



Infor Advanced Planning Release Notes

Version 11.1

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Publication Information

Release: Infor Advanced Planning 11.1

Publication date: August 31, 2017

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About this guide

The document includes information about the bug fixes and enhancements that are delivered as part of this release.

Intended audience

This guide provides high level, summarized functional and/or technical aspects of the new and/or changed functionality offered in AP 11.1. The intended audience can include key users, system administrators, implementation consultants, support specialists, and so on.

Contacting Infor

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If we update this document after the product release, we will post the new version on this Web site. We recommend that you check this Web site periodically for updated documentation.

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Chapter 1 Advanced Planning 11.1

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Infor Advanced Planning 11.1 contains many improvements and new functionalities. The important new functionalities are:

- [Enabled Functions PUSH \(B,L\) and COLLECT \(B,S,E,F\)](#)

By default, the functions PUSH (B,L) and COLLECT (B,S,E,F) are enabled.

- [Default Property Values on Plansheets](#)

It is now possible to display and update the default property values on plansheets.

- [Improved Copy of Plansheet Cells and Headers to Spreadsheets](#)

A new option "Edit > Copy cells & headers" copies cells, resources, and headers by extending the selection in the plansheet. The standard copy (via CTRL+C) uses the last selected area which consists either of headers, resources or cells. The copying process is up to 10 times faster.

- [Jump to Resource in Resource browser](#)

Double-click a resource in a plansheet to open the resource browser and display the selected resource.

- [Java Solver Engine / Faster Pre-optimization](#)

The solver engine has been rewritten in Java. Consequently, pre-optimization is up to 3 times faster.

- [ILOG CPLEX 12.7](#)

Advanced Planning optimization has been upgraded from ILOG CPEX 12.6.3 to ILOG CPLEX 12.7.

AP 11.0 data files can be easily upgraded to AP 11.0. With AP 11.1, you can open an AP 11.0 data file. In most cases, no change is required. See [Compatibility AP 11.1](#). The same applies for AP 5.1 data files. In this case, you also need to review [Compatibility AP 11.0](#). For more information on the important new functionalities in AP 11.0, see [Introduction to AP 11.0](#).

Compatibility

Forward Compatibility

AP data files that are saved with AP 11.1 cannot be opened with previous AP versions.

Backward Compatibility

- Remote Solver Engine & Decomposition:
The **remote solver engine** and **decomposition** can no longer be used. See [Compatibility](#) in [new functionalities in AP 11.1 > Java Solver Engine / Faster Pre-optimization](#).
- ILOG CPLEX 12.7:
The functionality for finding the Irreducible Inconsistency Set is no longer supported by ILOG CPLEX 12.7. If you are using ILOG CPLEX performance parameters, it is recommended that you check if there are any changes to the default values because of the new ILOG CPLEX release. See [Compatibility](#) in [new functionalities in AP 11.1 > ILOG CPLEX 12.7](#).
- Derived Locked Properties Behave similar to Normal Locked Properties:
The behavior of derived locked properties has been changed. See [Compatibility](#) in [new functionalities in AP 11.1 > Derived Locked Properties Behave Similar to Normal Locked Properties](#).

New Functionalities

General

- Manual ISA Installation ([ADVPLAN-3034](#)):
Automatic installation of [ISA](#) is no longer performed when installing Advanced Planning. To make use of ISA for an AP installation, it must be manually registered after installation. Refer to KB article 1605675 on Infor Xtreme for details on the process to register AP 11.1 with ISA.
- Improved User Interface for High DPI Scaling ([ADVPLAN-2935](#)):
Improved user interface display and usability of many areas, when a high DPI scaling is configured in Windows. For example, maintenance grids, class icons, calendar, and Quick Action.

- AP Installs Microsoft Visual C++ 2015 Redistributable ([ADVPLAN-3353](#));

When Advanced Planning is installed, Microsoft Visual C++ 2015 Redistributable runtime is now installed, unless it is detected as already being installed. This package is required for the CPLEX sub problem solver. In previous versions, the Microsoft Visual C++ 2012 Redistributable runtime was installed.

Modeler

- Enabled Functions PUSH(B,L) and COLLECT(B,S,E,F) ([ADVPLAN-3288](#)):

By default, the functions PUSH(B,L) and COLLECT(B,S,E,F) are enabled. These functions were added to [AP 11.0.03](#), but required using the Enable Push And Extended Collect Function workflow command to enable these functions. The usage of this workflow command is no longer needed.

Plansheet

- Default Property Values on Plansheets ([ADVPLAN-3260](#)):

It is now possible to display and update the default property values on plansheets. These values are displayed using a separate pseudo-bucket named **(*)**. This bucket is always the first in the list of buckets.

The Content tab of the Plansheet manager shows Default Property Values in a separate list. To add the default property value of property **A**, double-click **A (*)** in the Properties autopane.

The plansheet only displays property values per bucket and the default property values that are listed in the Content tab of the Plansheet manager. When the "Properties on rows" plansheet mode is used, this may lead to plansheet cells with a gray cross:

- If the configuration contains **A** and doesn't contain **A (*)**, the cells for property **A** in the pseudo-bucket **(*)** display a gray cross mark.
- If the configuration contains **A (*)** and doesn't contain **A**, the cells for property **A** in normal buckets display a gray cross mark.
- Improved Copy of Plansheet Cells and Headers to Spreadsheets ([ADVPLAN-3308](#), [ADVPLAN-3393](#)):

The copying of plansheet cells and row and column headers to external applications such as spreadsheets has been improved. A new "Copy cells & headers" item has been included under the Edit menu for plansheets. Selecting this menu item copies cells and headers (resources, buckets, properties) from the plansheet:

- When plansheet cells are selected, the corresponding row and column headers are also copied.

- When row and/or column headers are selected and no cells are selected, the corresponding cells are also copied. It is sufficient to make a selection in one of the headers. When no selection is made in one of the other headers, all elements of these headers are copied. For instance, when resources r1 and r2 are selected and no buckets or properties are selected, then resources r1 and r2, all buckets, all properties, and all corresponding cells are copied.

The progress bar indicates the progress during the copy action. Copying a large selection can take considerable time, especially for the first time because data needs to be retrieved and/or calculated.

Performing a standard copy on a plansheet (via CTRL+C) no longer accumulates all selected headers, resources, and cells. Instead, only the last selected area is copied, for example only the selected headers, resources, or cells.

You can now just click the selected header to easily deselect row and column headers, effectively toggling the selection. This is an alternative to the existing Control+Click to deselect all header elements.

- Faster Plansheet Copy ([ADVPLAN-3354](#)):

The performance of the Plansheet copy has been improved. It is up to 10 times faster.

- Jump to Resource in Resource browser ([ADVPLAN-3257](#)):

Added functionality on the Plansheet to directly open the resource browser and display the selected resource. Double-click a resource from within a plansheet to directly open the resource browser and display the selected resource.

- Find Other Resource with Same Name ([ADVPLAN-3256](#)):

When performing a search on the Plansheet, the search text will default to the first selected resource name. If a resource is not selected, the last used search text is displayed.

Solver

- Java Solver Engine / Faster Pre-optimization ([ADVPLAN-3248](#)):

The solver engine has been rewritten in Java. Consequently, pre-optimization is up to 3 times faster.

Notes:

- Pre-optimization consists of steps which are logged as opt4, opt5, opt6...
- The CPLEX sub-problem solver has not been rewritten.

Compatibility

The **remote solver engine** and **decomposition** options can no longer be used.

- The remote solver engine was used to optimize AP problems on a computer other than the computer on which AP was running.
- Decomposition was used to optimize a global problem consisting of several AP data files that were connected through linking variables.

- ILOG CPLEX 12.7 ([ADVPLAN-3285](#)):

Advanced Planning optimization has been upgraded from ILOG CPLEX 12.6.3 to ILOG CPLEX 12.7. You can still use ILOG CPLEX 11 or 12.2 by adding one of these lines to the optimization:

```
sub_problem_solver: APSolverIlogMip11.exe; // Use ILOG CPLEX 11.0 instead of ILOG
CPLEX 12.7
sub_problem_solver: APSolverIlogMip122.exe; // Use ILOG CPLEX 12.2 instead of ILOG
CPLEX 12.7
```

Compatibility

The functionality for finding the Irreducible Inconsistency Set is no longer supported by ILOG CPLEX 12.7. Using line 'check_infeasibility: irreducibly inconsistent set;' (no quotes) in an optimization may lead to the warning message:

Skip 'Irreducibly Inconsistent Set (IIS)' for CPLEX versions ≥ 12.7 . In order to analyze infeasibility, use 'use_conflict_refiner: yes;' (no quotes) or 'use_conflict_refiner: yes, keep pre-optimization = yes;'.

If you use CPLEX performance parameters, it is recommended that you test if the default ILOG CPLEX values for these parameters lead to better performance for the new ILOG CPLEX release. Examples of CPLEX performance parameters are **MIPEmphasis**, **Probe**, **RepeatPreSolve**, **HeurFreq**, **VarSel**, and **RootAlg**. Example:

```
set_ilog_parameter: EpGap = 0.01, MIPEmphasis = 1, Threads = 5, RepeatPreSolve = 2;
```

Change the above line to the following line:

```
set_ilog_parameter: EpGap = 0.01, Threads = 5;
```

- Derived Locked Properties Behave Similar to Normal Locked Properties ([ADVPLAN-2018](#)):

Compatibility

The behavior of derived locked properties has been changed.

