, with the **General** tab selected.

4. Select the **Time Management** tab.

5. Proceed to one of the following sections:

- ["Configuring a Resource's Time Sheet Policy and Default Approvers" below](#)
- ["Configuring a Resource's Delegates" on the next page](#)

Configuring a Resource's Time Sheet Policy and Default Approvers

To configure the time sheet policy and approvers for a resource:

1. If you have not already done so, access the **Time Management** tab for the resource. See ["Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates" above](#).
2. In the **Resource Time Management Settings** section, under the **Resource will:** heading, specify whether this resource will inherit the indicated global time sheet policy or use a particular time sheet policy you select.

3. Use the **Do not send this resource time sheet notifications** check box to indicate whether to send time sheet notifications to this resource. Selecting this check box prevents this resource from receiving any time sheet notifications for submitting time sheets or for reworking rejected time sheet lines, regardless of the configuration of the **Notifications** tab of that resource's time sheet policy (see ["Configuring the Notifications Tab" on page 28](#)).
4. Complete the two **Default Time Approver** fields to specify default approvers of this resource's submitted time. The default time approver is the individual resource or resource group who approves time sheet lines for this resource, unless other priorities take precedence as described in ["Determining Time Approvers" on page 42](#). Time approvers must have the Time Mgmt: Approve Time Sheets access grant.

Note: The parameter MAX_RSC_IN_SG_TMAPPROVERS controls the maximum number of resources allowed in the resource group that serves as time approvers. If the actual resource number exceeds the value of this parameter, the warning message pops up on the Modify Resource page. By default, the value of the parameter is 10,000.

5. Complete the two **Default Billing Approver** fields to specify who can freeze and close this resource's time sheets. A default billing approver is an individual resource or a resource group who freezes and closes time sheets after they are approved and who manages billing processes. See ["Overview of the Time Management Process" on page 8](#).
6. Click **Save**.

The selected time sheet policy and default approvers for this resource are saved.

If you change which time sheet policy a resource uses, then only new time sheets for that resource are affected.

If you change approvers for a resource, when that resource's unsubmitted time sheet is later saved or submitted, the new approvers are derived for that time sheet (delegate information is not used in determining the approvers at that time).

Analogous to time approvers, if multiple billing approvers (such as a resource group) are specified for a resource, only one of the billing approvers needs to freeze or close the resource's time sheets.

Configuring a Resource's Delegates

Time Management includes the concept of delegation, where one person (the delegator) temporarily assigns his or her own duties and responsibilities to another person, the delegate. Typically, people in

management positions delegate review and approval authority for their time sheets to others, with specific start and end dates (for example, to cover upcoming vacations).

If a delegate has the required licenses and access grants, the delegate can do the following on behalf of the delegator:

- Create, edit, and submit time sheets
- Approve and reject submitted time logged
- Freeze and close time sheets

Both the resources and their delegates must have Time Management licenses. Delegates do not inherit Time Management licenses or access grants from delegators. For example, charge code access is not transferred to a delegate. To enable delegates to perform their duties, make sure they have the access grants, such as Time Mgmt: Edit Time Sheets or Time Mgmt: Approve Time Sheets, they need to perform the delegated responsibilities.

A manager has implicit delegations, such as the ability to edit the time sheets of direct reports, if the manager has the Time Mgmt: Edit Time Sheets access grant.

After a delegate is specified, the delegator can still perform all the same actions as the delegate.

When you search time sheets, in addition to applying any filter criteria you specify, Time Management shows you only the time sheets that meet at least one of the following conditions:

- You created the time sheet (or someone created it for you).
- You are the manager of the resource for the time sheet.
- You are the delegate of the resource for the time sheet.
- You are a time approver of at least one line of the time sheet.
- You are the billing approver for the time sheet.

To specify a delegate for a resource:

1. If you have not already done so, access the **Time Management** tab for the resource. See ["Configuring a Resource's Time Sheet Policy, Default Approvers, and Delegates" on page 44.](#)
2. In the **Delegation Information** section, click **Add Delegate**.
3. Select a user from the list that appears.

That user's name is added to the list of delegates, with **Start Date** and **End Date** fields that default to today's date.

4. Change the **Start Date** and **End Date** fields as necessary.

5. Repeat [step 2](#) through [step 4](#) as needed.
6. Click **Save**.

The changes to the delegates for this resource are saved.

Considerations for Time Approvers and Billing Approvers

As detailed in ["Determining Time Approvers" on page 42](#), time approvers are determined by multiple factors depending on work item types. The changes to such factors as resource's time sheet policy, override rule, and project setting lead to changes of time approvers. Likewise, the changes to the setting of default billing approver and override rules lead to changes of billing approvers. Besides, delegates of approvers (time approvers and billing approvers) can act on behalf of approvers, therefore, the changes to delegates also matter in evaluating approvers. The background service Evaluate TM Approvers periodically checks to determine whether the resource assigned to approve a time sheet has changed. For more information about this service, see ["Evaluate TM Approvers Service" on the next page](#).

The performance of this service may be influenced in the following scenarios. PPM Center recommends that you avoid these scenarios in case of performance issue.

- A security group is the time approver or billing approver of a large amount of time sheets. The security group is changed by:
 - Adding or deleting group members.
 - Adding or deleting delegates of group members.
 - Enabling or disabling the security group.
 - Using (or not using) this security group for time sheets.
- A resource is the time approver or billing approver of a large amount of time sheets. The delegation of this resource is changed by:
 - Adding or deleting delegates of the resource.
 - Editing the start date or end date of a delegate.
- A resource is the creator of a large amount of time sheets. The default time approver or default billing approver of the resource is changed.
- An override rule controls a large amount of time sheets. The override rule is changed by:

- Editing the override rule dependencies (filters).
- Editing time approver or billing approver after the override rule dependencies (filters) are met.

Note: The service Evaluate TM Approvers would deal with all the outdated delegations when you run it for the first time in version 9.30, which may take a while to complete.

Evaluate TM Approvers Service

To check whether the resource assigned to approve a time sheet is changed, every time when the Evaluate TM Approvers service runs, it not only records changes information such as Security Group Changed, Override Rule Changed, and Resource Changed, but also renders these changes information into the Reevaluate Time Sheet information.

You can configure the parameter `TM_REEVALUATE_COUNT` in the `server.conf` file to control the amount of the Reevaluate Time Sheet information. By default, the value of the parameter is `1,000,000`. If the amount of information exceeds the number you specified, the system stops rendering the changes information into the Reevaluate Time Sheet information, but only deal with the Reevaluate Time Sheet information that has been rendered.

If the Reevaluate Time Sheet information is so large in quantity that it cannot be completely covered by the service in just one running process, the service will deal with the information in batches. The batches of information that is not covered in this running will be covered in the next.

If the service running time is longer than 720 minutes that is specified by the parameter `JOB_STATUS_CLEANUP_INTERVAL`, the service stops running. When it runs the next time, it continues dealing with the information left.

Parameters Controlling the Number of Time Approvers and Billing Approvers

For the sake of system stability and performance, the following four sever configuration parameters are added in the `server.conf` file to control the number of time approvers and billing approvers.

Parameter Name	Description, Usage	Default and Valid Value
----------------	--------------------	-------------------------

TM_MAX_TIME_APPROVER_WARNING_COUNT	The maximum number of time approvers of time sheet lines allowed by the system before it throws warning.	Default Value: 80,000,000 Valid Value: Positive integer
TM_MAX_BILLING_APPROVER_WARNING_COUNT	The maximum number of billing approvers of time sheets allowed by the system before it throws warning.	Default Value: 160,000,000 Valid Value: Positive integer
TM_MAX_TIME_APPROVER_ERROR_COUNT	The maximum number of time approvers of time sheet lines allowed by the system before it throws error.	Default Value: 100,000,000 Valid Value: Positive integer
TM_MAX_BILLING_APPROVER_ERROR_COUNT	The maximum number of billing approvers of time sheets allowed by the system before it throws error.	Default Value: 200,000,000 Valid Value: Positive integer

The system reports error log to remind the system administrator to check the configuration of time approvers or billing approvers or to check the table space, if both the following happen:

- The number of time approvers exceeds the number specified in the parameter TM_MAX_TIME_APPROVER_WARNING_COUNT.
- The number of billing approvers exceeds the number specified in the parameter TM_MAX_BILLING_APPROVER_WARNING_COUNT.

If the system throw warnings or errors, but the table space of the TM_USERS_BILLING_APPROVERS table and the TM_USERS_TIME_APPROVERS table is still big enough to store more approvers, you, as an administrator, can increase values of the four parameters according to your business need.

HPE recommends that you use the PPM Purge Tool to purge the outdated time sheets. In this way, the records of time approvers and billing approvers would decrease and the performance of Evaluate TM

Approvers Service would be better. For information about the PPM Purge Tool, see *Installation and Administration Guide*.

Chapter 5: Activities

- ["Overview of Activities" below](#)
- ["Creating Activities" on the next page](#)
- ["Editing Activities " on the next page](#)
- ["Requiring Users to Specify Activities Based on Request Type " on page 53](#)

Overview of Activities

Time Management can track actual time not only at the work item level, but also at a more granular level, using activities you define that are meaningful to your organization. The same activity can be used by any combination of work item types you specify—requests, projects, tasks, packages, and miscellaneous. This information can be useful for reporting of total work by multiple resources on each activity, and for future planning estimates.

Common activities include the following:

- Design
- Design review
- Coding
- Testing

In a time sheet policy, you can specify whether or not users are *allowed* to specify activities for any work items when they enter time on their time sheets. If allowed, you can *require* users to specify activities for any particular work item types. See ["Configuring the Activities Tab" on page 40](#).

You can also define activities specifically for assets. However, the time sheet policy does not provide a separate option to require that users specify activities for asset work items. Instead, in the time sheet policy, you can require that users specify activities for request work items in general (see ["Configuring the Activities Tab" on page 40](#)). Assets are a type of request.

You can use activities to track capitalization for SOP 98-1 compliance. The SOP 98-1 functionality must be enabled for the activities to be marked as capitalized and for projects and tasks associated with those activities to track capitalization data. For information about SOP 98-1 functionality and using activities to track capitalized costs, see the *Financial Management User's Guide*.

Note: To create or edit activities, you must have the Config: Edit Activities access grant.

If entry of activities is enabled on a user's time sheet policy **Activities** tab, then after selecting a time sheet line and clicking **Line Details**, the user adds activities to time sheet lines on the **Charge Codes/Activities** tab. If entry of activities is disabled in the time sheet policy, the tab name is **Charge Codes** rather than **Charge Codes/Activities** and no section for activities is shown.

Note: If a task in a work plan has a specified activity, that task can have only that one activity and users cannot change it or add any other activity to it. If a task in a work plan has no specified activity, users can select and add one or more predefined activities to that task on their time sheets. Multiple activities are not transferred to the work plan, but their total time is.

Creating Activities

Note: If your PPM Center instance supports multiple languages, any activity you create is defined in the language you selected at logon (your session language). After the activity is created, it can be modified only in its definition language. For more information, see the *Multilingual User Interface Guide*.

To create a new activity:

1. From the menu bar in the standard interface, select **Open > Administration > Time Management > Create Activity**.

The Create Activity window opens.

2. Complete the fields in the Create Activity window and click **Create**.

Note: You can select an SOP 98-1 category and capitalize the item only if SOP 98-1 functionality is enabled and only if the activity is specified as used for tasks. See the *Financial Management User's Guide*.

The activity is saved and the Create Activity window closes.

Editing Activities

Note: If your PPM Center instance supports multiple languages and the activity is defined in a language other than your session language, you cannot modify the activity. For more information, click **Why?** in the header or see the *Multilingual User Interface Guide*.

To edit an existing activity:

1. From the menu bar in the standard interface, select **Open > Administration > Time Management > Manage Activities**.

The Manage Activities window opens, with a list of existing activities in the **Select an Activity** section.

2. Click the activity of interest in the **Activity Name** column.

The Edit Activity window opens, with the same fields as when the activity was created.

3. Change the fields as necessary and click **Save**.

The activity is saved and the Edit Activity window closes.

Requiring Users to Specify Activities Based on Request Type

You can control whether users must specify activities for requests of particular request types when they add those requests to their time sheets. You can specify which activities are available to users for each request type, and you can specify a default activity. Implications for copying time sheets are also discussed in this section.

- ["Requiring Users to Specify Activities for Requests of Particular Request Types" below](#)
- ["Specifying Which Activities Are Available to Users and Defaults at the Request-Type Level" on page 56](#)
- ["Copying Requests with Disallowed Activities to New Time Sheets" on page 57](#)

Requiring Users to Specify Activities for Requests of Particular Request Types

In time sheet policies, you can require users to specify activities for *all* requests on their time sheets (see ["Configuring the Activities Tab" on page 40](#)). You can also require users to specify activities on time sheet lines for requests of *particular request types* if the following prerequisites are met:

- The capability has been enabled by setting the `TM_ENABLE_REQ_ACTIVITY_CONTROLS` server .conf parameter to `true` (most conveniently set by using the Administration Console). The

default setting is false.

- In the PPM Workbench, on the **Resources** tab of the request type, the **Use Time Management to track actuals** option is selected.

To enable the ability to require users to specify activities for a particular request type:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.

The PPM Workbench opens.

3. From the shortcut bar, select **Demand Mgmt > Request Types**.
4. Click **List** to list the request types.
5. Select the request type of interest and click **Open**.
6. Click the **Resources** tab.
7. Make sure the **Use Time Management to track actuals** option (checkbox) is selected.

The bottom left side of the **Resources** tab has the options related to requiring activities. In the following figure, options have been chosen that enable all the buttons and fields described in [step 8](#) and in the section "[Specifying Which Activities Are Available to Users and Defaults at the Request-Type Level](#)" on page 56.

Use Time Management to track actuals. Track res

Allow the following resources to report time: Enable

Resources assigned to the request during the time sheet's time period ✓

All resources listed on the request (Track resources must be checked) □

All users in the assigned group during the time sheet's time period □

All request participants Resou

All resources allocated in the staffing profile (requests with 'PFM - Asset' field group only) If a use own as

Activity is required for time logged against requests The fol allocat

Allow all activities ○ All t

Allow specific activities ● Spe

Activity
Coding
Design
Testing

Add Remove

Default Value: Design

8. Select the **Activity is required for time logged against requests** (checkbox) option.

Users are then required to specify activities for requests of this type before they can submit their time sheets. An error message is displayed if they do not do so.

Note: On the **Activities** tab of time sheet policies in the PPM Workbench, you can require that users specify activities on time sheets for requests of *all* types, and that setting takes precedence. That is, if the time sheet policy requires entry of activities for requests, users with that policy must enter activities for all requests in order to submit their time sheets, regardless of the setting of the **Activity is required for time logged against requests** option in any request type.

On the other hand, if a time sheet policy does not require that users specify activities for requests on their time sheets, selecting the **Activity is required for time logged against requests** option in the request type requires all users to enter activities on time sheets for that request type.

In both cases described above, only activities that are enabled and configured to use for requests (on the Create Activity or Edit Activity page) are available to users to add to requests on their time sheets.

Specifying Which Activities Are Available to Users and Defaults at the Request-Type Level

When users are required to specify activities on time sheet lines for requests of a particular type as described in "[Requiring Users to Specify Activities for Requests of Particular Request Types](#)" on page 53, you can control which activities are available to users.

