



Planning Space 16.5 Update 32 Release Notes

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Document information

This document contains Release Notes for updates 16 to 32. The Release Notes for previous updates of version 16.5 (RTM, and Updates 1 to 15) are available in a document at the URL link below.

The information in this document is available online at:

<https://documentation.aucerna.app/planningspace/release-notes/index.htm>.

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Planning Space 16.5 Update 32 Release Notes

RELEASE DATE: 08 April 2024

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Upgrading to Planning Space Version 20: See the [Planning Space Deployment Guide \(Version 20 Upgrade Paths\)](#) for the latest information about upgrade paths from version 16.5.

Support Ticket information: Ticket numbers refer to Cases in the Quorum Software Support service in Salesforce.

Database upgrades for this release

A mandatory database upgrade for Tenant databases is required for this update.

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Regimes - Excel Economics spreadsheet models: A new 'Mapping Files' mechanism has been added which allows for mappings to be defined in separate files while actual data and calculations can be contained in files that do not require special modification for use with Planning Space.
- Terms editor: Changed the behaviour of the editor so that default terms settings are not automatically added to a project or folder without terms when the editor is opened; the user must now do an explicit Save action in order to add terms settings.
- Regimes: A function 'Add All Temporary Variables As' has been added in the Logic Editor to perform configuration of multiple temporary variables.
- Regime module function library: New functions for data conversion to and from text format (ConvertNumberToText, ConvertYearMonthToText, ConvertTextToNumber).
- Regime Library - Variable Edit window: Added filter tools to the table columns.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Folder copy permissions in Calculate & Analyze (Result Sets) and Regime Library: Fixed a bug in the explorer tools where the permissions on a copied folder were being applied from the parent folder in the target location, rather than copying the permissions configured for the source folder.	—
Result Set Reports: Fixed a bug where 'One Line Summary' template reports were not correct for result set data which had 'Fiscal Year-End' not set to December.	—
Hierarchy clone operation: Fixed a bug where a Dataflow link was not being copied if the link was configured on the Corporate Rollup folder.	24-00946667
Economics Results Summary tool: Fixed a bug which was causing icon images not to display correctly.	24-00945992
Result Set calculations: Fixed a bug that was causing the error "Unexpected Error when building ringfenced calculator" which was occurring in the case where a module weighting variable no longer existed or was invalid; the calculation logic now checks for variable validity and in case of failure it substitutes 'Default' for the weighting variable.	23-00902211

Planning Space 16.5 Update 31 Release Notes

RELEASE DATE: 16 February 2024

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Upgrading to Planning Space 20.3: See the [Planning Space Deployment Guide \(Version 20 Upgrade Paths\)](#) for the latest information about upgrade paths from version 16.5 to 20.3.

Support Ticket information: Ticket numbers refer to Cases in the Quorum Software Support service in Salesforce.

Database upgrades for this release

A mandatory database upgrade for Tenant databases is required for this update.

Planning Space (IPS)

New Features

- Upgraded the CefSharp browser component in Planning Space to version v117.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Planning Space Dataflow

New Features

- Dataflow Reporting: Report outputs are now generated with respect to the Access Control permissions that have been set in the document template (i.e., if the current user has been allowed/denied access for each template element).

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Load from Economics tool: Fixed an issue in the aggregation logic where aggregated values of mapped variables were not calculated correctly for projects being calculated in parallel processes.	—
Load from Economics tool: Fixed a bug in the aggregation logic which was causing loading errors "Project <X> is not calculated".	23-00908894, 23-00920209
Fixed an issue where the automatic 'cluster temp cleanup' process was incorrectly removing temporary folders that were in use; this was causing missing output files for Dataflow reporting jobs.	23-00920421
Fixed a bug in Version permissions where the renaming of a workgroup was causing that workgroup to disappear from permissions settings.	23-00909386

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Result Set calculations: Calculated Spreadsheets for a Result Set Run are now persisted after the end of a Planning Space session, and can be accessed using a download button.
- Regime module function library: Functions have been added so that incremental project information can be used in regime models.
- Dataflow Pivot & Aggregate links - changed permissions for new entities after link creation: In previous releases, newly-created projects and folders after link creation or link refresh were only applied the node permissions of Full Access for the configured 'Link Manager Workgroup'; this has been modified so that inherited permissions from the parent node will also be applied to newly-created entities (i.e., the same behavior as when nodes are created manually in a hierarchy).
- Regimes - Excel Economics spreadsheet models: For calculations based on spreadsheet groups, the optional setting 'Start Date' has been added, so that the start period for the group calculations can be specified.
- Regimes - Module Editor: The context menu in the code editor has been improved so that temporary regime variables can be added and have their data type set, from within the code editor.
- Result Set calculations - Calculated Spreadsheets: The regime function 'ExecuteSpreadsheet' has two new options to control the saving of spreadsheets; the Boolean 'isSavingWorkingFile' determines if data will be saved for each function call (default 'true' if the parameter is not used); 'workingFileSavingPath' is an optional file path to specify the folder where the saved files will be stored.
- Result Set calculations - Preserve Calculated Spreadsheets option: There is a new additional setting for 'Match source' (default) or 'Match calculation (Debug)'; the latter option

should be used when the spreadsheet files are needed to check or debug the calculations in Planning Space; the former option should be used when the original spreadsheet files are required.

- Regime module function library: The PARTNERVALUE function now accepts a Text variable as the input parameter for the partner name.
- Regime module function library: Added the function MIRR to calculate the modified internal rate of return for periodic cash flows.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Economics OData API: Fixed a bug in the resource '/data/v1/calculate' where a 500 server error was occurring after a modification had been made in a result set report's Currency & Discounting preset, due to incorrect caching of the report configuration.	—
Result Set calculations: Fixed an issue where the automatic data cleanup process was incorrectly removing empty temporary folders that were in use and pending storage of data files; this was causing file save errors for Result Set calculation runs.	23-00920269
Result Set calculations with incrementals: Fixed an issue that was causing the log error "The base project <X> on <Default> tab cannot be used ... on tab <Y>"; a pre-calculation validation check has been added to check if base projects in the default tab have been used as incremental projects in other tabs.	24-00937112

Planning Space 16.5 Update 30 Release Notes

RELEASE DATE: 17 November 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets can be accessed only in Salesforce; the ticket (case) numbers start with '22-' or '23-'. The Freshdesk ticket system was withdrawn from use on 2023-06-05; all open tickets have been migrated to Salesforce.

