

# CA PPM SaaS - 15.5.1

## CA PPM 15.5.1 Change Impact and Upgrade

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# CA PPM 15.5.1 Change Impact and Upgrade

The *Change, Impact, and Upgrade* page highlights significant changes, required actions, known issues, and recommended options for customers upgrading from the previous release to CA PPM Release 15.5.1. Plan your CA PPM SaaS upgrade and determine the options that fit your business needs. Teams can also use this information to plan your new feature adoption, onboarding, and training efforts.



**Important! You cannot upgrade to 15.5.1 directly.** Due to the different specs for Java 8 and Java 11, you must upgrade to 15.5.0 first and then switch to Java 11 and apply the 15.5.1 service pack. See the known issues section below for important details.

**Before upgrading from an earlier release, review this page for all subsequent releases.**

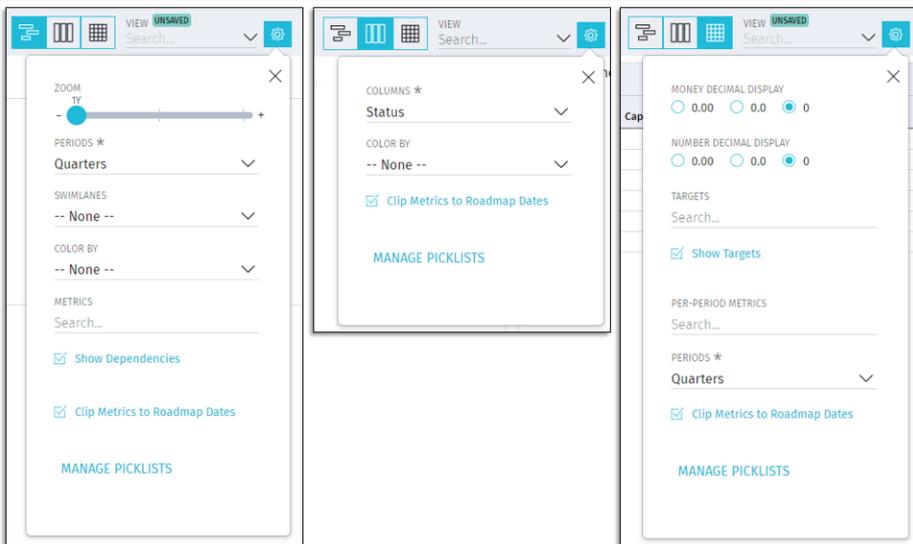
For example, you are upgrading from Release 14.4 to 15.5.1. Review the changes in releases 15.1, 15.2, 15.3, 15.4, 15.4.1, 15.5, and 15.5.1 before applying the 15.5.1 service pack release. To switch to the *Change Impact and Upgrade* page for each release, click the **Versions** menu at the top of this page. Check back often for updated content, especially if you downloaded a PDF or EPUB file. The English edition of this documentation is periodically updated with new information including new examples, explanations, corrections, and patch information.

To prepare for an upgrade to CA PPM SaaS Release 15.5.1, review the supported upgrade paths, features, enhancements, and required upgrade actions. The following information summarizes how the new changes introduced in this release impact your upgrade experience to CA PPM SaaS Release 15.5.1.

# Release 15.5.1 Changes: New User Experience Features

Feature, Enhancement, or Change:	Upgrade A
<p>1</p> <h3>To-Do Item Owners and Due Dates</h3> <ul style="list-style-type: none"> <li>You can now define and edit a due date for to-do items. The due date for a to-do item must fall within the project date range.</li> <li>You can also assign and update an owner for to-do items from the active resources, roles, or teams that are available to the parent task.</li> </ul>	<p><b>Upgrade A</b> action is re to-do item in your pre release, th remain int; upgrade. V open to-dc 15.5.1, the following r appear wit values:</p> <ul style="list-style-type: none"> <li>OWNEI</li> <li>DUE D/</li> </ul> <p>You can up empty fiel values in a or <i>complet</i> items.</p>
<p>2</p> <h3>How to Manage Local Picklists</h3> <p>Prior to this release, you had to click Settings and then click the drop-down menu for a picklist to see the Manage option for all local and global picklists.</p>	<p><b>Upgrade A</b> action is re</p> <p>You can nc manage yo picklists fo roadmap u either of th following r</p> <ul style="list-style-type: none"> <li>Click th link av: from th COLUMN on the layout. edit ac the roa you car active l for mai local pi The ED</li> </ul>

Feature, Enhancement, or Change: Upgrade A



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Feature, Enhancement, or Change:

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### Custom Investment Objects in Roadmaps

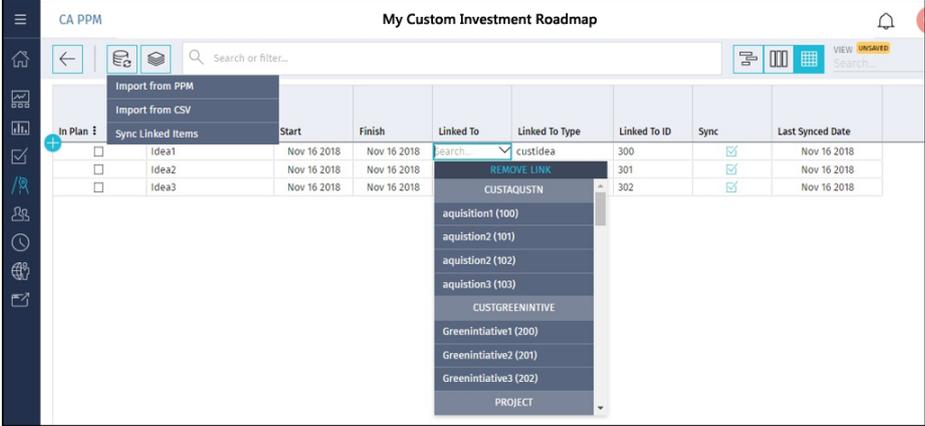
The screenshot shows the 'Properties' configuration page for a custom investment object. The 'Include In Roadmaps' checkbox is checked and highlighted with a red circle. Other visible fields include Object Name (custom-investment), Object ID (custominvestment), API Attribute ID (custCustomInvestments), Content Source (Customer), Description (Custom Investment), Master or Subobject (Master), Partition Model, Master Object, and various 'Enabled' checkboxes (Event, Copy, Export, View All).

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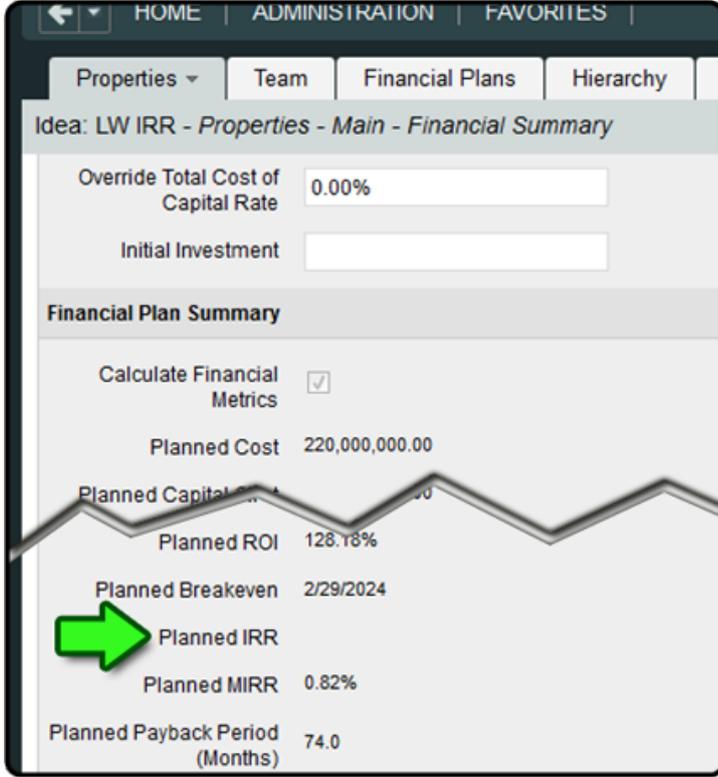
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<p data-bbox="352 1108 834 1146">Synchronize Custom Investments</p>  <p data-bbox="1284 1164 1410 1388">To link and synchronize investment roadmap it perform the following steps after you u</p> <ol data-bbox="1332 1422 1410 2027" style="list-style-type: none"> <li>1. Open the roadmap selection screen and click on 'Investment'.</li> <li>2. You will see the asset list. Select the roadmap item and click on 'Investment'.</li> </ol>	<p data-bbox="1284 1070 1410 1131">Upgrade A</p> <p data-bbox="1284 1131 1410 1164">action is re</p>

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**Tip:** Screenshots on this page have been reduced to prevent clutter. To see more details, zoom-in to magnify your browser view or right-click an image and select **Open image in new tab**.