- Derived locked properties now behave similar to normal locked properties. The costs and bounds are ignored and property **B** is not implicitly locked in expression **A * B** when property **A** is a derived locked property.
- In previous versions, derived locked properties functionally behaved similar to properties that were not locked. The costs and bounds were taken into account and property **B** was implicitly locked in expression **A * B** when **A** was a derived locked property.

Examples:

- Class **Z**: **A = B + 7**; **A <= 6**;
Optimization: **Z.A, 1**; **Locked: Z.B**;
One resource and one bucket with current values: **A = 8, B = 1**
 - The derived locked property **Z.A** behaves similar to a normal locked property. The bound **A <= 6** and the cost of 1 for **Z.A** are ignored. A solution with cost 0 and values **A = 8, B = 1** is found.
 - In previous versions, the derived locked property **Z.A** functionally behaved similar to a property that was not locked. The bound **A <= 6** and the cost of 1 for **Z.A** were taken into account. The problem was reported to be infeasible.

- Class Z: $A = (B + C) * D$;
Optimization: Z.A; Z.D; Locked: Z.B; Locked: Z.C;
 - The derived locked intermediate property **Z.(B + C)** behaves similar to a normal locked property. Property **Z.D** is not implicitly locked because **Z.(B + C)** is locked.
 - In previous versions, the derived locked property **Z.(B + C)** functionally behaved similar to a property that was not locked. Property **Z.D** was implicitly locked because **Z.(B + C)** was not a normal locked property.

Bug Fixes

Modeler

- Incorrect Split Over Two Buckets of the COLLECT(B,F,E,F) Function ([ADVPLAN-3322](#)):
The extended collect function $A = \text{COLLECT}(B,F,E,F)$ could incorrectly split B over two buckets for A. In this case the result would be equal to $A = \text{COLLECT}(B,F,E)$. This could occur when the shifted time interval was less than a day. This issue has been corrected.

Plansheet

- Search Stops Working After Clicking Expand ([ADVPLAN-2829](#)):
If you click Expand within the plansheet, while the plansheet search dialog is open, the search can stop working. This issue has been corrected.
- Resource Descriptions Are Not Copied ([ADVPLAN-3291](#)):
Performing a copy of selected resources on a plansheet would always copy the resource name, even when descriptions were being displayed. This issue has been corrected.

Solver

- Domain With Single Value Leads to Internal Error ([ADVPLAN-3321](#)):
Domains with a single value resulted in the Internal AP Solver Engine error 'EXCEPTION_ACCESS_VIOLATION'. This issue has been corrected.

Workflow

- Slow Workflow Commands that Change the Calendar ([ADVPLAN-3474](#)):

For these workflow commands, a performance regression was introduced in AP 11.0.04, especially when plansheets were opened.

- Set Partition From Date
- Restore Buckets
- Set Partition Part
- Set Partition Start
- Delete Partition

This issue has been corrected.

Compatibility

There are no compatibility issues between AP 11.0.04 and [AP 11.0.03](#).

New Functionalities

General

- Windows 10 64-bit ([ADVPLAN-2896](#)):
Advanced Planning is now available on Windows 10 64-bit.
- Java 8 ([ADVPLAN-2172](#)):
The Advanced Planning user interface has been upgraded from Java 7 to Java 8.
- Translated Help Update ([ADVPLAN-1411](#)):
Translated help content has been updated for these languages: German, French, Spanish, Portuguese, Chinese, Japanese.

Template

- AP SCO 11.0.2 ([ADVPLAN-3126](#)):
AP 11.0.04 contains the AP Supply Chain Optimization Template version 11.0.2. For a detailed list of changes, see *ChangeLog.pdf*, which can be accessed from the **Overview.pdf**. To access the **Overview.pdf**, from the Windows Start menu, select **Infor > Documentation > Advanced Planning 11.0 > Templates > Supply Change Optimization > Overview**.

Note: AP 11.0.03 contained the AP SCO Template version 11.0.0.

Query

- Asynchronous Query Evaluation after Calendar Update ([ADVPLAN-2827](#)):

Updating the calendar in Advanced Planning, for example, using a calendar import within a workflow, could result in the UI hanging for some time when there are a large number of queries; together with a large number of buckets and resources. This has been improved by evaluating queries asynchronously, as required, rather than synchronously, which is done directly after the calendar update. This results in a more responsive UI, as the queries are evaluated in the background.

Solver

- Ignore Discrete Constraints in Sub Problem Solver ([ADVPLAN-2956](#)):

Discrete constraints can now be ignored by the Sub Problem Solver using the new 'sub_problem_ignore_discrete_constraints' solver parameter. Solver engine pre-optimization still uses discrete constraints. For more information, click **Solver Constraints > Sub Problem Ignore Discrete Constraints** in the auto text pane of the AP Solver Window.

- ILOG CPLEX 12.2 ([ADVPLAN-2987](#)):

The option to also use the older CPLEX version 12.2 instead of 12.6.3 for Advanced Planning optimization is now available. This line must be added to the optimization text:

```
sub_problem_solver: APSolverIlogMip122.exe; // Use ILOG CPLEX 12.2 instead of ILOG CPLEX 12.6.3
```

This option has been added because in some exceptional cases CPLEX 12.2 outperforms CPLEX 12.6.3.

Bug Fixes

Template

- Cannot Create Resources of Complex Allocation Class after Template Load ([ADVPLAN-3072](#)):

If an allocation class with many relations was loaded from a template, resources of that class could not be created until the data file was saved and reopened again. This issue has been corrected.

Integration

- Silent Abort when Importing Variables with an Invalid Name ([ADVPLAN-2854](#)):

Importing AP variables with invalid names, such as spaces or numerics, were ignored and the variable import was aborted without a warning. This issue has been corrected. AP now reports the invalid variable names during the import of variables and does not abort the variable import.

Solver

- Solver does not Stop when Using Prioritized Costs and "always get first solution" ([ADVPLAN-2893](#)):

The solver occasionally did not stop when using prioritized costs in combination with "max_time: ..., always get first solution;". For the first prioritized cost, the time was correctly ignored until a first discrete solution was found. For subsequent prioritized costs, the time limit was ignored until a second solution was found. This issue has been corrected.

Calendar

- Unexpected Exit after Repeated Calendar Update ([ADVPLAN-2673](#)):

Repeated changes to the calendar in a workflow or the import of the calendar could cause an unexpected exit of the application. This issue has been corrected.

Compatibility

- Forward Compatibility:
AP data files that are saved with AP 11.0.03 can be opened using the previous AP 11 versions.
- Backward Compatibility:
ILOG CPLEX 12.6.3
If you are using ILOG CPLEX performance parameters, it is recommended that you check the default values again because of the new ILOG CPLEX release. See [Compatibility](#) in [new functionalities in AP 11.0.03](#) > [ILOG CPLEX 12.6.3](#).

New Functionalities

General

- Japanese translation of the Help and Application messages ([ADVPLAN-2473](#), [ADVPLAN-2280](#)):
This version includes the Japanese translation of the Advanced Planning help and application messages.

Template

- AP SCO 10.4.9 ([ADVPLAN-2515](#)):
AP 11.0.03 contains the AP Supply Chain Optimization Template version 11.0.0. For a detailed list of changes, see *ChangeLog.pdf*, which can be accessed from the **Overview.pdf**. To access the **Overview.pdf**, from the Windows Start menu, select **Infor > Documentation > Advanced Planning 11.0 > Templates > Supply Change Optimization > Overview**.
Note: AP 11.0.02 contained the AP SCO Template version 10.4.9.

Modeler

- New PUSH(B,L) function ([ADVPLAN-2364](#)):

The new PUSH(B,L) modeler function is introduced. This function can be used to model lead times that shift to a single bucket. This function is not enabled by default. To enable this function, use the [Enable Push And Extended Collect Function](#) workflow command.

For more details, go to **AP Consultant Manual > Modeler > Functions > [PUSH\(B,L\)](#)**.

- New COLLECT(B,S,E,F) function ([ADVPLAN-2273](#)):

The new COLLECT(B,S,E,F) modeler function is introduced. This function is an extension of the COLLECT(B,S,E) modeler function. The fourth parameter F can be used to remove partial buckets. This function is not enabled by default. To enable this function, use the [Enable Push And Extended Collect Function](#) workflow command.

For more details, go to **AP Consultant Manual > Modeler > Functions > [COLLECT\(B,S,E,F\)](#)**.

Integration

- Unique Interface Names Across Groups ([ADVPLAN-2320](#)):

When maintaining interface names in the Integration Kit, you must now ensure that the Interface name across all groups is unique. This applies to the Create, Duplicate and Rename actions of the Integration Kit.

- Extended usage of Variables in Interface Definitions ([ADVPLAN-2526](#)):

The usage of AP variables in the Integration Kit interfaces has been extended. Variables can be used in the 'Field name' and the 'Header' fields on the 'Definition' tab. For database interfaces, variables can also be used in the 'Database' field on the 'Data mapping' tab.

Query

- Expression with Default Property in the Query condition ([ADVPLAN-2282](#)):

A query condition for a property comparison can now accept an expression containing a reference to a default property. Examples:

Z.A = \$[A (*)]: This will filter to include resources of class Z where the value of property A is equal to the resources default property "A (*)" value.

Z.A > \$[A (*)] + \$[B]: This will filter to include resources of class Z where the value of property A is greater than the result of the expression, resources default property "A (*)" value + the value of property B.