Upgrading to Planning Space 20.3: See the [Planning Space Deployment Guide \(Version 20 Upgrade Paths\)](#) for the latest information about upgrade paths from version 16.5 to 20.3.

Advance notice for the PlanningSpace 32-bit applications: The 32-bit versions of the Dataflow and Portfolio applications will be discontinued in a future release of PlanningSpace 16.5.

Note for installation: if the PlanningSpace installer fails to complete when installing "in place" (i.e., when a previous version of PlanningSpace is still installed), it is important to completely uninstall the previous version *and to reboot the server machine* before using the installer again. This is because the Windows OS may have pending installations (i.e., they are deferred to the next reboot) that are interfering with the PlanningSpace installation.

Database upgrades for this release

Upgrades are not required for this update.

Planning Space (IPS)

New Features

- Upgraded the CefSharp browser component in Planning Space to version v116.0.230 to address a critical vulnerability (CVE-2023-4863).
- SSL certificates for Secure HTTP: Certificates that are based on the CNG storage provider can now be installed in the IPS Server.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Load from Database tool: Fixed a bug (in Server Side Load processing) where Dataflow documents were not being automatically updated by a calculation through the Economics regime linked to a Dataflow document.	23-00928471

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

Fixed Defects

Description	Support Ticket
Result Set Reports: Fixed a bug in the 'As Flat List' download process where a project name containing the ampersand character (&) was causing the export to fail with an "Entity Name" error.	23-00918948
Result Set Reports: Fixed a bug in the 'As Flat List' download process where the file path was too long for reports to be exported.	23-00918363

Planning Space 16.5 Update 29 Release Notes

RELEASE DATE: 20 September 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets can be accessed only in Salesforce; the ticket (case) numbers start with '22-' or '23-'. The Freshdesk ticket system was withdrawn from use on 2023-06-05; all open tickets have been migrated to Salesforce.

Upgrading to Planning Space 20.3: See the [Planning Space Deployment Guide \(Version 20 Upgrade Paths\)](#) for the latest information about upgrade paths from version 16.5 to 20.3.

Note for installation: if the PlanningSpace installer fails to complete when installing "in place" (i.e., when a previous version of PlanningSpace is still installed), it is important to completely uninstall the previous version *and to reboot the server machine* before using the installer again. This is because the Windows OS may have pending installations (i.e., they are deferred to the next reboot) that are interfering with the PlanningSpace installation.

Database upgrades for this release

Upgrades are not required for this update.

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Fixed a timeout (slow performance) issue that was occurring when importing a document into Dataflow where the timeseries variables had long durations (50 years plus with monthly periods); the import logic was applying a document re-calculation for each variable period being imported, and the logic has now been improved so that re-calculation only occurs when all of the data has been loaded.	23-00915914

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

Fixed Defects

Description	Support Ticket
Hierarchy folder delete operation: Fixed an issue that was causing a timeout error for large (over 50,000 projects) hierarchies.	—

Planning Space Portfolio

Fixed Defects

Description	Support Ticket
Load Data from Dataflow: Fixed an issue that was causing an exception error when attempting to load a Dataflow data source containing a large number of nodes; the code logic has been improved for multi-step loading from large databases.	—

Planning Space 16.5 Update 28 Release Notes

RELEASE DATE: 30 August 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets can be accessed only in Salesforce; the ticket (case) numbers start with '22-' or '23-'. The Freshdesk ticket system was withdrawn from use on 2023-06-05; all open tickets have been migrated to Salesforce.

Database upgrades for this release

A mandatory database upgrade for Tenant databases is required for this update.

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Dataflow integration: Improvements have been made in internal database scripts to resolve deadlock errors that could happen during data sync operations triggered by modifications in Dataflow document templates.

Fixed Defects

Description	Support Ticket
Result Set Reports: Fixed a bug that was causing incorrect folder-level aggregation for a multi-run result set; when a project was excluded in one of the runs it was failing to be included in the other runs.	23-00904287
Clone Hierarchy: Fixed a bug in the Planning Space application where empty project folders were not being included in the clone copy operation (the clone operation executed using the API did not have this bug).	—

Planning Space 16.5 Update 27 Release Notes

RELEASE DATE: 23 June 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets can be accessed only in SalesForce; the ticket (case) numbers start with '22-' or '23-'. The Freshdesk ticket system was withdrawn from use on 2023-06-05; all open tickets have been migrated to SalesForce.

Upgrading to Planning Space 20.3: See the [Planning Space Deployment Guide \(Version 20 Upgrade Paths\)](#) for the latest information about upgrade paths from version 16.5 to 20.3.

Database upgrades for this release

Upgrades are not required for this update.

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Resolved a UI performance issue when viewing documents with long duration (up to 50 years): the cursor movement between data fields was becoming slow to frozen, especially when regime calculations were required. The UI data caching mechanism has been improved to ensure better performance.	23-00901589
Reporting: Fixed a permissions bug where users were not able to access tags in the settings Revision selector because the 'apply tag' role was being incorrectly enforced.	23-00901389
PlanningSpace Data Connector: Fixed a bug that was causing Update configurations not to be correctly saved in Excel workbooks.	—

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Result Set calculations: New option to disable folder incrementals for the entire Result Set (Standard or Sensitivity), replacing the need to do manual settings for individual hierarchy nodes.
- Regime spreadsheet models: The 'ProjectIndex' cell in OUT rows can now contain a calculated value based on inputs and internal calculations, rather than a static value. This improvement makes it possible to have simpler models with fewer placeholder sections.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Hierarchy clone operation: Fixed an issue that was causing a timeout error for large (over 50,000 projects) hierarchies.	—

Planning Space 16.5 Update 26 Release Notes

RELEASE DATE: 12 May 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets with numbers starting '22-' or '23-' can be accessed in Salesforce; other tickets can be accessed in Freshdesk. When a ticket for the same issue exists in both systems, both numbers are included. (The Freshdesk system was deprecated on 2022-11-07 and it is not updated with new information.)

