

HP Project and Portfolio Management Center

Software Version: 9.22.0006

Release Notes

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Chapter 1: Overview

This document is an overview of the changes made to Project and Portfolio Management Center (PPM Center) for version 9.22.0006. It contains important information that is not included in the manuals.

You can find information about the following in this document:

- ["Installation Notes" on page 6](#)
- ["Enhancements" on page 8](#)
- ["Certifications" on page 30](#)
- ["Fixes" on page 31](#)
- ["Known Problems, Limitations, and Workarounds" on page 55](#)
- ["Documentation Errata" on page 58](#)

Protecting Your Deployment from Security Vulnerabilities

Make sure you take the necessary precautions to protect your PPM Center deployment from general security vulnerabilities, especially those related to Web server and related infrastructure vulnerabilities. Patch and configure your Web server's operating system and DNS servers to prevent malicious attacks that could put your organization and data at risk. You can take such steps as disabling unused ports or enabling SSL in your environment. Consult your Web server vendor for the latest patches to prevent harmful attacks such as cross-site scripting.

Chapter 2: Installation Notes

This procedure includes steps that are valid for PPM Center version 9.22.0006.

Caution: PPM Center version 9.22 is required before you can apply version 9.22.0006 on top of it.

To install version 9.22.0006:

1. Back up your database.
2. Stop the PPM Server. The patch cannot be installed on an active server,
3. Copy the patch file `ppm-922-patch0006.jar` to the `<PPM_Home>` directory. This is the directory where the PPM Server is installed.
4. Change to the `<PPM_Home>/bin` directory.
5. Start the installation using the following command:

```
sh ./kDeploy.sh -i patch0006
```

6. Follow the on-screen instructions to complete the patch installation.
7. Start the PPM Server.

Note: HP recommends that you back up your customized files including scripts before applying 9.22.0006.

Caution: If you intend to upgrade PPM Center from patches on top of version 9.14 to version 9.2x, read the note below:

Defect fixes included in patches (up until 9.14.0004) on top of version 9.14 are rolled into version 9.20. Version 9.21 contains defect fixes included in patches 9.14.0001 through 9.14.0006. Version 9.22 contains defect fixes included in patches 9.14.0001 through 9.14.0009. Version 9.22.0001 contains defect fixes included in patches 9.14.0001 through 9.14.0010.

Therefore, if PPM Center is running at patch 9.14.0010 on top of version 9.14, do not upgrade to version 9.22 yet, otherwise you may encounter some regression regarding the defect fixes in

9.14.0010. Instead, upgrade from patch 9.14.0010 to version 9.22 temporarily without running PPM Center, and then upgrade immediately to version 9.22.0001 or the latest patch.

Chapter 3: Enhancements

Enhancements in Version 9.22.0005

The following enhancement is included in version 9.22.0005:

- ["Enhanced PPM Center Password Policy" below](#)

Enhanced PPM Center Password Policy

To enhance PPM Center password policy, the default values of the following `server.conf` parameters are changed as follows:

Parameter Name	Changes
USER_PASSWORD_MIN_LENGTH	The default value is changed from 4 to 6.
USER_PASSWORD_MIN_DIGITS	The default value is changed from 0 to 1.
USER_PASSWORD_MIN_SPECIAL	The default value is changed from 0 to 1.
DMS_INSECURE_FILE_EXTENSION_CHECK	The default value is changed from <code>false</code> to <code>true</code> .
DMS_XSS_CHECK	The default value is changed from <code>false</code> to <code>true</code> .

Note: The changes to the default values take effect only for fresh installation. HP recommends that you manually change the values of the related parameters if necessary.

For description and usage for each of these parameters, see the *Installation and Administration Guide*.

Enhancements in Version 9.22.0004

The following enhancement is included in version 9.22.0004:

- ["Using Cost Rate of Resource Role or Position Role to Calculate Forecasted Labor Cost" below](#)

Using Cost Rate of Resource Role or Position Role to Calculate Forecasted Labor Cost

Starting from version 9.22.0004, you can decide to use one of the following to calculate the forecasted labor cost of a committed resource:

- The cost rate of the resource role, or
- The cost rate of the position role

To enable this functionality, a new parameter `SP_RESOURCE_ROLE_RATE_ENABLE` is introduced. You can configure this parameter in the Administration Console.

If you set this parameter to `true`, the forecasted labor cost of a committed resource is calculated by the cost rate of the resource role. If you set this parameter to `false`, the forecasted labor cost of a committed resource is calculated by the cost rate of the position role. By default, this parameter is set to `true`. When the resource has no role defined, and you set the parameter to `true`, the cost rate of the position role is used.

Enhancements in Version 9.22.0003

The following enhancements are included in version 9.22.0003:

- ["Connecting to Server Using Specified Port" below](#)
- ["Mail Notification for Specified Server Logs" on the next page](#)

Connecting to Server Using Specified Port

In previous versions, PPM Center used the hard-coded default ports when using the connection protocols to connect to the server. In version 9.22.0003, you can specify the port number when using the following three connection protocols to connect to the server:

- SSH
- SSH2 (Legacy)

- SSH2

To specify the port number,

1. From the Workbench shortcut, select **Environments > Environments**.

The Environments Workbench opens.

2. Open an environment.

The Environment window opens.

3. In the **Name** field of the **Server** section under the **Host** tab, type the host name or IP address of the computer in the following format:

- *hostname:port_number*, or
- *IP_address:port_number*

Note:

- HP recommends that your host name do not contain semicolons, otherwise, PPM Center cannot recognize the port number you specified.
- If you use protocols other than SSH, SSH2 (Legacy), or SSH2, you cannot specify the port number, and PPM Center still uses the default ports.

Mail Notification for Specified Server Logs

PPM Center version 9.22.0003 introduces the mail notification feature for specified server logs. As an administrator, you can decide the server logs information to be notified by email through specifying regular expression or the combination of log levels and regular expression.

To use the mail notification feature, you should configure the logging parameters as described in the following table. These parameters are added in the `logging.conf` file located in the `<PPM_Home>/conf` directory.

The logging parameter names listed below are shortened version of the actual names, all of which start with the prefix `com.kintana.core.logging`. For example, the full name of the `ENABLE_SMTP_LOGGING` parameter is `com.kintana.core.logging.ENABLE_SMTP_LOGGING`.

Parameter Name (*Required, **Required If)	Description, Usage	Default and Valid Values
ENABLE_SMTP_LOGGING	If set to true, mail notification for critical exceptions is enabled.	Default: false Valid values: true, false
SMTP.SMTPHost	The host name of the SMTP-compliant mail server. If not specified, the server address is derived from SMTP_SERVER in the server.conf file.	Default: N/A
**SMTP.To Required if ENABLE_SMTP_LOGGING is set to true.	The recipient of the notification.	Default: N/A Valid values: Email address
SMTP.From	The sender of the notification. If not specified, the email address of the sender is derived from EMAIL_NOTIFICATION_SENDER in the server.conf file.	Default: N/A Valid values: Email address
SMTP.Subject	The subject of the notification mail.	Default: N/A
**SMTP.Filter.RegexToMatch Required if ENABLE_SMTP_LOGGING is set to true.	The keyword or regular expression to be monitored.	Default: N/A Valid values: Regular expression For example, OutOfMemoryError \w+\d{2} Exception
SMTP.Filter.LevelMin	The lowest log level to be monitored.	Default: N/A Valid values: trace/debug/info/warn/error/fatal
SMTP.Filter.LevelMax	The highest log level to be monitored.	Default: N/A Valid values: trace/debug/info/warn/error/fatal

SMTP. delayBetweenChecksInSeconds	The time interval (in seconds) to check message queues.	Default: 10 Valid values: > 0
SMTP.SMTPDebug	If set to true, enables displaying debug information when mail notification is sent out.	Default: false Valid values: true, false
SMTP.BufferSize	The buffer queue length.	Default: 512 Valid values: > 0

Note:

- The same server log information generated several times within an hour is sent out only once per hour.
- If the information in the logging.conf file conflicts with this document, refer to this document for instructions.

Example

If you want to monitor the InfrastructureException issue only and receive emails about the issue, you can set the parameters as follows:

Parameter Name	Parameter Value
ENABLE_SMTP_LOGGING	true
SMTP.SMTPHost	smtp.yourhost.com
SMTP.To	admin@yourdomain.com
SMTP.From	sender@yourdomain.com or null
SMTP.Subject	Notification Report

SMTP.Filter.RegexToMatch	InfrastructureException
SMTP.Filter.LevelMin	debug
SMTP.Filter.LevelMax	fatal

You will receive emails with the content similar to the following:

Release Notes

Chapter 3: Enhancements

ERROR :ppmLightServiceListenerContainer-1:(ProjectHealthService.java:88):2014/08/15-16:18:38.037 CST: Failed to calculate health for some projects, rolling back transaction

```
com.mercury.itg.exceptions.InfrastructureException: org.hibernate.exception.SQLGrammarException: could not execute query
GUID=873B4FFD-23FB-FE54-3117-FB4E35860F06
Generated Time=2014/08/15-16:18:38.036 CST
    at com.mercury.itg.pm.dao.PendingProjectHealthCalculationDAO.getProjectPending(PendingProjectHealthCalculationDAO.java:42)
    at com.mercury.itg.pm.service.impl.ProjectHealthService.calculateProjectsHealth(ProjectHealthService.java:70)
    at com.mercury.itg.pm.service.impl.ProjectHealthService.runServiceImpl(ProjectHealthService.java:53)
    at com.mercury.itg.core.server.mdServices.PluggableHibernateMDSerivce.runService(PluggableHibernateMDSerivce.java:39)
    at com.mercury.itg.core.jms.service.impl.GenericServiceMessageHandler.handleMessage(GenericServiceMessageHandler.java:71)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:57)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:606)
    at org.springframework.aop.support.AopUtils.invokeJoinpointUsingReflection(AopUtils.java:307)
    at org.springframework.aop.framework.ReflectiveMethodInvocation.invokeJoinpoint(ReflectiveMethodInvocation.java:182)
    at org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:149)
    at org.springframework.aop.aspectj.MethodInvocationProceedingJoinPoint.proceed(MethodInvocationProceedingJoinPoint.java:77)
    at com.mercury.itg.core.monitor.impl.BackgroundServiceMonitorAspect.monitorService(BackgroundServiceMonitorAspect.java:104)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:57)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:606)
    at org.springframework.aop.aspectj.AbstractAspectJAdvice.invokeAdviceMethodWithGivenArgs(AbstractAspectJAdvice.java:627)
    at org.springframework.aop.aspectj.AbstractAspectJAdvice.invokeAdviceMethod(AbstractAspectJAdvice.java:616)
    at org.springframework.aop.aspectj.AspectJAroundAdvice.invoke(AspectJAroundAdvice.java:64)
    at org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:160)
    at org.springframework.aop.interceptor.ExposeInvocationInterceptor.invoke(ExposeInvocationInterceptor.java:89)
    at org.springframework.aop.framework.ReflectiveMethodInvocation.proceed(ReflectiveMethodInvocation.java:171)
    at org.springframework.aop.framework.JdkDynamicAopProxy.invoke(JdkDynamicAopProxy.java:204)
    at com.sun.proxy.$Proxy126.handleMessage(Unknown Source)
    at com.mercury.itg.core.jms.service.impl.ServiceMessageListenerImpl.onServiceMessage(ServiceMessageListenerImpl.java:357)
    at com.mercury.itg.core.jms.service.impl.ServiceMessageListenerImpl.onMessage(ServiceMessageListenerImpl.java:183)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:57)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:606)
    at org.springframework.aop.support.AopUtils.invokeJoinpointUsingReflection(AopUtils.java:307)
    at org.springframework.aop.framework.JdkDynamicAopProxy.invoke(JdkDynamicAopProxy.java:198)
    at com.sun.proxy.$Proxy128.onMessage(Unknown Source)
    at
    org.springframework.jms.listener.AbstractMessageListenerContainer.doInvokeListener(AbstractMessageListenerContainer.java:543)
    at
    org.springframework.jms.listener.AbstractMessageListenerContainer.invokeListener(AbstractMessageListenerContainer.java:482)
    at
    org.springframework.jms.listener.AbstractMessageListenerContainer.doExecuteListener(AbstractMessageListenerContainer.java:451)
    at
    org.springframework.jms.listener.AbstractPollingMessageListenerContainer.doReceiveAndExecute(AbstractPollingMessageListenerContainer.java:
    at
    org.springframework.jms.listener.AbstractPollingMessageListenerContainer.receiveAndExecute(AbstractPollingMessageListenerContainer.java:40)
    at com.mercury.itg.core.jms.service.impl.ServiceMessageListenerContainer.access$2000(ServiceMessageListenerContainer.java:40)
    at
    com.mercury.itg.core.jms.service.impl.ServiceMessageListenerContainer$AsyncMessageListenerInvoker.invokeListener(ServiceMessageListene:
    at
    com.mercury.itg.core.jms.service.impl.ServiceMessageListenerContainer$AsyncMessageListenerInvoker.executeOngoingLoop(ServiceMessageLis:
    at
    com.mercury.itg.core.jms.service.impl.ServiceMessageListenerContainer$AsyncMessageListenerInvoker.run(ServiceMessageListenerContainer.:
    at java.lang.Thread.run(Thread.java:724)
Caused by: org.hibernate.exception.SQLGrammarException: could not execute query
    at org.hibernate.exception.SQLStateConverter.convert(SQLStateConverter.java:67)
    at org.hibernate.exception.JDBCExceptionHelper.convert(JDBCExceptionHelper.java:43)
    at org.hibernate.loader.Loader.doList(Loader.java:2223)
    at org.hibernate.loader.Loader.listIgnoreQueryCache(Loader.java:2104)
    at org.hibernate.loader.Loader.list(Loader.java:2099)
    at org.hibernate.loader.hql.QueryLoader.list(QueryLoader.java:378)
    at org.hibernate.hql.ast.QueryTranslatorImpl.list(QueryTranslatorImpl.java:338)
    at org.hibernate.engine.query.HQLQueryPlan.performList(HQLQueryPlan.java:172)
    at org.hibernate.impl.SessionImpl.list(SessionImpl.java:1121)
    at org.hibernate.impl.QueryImpl.list(QueryImpl.java:79)
    at com.mercury.itg.pm.dao.PendingProjectHealthCalculationDAO.getProjectPending(PendingProjectHealthCalculationDAO.java:40)
    ... 44 more
Caused by: java.sql.SQLException: ORA-00904: "PENDINGPROO"."ATTEMPT_COUNT": invalid identifier
    at oracle.jdbc.driver.SQLStateMapping.newSQLException(SQLStateMapping.java:91)
    at oracle.jdbc.driver.DatabaseError.newSQLException(DatabaseError.java:112)
    at oracle.jdbc.driver.DatabaseError.throwSQLException(DatabaseError.java:173)
    at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:455)
    at oracle.jdbc.driver.T4CTTIoer.processError(T4CTTIoer.java:413)
    at oracle.jdbc.driver.T4C8Oall.receive(T4C8Oall.java:1030)
    at oracle.jdbc.driver.T4CPreparedStatement.doOall8(T4CPreparedStatement.java:194)
    at oracle.jdbc.driver.T4CPreparedStatement.executeForDescribe(T4CPreparedStatement.java:785)
    at oracle.jdbc.driver.T4CPreparedStatement.executeMaybeDescribe(T4CPreparedStatement.java:860)
    at oracle.jdbc.driver.OracleStatement.doExecuteWithTimeout(OracleStatement.java:1186)
    at oracle.jdbc.driver.OraclePreparedStatement.executeInternal(OraclePreparedStatement.java:3381)
    at oracle.jdbc.driver.OraclePreparedStatement.executeQuery(OraclePreparedStatement.java:3425)
    at oracle.jdbc.driver.OraclePreparedStatementWrapper.executeQuery(OraclePreparedStatementWrapper.java:1490)
    at org.jboss.resource.adapter.jdbc.WrappedPreparedStatement.executeQuery(WrappedPreparedStatement.java:236)
    at org.hibernate.jdbc.AbstractBatcher.getResultSet(AbstractBatcher.java:186)
    at org.hibernate.loader.Loader.getResultSet(Loader.java:1787)
    at org.hibernate.loader.Loader.doQuery(Loader.java:674)
    at org.hibernate.loader.Loader.doQueryAndInitializeNonLazyCollections(Loader.java:236)
    at org.hibernate.loader.Loader.doList(Loader.java:2220)
    ... 52 more
```

Enhancements in Version 9.22.0002

The following enhancements are included in version 9.22.0002:

- ["Set Focus in the First Editable Field " below](#)
- ["Audit Trail for Cost Rule" on the next page](#)
- ["Performance Improvements" on page 17](#)

Set Focus in the First Editable Field

Starting from version 9.22.0002, when you launch the following pages in the HP Demand Management module:

- The Request Details page
- The Request Look-ahead page
- The Create Request page

The system sets focus to the first editable text field on the pages automatically. This allows you to work in the editable field directly.