- Improved Query Check Message for Invalid Property ([ADVPLAN-1875](#)):

The query manager check functionality has been improved. When the Value field in the Query condition refers to an invalid property, such as \$[invalid property], AP now reports that the property is invalid, rather than indicate that the value is not numeric.

Solver

- Solve Multiple Sub Problems in Parallel ([ADVPLAN-2361](#)):

Multiple sub problems can now be solved simultaneously using the new "nb_sub_problems_solved_in_parallel" solver parameter. For more information, click **Solver Constraints > Nb Sub Problems Solved In Parallel** in the auto text pane of the AP Solver Window. This can be used in combination with parallel solving for each sub-problem. For example, "nb_sub_problems_solved_in_parallel: 4; set_ilog_parameter: Threads = 2;" enables solving of 4 sub-problems simultaneously using 2 CPU cores for each sub problem.

- ILOG CPLEX 12.6.3 ([ADVPLAN-1834](#), [ADVPLAN-2444](#)):

Advanced Planning optimization has been upgraded from ILOG CPLEX 12.6 to ILOG CPLEX 12.6.3. You can still use ILOG CPLEX 11 by adding this line to the optimization:

```
sub_problem_solver: APSolverIlogMip11.exe; // Temporary use ILOG CPLEX 11 instead of ILOG CPLEX 12
```

Instead of using:

```
set_ilog_parameter: RootAlg = 4, BarCrossAlg = -1; //Use barrier solver without crossover
```

It is recommended to use:

```
set_ilog_parameter: RootAlg = 4, SolutionType = 2; //Use barrier solver. Accept non-basic solution.
```

Compatibility

If you use CPLEX performance parameters, we recommend that you test if the default ILOG CPLEX values for these parameters lead to better performance for this new ILOG CPLEX release. Examples of CPLEX performance parameters are **MIPEmphasis**, **Probe**, **RepeatPreSolve**, **HeurFreq**, **VarSel**, and **RootAlg**. Example:

```
set_ilog_parameter: EpGap = 0.01, MIPEmphasis = 1, Threads = 5, RepeatPreSolve = 2;
```

Change the above line to the following line:

```
set_ilog_parameter: EpGap = 0.01, Threads = 5;
```

- New Solver Parameter to Convert Discrete Constraints ([ADVPLAN-2578](#)):

New "convert_discrete_constraints" public solver parameter can be used to convert threshold and/or bool constraints to integer variables and linear constraints. This solver parameter was introduced as a hidden parameter in Advanced Planning 5.1.14. See the [Upper Bound no Longer Needed for BOOL and Threshold](#) section in the [AP 5.1 release notes](#). The solver parameter is now changed to a public parameter because of a few issues, converting discrete

constraints can, in some cases, lead to better solver performance. For more detailed information about this solver parameter, click **Solver Constraints > Convert Discrete Constraints** in the auto text pane of the AP Solver Window.

- New "Use Conflict Refiner" Solver Parameter to Analyze Infeasible Continuous Problem ([ADVPLAN-2649](#)):

New "use_conflict_refiner" solver parameter can be used to analyze an infeasible continuous problem. This parameter invokes the ILOG CPLEX conflict refiner which replaces the slower ILOG CPLEX functionality to locate the irreducibly inconsistent set. The latter was invoked by adding line "check_infeasibility: irreducibly inconsistent set;" (no quotes) to the optimization. For more information:

- Click **Solver Constraints > Use Conflict Refiner** in the auto text pane of the AP Solver Window.
- See the **AP Consultant Manual > Solver > Analyze Infeasibility**.
- Specify Discrete Buckets for a specific Class.Property ([ADVPLAN-2525](#)):

It is now possible to specify discrete buckets for a specific class.property (a property in a class). The "discrete_buckets" solver parameter has been extended to allow, for example, "C(class1) P(property1) = [5 7]". For more information, click **Solver Constraints > Discrete Buckets** in the auto text pane of the AP Solver Window.

- Use Discrete Start Values for Specific Types of Discrete Constraints ([ADVPLAN-2621](#)):

It is now possible to use discrete values for specific types of discrete constraints. The "use_discrete_start_values" solver parameter has been extended to allow, for example, "multiple = yes, bool = no". For more information, click **Solver Constraints > Use Discrete Start Values** in the auto text pane of the AP Solver Window.

Workflow

- Default Properties in Expressions ([ADVPLAN-2286](#)):

Default properties can now be used in expressions provided to the Set Values workflow command and the Set Values For Selection workflow command. For example:

```
Set Values: Z.A = $[A (*)] * 1.10;
```

This sets the value of property A of class Z to 110% of the resources default value of property A.

- Improved Error Message for Workflow Command Set Values ([ADVPLAN-1875](#)):

The error messages for workflow commands Set Values and Set Values For Selection have been improved to indicate the cause better. Consider, for example, class Z with property definition "A = UNDEFINED;". Running the "Set Values: Z.A = A (*);" workflow command leads to this error message:

```
Exception: Error while setting value for Resource "z1" and bucket "Week 1" : unrecognized character "A" in math expression.
```


The improved error message is:

Exception: the value "A (*)" is not a valid property name, and an error occurred while trying to evaluate it as an expression: unexpected character "A" at position 1 in math expression.

- Improved Division By Zero Handling for Workflow Command Set Values ([ADVPLAN-1875](#)):

The handling of division by zero for workflow commands Set Values and Set Values For Selection has been improved. Consider, for example, class Z and properties A, B, and C where C is zero for resource z2 and bucket Week 1.

Previously, running the "Set Values: Z.A = $\$[B] / \$[C]$;" workflow command led to this result:

- No changes were made for any quantities of class Z and property A.
- Chapter Workflow of the AP Console displayed a 'Exception: Error while setting value for Resource "z2" and bucket "Week 1" : cannot divide by zero.' error message in Red.

Currently, running the "Set Values: Z.A = $\$[B] / \$[C]$;" workflow command leads to this result:

- For bucket Week 1 and resource z2, A is set to nil.
 - If A is a default property, A is set to the resource default property "A (*)" value.
- For other combinations of buckets and resources of class Z, A is set to the value of B / C.
- Chapter Workflow of the AP Console displays a 'Data error while evaluating value for Resource "z2" and bucket "Week 1" : cannot divide by zero. Setting value to NIL.' warning message in Blue.
- New Workflow Command: Enable Push And Extended Collect Function ([ADVPLAN-2707](#)):

The new workflow **Enable Push And Extended Collect Function** command is introduced. This command enables the new [PUSH\(B,L\)](#) and [COLLECT\(B,S,E,F\)](#) modeler functions and logs this warning in the AP Console window:

Saving the AP data file will create an AP data file that can no longer be opened by Advanced Planning 11.0.02 or previous versions.

See the **AP Consultant Manual > Workflow commands > [Enable Push and Extended Collect Function](#)**.

Bug Fixes

General

- Setting a Quantity to Empty Does Not Immediately Reset to the Default Property Value ([ADVPLAN-2317](#)):

If a quantity was set to empty for a property with a default value, the quantity was not immediately set to the default property value. This was delayed until the AP data file was saved and re-opened or the Clear History or Clear Future workflow command was used.

Note: There are several methods to set a quantity to empty:

- Set the value to empty in a plansheet.
- Run "Set Values: Z.A = nil;" workflow command for class Z and property A.
- Import NULL into a quantity with the "Disable conversion of NULL values" checkbox cleared in Preferences.

This issue has been corrected.

- Crash When Propagating a Change to a Tree of SUM Functions ([ADVPLAN-1221](#)):

Possibility of AP crashing when propagating a change to a tree of SUM functions. For example:

- Class Z has resource z1 and definition $A = \text{SUM}(Y.B) + \text{SUM}(Y.C)$.
- Class Y has resource y1 and definitions $B = \text{SUM}(X.B)$; $C = \text{SUM}(X.C)$.
- Class X has resource x1 and definitions $B = \text{UNDEFINED}$; $C = \text{UNDEFINED}$.
- Class Y is a child of class X and resource y1 is a child of resource z1.
- Class X is a child of class Y and resource x1 is a child of resource y1.

AP crashed when setting A to 1 for resource z1 for a bucket. The crashed occurred while propagating the change to B and C for resources y1 and x1. This issue has been corrected.

- Incorrect Propagation to a Chain of Two SUM Functions ([ADVPLAN-1221](#)):

AP might incorrectly propagate a change to a chain of two SUM functions. For example:

- Class Z has resource z1 and definitions $A = \text{SUM}(Y.A) + B$; $B = 0$.
- Class Y has resource y1 and definition $A = \text{SUM}(Y.A)$.
- Class X has resource x1 and definitions $A = 1$.
- Class Y is a child of class X and resource y1 is a child of resource z1.
- Class X is a child of class Y and resource x1 is a child of resource y1.

Changing property A from 1 to 2 for resource z1 caused AP to change property B from 0 to 1 for resource z1 and property A from 1 to 2 for resource x1. This was incorrect because these two changes correspond to value 3 for property A and resource z1. This issue has been corrected.

- Incorrect Calculation of Cyclic COVER ([ADVPLAN-2221](#)):

In certain situations involving a calculation of $\text{COVER}(B, S, E)$, the value of a calculated property B might be incorrectly calculated. An example of property definitions:

$$A = \text{COVER}(B, S, E);$$

$$B = A + 1;$$

The calculated properties B and A refer to each other. This creates a potential cyclic reference, depending on the values used for properties S and E. The reference is not cyclic if S and E have value -1 and all buckets are of the same length. In this case, the value of B must be correctly calculated. However, the value could still be incorrect for some resources. This issue has been corrected.