On the **Resources** tab of a request type in the PPM Workbench, when the **Activity is required for time logged against requests** option (check box) is selected, subordinate options become available. By default **Allow all activities** is selected, but you can select **Allow specific activities** and use the **Add** and **Remove** buttons to select specific activities. Then, on time sheets users can add only those specific activities to requests of that request type.

You can optionally specify the **Default Value** field for the activity, whether all activities or only specific activities are allowed. If only specific activities are allowed, the values in the auto-complete for the **Default Value** field are limited to those specific activities. If the **Default Value** field is specified, that activity appears as the default for all requests of that request type on all time sheets for all users. Users can still click **Line Details** on time sheets to edit the activities on their time sheet lines as usual.

Note: At the time a user adds an activity to a time sheet line, Time Management displays the available activities as they are currently configured on the **Resources** tab of the request type. If that configuration has changed since the user last added activities to any time sheet, the user sees the new set of activities. If an activity a user previously selected for a request on a time sheet has since been removed from the set of allowed specific activities on the **Resources** tab, that activity can no longer be added to any request of that type, but it remains on the time sheet from the previous usage and does not cause an error when the time sheet is saved or submitted.

In any case, only activities that are enabled and configured to use for requests (on the Create Activity or Edit Activity page) are available to configure on the **Resources** tab of request types so that users can then add them to requests on their time sheets.

Copying Requests with Disallowed Activities to New Time Sheets

A user can copy an existing time sheet or, if the `TM_DISABLE_INCLUDING_LAST_TS_ITEMS` `server.conf` parameter is set to `false`, a user can create a new time sheet that includes items from his or her previous time sheet.

Assuming the `TM_ENABLE_REQ_ACTIVITY_CONTROLS` `server.conf` parameter is set to `true`, consider the following sequence of events:

1. A time sheet is created with a request line that includes one or more specifically allowed activities. (Multiple activities for a time sheet line appear in separate rows in a time sheet.)
2. Some of those activities are later removed from the set of allowed activities (that is, they are disallowed) on the associated request type.
3. A user copies the time sheet.

In this scenario, depending on the activities, the request line is copied to the new time sheet with or without activities as follows:

- When the existing time sheet includes a request line with *one or more* activities and *all* of those activities were later disallowed, no activity is copied to the request line on the new time sheet, that is, the activity for the copied line is blank.
- When the existing time sheet includes a request line that has *multiple* activities and *some but not all* of those activities were later disallowed, the copied request line on the new time sheet includes separate rows for each of the activities that remain allowed.

If the `TM_ENABLE_REQ_ACTIVITY_CONTROLS` `server.conf` parameter is set to `false`, all activities are copied to the lines in the new time sheet.

Chapter 6: Charge Codes

- ["Overview of Charge Codes" below](#)
- ["Creating Charge Codes" on the next page](#)
- ["Editing Charge Codes" on page 60](#)
- ["Deleting Charge Codes" on page 61](#)
- ["Precedence of Setting Charge Codes" on page 61](#)

Overview of Charge Codes

This section details procedures to configure and maintain charge codes. Charge codes are entities used as links between work items and charge accounts.

In some organizations, actual time is used as information for charge-backs to an internal customer, external customer, or requestor. Time Management does not explicitly perform this charge-back or billing function. However, Time Management can specify charge codes, so that links can be created between work items and charge accounts to allow the time information to be extracted for a billing system.

Charge codes do not have hierarchical information or any dependencies. Charge codes are simply a list of values. The Charge Code window creates, views, and updates charge codes.

Note: To make new charge codes visible to a user, that user must be a member of a security group with **Restrict Charge Codes to the following rules** deselected in the **Charge Code Rules** tab in the Security Group Workbench, or that user must have the appropriate rules configured to allow access.

After selecting a time sheet line and clicking **Line Details**, users add charge codes to their time sheet lines on the **Charge Codes/Activities** tab.

Note: For resources whose time sheet policy disables entry of activities for all work item types (see ["Configuring the Activities Tab" on page 40](#)), the tab name is **Charge Codes** rather than **Charge Codes/Activities** and no section for activities is shown.

Default charge codes can be set for a time sheet line based on their configuration in work allocations, time sheet policies, and override rules. See ["Precedence of Setting Charge Codes" on page 61](#).

Creating Charge Codes

Note: If your PPM Center instance supports multiple languages, any charge code you create is defined in the language you selected at logon (your session language). After the charge code is created, it can be modified only in its definition language. For more information, see the *Multilingual User Interface Guide*.

To create a new charge code:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.

The PPM Workbench opens.

3. From the shortcut bar, select **Time Mgmt > Charge Codes**.

The Charge Code Workbench opens.

4. Click **New Charge Code**.

The Charge Code window opens.

5. Complete the fields in the Charge Code window as specified in the following table:

Field Name (*Required)	Description
*Charge Code Name	Name of the charge code.
*Description	Description of the charge code.
Charge Code Category	Category of the charge code. The default options are as follows: <ul style="list-style-type: none"> o blank (the default, equivalent to ALL in the Charge Code Workbench) o Billable o Non-Billable These options can be changed as described in " Time Management Validations " on page 99.
Department	Department of the charge code.
Client	Client associated with the charge code. The default options are as follows:

Field Name (*Required)	Description
	<ul style="list-style-type: none"> ○ blank (the default) ○ Client 1 ○ Client 2 <p>These options can be changed as described in "Time Management Validations" on page 99.</p>
*Enabled	Option to enable the charge code.

6. Click **OK**.

The charge code is added to the system.

Editing Charge Codes

Note: If your PPM Center instance supports multiple languages and the charge code is defined in a language other than your session language, you cannot edit the charge code. For instructions and more information, see the *Multilingual User Interface Guide*.

To edit an existing charge code:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Charge Codes**.
The Charge Code Workbench opens.
4. In the **Query** tab, enter search criteria and click **List**.
The **Results** tab lists the charge codes that meet your search criteria.
5. In the **Results** tab, open the existing charge code of interest.
The Charge Code window opens.
6. Change the fields as necessary. See the table in [step 5 in Creating Charge Codes](#).
7. Click **OK**.
The changes to the charge code are saved.

Deleting Charge Codes

To delete a charge code:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.

The PPM Workbench opens.

3. From the shortcut bar, select **Time Mgmt > Charge Codes**.

The Charge Code Workbench opens.

4. In the **Query** tab, enter search criteria and click **List**.

The **Results** tab lists the charge codes that meet your search criteria.

5. In the **Results** tab, select an existing charge code and click **Delete**.

A dialog box opens for confirmation.

6. Click **Yes**.

The charge code is deleted.

Precedence of Setting Charge Codes

Default charge codes can be set for a time sheet line according to the following order of precedence:

1. **Setting the charge codes in the work allocation.** A work allocation can have associated charge codes with settings that specify whether users can update charge codes and whether users are required to enter charge codes for the time sheet line. If charge codes are required but the user does not enter any, the time sheet shows an error message when it is submitted. When a manager or planner creates a work allocation, access to it can be restricted to specified resources and groups. (For information about assigning charge codes to work allocations, see the *Time Management User's Guide*.) When a user adds a work item to a time sheet, if any work allocation charge codes have been specified, they get assigned to the time sheet line. Any changes to the work allocation charge codes after the time sheet line has been created are not available for that line.
2. **Setting the charge codes in the time sheet policy.** The **Charge Codes** tab in the Time Sheet

Policy window allows you to set default charge codes for a time sheet policy. (See "[Configuring the Charge Codes Tab](#)" on page 37.) In the absence of work allocation charge codes, the default charge codes for a resource (using the resource's time sheet policy) are set for every time sheet line added to a time sheet. However, if work allocation charge codes exist, the **Override Work Allocation Charge Codes** option on the **Charge Codes** tab in the Time Sheet Policy window controls which charge codes are applied.

3. **Setting the charge codes in override rules.** Override rules can determine charge codes, whether users can change the charge codes, and whether users are required to enter charge codes for the time sheet line. If a time sheet line meets the dependencies specified for an override rule and if charge codes are specified as results of the override rule, those charge codes are applied (if none have been applied yet). If the charge codes are updateable, the user can change them. If the charge codes are required, the user must specify charge codes for the line. If charge codes are required but the user does not enter any, the time sheet shows an error message when it is submitted. The override rule takes precedence over time sheet policy and work allocation charge codes only if the **Override Time Sheet Policy Charge Codes** and **Override Work Allocation Charge Codes** fields in the Override Rule window are set to **Yes**. For more information about override rules, see "[Rules](#)" on page 63.

Chapter 7: Rules

- ["Overview of Override Rules" below](#)
- ["Rules for the Suggested Items List" on page 74](#)

Override Rules

- ["Overview of Override Rules" below](#)
- ["Creating Override Rules" on page 65](#)
- ["Editing Override Rules" on page 68](#)
- ["Deleting Override Rules" on page 69](#)
- ["Precedence of Dependencies Among Multiple Override Rules" on page 70](#)
- ["Precedence of Results for Override Rules" on page 72](#)

Overview of Override Rules

Override rules allow you to supersede the default processes by which Time Management determines (derives) who approves particular time sheet lines and which charge codes apply to those lines.

For information about specifying a resource's default time approvers, see ["Configuring a Resource's Time Sheet Policy and Default Approvers" on page 44](#). For information about how Time Management derives approvers, including the priority of override rules, see ["Determining Time Approvers" on page 42](#).

For information about configuring charge codes and how Time Management prioritizes override rules in determining them, see ["Charge Codes" on page 58](#).

All override rules have the following two parts:

- **Dependencies.** The filters that must be satisfied to apply the override rule.
- **Results.** The resulting rules that apply when the specified dependencies are met.

" [Figure 7-1. Example Override Rule window](#)" on the next page shows an example of an override rule with **Dependencies** and **Results** sections. The **Work Item Type**, **Work Item Set**, and **Work Item**

dependencies are related to the time sheet line and the **Department (of Resource)** and **Title** dependencies are related to the resource. You can specify all or any subset of the five dependencies in an override rule. If all the specified dependencies are met, then the specified rules in the **Results** section are applied to the associated time sheet line.

If dependencies for more than one override rule are met, only the override rule with the highest precedence takes effect. See "[Precedence of Dependencies Among Multiple Override Rules](#)" on page 70 for detailed information about override rule precedence.

If results of an override rule are not specified, other override rules with *lower* precedence can provide results under some circumstances. See "[Precedence of Results Between Override Rules and Other Settings](#)" on page 73.

Figure 7-1. Example Override Rule window

Override Rule

Override Rule Name: Rule A

Description: Time approver = Grayson IF Item Type = Request, Item Set = Key Release, and Item = 30122 (Alpha Test)

Enabled: Yes No

Dependencies

Work Item Type: Request

Work Item Set: Key Release

Work Item: 30122

Department (of Resource):

Title:

Results

Time Approver: Resource Jim Grayson

Billing Approver: Resource

Charge Codes are updateable: Yes Override Time Sheet Policy Charge Codes:

Charge Codes are required: No Override Work Allocation Charge Codes:

Charge Codes

Charge Code	Percent	Description	Charge Code Category	Enabled

New Delete

OK Save Cancel

Ready

When the dependencies of an override rule are met, the various results of the override rule are applied at specific times of the Time Management process, as indicated in "[Table 7-1. When rules are applied](#)" on the next page.

Table 7-1. When rules are applied

Rule in Results Section	Time When Rule Is Applied
Time Approver	When time sheet is saved or submitted.
Billing Approver	When time sheet is saved or submitted.
Charge Codes are updateable ^a	When charge codes in time sheet line details are edited or when the time sheet is saved.
Charge Codes are required ^a	When charge codes in time sheet line details are edited or when the time sheet is saved.
Override Time Sheet Policy Charge Codes ^a	When time sheet line is added.
Override Work Allocation Charge Codes ^a	When time sheet line is added.
Charge Codes	When time sheet line is added.
<p>a. If this field is left blank rather than selecting Yes or No, this override rule has no effect on (that is, it never overrides) settings related to this field that may be specified elsewhere in Time Management.</p>	

Creating Override Rules

To create a new override rule:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Override Rules**.
The Override Rule Workbench opens.
4. Click **New Override Rule**.
The Override Rule window opens.
5. Complete the fields in the Override Rule window as specified in the following table. (For more information about the Results section, see ["Precedence of Results for Override Rules" on page 72.](#))

Field Name (*Required)	Description
*Override Rule Name	Name of the override rule.
Description	Description of the override rule.
Enabled	Option to enable the override rule.
Dependencies section	
Work Item Type	The override rule will check the time sheet lines for the specified work item type (project, task, request, package, or miscellaneous).
Work Item Set	The override rule will check the time sheet lines for the specified work item set, which can be a specific project, request type, or package workflow. Options depend on the selected Work Item Type .
Work Item	The override rule will check the time sheet lines for the specified work item, which can be a specific project, task, request, package, or miscellaneous item. Options depend on the selected Work Item Set .
Department (of Resource)	The override rule will check the time sheet lines for resources in the specified department.
Title	The override rule will check the time sheets for resources with the specified title.
Results section	
Time Approver	These two fields set override time approver information.
Billing Approver	These two fields set override billing approver information regarding who can freeze and close a time sheet. Note: A time sheet can have only one billing approver. If override rules determine the same billing approver for some or all of the time sheet lines, the time sheet uses that billing approver. However, if override rules determine different billing approvers for different time sheet lines, the time sheet uses the default billing approver.
Charge Codes are updateable	Option to allow resources to update the charge codes after the override rule is executed.
Charge Codes are	Option to require resources to enter charge codes after the override rule is executed.

Field Name (*Required)	Description
required	
Override Time Sheet Policy Charge Codes	Option to override charge codes that have had defaults set by the Charge Codes tab in the Time Sheet Policy window.
Override Work Allocation Charge Codes	Option to override charge codes that have had defaults set by a work allocation.
Columns in Charge Codes section	
Charge Code	(Read-only) Charge code or codes assigned to the override rule.
Percent	Percentage of each charge code or codes assigned to the override rule. You can specify tenths of a percent. The total percentage must equal 100 percent.
Description	(Read-only) Description of the charge code or codes assigned to the override rule.
Charge Code Category	(Read-only) Category of the charge code or codes assigned to the override rule.
Enabled	(Read-only) Option to enable the charge code or codes assigned to the override rule.

Note: The time approver and billing approver results of an override rule for a project and its tasks do not take effect if both of the following conditions are met:

- In the **Dependencies** section of the override rule, the **Work Item Type** is **Project** or **Task**, the **Work Item Set** is the project name), and the **Work Item** is not specified.
- The option **Time logged against this project must be approved by a project representative from the following group** in the Cost and Effort policy for the project is selected.

6. To add and apportion charge codes:

- a. In the **Charge Codes** section, click **New**.

The Charge Code Selection window opens.

- b. Search for existing charge codes by completing the fields as desired in the Charge Code Selection window, as described in the following table. To display all charge codes, do not enter search criteria and skip to [step c](#).

Field Name	Description
Query	Limits the search to the selected saved query.
Charge Code Name	Limits the search to a charge code with the specified name.
Enabled	Limits the search to enabled or disabled charge codes.
Description	Limits the search to charge codes having the specified text in their descriptions.
Charge Code Category	Limits the search to charge codes with the specified charge code category.
Department	Limits the search to charge codes for the specified department.
Client	Limits the search to charge codes for the specified client name.

