HP Project and Portfolio Management Center

Software Version: 9.22.0003

Release Notes

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Contents

Chapter 1: Overview

This document is an overview of the changes made to Project and Portfolio Management Center (PPM Center) for version 9.22.0003. It contains important information that is not included in the manuals.

You can find information about the following in this document:

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: What's New in This Release

This section describes what is new in this release.

PPM Center version 9.22.0003 contains defect fixes since version 9.22. Defect fixes included in patches 9.14.0001~9.14.0010 on top of version 9.14 are rolled into version 9.22.0001.

The following enhancements are included in PPM Center version 9.22.0003:

Module	Enhancements
HP Deployment Management	You can specify the port number when using the following three connection protocols to connect to the server: • SSH • SSH2 (Legacy) • SSH2 For details, see "Connecting to Server Not Using Default Port" on page 9
Admin Tools	As an administrator, you can decide the server log information to be notified by email through specifying regular expression or the combination of log levels and regular expression. For details, see "Mail Notification for Specified Server Logs" on page 10

The following server configuration parameters are introduced in PPM Center version 9.22.0003:

Parameter Name	Description, Usage	Default and Valid Values
ENABLE_KCRT_ PARTICIPANT_CHECK_ V_LEGACY	Flags whether or not to use the view KCRT_PARTICIPANT_CHECK_V to check request participant security.	Default: `false` Valid values: `true`, `false`
<logging_parameters>	The logging parameters added to enable the mail notification feature for specified server logs. For details, see "Mail Notification for Specified Server Logs" on page 10.	

Chapter 3: Installation Notes

This procedures includes steps that are valid for PPM Center version 9.22.0003.

> **Caution:** PPM Center version 9.22 is required before you can apply version 9.22.0003 on top of it.

To install version 9.22.0003:

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-patch0003.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 patch0003
   ```

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 9.22.0003.

> **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.

Chapter 4: Enhancements

Enhancements in Version 9.22.0003

The following enhancements are included in version 9.22.0003:

- "Connecting to Server Not Using Default Port" below

- "Mail Notification for Specified Server Logs" on the next page

Connecting to Server Not Using Default 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** filed 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@youdomain.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:

```
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.getProjectsPending(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.PluggableHibernateMDService.runService(PluggableHibernateMDService.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.j
        at
org.springframework.jms.listener.AbstractPollingMessageListenerContainer.receiveAndExecute(AbstractPollingMessageListenerContainer.jav
        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.getProjectsPending(PendingProjectHealthCalculationDAO.java:40)
        ... 44 more
Caused by: java.sql.SQLSyntaxErrorException: ORA-00904: "PENDINGPRO0_"."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 16

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.
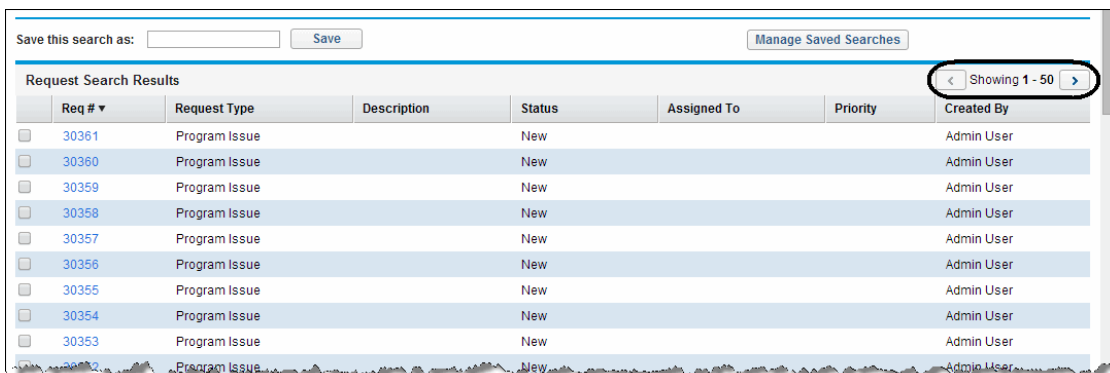
   The Cost Rule Audit Trail dialog opens.