The following field types support the focus functionality:

- Text Area
- Text Field
- Drop Down List
- Auto Complete List
- Radio Buttons (Yes / No)

Note: Pressing spacebar sets the focus to the **Yes** option automatically.

- Date Field
- Web Address (URL)

Audit Trail for Cost Rule

Starting from version 9.22.0002, you can track the changes to a cost rule in the audit trail when you perform the following actions:

- Create cost rule
- Add cost rate
- Edit cost rate
- Change cost factors

Note: If you delete a cost rule, the change cannot be tracked in the cost rule audit trail. However, it is recorded in the database.

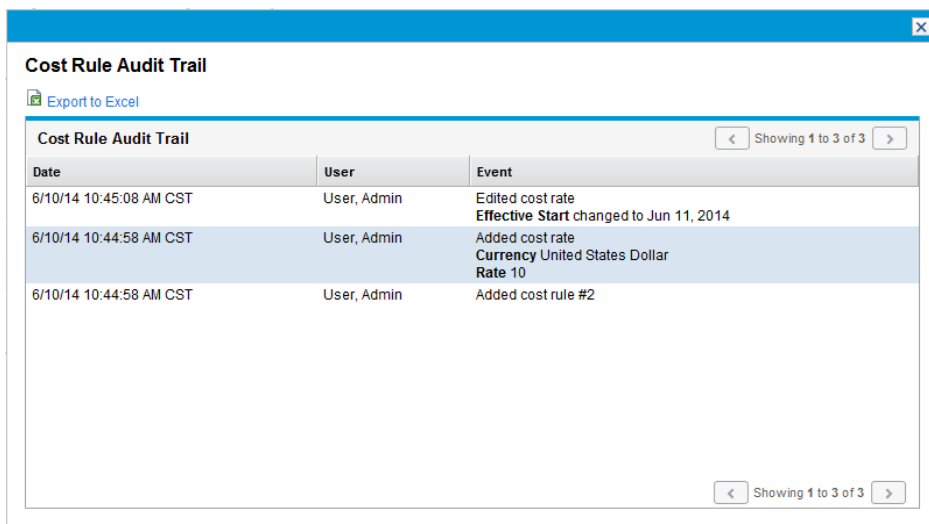
To view the audit trail of a cost rule:

1. Log on to PPM Center.
2. From the menu bar, select **Search > Administrative > Cost Rules**.
3. Click **Edit** next to the rule you want to open.

The Edit Cost Rule page opens.

4. Click **View Audit Trail** in the upper-right corner of the page.

The Cost Rule Audit Trail dialog opens.



Date	User	Event
6/10/14 10:45:08 AM CST	User, Admin	Edited cost rate Effective Start changed to Jun 11, 2014
6/10/14 10:44:58 AM CST	User, Admin	Added cost rate Currency United States Dollar Rate 10
6/10/14 10:44:58 AM CST	User, Admin	Added cost rule #2

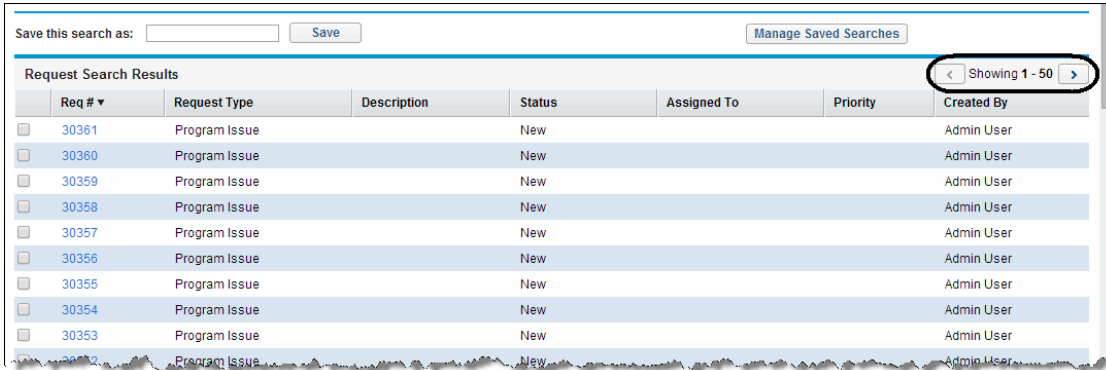
Performance Improvements

PPM Center version 9.22.0002 implemented pagination enhancements to help improve PPM Center system performance.

- ["Enhanced Request Search Pages" below](#)
- ["Enhanced Java and Builder Portlets of the Requests Category" on page 19](#)
- ["Using the Unchecking Showing Total Number Tool from Administration Console" on page 20](#)

Enhanced Request Search Pages

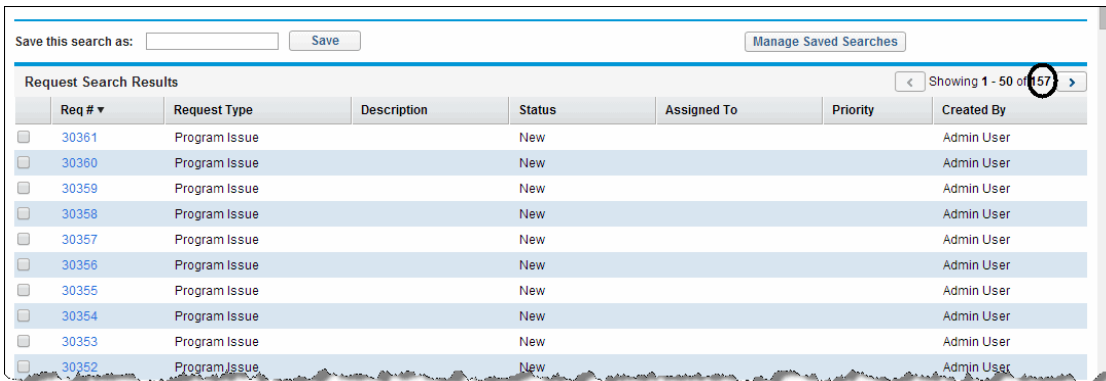
Starting from version 9.22.0002, the Request Search Results page do not display the total number of records by default for better system performance. When there are entries on the next page, the page navigation buttons are enabled.



The Request Search Results page for saved searches still displays the total number of records. To clear the total number of records displayed for saved searches, you can use the newly introduced Unchecking Showing Total Number Tool. For more information, see ["Using the Unchecking Showing Total Number Tool from Administration Console"](#) on page 20.

However, if you prefer to show total number of records on the Request Search Results page, you can do either of the following:

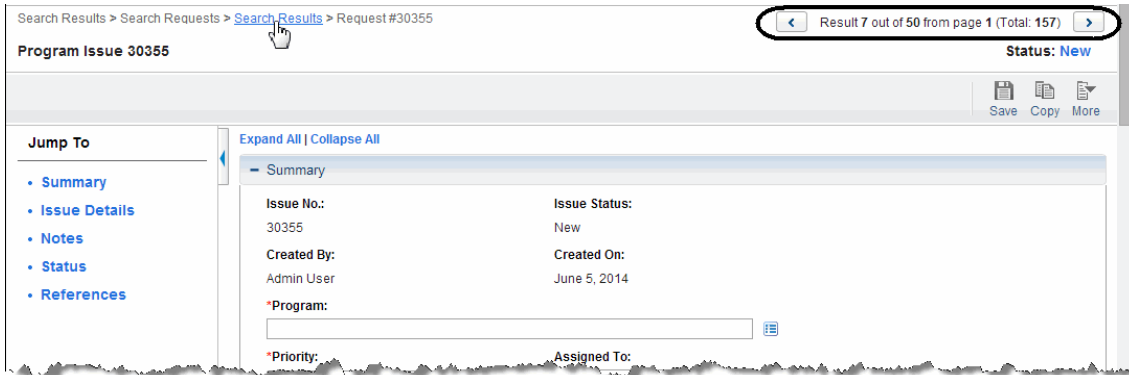
- Set the new server configuration parameter REQUEST_SEARCH_RESULTS_SHOW_TOTAL_NUMBER_OF_RECORDS to true from the Administration Console.
- In the **Search for Requests to View** section of the Search Requests page, select the **Show Total Number of Records** checkbox.



Note: This operation is effective to the current search only.

Starting from version 9.22.0002, you can also navigate among the requests on the same Request Search Results page. When you click a request number on the Request Search Results page and go to the Request Details page, the page navigation bar on the top right corner of the page allows you to,

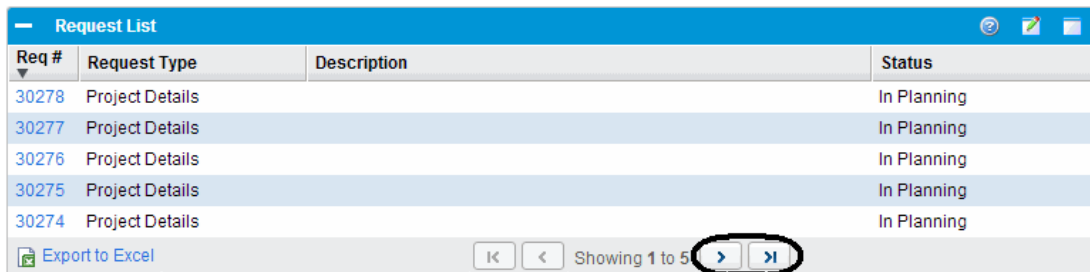
- Be aware of which request you are currently viewing, and
- Navigate to a previous or next request by clicking the arrow buttons




To navigate to a request that is not on the current Request Search Results page, you can go back to the Request Search Results page by clicking the **Search Results** breadcrumb, navigate to another search results page by clicking the right arrow button, and then go to the desired request.

Enhanced Java and Builder Portlets of the Requests Category

Starting from version 9.22.0002, Java and builder portlets of the Requests category do not display the total number of records by default for better system performance. When there are entries on the next page, the page navigation buttons are enabled.



To show total number of records in a Java or builder portlet of the Requests category,

1. From the portlet, click the **Edit**  icon.

The Edit Preferences page opens.

2. In the Preferences section, select the **Show Total Number of Records** checkbox.
3. Click **Done**.

The total number of records for the portlet displays.

Req #	Request Type	Description	Status
30278	Project Details		In Planning
30277	Project Details		In Planning
30276	Project Details		In Planning
30275	Project Details		In Planning
30274	Project Details		In Planning

Export to Excel < << Showing 1 to 5 of 127 >> >

Note:

- This operation is effective to the current user only.
- To show total number in multiple Java or builder portlets of the Requests category, you need to select the **Show Total Number of Records** checkbox on the Edit Preferences page for each portlet.

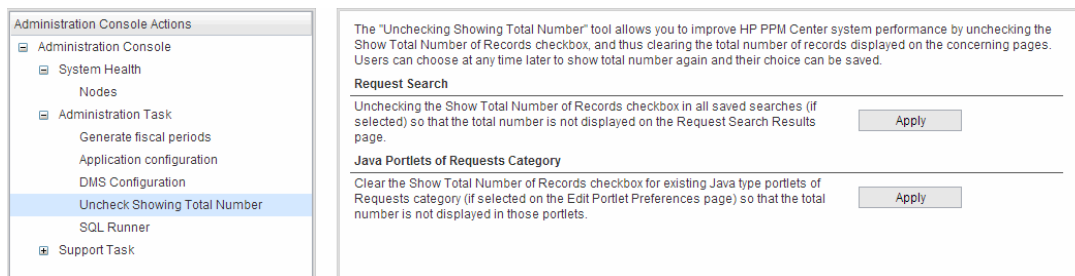
Using the Unchecking Showing Total Number Tool from Administration Console

The Unchecking Showing Total Number tool is added to the Administration Console. It allows you to clear the total number of records displayed on the concerning pages, and thus improve PPM Center system performance.

To use the tool,

1. Log on to PPM Center and launch the Administration Console.
2. In the left navigation pane of the Administration Console, expand the **Administration Task** section, and then select **Unchecking Showing Total Number**.

3. In the right panel, click **Apply** for **Request Search** or **Java Portlets of Requests Category**.



Caution: Be careful when clearing the Show Total Number of Records checkbox. This batch operation is irreversible.

For information about showing total number, see ["Enhanced Request Search Pages" on page 17](#) and ["Enhanced Java and Builder Portlets of the Requests Category" on page 19](#).

Enhancements in Version 9.22.0001

The following enhancements are included in version 9.22.0001:

- ["New Checkbox on the Define Preference Step of the Create Portlet Definition page" below](#)
- ["Enhanced kSupport: Added Constraints Check to SuperSupport" on the next page](#)
- ["Configuring A Single Email Notification for Multiple Recipients with Different Locales" on page 23](#)
- ["New SSH2 Client for PPM Center" on page 24](#)

New Checkbox on the Define Preference Step of the Create Portlet Definition page

In previous version, you would find the Total data displayed in the lower-right corner of the customized portlets if these portlets belong to one of the following four portlet types:

- Bar Chart
- Stacked Bar Chart

- Clustered Bar Chart
- Pie Chart

In version 9.22.0001, PPM Center introduced a new checkbox for these four portlet types on the Define Preference Step of the Create Portlet Definition page. With this checkbox available, you can decide whether or not the Total data should be displayed.