Upgrading to Planning Space 20.3: See the *Planning Space Deployment Guide (Version 20 Upgrade Paths)* for the latest information about upgrade paths from version 16.5 to 20.3.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Database upgrades for this release

Upgrades are not required for this update.

Planning Space (IPS)

New Features

- Upgraded the CefSharp browser component in Planning Space to version v112.

For more information about these changes, see the [Planning Space Deployment Guide](#).

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Regimes - Excel Economics spreadsheet models: Groups of linked spreadsheets can be inspected and have breakpoints set in the debugger; and the complete group of spreadsheet files can be exported in a runnable linked state.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Regime import: Fixed issues that were causing very slow importing for regime files containing large numbers of variables; the function logic has been improved for efficiency, error checking, and more linear dependence on the number of variables.	23-00894088
Dataflow link - Pivot and Aggregate: Fixed an issue where the truncated data periods were not correctly set (the start/end dates of the first child source variable were always applied and not adjusted for subsequent variables).	23-00895114

Planning Space 16.5 Update 25 Release Notes

RELEASE DATE: 06 April 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets with numbers starting '22-' or '23-' can be accessed in Salesforce; other tickets can be accessed in Freshdesk. When a ticket for the same issue exists in both systems, both numbers are included. (The Freshdesk system was deprecated on 2022-11-07 and it is not updated with new information.)

Upgrading to Planning Space 20.3: See the *Planning Space Deployment Guide (Version 20 Upgrade Paths)* for the latest information about upgrade paths from version 16.5 to 20.3.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Database upgrades for this release

Mandatory database upgrades for Tenant databases are required for this update.

Planning Space (IPS)

New Features

- Audit log: New OData endpoint '/planningspace/data/v1/auditlogs' for access to log data.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Fixed Defects

Description	Support Ticket
SAML-based authentication: Fixed a bug that was causing login failure due	23-

Description	Support Ticket
to the IPS Server interpreting SAML URLs with case-sensitivity.	00883234

Planning Space Dataflow

New Features

- Load from Economics tool - UI change: The result set run selection is now persistent between the batch setup tabs.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Configuration - Currencies Management: Fixed a UI bug where using the mouse scroll action was causing an application error.	23-00892271

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Regimes - Function Library: Added new functions so that Working Interest partner settings can be modified by the regime logic.
- Regimes - Excel Economics spreadsheet models: Added functionality so that multiple linked spreadsheets can be executed using a single call of the 'ExecuteSpreadsheet' function.
- Dataflow integration - Pivot & Aggregate link: Added an optional Inflation Date setting to the link configuration.
- Dataflow integration - Pivot & Aggregate link: the Unit System and Unit Size settings have been removed from the link configuration; they are no longer required because the unit transformations between Dataflow and Economics/Financials are handled automatically.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Result Set calculations - unweighted ringfencing: Fixed a bug that was causing the error "Unexpected Error when building ringfenced calculator" when the 'Align scenarios (unweighted)' option was enabled and a project scenario had been selected which did not exist in one of the projects.	23-00884265

Description	Support Ticket
Result Set calculations: Fixed an issue that was causing errors due to a missing setting when 'Inherit economic limit from parent node' was enabled. The option 'Use economic limit set in project' is now enforced as a default.	23-00884747
Result Set - Project Sensitivities configuration: Fixed a UI slow performance issue that occurred when the 'Inherit project sensitivities from parent node' checkbox was un-checked in cases where a large number of regimes needed to be scanned to load the variable information for the selection dialog; this load operation has now been optimized.	23-00888052
Result Set calculations: Fixed an issue that was causing the calculation error "There was an error in calculating the working interest shares" for ringfenced projects.	23-00885469
OData API: Fixed a bug that was causing a '500' error response to result set data requests due to incorrect handling of empty data tables in the tenant database.	—
Reporting: Fixed a bug that was causing incorrect non-inflated variable values when the 'From Template' option was being used for report runs.	23-00888638
Result Sets - Term Variables Sensitivities: Fixed a bug that was causing incorrect handling of sensitivities when more than one regime was added to the configuration (only the first regime's term overrides were being processed, the other regimes' overrides were being ignored).	23-00888643
OData API requests for Result Set data: Fixed a bug that was breaking paged downloads when the result set name contained accented characters.	23-00888997

Planning Space 16.5 Update 24 Release Notes

RELEASE DATE: 27 January 2023

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

General Notes

Support Ticket information: Tickets with numbers starting '22-' can be accessed in Salesforce; other tickets can be accessed in Freshdesk. When a ticket for the same issue exists in both systems, both numbers are included. (The Freshdesk system was deprecated on 2022-11-07 and it is not updated with new information.)

Upgrading to Planning Space 20.3: See the *Planning Space Deployment Guide* ([Version 20 Upgrade Paths](#)) for the latest information about upgrade paths from version 16.5 to 20.3.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Database upgrades for this release

Mandatory database upgrades for IPS Common and Tenant databases are required for this update.