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 the next page

- "Using the Unchecking Showing Total Number Tool from Administration Console" on page 18

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.
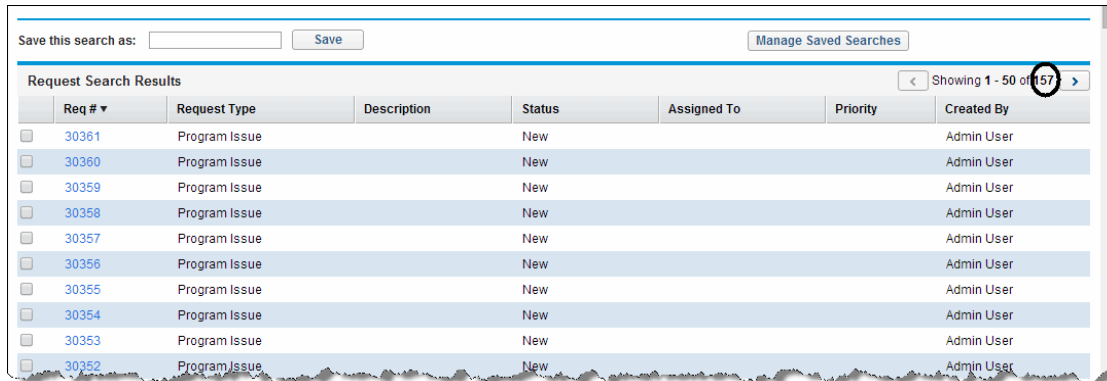

The Request Search Results page for saved searches still displays the total number of records. To clear the total number of records displayed for saved searches, you can use the newly introduced Unchecking Showing Total Number Tool. For more information, see "Using the Unchecking Showing Total Number Tool from Administration Console" on page 18.

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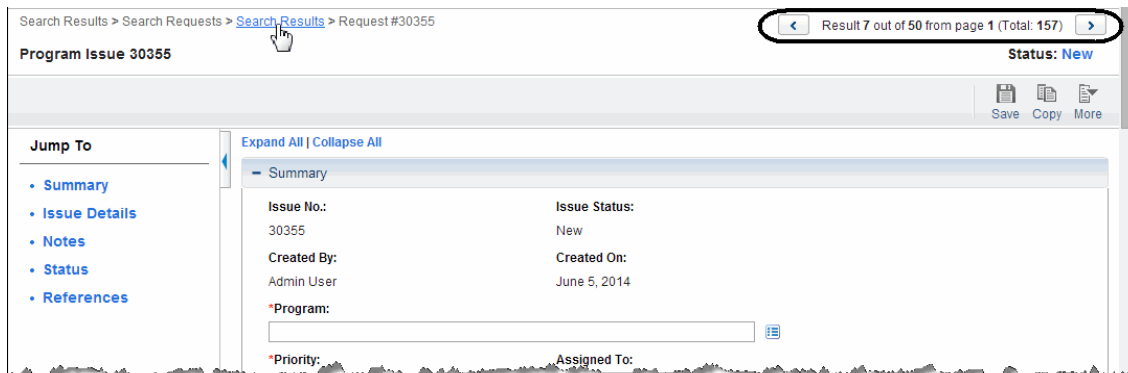
> **Note:** This operation is effective to the current search only.

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,
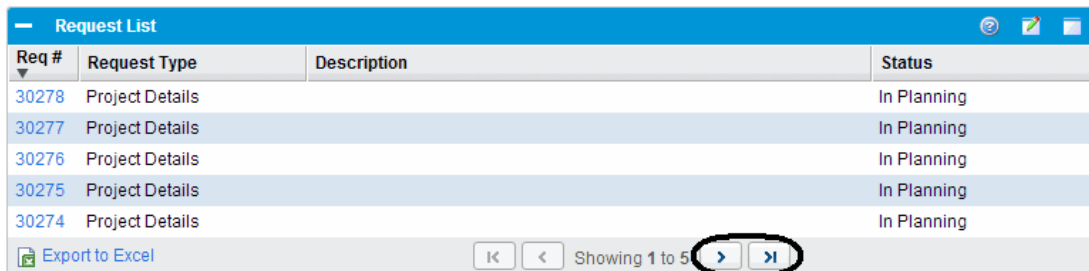
- Be aware of which request you are currently viewing, and

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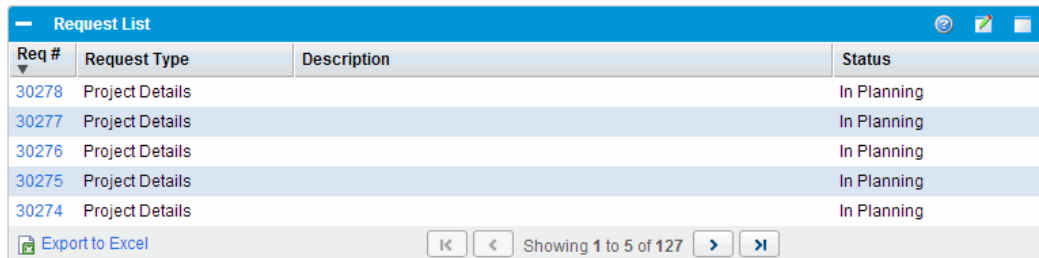
To show total number of records in a Java or builder portlet of the Requests category,

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.