- c. Click **List**.

The results of the query are listed in the Charge Code Selection window. Charge codes that are already listed in the override rule are shown in bold.

- d. Select one or more charge codes and click **OK**.

The Charge Code Selection window closes, and the selected charge codes are added to the **Charge Codes** section of the override rule.

- e. In the **Charge Codes** section, specify values in the **Percent** column that add up to 100 percent.

7. In the Override Rule window, click **OK**.

The override rule is saved.

Editing Override Rules

To edit an override rule:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Override Rules**.
The Override Rule Workbench opens.
4. In the **Query** tab, enter search criteria and click **List**.
The **Results** tab lists the override rules that meet your search criteria.
5. In the **Results** tab, open the existing override rule of interest.
The Override Rule window opens.
6. Change the fields as necessary. See the table in [step 5 in Creating Override Rules](#).
7. Click **OK**.
The changes to the override rule are saved.

Deleting Override Rules

To delete an override rule:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Time Mgmt > Override Rules**.
The Override Rule Workbench opens.
4. In the **Query** tab, enter the search criteria and click **List**.
The **Results** tab lists the override rules that meet your search criteria.
5. In the **Results** tab, select an override rule and click **Delete**.
A dialog box opens for confirmation.
6. Click **Yes**.
The override rule is deleted.

Precedence of Dependencies Among Multiple Override Rules

All of the specified dependencies (filters) of an override rule must be satisfied to apply the rule. If all the dependencies for more than one override rule are met, only the override rule with the highest precedence takes effect. (However, see also ["Precedence of Results for Override Rules" on page 72](#) for more information.)

The precedence among override rules whose dependencies are all met is based on which *combination* of dependencies is met for each of the override rules. ["Table 7-2. Override rule precedence based on which dependencies are met" below](#) shows the order of override rule precedence based on which of the five dependencies, indicated by X's, are met.

Table 7-2. Override rule precedence based on which dependencies are met

Precedence	Work Item Type	Work Item Set	Work Item	Department (of Resource)	Title
1	X	X	X	X	X
2	X	X	X	X	
3	X	X	X		X
4	X	X	X		
5	X	X		X	X
6	X	X		X	
7	X	X			X
8	X	X			
9	X			X	X
10	X			X	
11	X				X
12	X				
13				X	X
14				X	
15					X
16					

Note that whenever an override rule B has a subset of the dependencies of an override rule A, and all the dependencies of rule A and rule B are met, rule A takes precedence over rule B, so the specified results of rule A take effect. In other words, more restrictive rules take precedence. For example, only precedence 1 requires that all five of the rule's dependencies be met by a time sheet line and a resource, whereas lower precedence 2 imposes no requirement upon the **Title** of the resource. Similarly, for precedence 11, the **Work Item Type** of the time sheet line and the **Title** of the resource are specified, whereas only the **Work Item Type** is specified for lower precedence 12.

Note: If a particular project is integrated with Time Management and its **Cost and Effort** policy specifies that a project representative must approve time for the project, that policy supersedes any override rules for determining approvers, except where the override rule applies to a particular task. For more information about precedence of approvers, see the *Time Management User's Guide*.

Consider the following example cases and the dependencies for two override rules named Rule A (with precedence 4) and Rule B (with lower precedence 6), shown in "Table 7-3. Example of precedence of dependencies among override rules" below. For precedences 4 and 6, the **Title** of the resource does not matter (see "Table 7-2. Override rule precedence based on which dependencies are met" on the previous page), so it is not considered in the example.

Table 7-3. Example of precedence of dependencies among override rules

Precedence	Override Rule	Specified Dependencies				Time Approver Result
		Work Item Type	Work Item Set	Work Item	Department (of Resource)	
4	Rule A	Request	Key Release	30122		Jim Grayson
6	Rule B	Request	Key Release		Development	Joan Bell

In the following examples, assume that, for all time sheet lines, the **Work Item Type** is **Request** and the **Work Item Set** is **Key Release**.

Case One

An engineer from Development is working on the **30122** work item (Alpha Test) of the **Key Release** request. The **Work Item Type**, **Work Item Set**, and **Work Item** dependencies for Rule A are met. So are the **Work Item Type**, **Work Item Set**, and **Department (of Resource)** dependencies for Rule B. Because Rule A has higher precedence, the engineer's time approver is set to **Jim Grayson**.

Case Two

An accountant from Finance is working on the **30122** work item of the **Key Release** request. The **Work Item Type**, **Work Item Set**, and **Work Item** dependencies for Rule A are met. The **Department (of Resource)** dependency for Rule B is not met. As a result, the accountant's time approver is set to **Jim Grayson**.

Case Three

A programmer from Development is working on the Beta Planning work item of the **Key Release** request. The **Work Item** dependency for Rule A is not met. The **Work Item Type**, **Work Item Set**, and **Department (of Resource)** dependencies for Rule B are met. As a result, the programmer's time approver is set to **Joan Bell**.

Case Four

A consultant from Services is working on the Beta Planning work item of **Key Release**. The **Work Item** dependency for Rule A is not met. The **Department (of Resource)** dependency for Rule B is not met. Neither rule applies, so the consultant's time approver is his or her default time approver.

Precedence of Results for Override Rules

The following sections discuss what can occur when a field in the **Results** section of an override rule is left blank.

- ["Precedence of Results Among Override Rules" below](#)
- ["Precedence of Results Between Override Rules and Other Settings" on the next page](#)

Precedence of Results Among Override Rules

If a field in the **Results** section of an override rule is left blank, other override rules with *lower* precedence can populate the blank result field if their dependencies are met.

See ["Table 7-4. Example of precedence of results in override rules" below](#) and consider the cases of the previous example, with the same specified dependencies (not shown), the same specified time approver results, and the added charge code result shown.

Table 7-4. Example of precedence of results in override rules

Precedence	Override Rule	Time Approver Result	Charge Code Result
4	Rule A	Jim Grayson	
6	Rule B	Joan Bell	55

Case One

The engineer from Development and his work item met the dependencies for both Rule A and Rule B. Since Rule A takes precedence, the time approver was set to **Jim Grayson**. In addition, since the dependencies of Rule B are also met and Rule A does not specify a charge code, Rule B supplies the charge code result—the engineer's charge code is set to **55**.

Case Two

The accountant from Finance and his work item met the dependencies for Rule A but not Rule B, so no result of Rule B can be applied. The accountant's time approver is set to **Jim Grayson** and his default charge code is used.

Case Three

The programmer from Development and her work item met the dependencies for Rule B but not Rule A, so no result of Rule A can be applied. The programmer's time approver is set to **Joan Bell** and her charge code is set to **55**.

Case Four

The consultant from Services and her work item did not meet the dependencies for either Rule A or Rule B, so her default time approver and default charge code are used.

Precedence of Results Between Override Rules and Other Settings

If a field in the **Results** section of an override rule is left blank (and the field does not become populated by a rule of lower precedence as described in "[Precedence of Results Among Override Rules](#)" on the [previous page](#)), the override rule does not affect the value of the field as set elsewhere in Time Management.

For example, each of the four **Results** fields related to charge codes (see "[Figure 7-1. Example Override Rule window](#)" on [page 64](#)) can be left blank, set to **Yes**, or set to **No**. If a field is left blank, the override rule does not affect charge code settings in the manner described by the field name. If the settings are specified elsewhere, such as on the Work Allocation Charge Code Information page, those settings remain in effect. (For detailed information about the precedence of work allocations, time sheet policies, and override rules in setting charge codes, see "[Precedence of Setting Charge Codes](#)" on [page 61](#).)

Rules for the Suggested Items List

- ["Overview of Rules for the Suggested Items List " below](#)
- ["Configuring Custom Rules for the Suggested Items List" on the next page](#)
- ["Custom Rules for Time Sheets" on page 82](#)

Overview of Rules for the Suggested Items List

To help users add appropriate items to their time sheets, Time Management automatically generates the Suggested Items list and presents it to the user on the **Suggested Items** tab. (Also for convenience, each user can build a personal list of work items on the adjacent **My Items** tab. Each user completely controls its contents.)

Default rules populate the Suggested Items list with the following work items:

- Each work item of any type that meets *both* of the following conditions:
 - It is on the user's most recently submitted time sheet for a previous time period.
 - It is available to the user to log time against (because it is not closed).
- Each project that meets *both* of the following conditions:
 - It contains tasks that are assigned to the user.
 - It uses Time Management to track time at the project level. For more information, see the *Time Management Configuration Guide*.
- Each summary task that meets *both* of the following conditions:
 - It contains tasks that are assigned to the user.
 - It is in a project that uses Time Management to track time at a specified summary task level. For more information, see *Time Management Configuration Guide*.
- Each task that meets *all* of the following conditions:
 - It is assigned to the user.
 - It is in a project that uses Time Management to track time at the task level. For more information, see *Time Management Configuration Guide*.

- It can have time logged against it during this time sheet's time period (because its status is Ready and it has a scheduled start-to-finish date range that overlaps at least part of the time sheet's time period, or Each request that meets *either* of the following conditions and is of a type that uses listed resources to report time in Time Management:
 - It was assigned to the user to work on during the time period of the time sheet the user is completing.
 - It allows all listed resources to log time and its resource list includes the user. For more information, see the *Demand Management Configuration Guide*.because its status is In Progress).

Note that the Suggested Items list is specific to the resource and the time period.

You can create custom rules to control what appears in the Suggested Items list. See "[Configuring Custom Rules for the Suggested Items List](#)" below. These rules apply to all users. HPE strongly recommends that you keep the SQL efficient and the Suggested Items list short.

Note: Modifications to the rules for generating the Suggested Items list should be made with the help of HPE Software Support. Changing the rules requires strong knowledge of SQL and updating the server file system requires privileges you might not have.

You cannot directly modify HPE-supplied rules, however you can do the following:

- Disable HPE-supplied rules
- Create new custom rules, either from scratch or by copying an existing rule as a starting point and revising it

You are responsible for modifying custom rules as may be necessary if Time Management is patched or upgraded with new HPE-supplied rules.

The rules for the Suggested Items list are driven by flat text files that are read on server startup. A PPM Server restart is required after changes, deletions, or additions to the rules are made.

Configuring Custom Rules for the Suggested Items List

Files related to the Suggested Items list are located in the `<PPM_Home>/conf/quicklist` directory, which contains the following:

- `core_derivations` subdirectory, which contains the HPE-supplied rules
- `custom_derivations` subdirectory, where you must save all custom rules
- Master file named `QuickListMaster.xml`, which identifies all the HPE-supplied and custom rules and indicates which ones are enabled

Each HPE-supplied rule or custom rule for the Suggested Items list is specified as an XML definition file with tags and SQL query information (see ["Rule Definitions" below](#)).

To create a custom rule:

1. Copy and rename an existing HPE-supplied rule from the `core_derivations` directory or an existing custom rule from the `custom_derivations` directory.

Alternatively, create the new rule from scratch as an XML file.
2. Write the new rule. See ["Rule Definitions" below](#).
3. Save the new custom rule in the `custom_derivations` directory.
4. Revise the `QuickListMaster.xml` master file in the `quicklist` directory as follows (see ["QuickListMaster.xml File" on page 80](#)):
 - a. If appropriate, disable the HPE-supplied rule (found in the `core_derivations` directory) that your custom rule will replace.
 - b. Add and enable your custom rule (found in the `custom_derivations` directory).
5. Translate the values of **Description** and/or **Reason** for the new rule as needed. See ["Translating Descriptions and Reasons in Custom Rule Definition Files" on page 81](#).
6. Restart the PPM Server

Rule Definitions

Each rule definition is an XML file that uses the structure of the following example:

```
<derivation>
  <name>work_items_on_last_time_sheet</name>
  <description>text description</description>
  <reason>OnLastTimeSheet</reason>
  <resource-bundle>suggested_items</resource-bundle>
  <context>TIME_WORK_ITEM</context>
  <sql>
    <![CDATA[
      SELECT ...
```

```
        FROM ...
        WHERE ...
    ]]>
</sql>
</derivation>
```

The values for the `name`, `description`, `reason`, `resource-bundle`, `context`, and `sql` tags are described in the following sections. The `description` and `resource-bundle` tags are optional.

Name

This tag is a case-sensitive code-style name (that is, one with no spaces or special characters) that uniquely identifies the rule. The `<name>` value in the rule definition and the `<name>` value to be used in the `QuickListMaster.xml` file must match.

Description

This tag is an optional text description of the rule definition. The description must not use any XML special characters. You can arrange to translate this field into other languages supported by PPM Center, as described in ["Translating Descriptions and Reasons in Custom Rule Definition Files" on page 81](#)

The description must be included in the `.properties` file that has the file name specified for the `<resource-bundle>` tag in the rule definition XML file, which is `suggested_items` in the example so the file name with extension is `suggested_items.properties`. This file must be located in the following directory:

```
<PPM_Home>/conf/custom_resources/suggested_items
```

Reason

This tag is the key for the text that explains to the user the reason the item is being included in the Suggested Items list. The reason must not use any XML special characters. For example, the key `OnLastTimeSheet` could display the text `Item from previous time sheet`. You can arrange to translate this field into other languages supported by PPM Center, as described in ["Translating Descriptions and Reasons in Custom Rule Definition Files" on page 81](#).

The reason must be included in the `.properties` file that has the file name specified for the `<resource-bundle>` tag in the rule definition XML file, which is `suggested_items` in the example so the file name with extension is `suggested_items.properties`. This file must be located in the following directory:

```
<PPM_Home>/conf/custom_resources/suggested_items
```

Resource Bundle

If values for `description` and/or `reason` are to be translated into other languages, this tag is the name of the `.properties` file that contains those values. A new `.properties` file must be created for each language to which `description` and/or `reason` are to be translated. The file name must conform to Java resource bundle naming conventions, including any required suffix such as `_de` for German or `_pt_BR` for Brazilian Portuguese. For more information, see ["Translating Descriptions and Reasons in Custom Rule Definition Files" on page 81](#).

Context

Keep the value of this tag as `TIME_WORK_ITEM`.

SQL

Define an SQL statement to identify work items for the Suggested Items list. Multiple lines are allowed.

Including `<![CDATA[and]]>` tags around your SQL statement allows inclusion of special or reserved characters.