Planning Space (IPS)

New Features

- IPS Admin API: Added endpoint 'licenseserver/api/v1/licenseusage' which provides detailed historical data on the usage of licenses.
- Security improvements: Added support for HSTS protocol, and improved handling of cookies, to address web vulnerabilities.
- OAuth authentication: Added support for PKCE, client registration, and client credentials OAuth protocol flows.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Fixed Defects

Description	Support Ticket
Planning Space login - tenant selection: Fixed an issue so that, if tenant display is enabled, users will only see tenants listed for which they have an active account.	22-00867032

Planning Space Dataflow

New Features

- Added a new API endpoint 'PlanningSpaceDataflow/api/v1/report' which can be used to start the generation of reports (Document or Multi-dataset) and to retrieve the report contents.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Workflows: If the IPS Service failed while a workflow was running, it was not possible to check or modify the workflow status in Dataflow; this issue has been fixed so that workflow status is reported correctly in the UI.	22-00848835, 127543
Load from Economics tool - Project Grouping option: If a project has not been calculated with a sensitivity run based on project scenario settings, then all of the grouped variables will be set to value "[None]". This situation was incorrectly triggering import errors. The loader will now continue the import and put warning messages in the log.	22-00846261, 124653
Data Utility: A timeout exception error was happening during node calculations in cases where the parent document had Price Link variables associated, which causes extended lookup times. The timeout period has been extended and the retry logic has been improved.	22-00852078, 128132
Load from Database tool: Fixed a UI bug where the 'Override Data Source' dialog would not open, if the 'Edit Template' dialog had previously been opened and closed without making any changes.	22-00851720, 130505
OData API: Fixed a bug where data values were not being converted from real to nominal when the inflation date was being set in the API request.	22-00851559

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Excel Spreadsheets in Regimes: Added the ability to use Excel User Defined Functions (UDF) in spreadsheets.
- Manage Hierarchies: The column filters configured in the hierarchies table are now persistent between user sessions.
- Reporting: Added Real/Nominal settings for individual linked variables in report templates; report runs can use the setting 'From Template' to apply these individual values, or override them.
- Result Sets - Contract Terms Sensitivities: Term Variables Sensitivities are now inherited from the parent node, or overridden, at every node in the calculation hierarchy, in the same way as for the Project Sensitivities and Economic Limit settings. By default, the 'Inherit terms variables from parent node' check boxes are enabled, and the setting for the top-level Corporate Rollup folder will be inherited by all other nodes.
- Result Sets 'Copy': The Copy function has been extended to apply to folders in the explorer. This means that entire nested structures of folders and Result Sets can be copied in one step.
- Sensitivity Result sets: Added ability to change the decimal precision for variables in report tables and charts.
- Dataflow Link: The 'Filter' field in the link configuration can be directly edited instead of using the logic editor dialog; existing Filter definitions can be copied as text strings and pasted into the same or other Filter fields.
- Hierarchy 'Copy From': Added options to include the source hierarchy price deck and currency deck in the copy.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Economics API: The '/data/v1/Calculate' API request was creating temporary log files on server disk with no cleanup process to remove them. The code has been revised so that no disk-based files are used; all log information of interest to the user is included in the API response data.	—
Regime templates: Fixed a bug that was that was causing an exception error when a custom named range was used to link a variable in a template.	22-00849804, 128558
Dataflow link - Pivot and Aggregate: Fixed an issue in the aggregation of periodic values from documents with different start dates, which was causing unexpected shifts in dates in the aggregated document.	—
Result Set calculations - unweighted ringfence mode: Fixed an issue with the calculation option 'Align scenarios (unweighted)' which was generating wrong results if a specific project scenario was chosen in the result set runs.	—

Planning Space 16.5 Update 23 Release Notes

RELEASE DATE: 11 November 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Database upgrades for this release

A mandatory database upgrade for Tenant databases is required for this update.

Planning Space (IPS)

Fixed Defects

Description	Support Ticket
Updated the CefSharp User Agent code so that it is compatible with current versions of the Chromium engine.	—

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

Fixed Defects

Description	Support Ticket
Hierarchy 'Copy From': Fixed an issue with incorrect folder security permissions during a 'Copy From' operation when Economics project data created in an earlier Planning Space version were migrated and opened in version 14 and later.	127992
'Copy From' hierarchy function: Fixed an issue that was causing a timeout	—

Description	Support Ticket
exception error when the source hierarchy contained a large number (tens of thousands) of projects.	

Planning Space 16.5 Update 22 Release Notes

RELEASE DATE: 25 August 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Important - Upgrading to Planning Space 20.3: If you are planning to upgrade from Planning Space 16.5 to Planning Space 20.3, it is possible to upgrade your PlanningSpace databases from 16.5 Update 22 to Version 20.3 Update 1.

Advance notice for the Planning Space 32-bit applications: The 32-bit versions of the Dataflow and Portfolio applications will be discontinued in a future release of Planning Space 16.5.

Database upgrades for this release

A mandatory database upgrade for IPS Common and Tenant databases is required for this update.

Planning Space (IPS)

New Features

- Security improvements: Javascript libraries which support Planning Space web interfaces have been updated to address known vulnerabilities.
- Security improvement: IPS Server has been installed with the latest security against Cross-Frame Scripting (XFS) attacks.
- Security improvement: Server-side email settings have been removed from the config file 'PlanningSpace.exe.config' in the Planning Space client installer. This affects the "Send Report to Support" action when an unhandled exception error occurs in the client application; this will now use the 'mailto' action in the user's local context (which must be configured to use an email client).
- Security improvement: The Planning Space client code for the 'serverhome.lastuser' cookie has been updated to address a known vulnerability.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Fixed Defects

Description	Support Ticket
<p>OData API endpoints: Fixed an issue that was causing 500 error responses for GET requests that contained the header 'Content-Type: multipart/form-data'; this was traced to internal code changes made during the adoption of ASP.NET CORE in Update 17. The issue was observed when creating OData links in Spotfire.</p>	122929
<p>Fixed an issue that was causing '/data' resources to be missing from the Swagger-based API reference web pages for the Dataflow, Economics and Financials Web APIs.</p>	—
<p>OData API: Fixed an issue that was causing timeout errors for API requests that were querying Dataflow scalar data which contained large numbers of revisions (the database view queries in the API code have been optimized to handle this situation).</p>	125285
<p>Economics OData API: Fixed an issue that was causing intermittent authentication failure (error code 401) of OData API requests using Windows authentication, in a clustered deployment. (Planning Space license authorization for API requests was tied to single server machines and hence prone to failure when API requests were distributed to servers by the load balancer.)</p>	120306