Create Portlet Definition (Bar Chart)

1. Choose Portlet Type ▶ 2. Enter Portlet Information ▶ 3. Set up Display Options ▶ 4. Define Preferences
5. Configure Portlet Communication ▶ 6. Configure Access ▶ 7. Add User Help

Preference Form Layout

Click and drag to select and move fields

Drag outside box to cancel movement

Show Preferences summary on this portlet (user can choose to hide it)

Require user to edit preferences before viewing portlet for the first time

Show Total

If you select this checkbox when creating portlet definition, the Total data will be displayed in the customized portlets. If you deselect this checkbox, the Total data will not be displayed. By default, this checkbox is not selected.

Enhanced kSupport: Added Constraints Check to SuperSupport

The kSupport tool is enhanced by adding constraints check to the default selected **DBChangeCheck** module.

When you run the kSupport tool or generate super support information from PPM Center, the **DBChangeCheck** module now also compares user's database constraints against the baseline data.

The constraint comparison report can be found in the `<kSupport_Zip_File>/etc/DBChangeCheck/DBChangeReport.html` file. The report lists the following:

- Missing primary keys, foreign keys, and unique constraints
- Custom primary keys, foreign keys, and unique constraints

A new baseline file for constraints in the `<PPM_HOME>\bin\support\baseline\data\database` directory, and the file name follows the following format: `<PPM_version_number>_Constraints.xml`.

Configuring A Single Email Notification for Multiple Recipients with Different Locales

When sending email notifications of a workflow step or request field change, PPM Center behaves as follows:

- For recipients who are PPM Center users and have already logged on to PPM Center at least once, PPM Center groups them together according to their user locales (user locale includes regional settings and display language).
- For recipients who are not PPM Center users and who have PPM Center user accounts but have never logged on to PPM Center, PPM Center groups them together.

As a result, recipients in different groups receive different notification emails. This is because only PPM Center users who have already logged on to PPM Center at least once have locales.

To resolve this issue, do the following:

1. Group all PPM Center users and non-PPM Center users together by defining a default locale for all non-PPM Center users and those PPM Center users who have never logged on to PPM Center.

To do so,

- Add the `SERVER_LOCALE_COUNTRY_CODE` server configuration parameter into the `server.conf` file manually and set a value for it. The default value is `null`. Valid values are any two-letter abbreviation of a country in uppercase.

For example, if you want to set the default regional settings to United States, set the `SERVER_LOCALE_COUNTRY_CODE` server configuration parameter to `US`.

- Add the `SERVER_LOCALE_LANGUAGE_CODE` server configuration parameter into the `server.conf` file manually and set a value for it. The default value is `null`. Valid values are any two-letter abbreviation of a language in lowercase.

For example, if you want to set the default regional settings to United States, set the `SERVER_LOCALE_COUNTRY_CODE` server configuration parameter to `US`.

This ensures that PPM Center groups all PPM Center users and non-PPM Center users together when sending notifications.

However, users with different locales are still able to receive email notifications in their own languages.

If you want to send a single email notification to all recipients in the same group, instead of sending multiple email notifications in batches, proceed to the next step.

2. Set the `USE_SERVER_LOCALE_FOR_NOTIFICATIONS` server configuration parameter value to `true`. This ensures that PPM Center sends a single email notification to all recipients in the same group.

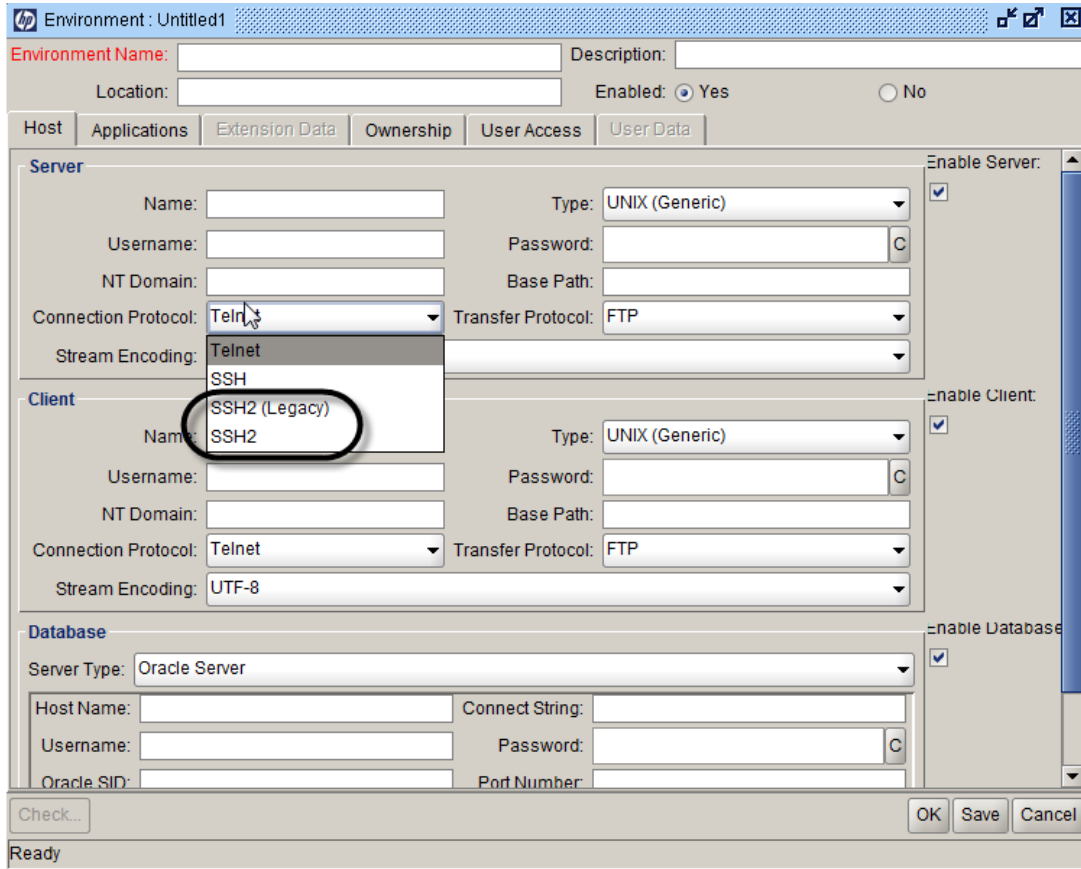
The `USE_SERVER_LOCALE_FOR_NOTIFICATIONS` parameter flags whether or not to check notification recipient regional settings. Setting the parameter value to `true` ignores users' regional settings, and uses the values of server configuration parameters `SERVER_LOCALE_COUNTRY_CODE` and `SERVER_LOCALE_LANGUAGE_CODE` instead. This ensures that recipients are not split into different groups according to their regional settings.

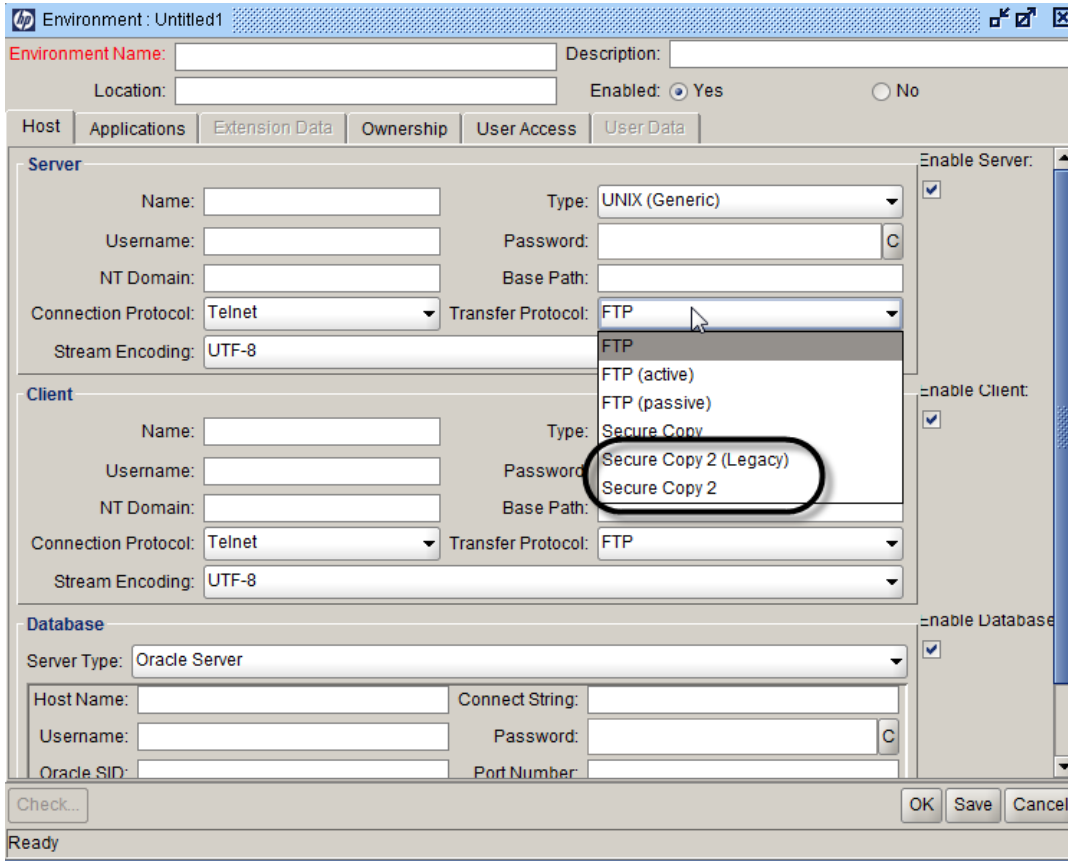
New SSH2 Client for PPM Center

In version 9.22.0001, a new SSH2 client is introduced to the HP Deployment Management module of PPM Center to support FIPS 140.2 compliant encryption algorithms. You can select the new SSH2 option from the Connection Protocol drop-down list in the Environment window of PPM Workbench.

The new SSH2 client is named **SSH2** in the Environment Connection Protocol list, with the old SSH2 renamed **SSH2 (Legacy)**. The new Secure Copy 2 is named **Secure Copy 2** in the Environment Transfer Protocol list, with the old Secure Copy 2 renamed **Secure Copy 2 (Legacy)**.

Release Notes
Chapter 3: Enhancements





To use the new SSH2 client, you should configure the following server configuration parameters from the Administration Console.

Parameter Name	Description, Usage	Default and Valid Values
SSH2_JSCH_DISABLE_STRICT_HOST_KEY_CHECKING	When set to true, the client will connect to the remote host even if its key is not in the list of trusted hosts (known_hosts file). <div style="border: 1px solid gray; padding: 5px; background-color: #f0f0f0;"> Caution: This parameter should not be set to true on a production environment. </div>	Default: false Valid values: true, false

<p>SSH2_JSCH_KNOWN_HOSTS_FILE_PATH</p>	<p>When a value is defined in this parameter (valid file path), PPM Center will use it as <code>known_hosts</code> file to validate keys of trusted hosts it connects to.</p> <p>The remote servers you will connect to should be included in the <code>known_hosts</code> file (using OpenSSH format), otherwise the client cannot connect to them (unless the <code>SSH2_JSCH_DISABLE_STRICT_HOST_KEY_CHECKING</code> parameter is set to <code>true</code>, in which case PPM Center does not search for a <code>known_hosts</code> file).</p> <p>If this parameter is left empty, PPM Center first checks if there is a <code><PPM_HOME>/known_hosts</code> file to use. If no, PPM Center then checks known standard locations for <code>known_hosts</code> file:</p> <ul style="list-style-type: none"> • <code>.../.ssh/known_hosts</code> and <code>.../etc/ssh/ssh_known_hosts</code> under UNIX • <code>%USERPROFILE%\ssh\known_hosts</code> and <code>%USERPROFILE%\ .ssh\known_hosts</code> under Windows <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p>Note: When a Linux user connects to a remote server using the <code>ssh</code> command on the command line and then accepts the host key when prompted, this remote machine key will be automatically added to the trusted hosts list in <code>.../.ssh/known_hosts</code>.</p> </div>	<p>Default: N/A</p>
--	--	---------------------

Enabling Logging for SSH2 Library

If the SSH2 connection fails with no useful information in the PPM logs, you can route the logs of the JSch library to a dedicated file and set its logging level to a more verbose setting by adding the following text in your `logging.conf` file. You can change the red parts as you demand.

```
# SSH2/JSch logging.
log4j.logger.com.kintana.core.net.ssh2.jsch=DEBUG, JSCH_LOG
```

```
# JSCH_LOG has a dedicated log file to easily pinpoint any error during SSH2
connection.
log4j.appender.JSCH_LOG=org.apache.log4j.RollingFileAppender
log4j.appender.JSCH_LOG.File=${jboss.server.home.dir}/log/ssh2_jsch_log.txt
log4j.appender.JSCH_LOG.Append=true
log4j.appender.JSCH_LOG.MaxFileSize=250KB
log4j.appender.JSCH_LOG.MaxBackupIndex=20
log4j.appender.JSCH_LOG.layout=org.apache.log4j.PatternLayout
log4j.appender.JSCH_LOG.layout.ConversionPattern=%x:%t:%c:%d{yyyy/MM/dd-
HH:mm:ss.SSS z}: %m%n
```

Note: Make sure that the value of the parameter `com.kintana.core.logging.SYSTEM_THRESHOLD` in the `logging.conf` file is set according to the logging level chosen for JSch logs.

Adding Support for Ciphers of Unlimited Strength

If you find that the new SSH2 client cannot use ciphers of unlimited strength such as AES-256-CTR, it is most probably because you have not installed the Java Cryptography Unlimited Strength Jurisdiction Policy Files on your JVM-running PPM Center.

The default Java installation is provided with limited cryptography capabilities (for example, keys over 128 bit cannot be used), as certain countries have regulations in place regarding authorized level of cryptography that can be freely used. In order to remove this limitation, you need to:

1. Download the new policy files for Java 7 from the following address:
<http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html>
2. Install the policy in the `<java.home>/lib/security` directory.

Once this is done, all algorithms should become available.

Note: Make sure you are installing the files into the JVM you are running PPM Center with.

FAQ

This section lists the questions you may have regarding the new SSH2 client. Each question is followed by an answer.

1. **Q:** What is the meaning of the following error when I use PPM Legacy SSH2 client:
ERROR: java.io.IOException: Unsupported encoding algorithms requested: aes256-

ctr, aes192-ctr, aes128-ctr ?

A: The PPM Legacy SSH2 client only supports Triple DES cipher as an encoding algorithm. If the server you try to connect to does NOT support it, you will encounter this error, and all the algorithms the server supports will be listed here.