# Release 15.5.1 Changes: Financial Features for Ideas

Feature, Enhancement, or Change:	Upgrade Action:
<p>1</p> <h2 data-bbox="215 533 813 571">Internal Rate of Return (IRR) Adjustment</h2> <p data-bbox="359 598 1077 719">In previous releases, the Planned IRR for ideas was not calculating a value and was blank in certain scenarios where costs preceeded benefits by about one year. The behavior was limited to detailed plans for ideas; simple plans did successfully calculate IRR.</p> 	<p data-bbox="1098 450 1278 479"><b>Upgrade Action:</b></p> <p data-bbox="1098 499 1394 779"><b>Upgrade Action:</b> No action is required; however, we recommend that you examine your ideas in Classic PPM. Previously blank values for Planned IRR might now calculate a value as a result of this adjustment in 15.5.1.</p> <div data-bbox="1102 819 1399 1314" style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p data-bbox="1121 853 1358 1104"><b>Tip:</b> If no positive (or negative) cash flow exists, IRR is left blank. To learn more, see the following links:</p> <ul data-bbox="1198 1115 1347 1279" style="list-style-type: none"> <li data-bbox="1198 1115 1315 1173">▪ <a href="#">Manage Ideas</a></li> <li data-bbox="1198 1189 1347 1279">▪ <a href="#">Create Financial Summaries</a></li> </ul> </div>

# Release 15.5.1 Changes: Administrative Features

Feature, Enhancement, or Change:	Upgrade Action:
<p>1</p>	<p data-bbox="699 1868 1409 2018"><b>Upgrade Action:</b> No action is required; however, if you decide to this new feature to delete investments with timesheet or transac data, follow these steps (we show the steps for projects; however you can also perform similar steps for other non-project investments):</p>

Feature, Enhancement, or Change:	Upgrade Action:
<p data-bbox="352 331 686 405"><b>Investments with Timesheets or WIP Transactions</b></p> <p data-bbox="352 432 694 712">In prior releases, attempting to mark projects for deletion would result in an error message if the projects had posted actuals. To delete investments with posted timesheets or WIP transaction data, you had to perform the following steps:</p> <ol data-bbox="405 748 694 1070" style="list-style-type: none"> <li>1. Run the Purge Financial Transactions job for the investment to remove the financial transactions.</li> <li>2. Delete the time reporting periods that cover the range of actual time entries for the investment.</li> </ol> <p data-bbox="352 1106 694 1487">Those steps deleted <i>all</i> timesheets in the selected reporting periods and affected timesheet entries for other investments that spanned the same time periods. In this release, you can target the deletion of <i>specific</i> investments without affecting the posted timesheet entries for other active investments.</p> <p data-bbox="352 1523 694 1711">You are no longer required to delete the entire time reporting period. This feature includes the following new options (by default, both options are not activated):</p> <ul data-bbox="373 1724 694 2020" style="list-style-type: none"> <li>▪ A new <i>Allow Marked Investments with Timesheet and Transaction Data to be Deleted</i> system option.</li> <li>▪ A new <i>Delete Marked Investments with Timesheet and Transaction Data</i></li> </ul>	<ol data-bbox="746 293 1410 584" style="list-style-type: none"> <li>1. Before you upgrade: <ol data-bbox="826 331 1410 472" style="list-style-type: none"> <li>a. Review the access right assignments for the Job Role access on your existing Delete Investments job.</li> <li>b. Make a note of the existing job schedules.</li> <li>c. Remove all scheduled instances of the job.</li> </ol> </li> <li>2. After you upgrade to the new release, log in to Classic PPM.</li> <li>3. Click <b>Administration, Reports and Jobs</b>. Review and modify access to the job for all users.</li> </ol> <div data-bbox="783 622 1410 913" style="border: 1px solid #ccc; background-color: #e6f2e6; padding: 10px; margin: 10px 0;"> <p data-bbox="804 651 1410 875"> <b>Tip:</b> As an administrator, restrict who can run this job because it can result in the deletion of data that may need to be reviewed. We recommend that access to the job be granted only to users who are responsible for reviewing the time reporting periods marked for deletion and for reviewing the investments that are marked for deletion.</p> </div> <ol data-bbox="746 952 1410 1756" style="list-style-type: none"> <li>4. Click <b>Administration, Project Management, Settings</b>.</li> <li>5. Select the <b>Allow Marked Investments with Timesheet and Transaction Data to be Deleted</b> check box.</li> <li>6. Click <b>Home, Portfolio Management, Projects</b>. Open a project with known actuals and timesheet data.</li> <li>7. Click <b>Properties, Settings</b>. In the <b>General</b> section, clear the <b>Active</b> check box and save your changes. Before you can delete projects and investments, you are required to make their status <i>inactive</i>.</li> <li>8. Click <b>Home, Portfolio Management, Projects</b>. Select one or more check boxes for projects in the list and click <b>Mark for Deletion</b>.</li> <li>9. (Optional) Click <b>Administration, Project Management, Time Reporting Periods</b>. Select the check boxes for one or more reporting periods and click <b>Mark for Deletion</b>.</li> <li>10. Click <b>Home, Reports and Jobs</b>. Click the <b>Jobs</b> tab.</li> <li>11. Open the <b>Delete Investments and Time Reporting Periods</b> job.</li> <li>12. In the <b>Parameters</b> section, select the <b>Delete Marked Investments with Timesheet and Transaction Data</b> check box.</li> <li>13. Run or schedule the <b>Delete Investments and Time Reporting Periods</b> job.</li> </ol> <div data-bbox="703 1794 1410 2020" style="border: 1px solid #ccc; background-color: #e6f2e6; padding: 10px; margin: 10px 0;"> <p data-bbox="724 1823 1410 1980"> <b>Tip:</b> When you delete a project or investment, the application removes any investment-specific charge code from the database (PRCHARGECODE table). Any rate matrix rows that used the investment-specific charge code are also removed.</p> </div>

Feature, Enhancement, or Change:	Upgrade Action:
<p>parameter when running the Delete Investments and Time Reporting Periods job.</p> <div data-bbox="400 445 699 725" style="border: 1px solid green; padding: 5px; margin: 10px 0;"> <p> <b>Tip:</b> The <i>Delete Investments</i> job in previous releases is renamed <i>Delete Investments and Time Reporting Periods</i> in 15.5.1.</p> </div> <ul style="list-style-type: none"> <li>▪ This feature includes the removal of investments and time entries associated with incidents in the Classic PPM Demand Management functionality.</li> </ul>	

2

### View Time Reporting Periods Marked for Deletion

This release helps users identify which closed time reporting periods are marked for deletion. As an administrator, review the new *Marked for Deletion* column on the Time Reporting Periods page before running the Delete Investments and Time Reporting Periods job.

**Upgrade Action:** No action is required. To review the changes introduced by this enhancement, follow these steps:

1. Click **Administration, Project Management, Time Report Periods**.
2. Select the check boxes for one or more closed reporting periods and click **Mark for Deletion**.
3. Review the new **Marked for Deletion** column. A yellow cl mark appears for rows that were selected for deletion.
4. (Optional) You can also filter time reporting periods with new **Marked for Deletion** filter field.