- Script "APWithModule.cmd" Does Not Work ([ADVPLAN-2397](#)):
Script "APWithModule.cmd" did not work. The "-m" command line option was used, which is no longer supported. As an alternative the ["-layout"](#) command line option can be used. This issue has been corrected by removing the redundant "APWithModule.cmd" script.
- Saving Could Fail with Error "NSIncrementExtraRefCount() asked to increment too far" ([ADVPLAN-2550](#)):
Saving the AP data file could fail and the "NSIncrementExtraRefCount() asked to increment too far" error was reported. This could occur when performing a Save or Save As, either using the File menu or a workflow command, when there were many queries to be evaluated across many resources and buckets. This issue has been corrected.

Plansheet

- Changing Plansheet Cell Value Does Not Move Focus to Next Cell ([ADVPLAN-2620](#)):
After changing a value in a plansheet cell, the focus was not moved to the next cell. Instead the focus was moved to the "Expand" button at the top left of the plansheet. It was not possible to select the next cell without using the mouse. This issue occurred when a query was on an open plansheet or resource browser, where the query referenced a property that was changed, either directly, or through propagation. This issue has been corrected.
- Incorrect Aggregated Values after Shortening Planning Horizon ([ADVPLAN-2623](#)):
If the planning horizon was shortened while a plansheet with aggregated values was displayed, the aggregated values were not recalculated correctly. This issue has been corrected.
- Missing Classes in a Plansheet Imported from a Template ([ADVPLAN-2785](#)):
When importing plansheets from a template, if any of the classes or queries referenced in a plansheet did not exist, entries were not displayed in the "Classes / Resources" section on the Content tab, in the Plansheet manager pane; and the plansheet view was empty. This issue has been corrected. Additionally, any missing classes or queries referenced on a plansheet which is imported using a template are logged to the 'File Reading and Writing' chapter of the AP Console, and removed from the plansheet.

Integration

- Crash on No or Invalid Default Database Schema ([ADVPLAN-2201](#)):
There was a possibility of AP crashing, if a database interface definition in the Integration Kit was used and a database user ID without a default database schema or an invalid schema was used. This issue has been corrected.
- Post-SQL Statement Executed Twice ([ADVPLAN-2204](#)):
If an import interface specified a post-SQL statement, the statement was executed twice. This issue has been corrected.

- **Incorrect Logging of Database Connection Errors ([ADVPLAN-2119](#)):**
Database connection errors were not logged correctly in the Integration Kit log. This issue has been corrected.
- **Executing an Interface Opens the Integration Kit Window in Another Tab ([ADVPLAN-2539](#)):**
When executing an interface from either the Quick Action window or the toolbar, AP would open the Integration Kit window in another tab. This issue has been corrected.

Query

- **Occasional Hang When Using %max Query Operator ([ADVPLAN-2224](#)):**
The %max operator in a query condition did not work properly and could cause the application to hang occasionally. This issue has been corrected.

Solver

- **Divide by Zero not Correctly Handled for Property Expression ([ADVPLAN-2025](#)):**
Divide by zero was not correctly handled for a property expression. This could lead to infeasibility. This issue occurred, for example, for the constraint $A = B / C + D$ where a quantity for property C was 0 or nil for a resource and bucket. The workaround was to use constraints $A = E + D$ and $E = B / C$. This issue has been corrected.
- **Wrong CPLEX Message About Singularities ([ADVPLAN-2463](#)):**
When the CPLEX sub problem solver experienced numerical difficulties, an error message "(singularities in phase ...)" was logged to the solver log file SubProblemLog*.txt. This message was inaccurate and confusing. This issue has been corrected by changing the message to "(numerical difficulties during optimization)".
- **Executing an Optimization Opens the Solver Window in Another Tab ([ADVPLAN-2539](#)):**
When executing an optimization from either the Quick Action window or the toolbar, AP would open the Solver window in another tab. This issue has been corrected.
- **Solver Parameter "Use Discrete Start Values" Ignores MIN and MAX ([ADVPLAN-2583](#)):**
The "use_discrete_start_values" solver parameter ignored discrete start values of the MIN and MAX constraints. This issue has been corrected.

Workflow

- Using Toolbar to Run a Workflow Stops Currently Running Workflow ([ADVPLAN-2379](#)):

It was possible to select a workflow from the toolbar icon when a workflow was already running, which would stop the current workflow. The was also true for the Interface and Solver toolbar icons. This issue has been corrected, by disabling the selection of a workflow, interface, or solver, from the respective toolbar icon, if one is already executing a process.

- Executing a Workflow Opens the Workflow Manager Window in Another Tab ([ADVPLAN-2228](#)):

When executing a workflow from either the Quick Action window or the toolbar, AP would open the Workflow manager window in another tab. This issue has been corrected.

Compatibility

There are no compatibility issues between AP 11.0.02 and [AP 11.0.01](#).

New Functionalities

Solver

- Always Allow Parallel Solving ([ADVPLAN-1957](#)):
Parallel solving is enabled for all the AP license keys. Previously, parallel solving was disabled for the AP 32-bit license keys.

Bug Fixes

Integration

- Incorrect Import of Last Character of a VARCHAR or NVARCHAR Database Column ([ADVPLAN-2019](#)):
When importing text data from the VARCHAR or NVARCHAR database columns, if the text was as long as the maximum length of the source column, the last character might be removed or the import might fail. This issue has been corrected.

Compatibility

Forward Compatibility

The AP data files that are saved with [AP 11.0.01](#) can be opened with [AP 11.0](#), but this new functionality cannot be used.

Date Format Prefix in Integration Kit Data Filtering

With AP 11.0, in the Data Filtering tab of the Integration Kit, date format prefixes cannot be used. See [Forward Compatibility](#) in [new functionalities in AP 11.0.01](#) > [Date Format Prefix in Integration Kit Data Filtering](#).

Backward Compatibility

The AP data files that are saved with AP 11.0 can be opened with AP 11.0.01. Because of a fixed bug, a backward compatibility issue exists.

Invalid Values are Silently Translated to 0 by the Set Values Command

With an old AP data file, red error messages may be added to the workflow log. For example, if no default value is assigned to the "maintenance" property and the workflow command "Set Values: Resources.maintenance = maintenance (*);" is used, a red error message is added to the chapter Workflow of the AP Console. In previous AP versions, "maintenance (*)" was silently translated to 0. See [Backward Compatibility](#) in [bug fixes in AP 11.0.01](#) > [Invalid Values are Silently Translated to 0 by the Set Values Command](#).

New Functionalities

General

- Warning When Saving Prevents Opening with the Previous AP Version ([ADVPLAN-1340](#)):

If you open an AP data file that was last saved with an older version of Advanced Planning and saving would break the backward compatibility, a warning message is displayed in the AP Console.

For example, if you open, with Advanced Planning 11.0.01, an AP data file that was last saved with Advanced Planning 5.1.19, this warning message is displayed in the AP Console:

This AP data file was last saved with an older version of Infor Advanced Planning (5.1.19.0.20), which is not forward compatible with AP data files from this version of Infor Advanced Planning (11.0.01.0.19). Saving the AP data file with this version of Infor Advanced Planning, will create an AP data file that can no longer be opened by that previous version of Infor Advanced Planning.

- Quit AP When Closing License Dialog Box ([ADVPLAN-1396](#)):

If you click the Close button 'x' of the license key dialog box, a confirmation box is displayed. The user is prompted to confirm the action. Previously, the license input dialog was displayed three times or until a valid license key was entered.

Note: If you start AP with a missing or incorrect license, the license key dialog box is displayed.

- Improved Error Messages when Saving Fails ([ADVPLAN-1322](#)):

The error messages that were used to report failures when saving the data file to a different location, using the "Save as" option, were unclear. These messages have been improved.

For example, this error message is now logged:

Error saving the data file to C:\example.pls. Reason: Cannot delete the contents of the target directory. The directory might be open in another program.

Previously, this error message was logged:

Exception: Save failed. See C:\Users\...\File Reading and Writing for details.

- Improved Status Bar & Workflow Console Messages ([ADVPLAN-1398](#)):

During the execution of a workflow, the display of the current action on the AP status bar is clearer. For example, the status bar mentions the name of the current Interface, Workflow or Solver. The Workflow console messages have also been improved to indicate the action start and finish messages, including the duration. As part of this improvement, the "Waiting for finish..." and "Ready" messages have been removed.

Template

- AP SCO 10.4.9 ([ADVPLAN-1872](#)):

AP 11.0.01 contains AP Supply Chain Optimization Template version 10.4.9. This template is compatible with Supply Chain Vault 10.4.9. For a detailed list of changes, see *ChangeLog.pdf*, which can be accessed from **Overview.pdf**. To open **Overview.pdf**, from the Windows Start menu select, **Infor > Documentation > Advanced Planning 11.0 > Templates > Supply Change Optimization > Overview**. AP 11.0 contained AP SCO Template version 10.4.8.

Integration

- Date Format Prefix in Integration Kit Data Filtering ([ADVPLAN-1818](#)):

When using dates in the Data Filtering tab of the Integration Kit, you can now specify the date format using a prefix. The format of the prefix is the same as in variable expressions in workflows, that is, the prefix can consist of any combination of the letters d, m and y, surrounded by parentheses. The letters indicate the order of the day, month, and year respectively in the date expression. For example, "(dmy) 04-05-2015" indicates 4th May 2015. "(ymd) 2015-05-08" indicates 8th May 2015. If no formatting prefix is used, the original behavior is kept, that is, the date format specified in the user preferences is used.