2. **Q:** When trying to connect to a remote server with the new PPM SSH2 client, why do I have the following error:

```
java.lang.RuntimeException: com.jcraft.jsch.JSchException: <host_name>. RSA key fingerprint is xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx ?
```

A: If you encounter this error message when trying to connect to a remote host, it means that PPM Center cannot find the remote host in the list of trusted hosts (also known as `known_hosts` file). Refer to the descriptions of parameters `SSH2_JSCH_DISABLE_STRICT_HOST_KEY_CHECKING` and `SSH2_JSCH_KNOWN_HOSTS_FILE_PATH` in the parameter table to address this problem.

3. **Q:** I can use aes128-ctr, but I cannot use aes256-ctr or aes192-ctr. Why?

A: You need to enable support for ciphers of unlimited strength in your Java Virtual Machine running PPM Center. See the section "[Adding Support for Ciphers of Unlimited Strength](#)" on the [previous page](#) for details.

Chapter 4: Certifications

The following certifications are included in PPM Center version 9.22.0001:

- Microsoft Office Project Standard 2013 (both 32- and 64-bit)

Microsoft Office Project Professional 2013 (both 32- and 64-bit)
(single-user or connected to Microsoft Office Project Server 2013)
- Certification resigned for the HP Deployment Management Extension for Oracle E-Business Suite

The following certification is included in PPM Center version 9.22.0005:

- The latest version of Mozilla Firefox is extended to 31.2 Extended Support Release (ESR)

Chapter 5: Fixes

Fixes in Version 9.22.0006

Costing

Tracking Number	Problem Description
4650080385	<p>The recalculation of projects and time sheets by the Cost Rate Rule Update service is blocked by the recalculation of staffing profiles. (QCCR1L57138, QCCR1L57135)</p> <p>To fix this issue, the following two changes are made:</p> <ul style="list-style-type: none">• The calculation steps of the Cost Rate Rule Update service is reordered as follows:<ol style="list-style-type: none">a. Recalculate projects: it inserts a row into ITG_PENDING_ROLLUPS to trigger the Cost Rollup serviceb. Recalculate time sheetsc. Recalculate staffing profiles• A new parameter <code>COST_RATE_RULE_UPDATE_SERVICE_COMMIT_BATCH_SIZE</code> is added in the <code>server.conf</code> file. You can use this parameter to specify the batch size of the Cost Rate Rule Update service. By default, the value of this parameter is 20.

Dashboard

Tracking Number	Problem Description
N/A	An error appears in the server log when you open Analyze Resource Pools portlet or Analyze Assignment Load portlet. (QCCR1L56397)

HP Demand Management

Tracking Number	Problem Description
N/A	Errors appear when you open requests. (QCCR1L57264, QCCR1L57221)
N/A	The columns in the Scenarion Content are not displayed correctly. (QCCR1L57276, QCCR1L57275)
4650217564	An error appears when you sort a portlet by certain columns. (QCCR1L57280, QCCR1L56995)
N/A	Unable to update requests in APM. (QCCR1L57286, QCCR1L53412)

HP Deployment Management

Tracking Number	Problem Description
4649776273	<p>The content of "where" clause gets truncated when you migrate a datasource. (QCCR1L56957, QCCR1L56736)</p> <p>The fix of this defect also releases the length limit of the text entered in the Edit WHERE Clause window in PPM Workbench. You should clear Java cache to release the limit:</p> <ol style="list-style-type: none">1. Open the Java Control Panel.2. Click Settings to open the Temporary Files Settings window.3. Click Delete Files.

Documentation

Tracking Number	Problem Description
4646799596	<p>The information about copying users and disabling users is insufficient in the <i>Security Model Guide and Reference</i>. (QCCR1L53716)</p> <p>For details, see "Insufficient information about copying users and disabling users" on page 62.</p>

Tracking Number	Problem Description
4649465678	<p>Inconsistent descriptions about SM_PASSWORD in the <i>Installation and Administration Guide</i> and <i>HP Solution Integrations Guide</i>. (QCCR1L56713)</p> <p>For details, see "Incorrect description about SM_PASSWORD in the guide" on page 67.</p>
4646387007	<p><i>Resource Management User's Guide</i> does not state that manager of the parent resource pool cannot make assignments to a position that requests resources from the child resource pool. (QCCR1L53183)</p> <p>For details, see "Insufficient information about who can make assignments" on page 62.</p>
4648176778	<p>To use PPM Center, the screen resolution should be 800 x 600 at least. This information is not included in PPM documents. (QCCR1L54830)</p> <p>For details, see "Screen resolution requirement to use PPM Center" on page 58</p>
4649617050	<p>The integration of PPM Center with Remedy service desk application is no longer supported. The Remedy service information should be removed from the <i>Solution Integrations Guide</i>. (QCCR1L56457)</p> <p>For details, see " Remove the Remedy service information from the guide" on page 63.</p>
4649502519	<p>The <i>HP Deployment Management Configuration Guide</i> does not include the information about command-line utility for SQL Server supported by PPM Center. (QCCR1L56465)</p> <p>For details, see "Insufficient information about command-line utility for SQL Server supported by PPM Center" on page 61</p>
4650378618	<p>The description about the use of external Web server is confusing. (QCCR1L57142, QCCR1L57133)</p> <p>For details, see "Confusing descriptions about the use of external Web server" on page 67.</p>

Platform

Tracking Number	Problem Description
4649936701	<p>If you select a security group with a large number of resources as time approvers, it returns StackTraceError. (QCCR1L57191, QCCR1L56648)</p> <p>To fix this issue, a new parameter <code>MAX_RSC_IN_SG_TMAPPROVERS</code> is added in the <code>server.conf</code> file. You can use this parameter to specify the maximum number of resources allowed in a security group that serves as time approvers. This helps improve the performance of background services.</p> <p>If the actual resources number exceeds the limit, the warning message pops up on the Modify Resource page. By default, the value of the parameter is <code>10,000</code>.</p>
4646739407	The ITG_SETTINGS_CONTAINERS query is shown in the AWR report as an expensive query. (QCCR1L53584)
4648406055	You may experience inconsistent results when using smart URLs in notifications. (QCCR1L56228, QCCR1L56112)
4649668618 4649693001	The validation "RSC - Primary Org Unit - Enabled" has invalid SQL statement. (QCCR1L56430)
4649425365	When a node joins in the cluster, the information of its joining is not logged. (QCCR1L56468)
N/A	There is a performance issue with opening approval details of time sheets. (QCCR1L56958, QCCR1L56954)
4649934455	The NDC reference issue leads to OutOfMemory error. (QCCR1L56985, QCCR1L56894)
N/A	PPM Center version 9.22 runs slowly in IE 10. (QCCR1L57243, QCCR1L56586)
4648561158 4648812602	Double headers appear randomly on some pages. (QCCR1L57310, QCCR1L57025)

HP Portfolio Management

Tracking Number	Problem Description
4650062172	Role availability information becomes incorrect when you change the start date of an item in the scenario comparison. (QCCR1L56997, QCCR1L56897)

Fixes in Version 9.22.0005

Documentation

Tracking Number	Problem Description
4648722644	Some UNIX operating system parameters affect the PPM Center behavior. This information is currently missing from the <i>Installation and Administration Guide</i> . (QCCR1L55364) See "Troubleshooting Performance Problems" on page 83 for details.
4649682270 4649667691 4649764825 4649757828 4650038008	It is inaccurate by stating that PPM Center 9.20 supports Mozilla Firefox 11 or later. (QCCR1L56700, QCCR1L56486) See Mozilla Firefox versions supported for details.
4649747585	Some of the necessary privileges for PPM Schema and Reporting Schema are missing from the document. (QCCR1L56498) See Granting privileges to the PPM Schema and Operational Reporting Schema for details.

Tracking Number	Problem Description
4649987122	<p>Currently, the document does not explain when the option Finish Execution before displaying the request page to the user is to be used. (QCCR1L56810)</p> <p>See Using the Finish Execution before displaying the request page to the user option for details.</p>

HP Demand Management

Tracking Number	Problem Description
4649640542 4648956987	<p>Instead of providing the latest note on a request, the OOTB token REQ.MOST_RECENT_USER_NOTE_TEXT provides the latest saved note in the Oracle database. It is not what users see on the user interface. (QCCR1L56463)</p>
4649071685	<p>Users run into the following error when editing an HP Demand error or request: Insertion of a null value in NULL in KRSC_PENDING_ASSIGNMENTS.SOURCE_ID. (QCCR1L56515)</p>
4649596732	<p>The OOTB Request List portlet is not paging correctly when the default Sort by field is not a visible column of the request list. It selects random results. (QCCR1L56589, QCCR1L56587)</p>
N/A	<p>An error message is displayed in Request List portlets if Associated programs is selected as a display field. (QCCR1L56930)</p>

HP Financial Management

Tracking Number	Problem Description
4649248073	<p>The sequence of the steps that a user takes to add costs in a Financial Summary affects the result of the Cost Health indicator. (QCCR1L56865, QCCR1L56636)</p>

Platform

Tracking Number	Problem Description
4650364624	Unable to start Windows service after deploying PPM Center version 9.22.0005. (QCCR1L57168)
4648702819	<p>It takes more than 24 hours to run Exception Rule Service. (QCCR1L56758, QCCR1L55798)</p> <p>To fix this issue, a new parameter EXCEPTION_ENGINE_PROCESSING_THREAD_COUNT is added in the server.conf file. You can use this parameter to specify the thread number of the Exception Rule Service. The default value of this parameter is 1.</p>
4649611795 4649933953	Exceptions are thrown when the Staffing Profile Financial Summary Sync service runs. (QCCR1L56687)

HP Portfolio Management

Tracking Number	Problem Description
4650004127 4649915742	When users use the predication AND ROWNUM in a nested SQL query of the SELECT/FROM clause, an error message is displayed. (QCCR1L56951, QCCR1L56950)

HP Project Management

Tracking Number	Problem Description
4646913281	When users do a search by Project Manager, the desired result is displayed; however, when they click Modify search , the search screen is displayed and the previous search result is removed. (QCCR1L56637, QCCR1L53570)

HP Resource Management

Tracking Number	Problem Description
4649381615	A user with Edit Staffing Profiles access and Edit Positions access only on the staffing profile is not able to add new positions to the staffing profile. (QCCR1L56634, QCCR1L56272)
4648953832	After a position is added to the staffing profile, resource managers can assign resources to this position without stating any demand. (QCCR1L56635, QCCR1L55705)

Integrations

Tracking Number	Problem Description
4649549603	Users receive an Invalid Username and Password message whenever they send an MSP file to PPM. (QCCR1L56649)
4649972382	When you add an attachment exceeding the maximal size defined by the parameter MAX_WEB_ATTACHMENT_SIZE_IN_MB, a meaningless error message is displayed. (QCCR1L56729)

Fixes in Version 9.22.0004

Dashboard

Tracking Number	Problem Description
4647528929	An error appears when you use the filter of an auto-complete list validation in the data source filter field. (QCCR1L54192)
4649519889	A custom portlet shows an index out of the range. (QCCR1L56379, QCCR1L56372)

HP Deployment Management

Tracking Number	Problem Description
NA	<p>A failed package line blocks the subsequent package lines. (QCCR1L56077, QCCR1L56076)</p> <p>To fix this issue, a new server configuration parameter <code>BLOCK_PENDING_PKGL_FOR_ERROR</code> is introduced. If you set this parameter to <code>false</code> in the <code>server.conf</code> file, when a package line fails, the system continues executing the subsequent package lines. If you set this parameter to <code>true</code>, the execution is blocked when a package line fails. By default, this parameter is set to <code>true</code>.</p> <p>When a package line fails and its subsequent package lines pass, the status of this execution is still successful in PPM Workbench. However, you should note that even when the status is successful, it does not mean all the package lines are executed successfully in logical relationship to meet your business needs. HP suggests that you exercise caution when setting this parameter to <code>false</code>, unless you are absolutely sure about the consequences.</p>
NA	<p>Mandatory notes for a decision step can be empty during the running of a package line. (QCCR1L56080, QCCR1L56078)</p>
4648229203	<p>An error appears when you migrate a request type. (QCCR1L56230, QCCR1L56229)</p>

Documentation

Tracking Number	Problem Description
4648078996	<p>After you set the parameter <code>SKIP_REQUEST_CREATE_CONFIRMATION_PAGE</code> to <code>true</code>, the request creation confirmation page is skipped, but the request status is shown as Not Submitted and there are no action buttons until the request page is refreshed.(QCCR1L54861)</p> <p>For more information, see "Insufficient information about skipping the Request Creation Confirmed page" on page 66.</p>
4648291926	<p>PPM Center does not use <code>userQuery</code> in its integration with HP SM Changes, but <code>userQuery</code> is included in the guide. (QCCR1L55237)</p>

Tracking Number	Problem Description
4648669208	<p>More clear descriptions are needed about how to define portlet events. (QCCR1L55299)</p> <p>For detailed information about how to define portlet events, see "Defining a Portlet Event" on page 70.</p>

HP Demand Management

Tracking Number	Problem Description
4649061212	<p>When you update a field with "&" in its drop-down values by using the Quick Edit feature, unnecessary values are added to the PARAMETERx column in the KCRT_REQUEST_DETAILS table. (QCCR1L55688)</p>
4649013791	<p>An error appears when a user with "" in the name submits a request. (QCCR1L55960)</p>
4644410768	<p>An error appears when you add the Associated Programs field to the Request List portlet as a column. (QCCR1L56259, QCCR1L50762)</p> <p>To fix this issue, PPM Center leverages the LISTAGG function which was introduced in Oracle 11.2. You should use Oracle 11.2 or later versions to avoid this issue.</p>

Integrations

Tracking Number	Problem Description
4648907839	<p>You cannot update actuals when retrieving actuals from PPM using PPM-MSP plug-in in MS Project. (QCCR1L55600)</p>
4648907839	<p>A warning is shown when you retrieve actuals from PPM. (QCCR1L55601)</p> <p>Since version 9.22.0004, for tasks with updated or impacted actuals, only the task name fields instead of the whole task rows are displayed in colors.</p>

Platform

Tracking Number	Problem Description
4648375025	Service node gets OutOfMemory error resulting in heap dumps. (QCCR1L55029)
4648896594	The performance improvements introduced in 9.22.0002 are not working as documented. (QCCR1L56196)
4649425365	Service nodes are halted frequently. (QCCR1L56391, QCCR1L56390)

HP Project Management

Tracking Number	Problem Description
4648840119 4649278190	When the actual complete percentage of a task is less than 0.5%, the value of the % Complete field for the task is 1, which results in the pop-up message indicating the error when you click Save on the Task Details page. (QCCR1L55885)
4648854547	The Delete Project functionality does not work as expected in MS Project if the project has a work plan defined. (QCCR1L56333, QCCR1L55543)

HP Resource Management

Tracking Number	Problem Description
4644022913	Errors appear in the logs when you create an organization unit. (QCCR1L56389, QCCR1L50885)

HP Time Management

Tracking Number	Problem Description
4647554254	Performance issue with searching time sheets to approve. (QCCR1L56219, QCCR1L55524)