3

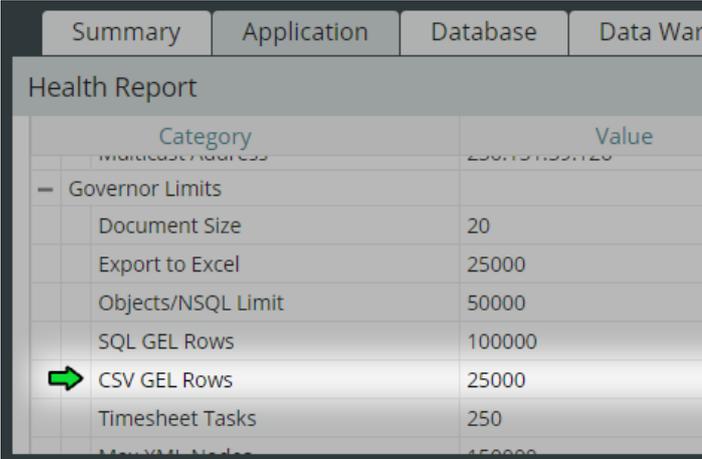
### API-Enable Custom Subobjects for the New User Experience

You can now API-enable custom subobjects of the Project object. You can then add these sub objects as modules to a project blueprint. When you create a new project using the blueprint, the sub object appears as a tab with a grid containing the selected attributes.

**Upgrade Action:** To display the subobjects that were defined prior to this release in the project pages of the New User Experience, complete the following steps:

1. In Classic PPM Studio, API-enable the subobjects.
2. Provide API Attribute IDs for the sub object attributes.
3. In the new UX, configure a project blueprint to include the sub objects as modules.
4. Publish the blueprint.
5. Create a project using the blueprint.
6. Verify that the sub objects appear as tabs on the project

4

Feature, Enhancement, or Change:	Upgrade Action:
<p><b>100-Row GEL Governor CSV Files</b></p> <p>In 15.5.1, the same limit for Excel is enforced for CSV with MAX_CSV_GEL_ROWS=25000.</p> <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> <b>Tip:</b> Until you upgrade to 15.5.1, avoid creating GEL scripts that attempt to read, run, or append records in very large CSV files. Out-of-memory errors and application outages can occur.</p> </div>	<p><b>Upgrade Action:</b> No action is required. If you had GEL scripts in a previous release that were causing issues, the new limit prevents application outages from related out-of-memory errors associated with attempting to read a large CSV file in a GEL script. Make adjustments to your existing GEL scripts to limit the number of rows being read from a CSV file to 25,000.</p> <p>Governor Limits are available on the <b>Application</b> tab of the Health Report. The label changed from <b>GEL ROWS</b> to <b>SQL GEL ROWS</b> and <b>CSV GEL ROWS</b> was added to control the number of rows read from a CSV file.</p>  <p>Do not confuse the CSV limit with the SQL limit, which remains at 100,000 rows (MAX_SQL_GEL_ROWS=100000).</p>

5

**New processFileLines GEL Tag**

This tag allows you to read one record at a time from a file. Without this tag, previous releases required reading the whole file at once and then iterating through the file.

**Upgrade Action:** No action is required.

**Example:**

```
<f:processFileLines
fileName="${logdir}/${logfile}" delimiter=" "
indexVar="d" embedded="false" var="logfileRecord"
<!-- do steps/activities here -->
</f:processFileLines>
```

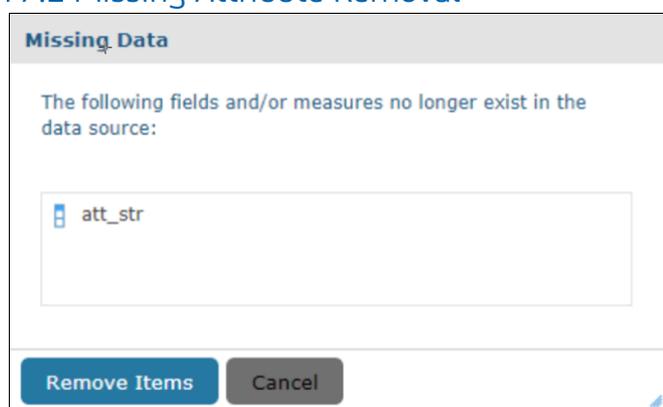
## Release 15.5.1 Changes: Jaspersoft 7.1

Feature, Enhancement, or Change:	Upgrade Action:
<p><b>1</b></p> <p><b>7.1 Upgrade</b></p>	<p><b>Upgrade Action:</b> After upgrading to 15.5.1, SaaS customers are already at 7.1. On-premise customers can take advantage of new features and enhancements in 7.1 or delay their upgrade and remain on 6.4.2.</p>

Feature, Enhancement, or Change:	Upgrade Action:
	<p>When upgrading, observe the following changes:</p> <ul style="list-style-type: none"> <li>▪ <b>Ehcache:</b> The same Ehcache XML file used with 6.4.2 can be applied to 7.1 (required in clustered environments).</li> <li>▪ <b>Jaspersoft Studio Pro:</b> Redo the connections with Jaspersoft Studio Pro and the optional CA JDBC Adapter for Advanced Reporting.</li> <li>▪ <b>Changes to the Login Page:</b> The layout of the reportservice login page changed in JasperReports Server 7.1. The CSS classes did not change; however, some default values were modified. If you customized the login page, verify that your customizations behave correctly in 7.1, and make any necessary changes. If you have not customized the Login page, this change does not affect you.</li> <li>▪ <b>Pipe   Character:</b> Jaspersoft examples in documentation no longer include the pipe character (   ) because new versions of tomcat do not support it.</li> <li>▪ <b>Tomcat Version:</b> Tomcat 8.5.30 is strongly recommended due to performance issues with 8.5.31.</li> </ul>

2

### : 7.1 Missing Attribute Removal



**Upgrade Action:** After upgrading to 15.5.1 and Jaspersoft 7.1, customers also automatically receive the following enhancement. When attributes are removed in CA PPM, downstream Jaspersoft views and reports prompt you with the option to remove the attributes.

**To observe the new behavior, perform the following steps:**

1. Log in to CA PPM and navigate to Classic PPM Studio.

Feature, Enhancement, or Change:	Upgrade Action:
	<ol style="list-style-type: none"> <li data-bbox="1074 255 1390 315">2. Create a custom attribute for a project.</li> <li data-bbox="1074 338 1390 488">3. Run the Load Data Warehouse job to populate the changes for the new custom attribute in the data warehouse.</li> <li data-bbox="1074 510 1390 660">4. In <b>Advanced Reporting</b>, create an adhoc view with the new custom attribute and save the adhoc view as a report.</li> <li data-bbox="1074 683 1390 922">5. After some time, a user might delete the custom attribute from a project. When the Load Data Warehouse job runs, the attribute no longer appears in the data warehouse.</li> <li data-bbox="1074 945 1390 1252">6. In previous releases of Jaspersoft including 6.4.2, users see an error message when they attempt to open the ad hoc view or report with the missing attribute. The report developer would have to remove the attribute.</li> <li data-bbox="1074 1274 1390 1386">7. In Jaspersoft 7.1, a new <b>Missing Data</b> window appears and shows the missing attributes.</li> <li data-bbox="1074 1408 1390 1547">8. To remove the attributes from the ad hoc views and reports at the data source, click <b>Remove Items</b>.</li> </ol>

## Release 15.5.1 Changes: PPM Integration with OWB, Schedule Connect, and XOG

Feature, Enhancement, or Change:	Upgrade Action:
1	<b>Upgrade Action:</b> You cannot upgrade directly to 15.5.1 because it requires Java 11. Instead you must follow these steps:

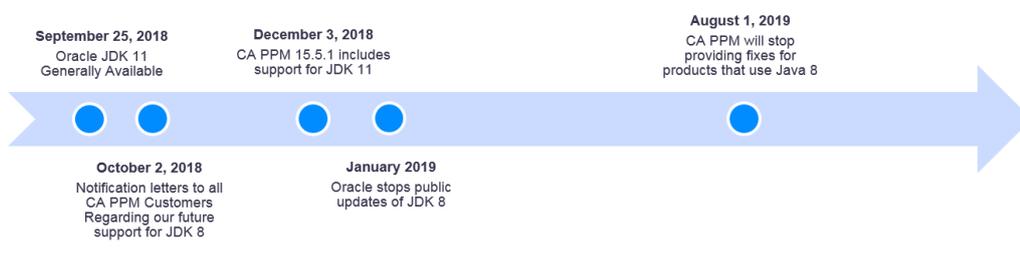
Feature, Enhancement, or Upgrade Action:  
Change:

This release requires Java 11.