Planning Space Dataflow

New Features

- Document Lock Management: The list of locked documents is now filtered according to the access permissions of the current user for each locked document; the user will not be able to view documents for which they are not granted 'Read' access. (This means that the 'Documents Unlock' role can safely be granted to users with restricted access to Dataflow data).
- Load from Economics and Load from Financials tools: Added security permissions for mapping templates.
- Load from Economics and Load from Financials tools: Added security permissions for batch import settings.
- Load from Excel tool: Improved the selection, copy and paste actions in the File Root Folder input field.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Data Batching hierarchy tool: Fixed a UI bug where the 'Filter' window required repeated clicks to be closed.	—
Load from Database tool: Fixed a bug in the Query Preview function which was causing an error "unable to open database file" for SQLite data sources.	—
Load from Database tool: Fixed a bug that was allowing users to modify a destination document's revision tags when the user was not granted the 'Revisions Apply and Remove Tags' role.	119337
Change Dates hierarchy tool: Fixed an issue that was causing the error "Collection was modified; enumeration operation may not execute".	120158
PlanningSpace Data Connector (PDC): Fixed an issue where failed document Update operations were not being reported correctly in the PDC; these Update failures were due to a bug in handling the case where the 'Revision' data in Excel did not specify a revision tag.	122329
Load from Excel tool: Fixed a bug that was causing an exception error when attempting to create a document where the project 'end date' month in the Excel file did not contain 31 days.	125239

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Regime Library: A 'Read-Only' mode has been added so that a user can view the content of a regime when the regime has been opened and locked by another user.
- Regime Library: Security permissions have been added to folders; these will be automatically-inherited by new regimes created within folders.
- Security permissions for report templates: Permissions can be applied to report templates and folders in the Report Designer in the Configuration workspace. The permissions control a user's access to modify a template and to use it for generating reports. Folder permissions are inherited; you can use this feature to set default permission settings which new report templates will automatically inherit.
- Hierarchy 'Copy Settings From' function: Added an option to include the projects' Scenario Consolidation Settings in the copy operation.
- Result Set calculations - Price sensitivities: Added the ability to sensitize on Price Deck prices (this can be used for Standard and Sensitivity Result Sets).
- Regime module function library: Added the function `GetPriceScenarioName()` which returns the price scenario name used in the result set run that is being calculated.

- Regime module function library: Added the function `GetProjectScenarioName()` which returns the project scenario name that is being calculated.
- Result Set calculations: A new calculation mode has been added which implements a type of unweighted ringfencing. If the application tenant setting 'EnableUnweightedRingFenceMode' is set to True then all users of the tenant will be able to use an extra option 'Align scenarios (unweighted)' when a ringfenced calculation is selected (available for Standard Result Sets and Sensitivity Result Sets); in this mode the inputs to the ringfences are not risked before entering the ringfence calculation.
- Lock Management: The list of locked entities (project, regime, etc.) is now filtered according to the access permissions of the current user for each locked item; the user will not be able to view entities for which they are not granted 'Read' access. (This means that the 'Locks' role can safely be granted to users with restricted access to Economics/Financials data).
- Result Set calculations: The naming scheme for exported calculation spreadsheets has been changed to deal with issues that users were experiencing with filenames that were exceeding the length limit allowed in Windows.
- Clone Hierarchy function copies hierarchy permissions: the function has been modified to copy all of the user/workgroup permissions settings from the source hierarchy.
- Global price decks: Security permissions have been added to folders in the Price Management interface; these will be automatically-inherited by new decks or folders created within a parent folder.
- Sensitivity Result Set calculations- Project Variable Sensitivities setting: The 'Select Sensitivity Types' dialog now includes a 'Search' field for variable names, and a 'Regime' field to filter for variables that are used that are used in one specific regime in the hierarchy.
- Incremental groups: Added the ability to include projects with different project scenario weightings within the same incremental group (the 'Back Allocation' option must be enabled in the Incremental Settings).

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Fixed an issue that was causing incorrect output of the <code>TotalBack()</code> function when applied within a ringfence.	108530
Dataflow integration: Fixed a bug that was causing an 'OutOfMemory' exception error when 4 entity types had been selected in the link configuration.	—
Sensitivity Result Sets: Indicator discount rates were being displayed in the UI and output charts without decimal places. This has now been corrected to display the rate as it has been defined.	—
Result Set and Scratchpad calculations: Fixed an issue in error handling that could occur when a correctly-configured calculation was being affected by a regime modification which had changed the data type of a variable. (In the new calculation logic, the data type mis-match is detected and a new project input variable will be created instead.)	—
Dataflow integration - link configuration: Fixed incorrect permissions logic that was causing the list of available entity types displayed to a user to not	—

Description	Support Ticket
match with the user's effective access permissions.	
Result Set reporting: Fixed a bug in permissions handling that was causing an error in generating a variance report, when the hierarchy permissions were being enforced.	123856
Dataflow integration: Fixed a bug in the cloning operation which was causing a cloned hierarchy not to refresh correctly when its Dataflow link's selected Version was changed.	124174
Dataflow integration - Pivot & Aggregate: Fixed an issue that was causing errors in data synchronization, in cases where a large number of folders in the Economics hierarchy were being processed (redundant data caching is now optimized).	122077
Dataflow integration - Pivot & Aggregate: Fixed a bug that was occurring when a Dataflow variable was mapped to multiple Economics variables but only one of the variables was being synchronized by the link.	143635

Planning Space Portfolio

Fixed Defects

Description	Support Ticket
Fixed a bug in saving and opening PPLAN files where invalid XML characters in project data were not handled correctly.	124652

Planning Space 16.5 Update 21 Release Notes

RELEASE DATE: 19 May 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Important - Upgrading to Planning Space 20.3: If you are planning to upgrade from Planning Space 16.5 to Planning Space 20.3, it is possible to upgrade your Planning Space databases from 16.5 Update 21 to Version 20.3 Update 1.