Forward Compatibility

A data file that is saved with AP 11.0.01 can be opened with AP 11.0, but the date format prefixes that are used in the Data Filtering tab of the Integration Kit cannot be handled by AP 11.0.

- Allow Database Interfaces With Incomplete Mapping ([ADVPLAN-1801](#)):

If some AP fields have no Database column specified in the Data Mapping tab, that is, the Database column is empty or equal to "??", Database Interfaces can now be executed successfully. These unmapped AP fields are skipped during the execution of the interface and are reported as a warning during the Check and Execute operation. This example shows a warning that can be displayed:

AP field "Products.Name" has no mapping provided, and will be skipped.

Previously, executing these Database Interfaces would generate an error and fail.

Solver

- Default Logging of Problem Statistics Extreme Values & Discrete Constraints ([ADVPLAN-1210](#)):

These problem statistics are now logged by the solver to the solver log file APSolverEngineLog.txt by default:

- Logging of **extreme values**, for example, biggest upper bound.

- Logging of class.properties, resources and buckets of **discrete** constraints, for example, multiples.

For more information, click **Solver Constraints > Log Problem Statistics** in the auto text pane of the AP Solver Window.

Workflow

- Automatic Sizing of Workflow Input Dialog Box ([ADVPLAN-1391](#)):

When the workflow command "input: message;" is used, the input dialog box is now automatically sized to fit the message. This message may contain several lines.

- Stop Workflow when Closing Workflow Input Dialog Box ([ADVPLAN-1396](#)):

If you click the Close button 'x' of the workflow input dialog box, a confirmation message is now displayed. The user is prompted to confirm the action. Previously, closing the workflow input dialog box had the same effect as pressing the enter key, that is, the entered string was accepted and the workflow continued.

Note: When the workflow command "input: ...;" is used, the input dialog box is displayed.

- Property Expressions in Set Values & Set Values For Selection ([ADVPLAN-1393](#)):

The workflow commands **Set Values** and **Set Values For Selection** now support expressions. These expressions may contain references to the properties of the same class being updated, using the syntax $[\text{property name}]$. Examples:

- Set Values For: Resources.overtime capacity = $[\text{regular capacity}] * 0.15$;
 - This sets the overtime capacity to 15% of the regular capacity for all resources of class Resources.
- Set Values For Selection: Products At Location.std cost = $[\text{std cost}] + [\text{std cost}] * 0.1$;
 - This increases the value of "std cost" by 10% for the selected resources of class Product At Location.

The ability to set a property directly to another property value still exists. The syntax $[\text{property name}]$ is only required when a property is used as part of an expression.

When using the $[\text{property name}]$ syntax, empty values are translated to zero. This does not occur when setting the property directly. Examples:

- Set Values: Customer Allocations.planned sales = **forecast**;
 - This sets the planned sales to the value of the forecast. If the forecast is empty, then the planned sales are also set to "empty".
- Set Values: Customer Allocations.planned sales = **\$\$forecast**;
 - This sets the planned sales to the value of the forecast. If the forecast is empty, then the planned sales are set to **zero**.

When an error occurs during the execution of these workflow commands, none of the values are updated. An example of error is a divide by zero.

- Log Recalculation & Query Evaluation to Workflow Console ([ADVPLAN-1602](#)):
The Workflow console log now indicates that recalculation and synchronous query evaluation are running, which may be triggered after a workflow has completed. This information provides visibility on the reason why AP is still busy after the workflow steps have completed.

Bug Fixes

General

- Incorrect Parsing of Numbers with More Than 18 Digits ([ADVPLAN-1679](#)):
Some numbers, containing more than 18 digits, were not correctly parsed. For example, 50.64687464674616461 was parsed as 7.6972016867461646. This parsing impacted the numbers that were specified in a workflow, conditional format conditions, and import of quantities from text. This issue has been corrected.
- Status Bar Does not Always Report Completion ([ADVPLAN-1754](#)):
Occasionally, the status bar message did not indicate the completion of some actions. This omission included the Check and Execute actions of the Integration Kit, the Query Manager and the Conditional Format Manager. This issue has been corrected.
- Empty Dialog Box When AP Data File is Too New or Too Old ([ADVPLAN-1833](#)):
If an AP data file could not be opened because its AP version was either too old or too new, an empty dialog box was displayed and AP hung. This issue has been corrected.
- ISA Data Collection Might Use Too Much Memory and Hang ([ADVPLAN-1874](#)):
If one or more AP log files are larger than 1 GB, the ISA data collection script might allocate over 2 GB of memory and hang. This issue has been corrected.
Note: To make this change effective, you need to uninstall AP 11.0.

Template

- Trying to Connect to ODBC Data Sources While Loading Template ([ADVPLAN-1250](#), [ADVPLAN-1576](#), [ADVPLAN-1686](#), [ADVPLAN-1852](#)):
When loading a template, a connection was attempted to all the ODBC data sources that were referenced by the interfaces defined in the template. As a result, the performance of the template load was poor. When trying to connect to a data source that was not responding, AP might even hang for a longer period of time. This issue has been corrected.

- Cannot Open Template with Conditions ([ADVPLAN-1564](#)):
When opening a template with conditions, AP hung. This issue has been corrected.
- Default Plansheet Cell Height Sometimes not Included when Creating Template ([ADVPLAN-1345](#)):
When creating a template using **File > Create template...**, a default plansheet cell height was sometimes included in the plansheet files of the template and sometimes omitted. When opening this template, the actual plansheets were not affected, but comparing templates was inconvenient. This issue has been corrected. When creating a template, the plansheet cell height is now always included.

Plansheet

- Collapsing a Large Resource Sub-tree Briefly Displays Red Text "Invalid" in Plansheet Cells ([ADVPLAN-1258](#)):
When collapsing a large resource sub-tree on a plansheet, the corresponding plansheet cells briefly displayed the red text "Invalid" before the sub-tree collapse finished. This issue has been corrected.
- Incorrect List of Conditional Formats ([ADVPLAN-1758](#)):
When no Conditional Formats with group (None) was specified, the list of Conditional Format Names in the plansheet Cell Format tab incorrectly displayed the list of Conditional format Groups. This issue has been corrected.
- Cell Height not Saved or Loaded ([ADVPLAN-1724](#)):
The cell height that was defined on a plansheet was not saved or loaded from an AP data file or template. This issue has been corrected.

Integration

- Crash or Error when Running Database Interface with Data Type TEXT ([ADVPLAN-1829](#)):
When running a database interface on a table column with data type TEXT, AP 11.0 crashed or an error was reported. This issue has been corrected. The TEXT database data type is now supported. The maximum length of data to import or export to a TEXT field is limited to 4000 characters.
- Incorrect Default Filters on the Data Mapping Tab ([ADVPLAN-1744](#)):
The file chooser dialog boxes on the Data Mapping tab of the Integration Kit had a default filter for AP data files and templates (*.pls and *.plst). The dialog boxes did not allow descending into data AP file directories. This issue has been corrected. In the file chooser dialog box, that is used on the text interface Data Mapping tab to select the file path, the filter on text files (*.txt, *.csv) is now used by default. In the file chooser dialog box, that is used on the database interface mapping tab to select the data source definition file, the filter on ODBC data source files (*.dsn)

is now used by default. In these dialog boxes, you can switch to the All Files filter and descend into the AP data file directories.

- **Disappearing Columns Header & Length of a Text Interface ([ADVPLAN-1145](#)):**
After changing the Direction or switching the Data link from Text to Database, and back to Text, the columns "Header" and "Length" were omitted from the Definition tab of a Text Interface. This issue has been corrected.
- **Error When Interfacing Records With Dates Spanning Over More Than 15 Years ([ADVPLAN-1857](#)):**
Interfacing records with dates that are spanning over more than 15 years, for example, bucket start dates or effectivity dates, could lead to the error "NSIncrementExtraRefCount() asked to increment too far". This issue has been corrected.

Solver

- **Discrete Start Values Rejected Due to Tiny Discrete Violations in Solution ([ADVPLAN-2635](#)):**
When using solver parameter "use_discrete_start_values: yes;" the discrete start values were sometimes rejected due to tiny discrete violations. An example of such a tiny discrete violation is a start value 300.00001 for a variable that must be a multiple of 100. This issue has been corrected by upgrading to [CPLEX 12.7](#).
- **Ignored Solver Parameter "check_infeasibility: yes;" ([ADVPLAN-1343](#)):**
The solver parameter "check_infeasibility: yes;" was ignored. This issue has been corrected. For more information, click **Solver Constraints > Check Infeasibility** in the auto text pane of the AP Solver Window.
- **Internal Error when Using CPLEX Parameter DetTiLim" ([ADVPLAN-3369](#)):**
When running an optimization containing "set_ilog_parameter: DetTiLim = 5000;", the sub-problem solver reported:

Internal error: unknown solver result code '25'.

Output best solution found so far.

This occurred after the CPLEX **Deterministic Time Limit**.
Note: It didn't have any impact on the solution. This issue has been corrected.

Workflow

- **Invalid Values are Silently Translated to 0 by the Set Values Command ([ADVPLAN-1842](#)):**
Invalid values that were specified with the workflow commands **Set Values** and **Set Values for Selection** were silently translated to 0, with no message in the workflow log. This issue has been corrected.

Backward Compatibility

For an old AP data file, red error messages may be added to the workflow log. For example, if no default value is assigned to the "maintenance" property and the workflow command "Set Values: Resources.maintenance = maintenance (*);" is used, a red error message is added to the chapter Workflow of the AP Console. In previous AP versions, "maintenance (*)" was silently translated to 0.

