Angles for SAP Release Notes

Version: *2020SP2*

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End user - Highlights

How to prevent obsolete stock for perishable goods?

Introduction: SLED and requirements planning MD04

SLED stands for Shelf Life Expiration Date. This is the latest date a batch may be used/consumed (usage for production or delivery to a customer). This date is determined by SAP when a batch is created by the shelf life of the material, when receipted. This date can be adjusted manually or by the test results of the quality inspection of the batch.

The SLED is not considered in SAP MRP and MD04 (stock requirements list). This means that when a batch is expired (SLED lies in the past) the batch is still considered as available stock, and no shortage is detected! Only after the batch is consumed you will get a warning message during goods receipt. To prevent this batch from further use, the expired batch needs to be transferred from unrestricted to blocked stock (not available anymore for usage) or quality stock (for re-inspection). Only after the batch is transferred, will MRP indicate a shortage and will create new replenishment orders. However, that might be a little late to fulfill your requirements!

New functionality: Include SLED logic into Every Angle Supply/Demand matching

To have better insight into the impact of SLED on your requirements planning, you can now choose how batches with a SLED are considered during the Supply/Demand matching. There are two options (defined in the EAModelServer/Content Parameters/Enterprise Configuration):

- SLED is ignored during Supply/Demand matching (= default value) => Every Angle has similar logic as SAP MRP/MD04. In other words, unrestricted batch stock is considered as available stock, even when the SLED lies in the past (batch is expired).
- SLED is evaluated during Supply/Demand matching (= optional value) => Every Angle will only allocate a batch to a dependent order (=material requirement) during the supply/demand matching, when:
  - Batch is not expired (SLED lies in the future).
  - Requirement date of the batch lies before the batch SLED (in other words, the batch will not be expired when the requirement takes place, and the consumption/goods issue will be done).

As a result, Every Angle will show stock shortages, and reschedule advices that are not visible in SAP MD04 yet. This will allow you to act in a timely manner to fulfill your requirements.

To facilitate a better analysis on SLED when using this logic in Every Angle Supply/Demand two new fields have been added to the object Stock:

New field: SLED Allocation Status

The Shelf Life Expiration Date (SLED) Allocation Status field is determined based on the SLED. The SLED Allocation Status field can have the following values:

Value	Meaning
Obsolete (SLED lies in the past)	The SLED lies in the past. This situation arises when the SLED lies before the model date.
NA (SLED is not applicable)	When there is no SLED assigned to the batch, the system will allocate the requirement to the dependent orders regardless of dates. The batch quantity is assigned on 'first come first serve' basis.
Before Req. (SLED lies before requirement)	The stock is available, but the requirement date lies after the expiry date (SLED) of the batch.
Blocked (Blocked Stock, SLED lies in the future)	The batch stock is in blocked stock. It would allocate the stock.
OK (SLED lies in the future)	The SLED is in the future and the requirement dates are before the SLED compared to the model date. There are three possibilities: 1. Required quantity is equal to batch quantity. This is an ideal scenario where quantity allocation percentage is 100% and quantity unallocated is 0. 2. Required Quantity is more than batch quantity. In this scenario, the dependent order utilizes the full batch quantity and takes the additional quantity from the next batch. 3. Required Quantity is less than batch quantity. In this scenario, the output allocation percentage is not 100%.

New field: Quantity at Risk

This Boolean field is activated when the output allocation is not 100%, and SLED Allocation status is Ok, Obsolete, Blocked stock or Before requirement.

Simplify the Dunning Process with a new Customer Master Dunning Data Object

Most companies have a procedure to collect the account receivables which are overdue. Dunning is the process of methodically communicating with customers to ensure the collection of accounts receivables. When a company decides to start issuing reminders to the overdue customers, the dunning procedure must be configured in the customer master data of the company code. Because the dunning process depends on different regulations in different countries, the correct setup and maintenance of this data is key for an effective and efficient dunning process.

To support this process, the new object Customer Master Dunning Data has been added, based on the SAP table KNB5. This object includes references to other objects like Company Code, Customers and Customers on Company Code Level (CLL), allowing you to do follow-up analysis. A template, Customer Dunning, is made available for jumpstarting your analysis as well.

More Easily Manage Your Customer's Tax Classification

The new object Customer Tax Classification has been introduced, based on the SAP table KNVI (Customer Master Tax Indicator). The tax classification represents general information, such as deduction rules, that apply to each tax type. This change includes links to the existing object Customer enabling you to maintain all customer tax classifications in an efficient way.