Tracking Number	Problem Description
4648449339	Performance issue with freezing time sheets. (QCCR1L56319, QCCR1L55582)
4646264039	There are differences in Total Actual Cost between the Actual Time Summary reports with "resource" in the Group By field and the reports without "resource" in the Group By field. (QCCR1L56320, QCCR1L53111)
4649425365	The string buffer issue with TM_APPROVAL_UTILS. (QCCR1L56393, QCCR1L56392)

Fixes in Version 9.22.0003

Dashboard

Tracking Number	Problem Description
4648746421	<p>Custom portlets do not work as expected when displayed in list after you upgrade PPM Center to 9.22.0002. (QCCR1L55390)</p> <p>This issue is caused because the pagination functionality was not capable of handling some complex custom SQLs of builder portlets. For details about how to deal with these complex SQLs in order to take advantage of the pagination functionality, see .</p>

Documentation

Tracking Number	Problem Description
4648446038	<p>Oracle database related performance issue encountered after upgrading PPM Center from 7.5 to 9.14.0009, which can be resolved by enabling an Oracle VM feature. The <i>Installation and Administration Guide</i> guide does not mention support for Oracle VM, therefore the following text shall be added to the "Configuring or Reconfiguring the Database" section of the guide:</p> <p>If Oracle Database is running over Oracle VM (OVM), HP recommends to enable the Hard Partitioning feature, also known as CPU pinning.</p> <p>For more information, see Oracle VM documentation: http://docs.oracle.com/cd/E26996_01/E18549/html/vm_hardpart.html (QCCR1L55177)</p>
4648138843	<p>The information about how to customize menu arrows is not documented.</p> <p>For details, see "Information about how to customize menu arrows is not documented" on page 58.</p> <p>(QCCR1L55151)</p>

HP Demand Management

Tracking Number	Problem Description
4648364485	Saving draft of Bug requests failed with error. (QCCR1L55090)

Mobility

Tracking Number	Problem Description
4648679910	Request for PPM new apps supported for HPA 10.11 and PPM Center 9.22.0001. (QCCR1L55374)

Integrations

Tracking Number	Problem Description
4647469148	<p>The SMTP server rejects ALM Integration email notifications when they are sent from the address "DO-NOT-REPLY" . (QCCR1L55501, QCCR1L55063)</p> <p>Since version 9.22.0003, if you set the parameter EMAIL_NOTIFICATION_SENDER in the server.conf file to a valid email address, the sender address of ALM Integration email notification is the valid email address you specified. If the value of the parameter EMAIL_NOTIFICATION_SENDER is null, the sender address of the email notification is "DO-NOT-REPLY".</p>

Platform

Tracking Number	Problem Description
4647515761	Issue with high task audit workload. (QCCR1L54953, QCCR1L54593)
4647817879	Performance issue with project search after you upgrade PPM Center to 9.22. (QCCR1L55136)
4647817879	Creating a request of a different request type at the first time is slow. (QCCR1L55137)
4647817879	<p>Performance issue with request search. (QCCR1L55138)</p> <p>To fix this issue, a new view KCRT_PARTICIPANT_CHECK_V2 is introduced to check request participant security and thus improves the request search performance.</p> <p>If you want to switch back to the old view KCRT_PARTICIPANT_CHECK_V for checking request participant security, you can set the new server configuration parameter ENABLE_KCRT_PARTICIPANT_CHECK_V_LEGACY to true in the server.conf file. By default, the parameter value is null, with the old view disabled.</p>
4647817879	The shared pool grows fast during workflow execution time. (QCCR1L55139)
4647817879	Creating a request is slow at the first time. (QCCR1L55140)

Tracking Number	Problem Description
4648669782	Issue with cross-site scripting. (QCCR1L55276, QCCR1L55271)
4648371878	PPM Server node stopped responding unexpectedly. (QCCR1L55487)

HP Program Management

Tracking Number	Problem Description
4643207711	Custom fields do not work as filters in advanced search when you add projects to a program. (QCCR1L55349, QCCR1L49588)

HP Time Management

Tracking Number	Problem Description
4645468605	FORMAT_WEEK_LONG_NAME in periods_en.conf file does not take the format {month} {dd}, {yyyy} any more. (QCCR1L55003, QCCR1L52344)

Fixes in Version 9.22.0002

Accelerators

Tracking Number	Problem Description
4647570085	When submitting the AOL migration request from a user node, NullPointerException occurs and sometimes error appears in the package log file. (QCCR1L54790, QCCR1L54323)

Documentation

Tracking Number	Problem Description
4647720889	Cost Category field is not required when creating a new position. (QCCR1L54737)
4646594181	Error when retrieving actuals from PPM Center into MSP work plan via PPM plug-in. (QCCR1L55025, QCCR1L54162)

HP Demand Management

Tracking Number	Problem Description
4647214704	Performance issue when opening a demand request in Internet Explorer 9 in Quirks mode. (QCCR1L53893)
4647385389	Adding one row to a table component using Webservice CreateRequest standard function, the PPM duplicates the row. The table then has two lines with same values. (QCCR1L54332, QCCR1L54327)
4647759050	Financial Client Industry Name field is only partially auto-populated when Financial Client Name field contains an ampersand, a comma or a period. This issue happens in Internet Explorer versions lower than 11. (QCCR1L54496)
4637821742	Performance issue with Request Search. (QCCR1L54859, QCCR1L46150)
4646723348	Error when clicking Continue Workflow Action . (QCCR1L54749)
4648452179	Regression: For the request types Project Details and PFM-Project, you are unable to select multiple values for the Project Manager field because you cannot set the option Multi-Select Enabled for the field to yes. (QCCR1L55065)
4644867608	Any search of a PPM Center object which includes an ampersand, for example "I&O", returns no results because the name is converted to "I&O". (QCCR1L54686, QCCR1L51370)
4648270530	Notifications are not sent in HTML format after applying "Standard HTML Message (HTML)" template. . (QCCR1L54922, QCCR1L54921)

Integrations

Tracking Number	Problem Description
4647313755	When the workplan is synchronized from MSP, the resource of seq 0 (root task) cannot be assigned automatically. (QCCR1L54013)
4648455934	Error when uploading an MSP project to PPM Center. The root cause is that the Promise resource with an ID of 80 is not filtered out of the Resource Matching code. (QCCR1L55112, QCCR1L55085)

Platform

Tracking Number	Problem Description
4646795394	OOTB Report "Import Requests" is not working after upgrading to PPM Center 9.22 . (QCCR1L54420)
4647924547	Need to identify the cause of the OutOfMemory error on a user node. (QCCR1L54538, QCCR1L54537)
4646442321	Error appears and PPM Workbench cannot open after Secure RMI is enabled. (QCCR1L54685)
4647940790	Notification Cleanup Service issue. No notification mails are sent for some time and error appears in log files. (QCCR1L54715)
4648232528	Performance issue with TMG - Time Sheet Details - Project Work Items validation. Timesheet query consumes most of the CPU and memory resource. (QCCR1L54869, QCCR1L54867)
4645919029	REQ token and WFS token cannot resolve when used in the workflow transition. (QCCR1L55023, QCCR1L53969)
4647799080	Unable to remove rows from the database via Notification Cleanup Service. (QCCR1L54883)
4646583175	Need multicast communication in the diagram of a Cluster and basics for the multicast configuration documented in the guides. (QCCR1L55024, QCCR1L54081)
4648403503 4648359052	Error when you open a project after applying patch 0001 on PPM 9.22. (QCCR1L55122)

HP Project Management

Tracking Number	Problem Description
4626504533	Dates are missing in Excel file when you export Resource Usage page to Excel, . (QCCR1L39859)
4637883092 4644875018	Unable to modify Resource List for a task in the workplan when one of the resources is disabled. (QCCR1L45506)
N/A	No task notificaitons and no entry in the Knta_notif_txn_parents table. (QCCR1L54346)
4645987868	Double-click a task without making any change in the workplan, a window pops up to ask whether you want to save the changes. (QCCR1L52808)

HP Portfolio Management

Tracking Number	Problem Description
4647411346	Error when adding more filters like "Selected Portfolios" and clicking Apply in PPM Center Analyze Current Portfolio portlet. (QCCR1L54141)

HP Resource Management

Tracking Number	Problem Description
4644559742	Resource value cannot be calculated correctly in Assignment Details after you click View Resource Load Breakdown in the Analyze Assignment Load portlet. (QCCR1L54387, QCCR1L54195)
4647820746	Long resource type names are truncated in Internet Explorer. (QCCR1L54435)

HP Time Management

Tracking Number	Problem Description
4647687832	The value in Estimated Remaining Effort (hrs) is calculated incorrectly in timesheets. (QCCR1L54264)
4647305159	Performance problem with SQL when selecting tasks from within the timesheets. (QCCR1L54560)
4648055388	Multiple notification messages are sent for the same time sheet. (QCCR1L54618)
4646599987	Mismatch of cost calculation between Project Management and Time Management tasks. Cost rollup messages are confusing. (QCCR1L54781, QCCR1L54769)
4647681494	Time periods prior to the "Previous Time Periods to Show" are displayed when you run Delinquent Time Sheet Report after changing time sheet policy. (QCCR1L54942, QCCR1L54839)
4646160391	Error appears when you import the time sheets with the command <code>kTMDataConversion.sh</code> . (QCCR1L55021, QCCR1L53146)

Fixes in Version 9.22.0001

Accelerators

Tracking Number	Problem Description
4642033487	An error appears when you try to apply PPM Center version 9.14.0002. (QCCR1L54018, QCCR1L48685)

Admin Tools

Tracking Number	Problem Description
4647129048	<p>Constraints check should be added to SuperSupport. (QCCR1L53984, QCCR1L53979)</p> <p>To address this issue, the kSupport tool is enhanced by adding constraints check to the default selected DBCChangeCheck module. For details, see "Enhanced kSupport: Added Constraints Check to SuperSupport" on page 22.</p>

Costing

Tracking Number	Problem Description
4645615303	Benefit lines can be added without filling in mandatory fields on the Add Benefits page. (QCCR1L52614)
4645863628	Creating snapshots for project financial summaries slows down after upgrading PPM Center from version 8.04 to version 9.21. (QCCR1L53092)
4646756394	Unable to edit the validation FINANCIAL BENEFIT AVOIDANCE CATEGORY List. (QCCR1L53982, QCCR1L53980)

Dashboard

Tracking Number	Problem Description
4646648884	The Export to Excel functionality fails when Request List portlet displays the column "Expected Start Period". (QCCR1L53759)

Documentation

Tracking Number	Problem Description
NA	The summary of QCCR1L52233 in 9.22 Release Notes is not consistent with the actual fixed issue. (QCCR1L53993)

HP Demand Management

Tracking Number	Problem Description
4646913890	No summary pops up for multi-select fields to indicate the values you have selected. (QCCR1L53566)
4644794440	Errors appear when you try to modify request types. (QCCR1L53603)
4644794440	No proper error message is shown when package is invoked from PPM Workbench. (QCCR1L53604)
4646530830	<p>You can control a request type user access by a User Defined Token and open the requests of the request type. However, you are not able to search request type on the Search Requests page. (QCCR1L53605)</p> <p>This issue is addressed by introducing the server configuration parameter <code>SEARCH_ALL_REQUEST_TYPE</code>. Setting this parameter to <code>true</code>, you can find all request types listed in the Request Type auto-complete list on the Search Request page. However, you are not able to view the requests that you have no access to.</p>
4639164795	An error appears when you migrate request types. (QCCR1L53617)
4646816697	For the request types Project Details and PFM-Project, you are unable to select multiple values for the Project Manager field because you cannot set the option Multi-Select Enabled for the field to <code>yes</code> . (QCCR1L53899, QCCR1L51645)
4646646276	Information in the Request Summary Bar Chart portlet is not displayed alphabetically. (QCCR1L53994, QCCR1L53675)
4647693286	There is no Show All option for a field that uses a table component validation. (QCCR1L54368)

HP Deployment Management

Tracking Number	Problem Description
4646931836	Timeout issues with SQL Script objects. (QCCR1L54038, QCCR1L54037)
4646931836	SSH patch is causing noisy logs. (QCCR1L54057)

Platform

Tracking Number	Problem Description
NA	PPM server log is created in the <PPM_HOME>\server\<server name> directory instead of the <PPM_HOME>\server\<server name>\log after you upgrade PPM Center to version 9.20. (QCCR1L51900)
4646683930 4646707564	OracleApps and other JAR files need to be re-certified. (QCCR1L53549)
4646739407	The query itg_container is shown in the AWR report as an expensive query. (QCCR1L53584)
4646423969	Saved preference sets are displayed differently when you navigate to it through different menus. (QCCR1L53883, QCCR1L53133)
NA	Performance issue when custom reports are submitted concurrently in large quantities. (QCCR1L53894, QCCR1L53206)
4645290737	<p>App and Service nodes fail to start up due to OutOfMemory error. (QCCR1L53898, QCCR1L53391)</p> <p>This issue is fixed by introducing the server configuration parameter MAX_REQUEST_OF_AUDIT_EVENT_QUERY. This parameter specifies the maximum number of audit event query results. The default value is 1000.</p>
4647328221	Incorrect login logo in the Customizing the Standard Interface guide. (QCCR1L53981)
4646297015	JGroup reaper thread is not enabled by default. (QCCR1L54024, QCCR1L54023)
4646581414	Cost Rate Rule Service and Cost Rollup Service stop running. (QCCR1L54050)
4644315828	Performance issue when loading the Project Overview page. (QCCR1L54238, QCCR1L53413)

HP Program Management

Tracking Number	Problem Description
4645659208	The health indicator image is not shown on the View Portfolio page when you use Apache web server. (QCCR1L53891, QCCR1L52601)

HP Project Management

Tracking Number	Problem Description
4646720318	Project Details page does not always load successfully for the first time, with an error message appearing in the lower left corner of the page. (QCCR1L53975, QCCR1L53652)
4644915089	Project PV Update service triggers a SQL which passes thousands of project IDs and causes DB performance issue. (QCCR1L53986, QCCR1L52990)
NA	The Project Health is not in sync with the Overall Health. (QCCR1L54269)

HP Portfolio Management

Tracking Number	Problem Description
4647490694	Th Program tab cannot be opened in portfolio when the programs contained in the portfolio have any numeric user data. (QCCR1L54028)

HP Resource Management

Tracking Number	Problem Description
4644836201	Resource Request portlet filters out records where the values of Total Unmet Hours are less than zero. (QCCR1L53621)
NA	There are blank line in the staffing profile table when you click View Actuals in the Staffing Profile page.(QCCR1L53996)

Tracking Number	Problem Description
4647099868	The report Run PPM Organization Unit Interface does not work when you select multiple product licenses. (QCCR1L54355, QCCR1L54352)

HP Time Management

Tracking Number	Problem Description
4647730301	Error appears when you import time sheet data using PPM time sheet data loader (kTMDataConversion.sh). (QCCR1L54345, QCCR1L54342)
4647599184	The User Data tab is not displayed in time sheet line details when you use German as the session language. (QCCR1L54469, QCCR1L54131)

Chapter 6: Known Problems, Limitations, and Workarounds

The following problems and limitations are known to exist in PPM Center version 9.22.0001 (or later software, as indicated). The problems are categorized by the affected product area. If a problem has an assigned internal tracking number, that tracking number is provided (in parentheses) at the end of the problem descriptions.