See also the JDK Support Timeline image below (subject to change).

1. Go to CA Support and download the ISO for the 15.5.0 installer.
2. Upgrade to 15.5.0 while you still have Java 8.
3. Install Java 11 and remove Java 8.
4. Run the 15.5.1 service pack upgrade installer.
5. After upgrading to 15.5.1, upgrade clients for XOG, OWB, and Schedule Connect. They now use native Java 11 code and no longer require a separate JRE.

## JDK Support Timeline



**Tip:** The new JDK still has many of the same familiar administrative tools. They are now in the `$JAVA_HOME/bin` folder. To learn more, see <https://docs.oracle.com/en/java/javase/11/tools/>.



**CA PPM 15.5.1 and Java 11:** Oracle provides the Java 8 platform that is shipped with prior releases of CA PPM and Java 11 that is shipped with 15.5.1. Oracle has announced end-of-public-support for the version of Java used by CA PPM 15.5.0 and earlier. Java 8 was provided with releases of CA PPM prior to 15.5.1 which now includes Java 11.

**Customers may continue to run Java 8 in production and non-production CA PPM 15.5.0 and earlier environments after the End-of-Service Date.** However, after July 31, 2019, CA Technologies will no longer provide any fixes, patches, service packs, updates, upgrades, programmatic changes, new features, or coverage for updated or new operating systems, browsers, or any additional components for Java 8. CA Support may submit potential security and vulnerability issues to Oracle Support for possible remediation; however, customers will be required to get any remediation to such vulnerabilities directly from Oracle. Customers can continue to contact CA Support after July 31, 2019, for troubleshooting issues potentially related to Java 8 on an "as-is" basis if installed in conjunction with a still-supported CA product. If a workaround cannot be determined, the problem will be deemed "irresolvable." We encourage you to plan for migration to CA PPM 15.5.1 as soon as it becomes available, so you can take full advantage of the features and enhancements this release has to offer. For CA PPM 15.5.1, we include Java 11, the latest version of Java provided by Oracle. Please note that Java 11 does not work with and is not supported by CA PPM 15.5 or earlier releases.

# Release 15.5.1 Changes: PPM Integration with CA Agile Central

Feature, Enhancement, or Change: Upgrade Action:

1  
Investment with CA Agile Central (formerly

**Upgrade Action:** In an integrated environment, the Integration Type attribute appears. This attribute was introduced in 15.5.0 with one choice (*Portfolio Item*). In 15.5.1, you can also choose *Investment*.

Object: Integration | Attribute: Integration Type - Object Attribute

**General**

- Attribute Name: Integration Type
- Attribute ID: agl\_integration\_type
- Description: Integration Type
- Data Type: Lookup - String
- Lookup: Agile Integration Type
- Default: [Field]
- Populate Null Values with the Default:
- Value Required:
- Presence Required:
- Read-Only:  (In order to make an attribute read-only a default must be selected)
- API Attribute ID: aglIntegrationType (This is the attribute id used in the REST API. Set this to make the attribute available via the REST API.)

**Display Mappings**

Type: Color

1. An upgrade script for customers who use the Agile Add-in updates the **Integration Type** attribute to *Portfolio Item* in all agile projects.
2. Post-upgrade, review your projects. You can now select a value for the new **Integration Type** attribute. Choose **Investment** or **Portfolio Item**. The value you choose determines the appearance of the **Agile Summary** page for the project.
3. See the detailed steps in the [Add-Ins and Integrations](#) section of the English edition of this documentation.

General | Agile Central

Integration - AC to PPM Properties - Agile Central

**General**

- Integration Type: [--Select--] (Corresponding integration policy will be available upon selection of the integration type)

**Task - Create Defaults**

- Task Open for Time Entry:
- Time Tracking Project Template: [Field]

Save | Save and Return | Return

Feature, Enhancement, or Change:

Upgrade Action:

**Tip:** The **Time Tracking Project Template** field has been removed. The Synchronize Agile Central job ignores this attribute which had been used in previous releases.

2

## Improvements to the Synchronize Agile Central Job

The **Date Window** parameter now includes options for filtering by projects that were updated in the last month or last quarter:

- Projects updated in the last month (new)
- Projects updated in the last 3 months (new)
- Projects updated in the last 12 months
- Projects updated in the last 24 months

You can also set the new **Synchronize Projects where Work Status is Complete** option. By default, this option is not selected.

**Upgrade Action:** No action is required; however, these new options are available. Revisit your job settings.

## IPv6 Network Compatibility Restrictions

The following section applies only to on-premise environments.

CA PPM 15.5 is certified to operate in an IPv6 networking environment with restrictions. Other configurations of CA PPM using IPv6 are likely to work but have not been certified. For mixed environments with IPv6 and IPv4, the server instance uses two network interface cards, one configured for IPv6 and the other for IPv4. We performed our certification testing on an isolated private IPv6 environment that is not accessible to other networks.

During PPM installation in IPv6 environments, you are prompted for the correct multicast and bind address. The following entries provide examples:

**IPv6 Multicast:** ff0e::75:75

**bindAddress=**fe80::cb8b:3483:cddd:bca3

## Red Hat Enterprise Linux Configurations with Oracle

We support mixed mode IPv6 installations of CA PPM, mail server, and Jaspersoft in Red Hat Enterprise Linux (RHEL) configurations with Oracle.

- **RHEL OS Version:** 7u5
- **App Server:** Apache Tomcat 8.5.33 (64-bit)
- **Database:** Oracle Enterprise Edition 12.2.0.1.0
- **JasperReports Server:** 7.1

## IPv6 Notes and Known Issues

- CA PPM supports pure IPv6 and mixed mode. Jaspersoft only supports mixed mode IPv6.
- We have tested PPM on a private network where the mail server is not accessible. This is expected to work; however, it was not a tested component.
- Components that connect to an external network outside of the isolated IPv6 environment were not tested. These components include an integrated mail server and integration with CA Agile Central. Not tested does not mean it does not work.
- Due to issue DE38980, the New User Experience does not work as expected when an IPv6 address is used in the URL.  
Workaround: Use Host Name instead of IPv6 address.
- Due to an unknown issue, the Jaspersoft URL provided in CA PPM System Administration (CSA) does not work with IPv6 addresses.  
Workaround: Use Host Name instead of IPv6 address.
- Due to issue DE38981, a problem with DBLINK does not allow you to save a data warehouse link when IPv6 is configured, resulting in a Load Data Warehouse job failure.  
Workaround: Connect to DWH-Database. CREATE DATABASE LINK PPMDBLINK CONNECT TO <schema> IDENTIFIED BY <password> USING '<user>';

## Upgrades from CA PPM 15.3 to 15.5.1 on RHEL

We do not recommend attempts to integrate any IPv6 components into earlier releases and then upgrade to 15.5 or higher. IPv6 was not supported in 15.3 and earlier releases. Upgrade to 15.4 or higher using IPv4 and then switch to IPv6 in your new environment. If your requirements mandate an attempt to force an upgrade from 15.3 to 15.4 or higher in an IPv6 environment, follow these steps:

1. Verify your RHEL OS, app server, and database version numbers meet the requirements listed above.

2. Start the upgrade.

The following error is likely to appear:

**Error: Failed to initialize Context properties java.sql.  
SQLNonTransientConnectionException: [CA Clarity][Oracle JDBC Driver]**

3. To resolve the error, update all entries in the following files:

```
update config/properties.xml
update bin/admin.sh (or admin.bat)
update {install.dir}/.setup/scripts/db.macros.xml
```

Locate all instances of the following entry:

```
<jvmarg value="-Djava.net.preferIPv4Stack=true"/>
```

Replace all instances of this entry from *true* to *false*:

```
<jvmarg value="-Djava.net.preferIPv4Stack=false"/>
```

## Oracle Database Changes

### New Oracle 12c Multitenant Support and Encryption Options

Oracle 12c introduces multitenancy (MT), pluggable database (PDB) capabilities, and new encryption options.

Oracle Multitenant architectures for next-generation cloud databases deliver isolation, agility, and scale. A multitenant container database can hold many pluggable databases. An existing database can simply be adopted with no application changes required. Oracle Multitenant fully complements Oracle Real Application Clusters, Oracle Active Data Guard, and other options.