Planning Space (IPS)

Fixed Defects

Description	Support Ticket
WiX installer: Fixed an issue that was affecting client deployments performed via the command line.	121456

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Fixed a memory leak bug in Dataflow that was causing memory loading issues in IPS Server (observed when Dataflow was being used as a data source in Portfolio).	120400

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

Fixed Defects

Description	Support Ticket
Price Deck editor: Fixed a bug that was causing edits made to formatting (cell fill color) to be lost.	120469
Sensitivity Result Set: Fixed a bug that was causing price scenario settings to be lost when the RS is closed and re-opened.	120914

Planning Space Portfolio

New Features

- Dataflow mapping template: Revision "By Tag" setting is now stored in the template and does not need to be manually set.

For more information about these changes, see the [Planning Space User Manual](#) .

Planning Space 16.5 Update 20 Release Notes

RELEASE DATE: 14 April 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Requirement change for .NET Framework - Update 17 and later: To run the Updates 17 and onwards, the ".NET Framework 4.8 Runtime" (or a more recent version) must be installed on all IPS Server machines, and on all client machines that run the CX and Planning Space client software.

Planning Space (IPS)

New Features

- Improvements in the Planning Space client to deal with authentication and network communication issues, including: improved handling of authentication token refresh failures; enhancements to client-side logging for improved diagnosis of network issues (optional additional logging can be enabled for the Dataflow, Economics and Financials client logs, using the application client settings 'DiagnosticLoggingEnabled').

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Improvements and fixes for performance and stability of the Planning Space client when performing hierarchy and result set operations.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Scratchpad calculations: Fixed a bug that was causing a fatal exception error ("The given key was not present in the dictionary") in a Scratchpad calculation when a variable had been removed from a regime while the project was left open.	116924
Fixed an issue with memory usage that was causing timeout errors in multi-run Result Set calculations. Improved calculation performance due to changes in the handling of price deck data.	—

Planning Space 16.5 Update 19 Release Notes

RELEASE DATE: 11 March 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Requirement change for .NET Framework - Update 17 and later: To run the Updates 17 and onwards, the ".NET Framework 4.8 Runtime" (or a more recent version) must be installed on all IPS Server machines, and on all client machines that run the CX and Planning Space client software.

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

Fixed Defects

Description	Support Ticket
Dataflow integration - Pivot & Aggregate link: Fixed a bug that was causing timeout errors when synchronizing for large numbers of source documents.	117506
Fixed an issue that was causing errors for API requests to the Economics/Financials OData endpoint '/data/v1/Regimes' when the request parameter '\$expand=RegimeVariables' was included.	117884

Planning Space 16.5 Update 18 Release Notes

RELEASE DATE: 23 February 2022

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Important: Mandatory database upgrades for the IPS Common and Tenant databases are required for this update (note: these are not required if the Update 17 upgrades have been applied, since they have the same contents). The upgrade programs will grow the SQL Server logs due to creation of recovery log data; it is recommended to temporarily switch the database Recovery Model setting to 'Simple' in order to avoid potential disk space overflow during the upgrade.

Installation changes - Update 17 and later: Releases since Update 17 use a new installer platform based on the WiX Toolset. This provides a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*. **When the WiX-based installer is used for the first time, a complete uninstall of the existing Planning Space installation (i.e., Update 16 or earlier), followed by a machine reboot, will be required. Subsequent Updates can be installed in-place.**

Requirement change for .NET Framework - Update 17 and later: To run the Updates 17 and onwards, the ".NET Framework 4.8 Runtime" (or a more recent version) must be installed on all IPS Server machines, and on all client machines that run the CX and Planning Space client software. **If the Update 17 release was not installed in your deployment, you will need to have the .NET Framework upgrade for this release. The WiX installer program will automatically check if the .NET upgrade is required and carry it out.**

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Load from Database tool: Fixed a bug in the IPS server job clean-up process which was causing running database loader jobs to be cancelled by mistake, if the 'Server Side Load' option was enabled.	—
Load from Database tool: Fixed an issue in IPS server job management which would not allow a running database loader job to be cancelled if the 'Server Side Load' option was enabled.	—

Planning Space 16.5 Update 17 Release Notes

RELEASE DATE: 15 February 2022

Important: Mandatory database upgrades for the IPS Common and Tenant databases are required for this update. The upgrade programs will grow the SQL Server logs due to creation of recovery log data; it is recommended to temporarily switch the database Recovery Model setting to 'Simple' in order to avoid potential disk space overflow during the upgrade.

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Note for installation: if the Planning Space installer fails to complete when installing "in place" (i.e., when a previous version of Planning Space is still installed), it is important to completely uninstall the previous version *and to reboot the server machine* before using the installer again. This is because the Windows OS may have pending installations (i.e., they are deferred to the next reboot) that are interfering with the Planning Space installation.

Installation changes: This release uses a new installer platform based on the WiX Toolset. There is now a single, unified EXE file for installing any of: Planning Space (IPS) server; Planning Space client application; CX Suite client applications; LP Solver service. For the updated installation instructions see the *Deployment Guide*.

Important requirement change: To use the updated software the ".NET Framework 4.8 Runtime" (or a later version) must be installed on all IPS Server machines, and on all client machines that run the Planning Space client software. **The WiX installer program will automatically check if the .NET upgrade is required and carry it out.**

Code changes for API processing: This release completes the upgrade of the Planning Space HTTP services (these handle the processing of the Web and OData APIs, as used by external applications and internally for Planning Space/CX client-server communications), which has been implemented in phases across several releases. Code based on OWIN (Open Web Interface for .NET, <http://owin.org>) has been upgraded to use ASP.NET Core (<https://docs.microsoft.com/aspnet/core>).

Firewall configuration changes are required due to the HTTP services upgrade, see the details below.

Planning Space (IPS)

New Features

- New installer platform for Planning Space and CX Suite based on the WiX Toolset. There is now a unified EXE file for the Planning Space or CX server and client installs, as well as the LP Solver install.
- This release completes the upgrade (implemented in phases across several releases) of the Planning Space HTTP services. As part of this change, the WCF-based application

services have been separated from the web services, resulting in 3 new IPS modules (Dataflow WCF Service, Economics WCF Service, Financials WCF Service) which each require new port assignments for inter-server communication (the defaults are: 9145, 9146, 9147, 9245, 9246, 9247) and these ports must be set open on any firewall that exists between the IPS server machines in a cluster.