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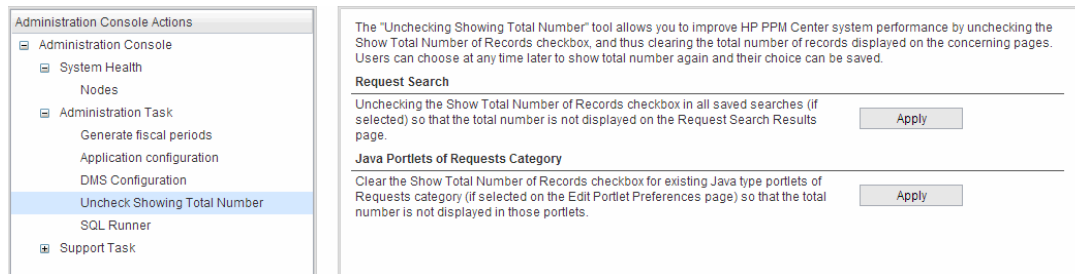
> **Caution:** Be careful when clearing the Show Total Number of Records checkbox. This batch operation is irreversible.

For information about showing total number, see "Enhanced Request Search Pages" on page 16 and "Enhanced Java and Builder Portlets of the Requests Category" on page 17.

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 21

- "New SSH2 Client for PPM Center" on page 22

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

Edit

☑ 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

| Cancel | ◀ Back | Next ▶ | Preview | Finish |

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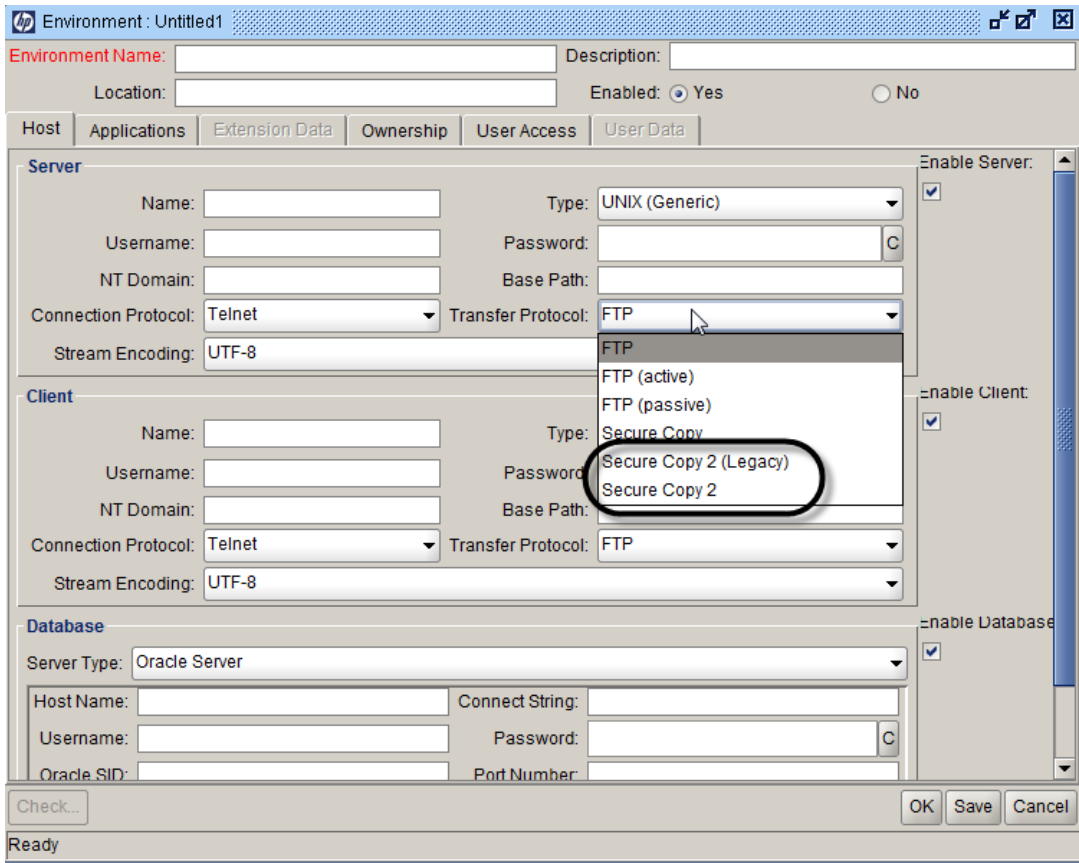
To use the new SSH2 client, you should configure the following server configuration parameters from the Administration Console.