Known Problems, Limitations, and Workarounds in Version 9.22.0006

HP Demand Management

Limitation: You are not able to open the attachment of a request if you do one of the following:

- Change the request header type of the request type, based on which the request is created
- Change the request type of the request on the request details page.
- Use the command `ksc_copy_request`

In this case, you can open the attachment of the original request, but unable to open the attachment in the copied request.

(QCCR1L56717)

Workaround: Revert your changes to the request header type or request type.

HP Project Management

Limitation: If you set a large number of resources as the summary task owners, the length of RESOURCE_FULL_NAME_LIST_HOVER will exceed the limit of 4,000. This causes the Summary Task List portlet to throw errors. (QCCR1L54394)

Workaround : Decrease the number of summary task owners.

Limitation: The stakeholders of a project can be individual users or security groups. The individual users and users in the security groups are listed by user ID in the database in the following form:

```
<user_id>#@#<user_id>#@#<user_id>#@#<user_id>
```

The maximum length of the variable that holds the delimited list of user IDs is 4000.

The maximum number of stakeholders of a project depends on the character length of user IDs. The longer the user IDs are, the less stakeholders can be supported. For example, if all user IDs have five digits, then the project can have $4000/8=500$ stakeholders, with the delimiter "#@#" taken into calculation.

(QCCR1L56866)

Workaround: None.

Platform

Problem: Unable to generate support information by using kSupport if you use earlier versions of JDK, such as 1.7.0_03, 1.7.0_04, or 1.7.0_05. (QCCR1L57067)

Workaround : Upgrade JDK to a later version, for example 1.7.0_25.

Limitation: Importing entities translations from another PPM instance will fail because the UUID of some entities are different between different PPM instances. (QCCR1L57201)

Workaround: HP suggests that you export and import translations of entities attributes within one PPM instance.

Known Problems, Limitations, and Workarounds in Version 9.22.0003

HP Demand Management

Limitation: The maximum entry number allowed for fields of table component type is 500. (QCCR1L54962)

Workaround: None.

Known Problems, Limitations, and Workarounds in Version 9.22.0002

Platform

Limitation: For the drop-down list validations that are used in workflow steps, PPM Center does not deal with tokens with the prefix REQ, REQD, or WF. (QCCR1L55023)

Workaround: None.

Chapter 7: Documentation Errata

The following documentation items need to be updated:

Creating Portlets and Modules

More clear information is needed about how to define a portlet event

Location: *Creating Portlets and Modules*, version 9.20

Error: The descriptions in the guide are not clear enough for users to understand portlet events. (QCCR1L55299)

Correction: Updated the section Defining a Portlet Event in the guide.

For details, see ["Defining a Portlet Event" on page 70](#).

Customizing the Standard Interface

Screen resolution requirement to use PPM Center

Location: *Customizing the Standard Interface, Getting Started*, version 9.20

Error: The guides did not include the information about the screen resolution requirement to use PPM Center.

Correction: Add the following information in the guides:

Your screen resolution should be at least 800 x 600 when you use PPM Center.



Information about how to customize menu arrows is not documented

Location: *Customizing the Standard Interface*, version 9.20

Error: The guide did not include the information about how to customize menu arrows.

Correction: Add the following table in the guide:

Table 2-3. Menu arrow files used in the PPM Center standard interface

Image	File Location	Size (in pixels)
	<PPM_Home>/server/<PPM_Server_Name>/deploy/itg.war/yui/build/menu/assets/skins/ppm/menu-arrow.png	26 x 16
	<PPM_Home>/server/<PPM_Server_Name>/deploy/itg.war/yui/build/menu/assets/skins/ppm/menu-expander.png	12 x 12


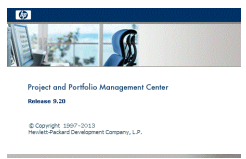



Login images in the document not updated

Location: *Customizing the Standard Interface*, version 9.20, page 17

Error: The login page has been modified in version 9.20, however, the related login images in the document are not updated.

Correction: Update Table 2-1 in Chapter 2 of this document as follows:

Table 2-1. Corporate logo files used in the PPM Center standard interface

Image	File Location	Size (in pixels)
Stored on the PPM Server File System		
	<ul style="list-style-type: none"> <PPM_Home>/server/<PPM_Server_Name>/deploy/itg.war/web/knta/global/images/favicon-whiteonred.ico 	16 x 16
	<ul style="list-style-type: none"> <PPM_Home>/server/<PPM_Server_Name>>/deploy/itg.war/html/MercurySplash.gif 	450 x 301
	<ul style="list-style-type: none"> <PPM_Home>/server/<PPM_Server_Name>>/deploy/itg.war/images/common/CorporateBrand.png 	480 x 40
	<ul style="list-style-type: none"> <PPM_Home>/server/<PPM_Server_Name>>/deploy/itg.war/web/new/img/HP_Blue_64x64.png 	64 x 64
	<ul style="list-style-type: none"> <PPM_Home>/server/<PPM_Server_Name>>/deploy/itg.war/web/new/img/ppm_logo.png 	400 x 400

HP Demand Management User's Guide

No description about the removal of the "All" option from table component paging display

Location: *HP Demand Management User's Guide*, version 9.20

Error: The "All" option was removed from the Show <n> Each Page drop-down list for table component in version 9.20 by design. However, there is no description about the removal of the "All" option.

Correction: Add the following content to the document under the *Request Detail Page, New Table Component* section in Chapter 3:

Quick Navigation through Table Rows

You can choose to show a certain number of entries in the table component.

To do so, specify an available option for the **Show *M* Each Page** field at the lower right corner.

Note: Before PPM Center version 9.20, when there are more than 5 entries in the table component, the **Show: *M* of *N* Entries** field appears to the right of the table component menu icons, where ***M*** is the number of entries currently displayed, ***N*** is the total number of entries in the table. Version 9.20 renamed the field to **Show *M* Each Page**, and also removed the **All** option for ***M*** by design.

HP Demand Management User's Guide

Using the Finish Execution before displaying the request page to the user option

Location: *HP Demand Management User's Guide*, version 9.20

Error: Currently, the document does not explain when the option **Finish Execution before displaying the request page to the user** is to be used. (QCCR1L56810)

Correction: Include a note in step 9 of "Creating Requests from the Menu Bar" under **Chapter 2: Creating Requests** as follows:

Note: You can skip the Request Creation Confirmed page if you manually adding the following line into the `server.conf` file:

```
com.kintana.core.server.SKIP_REQUEST_CREATE_CONFIRMATION_PAGE=true
```

If you enable this feature, you can directly go to the Request Details page after clicking **Submit**. And you would find an information box displayed above the Status section on the Request Details page informing you that your request is created. Clicking the Delete icon closes the box.

The option **Finish Execution before displaying the request page to the user** does not work for request creation. Therefore, when you select this option and skip the request creation confirmation page, the request page opens before the execution finishes and the request status may be incorrect.

HP Deployment Management Configuration Guide

Insufficient information about command-line utility for SQL Server supported by PPM Center

Location: *HP Demand Management Configuration Guide*, version 9.20

Error: The guide does not include the information about command-line utility for SQL Server supported by PPM Center.

Correction: Add a note as follows to the guide:

For SQL Server database, PPM Center supports ISQL utility only. Since ISQL utility is not supported in SQL Server 2005 and later versions, PPM Center does not support SQL Server 2005 and later.

HP Project Management User's Guide

Information is needed to tell users not to filter out all task in MSP before retrieving actuals

Location: *HP Project Management User's Guide*, version 9.20

Error: If users filter out all tasks in Microsoft Project before retrieving actuals from HP Project Management, an error message appears. This information is missing in the document. (QCCR1L55025)

Correction: Add a note as follows to the document:

Note: Do not filter out all tasks in Microsoft Project before you retrieve actuals from HP Project

Management.

HP Resource Management User's Guide

Insufficient information about who can make assignments

Location: *HP Resource Management User's Guide*, version 9.20

Error: The guide does not state that manager of the parent resource pool cannot make assignments to a position that requests resources from the child resource pool.

Correction: Add a note as follows to the guide:

Note: To make assignments, you should be the direct manager of the resource pool. If you are the manager of the parent resource pool, you cannot make assignments to positions that request resources from the child resource pool, unless you have the staffing profile: edit all staffing profiles access grant.

Unclear description about when Cost Category field in staffing profile is required

Location: *HP Resource Management User's Guide*, version 9.20

Error: When the project associated with a staffing profile is set to calculate the forecasted labor cost from the staffing profile, the Cost Category field in the staffing profile is required. This information is not clearly stated in the document. (QCCR1L54737)

Correction: Add the following description to the guide:

When the project associated with the staffing profile is set to calculate the forecasted labor cost from the staffing profile, the Cost Category field in the staffing profile is required.

Security Model Guide and Reference

Insufficient information about copying users and disabling users

Location: *HP Solution Integrations Guide*, version 9.20

Error: The guide does not provide sufficient information about how to copy and disable users.

Correction: Added two sections "Copying Users" and "Disabling Users" in the guide

For the updated guide, see <http://softwaresupport.hp.com/group/software-support/search-result/-/facetsearch/document/KM00310118>.

HP Solution Integrations Guide

Remove the Remedy service information from the guide

Location: *HP Solution Integrations Guide*, version 9.20

Error: The integration of PPM Center with Remedy service desk application is no longer supported.

Correction: Remove the Remedy service information from the guide.

userQuery information in the guide should be removed

Location: *HP Solution Integrations Guide*, version 9.20

Error: PPM Center does not use userQuery in its integration with HP SM Changes, but userQuery is included in the guide. (QCCR1L55237)

Correction: Remove the userQuery information from the guide.

Additional information needed for configuring the integration between PPM Center and Service Manager RFCs when a Process Designer (PD) patch is deployed on top of Service Manager instance

Location: *HP Solution Integrations Guide*, version 9.20, page 335

Error: Additional information needed for configuring the integration between PPM Center and Service Manager RFCs when a Process Designer (PD) patch is deployed on top of Service Manager instance

Correction: Add the following information to the document:

- In step 6, add the following note:

Note: If PPM Center is integrated with Service Manager with a PD patch, you shall also import the following unl file into Service Manager:

- HPSMPPMIntegration.unl

If you already deployed the 9.22.0001 patch, the unl file is also present in the `<PPM_Home>\conf\smr\fc` directory. Otherwise go to [KM00786444](#) to download the unl file.

- In step 8, add the following note immediately after the first note:

Note: For Service Manager with a PD patch deployed, you only need to modify the **cm.close** and **change.update.save** processes.

Then, add the following note in step g:

Note: For Service Manager with a PD patch, repeat step c through step f for the **change.update.save** process only.

For more details about configuring the integration, see the second edition of the *HP Solution Integrations Guide* ([PDF](#) on the SSO site) for PPM Center version 9.20.

HP Time Management Configuration Guide

Incorrect statement about the number of reminders sent to users to submit time sheets

Location: *HP Time Management Configuration Guide*, version 9.20

Error: Users receive email reminders if they are required by time sheet policy to submit time sheets for each time period. The document states that users receive only one email reminder per day per time sheet. However, the number of the emails is decided by the running frequency of Time Sheet Notifications Service. (QCCR1L54618)

Correction: Replace such statement in the document with the following:

You may receive the reminder several times per day, which depends on the running frequency of Time Sheet Notifications Service. For example, if Time Sheet Notifications Service is scheduled to run every two hour, you would receive 12 reminders per day per time sheet until you submit the time sheet.

Operational Reporting Administrator's Guide CP 2.0

Granting privileges to the PPM Schema and Operational Reporting Schema

Location: *Operational Reporting Administrator's Guide, CP 2.0*

Error: Some of the necessary privileges for PPM Schema and Operational Reporting Schema are missing from the document. (QCCR1L56498)

Corrections: Under "Post-Installation Tasks on Windows Systems" > "Running the Setup Scripts" of **Chapter 2: Deploying Operational Reporting on Windows Systems**, update the following

- In step 2, update the first bullet to the following:
 - Connect to PPM database as SYSDBA and run the SQL commands as follows:

```
grant select_catalog_role to <PPM_SCHEMA>;
grant execute_catalog_role to <PPM_SCHEMA>;
grant create_job to <PPM_SCHEMA>;
grant create_materialized_view to <PPM_SCHEMA>;
grant dba to <PPM_SCHEMA>;
grant become_user to <PPM_SCHEMA>;
grant create_view to <PPM_SCHEMA>;
grant create_sequence to <PPM_SCHEMA>;
BEGIN
    DBMS_STREAMS_AUTH.GRANT_ADMIN_PRIVILEGE(grantee => '<PPM_SCHEMA >',
grant_privileges => true);
END;
grant execute on DBMS_APPLY_ADM to <PPM_SCHEMA>;
grant execute on DBMS_CAPTURE_ADM to <PPM_SCHEMA>;
grant execute on DBMS_STREAMS_ADM to <PPM_SCHEMA>;
alter user <PPM_SCHEMA> quota unlimited on <TABLE_SPACE_NAME>;
```

- In step 3, update step ii of the first bullet to the following:
 - ii. Grant necessary privileges to the new schema:

```
grant connect to <reporting_shcema_name>;
grant create_procedure to <reporting_shcema_name>;
grant create_session to <reporting_shcema_name>;
grant create_sequence to <reporting_shcema_name>;
grant create_synonym to <reporting_shcema_name>;
```

```
grant create table to <reporting_shcema_name>;
grant create view to <reporting_shcema_name>;
grant create materialized view to <reporting_shcema_name>;
grant create database link to <reporting_shcema_name>;
grant alter session to <reporting_shcema_name>;
grant analyze any to <reporting_shcema_name>;
grant select on v_$parameter to <reporting_shcema_name>;
grant create job to <reporting_shcema_name>;
grant EXECUTE ANY PROGRAM to <reporting_shcema_name>;
grant MANAGE SCHEDULER to <reporting_shcema_name>;
grant select on dba_scheduler_programs to <reporting_shcema_name>;
grant select on dba_scheduler_schedules to <reporting_shcema_name>;
grant select on dba_scheduler_jobs to <reporting_shcema_name>;
alter user <reporting_shcema_name> quota unlimited on <TABLE_SPACE_NAME>;
DBMS_RULE_ADM.GRANT_SYSTEM_PRIVILEGE(DBMS_RULE_ADM.CREATE_RULE_OBJ,
'<reporting_shcema_name>');
DBMS_RULE_ADM.GRANT_SYSTEM_PRIVILEGE (DBMS_RULE_ADM.CREATE_RULE_SET_OBJ,
'<reporting_shcema_name>');
DBMS_RULE_ADM.GRANT_SYSTEM_PRIVILEGE (DBMS_RULE_ADM.CREATE_EVALUATION_
CONTEXT_OBJ, '<reporting_shcema_name>');
```

Release Notes

Insufficient information about skipping the Request Creation Confirmed page

Location: *Release Notes*, version 9.22

Error: Insufficient information about the Request Details page displays incorrect request status after skipping the Request Creation Confirmed page. (QCCR1L54861)

Correction: Add a note as follows:

Note: If an execution workflow step is set as the first step, the step may not finish executing when you are directed to the Request Details page, even when you select the option **Finish Execution before displaying the request page to the user** in the Execution window of PPM Workbench. In this case, you should refresh the Request Details page after the step completes the execution so that PPM Center can display correct request status and you can make further changes to the request.