The following tokens are supported:

- `[TMG.RESOURCE_ID]`
- `[TMG.PERIOD_ID]`

To be read correctly, the `SELECT` columns of the SQL statement must be aliased to the following column names (but the return order of the columns does not matter):

- `work_item_id` (ID of the work item)
 - For projects or tasks (including summary tasks/root node): `task_id`
 - For requests: `request_id`
 - For packages: `package_id`
 - For miscellaneous: `lookup_code`
- `work_item_name` (display name of the work item)
 - For projects or tasks: `task_name`
 - For requests: `request_id`
 - For packages: `package_id`
 - For miscellaneous: `lookup_meaning`

- `work_item_set_id` (ID of the work item set, such as project or request type)
 - For projects or tasks: `work_plan_id`
 - For requests: `request_type_id`
 - For packages: `workflow_id`
 - For miscellaneous: `validation_id`
- `work_item_set_name` (name of the work item set)
 - For projects or tasks: `work_plan_name`
 - For requests: `request_type_name`
 - For packages: `workflow_name`
 - For miscellaneous: `lookup_type`
- `description` (any plain text description of the work item, with suggested descriptions as follows)
 - For projects: the project description
 - For tasks: project path list to the task
 - For requests: request description
 - For packages: package description
 - For miscellaneous: lookup description
- `work_item_type` (type of the work item—internal code)
 - For projects or tasks: `TASK`
 - For requests: `REQUEST`
 - For packages: `PACKAGE`
 - For miscellaneous: `MISC`

For example, the following SQL selects all the requests that are both assigned to the user and in Approved status:

```
<sql>  
<![CDATA[  
SELECT r.request_id work_item_id,  
       r.request_id work_item_name,  
       r.request_type_id work_item_set_id,  
       rt.request_type_name work_item_set_name,  
       r.description description,  
       'REQUEST' work_item_type
```

```

FROM kcrt_requests r,
     kcrt_request_types rt,
     kcrt_statuses s
WHERE r.assigned_to_user_id = [TMG.RESOURCE_ID]
     and r.request_type_id = rt.request_type_id
     and r.status_id = s.status_id
     and s.status_name = 'Approved'
]]>
</sql>

```

QuickListMaster.xml File

The `QuickListMaster.xml` file includes the following set of tags for each rule:

- **Name.** Case-sensitive code-style name (that is, one with no spaces or special characters) that uniquely identifies the rule. The name is used throughout all the files to link information together, and it must be consistent with the `<name>` value in the rule definition.
- **Enabled flag.** Flag to indicate whether or not the rule should be used. You must change this flag on any HPE-supplied rule that is to be replaced by a custom rule. Allowed values are **N** and **Y**.
- **File path.** Path to the file that defines the rule, relative to the `quicklist` directory. This path is as follows:
 - `core_derivations/<file name.xml>` for HPE-supplied rules
 - `custom_derivations/<file name.xml>` for custom rules.

HPE recommends making the values of `<file name.xml>` unique for each rule across the `core_derivations` and `custom_derivations` directories.

Following is a sample `QuickListMaster.xml` file:

```

<quicklist>
  <derivation>
    <name>tasks_assigned_to_me</name>
    <enabled>Y</enabled>
    <file>core_derivations/tasks_assigned_derivation.xml</file>
  </derivation>
  <derivation>
    <name>work_items_on_last_time_sheet</name>
    <enabled>Y</enabled>
    <file>core_derivations/work_items_on_last_time_sheet.xml</file>
  </derivation>
  <derivation>
    <name>requests_available_to_you</name>

```



```

        <enabled>Y</enabled>
        <file>core_derivations/request_resources_assignees_derivation.xml</file>
    </derivation>
    <derivation>
        <name>my_tasks</name>
        <enabled>Y</enabled>
        <file>custom_derivations/MyTasksRule.xml</file>
    </derivation>
</quicklist>

```

After you complete the new rule and the revision of the `QuickListMaster.xml` file, the application can apply the new rule.

For more information about adding or revising rules, see ["Configuring Custom Rules for the Suggested Items List" on page 75](#).

Translating Descriptions and Reasons in Custom Rule Definition Files

For custom rules for the Suggested Item list, if the values for *description* and/or *reason*, which appear as the **Description** and **Reason** columns in Suggested Items lists, are to be translated into other languages, a separate suggested items `.properties` file must be created for each language. After translation, each user sees the *description* and/or *reason* text in his or her session language, assuming that language is supported (previously installed) in PPM Center.

For example, suppose the `MyTasksRule.xml` custom rule definition file includes tags for *description* and *reason* as follows:

```

<description>MyTasksDesc</description>
<reason>MyTasksReason</reason>

```

A sample `suggested_items.properties` file with all lines commented out is provided in the following directory:

```

<PPM_Home>/conf/custom_resources/suggested_items

```

If the custom rule adds tasks from the My Tasks portlet to the Suggested Items list, you could change the content of the sample `suggested_items.properties` file to the following:

```

# Resource file for translated description and reason for
# adding tasks in My Tasks portlet to Suggested Items list.
MyTasksDesc=My tasks
MyTasksReason=In My Tasks portlet

```

Content in the `.properties` files must use the Java standard format of `<key>=<value>`. If you modify the sample `suggested_items.properties` file, remember to remove comment characters (`#`) as needed.

In the example, note that the keys in the `suggested_items.properties` file—`MyTasksDesc` and `MyTasksReason`—match the values of the `description` and `reason` tags in the `MyTasksRule.xml` custom rule definition file, as required.

A new `.properties` file must be created for each language to which the values for the keys (`My tasks` and `In My Tasks portlet` in the example) are to be translated.

The names of the `.properties` files must be appended with “_” followed by a two-character language code from the subset of languages in ISO standard 639-1 that are supported by Oracle. The file names can be further appended with “_” followed by a two-character country code from the subset of codes in ISO standard 3166-1 that are supported by Oracle.

Examples:

- `suggested_items_de.properties` for German
- `suggested_items_pt_BR.properties` for Brazilian Portuguese

To prepare for translation, for each language to which content in your `suggested_items.properties` file is to be translated, copy your `suggested_items.properties` file and append the new language code (for example, `_de`) to the file name, so that each file name indicates the intended language, and the translations can be performed accordingly.

After translation, the `.properties` files for all languages must be placed in the following directory:

```
<PPM_Home>/conf/custom_resources/suggested_items
```

For more information about using multiple languages in a single installation of PPM Center, see the *Multilingual User Interface Guide*.

Custom Rules for Time Sheets

You can create custom time sheet rules that are evaluated when users submit their time sheets. These rules supplement the standard configurable time sheet policies described in the *Time Management Configuration Guide*. Users do not see messages for rules violations when they save their time sheets without submitting them.

Caution: When using custom rules, the performance of Time Management when time sheets are submitted depends on such factors as the number of rules, their complexity, and whether the rules require evaluation of all time sheet lines.

A violation of a rule occurs when a user submits a time sheet that does not meet the requirements of the rule.

The rules you need to specify are all written in one XML file, and each rule includes SQL to specify the conditions of a time sheet that constitute a violation. Any data on the time sheet can be validated through SQL.

The custom rules can be restricted to apply to users who are associated with particular time sheet policies.

In the XML file, you specify the SQL that defines the rules. In a properties file, you create the message titles and messages that users see when a rule violation occurs or when a runtime error (a failure of the rule to run correctly) occurs.

The messages for all custom rule violations are displayed after any messages for the standard configurable time sheet policy violations, on the same dialog. The dialog has the same general "look and feel" as in the past, with some layout and spacing improvements.

HPE provides a sample XML file and a sample properties file to use as models. This document describes examples in those files, but it does not describe how to write the SQL to define the custom rules.

Prerequisites

To create custom rules for time sheets, you must create the new `com.kintana.core.server.TM_ENABLE_POLICY_EXTENSION` `server.conf` parameter and set it to `true`. For information about creating `server.conf` parameters, see the Installation and Administration Guide. This parameter cannot be configured through the Administration Console.

Sample Files

The `<PPM_Home>/conf/tm_policy` directory initially contains the sample file `config.xml.sample`, which has rules you can use as models for the rules you want to develop and apply.

This directory also contains the schema file `config.xsd`, which you should not change.

The sample properties file, which contains titles and text for violation messages and error messages, is located at:

```
server/<PPM_Server_Name>/deploy/itg.war/WEB-INF/conf
```

The directory initially contains the sample properties file named:

`TMCustomRulesResources.properties.sample`

You will specify messages for violations and errors in the properties file named:

`TMCustomRulesResources.properties`

Note: The properties files can be localized to specific languages that are supported on a particular PPM Center instance. For example, the properties files could be translated and named:

- `TMCustomRulesResources_en.properties` for English
- `TMCustomRulesResources_de.properties` for German

Structure of a Rule

A rule includes the following attributes:

- `identifier`, which is a number or a string that can help you distinguish multiple rules in the XML file. HPE recommends specifying a unique identifier for each rule.
- `title`, which specifies the key for a key-value pair in the properties file, where the value is the title of both the violation message and the error message for the rule. The properties file also contains the text used in each of the messages.
- `enabled`, which is a flag to enable or disable a rule
- `restrictTo`, which is an optional attribute that allows the rule to apply to only the specific time sheet policies listed by ID number
- `sql`, which defines the rule
- `violation`, which specifies the key for a key-value pair in the properties file, where the value is the text of the violation message for the rule.
- `error`, which specifies the key for a key-value pair in the properties file, where the value is the text of the runtime error message for the rule. The text can be generic and apply to any number of rules, or it can be specific to one rule.

The SQL in the rule can use the following tokens, which get resolved at run time:

- `[TMG.TIME_SHEET_ID]`, which represents the time sheet being submitted
- `[TMG.CURRENT_USER_ID]`, which represents the user who is currently logged in, not necessarily the time sheet resource

The following examples of rules are provided, in order of increasing complexity, to describe the effect of various rules and properties files on the occurrence and content of violation messages and error messages.

Rule and Messages: Example 1

In the following example, the rule prevents users from logging more than a total of 20 hours on Misc items in a time sheet. This rule uses the [TMG.TIME_SHEET_ID] token and it evaluates effort entered by users on time sheet lines.

```
<rule>
  <identifier>misc_excess_hours</identifier>
  <title>misc.excessHours.title</title>
  <enabled>true</enabled>
  <sql><![CDATA[
    SELECT 1
      FROM tm_time_sheets ts,
           tm_time_sheet_lines tsl,
           tm_actuals ta,
           tm_actuals_effort tae
     WHERE ts.time_sheet_id = tsl.time_sheet_id
           AND tsl.time_sheet_line_id = ta.time_sheet_line_id
           AND ta.actuals_id = tae.actuals_id
           AND ta.totals_flag = 'Y'
           AND tsl.work_item_type = 'MISC'
           AND ts.time_sheet_id = [TMG.TIME_SHEET_ID]
           HAVING SUM (tae.actual_effort) > 20
  ]]></sql>
  <violation>misc.excessHours.violation</violation>
  <error>genericError</error>
</rule>
```

Assume this rule uses the following key-value pairs in the properties file:

```
misc.excessHours.title=Excess Hours
```

```
misc.excessHours.violation=This time sheet exceeds the maximum of 20 hours
permitted for the sum of all Misc. lines.
```

```
genericError=An error occurred while checking this time sheet rule.
```

Based on the SQL and the properties file, if a user submits a time sheet with too many hours for Misc items, a Non-Compliance message is displayed with the following title and text:

Excess Hours This time sheet exceeds the maximum of 20 hours permitted for the sum of all Misc. lines.

Based on the SQL and the properties file, if a runtime error occurs during execution of the SQL, the error message that appears consists of the message title specified in the properties file, followed by the generic error message text:

Excess Hours An error occurred while checking this time sheet rule

Rule and Messages: Example 2

In the following example, the rule prevents users with either of two particular time sheet policies from submitting a time sheet with a request that has been cancelled or closed for more than 30 days. This rule uses the [TMG.TIME_SHEET_ID] token and it restricts which requests users can enter on time sheets.

The `restrictTo` attribute is used to apply the rule to time sheet policies 20000 and 20001 only. To find the time sheet policy ID number associated with a policy name, see the `KTMG_POLICIES` table in the database.

```
rule>
  <identifier>requests_closed</identifier>
  <title>req.closed.title</title>
  <enabled>>true</enabled>
<!-- Restrict this rule to resources associated with particular PPM Time Management
policies -->
  <restrictTo>
    <policies>
      <policy id="20000"/>
      <policy id="20001"/></policies>
    </restrictTo>
  <sql><![CDATA[
    SELECT '#' || kr.request_id
    FROM kcrt_requests kr
    WHERE (kr.status_code LIKE 'CLOSED%' OR kr.status_code LIKE 'CANCEL%')
    AND EXISTS (
      SELECT 1
      FROM tm_time_sheets ts,
           tm_time_sheet_lines tsl,
           ktmg_periods tp,
           kwfl_workflow_instances kwi
      WHERE ts.time_sheet_id = [TMG.TIME_SHEET_ID]
            AND ts.time_sheet_id = tsl.time_sheet_id
            AND tsl.work_item_type = 'REQUEST'
            AND tsl.work_item_id = kr.request_id
            AND ts.period_id = tp.period_id
            AND kr.request_id = kwi.instance_source_id
            AND kr.workflow_id = kwi.workflow_id
            AND kwi.instance_source_type_code = 'IR'
```

```

        AND TRUNC (tp.end_date) - TRUNC (kwi.completion_date) > 30)
    ]]></sql>
    <violation>req.closed.violation</violation>
    <error>genericError</error>
</rule>

```

Assume this rule uses the following key-value pairs in the properties file:

```
req.closed.title=Closed Requests
```

```
req.closed.violation=The following requests on this time sheet have been closed or
cancelled for more than 30 days: {0} You are no longer permitted to submit
additional effort on these requests.
```

```
genericError=An error occurred while checking this time sheet rule.
```

The violation message is written to include specific data returned by the SQL, namely one or more request IDs in place of {0} in the violation message text. Note that the outermost SELECT statement in the SQL is written such that the returned strings shown in the violation message clearly identify the particular items of interest (request IDs in this example).

Based on the SQL and the properties file, if a user submits a time sheet with effort on any requests that have been cancelled or closed for more than 30 days, a Non-Compliance message is displayed with the following title and text (including two example request numbers):

Closed Requests The following requests on this time sheet have been closed or cancelled for more than 30 days:

```
1 #12345
```

```
1 #23456
```

You are no longer permitted to submit additional effort on these requests.

Based on the SQL and the properties file, if a runtime error occurs during execution of the SQL, the error message that appears consists of the message title specified in the properties file, followed by the same generic error message text as in example 1:

Closed Requests An error occurred while checking this time sheet rule.

Rule and Messages: Example 3

In the following example, the rule prevents any resource from submitting time sheets with effort on tasks from any project that starts with the word "Operation" but the rule allows their managers to submit such time sheets. This rule uses both the [TMG.TIME_SHEET_ID] token and the [TMG.CURRENT_USER_ID] token and it restricts which tasks certain users can have on time sheets.

```

<rule>
  <identifier>tasks_restricted</identifier>
  <title>tasks.restricted.title</title>
  <enabled>true</enabled>
  <sql><![CDATA[
    SELECT ti.name
      FROM wp_task_info ti, wp_tasks t
     WHERE ti.task_info_id = t.task_info_id
           AND EXISTS (
             SELECT 1
              FROM tm_time_sheets ts,
                   knta_users ku,
                   tm_time_sheet_lines tsl,
                   pm_projects prj,
                   pm_work_plans wp
             WHERE ts.time_sheet_id = [TMG.TIME_SHEET_ID]
                  AND ts.resource_id = ku.user_id
                  AND ku.manager_user_id <> [TMG.CURRENT_USER_ID]
                  AND ts.time_sheet_id = tsl.time_sheet_id
                  AND tsl.work_item_type = 'TASK'
                  AND tsl.work_item_id = t.task_id
                  AND t.work_plan_id = wp.work_plan_id
                  AND wp.project_id = prj.project_id
                  AND prj.project_name LIKE 'Operation%')
           ORDER BY ti.name
    ]]></sql>
  <violation>tasks.restricted.violation</violation>
  <error>tasks.restricted.error</error>
</rule>

```

Assume this rule uses the following key-value pairs in the properties file:

```
tasks.restricted.title=Restricted Tasks
```

```
tasks.restricted.violation=You are not permitted to submit effort on the following
tasks: {0}.
```

```
tasks.restricted.error=An error occurred while checking this time sheet rule.
Please contact your PPM Center administrator.
```

The violation message is written to include specific data returned by the SQL, namely one or more tasks in place of {0} in the violation message text. Note that the outermost SELECT statement in the SQL is written such that the returned strings shown in the violation message clearly identify the particular items of interest (task names in this example).