Infor Advanced Planning 11.0 contains many improvements and new functionalities. These release notes describe the important changes:

- [AP Windows 64-bit Only:](#)
AP no longer runs on Linux and Windows 32-bit.
- [Supply Chain Optimization \(SCO\) Template:](#)
This new template / AP data file covers the typical supply chain and can be deployed in various situations because of the built-in flexibility.
- [Conditional Formatting in Plansheets:](#)
This functionality allows users to configure the formatting of plansheet cells, such as color and font style, based on the displayed value.
- [Access 32-bit ODBC Data Sources:](#)
32-bit ODBC data sources, for example, Excel, can now be accessed from AP 64-bit.
- [Asynchronous Queries:](#)
Queries are now asynchronously evaluated in the background, thus not blocking user input.
- [No Query Evaluation at End of Workflow:](#)
AP now excludes the synchronous query evaluation from the workflow execution.
- [Allow Bound Expressions:](#)
Bound expressions, for example, "**stock** >= safety stock - **under safety stock**", are now allowed by the Solver.
- [AP Core up to 30% Faster:](#)
AP core components, for example, solver setup, recalculation, and saving, are up to 30% faster.
- [Double Number Precision for Plansheet Values:](#)
In plansheets, users can now display and specify quantity values up to 15 digits.

AP 5.1 data files can be easily upgraded to AP 11.0. With AP 11.0, you can open an AP 5.1 data file. In most cases, no change is required. See Compatibility AP 11.0.

Compatibility

Forward Compatibility

AP data files that are saved with AP 11.0 cannot be opened with previous AP versions.

Backward Compatibility

- Allow Bound Expressions

If a conflict for an optimization is reported by the Solver check function of a previous AP version, a compatibility issue might exist for this optimization. See [Compatibility](#) in [new functionalities in AP 11.0 > Allow Bound Expressions](#).

- ILOG CPLEX 12.6

If you are using ILOG CPLEX performance parameters, you might want to test default values again because of the new ILOG CPLEX release. See [Compatibility](#) in [new functionalities in AP 11.0 > ILOG CPLEX 12.6](#).

- Improved Precision Handling For BOOL Constraint

A problem that was previously feasible, may now be infeasible. An example is "B = BOOL(A); A >= 0.02; A <= 0.05". See [Compatibility](#) in [new functionalities in AP 11.0 > Improved Precision Handling For BOOL Constraint](#).

- Preference Language, Date Style & Display Century ([ADVPLAN-1623](#), [ADVPLAN-1262](#))

The **first** time a user starts AP 11.0, these operations are performed:

- These user preferences, that can be accessed from **Tools > Preferences**, are migrated:
 - **Language of user interface** from the **Language** tab.
 - **Date Style & Display Century** from the **Date** tab.
- For the previous AP version, these user preferences are removed. The next time you start the previous AP version, the default values are used:
 - **Language of user interface** is set to "English".
 - **Date Style** is set to "day, month, year".
 - **Display Century** is set to "off".

This migration does not occur if the user has a **roaming user profile**, that is, a Windows home folder on the network. In this case, the first time a user starts AP 11.0, these operations are performed:

- The AP 11.0 default values are used for these user preferences:
 - **Language of user interface** is set to "English".
 - **Date Style** is set to "day, month, year".

- **Display Century** is set to "off".
- For the previous AP version, the values of the **Language of user interface**, **Date Style**, and **Display Century** settings are not changed.

For the language preference, an issue can occur. If you use a previous AP version after using AP 11.0, AP 11.0 and the previous AP version may display a mix of two languages. To correct this issue, change the language in the AP version that displays the mix of the two languages. The issue has these causes:

- The language preference for server side elements is migrated. Examples of server side elements are the messages in the AP Console and in the status bar.
- The language preference for client side elements are shared by AP 11.0 and previous AP versions. Examples of client side elements are the menu and the names of AP windows.

The following example shows several scenarios that can cause AP to use two languages. For example, you do not use a roaming profile and you have selected the German language in AP 5.1.19.

- 1 Open AP 11.0 for the first time. The German language is used as expected. Quit AP.
- 2 Open AP 5.1.19. The German language is used for the client side elements. The English language is used for the server side elements. Set the language to Spanish. Quit AP.
- 3 Open AP 5.1.19. The Spanish language is used as expected. Quit AP.
- 4 Open AP 11.0. The Spanish language is used for client side elements. The German language is still used for server side elements. Set the language to French. Quit AP.
- 5 Open AP 11.0 The French language is used as expected. Quit AP.
- 6 Open AP 5.1.19. The French language is used for client side elements. The Spanish language is used for server side elements. Set the language to French. Quit AP.

New Functionalities

General

- AP Core up to 30% Faster ([ADVPLAN-1689](#)):
AP core components, for example, solver setup, recalculation, and saving are up to 30% faster. This performance improvement is due to an optimized build of the core runtime library "objc-1.dll" that is used by AP. This improvement has no effect on the performance of the solver engine.
- AP Windows 64-bit Only ([ADVPLAN-1366](#), [ADVPLAN-1407](#)):
Advanced Planning is a 64-bit application running on Windows 64-bit. AP no longer runs on Linux and Windows 32-bit. AP 64-bit now accepts AP 32-bit license keys, but, for these keys, parallel solving is disabled.

Note: since AP 11.0.02, parallel solving is enabled for all the AP license keys.

- 64-bit User Interface ([ADVPLAN-1080](#)):

We upgraded the Advanced Planning user interface from java 32-bit to java 64-bit. Consequently, the Advanced Planning user interface (process javaw.exe) can consume more RAM.

- AP Installs Infor Support Assistant (ISA) ([ADVPLAN-1454](#)):

The Infor Support Assistant (ISA) tool is now automatically installed with Advanced Planning. ISA is a support tool that allows collecting and uploading data to the Infor Xtreme Support portal. See the Infor Xtreme knowledge base article KB 1493246. In addition to general system information, ISA collects these AP-specific data:

- AP Logs from all user accounts.
 - AP specific configuration, that is, AP registry keys and AP configuration files, from all user accounts.
 - ODBC settings.
 - Status of AP processes.
- AP Installs Microsoft Visual C++ 2012 Redistributable ([ADVPLAN-1339](#)):

When Advanced Planning is installed, Microsoft Visual C++ 2012 Redistributable runtime is now installed, unless it is detected as already being installed. This package is required for the AP solver engine.

- Warning About Opening a New Data File ([ADVPLAN-1433](#)):

If you try to open an existing folder that is neither an AP data file nor an AP template, a warning message is now logged. As in previous releases, a new untitled AP data file is opened instead.

For example, the folder **c:\temp\Example.pls** contains one folder, **Example.pls**. This example shows a typical issue of incorrect unzipping an AP data file. If you drag the folder **c:\temp\Example.pls** to the AP icon, this message is displayed in the chapter "File Reading and Writing" of the AP console:

Could not locate a valid data file at C:\temp\Example.pls. Opened a new data file instead.

Template

- Supply Chain Optimization (SCO) Template ([ADVPLAN-609](#)):

The Supply Chain Optimization (SCO) template has been included in Advanced Planning. This template is available as the Supply Chain Optimization option in the AP startup dialog box. From the Windows Start menu, you can access this documentation: **Infor > Documentation > Advanced Planning 11.0 > Templates > Supply Change Optimization**.

The Supply Chain Optimization (SCO) template has been developed based on extensive experience in implementing AP for companies in different industries. The template covers the typical supply chain and can be deployed in various situations because of the built-in flexibility. The template includes integration with the **Infor Supply Chain Vault (SCV)**.

Example data can be imported from the provided spreadsheet **ApScoData.xlsx**. This example data is fully documented. The AP data file **ApSco.pls** already includes this example data. See the *Overview.pdf* document.

- Improved Template File Names ([ADVPLAN-777](#)):

When creating templates from Advanced Planning, the individual files for the different types of configuration entities are named as per the relating configuration entity name. For example, if an Interface is named "Import demand", the created file is named "Import demand.plstf" within the template. This naming allows easier comparison between different versions of templates, because the file names are consistent between created templates. Previously, the file names were more abstractly named and not consistent between the creation of templates.

Non-ASCII characters are converted to ASCII characters where possible. If the file names are not unique, a sequence number is appended. For example, the optimization names "optimización" and "optimizacion" result in the template file names "optimizacion.plstf" and "optimizacion_1.plstf".

- Label Sets in Template ([ADVPLAN-1439](#)):

When importing or creating a template from AP, Label Sets are now included.

Plansheet

- Conditional Formatting in Plansheets ([ADVPLAN-354](#)):

The concept of conditional formatting has been introduced in Advanced Planning plansheets. This functionality allows users to configure the formatting of plansheet cells, such as color and font style, based on the displayed value. A new configuration screen allows you to maintain sets of conditional formats. In the plansheet cell formatting configuration, a new field allows you to optionally specify the conditional format to apply. See the "Conditional Format Manager" section within the Advanced Planning help.

- Double Number Precision for Plansheet Values ([ADVPLAN-1163](#)):

Plansheets are now handling quantity values as double precision floating point values. In plansheets, you can now display and enter quantity values up to 15 significant digits. Previously, single precision values, that is, values with 6 significant digits, were used in AP plansheets.

Consequently, the memory usage (RAM) of the Advanced Planning user interface (process javaw.exe) is increased.

Note: Internal precision of quantities has not been changed. Double precision was already used.