CA PPM officially supports Transparent Data Encryption (TDE) at the tablespace level. Limited support is available for JDBC traffic between the application and the database.

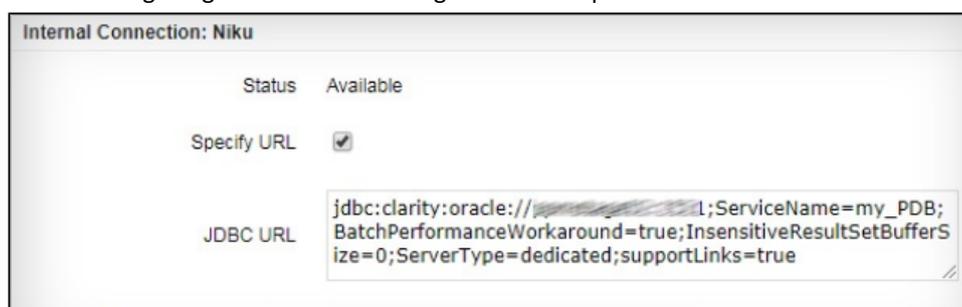
**Upgrade Action:** To implement an MT architecture, follow the steps in the [Install CA PPM](#) topic. A summary of the complete steps appears below as a convenience.

1. As a database administrator, install and configure your Oracle MT enabled database. You can create a container in a test environment for CA PPM, create your PDB, directory, and permissions, and query your PDB and resolve any connection issues.

2. Make the following change in CSA:
  - a. Select the **Specify URL** check box.  
The **JDBC URL** field appears with default values that include an **SID** assignment.  
For example:  

```
jdbc:clarity:oracle://my_ppm_server:1818;
SID=niku;
BatchPerformanceWorkaround=true;
InsensitiveResultSetBufferSize=0;
ServerType=dedicated;
supportLinks=true
```
  - b. Change **SID** to **ServiceName**.
  - c. Set the `ServiceName` parameter to the name of your PDB.

The following image shows a new configuration example:



## Data Model Changes

To view a summary of the data model changes for this release including the data warehouse, see *Schema Changes* under *Reference* in the English edition of the documentation.

## Known Issues for Release 15.5.1

The following section lists the known issues at the time this release was delivered.

### Check-Install Utility Fails If It Detects Any Past Failure of the Load Data Warehouse Job

The check-install utility would typically alert you if *only the most recent instance* of the Load Data Warehouse job had failed prior to running the 15.5.1 upgrade. In this known issue, the 15.5.1 check-install utility fails if it detects *any previous failure* of the job, even if the latest instance of the job was successful.

**Workaround:** Modify and then run the following query to capture and delete failed instances of the Load Data Warehouse job. As an Oracle or Microsoft SQL Server database administrator, update the query statements to delete all previous failed instances of the job and then resume check-install to continue your upgrade:

```
select * from CMN_SCH_JOB_RUNS
  where JOB_ID = '5110024'
  and STATUS_CODE = 'FAILED'
```

## DE37990: XOG or SOAP Integrations Invoking WSDL Queries

The following rare potential known issue applies only to customers upgrading from 15.3 or a previous release where all of the conditions listed below are satisfied.

Due to a bug fix in 15.4 (DE37990) and newer releases (including 15.5.1) that restores correct behavior, your legacy external integration scripts that invoke WSDL queries from the XOG, SOAP, or other means could experience the following problems, requiring corrective action on your part after an upgrade from 15.3 or older releases (at the base level or any patch level) to 15.4 or higher, including 15.5.1.

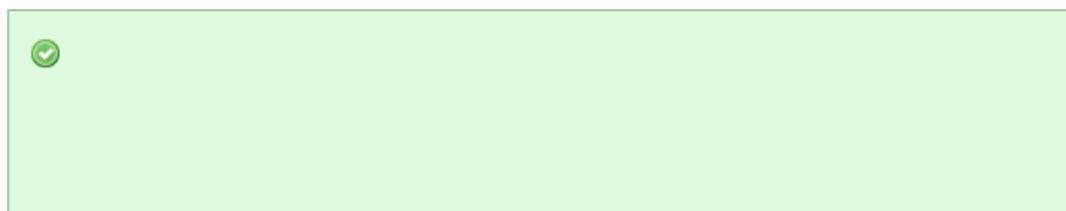
To illustrate the problem, consider whether the following PPM integration scenario applies to you:

- You maintain an integration tool that interfaces with CA PPM to read and write data.
- You use NSQL queries to read data. You might import projects, tasks, incidents, or even configuration data such as lookup field values that are based on dynamic NSQL queries.
- You use slicing (paging) to limit the response size and rely on the slice return value to indicate how many more pages exist.
- You invoke a SOAP request for any NSQL query with multiple results. For example, you make a XOG read request using SOAP on a slice size that is smaller and lower than the total results. Or, you enter a slice size that does not divide the total results evenly (`total results modulo slice size > 0`).

The last page retrieved in the result set (final slice) could have a slice size that no longer matches the requested size, but is instead, the returned number of items. In CA PPM 14.4, this was not the case. The slice size returned was always the requested one, even if fewer items were retrieved. CA PPM 15.4 and higher restores this functionality.

**Upgrade Action:** If this scenario applies to your organization, advise your integration developers to examine their code for calculating when the next page exists. As a workaround, they might already be storing the requested page size. The size element in the response was corrected in 15.4 and newer releases to represent the `returned records count` instead of the `requested size`.

In 15.4 and higher, the NSQL web service query limit can only be controlled up to the internal limit of 50,000 for the maximum results returned. You can still run a query that pulls more data than this by requesting it in chunks. For example, in 75,000 total possible results, you could get up to 50,000 on the first pull, and then the next pull would get the remaining 25,000.



**Tip:** The bug fix for DE37990 resolved a serious issue where the MAX\_FETCH\_LIMIT governor could be overridden in WSDL query calls, producing incorrect slice totals and results. Bypassing that necessary governor limit also permitted a single user action to create a `java.lang.OutOfMemoryError` condition to bring down the application service. Release 15.4 and higher releases include this bug fix.

## Change in Status Report Status Lookup Values

The following subtle change applies only to customers upgrading from 14.3 or earlier releases (as previously announced, mainstream support for those releases has expired).

Starting with Release 14.4, the default *Status Report Status* lookup values changed from *Minor Variance* to *Needs Help* and from *Significant Variance* to *At Risk*. The *On Track* value remained the same. See the [PMO Accelerator Release Notes](#) in the 14.4 edition of the English documentation set.

## Cannot Edit an Instance in the New Status Report Grid or Custom Subobject Grid

A known issue with the new status report grid layout prevents users from editing an instance even though they have the required *Status Report – Edit* instance rights. As a workaround, grant *Status Report – Edit All* global rights to authorized users. A similar known issue might be observed with the new grid layout for custom subobjects of the project object. Users cannot edit an instance even though they have the required edit *instance* rights. As a workaround, grant *global* access rights for editing to authorized users.

## 'An error occurred while saving preferences' in a Custom Subobject Grid

Some users might see **An error occurred while saving preferences** the first time they open the page.

**Workaround:** Users can safely ignore this message. The next time the user opens the grid on this page, this message no longer appears.

## Internet Explorer 11 No Longer Supported for the New User Experience

Classic PPM still supports IE 11; however, the New User Experience cannot extend backward compatibility with any old browser technology, including IE 11.

This is not a known issue with CA PPM. Instead, it is a known issue with IE 11. Microsoft has invested in a new browser, Microsoft Edge.



**Tip:** If they ignore the support requirements and attempt to use IE 11 with the New User Experience, your users could encounter the following problems:

- Defective features or memory leaks (with no scheduled fixes from Microsoft)
- Missing browser framework support for new REST API capabilities
- Poor appearance or slow performance with HTML 5 and new Angular components
- Links to other sites stop working or show messages indicating you need to update your browser

For example, using IE 11, you could cause your roadmap timeline to stop working, the staffing pages might not load all resources, and other problems could occur that appear to be *random* until users realize they are using old unsupported browser technology to access a completely new drag-and-drop feature-rich web application interface. For best results when viewing the modern user experience pages in CA PPM, switch to a new browser such as Edge, Firefox, or Chrome.