The runtime error message is unique, not generic.

Based on the SQL and the properties file, if a user submits a time sheet with effort on tasks from any project that starts with the word "Operation," a Non-Compliance message is displayed with the following title and text (including two example task names):

Restricted Tasks You are not permitted to submit effort on the following tasks:

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Based on the SQL and the properties file, if a runtime error occurs during execution of the SQL, the error message that appears consists of the message title specified in the properties file, followed by the unique error message text for this rule:

Restricted Tasks An error occurred while checking this time sheet rule. Please contact your PPM Center administrator.

As with any rule, the SQL could be changed for variations of interest. For example, you could display the project names as well as the subordinate task names, or you could allow delegates as well as managers to log time against projects that begin with "Operation."

Creating Your Own Custom Rules for Time Sheets

To create the rules you need, copy and edit the `config.xml.sample` file and the `TMCustomerRulesResources.properties.sample` file or create new ones as needed.

The XML file must be renamed:

```
config.xml
```

and it must be placed in the directory:

```
<PPM_Home>/conf/tm_policy
```

The properties file must be renamed:

```
TMCustomerRulesResources.properties
```

and it must be placed in the directory:

```
server/<PPM_Server_Name>/deploy/itg.war/WEB-INF/conf
```

Any translated properties files must be placed in the same directory.

On successful server startup, a message appears stating that the rules in the XML file were parsed correctly.

Chapter 8: Work Item Filters

- ["Overview of Work Item Filters" below](#)
- ["Adding Work Item Filter Fields" on page 93](#)

Overview of Work Item Filters

On their time sheets, users click **Add Items** to add work items directly to their time sheets. They can also build a My Items list. In either case, they select the type of work item—project, task, request, package, or miscellaneous—to add from a drop-down list.

When a user selects **Add Project**, **Add Task**, **Add Request**, or **Add Package** (but not **Add Miscellaneous**), a window opens with filter criteria for that work item type. The window for each work item type offers the same set of general filters plus a set of filters that is unique to that work item type.

The same work item filters used for time sheets also apply when creating work allocations, and they cannot be changed independently for work allocations. (All the filters for work allocations appear in one window with a section for each supported work item type.)

Users can specify values for these filters to limit the search results for work items they can then add to time sheets and work allocations. See the *Time Management User's Guide* for detailed information. These filters are collectively listed in ["Table 8-1. Work item filters" below](#).

This section describes how you can add other filter criteria and make them available to users.

Table 8-1. Work item filters

Filter (*Required)	Description
General filters	
Modified in Last x days	Limits the list of work items to those that were modified within the specified number of days.
Created in Last x days	Limits the list of work items to those that were created within the specified number of days.
Include Closed	Option to include closed work items in the list of returned work items. Closed work items include the following: <ul style="list-style-type: none">• Requests that are closed• Tasks that are complete and whose projects still allow time to be

Table 8-1. Work item filters, continued

Filter (*Required)	Description
	<p>logged</p> <ul style="list-style-type: none"> • Packages that are closed
Project filters ^a	
Project Name Contains	Limits the list of projects to those with names that include the specified string.
Project Resource	Limits the list of projects to those with a participant list that includes the resource you specify. (Participant lists include resources in the project's staffing profile, resources directly assigned on tasks in the work plan, and summary task owners.)
Project Manager	Limits the list of projects to those that have the project manager you specify.
Scheduled Start From	Limits the list of projects to those that start on the specified date or later.
Scheduled Start To	Limits the list of projects to those that start on the specified date or earlier.
Scheduled Finish From	Limits the list of projects to those that finish on the specified date or later.
Scheduled Finish To	Limits the list of projects to those that finish on the specified date or earlier.
Task filters ^b	
Task Name Contains	Limits the list of tasks to those with names that include the specified string.
*Project	Limits the list of tasks to those in the specified project. The project must have a work plan, and the user must be allowed to log time against the project or its tasks.
Task Type	Limits the list to tasks or to summary tasks, or displays both.
Project Assigned Resource	Limits the list of tasks to those with the specified assigned resource.
Task Status	Limits the list to tasks of a particular status.
Project Manager	Limits the list of tasks to those in projects that have the specified project manager.
Scheduled Start From	Limits the list of tasks to those that start on the specified date or later.
Scheduled Start To	Limits the list of tasks to those that start on the specified date or

Table 8-1. Work item filters, continued

Filter (*Required)	Description
	earlier.
Scheduled Finish From	Limits the list of tasks to those that finish on the specified date or later.
Scheduled Finish To	Limits the list of tasks to those that finish on the specified date or earlier.
Request filters	
Request Type ^c	Limits the list of requests to those with the specified set of request types.
Request Assigned To	Limits the list of requests to those assigned to the specified user.
Only requests whose assigned group includes me	If set to Yes , limits the list of requests to those that include the current user in the request's assigned group.
Request Resource	Limits the list of requests to those that include the specified resource in the request's resource list.
Only requests that list me as a resource	If set to Yes , limits the list of requests to those that include the current user in the request's resource list.
Request Assigned Group	Limits the list of requests to those with the Request Assigned Group specified from a list of security groups.
Request Number	Limits the requests to only the one with the specified number.
Package filters	
Package Workflow	Limits the list of packages to those with the specified workflow.
Package Number	Limits the list of packages to those with the specified number.
Package Assigned Group	Limits the list of packages to those with the Package Assigned Group specified from a list of security groups.
Package Assigned To	Limits the list of packages to those assigned to the specified user.
<p>a. As an additional project filter, only projects that track time at the project level are displayed.</p> <p>b. If a project has a work plan and it tracks time at the project level, the task filter returns top-level summary tasks.</p> <p>c. As described in the <i>Demand Management Configuration Guide</i>, you can use the Security tab on a field in a request type to specify which users and user groups can view and/or edit that field.</p>	

Adding Work Item Filter Fields

This section details how to add a field to the work item filters. After they are created, new work item filters appear in the screens that users complete to select work items to add to time sheets, and on the Create Work Allocations page.

Note: Modifications to the Time Management work item filters should be made with the help of HPE Professional Services.

Updating the database requires privileges a DBA might not want to grant to the application administrator.

Note: As described in the *Time Management User's Guide*, users view a "Suggested Items" list of work items they can add to their time sheets. If Time Management validations are customized, Suggested Items list queries might need to be correspondingly customized.

Note: HPE recommends adding no more than four or five new work item filters. SQL imposes a limitation of 4000 characters on a search query formed from the filters. Adding many filter fields causes the SQL validation to exceed this limit and break.

Overview of Adding Work Item Filter Fields

The following major steps are required to add a filter field to the work item filters:

- Determine the information described in ["Prerequisites" on the next page](#).
- Add the new filter field to the work item filters by editing the TMG Configurable Filters request type. See ["Adding a New Filter Field to the Work Item Filters" on the next page](#).
- Edit the appropriate SQL validation for the work item filter from the database. The Time Management SQL validations are HPE-supplied data and some of them cannot be edited from the PPM Workbench. See ["Editing an SQL Validation" on page 96](#).
- Update the database. See ["Updating the Database Table" on page 97](#).

Prerequisites

Before adding a filter field, you must determine the following:

- **The name and validation ID of the SQL validation to be used for the new filter field.**

Validation names are related to work item types as follows:

- For projects, the validation names end with `Project Work Items`.
- For tasks, the validation names end with `Task Work Items`.
- For requests or packages, the validation names end with `Work Item`.

"[Table 8-2. SQL validation IDs for filter fields](#)" below lists the relevant validation names and their validation IDs.

Table 8-2. SQL validation IDs for filter fields

Validation Name	Validation ID
TMG - Time Sheet Details - Project Work Items	3079
TMG - Time Sheet Details - Task Work Items	2693
TMG - Time Sheet Details - Work Item	826

- **The SQL to support the new filter field.** Knowledge of SQL and database schema is required to write the SQL for the new filter field.
- **The name of the new filter field.** An example is **Creation Date**.
- **The token for the new filter field.** An example is `CREATION_DATE`. (When editing the SQL code in the SQL validation, add the `FLTR` prefix to the token name, as in `FLTR.CREATION_DATE`.)

Adding a New Filter Field to the Work Item Filters

To add a new filter field to the work item filters, edit the TMG Configurable Filters request type as follows:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.

The PPM Workbench opens.

- From the shortcut bar, select **Demand Mgmt > Request Types**.

The Request Type Workbench opens.

- In the **Request Type** field of the **Query** tab, enter TMG and click **List**.

The **Results** tab lists only the request types associated with Time Management.

- In the **Results** tab, select the **TMG Configurable Filters** request type and click **Open**.

The Request Type window opens with the **Fields** tab selected.

- In the **Fields** tab, click **New**.

The Field: New window opens, with the **Attributes** tab selected.

- Complete the fields in the Field: New window as specified in the following table:

Field Name (*Required)	Description
*Field Prompt	Name of the new filter field, such as Creation Date . This field name will appear among the general filters or the filters for a specific work item type, as specified in the Section Name field in the Attributes tab.
*Token	Token for the new field. This token will be used later to update the search logic. For example, if the validation SQL adds <code>FLTR.CREATION_DATE</code> , use the non-prefixed token name <code>CREATION_DATE</code> for this field.
Description	Description of the new field.
Enabled	Yes to enable the field for use. No to disable the field.
*Validation	Validation for the new filter field. Depending on the selected validation, the Component Type and Multi-Select Enabled fields can become enabled.
Component Type	Type of field, such as drop-down list or text field. Selecting particular values in the Validation field enables this field.
Multi-Select Enabled	Option to allow multiple entries to be selected from this field. Selecting particular values in the Validation field enables this field.
Attributes tab	
Section Name	Which section the new work item filter field will appear in. Do not add new sections.
Display Only	Option to make the field read-only and not updateable, even at initial request entry.

Field Name (*Required)	Description
Transaction History	Not applicable.
Notes History	Not applicable.
Display on Search and Filter	Not applicable.
Display	Option to display the field in the standard interface.
Search Validation	Validation to use to determine the valid search values for the field.

8. As needed, use the **Security** tab for the new work item filter field to specify which users and user groups can view and edit that field, depending on their requirements for logging time. In general, users who can view a work item filter should also be allowed to edit it. For more information, see the *Demand Management Configuration Guide*.

9. Click **OK**.

The changes to the new field are saved and the Field: New window closes. The Request Type window is displayed.

10. In the Request Type window, click **OK**.

The changes to the request type are saved.

Editing an SQL Validation

This section details how to edit an existing SQL validation to support the new filter field for the work item.

To edit the SQL validation:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.

The PPM Workbench opens.

3. From the shortcut bar, select **Configuration > Validations**.

The Validation Workbench opens.

4. In the **Validation Name** field, enter TMG and click **List**.

The **Results** tab lists only the validations associated with Time Management.

5. In the **Results** tab, select the appropriate validation listed in [Table 8-2 in Prerequisites](#), depending on the section (**Section Name**) where the new work item filter field was added in [step 7 in Adding a New Filter Field to the Work Item Filters](#).

6. Click **Open**.

The Validation window opens.

7. Copy the SQL from the **SQL** field and paste it into an SQL editor.

8. Edit the SQL as needed.

Include the new prefixed token, such as `FLTR.CREATION_DATE`. The prefixed token should be added to the `WHERE` clause of the validation SQL.

Updating the Database Table

This section details how to copy the modified SQL to the validation in the database table.

Note: Updating the database requires privileges a DBA might not want to grant to the application administrator.

To update the database table:

1. Connect to the database containing the database schema.
2. Update the database table as follows, where the modified SQL you copy from the editor is designated in the following bullets as *<new validation sql>*:

- For projects, add the following:

```
Update Knta_validations set validations_sql
= '<new validation sql>' where
validations_id=3079
```

- For tasks, add the following:

```
Update Knta_validations set validations_sql  
= '<new validation sql>  
' where validations_id=2693
```

- For requests or packages, add the following:

```
Update Knta_validations set validations_sql  
= '<new validation sql>' where  
validations_id=826
```

3. Stop, then restart the PPM Server so that the changes take effect.

Chapter 9: Time Management Validations

- ["Overview of Time Management Validations" below](#)
- ["Adding Values to a Time Management Validation" on the next page](#)
- ["Copying Validation Values from a Different Validation" on page 101](#)

Overview of Time Management Validations

Validations determine the acceptable input values for fields, such as the particular miscellaneous work items to be supported. Time Management includes the following validations that you can customize to meet specific business requirements:

- **TMG - Charge Code Categories - Enabled.** The categories that can be specified for charge codes. You can use charge code categories to restrict charge code access. The HPE-supplied **Charge Code Category** values are as follows:
 - **Billable**
 - **Non-Billable**
- **TMG - Clients - Enabled.** The clients (internal or external customers, or both) that can be specified for charge codes. You can use charge code clients to restrict charge code access. The HPE-supplied **Client** values are as follows:
 - **Client 1**
 - **Client 2**
- **TMG - Misc. Work Items.** The miscellaneous and untrackable work items that users can add to their time sheets or their My Items lists. The HPE-supplied **Miscellaneous** work item values are as follows:
 - **Meetings**
 - **Other**
 - **Vacation**

Adding Values to a Time Management Validation

To add values to a customizable Time Management validation:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Configuration > Validations**.
The Validation Workbench opens.
4. In the **Validation Name** field on the **Query** tab, enter TMG and click **List**.
The **Results** tab lists only the validations associated with Time Management.
5. Select the customizable Time Management validation of interest from the following list and click **Open**:
 - **TMG - Charge Code Categories - Enabled**
 - **TMG - Clients - Enabled**
 - **TMG - Misc. Work Items**The Validation window opens with the current values of the validation.
6. In the Validation window, click **New**.
The Add Validation Value window opens.
7. In the Add Validation Value window, complete all required fields and any optional fields. **Code** field entries must be unique. For TMG - Misc. Work Items validations, the **Code** field must be numeric.
8. Click **OK**.
The new value is added to the validation. The Add Validation Value window closes.
9. In the Validation window, click **OK**.
The changes to the validation are saved.

Copying Validation Values from a Different Validation

To copy a validation value from a different validation:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Configuration > Validations**.
The Validation Workbench opens.
4. In the **Validation Name** field on the **Query** tab, enter TMG and click **List**. (This step assumes that the validation value of interest is in Time Management.)
The **Results** tab lists only the validations associated with Time Management.
5. Select a customizable Time Management validation and click **Open**.
The customizable Time Management Validations are as follows:
 - **TMG - Charge Code Categories - Enabled**
 - **TMG - Clients - Enabled**
 - **TMG - Misc. Work Items**The Validation window opens, showing the values of the validation.
6. In the Validation window, click **Copy From**.
The Copy Validation Values window opens.
7. In the **Validation Name** field, select the validation containing the validation value to be copied and click **OK**.
The Copy Validation Values window is populated with the values from the selected validation.
8. In the Copy Validation Values window, select one or more values to copy. **Code** field entries must be unique.
9. Click **OK**.