Integration

- Access 32-bit ODBC Data Sources ([ADVPLAN-1112](#)):

From AP 64-bit, you can access 32-bit ODBC data sources. For example, you can import an Excel spreadsheet on a PC with Microsoft Excel 32-bit. To enable this functionality, select **Tools > Preferences > Integration Kit** and select **Access 32-bit ODBC datasources**. If this option is enabled, you can choose from both 64-bit & 32-bit ODBC data sources. This option is saved in the AP data file.

AP 64-bit can only access 32-bit ODBC data sources that are defined as System DSNs. 32-bit User DSNs and 32-bit File DSNs are not accessible from AP 64-bit.

For more information about ODBC connections to Microsoft Office on Windows 64-bit, see [Microsoft Knowledge Base article 2721825](#).

- Optionally Delete Buckets Before Import ([ADVPLAN-1170](#)):

Before importing a calendar, you can now delete existing buckets. The tab **Transfer behavior** of an Integration Kit interface contains the new group **When importing calendar**. This group allows you to choose between these two options:

- **Append to existing buckets:** When importing a calendar, the imported buckets are appended to the existing buckets.
- **Delete existing buckets:** Before importing a calendar, the existing buckets are deleted.

The default option for the existing AP data files and new interfaces is **Append to existing buckets**.

- Error When Interfaced Data Mismatches Date Format ([ADVPLAN-1463](#)):

If a text value is interfaced as a date but does not match the date format that is specified on the interface, an error is now generated. For example, the format is "%d-%m-%y". "%y" indicates that a two-digit year is expected. If the text value is "01-01-2014", an error is generated. Previously, "20" was used as the two-digit year. The remaining two digits were ignored, without any error or warning. These operations are concerned:

- Importing the bucket from a text file or a database text field
- Exporting a resource attribute to a date-type database column

Query

- Asynchronous Queries ([ADVPLAN-1030](#), [ADVPLAN-883](#)):

Queries are now evaluated asynchronously in the background, thus not blocking user input. When the evaluation of a query is in progress, an animated query icon is displayed on the application status bar. The same icon is also displayed at each evaluated query on plansheets and in the resource browser, together with the query name in italics. If a query must be evaluated during the workflow run, for example, because the results of a query are requested by a workflow command, it is still evaluated synchronously.

Solver

- Allow Bound Expressions ([ADVPLAN-1083](#)):

These examples show bound expressions that are now allowed by the Solver:

stock <= max stock + **above max stock**

stock >= safety stock - **under safety stock**

You no longer need to rewrite these constraints as in these examples:

stock <= **stock ub**; **stock ub** = max stock + **above max stock**

stock >= **stock lb**; **stock lb** = safety stock - **under safety stock**

These bound expressions are allowed because bounds are no longer implicitly locked.

Compatibility

A compatibility issue can only occur if the solver check function of the previous AP versions reports a conflict.

Example:

- The class **Products** contains "stock <= max stock".
- The optimization contains "Products.stock".
- The optimization does not contain "locked: Products.max stock".

This example shows a compatibility issue:

- AP 11.0:
 - The solver is allowed to change "max stock".
- Previous AP versions:
 - The solver is not allowed to change "max stock".
 - The red message "Some conflicts found" and the detailed message "conflict: upper bound 'max stock' is implicitly locked" are reported by the solver check function.
- Solver Check Only Reports Relevant Derived Locks ([ADVPLAN-1666](#)):

Only relevant derived locks are reported by the solver check function. Relevant derived locks are derived locks that appear in posted constraints, either directly or indirectly. An inequality constraint is posted if it contains a posted property. An equality constraint is posted if the left hand side is a posted property.

Consider, for example, these following optimization and classes:

Optimization:

locked: Customer Allocations.forecast;

locked: Customer Allocations.firm orders;

locked: Customer Allocations.planned orders;

Products At Locations.stock, 1;

Products At Locations.satisfied forecast, -100;

Products At Locations.production;

Class Customer Allocations:

forecast = UNDEFINED;

orders = firm orders + planned orders;

firm orders = UNDEFINED;

planned orders = UNDEFINED;

Class Products At Locations:

forecast = SUM(Customer Allocations.forecast);

orders = SUM(Customer Allocations.orders);

satisfied forecast <= forecast;

stock = production - orders - **satisfied forecast** + SHIFT(**stock**, 1);

production = UNDEFINED;

satisfied forecast = UNDEFINED;

demand = orders + forecast;

Class Locations:

forecast = SUM(Products At Locations.orders);

orders = SUM(Products At Locations.orders);

demand = SUM(Products At Locations.demand);

These derived locks are reported by AP 11.0:

- "Products At Locations.forecast", because this derived lock is used in "**satisfied forecast** <= forecast".
- "Customer Allocations.orders" and "Products At Locations.orders", because the latter is used in "**stock = production** - orders - **satisfied forecast** + SHIFT(**stock**, 1)".

These derived locks were reported by previous AP versions, but are not reported by AP 11.0:

- "Products At Locations.demand", because it is only used in "demand = SUM(Products At Locations.demand)", which is not a posted constraint.
- "Locations.forecast", because it is not used in any constraint.
- "Locations.orders", because it is not used in any constraint.
- "Locations.demand", because it is only used "demand = SUM(Products At Locations.demand)", which is not a posted constraint.

- ILOG CPLEX 12.6 ([ADVPLAN-1185](#), [ADVPLAN-1186](#)):

Advanced Planning optimization has been upgraded from ILOG CPLEX 12.4 to ILOG CPLEX 12.6. You can still use ILOG CPLEX 11 by adding this line to the optimization:

```
sub_problem_solver: APSolverIlogMip11.exe; // Temporary use ILOG CPLEX 11 instead of
ILOG CPLEX 12
```

You can now execute the solver with more threads than the number of CPUs. For example, an optimization contains this line:

```
set_ilog_parameter: Threads = 5; // ILOG CPLEX parallel solving
```

In this example, if the PC has less than 5 CPUs, this error message is not generated anymore:

```
Don't understand value of solver parameter 'set_ilog_parameter: ...Threads = 5...'. CPLEX
Error 1015: Parameter value too big.
```

However, if the number of threads exceeds the number of CPUs, the performance decreases.

Because ILOG CPLEX 12.6 cannot be statically linked, the Microsoft Visual C++ 2012 Redistributable is required. This redistributable is installed by the AP installer. See subsection [AP Installs Microsoft Visual C++ 2012 Redistributable](#) of previous section [General](#).

The internal workaround for an ILOG CPLEX bug has been removed. See the reference number [ADVPLAN-878](#) in [ReleaseNotes5.1.html > Bug Fixes in AP 5.1.16 > Solver](#).

Compatibility

If you use CPLEX performance parameters, we recommend that you test whether the default ILOG CPLEX values for these parameters lead to better performance for this new ILOG CPLEX release. Examples of CPLEX performance parameters are **MIPEmphasis**, **Probe**, **RepeatPreSolve**, **HeurFreq**, **VarSel**, and **RootAlg**. Example:

```
set_ilog_parameter: EpGap = 0.01, MIPEmphasis = 1, Threads = 5, RepeatPreSolve = 2;
```

Change the above line to the following line:

```
set_ilog_parameter: EpGap = 0.01, Threads = 5;
```

- Improved Precision Handling For BOOL Constraint ([ADVPLAN-1447](#)):

The precision handling of the BOOL constraint has been improved. Consider the constraint "B = BOOL(A)". If A or B is locked, "B = BOOL(A)" is removed or an infeasibility is reported by the solver engine pre-optimization **opt21**. If A or B have appropriate lower or upper bounds, "B = BOOL(A)" is also removed by the solver engine pre-optimization **opt21**.

Examples:

- If A is locked to "1e-6" ("0.000001"), "B = BOOL(A)" is removed and B is set to "0" by the solver engine pre-optimization **opt21**. Previously, no change was performed by the solver engine pre-optimization **opt21**.
- If A contains the upper bound "1e-6", "B = BOOL(A)" is removed and A and B are set to "0" by the solver engine pre-optimization **opt21**. Previously, no change was performed by the solver engine pre-optimization **opt21**.

The solver engine pre-optimization **opt21** respects these lines in an optimization:

```
precision: infeasibility bool zero = 1e-5 relative = 1e5; // Set infeasibility precision to 1e-5 for  
BOOL
```

```
precision: infeasibility discrete zero = 1e-5 relative = 1e5; // Set infeasibility precision to 1e-5 for  
all discrete constraints (including BOOL)
```

Previously, the fixed infeasibility precision "1e-6" was used by the solver engine pre-optimization **opt21**.

Compatibility

A problem that was previously feasible, may now be infeasible.

Consider the class Z with the constraints "B = BOOL(A); A >= 0.02; A <= 0.05". Because the default **bool threshold** 0.1 forbids values of A between 0 and 1, the pre-optimization **opt21** now reports the problem to be infeasible. The infeasibility can be resolved by setting solver parameter **bool_threshold** to 0.01. For more information about this solver parameter click **Solver Constraints > Bool Threshold** in the auto text pane of the AP Solver Window.

Previously, the problem was feasible when pre-optimization **opt21** was used, but it was infeasible when pre-optimization **opt21** was not used.

- Check the Time Limit Every 1, 2, ..., 15 Seconds ([ADVPLAN-1336](#)):

If the optimization contains "max_time: ..., **always get first solution**" or "max_time: ...; **prioritized_costs**: ...", the time limit is checked at this frequency:

- Every 1 second, if **elapsed seconds** < 20.
- Every **elapsed seconds** * 15 / 300 seconds, if 20 <= elapsed seconds <= 300.
- Every 15 seconds, if **elapsed seconds** > 300.