## Cannot Upgrade Directly to 15.5.1 Due to Mixed Java 8 and 11 Configurations

You cannot upgrade directly to 15.5.1 because it requires Java 11.

### Workaround:

1. Go to [CA Support](#) and download the ISO for the 15.5.0 installer. You can create an installation DVD or mount the ISO.
2. Upgrade to 15.5.0 while you still have Java 8.
3. Install Java 11 and remove Java 8.
4. Run the 15.5.1 service pack upgrade installer.
5. After upgrading to 15.5.1, upgrade clients for XOG, OWB, and Schedule Connect. They now use native Java 11 code and no longer require a separate JRE. Refer the knowledge base article [here](#) for more information.

## Cannot Upgrade on Oracle Until Security License and MD5 Package Are Enabled

1. Contact your database administrator or Oracle to obtain the advanced security license (OAS) required for DBMS\_CRYPTO.
2. Enable and grant explicit permissions to dbms\_obfuscation\_toolkit.md5 (also provided with your Oracle installation).

3. Start the upgrade to 15.5.0 and then apply the 15.5.1 service pack.

## FIPS Support Not Available in CA PPM 15.5.1

FIPS is not supported due to compatibility issues with JDK 11 and the Bouncy Castle FIPS provider.

**Upgrade Action:** Disable FIPS in your current release before upgrading to CA PPM 15.5.1. If you require FIPS, delay your upgrade plans until a fix or workaround is available.

**Explanation:** After an upgrade, system administrators would typically not re-generate a new keystore and would continue to use their older keystore. Ideally, JDK 11 should be able to read older keystores generated by lower JDK, openjdk, or openssl versions. However, after an upgrade to 15.5.1, verification of the BCFIP.jar signature fails. Bouncy Castle (our encryption provider) does not support FIPS with JDK 11. Administrators would have received the following error in the logs:

```
java.util.jar.JarException: file:/fs0/niku/1551runtime/lib/bc-fips.jar not signed by trusted signer
```

**Workaround:** Upgrading customers would need to reset any configuration changes they made to enable FIPS 140-2 mode of operation in previous releases before upgrading to 15.5.1. If you did not disable FIPS before the upgrade to 15.5.1, you will likely encounter this error.



**Tip:** JRE is no longer part of JDK 11. When a fix is found, you might need to copy the FIPS provider jar (bc-fips.jar) to `JAVA_HOME/lib` instead of `JAVA_HOME/JRE/lib/ext`. Remember to modify the security providers list in the properties file at `JAVA_HOME/conf/security/java.security` instead of its old Java 8 location at `JAVA_HOME/JRE/lib/security/java.security`.

## DE42925: Cannot XOG-Out Data For a Single User By Resource ID

You might experience the following issue if you export (XOG-out) a project with multiple task assignees. To encounter this issue, you would have to modify your XOG script to filter on the project ID and just one resource ID from the project. After you export the project, instead of getting filtered allocations for a particular resource, your XOG output contains the allocations for every resource in the project.

**Workaround:** Apply post-processing on the output to filter the content or extract the single record.



**Tip:** This issue has been resolved in recent development activity for the next release of CA PPM. Contact CA Support to request the possibility of inclusion in a future 15.4.1 or 15.5.1 patch.

After resolving this issue, either of the following filters for `resourceId` or `resourceID` will work as expected to filter for only one resource:

```
<Filter name="resourceId" criteria="EQUALS">csk.testEngineer</Filter>
<Filter name="resourceID" criteria="EQUALS">csk.testEngineer</Filter>
```

## Unauthorized When Assigning Staff to Tasks

In Modern PPM 15.5 and higher, when selecting a staff member for task assignment, an error can appear indicating the user is not authorized to assign the staff member:

ERROR: API-1007: You are not authorized to process request. Contact your s

The following conditions must be present for this error to occur:

- The searchable pull-down always appears on the Task Staff tab for users that have view or edit project access.
- The user does not have *Project - Task Management* access to edit tasks on the project.
- The user is a participant or has explicit project view access granted.
- The pull-down list does not check for the *Project - Task Management* access right for the user.

**Workaround:** Grant the user the *Project – Task Management* access right to allow them to manage tasks on their assigned projects. See KB0000112099.

## Task Assignment Lookup Includes Assigned

When the user opens the searchable pull-down list to select a Resource, Role or Team to a Task, the list always includes staff members already assigned to the Task. When the user selects a resource, role or team already assigned, an error message appears:

ERROR: Team member is already assigned to this task.

In CA PPM 15.5 and 15.5.1, this pull-down does not filter out staff that is already assigned to the task. No workaround is available. See KB0000112101.

## Unable to Update Project Staff Records

A user with edit project access but without booking rights is allowed to update Project Staff page records for non-allocation fields. When trying to update a non-allocation field the user can encounter an *Unable to update record* error in Classic PPM or in New UX.

The cause of this condition is rooted in the XOG. The XOG is defining an allocation segment that ends at midnight of the project finish date. A XOG WARNING message will appear in CA PPM 15.4.1 or newer releases:

XOG-3909: AllocCurve segment finish on Resource [resourceName] is later

**Workaround:** When another user with edit access to the project and booking rights to the staff can successfully update the record, the data is automatically updated and clipped to fall within the date/time range of the project. Ensure the XOG file creates allocations within the Project date and time range. See KB000095832.

## Selecting a Project Role for a Staff Member

In the Project Staff grid in CA PPM 15.4.1 or newer, on a row for a staff member, the Project Role lookup displays all types of roles. The user can select a non-labor role for a labor resource record and it allows the user to select a different role for a role record.

The lookup displays all types of roles based on the user *Resource - View* access right for active roles in the system and it is up to the user to review the selection of the Project Role field for selecting the correct type of role. The current design of the application allows flexibility for the user to select any role for determining cost rates. The lookup is not dependent on the type of resource or role record (for example, Staff Allocation Project Role, Staff Task Assignment Project Role, or Voucher Transaction Entry Role). See KB000097161.

## Unsupported Parameterized Lookups Appear

A user can define a parameterized or a Static Dependent lookup in a studio object and enable API Alias. Unexpectedly, the field appears in the Modern PPM Grid Column Panels for the following grids in 15.4 or higher:

- Roadmaps
- Project Staff
- Project Risks, Issues, Changes
- Tasks (My Tasks) grid

**Workaround:** Remove the API Alias so that the field does not show up in a Modern PPM grid. See KB000095938.

## Status Report Error: You are not authorized to create status reports

A user with Status Report create and edit access must access the project Status Reports for the system to automatically create the initial status report. If this is not done, a user with only view access will encounter an error: *You are not authorized to create status reports.*

## Users Without Rights to Create Might Have Access to Add New Rows

In this release, a user without explicit access rights to create subobject instances might be able to click the **+ Add Row** button or right-click and select **Insert Row**. At minimum, the user would already have the following rights:

- *Project - Navigate*
- *Project Management - Navigate*
- *Project - View Management - All*

In addition, the user could have *<custom\_subobject\_name> - View All* rights. When the user navigates to the project Status Report page or custom subobject page in an open project, the options to create new rows would typically be hidden. Even if they attempt to click those options, the user still cannot create a new instance.

A subtle variant of this known issue exists on the project task grid where the **+ Add Row** button appears if the user has *Project Task Management* access (and not explicit create rights).

## DE41143: API-1007 Authorization Error In CA PPM 15.4.1 or Higher

A user with *Task Management* or *edit* access must open the Project Task page Board layout for the system to automatically create the board. If this is not done, a user with only view access to tasks will encounter an API-1007 authorization error. Participants without explicit *Project - View* access see the Tasks page but get an API-1007 authorization error in accessing the task board.

**Workaround:** Users need some type of Project View access to see the Task List or Task Board. For participants, grant access to *Project - View*. If users with only *Project - View* base access get an API-1007 authorization error in accessing the task board, grant those participants access to *Project - View Tasks*.

## Classic PPM E-Mail Notification Link When Adding a Participant

When a person is added as a participant on a project from the New User Experience in 15.3 or newer releases, the e-mail notification provides a link to the project in Classic PPM instead of the New UX.