The selected validation value is copied to the Validation window and the Copy Validation Values window closes.

10. In the Validation window, click **OK**.

The changes to the validation are saved.

Chapter 10: Time Management User Data

- ["Overview of User Data" below](#)
- ["Configuring User Data" below](#)

Overview of User Data

After selecting a time sheet line and clicking **Line Details**, users specify values for fields on the **User Data** tab. You configure these custom fields as described in this section. (The user data for *all* the lines of a time sheet is displayed on the **Additional Information** tab of the time sheet.) For more information about how users complete these fields, see the *Time Management User's Guide*.

Note: For resources whose time sheet policy disables entry of activities for all work item types (see ["Configuring the Activities Tab" on page 40](#)), the first tab name is **Charge Codes** rather than **Charge Codes/Activities**.

In the PPM Workbench, you configure the user data fields and associated validations that resources specify for their time sheet lines. For example, you might configure a field named **Initiative Type** that resources can optionally complete. The validation for this field could be a drop-down list with supported values of **Internal** and **External**.

For general information about configuring user data, see the *Deployment Management Configuration Guide*.

Configuring User Data

Configure user data fields for time sheet lines in the User Data Workbench, as follows:

1. Log on to PPM Center.
2. From the menu bar, select **Open > Administration > Open Workbench**.
The PPM Workbench opens.
3. From the shortcut bar, select **Configuration > Validations**.
The Validation Workbench opens.

4. Validations determine the acceptable input values to be supported. In this step, create as necessary the validations with supported values that you will later assign to the user data fields you plan to add.

For example, if you want to create the user data fields **Initiative Type**, **Department**, and **# Staff Affected** at the XYZ Corporation, you could do the following:

- For the **Initiative Type** user data field, create a new validation named **XYZ Initiative Type**, and specify that it is a drop-down list with validation values of **Internal** and **External**.
- For the **Department** user data field, create a new validation named **XYZ Department**, and specify that it is a drop-down list with validation values of **IS** and **R & D**.
- For the **# Staff Affected** user data field, create a new validation named **XYZ Number of Staff Affected**, and specify that it is a text field with a numeric data mask.

5. From the shortcut bar, select **Configuration > User Data**.

The User Data Workbench opens.

6. Click **List**.

The **Results** tab lists the available user data types.

7. Select **Time Sheet Line User Data** and click **Open**.

The User Data Context : Time Sheet Line User Data window opens.

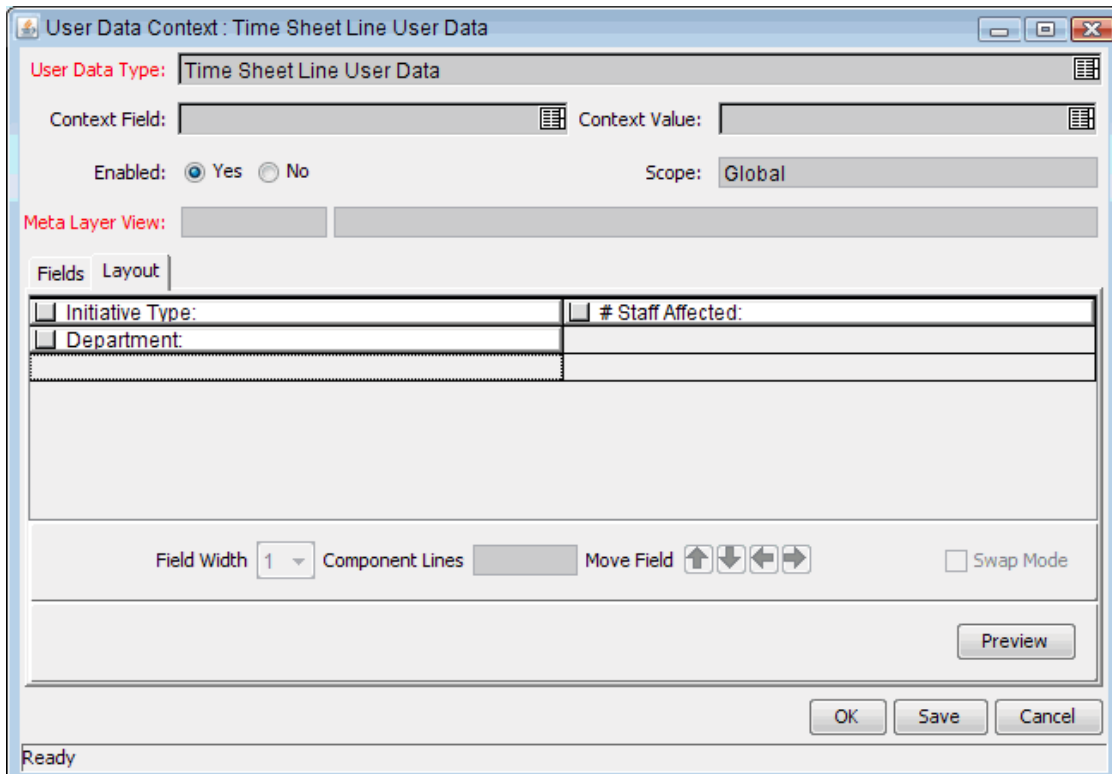
8. To add a new field for users to complete, click **New**.

The Field: New window opens.

9. As needed, complete the fields, including any **Validation** field you created in [step 4](#) and click **OK**.

10. Repeat "[To add a new field for users to complete, click New.](#)" [above step 8](#) and [step 9](#) as needed to define all the user data fields for time sheet lines. In the example, the fields **Initiative Type**, **Department**, and **# Staff Affected** are meaningful for users' time sheet lines.

11. Use the **Layout** tab as needed to rearrange the fields as you want the user to view them.



12. After configuring the user data fields you need, click **OK** in the User Data Context : Time Sheet Line User Data window.

Chapter 11: Maintaining Time Sheets in Database

- "Purge Empty Time Sheet Lines Report" below

Purge Empty Time Sheet Lines Report

The Purge Empty Time Sheet Lines report purges empty time sheet lines from the database.

An empty time sheet line is defined as a line in which no actual effort has been entered. This does not mean a time sheet line that has a total effort of 0 because users are allowed to enter negative time as effort.

Tip: To keep the data growth under control, HPE recommends that you run this report periodically. Optionally, you can prevent resources from submitting empty time sheet lines by using time sheet policies. For more information about how to specify the level of enforcement for empty lines, see the *Time Management Configuration Guide*.

Note:

- This report only removes empty time sheets from time sheets that are in one of the following states:
 - Closed
 - Frozen
 - Canceled
- This report is restricted to users who have a User Administration license.

Creating a Purge Empty Time Sheet Report

The Purge Empty Time Sheet Lines report is available under the **Administrative** category by clicking **Create > Report** menu.

To create and submit a Purge Empty Time Sheet Lines report:

1. Log on to PPM Center.
2. From the menu bar, select **Create > Report**.
The Submit New Report page opens.
3. From the **Select Report by Category** section, select **Administrative** from the **Report Category** drop-down list.
4. Click **Purge Empty Time Sheet Lines** in the list.
The **Submit Report: Purge Empty Time Sheet Lines** window opens.
5. To define the report results you want, type or change information in the fields under the **Report Parameters** section.
For more information, see the "[Report Parameters](#)" below section.
6. To run the report at a later time, on a periodic basis, or provide a brief notification when the report is finished, expand the **Scheduling** section, and then type or change the information in this section according to the task you want to accomplish.
7. To add a notification that has more comprehensive features than those available with Send email to, expand the Advanced Notifications section, and then configure the advanced notification settings according to your requirement.
For more information, see the *Reports Guide and Reference*.
8. Click Submit.
The report will run immediately, at a later time, or on a periodic basis, depending on your settings in the **Scheduling** section.

Report Parameters

This report has four parameters (as shown in). These parameters are described in the following table.

Table 11-1. Purge Empty Time Sheets Lines report field description

Field Name (*Required)	Description	Default Value
* Purge Line in Time Sheets created before	Specifies the time threshold of the purge. Only time sheets with period end dates prior to this date will have empty lines deleted.	Blank When you open the calendar, the current date is highlighted.

Table 11-1. Purge Empty Time Sheets Lines report field description, continued

Field Name (*Required)	Description	Default Value
Report Only	Indicates whether or not to generate a report without deleting the eligible empty time sheet lines. If you set this field to Yes, no lines will be deleted. In this case, only a report of the empty lines that are eligible to delete is generated.	No, which means all eligible empty time sheet lines are deleted after the report completes.
Work Item Types	Specifies which work item types are eligible to have empty lines deleted.	Blank, which means this report processes time sheet lines of all work item types.
Time Sheet Statuses	Specifies the states of time sheets to process. Only time sheets in the specified states will have empty lines deleted. Choices include: <ul style="list-style-type: none">• Closed• Canceled• Frozen	Blank, which means this report processes empty lines for time sheets in all the following states: <ul style="list-style-type: none">• Closed• Canceled• Frozen

Report Output

The output of this report includes:

- Report parameters
- The number of time sheet lines that were purged for each period (categorized by period type), work item type, and time sheet status
- The total number of time sheet lines that were purged

" [Figure 11-2. Report output](#)" on the next page shows an example of the report output.

Figure 11-2. Report output

Report Parameters

Report Name: Purge Empty Time Sheet Lines
 Run Date: September 28, 2010 08:38 AM EEST
 Purge Lines in Time Sheets created before: 2010-09-28 00:00:00
 Report Only: Yes
 Work Item Types (blank means all):
 Time Sheet Statuses (blank means all):

Time Sheet Lines to Purge, by Period

Period Type	Period	Time Sheet Lines to Purge
	08/16/10 - 08/31/10	1
Semi-Monthly	07/16/10 - 07/31/10	4
Total:		5
	08/09/10 - 08/22/10	51
	07/26/10 - 08/08/10	51
Bi-Weekly	07/12/10 - 07/25/10	51
Total:		158

Time Sheet Lines to Purge, by Work Item Type

Work Item Type	Total
Package	33
Request	32
Project	31
Misc	32
Task	30
Total:	158

Time Sheet Lines to Purge, by Time Sheet Status

Work Item Type	Total
Frozen	52
Cancelled	51
Closed	55
Total:	158

Appendix A: Importing Time Sheet Data from External Applications

- ["Overview of Importing Time Sheet Data from External Applications"](#) below
- ["Prerequisites for Running the Time Sheet Data Importer"](#) on page 112
- ["Strategy for Testing and Importing the Data"](#) on page 122
- ["Running the Time Sheet Data Importer Script"](#) on page 127

Overview of Importing Time Sheet Data from External Applications

Some customers need to import large volumes of time sheet data from an external application into the database of PPM Center before or after they begin using Time Management. HPE provides the time sheet data importer script (`kTMDataConversion.sh`) for this purpose.

The time sheets that the script creates from data you specify in `.xml` files have the same functionality as if they had been originally created using Time Management in PPM Center. For example, the data in the `.xml` files can represent time sheets that are submitted or approved, as reflected in the time sheets the script creates. After import, the time sheets the script creates have all the functionality of time sheets that users create in Time Management.

The time sheet data importer script does the following:

- Processes data from one or more source `.xml` files that represent time sheets. The data in the `.xml` files must conform to the formats specified in the XML Schema Definition (`.xsd`) file provided by HPE.
- Converts the time sheet data into time sheets in Time Management.

Note: During the import process, the script cannot change any of the time sheet data in the `.xml` files or the corresponding time sheets it creates.

- Validates the integrity of the time sheet data as it imports the data.
- Checks for violations of time sheet policies as it imports the data.

- Supports the following:
 - All the PPM Center work item types—projects, tasks, requests, packages, and miscellaneous. (Tasks are specified by their full paths in their projects. Values of miscellaneous work items must be defined in the associated PPM Center validation.)
 - Importing data for which time was logged in the external application using any of the Time Management options:
 - In units of hours, day by day over the time period
 - In units of hours for the entire time period
 - As a percentage of the entire time period
 - In units of days, day by day over the time period
 - In units of days for the entire time period
 - Specifying an actual approver and an actual approval date for a time sheet line in the `.xml` file.
- Determines and populates the following data:
 - Time approver for each time sheet line if the time sheet is in Unsubmitted, Pending Approval, or In Rework status and if no time approver is specified in the `.xml` file for that line.
 - Billing approver for each time sheet if the time sheet is in Unsubmitted, Pending Approval, or In Rework status.
 - Overall status of each time sheet based on the statuses specified for its set of time sheet lines. For information about time sheet status and time sheet line status, see the *Time Management User's Guide*.
- Creates records in the audit trail on each time sheet indicating the following:
 - When the time sheet line was created, if specified in the `.xml` file.
 - Time sheet line approver and approval date, if specified in the `.xml` file.
- Runs several processes in parallel and uses multithreading for the creation of each time sheet to improve performance.

As needed, you can run the time sheet data importer script at different times for different source data, no matter how long Time Management has been in use. If you run the script a second time for the same time sheet, that is, a time sheet having the same resource, time period, and sequence number specified in the `.xml` file (other data can be the same or different), the script preserves the previously imported time sheet, does not process the new time sheet data, and logs an error.

If the imported time sheets include projects or tasks for which actual effort is logged on time sheets, you can establish the correct synchronization between Time Management and Project Management

after importing the time sheets by running the `kTMPMSync.sh` script (see the *Project Management Configuration Guide*).

Prerequisites for Running the Time Sheet Data Importer

To run the time sheet data importer script, the following prerequisites must be met:

- You must have the Edit Time Sheets access grant.
- Values for all of the following data specified in the `.xml` file must already exist in PPM Center:
 - Work items (projects, tasks, requests, packages, and miscellaneous items)
 - MISC work items in time sheets, as values for the PPM Center validation TMG - Misc. Work Items
 - Resources specified for any purpose, including time sheet line approvers
 - Time periods
 - Time sheet policies
 - Activities
 - Charge codes
 - Time sheet line user data fields
 - Relevant override rules
- When you run the script, you can import data from multiple `.xml` files. Each file can include multiple time sheets, but you must place all the files in the same directory, which you specify when you run the script. That directory must contain *only* files that are to be used by the script.
- The data in all the `.xml` files must conform to the formats specified in the `timeConversion.xsd` file, which is located in the following directory:

```
http://<Host>:<Port>/itg/web/knta/global/webservices/xsd
```


where

<Host>	represents the host name or IP address where your PPM Center instance is accessed.
<Port>	represents the port number where your PPM Center instance is accessed. <Host>:<Port> corresponds to value of the <code>BASE_URL</code> parameter in the <code>server.conf</code> configuration file.

- If the `.xml` file contains any non-English characters, it must use UTF-8 encoding.

Specifying the `.xml` Files Based on the `.xsd` File

Review the `timeConversion.xsd` file for the required formats of tags and data in the `.xml` files. HPE recommends specifying one or two time sheets per `.xml` file to perform tests and 50–100 time sheets per `.xml` file to create the time sheets.

"[Table 12-1. Fields in `.xml` files used by the script](#)" below shows the fields and descriptions for the required and optional fields. Each time sheet must include one set of time sheet data and one or more sets of time sheet line data. An example is provided in the following section.