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). **Caution:** This parameter should not be set to `true` on a production environment.	Default: `false` Valid values: `true`, `false`

SSH2_JSCH_KNOWN_ HOSTS_FILE_PATH	When a value is defined in this parameter (valid file path), PPM Center will use it as `known_ hosts` file to validate keys of trusted hosts it connects to.	Default: N/A
	The remote servers you will connect to should be included in the `known_hosts` file (using OpenSSH format), otherwise the client cannot connect to them (unless the `SSH2_JSCH_ DISABLE_STRICT_HOST_KEY_CHECKING` parameter is set to `true`, in which case PPM Center does not search for a `known_hosts` file).	
	If this parameter is left empty, PPM Center first checks if there is a `<PPM_HOME>`/known_hosts file to use. If no, PPM Center then checks known standard locations for `known_hosts` file:	
	`.../.ssh/known_hosts` and `.../etc/ssh/ssh_known_hosts` under UNIX `%USERPROFILE%\ssh\known_hosts` and `%USERPROFILE%\.ssh\known_hosts` under Windows	
	Note: When a Linux user connects to a remote server using the `ssh` 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 `.../.ssh/known_ hosts`.	

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 5: 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

Chapter 6: Fixes

Fixes in Version 9.22.0003

Dashboard

Tracking Number	Problem Description
4648746421	Custom portlets do not work as expected when displayed in list after you upgrade PPM Center to 9.22.0002. (QCCR1L55390) 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 "Best Practices on Builder Portlets Pagination" on page 50.

Documentation

Tracking Number	Problem Description
4648446038	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 *Installation and Administration Guide* 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: If Oracle Database is running over Oracle VM (OVM), HP recommends to enable the Hard Partitioning feature, also known as CPU pinning. For more information, see Oracle VM documentation: http://docs.oracle.com/cd/E26996_01/E18549/html/vm_hardpart.html (QCCR1L55177)

Tracking Number	Problem Description
4648138843	The information about how to customize menu arrows is not documented. For details, see "Information about how to customize menu arrows is not documented" on page 43. (QCCR1L55151)

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	The SMTP server rejects ALM Integration email notifications when they are sent from the address "DO-NOT-REPLY" . (QCCR1L55501, QCCR1L55063) 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".

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	Performance issue with request search. (QCCR1L55138) 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. 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.
4647817879	The shared pool grows fast during workflow execution time. (QCCR1L55139)
4647817879	Creating a request is slow at the first time. (QCCR1L55140)
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)

Tracking Number	Problem Description
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)

Tracking Number	Problem Description
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 kTMDataConversion.sh. (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	Constraints check should be added to SuperSupport. (QCCR1L53984, QCCR1L53979) 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 20.

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)

Tracking Number	Problem Description
4646530830	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)

This issue is addressed by introducing the server configuration parameter SEARCH_ALL_REQUEST_TYPE. Setting this parameter to true, 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. |
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 yes. (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) |

Tracking Number	Problem Description
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	App and Service nodes fail to start up due to OutOfMemory error. (QCCR1L53898, QCCR1L53391) 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.
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)

Tracking Number	Problem Description
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)
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 7: 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 9.22.0003

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 8: Documentation Errata

The following documentation items are incorrect:

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

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 document:

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.

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.

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.

Release Notes

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 48

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.

Customizing the Standard Interface

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

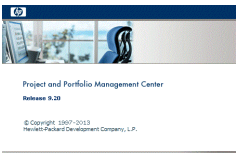| Image	File Location	Size (in pixels)
	<PPM_Home>/server/*<PPM_Server_Name>*/deploy/ itg.war/yui/build/menu/assets/skins/ppm/ menu-arrow.png	26 x 16
	<PPM_Home>/server/*<PPM_Server_Name>*/deploy/ itg.war/yui/build/menu/assets/skins/ppm/ menu-expander.png	12 x 12

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		
	• *<PPM_Home>*/server/*<PPM_Server_Name>*/deploy/ itg.war/web/knta/global/images/favicon-whiteonred.ico	16 x 16
	• *<PPM_Home>*/server/*<PPM_Server_Name>>*/deploy/itg.war/html/MercurySplash.gif	450 x 301
	• *<PPM_Home>*/server/*<PPM_Server_Name>>*/deploy/ itg.war/images/common/CorporateBrand.png	480 x 40
	• *<PPM_Home>*/server/*<PPM_Server_Name>>*/deploy/ itg.war/web/new/img/HP_Blue_64x64.png	64 x 64
	• *<PPM_Home>*/server/*<PPM_Server_Name>>*/deploy/itg.war/web/new/img/ppm_logo.png	400 x 400

Installation and Administration Guide

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 moniter.

- 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 `server.conf` 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

HP Solution Integrations 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\smrfc 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.

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, 9.21, 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:

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

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 `kDepoly.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.

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Just add your feedback to the email and click send.

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