**Workaround:** The user must have access to New User Experience and can manually navigate to the project. See KB000097158.

## Cannot API-Enable an Existing Custom SubObject In Studio

API enabling existing custom subobjects of the master Project object directly in Studio is not working due to a defect. Users might not see their custom subobject as a module in the project blueprint or as a page in an open project. If the API alias exists for an object, any further attempts (even through the XOG) to API-enable the same object will not work because such requests are ignored. The API alias is generated but metadata is not seeded for the modules.

**Workaround:** Several workarounds exist. Only the second of four use cases below is an issue. All other cases are working fine.

- API-enable the subobject in Studio immediately when you create it.
- ~~API-enable the subobject in Studio after it is created~~ (only this use case fails; you cannot later decide to API-enable the subobject during any future edits)
- API-enable a subobject through a XOG create script
- API-enable a subobject through a XOG update script

## Known Issue with Fresh Installations of Jaspersoft 7.1

In on-premise environments, you might observe the following *Failed to execute: create index* entry in the installation logs during a new installation of Jaspersoft 7.1.0 on Oracle 11g R2 or 12c:

```
[exec] [exec] init-js-db-pro:
[exec] [exec] [echo] For JDBC driver the artifactId and version
properties are set:
[exec] [exec] [echo] maven.jdbc.artifactId=ojdbc8
[exec] [exec] [echo] maven.jdbc.version=12.2.0.1.0
[exec] [exec] [echo] Specified JDBC driver jar exists
[exec] [exec] [advanced-sql] Executing resource: /fs0/clarity1
/install_cd/ca_ppm_jaspersoft_7.1.0/buildomatic/install_resources
/sql/oracle/js-pro-create.ddl
[exec] [exec] [advanced-sql] 0 rows affected
[exec] [exec] [advanced-sql] Failed to execute: create index
idx46_jiresfldr_hidden_idx on JIResourceFolder(hidden)
[exec] [exec] [advanced-sql] java.sql.SQLException: ORA-01408:
such column list already indexed
[exec] [exec] [advanced-sql] 0 rows affected
[exec] [exec] [advanced-sql] Executing resource: /fs0/clarity1
/install_cd/ca_ppm_jaspersoft_7.1.0/buildomatic/install_resources
/sql/oracle/quartz.ddl
```



**Tip:** You can ignore this entry. The warning appears to be alerting you about a duplicate index creation scenario; however, it is not a valid warning.

- This warning has no impact on your installation and does not affect any Jaspersoft 7.1 functionality.
- CA Engineering teams confirmed that all the DDL commands are successfully executed after the reported warning.
- The warning only appears on new Oracle installations; it does not occur with supported versions of Microsoft SQL Server

## Installation and Upgrade Dependencies

The install and upgrade scripts in this release introduce the following dependencies in the listed chronological order:

Install/Upgrade of This Component:	Requires This Component:
Upgrade CA PPM SaaS	<ul style="list-style-type: none"> <li>▪ Data Warehouse Configured</li> <li>▪ Load Data Warehouse Job Completed</li> </ul>
New User Experience	<ul style="list-style-type: none"> <li>▪ PMO Accelerator Add-in Installed</li> </ul>
Install PMO or APM add-ins	<ul style="list-style-type: none"> <li>▪ Data Warehouse Configured</li> </ul>

## Supported Upgrade Paths for Release 15.5.1

To upgrade *directly* to this release (15.5.1), your current release must be 14.3 or higher. The 15.5.1 installer can backup and upgrade your data from supported older releases.

- If you have Release 13.3, 14.1, or 14.2, your release is no longer supported. You might be able to upgrade to Release 15.2 or 15.3 first, and then install 15.5.1.
- You cannot upgrade to Release 15.5.1 *directly* from Release 14.2 with Jaspersoft 5.6.1 or from Release 14.3 with Jaspersoft 6.1.0. The Jaspersoft 6.4.2 or 7.1 upgrade does not support those configurations. Your *indirect* upgrade is still supported. For example, upgrade to 14.3 and Jaspersoft 6.4.2 first. Then upgrade to 15.5.1 and upgrade to Jaspersoft 7.1.
- You can upgrade from a previous release even if you have no Jaspersoft reports environment configured. The data warehouse is required; however, reporting is not required. You can elect to upgrade from 14.x and perform a fresh installation of your reports environment.
- To upgrade from 13.2 and earlier releases, upgrade to 14.3 first and skip the Advanced Reporting component. This middle step simplifies the troubleshooting and restart process if an upgrade step fails. Then, from 14.3, you can upgrade to 15.5, apply the 15.5.1 service pack, install Jaspersoft 7.1 for Advanced Reporting, and apply any patches.



**Tip:** The installer detects how many incremental upgrade steps are required to update your installation to the latest release. If two or more, you are prompted to decide if you would like the installer to save automated backups at each step. For example, from 15.3 to 15.4, from 15.4 to 15.5, and from 15.5 to 15.5.1.

If you have installed any patches on the base version, verify that you applied the latest supported cumulative patch before and after you upgrade. Patch maintenance before and after upgrades is important for troubleshooting, security fixes, and general system health.

**Follow these steps:**

1. See the [CA PPM and Jaspersoft Patches](#) page.
2. Select your current release from the **Versions** menu at the top right of that docops page. For example, select 15.1 and verify you installed the 15.1.0.9 patch or select 15.3 and verify that you installed the 15.3.0.5 patch before starting your upgrade to 15.5.1. After the upgrade, install the latest 15.5.1 patch.



**Important!** You might experience issues if you attempt to upgrade directly from an unsupported patch level. For best results, follow a supported upgrade path. To learn more, contact CA Support or CA Services. You can also visit the [CA PPM Community](#) to collaborate with other community members about your specific questions.



**Tip:** You can upgrade to 15.5.1 from 15.5.0.0 or 15.4.0.0 base releases, 15.5.0.1 or 15.4.0.1 patched releases, 15.4.1.0 service pack base release, or from any 15.4.1.x patched release.

## CA PPM Upgrade Overview

**Follow these steps:**

1. Perform the pre-upgrade requirements.
  - a. Install the prerequisite third-party software. For the supported operating environment information, see *Compatibilities* in the Release Notes.
  - b. Create a full backup of your database, file systems, and customizations (if applicable). To keep sequences in line, take a *cold* backup.
  - c. Remove customer-added database triggers, stored procedures, indexes, views, and constraints before upgrading.



**Important!** As a result of the database schema changes for this release, most custom triggers, indexes, and constraints can cause the upgrade to fail. We recommend *removing*, not disabling, customer-added triggers.

2. Perform the remaining pre-upgrade steps and then start the upgrade as detailed in *Upgrade CA PPM*. This documentation is available only in the English edition of the documentation set.
3. Some important changes include:
  - The upgrade prompts you for current and target CA PPM SaaS folders. You can specify the same folder or different folders. If you specify the same folder for both, the existing folder is renamed. The new release is installed into an empty folder with the target folder name.
  - If you are installing on a different server, review the information about setting up the application server in *Install CA PPM*. This documentation is available only in the English edition of the documentation set.
  - The HTTP and HTTPS Entry URL fields completed for the server in CA PPM SaaS System Administration (CSA) cannot be *localhost* when Jaspersoft is integrated with CA PPM SaaS. When you use Jaspersoft, enter the complete URLs on the Application subtab of the Properties tab for the CA PPM SaaS server.
4. Complete the post-upgrade steps:
  - a. Verify that all installation steps completed successfully by reviewing the post upgrade report that the installer generates.
  - b. Review the CA PPM SaaS System Administration server *admin.log* and *install.log* for errors.
  - c. Reapply any database and file system customizations.
5. Upgrade your Advanced Reporting content or configure Advanced Reporting for the first time:
  - a. Set up the Data Warehouse database and populate it with CA PPM SaaS data.
  - b. Install Jaspersoft and import the domain information for reporting.
6. Install and upgrade your choice of add-ins and connectors.
  - Back up your CA PPM SaaS installation before installing each add-in so that you can restore the application if necessary.
  - Apply the *Upgrade Ready* content for those items that you are actively using.



**Important!** Consider the configurations that you have made to items before applying them. Applying modified items overwrites your configurations.