Table 12-1. Fields in `.xml` files used by the script

Field (*Required)	Description
Time Sheet Data	
*resourceUserName	Username of the resource for whom the script will create a time sheet. This field becomes the Resource field in the time sheet.
timesheetPolicy	Name of the time sheet policy to apply to this resource. If not specified, the script uses the resource's current time sheet policy.
*periodTypeCode	One of the following period types (case-sensitive): <ul style="list-style-type: none"> • WEEKLY • BI_WEEKLY • SEMI_MONTHLY • MONTHLY

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
periodTypeStartDay	<p>Start day of the week(s) in the period. One of the following options (case-sensitive):</p> <ul style="list-style-type: none"> • SUNDAY • MONDAY • TUESDAY • WEDNESDAY • THURSDAY • FRIDAY • SATURDAY <p>This field can be used with the periodTypeCode field (but only if it is WEEKLY or BI_WEEKLY) to identify the PERIOD_TYPE_ID that the script will use from the ktmg_period_types database table, as follows:</p> <ul style="list-style-type: none"> • If this field is specified, the script will use the database table PERIOD_TYPE_ID that specifies the same PERIOD_TYPE_START_DAY. • If this field is not specified, the script will use the database table PERIOD_TYPE_ID for which no PERIOD_TYPE_START_DAY is specified.
*periodStartDate	<p>Start date of the period. This field is required in conjunction with the PERIOD_TYPE_ID (determined from the required periodTypeCode field and the optional periodTypeStartDay field) to identify a specific period for the time sheet. The format must be as in the following example, although the script ignores the time of day:</p> <p>2009-06-14T13:00:00Z</p>
timesheetSequence	<p>Sequence number of the time sheet. This field must be specified if there is more than one time sheet for the combination of resource and period.</p> <p>If not specified, the script assumes this is the only time sheet for the resource and period, and rejects other time sheets for the resource and period.</p> <p>This field becomes the Time Sheet # field in the time sheet.</p>
creationUser	<p>Username of the resource who created the time sheet.</p> <p>If not specified, the script uses the user specified as a script argument when the script is run.</p>

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
	This field becomes the value in the User column in the Time Sheet Audit Trail window for the time sheet creation event.
creationDate	<p>Timestamp for the creation of the time sheet.</p> <p>If not specified, the script uses the time when the script is run. The format must be as in the following example, although the script ignores the time of day:</p> <p>2009-06-15T13:00:00Z</p> <p>This field becomes the value in the Date column in the Time Sheet Audit Trail window for the time sheet creation event.</p>
lastUpdateUser	<p>Username of the resource who last updated the time sheet.</p> <p>If not specified, the script uses the user specified as a script argument when the script is run.</p>
lastUpdateDate	<p>Timestamp for the creation of the time sheet.</p> <p>If not specified, the script uses the time when the script is run. The format must be as in the following example, although the script ignores the time of day:</p> <p>2009-06-15T13:00:00Z</p>
timesheetNotes	<p>Plain text notes.</p> <p>This field is added to the Notes section in the time sheet.</p>
Time Sheet Line Data	
*workItemType	<p>Work item type. One of the following options (case-sensitive):</p> <ul style="list-style-type: none"> • PROJECT • TASK • REQUEST • PACKAGE • MISC <p>This field becomes part of the value in the Item column for the time sheet line.</p>
*workItemDescription	<p>Identifier for the work item in PPM Center, depending on its workItemType, as follows:</p> <ul style="list-style-type: none"> • For projects, the project name.

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
	<ul style="list-style-type: none"> For tasks, the full hierarchical path, from the project name to the specific task name, concatenated into one string and delimited by the PPM Center separator #@#, as in the following: Project XYZ#@#First Task#@#Subtask A <p>If several tasks in a project have identical paths, only the first one in the project sequence is used.</p> <ul style="list-style-type: none"> For requests, the Request # field. For packages, the Package # field. For miscellaneous items, any selection from the TMG - Misc. Work Items validation. <p>This field becomes part of the value in the Item column for the time sheet line (for tasks, the full hierarchy does not appear).</p> <p>Note: For any miscellaneous work item, this field must be coded in the .xml file in the language that will be specified for the - LanguageCode field when the script is run, otherwise the script will not find the miscellaneous work item. For more information, see "Running the Time Sheet Data Importer Script" on page 127.</p>
*timesheetLineStatus	<p>Time sheet line status. One of the following options (case-sensitive):</p> <ul style="list-style-type: none"> UNSUBMITTED SUBMITTED APPROVED REJECTED CANCELLED FROZEN CLOSED <p>This field becomes the value in the Status column for the time sheet line. (The Status column is displayed only if the time sheet has been submitted.)</p>
approver	<p>Username of the resource who approved the time sheet line.</p> <p>If not specified, PPM Center determines the time sheet line approver when the script creates the time sheet.</p> <p>This field becomes the value in the User column in the Time Sheet</p>

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
	Audit Trail window for the approval event.
approvalDate	<p>Approval date of the time sheet line. (Ignored by the script if no approver is specified.) The format must be as in the following example, although the script ignores the time of day:</p> <p>2009-06-15T13:00:00Z</p> <p>If the approver field is specified but the approvalDate field is not, the script uses the approver field and the current date when it creates the time sheet line.</p> <p>If the approvalDate field is specified but the approver field is not, the script ignores both fields.</p> <p>This field becomes the value in the Date column in the Time Sheet Audit Trail window for the approval event.</p>
timesheetLineNotes	<p>Plain text notes.</p> <p>This field is added to the Notes tab in the Line Details for the time sheet line.</p>
<p><i>Up to 20 user data fields:</i></p> <p>userData<number></p> <p>visibleUserData<number></p>	<p>User data fields userData1 and visibleUserData1 through userData20 and visibleUserData20. User data fields are optional but, if used, both tags must be specified for each user data field, and they must have values that are established in PPM Center (the script does not verify the values). See the user data fields in the TM_TIME_SHEET_LINES database table.</p> <p>These fields are added to the User Data tab in the Line Details for the time sheet line.</p>
chargecode	<p>Tag for a set of charge codes to apply to the work item.</p> <p>Charge codes are optional, but if used, both the chargecodeName field and the chargecodePercent field described in the following rows must be specified for each charge code.</p> <p>This data is added to the Charge Codes/Activities tab in the Line Details for the time sheet line.</p>
*chargecodeName	<p>Name of the charge code.</p> <p>Note: For each time sheet line, this field, if used, must be coded in the .xml file in the language that will be specified for the languageCode field when the script is run, otherwise the script will not find the charge code. For more information, see "Running the Time Sheet Data Importer Script" on page 127.</p>
*chargecodePercent	Percentage of the work item to assign to the charge code.

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
	Percentages for each work item must add up to exactly 100.
*timeBreakdown	<p>Tag for the optional <code>activityName</code> field and the required <code>periodValue</code> field or <code>dateValueEntry</code> (date and value) field for time logged.</p> <p>This data is added to the time sheet line.</p>
activityName	<p>Optional activity for the work item.</p> <p>In a time sheet, for time logged on any work item, you can specify one or more activities. However, if you specify an activity for some of the time logged on a work item, activities must be specified for all of the time logged on the work item.</p> <p>In the .xml file, within one set of <code>timeBreakdown</code> tags, you can specify only one <code>activityName</code> field. Use multiple <code>timeBreakdown</code> tags for a time sheet line only if you need to specify multiple activities for the line.</p> <p>This data is added to the Charge Codes/Activities tab in the Line Details for the time sheet line.</p> <p>Note: For each time sheet line, this field, if used, must be coded in the .xml file in the language that will be specified for the <code>languageCode</code> field when the script is run, otherwise the script will not find the activity. For more information, see "Running the Time Sheet Data Importer Script" on page 127.</p>
<p>periodValue</p> <p>Note: <i>Either periodValue or the date and value for dateValueEntry must be specified.</i></p>	<p>If the time sheet policy requires entry of time by period in units of hours, the total number of hours in the period to log for the work item on the time sheet.</p> <p>If the time sheet policy requires entry of time by period in units of days, the total number of days in the period to log for the work item on the time sheet.</p> <p>If the time sheet policy requires entry of time by period in percent, the percentage of the period to log for the work item on the time sheet.</p> <p>During the import process, the time sheet policy determines whether the script interprets the specified value as hours for the period, as days for the period, or as a percentage for the period.</p> <p>If the time sheet policy requires entry of time by day in units of hours or by day in units of days, the script ignores this value and uses the date and value fields for the <code>dateValueEntry</code> tag instead.</p>

Table 12-1. Fields in .xml files used by the script, continued

Field (*Required)	Description
dateValueEntry Note: <i>Either periodValue or the date and value for dateValueEntry must be specified.</i>	Tag for the entry of date and value fields instead of the periodValue field.
date	Date for the hours or portion of a day logged. The format must be as in the following example, although the script ignores the time of day: 2009-06-15T13:00:00Z If the time sheet policy requires entry of time by period in units of hours, by period in units of days, or by period in percent, the script ignores this value and uses the periodValue field instead.
value	Decimal number of hours or portion of a day logged for the date. If the time sheet policy requires entry of time by period in units of hours, by period in units of days, or by period in percent, the script ignores this value and uses the periodValue field instead.

Note: Special characters in the .xml file, as in notes or names, must be handled either as entity references or placed inside a CDATA section with no breaks. The CDATA section starts with <![CDATA[and ends with]].

Example .xml File

This section provides an example of an .xml file created for test purposes. There are two time sheets having the following characteristics:

- Both time sheets are for the resource David Jones (username **djones**).
- Both time sheets use the **Semi-Monthly - Day - Hours** time sheet policy and the **Semi-Monthly** period type, with time entered by **Day in Hours**.
- The first time sheet starts on June 1, 2009. The second time sheet starts on June 16, 2009.
- The first time sheet reports time for one project, Project XYZ, on June 11, 2009, and one miscellaneous item, Vacation, on June 12, 2009.
- The second time sheet reports time for one task, subtask A under summary task First Task in Project XYZ, for two days, June 16 and 17.

- All time sheet lines are unsubmitted.
- Notes are provided to distinguish each time sheet and time sheet line.

The example .xml file, with values shown in bold, is as follows:

```
<?xml version="1.0" encoding="UTF-8" ?>
<timesheets>
  <timesheet>
    <resourceUserName>djones</resourceUserName>
    <timesheetPolicy>Semi-Monthly - Day - Hours
    </timesheetPolicy>
    <periodTypeCode>SEMI_MONTHLY</periodTypeCode>
    <periodStartDate>2009-06-01T08:00:00Z</periodStartDate>
    <creationUser>admin</creationUser>
    <creationDate>2009-06-23T11:00:00Z</creationDate>
    <creationUser>admin</creationUser>
    <lastUpdateDate>2009-06-23T11:00:00Z</lastUpdateDate>
    <timesheetNotes>1st time sheet</timesheetNotes>
    <timesheetLine>
      <workItemType>PROJECT</workItemType>
      <workItemDescription>ProjectXYZ</workItemDescription>
      <timesheetLineStatus>UNSUBMITTED</timesheetLineStatus>
      <timesheetLineNotes>1st time sheet, line 1
      </timesheetLineNotes>
      <timeBreakdown>
        <dateValueEntry>
          <date>2009-06-11T08:00:00Z</date>
          <value>8.5</value>
        </dateValueEntry>
      </timeBreakdown>
    </timesheetLine>
  </timesheet>
  <timesheetLine>
    <workItemType>MISC</workItemType>
    <workItemDescription>Vacation</workItemDescription>
    <timesheetLineStatus>UNSUBMITTED</timesheetLineStatus>
    <timesheetLineNotes>1st time sheet, line 2
    </timesheetLineNotes>
    <timeBreakdown>
      <dateValueEntry>
        <date>2009-06-12T08:00:00Z</date>
        <value>8</value>
      </dateValueEntry>
    </timeBreakdown>
  </timesheetLine>
</timesheet>
<timesheet>
  <resourceUserName>davidjones</resourceUserName>
  <timesheetPolicy>Semi-Monthly - Day - Hours
```



```

</timesheetPolicy>
<periodTypeCode>SEMI_MONTHLY</periodTypeCode>
<periodStartDate>2009-06-16T08:00:00Z</periodStartDate>
<creationUser>admin</creationUser>
<creationDate>2009-06-23T11:00:00Z</creationDate>
<creationUser>admin</creationUser>
<lastUpdateDate>2009-06-23T11:00:00Z</lastUpdateDate>
<timesheetNotes>2nd time sheet</timesheetNotes>
<timesheetLine>
  <workItemType>TASK</workItemType>
  <workItemDescription>Project XYZ#@#First Task#@#Subtask A
  </workItemDescription>
  <timesheetLineStatus>UNSUBMITTED</timesheetLineStatus>
  <timesheetLineNotes>2nd time sheet, line 1
  </timesheetLineNotes>
  <timeBreakdown>
    <dateValueEntry>
      <date>2009-06-16T08:00:00Z</date>
      <value>8</value>
    </dateValueEntry>
    <dateValueEntry>
      <date>2009-06-17T08:00:00Z</date>
      <value>8</value>
    </dateValueEntry>
  </timeBreakdown>
</timesheetLine>
</timesheet>
</timesheets>

```

Configuring PPM Center Environments

Running the script can be a highly CPU-intensive process, depending on the volume of data to be imported as time sheets. To accommodate various quantities of data, you can change the `-maxThreadcount` argument for the number of threads the script uses. Test and production environments should be configured to help address performance considerations, as described in the following sections.

Configuring a TEST Environment

As part of testing the conversion of data in the `.xml` files to time sheets (see ["Strategy for Testing and Importing the Data" on the next page](#)), HPE recommends running the script in a TEST environment against a subset of the actual data files to be imported as time sheets. Some tests should use a subset

that is large enough to evaluate the CPU resource demand of the script and to determine an optimal number of threads for the script to use.

Make sure that the database in the TEST environment is correctly configured and sized to accommodate the time sheet data to be imported.

Configuring the Production Environment

To avoid affecting end user performance when running the script against all of the data to be imported in the production environment, HPE recommends running the script on a separate physical host in production that does not include nodes with user traffic. For very large volumes of data, HPE recommends configuring a separate server as a host in the PPM Center cluster or instance, but with no PPM Center nodes configured on that host. Only the PPM Center home directory should be configured on that host, because the script requires its assets and configuration data. When the time sheet import process is completed, this host can be removed.

Make sure that the database in the production environment is correctly configured and sized to accommodate the time sheet data to be imported.

Strategy for Testing and Importing the Data

This section discusses running the script to test the `.xml` data and to create time sheets from the `.xml` files. In summary, the recommended strategy is to perform the following sequence of tasks:

- Using a few `.xml` files, run the script in test mode on a TEST instance, which validates the source `.xml` files but does not create time sheets, and correct any resulting errors
- Using the same `.xml` files, run the script and create time sheets on the TEST instance, and correct any resulting errors
- Configure all the `.xml` files that will later be imported as time sheets on the production instance
- Using an appropriate subset of those `.xml` files, run the script and create time sheets on the TEST instance to evaluate the CPU resource demand of the script and to determine an optimal number of threads for the script to use
- Using a few `.xml` files, run the script in test mode on the production instance to verify correct operation
- Using all the `.xml` files, run the script and create time sheets on the production instance, and correct any resulting errors

Task 1: Testing .xml Files on a TEST Instance Without Creating Time Sheets

Test some .xml files on a TEST instance, as follows:

1. For testing purposes, create a project with tasks and integrate the project with Time Management such that actuals entered for tasks on time sheets are reflected in the project. See the *Project Management User's Guide*.
2. For testing purposes, create one or more .xml files, each with one or two time sheets, for one or two resources. For at least one time sheet line, include data for time logged against a task in the project that is integrated with Time Management.