Better Understand the Status of Existing Contracts

For quantity contracts, new logic has been added to get a better overview of the current status of those contracts. This will enable you to stay in control of your quantity contracts allowing you to act accordingly making your supply chain more effective and efficient.

To get to the correct status, several elements of a contract need to be considered:

- **Validity** – A contract has a Valid from and a Valid to date. This element is not leading because orders can also be called off on invalid contracts. But it is important to see the time the contract is intended for.
- **Quantity closed (%)** – The quantities that have already been called off on the contract, and its percentage.
- **Time passed %** (new field) – How much time has passed on the contract and how much time is left based upon the valid from / valid to dates. The combination with the quantity closed this gives information on the status of the contract.
- **Contract Factor** (new field) – The contract factor is obtained by dividing the quantity closed % by the time passed % to give insight into whether the call-off quantity is in line with the time passed.

In the background calculations are made based on this contract factor. These are default settings that may easily be changed to fit your business environment.

- Default setting for Contract ahead = more than 130%
- Default setting for Contract lagging = less than 70%

This means that in the default setting we are considering a 30% deviation from the ideal situation. This of course depends on your business situation. Changing this to your requirements is easy. Please contact Every Angle support to have this adjusted.

In the end this all comes together in the new field **Contract status**.

This field can have the following possible values:

Value	**Meaning**
To be valid	The validity start date of the contract has not been reached yet.
Closed	The contract has been closed because it is (almost) completely called off.
OK	The contract is running within the set boundaries.
Ahead	Call-offs on the contract are going faster than expected.
Lagging	Call-offs on the contract are going slower than expected.
Late	Contract validity has expired but less than 90% of the quantity has been called off. (90% is a default setting that may be changed).
Needs closure	Contract validity has expired and 90% or more of the quantity has been called off. (90% is a default setting that may be changed).
Cancelled	Contract has been cancelled.
No Contract	The document category is not a contract.
Not applicable	The status could not be derived.

For the contract status 'Late' and 'Needs closure' also a default setting exists, that (just like the settings for the set boundaries for 'Lagging' and 'Ahead') can be changed by Every Angle Support.

All this functionality comes together in the **Activity diagrams** for **P2P** and **O2C**, where you can select the **Contract** block. This will take you to a pivot overview of your current quantity contract statuses, including some nice details on follow-up documents (call-offs on contracts) and the possibility to view the contracts in more detail. Next to that, some additional Displays exist for more specific situations.

Focus Only Your Angle Displays

Users that take advantage of Private Displays within Published Angles can now choose to only view the Private Displays that they have created – or, has been the case previously, view all Private Displays associated with an Angle.

Easily Create Dashboards for Easier Viewability

Apart from standard Angle Templates we can now also provide you with standard EA Business Process Dashboards!

The Dashboards have been developed based on best practices and will give you an immediate graphical representation of performance indicators in your business processes.

There are different types of Dashboards available:

- Operations Dashboards: these focus on insight in day-to-day business and can be used to plan the actions / priorities on a day to day basis.
- Performance Dashboards: these focus on insight in business process performance and can be used to keep track of the operational process indicators and required improvements.

The standard EA business process Dashboards available for the following processes:
O2C, P2P, S2D, F2R, GRC, QM, PM and EA4IT.

Example: Plant Maintenance Operational Dashboard

Note: The standard Dashboards will give you a jump start when creating your own customized Dashboards to stay in control of your own business processes. When creating your own customized Dashboards (adjust/add widgets, customize scaling), make sure you create your own copy of the standard EA business Dashboard. When opening a Dashboard, it will not, unlike Angle Templates, create an automatic copy (with the prefix 'Based on'). You have to create that yourself.

Overwriting EA standard business Dashboards can be prevented at upgrade when the Dashboards are authorized as view-only. Authorization can be set by Every Angle Consultancy/Support, or by your system administrator.