**Best Practice:** If you modified stock CA PPM SaaS content, copy the modified content before upgrading. Then, apply the new incoming stock CA PPM SaaS content, and retrofit the modifications to the new content.

7. Review the Studio views and system content and manually upgrade as needed.  
The upgrade preserves all pre-existing Studio view configurations. If an existing view has configurations or if the object for the view is partitioned, the system does not automatically upgrade the view or the partition.  
To determine which views were not automatically upgraded, use the Studio Views list page.  
Use these tips to help you manage the views:
  - The Last Version column identifies changes to stock views in this release.
  - If a view was automatically upgraded as part of the upgrade process, a checkmark appears in the Upgraded column. No further action is required.
  - If a view that changed was not upgraded due to pre-existing configurations, decide whether to apply the changed view.  
Look for views with the following column information:  
Last Version column=14.4 and the Upgraded column= unchecked.
8. Verify your NSQL queries.  
During the upgrade, the checkinstall utility automatically verifies NSQL queries. Results are captured in the postcheck-results.html file of the checkinstall-results.zip file. This log contains the following information:

- Query name
- Query ID
- Content Source
- Query ID from CMN\_NSQL\_QUERIES of the query that failed validation

This release contains database schema changes. To ensure that your custom portlets work, correct any invalid NSQL queries.

For more information about the database schema changes, see Data Model Changes.

**Upgrade Action:**

If the query can be changed in Studio, complete these steps:

- a. Go to the NSQL tab for each failing query.
- b. Click the Preview button.
- c. Review the errors.
- d. Repair the broken query constructs or fields.
- e. Click the Preview button.
- f. Confirm that the NSQL query is valid.  
If the query is in use by active portlets and cannot be edited in Studio, complete these steps:
- g. Use the XML Open Gateway (XOG) to export the failing query.

- h. Correct the broken query constructs or fields.
  - i. Use XOG to import the corrected query.
  - j. In Studio, go to the NSQL tab for the imported query and click the Preview button.
  - k. Confirm that the NSQL query is valid.
9. Save the Upgrade Check Install Results Package.  
The upgrade process produces a zipped file that contains all of the artifacts that were created during the upgrade. Review the contents and save the zip package for future reference.  
The files are zipped into an archive that has a timestamp-encoded name (for example, checkinstall-results\_2018-08-17\_16-48-31.zip). This file is located in the checkinstall /check-logs directory, and if possible, the file is copied into the <target runtime dir>/logs /checkinstall directory.

## MS SQL Server Database Compatibility Level

If you are using SQL Server 2014 for this release, set the compatibility level to 120 from SQL Server Management Studio or use the following command:

```
EXEC SP_DBCMPTLEVEL <database>, 120
```

## Oracle Database Only PRJ\_BLB\_SLICES Table

The ID, UNIT, LAST\_UPDATED\_DATE and LAST\_UPDATED\_BY columns in the PRJ\_BLB\_SLICES table have been dropped. If you are using Oracle, the table is replicated before the columns are dropped. The replication requires you to verify that the tablespace that PRJ\_BLB\_SLICES occupies is large enough to accommodate the temporary size increase.

### Upgrade Action:

To determine if the tablespace can deal with this condition, have your database administrator (as sysdba) run the following query. Change the schema owner to the owner of the CA PPM SaaS schema:

```
select SLC.owner, SLC.table_name, SLC.TABLESPACE_NAME, SLC.MB MB_NEEDED, TBSPC.
MB_FREE MB_FREE, SIZING.MAX_MB, SIZING.MB_USED,
EXT.AUTOEXTENSIBLE
FROM
(select owner, table_name, NVL(round((num_rows*avg_row_len)/(1024*1024)),0) MB,
TABLESPACE_NAME
from all_tables
where owner = 'CLARITY'
and table_name = 'PRJ_BLB_SLICES') SLC
INNER JOIN (select df.tablespace_name,
(df.totalspace - tu.totalusedspace) "MB_FREE"
from
(select tablespace_name,
round(sum(bytes) / 1048576) TotalSpace
from dba_data_files
```

```

group by tablespace_name) df,
(select round(sum(bytes)/(1024*1024)) totalusedspace, tablespace_name
from dba_segments
group by tablespace_name) tu
where df.tablespace_name = tu.tablespace_name) TBSPC ON (SLC.TABLESPACE_NAME =
TBSPC.TABLESPACE_NAME)
INNER JOIN (select distinct(autoextensible), tablespace_name from dba_data_files)
EXT on (slc.tablespace_name = ext.tablespace_name)
INNER JOIN (select tablespace_name
, count(*) as no_of_data_files
, sum(MAXBYTES)/(1024*1024)*count(*) as MAX_MB
, sum(user_bytes)/(1024*1024) MB_USED
, round((sum(user_bytes)/(1024*1024))/(sum(MAXBYTES)/(1024*1024))*100,2)
PERCENT_USED
from dba_data_files
group by tablespace_name) SIZING ON (SLC.TABLESPACE_NAME = SIZING.TABLESPACE_NAME)

```

The following example shows the kind of results that the query returns:

OWNER	TABLE_NAME	TABLESPACE_NAME	MB_NEEDED	MB_FREE	MAX_MB
MB_USED	AUTO-EXTENSIBLE				
CLARITY	PRJ_BLB_SLICES	USERS_LARGE	1306	5020	90000
15997	YES				

#### If AUTOEXTENSIBLE is YES:

The tablespace for PRJ\_BLB\_SLICES can grow automatically up to the MAX\_MB value. Ensure that the MAX\_MB value is higher than the MB\_NEEDED + MB\_USED.

#### If AUTOEXTENSIBLE is NO:

Ensure that the MB\_NEEDED value is less than MB\_FREE. If the MB\_NEEDED value is not lower, the database administrator can allocate or extend extra data files to the tablespace under the TABLESPACE\_NAME column.



**Tip:** We recommend increasing the tablespace at least 20 percent more than is needed. The increase helps to ensure that the tablespace can accommodate standard data growth and the temporary replication.

## Custom Processes, Scripts, and Other Customizations

CA PPM cannot upgrade any unsupported customized content. Customizations must be disabled and may need to be redesigned and re-implemented to work with changing product functionality.



**Important!** After an upgrade, unless you disable them, your customizations might result in errors or fail to work as expected.

**Follow these steps:**

1. Identify your custom content. For example, you have one or more custom processes with custom GEL scripts that modified timesheet status attributes in a previous release.
2. Acknowledge the customizations and recognize that the upgrade scripts might not support the custom content. Even if the custom content is upgraded, it may no longer work as expected. For example, your custom process references an object or attribute that has changed in the new release.
3. As an on-premise administrator, the checkinstall script provides a warning for customizations that it detects pre-upgrade. You can see these warnings or the referenced logs for insight into the types of customizations that can negatively impact your upgrade experience. For example:

```
WARNING: Possible schema customizations have been found.
Any customizations to the system are the responsibility of the customer.
To upgrade, all customizations must be reviewed, changed, or removed.
After a successful upgrade, the customizations may be added back to the system.
The possible customizations found are listed in the following log files:
```

```
checklogs/database_customization_triggers.txt
checklogs/database_customization_indexes.txt
checklogs/database_customization_tables.txt
checklogs/database_customization_constraints.txt
```

4. As an on-demand (SaaS) administrator, you do not see these warnings or the referenced logs. These example messages provide insight into the types of customizations that can negatively impact your upgrade experience.
5. In on-premise or SaaS environments, turn off your customizations before the upgrade. After the upgrade, reintroduce the customizations and test them in the Classic PPM interface. Optionally, verify the impact of the customization behavior on the New User Experience.
6. In addition to database objects, also evaluate attribute values. Review the Oracle and Microsoft SQL database and data warehouse changes (see the Reference section in the English documentation). Validate if any of your customizations depend on any dropped, changed, or new attributes.



**Tip:** Some customers have experienced errors with legacy custom content. After disabling the custom process, script, or other legacy custom content, the New User Experience provided the functionality with no net loss to end users. We recommend that you perform an analysis comparing the value of CA PPM features in a complete COTS/SaaS solution against the value of developing your own unsupported customizations.

**More Information:**

- [CA PPM 15.5.1 Release Notes](#)

- [Documentation for earlier releases before 14.2](#)