Make sure the time sheet data in each file conforms to the formats specified in the `timeConversion.xsd` file. Make sure all the .xml files containing the time sheets are in the same directory, and note the path to that directory.

3. Run the script in test mode to verify the test .xml files on the TEST instance. In test mode, no time sheets are created, but logs describing errors that can be detected in the .xml files are created. See ["Running the Time Sheet Data Importer Script" on page 127](#).

You can abort the script at any time by pressing Q + Enter or E + Enter. The file the script is operating on will be left in its current location and indicated as aborted in the main progress log and in the `itg_tm_data_loader_progress` database table.

4. When the script completes, review the logs to identify specific or systematic errors that should be corrected in the .xml files.

The .xml files, unchanged, are moved to subdirectories named SUCCESS, PARTIAL, and FAILURE, and copies that include only the time sheet data that caused failures are added to the resubmissions subdirectory. For more information, see ["Files Generated While Running the Time Sheet Data Importer" on page 130](#).

5. To correct the original .xml files that were moved to the PARTIAL and FAILURE subdirectories:
 - a. Use the error logs and the data in the `resubmissions` subdirectory to understand what to correct.
 - b. Correct the original .xml files in the PARTIAL and FAILURE subdirectories.
 - c. Move those corrected .xml files back to the original directory you used when you ran the

- script (see [step 2](#)).
- d. Delete the files in the `resubmissions` subdirectory.
 6. Starting at [step 2](#), repeatedly run the script in test mode against corrected source `.xml` files until all errors in the files are corrected, that is, until the script moves all of the `.xml` files to the `SUCCESS` subdirectory.
 7. Repeat this procedure with increasingly complex `.xml` data representing time sheets, until the script options and the variety of time sheet data applicable to your business have been tested and corrected.
 8. When all the `.xml` files are in the `SUCCESS` subdirectory, move them back to the original directory you used in [step 2](#) to prepare to create test time sheets from them.

Task 2: Creating Time Sheets on the TEST Instance to Verify Correct Operation

Using the same test `.xml` files as in "[Task 1: Testing .xml Files on a TEST Instance Without Creating Time Sheets](#)" on the [previous page](#), import the test data and create PPM Center time sheets on the TEST instance, as follows:

1. Run the script on the TEST instance without using test mode. See "[Running the Time Sheet Data Importer Script](#)" on [page 127](#).
2. Even though source `.xml` files caused no errors when you ran the script in test mode, errors can occur when you run without test mode and attempt to actually create time sheets. When the script completes, review and correct all errors as [step 4 in Task 1](#) in and [step 5 in Task 1](#) and rerun the script until it moves all of the `.xml` files to the `SUCCESS` subdirectory and creates corresponding time sheets.
3. In PPM Center, search for the new time sheets. Open them and verify that the time sheet lines specified in the `.xml` files exist and are correct in the time sheets.
4. Open the project integrated with Time Management and verify that actuals for tasks in the time sheet are *not* reflected in the project.
5. Run the `kTMPMSync.sh` script with the `-includeDates` argument set to `yes` and then verify that actuals for tasks in the time sheet are reflected in the project. For information about the `kTMPMSync.sh` script, see the *Project Management Configuration Guide*.

6. Run reports and portlets for Time Management, Project Management, and Resource Management, and verify that they reflect data in the new time sheets.
7. Cancel the time sheets that were created for test purposes.

Task 3: Completing the Configuration of All .xml Files

Based on the experience of testing some .xml files and taking corrective actions on the TEST instance, complete the configuration of the .xml files that represent *all* of the actual data to be imported. HPE recommends specifying 50–100 time sheets per .xml file.

Task 4: Creating Time Sheets on the TEST Instance to Evaluate Performance

When all of the .xml files representing actual data seem to be ready to import, HPE recommends running the script on the TEST instance against a subset of the actual time sheet data to be imported later on the production instance. This subset should be large enough to evaluate the CPU resource demand of the script and to determine an optimal number of threads for the script to use.

Before proceeding, make sure that the database is correctly configured and sized to accommodate the time sheet data to be imported. Also see ["Configuring PPM Center Environments" on page 121](#).

Note: If performance of the script does not meet the required throughput with higher values of the `-maxThreadcount` argument, you can run multiple concurrent executions of the script, each against different sets of .xml data. Using this approach, the CPU demand is a function of the combination of active threads among all of the script executions.

To test a subset of the .xml files representing actual data:

1. Save the subset of the .xml files in the desired directory on the TEST instance.
2. Run the script on the TEST instance without using test mode. See ["Running the Time Sheet Data Importer Script" on page 127](#).

While the script is running, monitor the following:

- Usage of system resources (CPU, memory, disk space)
 - Table space available in the database
3. When the script completes, review and correct all errors, as in [step 4 in Task 1](#) and [step 5 in Task 1](#).
 4. As needed, rerun the script with various values of the `-maxThreadcount` argument to identify the optimal value to use from a performance standpoint.
 5. Starting at [step 2](#), repeatedly run the script against corrected source `.xml` files until all errors in the files are corrected, that is, until the script moves all of the `.xml` files to the SUCCESS subdirectory.

When all the `.xml` files chosen for this procedure are in the SUCCESS subdirectory, testing on the TEST instance is complete.
 6. Cancel the time sheets that were created for test purposes.

Task 5: Testing .xml Files on the Production Instance Without Creating Time Sheets

For information about configuring the production instance, see "[Configuring the Production Environment](#)" on page 122.

To verify correct operation of the script on the production instance:

1. Copy a few of the `.xml` files that were successfully imported as time sheets on the TEST instance to the desired directory on the production instance.
2. Run the script in test mode on the production instance. See "[Running the Time Sheet Data Importer Script](#)" on the next page.
3. When the script completes, review and correct all errors, as in [step 4 in Task 1](#) and [step 5 in Task 1](#). If the script ran without errors against an `.xml` file on the TEST instance, it should run without errors on the production instance.

Task 6: Creating Time Sheets on the Production Instance

For production environments with heavy usage of Time Management, such as more than 300 users logging or approving time in a peak hour, HPE recommends running the script at a time other than peak usage.

When the data in all the `.xml` files is ready to use for time sheet creation on the production instance, do the following:

1. Copy all of the `.xml` files for time sheets to the desired directory on the production instance. Be sure to use any `.xml` files to which you made corrections while testing on the TEST instance.
2. Run the script on your production instance without using test mode, to create time sheets in PPM Center. Use the number of threads (`-maxThreadcount` argument) indicated by your performance testing on the TEST instance. See "[Running the Time Sheet Data Importer Script](#)" below.

While the script is running, monitor the following:

- Usage of system resources (CPU, memory, disk space)
 - Table space available in the database
 - Redo archive log growth in the database
3. When the script completes, review and correct all errors as in [step 4 in Task 1](#) and [step 5 in Task 1](#), and rerun the script until it moves all of the `.xml` files to the SUCCESS subdirectory and creates corresponding time sheets.
 4. Run the `kTMPMSync.sh` script with the `-includeDates` argument set to `yes`. For information about the `kTMPMSync.sh` script, see the *Project Management Configuration Guide*.

Running the Time Sheet Data Importer Script

Note: Careful preparation of the data in the `.xml` file is essential to a successful import process. Reworking invalid data and rerunning the script is time consuming, especially for larger volumes of data. Make sure that prerequisites are met and that appropriate time and resources will be available when preparing to run the script and when running it.

To run the script to import time sheet data from the `.xml` file into the PPM Center database:

1. On the PPM Server, navigate to the directory that contains the `kTMDDataConversion.sh` script, as follows:

```
cd <PPM_Home>/bin
```

where `<PPM_Home>` represents the path where your PPM Center instance is installed. For example: `xyzserver/E/PPMServer`.

2. Run the following script, adding optional arguments as needed:

```
sh ./kTMDDataConversion.sh -user <username> -pwd <password> -xmlLocation <XML Location>
```

For example, run the following script in test mode against the source file named `Source.xml` in the `C:/Timesheet_Data` directory:

```
sh ./kTMDDataConversion.sh -user <username> -pwd <password> -xmlLocation C:/Timesheet_Data/Source.xml -testMode
```

The following table describes the arguments.

Argument (*Required)	Description
* -user	Any existing PPM Center user who has the Edit Time Sheets access grant.
* -pwd	Password of the PPM Center user.
* -xmlLocation	Directory where the <code>.xml</code> files to be used by the script are located. Add the file name if only one file among others in the directory is to be used. The directory must contain only <code>.xml</code> files that can be used by the script.
-logLocation	Directory where the logs generated by the script are to be saved. The default is the directory where the <code>.xml</code> files are located. For information about the logs, see "Files Generated While Running the Time Sheet Data Importer" on page 130 .
-maxThreadcount	Number of simultaneous threads the script can use to process data and create time sheets. The default is 10. For considerations in specifying the value of this argument, see "Configuring PPM Center Environments" on page 121 . HPE recommends using no more than 15 threads.
-checkPolicyAndDefaultCC	Specifies whether the script will determine which time sheets that are in Unsubmitted, Pending Approval, or In Rework status violate any of their time sheet policies specified in the <code>.xml</code> file.

Argument (*Required)	Description
	<p>For example, the user could have reported working more hours than the policy allows or fewer than it requires. In setting this argument to <code>true</code> or <code>false</code>, consider whether the specified time sheet policy should be applied now to time that users previously logged in the external application.</p> <p>A time sheet policy violation does not cause the script to log an error, and the script creates a time sheet in PPM Center, but the violations appear as usual when the time sheet is opened.</p> <p>For information about time sheet policies and violations, see "Time Sheet Policies" on page 22 and the <i>Time Management User's Guide</i>.</p> <p>If a time sheet line in the <code>.xml</code> file has a charge code specified, that charge code is imported to that line. If this argument is set to <code>true</code> and the <code>.xml</code> file does not specify a charge code, the charge code for the imported line is set according to the default charge code and override rules of the resource's time sheet policy in PPM Center.</p> <p>The default for this argument is <code>false</code>.</p>
<code>-errorsPerMinuteForCancel</code>	<p>Number of errors you allow per minute, for errors that prevent importing a time sheet. If exceeded, the script automatically stops running. (Some of the time sheets in a file might not be imported, but any one time sheet will be completely imported or not imported at all.)</p> <p>The default is <code>50</code>.</p>
<code>-testMode</code>	<p>If set to <code>true</code>, runs the script and logs errors for you to review, but does not create any time sheets.</p> <p>If set to <code>false</code>, runs the script, logs errors, and imports data as new time sheets in PPM Center.</p> <p>The default is <code>false</code>.</p>
<code>-languageCode</code>	<p>Code for the language in which the <code>.xml</code> files must specify the following entities:</p> <ul style="list-style-type: none"> ◦ <code>activityName</code> for activities ◦ <code>chargecodeName</code> for charge codes ◦ <code>workItemDescription</code> if <code>workItemType</code> is <code>MISC</code>, for the descriptions of miscellaneous (MISC) work items. <p>For example, the value of this field is <code>de</code> for German or <code>ko</code> for Korean.</p>

Argument (*Required)	Description
	<p>The default is the system language of the PPM Server.</p> <p>This field is provided for users who need to specify these entities in .xml files in a language other than the system language, such as a different session language the user selects when logging in to PPM Center.</p> <p>If any of these entities is not coded in an .xml file in the language specified by this field, the script cannot find the entity.</p> <p>For information about the use of multiple languages in a PPM Center instance, see the <i>Multilingual User Interface Guide</i>.</p>

Files Generated While Running the Time Sheet Data Importer

As the script completes its operation on each .xml file in the directory, it *moves* the file to one of the following subdirectories of the directory you specified for `logLocation`, as appropriate:

- SUCCESS subdirectory if all of the file's time sheets were successfully imported.
- PARTIAL subdirectory if only some of the file's time sheets were successfully imported. (No individual time sheet is partially imported—each time sheet is either imported entirely or not at all.)
- FAILURE subdirectory if none of the file's time sheets were successfully imported.

The script does not change any of the .xml files.

For each time sheet that does not get created from .xml data for any reason, the script creates the following two new files in the `resubmissions` subdirectory:

- .log file containing the exception
- .xml file containing data for *only* that time sheet, copied from the original .xml file so that you can more conveniently identify and correct that time sheet data in the original .xml file to resubmit it.

For example, if you specify the location of your source .xml files as `Timesheet_Data` and you do not specify a different log location (`-logLocation`) when you run the script, the directory and file structure would be as follows:

```
Timesheet_Data
  <Source .xml files with time sheet data to be processed>
```

```

SUCCESS
  <Source .xml files with successfully imported data>
PARTIAL
  <Source .xml files with partially imported data>
FAILURE
  <Source .xml files with no successfully imported data>
logs
  mainProgressLog_runId_<runID>.log
  [Example: mainProgressLog_runId_30005.log]
resubmissions
  [A .log and an .xml file for each failure to import a time sheet:]
  <resourceUserName>_<periodStartDate>_
  <timesheetSequence>_failure_exception.log
  [Example djones_2010-06-16_1_failure_exception.log]
  <resourceUserName>_<periodStartDate>_
  <timesheetSequence>_failure_xml.xml
  [Example: djones_2010-06-16_1_failure_xml.xml]

```

Error Logs

The script logs an error and does not create a time sheet in PPM Center when it finds any of the following:

- Specified .xml file does not exist.
- Specified .xml file does not meet the required format of the .xsd file.
- Specified .xml file does not include a time sheet.
- Time sheet for this resource, time period, and sequence number already exists in PPM Center.
- Resource specified for any purpose, including the time sheet line approver, does not exist in PPM Center.
- Specified time sheet policy does not exist in PPM Center.
- Time period of the specified type and start day does not exist in PPM Center.
- Time period's start date is not within the specified time period in the .xml file.
- Time sheet in the .xml file includes lines that use different methods of entering time. Time for the lines in a time sheet must be logged entirely in one of the supported methods specified by the **Enter Time by** field on the **Time Sheet Policy** tab (see ["Configuring General Information and the Time Sheet Policy Tab" on page 24](#)).
- Time sheet has no time sheet lines in the .xml file.

- Work item type with the specified type and description does not exist in PPM Center.
- Work item type is not PROJECT, TASK, REQUEST, PACKAGE, or MISC.
- One or more of the time sheet lines in the time sheet does not have any actuals.
- Time breakdown for the same line is provided both with and without an activity. (Either all actuals must specify some activity, or none can.)
- Time breakdown is specified for dates that are not within the time period.

Note: Time sheet policy violations identified by the script are not considered errors and do not cause log entries. The script creates time sheets with the violations, which are seen as usual when the time sheets are opened in PPM Center.

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 Time Management Configuration Guide (Project and Portfolio Management Center 9.40)

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 your `_IE_team_PDL@hpe.com`.

We appreciate your feedback!