New features of kDeploy.sh script is not included in 9.22 Release Notes

Location: *Release Notes*, version 9.22

Error: The new features of the `kDeploy.sh` script are not included in the release notes. (QCCR1L54883)

Correction: Add the descriptions of the new features in the release notes. For details of these features, see ["Enhanced kDeploy.sh Tool" on page 77](#)

Incorrect problem description of QCCR1L52233

Location: *Release Notes*, version 9.22

Error: The description of QCCR1L52233 does not properly reflect the actual fixed issue.

Correction: Correct the problem description of QCCR1L52233 as follows:

You are able to edit the status of a staffing profile even when it is canceled.

Installation and Administration Guide

Confusing descriptions about the use of external Web server

Location: *Installation and Administration Guide*, version 9.20

Error: The note "To use HTTPS, you must use an external Web server" in the section "Server Cluster Hardware Load Balancer Configuration" is confusing.

Correction: Remove the note and add the descriptions as follows in the section:

If you use hardware load balancer to forward HTTPS to PPM Server, you must also have an external Web server.

Incorrect description about SM_PASSWORD in the guide

Location: *Installation and Administration Guide*, version 9.20

Error: The description about the `SM_PASSWORD` parameter in the guide is incorrect.

Correction: Updated the description as follows:

Password that PPM Center uses to access Service Manager. You must encrypt this password by using the `kEncrypt.sh` script, which is located in the `bin` directory of the PPM Server. Then remove `###` from the beginning and the end of the encrypted password.

Microsoft Telnet server configuration not supported on Windows 2008

Location: *Installation and Administration Guide*, version 9.20

Error: The Microsoft Telnet server configuration included in the guide is not supported on Windows 2008.

Correction: Change the section name from Configuring Microsoft Telnet Server in Windows 2003 and 2008 Servers to Configuring Microsoft Telnet Server in Windows 2003 Server.

Insufficient information about multicast communication

Location: *Installation and Administration Guide*, version 9.20

Error: The information about setting up multicast communication is insufficient in the guide.

Correction:

- Add the statement as follows in the "Server Cluster/External Web Server Configuration" section:

The nodes also accept TCP/UDP connections from other nodes for cache synchronization and cluster monitor.

- Add the information as follows in the table "PPM Center ports and protocols":

Communication Channel	Protocols	Ports
App Server nodes	TCP/UDP	Customized in <PPM_HOME>/conf/integrity.conf, cache.conf, and <PPM_HOME>/conf/jboss/cluster-services.xls. It depends on your requirement.

The MULTICAST_NIC_IP parameter was not documented

Location: *Installation and Administration Guide*, version 9.20

Error: The MULTICAST_NIC_IP server configuration parameter was introduced in PPM Center version 9.14, but it was not added to the *Installation and Administration Guide* for PPM Center version 9.20. (QCCR1L54488)

Correction: Add the following description to the document:

Parameter Name	Description, Usage	Default and Valid Values
MULTICAST_NIC_IP	If the MULTICAST_NIC_IP parameter is specified in the <code>server.conf</code> file, the JGroup and MULTICAST Channel multicast sockets will bind to the NIC that you specified by using the MULTICAST_NIC_IP parameter. The value of the MULTICAST_NIC_IP parameter can be a host name or an IP address.	Valid value: A host name or an IP address

Having “Server Tools: Execute admin tools” Access Grant alone does not provide access to the Application Exception Details Page

Location: *Installation and Administration Guide*, version 9.20, page 281 of the original edition, or page 261 of the third edition

Error: The note on the page says "To access the Search Exceptions page, you must have an Administrator license and the “Server Tools: Execute admin tools” access grant". However, this does not provide access to the Application Exception Details page. (QCCR1L54688)

Correction: The "Sys Admin: Edit Services Schedules" access grant is also required. The document shall be updated as follows:

Note: To access the Search Exceptions page, you must have an Administrator license and the following access grants:

- Server Tools: Execute admin tools
- Sys Admin: Edit Services Schedules

System Requirements and Compatibility Matrix

The documentation does not clearly indicate whether NLS Charset is recommended or compulsory for AL32UTF8, also not clear whether WE8MSWIN1252 can be used

Location: *System Requirements and Compatibility Matrix*, version 9.20~9.22

Error: The documentation does not clearly indicate whether NLS Charset is recommended or compulsory for AL32UTF8, also not clear whether WE8MSWIN1252 can be used. (QCCR1L55268)

Correction: Add the following note to the document:

Note: WE8MSWIN1252 is supported for legacy reasons. For new PPM Center installations, HP strongly recommends the use of AL32UTF8.

Mozilla Firefox versions supported

Location: *System Requirements and Compatibility Matrix*, version 9.20~9.22

Error: It is inaccurate by stating that PPM Center 9.20 supports Mozilla Firefox 11 or later. (QCCR1L56700, QCCR1L56486)

Correction: In the "Platform and Browser Requirements" section, update the Mozilla Firefox versions supported from "Mozilla Firefox 11 or later" to "Mozilla Firefox 11 to Mozilla Firefox 31.2 Extended Support Release (ESR)".

Defining a Portlet Event

The following procedure describes how to define a portlet event. These instructions are applicable to the third step (Set up Display Options) of the Portlet Definition wizard.

Portlet events are used to build communication between two portlets, which is a way to implement the portlet drill-down feature. A portlet event should be defined in the drill-from portlet.

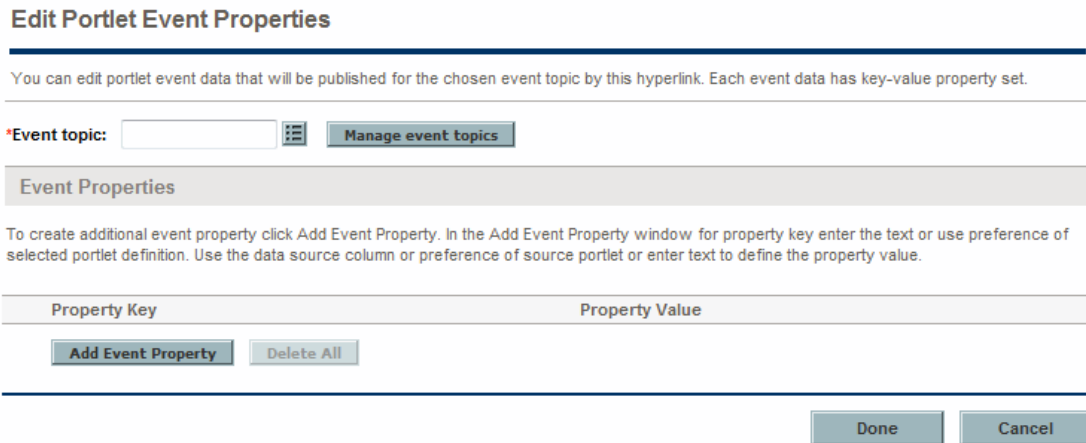
To define a portlet event in the drill-from portlet:

1. On the Set up Display Options step of the Create Portlet Definition (<Portlet Type>) page, from the Hyperlink Options section, select **Portlet Event**.

Note: For list portlets, click **Add Column** to open the Add Display Column dialog box, and then click **Portlet Event**.

2. Click **Edit**.

The Edit Portlet Event Properties dialog box appears.



3. Provide an event topic in either of the following two ways:

- Use the auto-complete button to provide an existing event topic
- Add a new topic.

To add a new topic:

i. Click **Manage event topics**.

The Manage portlet event topics dialog box opens.

ii. In the **New Topic** field, enter the event topic name.

iii. Click **Add**.

The event topic you added is listed under the Portlet Event Topics.

iv. Click **Done**.

You are back to the Edit Portlet Event Properties dialog box.

v. Use the auto-complete button to select the event topic you added.

4. Click **Add Event Property**.

The Add Event Property dialog box appears.

Add Event Property

***Property Key:**

Preference:

Text:

Portlet Definition:

TEST_PORTLET_EVEN
⋮

Preference:

REQUEST_TYPE_NAMES
▼

***Property Value:**

Data Source Column:

Text:

DESCRIPTION

DESCRIPTION
▼

Add

Cancel

5. Provide the event property details using the information from the following table.

Field Name (*Required)	Description
*Property Key	<ul style="list-style-type: none"> ■ Preference <ul style="list-style-type: none"> ○ Portlet Definition: Select the drill-to portlet you want to build communication with the drill-from portlet. Choices are limited to the portlets that have preference fields in their portlet definitions. ○ Preference: Select the desired preference of the portlet definition you decided in the Portlet Definition field. ■ Text: Provide an alphanumeric string up to 200 characters in length.
*Property Value	<p>Indicate the data to use.</p> <p>Choices include:</p> <ul style="list-style-type: none"> ■ Data Source Column. Select a column. Choices are limited to the columns available in the data source of the drill-from portlet. ■ Text. Provide an alphanumeric string up to 200 characters in length.

6. Click **Add**.

The information is added to the Edit Portlet Event Properties dialog box and the Add Event Property dialog box disappears.

7. (Optional) To delete an event property:
 - Click the **Delete** icon next to the unwanted event property.
 - Click **Delete All** to remove all the event properties at one time.
8. Once the event properties are correctly defined, click **Done**.

The Edit Portlet Event Properties dialog box disappears.

After defining a portlet event in the drill-from portlet, you should enable portlet communication in the drill-to portlet before the portlet communication is built. To do so:

1. From the menu, select **Search > Administrative > Portlet Definitions**.
2. Click **Search**.
3. Select the drill-to portlet.

The Configure Portlet Definition page opens.

4. In the Portlet Communication tab, click the **Enable portlet communication (user can choose to disable it)** option.
5. In the **Event topic** field, use the auto-complete button to select the event topic you added in the drill-from portlet.
6. Click **Done**.
7. Go to the Edit Preferences page of the drill-to portlet.

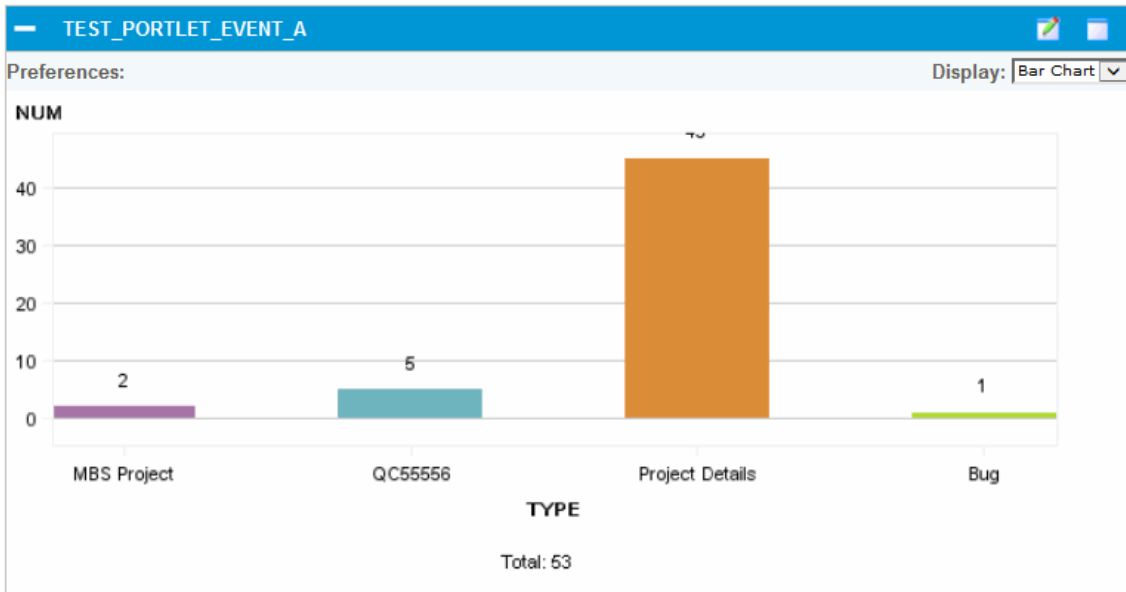
For instructions about how to go to the Edit Preferences page, see the *Getting Started* guide.

8. Click **Enable portlet communication**.
9. Click **Done**.

Usage Sample

The following images provide details about the data source and portlet configuration used to build portlet communication between two portlets using portlet events.

The following image shows an example of a drill-from portlet.



If you click either of the four type, the drill-to portlet having requests of that type is shown. For example, if you click MBS Project, the drill-to portlet displays requests of the request type MBS Project.

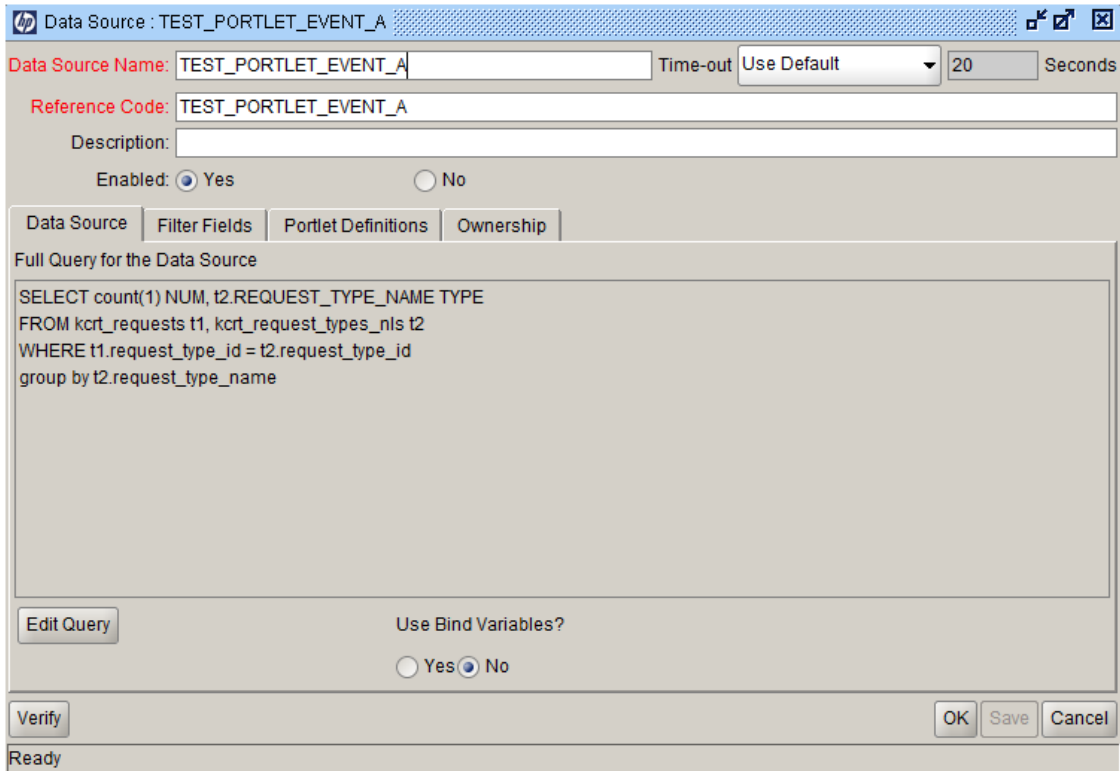
A table view titled 'TEST_PORTLET_EVENT_B' showing a list of requests. The table has three columns: Request Number, Description, and Priority code. The first two rows are visible. There are navigation buttons and an 'Export to Excel' link at the bottom.