- An alert message can be displayed to users during login (to warn about planned system events, for example). It is set by a new Planning Space application tenant setting 'Login Alert Message'.
- Added full support for the use of Microsoft Azure SQL PaaS to run the IPS Common and Tenant databases.

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Fixed Defects

Description	Support Ticket
PowerShell cmdlets 'SetTenantAwsCloudStorage' and 'SetTenantAzureCloudStorage': The use of 'true' and 'false' string values as inputs to Boolean parameters has been blocked, these do not work correctly if used. Note: while other cmdlets will not block the string values they should not be used - always use the Boolean inputs (0, 1, \$true, \$false).	—
Fixed a bug that was causing an error when editing a workgroup in a clustered deployment (multiple IPS servers).	—
Fixed an issue that was causing IPS cluster communication to fail, due to a Windows Server OS change that was made in the January 2022 Microsoft Windows update.	—
Fixed several bugs in the PlanningSpaceDataflow API, which could cause exception errors in clustered deployments.	115400
Upgraded the CefSharp browser component in Planning Space to the latest stable version v97. This fixes an issue that was affecting SAML authentication and SSO, due to a bug in CefSharp v93.	—

Planning Space Dataflow

New Features

- Planning Space Anonymizer add-on tool: The setting 'Anonymize version names and history' has been split into two separate settings for 'version names' and 'document history'.
- Load from Enersight tool: Added the ability to create and/or apply a scenario tag with the same name as the named scenario.
- Load from Enersight tool: Enersight outcome names are now used as scenario names by default, when importing into named scenarios.
- Users with 'Read-only' permission for a version will no longer be able to add or remove revision tags to any document within the version. 'Full Access' permission is needed to modify revision tags.

- Load from Database and Load from Excel tools: When the 'Destination Dataflow Hierarchy Node' selection screen is opened, the version selector now defaults to the version that is active.
- Load from Economics tool: A validation check has been added that will warn the user when the currency deck used in the load does not match the currency deck set in the destination document.
- Load from Economics tool: The price deck name used in a Result Set calculation can now be mapped by the loader.
- Load from Database tool: The tool now supports the use of Windows authentication when the Server Side Load option is used.
- Version Manager: Users will only be able to select price decks that they have permission to read.
- When assigning prices to product streams in documents (either from the hierarchy or inside the document), the dropdown selector for price streams will only show prices for which the user has Read permission for the related Price Group in the hierarchy Price Deck.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Data Aggregator hierarchy tool: Fixed a bug that was causing an aggregated value with incorrect unit size in a parent document if there were no values saved in the parent document prior to aggregation.	106469
Fixed a bug that was causing the variable unit system, unit scale and currency default settings in the document template to be ignored.	107193
PlanningSpace Data Connector: Fixed a bug that was causing the scenario name to be extracted into the scenario tag column when performing an Extract operation in Ad hoc mode.	111566
Economics/Dataflow integration (Pivot & Aggregate): Fixed a bug that was causing incorrect transformation of variables in the case where a Dataflow document template was set to 'Nominal' but a document instance of that template had a variable which was set to 'Real'.	—
Load from Database tool: Fixed a bug that was causing an exception error when trying to update documents using the 'Update document using identifier' option, if the loader was run on a version that had been copied from another version without calculating the documents.	113932

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- Dataflow integration: Revision Tag data from linked Dataflow documents is now stored in projects and can be processed in Result Set calculations.
- Regime Spreadsheets: Added functionality to assign values to individual projects in ring-fence calculations that are performed within Excel spreadsheets.
- Dataflow integration: for the link configuration, the list of entity types shown to a user will only show entities for which the user has been granted 'Read' permission.
- Sensitivity Result Sets: The 'Indicator' variable selector now includes the Discount Rate information taken from the configured Currency & Discounting preset (this removes the need to do a separate lookup for information when configuring Aliases).
- Dataflow integration 'Pivot and Aggregate' link: Added a filter option for source documents (as already available for the Default link).
- Manage Hierarchies table: new 'Copy Table' context menu action copies all table data to the system clipboard; it can be pasted as tabular data to an external application (e.g., a spreadsheet).
- Report template editor: Added pseudo-variables to access the Revision Tag data from linked Dataflow documents ('Revision Tag', 'Revision Date', 'Was Linked to Dataflow').
- When assigning prices to projects in the hierarchy, the dropdown selector for price streams now has a search box so that the list can be filtered using substring matching (i.e., the prices shown in the list will be only those that contain the specified string of characters anywhere in the price name).
- Global Price Deck security: Permissions can be applied to each Price Deck in the global configuration.
- Global Price Deck security: Permissions can be applied to price groups within global Price Decks.
- Hierarchy security: Added permissions for price groups within hierarchy price decks. These permissions replace the document-level price deck permissions which were introduced in Update 15.
- Query Builder: Added an optional filter on the variables list when a result set is selected. If used, only variables that are used in the result set will be included.
- Dataflow integration: When a configured Revision Tag is not referenced for any Dataflow document in the synchronization then a fatal 'Sync Error' used to be triggered. This change demotes such events to warnings only,
- Query Builder: Improved display of Result Set data as a tree view, and added search functionality.
- Regime editor - Project Template: Added pseudo-variables to access the Revision Tag data from linked Dataflow documents ('Revision Tag', 'Revision Date', 'Linked to Dataflow').