Previously, this time limit was checked every 15 seconds, independently of the number of **elapsed seconds**.

Workflow

- No Query Evaluation at End of Workflow ([ADVPLAN-1427](#)):

Previously, once all commands had been completed by a workflow, all the queries that could have been affected during the workflow were synchronously evaluated. This synchronous query evaluation is now excluded from the execution of the workflow. The asynchronous query evaluation now determines when the affected queries must be evaluated. The potential effect is that the workflow is indicated as finished sooner, returning control to the user, and delaying the query evaluation until it is required. See subsection [Asynchronous Queries](#) of the previous section [Query](#).

- New Workflow Command: Delete Partition ([ADVPLAN-1169](#)):

The workflow command **Delete Partition** is new. This command allows you to delete the calendar partition and to reset the calendar start and end dates to the current date.

- Interpret Expression as String ([ADVPLAN-1374](#)):

In a variable assignment and in the workflow command **Echo**, you can now use "(string)" to let AP interpret the succeeding string as a string instead of a number:

- "\$a = 01.10;" sets the variable \$a to "1.1" because "01.10" is interpreted as a number.
- "\$a = (string)01.10;" sets the variable \$a to "01.10" because "01.10" is interpreted as a string.
- "Echo: 01.10;" echoes "1.1".
- "Echo: (string)01.10;" echoes "01.10".
- "\$a = (string)01.10; Echo: \$a;" echoes "1.1" because "01.10" is interpreted by the echo command as a number. In the Variable Manager, you can see that the value of variable \$a is "01.10".
- "\$a = (string)01.10; Echo: Value of variable a is \$a;" echoes "Value of variable a is 01.10".

You can use parenthesis to limit the scope of "(string)":

- "\$a = (string)01.10 + (1 + 2) * 4;" sets the variable \$a to "01.10 + (1 + 2) * 4".
- "\$a = ((string)01.10 +)(1 + 2) * 4;" sets the variable \$a to "01.10 + 12".

You can't use "((string) ...)" before or after a mathematical operator:

- "\$a = ((string)01.10) + (1 + 2) * 4;" sets the variable \$a to "((string)01.10) + (1 + 2) * 4".
Note: "\$b = (string)01.10; \$a = \$b + (1 + 2) * 4;" sets the variable \$b to "01.10" and the variable \$a to "13.1".
- "\$a = (1 + 2) * 4 - ((string)01.10);" sets the variable \$a to "(1 + 2) * 4 - ((string)01.10)".
Note: "\$b = (string)01.10; \$a = (1 + 2) * 4 - \$b;" sets the variable \$b to "01.10" and the variable \$a to "10.9".

You can also use "(string)" to limit the scope of a mathematical operator:

- "\$a = The cost is 10 * 5 EURO;" sets the variable \$a to "The cost is 10 * 5 EURO", because the multiplication of "The cost is 10" and "5 EURO" fails.
- "\$a = ((string)The cost is) 10 * 5 (string)EURO;" sets the variable \$a to "The cost is 50 EURO".

Conditional Formats

- New Tool Conditional Formats ([ADVPLAN-354](#)):

The new tool Conditional Formats to support conditional formatting in plansheets has been added. The Conditional Formats menu option is accessible via the Tools menu. See subsection [Conditional Formatting in Plansheets](#) in previous section [Plansheets](#).

Help

- Improved Query Help ([ADVPLAN-1084](#)):
Advanced Planning help has been updated with information from the document Queries in AP, which was previously provided separately.
- Help has Fresh New Look and Runs on Chrome Browser ([ADVPLAN-1000](#)):
Advanced Planning help has a fresh new look, and is now compatible with the browsers Internet Explorer 9+, Firefox and Chrome. Previously, the Chrome Browser was not supported. Currently, only the English help has been updated.
- Help Pages: What's New, Consultant Manual, Templates ([ADVPLAN-1445](#)):
Within the Advanced Planning Overview, AP help now has separate pages to describe What's new in Advanced Planning, Consultants manual, and Templates. Each page provides a link to the relating documentation.

Bug Fixes

General

- NTFS junction points and DFS links ([ADVPLAN-1269](#)):
The AP file open dialog boxes did not allow users to navigate through NTFS junction points and DFS links. This issue has been corrected.
- UNTITLED 2.pls ([ADVPLAN-1483](#)):
New AP data files were opened as the AP data file **UNTTLED 2.pls** even if no AP data file **UNTTLED 1.pls** existed. This issue has been corrected.
- Saving Makes a Very Small Quantity Change ([ADVPLAN-1516](#)):
When the AP data file was saved, a very small quantity change, to the 17th decimal digit, could sometimes be performed. This difference caused different behavior of the solver. This issue has been corrected.

Integration

- Missing Imported Buckets in Planning Horizon ([ADVPLAN-1177](#)):
If the calendar buckets that were imported via the Integration Kit were ordered randomly in the source table or the source text file, the planning horizon did not include all the imported buckets. This issue has been corrected.

- Wrong Parent Scalar Value After Import ([ADVPLAN-1271](#)):
If a scalar value that was assigned to the relation's parent side was imported via the Integration Kit as a part of a child resource, it was not set correctly for all relations of the parent. This issue has been corrected.
- Exporting Incorrect Data When Using Format ([ADVPLAN-1466](#)):
If format strings other than "%s" were used in interfaces where text was exported, garbage data was exported. This issue has been corrected. Instead of exporting incorrect data, format strings are now ignored and a warning message is displayed. Format strings that perform string formatting only, that is, "%s" and its variants, are still processed by the text interfaces.
- Losing Selection After Re-ordering Rows in Text Interfaces ([ADVPLAN-1272](#)):
When reordering rows via the Up and Down buttons in the Definition tab of a text Integration Kit interface, selected rows were deselected. This issue has been corrected.
- Log Errors for Skipped Records ([ADVPLAN-1514](#)):
If import or export of a record in the Integration Kit failed because of a date conversion error, then the record was silently skipped. This was occurring, for example, when exporting an attribute value that did not match the format mask specified in interface definition tab. This issue has been corrected. The chapter "Integration Kit" of the AP console now contains a red message for each date conversion failure and the total number of records that was skipped.

Solver

- Solver Changes Locked Value For Property With Definition MAX or MIN ([ADVPLAN-1300](#)):
The solver could change the value of a locked property if the definition was MIN or MAX and contained an intermediate property.
Example:
 - "**lost sales = MAX(0,demand - planned sales - backlog)**"
 - Locked values "**lost sales = 0**" and "**demand = 100**"

The solver engine got the constraints " $0 = \text{MAX}(0, X1)$ "; $X1 = 100 - \text{planned sales} - \text{backlog}$ " where $X1$ is an intermediate variable. " $0 = \text{MAX}(0, X1)$ " was first replaced by " $X1 \leq 0$ ".
Later " $X1 = 100 - \text{planned sales} - \text{backlog}$ " was removed by the pre-optimization opt16.
" $100 - \text{planned sales} - \text{backlog} \leq 0$ " was not added because $X1 \leq 0$ was ignored. This issue has been corrected.
- Number of Booleans in Sub Problem Is Not Logged to Chapter Solver Output ([ADVPLAN-1337](#)):
The number of booleans in a sub problem was not logged to the chapter "Solver Output" of the AP Console. This issue has been corrected. The chapter "Solver Output" of the AP Console now contains these lines:

SOLVING SUB PROBLEM ...:

Number of:
variables ...
linear constraints ...
...
bools ...
...

Workflow

- Workflow with Small Imports Takes Too Long ([ADVPLAN-690](#)):
If a large AP data file included queries that took long time to complete, importing small amounts of data into it took a long time. The cause was that the queries were synchronously evaluated at the end of each import, which was blocking the application. This issue has been corrected by running the query evaluation in the background.
- Very Large Integer Numbers Are Handled Incorrectly ([ADVPLAN-1669](#)):
Parsing very large integer numbers (>2147483647) produced unexpected results in some workflow commands. For example, performing the workflow command "\$a = 5646875616168;" resulted in the variable \$a containing the value "-1006378072". This issue has been corrected.
- Stopped Workflow Cannot Be Started ([ADVPLAN-1546](#)):
Once a workflow was stopped by pressing the Stop button, the button remained dimmed and it was not possible to start the workflow again. This issue has been corrected.

Variables

- Incorrect Value of System Variable \$datafilepath ([ADVPLAN-1430](#)):
The system variable **\$datafilepath** contained an incorrect value if the path of the AP data file contained a dot. For example, if you opened the AP data file **c:\temp\folder.with.dot\Example.pls**, the incorrect path "c:\temp/folder.with" was returned by the variable **\$datafilepath** instead of "c:\temp/folder.with.dot". This issue has been corrected.

Help

- Context Sensitive Help ([ADVPLAN-1248](#), [ADVPLAN-1367](#)):
The help window that was launched by pressing the F1 key was not context sensitive. This issue has been corrected. If you press F1, the help page is displayed for the AP module that is currently open.

- Help on Google Chrome Browser ([ADVPLAN-725](#)):

If Google Chrome was set as the system default browser, AP help was not displayed correctly. This issue has been corrected.

Chapter 7 Advanced Planning 5.1

A red square containing the white number 7, serving as a chapter indicator.

See [ReleaseNotes5.1.html](#) for release notes of AP 5.1 and earlier AP versions.