Request Number ▲	Description	Priority code
30640	test1	
30641	test	

Export to Excel | < < Showing 1 to 2 of 2 > >

TEST_PORTLET_EVENT_A

This is the data source of the drill-from portlet TEST_PORTLET_EVENT_A.



This is event property details of the event topic defined in the portlet TEST_PORTLET_EVENT_A.

Add Event Property

*Property Key: Preference: Portlet Definition: **PORTLET_EVENT_B**

Preference: **REQUEST_TYPE_NAMES**

Text: _____

*Property Value: Data Source Column: **TYPE**

Text: _____

Add **Cancel**

TEST_PORTLET_EVENT_B

This is the data source of the drill-to portlet TEST_PORTLET_EVENT_B.

Data Source : TEST_PORTLET_EVENT_B

Data Source Name: TEST_PORTLET_EVENT_B Time-out Use Default 20 Seconds

Reference Code: TEST_PORTLET_EVENT_B

Description:

Enabled: Yes No

Data Source | Filter Fields | Portlet Definitions | Ownership

Full Query for the Data Source

```
SELECT t2.REQUEST_TYPE_NAME TYPE, t1.REQUEST_NUMBER REQUEST_NUMBER, t1.DESCRPTION DESCRIPTION,
t1.PRIORITY_CODE PRIORITY_CODE
FROM kcr_requests t1, kcr_request_types_nls t2
WHERE t1.request_type_id = t2.request_type_id
```

Edit Query Use Bind Variables?
 Yes No

Verify OK Save Cancel

Ready

Data Source : TEST_PORTLET_EVENT_B

Data Source Name: TEST_PORTLET_EVENT_B Time-out Use Default 20 Seconds

Reference Code: TEST_PORTLET_EVENT_B

Description:

Enabled: Yes No

Data Source | Filter Fields | Portlet Definitions | Ownership

Seq	Name	Token	Validation	Required	Enabled
1	request_type	REQUEST_TYPE_NAMES	Text Field - 200	N	Y

Verify OK Save Cancel

Ready

Enhanced kDeploy.sh Tool

The `kDeploy.sh` script is enhanced in the following functionalities:

- ["Deploying Hotfix" below](#)
- ["Undeploying Hotfix" on the next page](#)
- ["Redeploying Hotfix" on the next page](#)

Deploying Hotfix

In previous versions, running the command `sh ./kDeploy.sh -hotfix <hotfix_bundle_name>` deploys a hotfix without checking the information of the hotfixes that have been installed on the current instance. This would cause the newly installed hotfix unable to work, because it might have replaced some files in the previous hotfixes.

The enhanced `kDeploy.sh` tool would perform conflict check before installing a hotfix:

- If the hotfix files do not exist on the current instance, running the deployment command successfully installs the hotfix.
- If the hotfix is checked to be conflicting with some files on the current instance, the installation would fail.

To address the conflict issue and to continue the installation, you can contact HP Software Support who would provide a `.lst` file that contains the latest MD5 code. You can then run the following command:

```
sh ./kDeploy.sh -supersede <hotfix_bundle_name> <hotfix_bundle_name>.lst
```

If you encounter further conflict issues when running this deployment command, contact HP Software Support for solutions.

After the hotfix is deployed successfully, the enhanced `kDeploy.sh` tool continues to verify whether or not the hotfix is deployed correctly.

Undeploying Hotfix

Running the command `sh ./kDeploy.sh -undeploy <hotfix_bundle_name>` undeploys a hotfix, and this command would perform files dependency check before undeploying the hotfix:

- If the hotfix files are not included in any other hotfix, running the command undeploys it directly.
- If some files in the hotfix are also included in the hotfixes that are installed later than it, you should undeploy those hotfixes first by running the above command.

Note: In undeploying a hotfix, running the undeploy command rolls back only DB changes and file changes. It does not roll back DML (Data Modification Language) changes.

Redeploying Hotfix

If you have successfully deployed a hotfix, and you want to redeploy it, you can run the deployment command `sh ./kDeploy.sh -hotfix <hotfix_bundle_name>` again.

When running this command for redeploying purpose, it would:

1. Perform conflict check.
2. Perform files dependency check.
3. Undeploy the hotfix.
4. Deploy the hotfix again.

Limitations

The enhanced `kDeploy.sh` tool contains the following limitations:

- Only DDLs which are used to update a view or a package are fully supported. Other SQLs, like DML or DDL used for altering a table can be deploy successfully but cannot be rolled back by this tool.
- The files contained in the `fs_home` directory are not fully supported by this tool. They can be deployed, but cannot be rolled back.

- This tool does not support a patch that is completely composed of SQLs. You cannot use this tool to deploy, undeploy, or redeploy such patches.

Best Practices on Builder Portlets Pagination

Background

PPM Center version 9.22.0002 introduced pagination for builder portlets of the Request category. Basically, PPM Center transforms the original SQL data source of a builder portlet, for example,

```
Select a A, b B, c C
from T1, T2, Tn
where T1.x = T2.x
and T1.y = 'Y'
order by a
```

to a new pagination-aware format, similar to the following:

```
Select *
  from (Select a A, b B, c C, row_number() over(order by a) as record_index
        from T1, T2, Tn
        where T1.x = T2.x
        and T1.y = 'Y')
 where record_index between ? and ?
```

In earlier versions, when PPM Center renders a builder portlet page, it fetches all matching result from the database, iterates through the result, and finds out the right amount of result for the given page and renders them. This was time-consuming, especially when the result set is large. Sometimes it causes out-of-memory exceptions.

The new feature, that is, this automatic transformation, not only offers better performance, but also overcomes potential out-of-memory exceptions as the result set is relatively much smaller now.

Limitation and Workaround

However, this pagination functionality was not capable of handling some complex custom SQLs. For example, a custom SQL that has one of the following patterns:

1. A with clause at top level ("at top level" means not in a sub query). Example:

```
with subquery as
  (select count(*) total from kcrt_requests)
  select request_type_id, round(count(1) / subquery.total, 4) * 100 || '%' as
percentage
  from kcrt_requests, subquery
  group by request_type_id,subquery.total
```

2. Set operations (MINUS, Union [ALL], or INTERSECT operator) at top level. Example:

```
SELECT 1 seq,
      'roms' AS envi,
      '/itg/web/knta/global/RunSearch.jsp?SAVED_SEARCH_ID=30000' AS urllink,
      'Update Project and WBS number for OER Grant Application' AS urlname,
      'OER' fundingType
FROM DUAL

UNION ALL

SELECT 2 seq,
      'roms' AS envi,
      '/itg/web/knta/global/RunSearch.jsp?SAVED_SEARCH_ID=30020' AS urllink,
      'Update Project and WBS number for GPL Grant Application' AS urlname,
      'GPL' fundingType
FROM DUAL
```

3. GROUP BY clause at top level, with the **Show Total** check box enabled. Example:

```
SELECT /*+RULE*/
  u.first_name || ' ' || u.last_name resource_full_name,
  pt.period_type_name,
  u.email_address,
  r.user_id,
  SUM(DECODE(ts.period_id,
             pc.period_id,
             DECODE(tsl.state, 1, 0, ae.actual_effort),
             0)) actual_time_current,
  SUM(DECODE(ts.period_id,
             pc.period_id,
             0,
             DECODE(tsl.state, 1, 0, ae.actual_effort))) actual_time_previous,
  SUM(DECODE(tsl.state, 1, ae.actual_effort, 0)) unreleased_time
  FROM tm_actuals      ta,
       tm_actuals_effort ae,
       tm_time_sheet_lines tsl,
       tm_time_sheets   ts,
       rsc_resources    r,
```



```

        ktmg_periods      p,
        ktmg_period_types pt,
        ktmg_periods      pc,
        knta_users        u
WHERE u.manager_user_id in ([SYS.USER_ID])
AND (u.end_date is null or u.end_date >= CURRENT_DATE)
AND ts.resource_id = r.resource_id
AND r.user_id = u.user_id
AND pc.start_date < CURRENT_DATE
AND pc.end_date >= trunc(CURRENT_DATE)
AND pc.period_type_id = pt.period_type_id
AND (p.seq = pc.seq OR p.seq = pc.seq - 1)
AND p.period_type_id = pc.period_type_id
AND ts.period_id = p.period_id
AND ts.status_code != 5
AND tsl.time_sheet_id = ts.time_sheet_id
AND ta.time_sheet_line_id = tsl.time_sheet_line_id
AND ae.actuals_id = ta.actuals_id
AND ta.totals_flag = 'Y'
GROUP BY u.first_name || ' ' || u.last_name,
        pt.period_type_name,
        u.email_address,
        r.user_id

```

4. UNIQUE or DISTINCT inside a SELECT statement. Example:

```
select distinct request_type_id from kcrt_requests
```

In PPM Center version 9.22.0003, this limitation is fixed by suppressing new pagination for builder portlet SQLs that contain pattern #1, #2, or #3. Technically, when PPM Center parses SQLs and detects these patterns, it will render builder portlets using non-pagination logic as before. Because SQLs with patterns #1, #2, or #3 are mostly used in graphic portlets, which are not returning too many rows. Therefore there is no impact on performance or memory.

Support for pattern #4 is also available with 9.22.0003. That is, data source SQL that contains pattern #4 will be handled by the new pagination feature.

Considering the complexity of real data source SQLs used in customer's business, a switch is now available for you to disable the new pagination feature at data source level. You can add the the `/*NOPAGINATION*/` tag into the particular SQL statement of your concern. This allows you to disable the feature just in case there are some corner cases that the new pagination solution fails to cover. For example, if you have a data source SQL statement, like the following, not working properly as it was,

```
select distinct request_type_id from kcrt_requests
```

You can switch to non-pagination logic by adding the `/*NOPAGINATION*/` tag into the SQL statement, as follows:

```
/*NOPAGINATION*/ select distinct request_type_id from kcrt_requests
```

Note:

- The `/*NOPAGINATION*/` tag is case-insensitive.
- This tag does not have to be added to the very beginning of a SQL statement. Actually you can add it anywhere as long as the SQL syntax is not broken.
- This tag disables pagination for this particular data source only.

However, HP encourages you to take a look at such complex SQLs and follow the ["Best Practices"](#) below to re-factor them.

Best Practices

This section provides some best practices to help you eliminate the impact of the pagination limitation in your custom SQLs.

- **Avoid suppressing index**

- Do not use "`<>`" or "`!=`" when it is possible to use "`=`"
- Do not use "`is null`" or "`is not null`" when it is possible to use some specified value
- Do not use "`like`" when the parameter value is certain
- Create function-based index when a function is used in condition expressions
- Pay attention to type mismatch. For example, "`where varchar2column=1234`" will suppress index on `varchar2column`, you should use "`where varchar2column='1234'`"

- **Optimize Nested Query as much as Possible**

- Nested query can appear in `SELECT` statements, `FROM` clauses, and `WHERE` clauses. Use as less nested queries as possible.
- Never use `ORDER BY` clause in inline views
- Use materialized views to replace inline views whenever possible

- **Do not use Row_number()**

This analytical function will introduce sorting as well. It may cause conflict and performance issue when the original SQL statements are transformed.

- **Optimize access control**

- **Do not use** `KCRT_PARTICIPANT_CHECK.is_participant_of_request()`. **Instead, join** `KCRT_PARTICIPANT_CHECK_V`.
- **Do not involve** `KCRT_PARTICIPANT_CHECK_V`, `KNTA_ELIGIBILITY_CHECK_V`, or `KNTA_FIELD_SECURITY_V` unless it is definitely necessary. Consider using some alternative filters, for example, `create_by`, `create_date`, `status`, or use a snippet from those views.

Troubleshooting Performance Problems

This section provides information about common performance problems and how to correct them. If you are not using the default or recommended settings, reset your parameters to those values before you try other solutions.

Tip: Consider upgrading to the latest PPM Center service pack. HP has a regular and well-established service pack release cycle. Much of the development effort that goes into these service packs is focused on resolving known performance issues. Review the Release Notes for the latest service pack to determine whether it addresses the performance problem you are experiencing.

Unable to Create New Native Thread on the UNIX Operating System

Problem: Users are not able to create new native thread on the UNIX Operating System.

Possible source: This error occurs when PPM Center requires more threads than the UNIX Operating System supports. The default number of threads that is supported by the UNIX Operating System is 1,024.

Solution: To increase the number of threads supported, you need to update the `kStart.sh` script:

1. Navigate to the `<PPM_Home>/bin` directory and open the `kStart.sh` file in a text editor.

2. Locate the following:

```
if [ $HOST_TYPE = UNIX ]; then
```

3. Add `ulimit -p 2048` under the above text:

```
if [ $HOST_TYPE = UNIX ]; then
ulimit -p 2048
```

4. Run the `kStart.sh` script.

In this example, the OS configuration is updated to allow 2,048 threads for PPM Center.

Too Many Files Opened on the UNIX Operating System

Problem: PPM Centerfiles opened on the UNIX Operating System exceeds the limit.

Possible source: This error occurs when the number of files that are opened on the UNIX Operating System exceeds the limit. On UNIX systems, PPM Center uses the `ulimit` utility in the `kStart.sh` script to set the maximum number of open file descriptors to 1000.

Solution: To increase the limit, you need to update the `kStart.sh` script:

1. Navigate to the `<PPM_Home>/bin` directory and open the `kStart.sh` file in a text editor.

2. Locate the following:

```
if [ $HOST_TYPE = UNIX ]; then
ulimit -n 1000
```

- a. Change the `ulimit` value as follow:

```
if [ $HOST_TYPE = UNIX ]; then
ulimit -n 4096
```

3. Run the `kStart.sh` script.

In this example, the OS configuration is updated to allow 4,096 open file descriptors.

For details about setting the `ulimit` value, see "(UNIX only) Setting the `ulimit` Value" in the *Installation and Administration Guide*.

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 Release Notes (Project and Portfolio Management Center 9.22.0006)

Just add your feedback to the email and click send.

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

We appreciate your feedback!