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Permissions configuration dialog (Economics/Financials): Fixed a UI bug in "View Effective Permissions" where the Delete permission could have both 'Allow' and 'Deny' checked at the same time.	—
Result Set calculation debugger: Fixed an issue that could cause the debug-	87191

Description	Support Ticket
ger not to work when a module was ringfenced.	
Result Set reporting: Fixed a bug that could cause the spurious date "12/3000" to appear in the report configuration screen when the report End Date was set to "Project Economic Limit".	109014
Result Set calculations: Fixed inconsistent behavior in the handling of project validation for ringfenced or non-ringfenced projects. The non-ringfenced case was causing calculations to stall and fail later due to timeout errors. Now in both cases the calculation will fail immediately with a validation error.	114419
Dataflow integration (Pivot & Aggregate): Fixed a bug that was causing incorrect real currency values in destination projects during data synchronization.	112984
Dataflow integration - Pivot & Aggregate link: Fixed an issue where data synchronization was failing due to a scalar datetime value in a Dataflow source document that was outside the allowed date range for SQL datetime variables (i.e. less than 1/1/1753). The transform function has been modified to reset any value below the SQL valid minimum to a Null value.	112387
Result Set calculation - Contract terms sensitivity: Fixed a bug which was including non-flexible terms when a non-default preset was used.	110873
Improved the Economics Cluster Cleanup automatic process so that it cannot delete temporary folders for Result Set calculations that are running (folder deletion will cause the calculation to fail).	—

Planning Space Reserves (Reconciliation and Decline)

Fixed Defects

Description	Support Ticket
Reconciliation: Fixed a bug that was preventing blank values to be loaded into text variables.	100877

Planning Space 16.5 Update 16 Release Notes

RELEASE DATE: 29 November 2021

Important: A mandatory database upgrade for IPS Common and Tenant databases is required for this update.

Updates are based on full installations of Planning Space. All changes in previous Updates are included in the latest Update.

Note for installation: if the Planning Space installer fails to complete when installing "in place" (i.e., when a previous version of Planning Space is still installed), it is important to completely uninstall the previous version *and to reboot the server machine* before using the installer again. This is because the Windows OS may have pending installations (i.e., they are deferred to the next reboot) that are interfering with the Planning Space installation.

Advance notice of a .NET Framework requirement change (Update 17): It is expected that a requirements change will be made in the next update. ".NET Framework 4.8 Runtime" will be required to be installed on all IPS Server machines, and on client machines that run the Planning Space client software. (The current minimum requirement is .NET version 4.7.2)

Planning Space (IPS)

New Features

- License Profile feature in IPS Manager for the management of license affinity and the assignment of licenses.
- Added groundwork implementation of support for the use of Azure SQL PaaS to run the IPS Common and Tenant databases; full support will be developed in later releases.
- User authentication: Added support for user client logins to be initiated by an Identity Provider server; this allows sign-ins from an IdP web portal page, if this is supported by the IdP.
- Changed the default values of the IPS service setting 'CaptureApiTraffic' (new default 'True') and the application settings 'License.SelectionMode' (new default 'AutomaticWithOverride').

For more information about these changes, see the [Planning Space Deployment Guide](#) .

Fixed Defects

Description	Support Ticket
Fixed an issue in the server API log files which were not using the correct 'NCSA log format' for timestamps.	—
Audit Log: Fixed a bug that was causing unicode characters to appear as '?' in audit log records.	—
Economics Calculation API: Fixed a bug that was causing '500' error	—

Description	Support Ticket
responses not to be recorded in the API log file.	
Fixed an issue which was causing database contention during IPS Server clean-up jobs.	—
Fixed a UI bug in the Planning Space client application where external hyperlinks in the help documentation were launching a redundant extra browser window.	—
Improvements to the IPS job scheduler logic have been made to address an intermittent issue where job processes did not terminate properly due to failed inter-process communication. This issue was preventing new jobs from starting and resulted in jobs remaining indefinitely in the job queue.	—
IPS Server Monitor: Fixed a bug that was causing incorrect output for process memory usage when the usage exceeded 4 GBytes.	—

Planning Space Dataflow

Fixed Defects

Description	Support Ticket
Data Utility: Fixed a bug that was causing an application crash when a filter was applied for a ScalarInteger variable to contain a Null value.	110485
Data Batching hierarchy tool: Fixed a bug that could cause failure of a propagation step with advanced filtering applied (log warning: "No target documents found, please ensure the correct node type was selected"); this was due to the tool's incorrect use of the source document path and not the hierarchy path.	110916

Planning Space Economics and Financials

New Features and Fixed Defects apply to both applications, unless otherwise noted.

New Features

- (For Economics only) Added functionality to store Working Interest data at the hierarchy folder level, which will be inherited or overridden by projects.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Scratchpad calculation: Fixed a bug that could cause a calculation error due to duplicated Terms existing for a folder that was generated by a 'Copy From' operation.	—
Economics Calculation API: 'POST /calculations' requests now create a ResultSet name that contains a random numeric sub-string. This fixes an issue with filename conflicts when requests processed at the same exact millisecond were being assigned the same ResultSet name.	—
Result Set calculations: Fixed a bug in pre-calculation project validation which could cause non-ringfenced calculations to 'hang' and fail to exit cleanly (resulting in 'timed out' errors). This fix ensures clean exit from calculations.	—
Result Set Runs – Report Groups: Fixed a bug that was causing an exception error when the Manage Report Groups tool was opened just after creating a new report group.	111373
Economics Calculation API: A number of fixes and improvements have been made to address intermittent issues where calculation jobs were failing to complete.	110194

Planning Space Portfolio

New Features

- Load Data from Economics/Financials: Improved the loader performance when the source data contain a large number of result sets.

For more information about these changes, see the [Planning Space User Manual](#) .

Fixed Defects

Description	Support Ticket
Fixed a bug in the Import Dependencies tool which did not correctly handle negative shift periods.	110884

Planning Space Reserves (Reconciliation and Decline)

New Features

- Reconciliation: Added permissions at the reconciliation level. These control when a user will be allowed to modify node data during a 'Load Data' operation. (Note: for existing reconciliations after upgrading, 'Full Access' permissions will be granted to the 'Everyone' workgroup to maintain compatibility with the previous version; if permissions are going to be used then the Everyone permission for each reconciliation must be modified or removed.)

For more information about these changes, see the [Planning Space User Manual](#) .