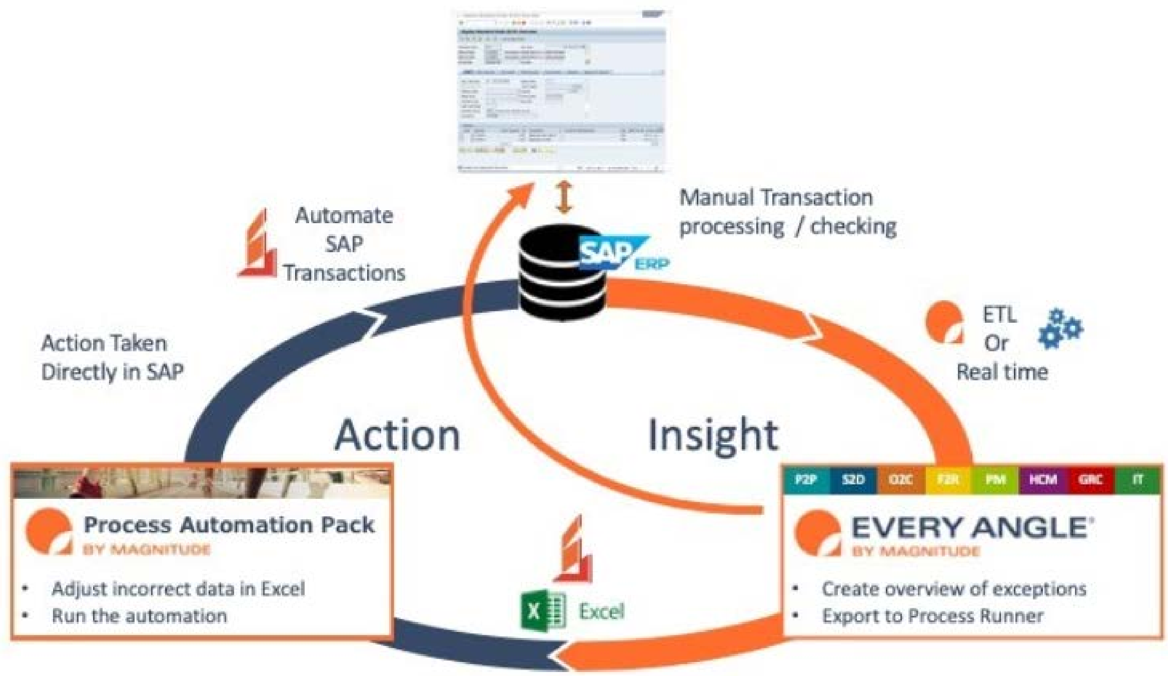
Turn Insights into Action with Every Angle Process Automation Pack

Every Angle provides end-to-end understanding and transparency across your SAP value chain; enriching organizations with actionable insight to understand, control and improve the performance of SAP.

However, turning those insights into corrective actions within SAP can be a tedious, labor-intensive task subject to human error. A business user must have intimate knowledge of the intricacies of SAP – and ensure that every keystroke is made meticulously without typos.

To improve this process, the **Every Angle Process Automation Pack** allows any user to automatically commit changes to SAP based on wisdom gained from viewing data within an Angle.

Instead of manually making changes directly in SAP, Every Angle will export an Angle into a predefined Excel file, allowing you to approve any changes directly within Excel and apply them automatically to SAP in one go.



The Every Angle Process Automation Pack comes pre-packaged with the following select scenarios:

- Release, close or delete polluted purchase orders and requisitions
- Correct Weight, European Article number (EAN) and Purchasing group in material master

Allowing users to commit changes to SAP without writing a single line of code, enabling your organization to:

- Reduce errors that lead to decreased data quality within SAP
- Improve the efficiency of commonly-used processes
- Effectively take advantage of insights gained from Every Angle

BVEM: Business Value Estimator is now available

You can now easily show the Every Angle Business Value to a prospect so that you can start a PoC or Implementation project using customer data, without involvement of customer IT.

To support this, the following has been delivered:

- A full installation of Every Angle running in VMware Player.
- A light version of the IT Management Console which allows you to set:
  - SAP Connection details
    - IP adress
    - Username
    - Password
    - Language
    - System ID
  - Material value Filter - You can greatly reduce the volume of a customer dataset by setting this filter to, for example, 10000, The extraction will find the materials that have a value greater than 10000, and from that list, the top 50 materials will be used in a "global filter" which is used for all tables that have a material number. From these materials, only the relevant order numbers will be downloaded. Setting this up reduced the model size by 90%, allowing you to run this solution on a laptop.

Laptop hardware requirements:

- 16GB RAM
- At least 60GB of free disk space
- 4 to 8 CPUs

The VMWare image is available to Sales and Pre-sales via the Delivery Portal.

Improvements in Web Client based on user feedback

We have made the following improvements to the Web Client, based on user feedback after releasing 2020SP1:

- Color picker for reference lines
- Set value at execution for Dashboard filters
- Bigger icons, scroll bars, more visual separation between sections and more contrast for better visibility on smaller screens
- New Cancel button, replacing the Undo button in the side panel
- New Save Display button: this is now the default, instead of Save all
- New Labels section that includes Business Processes and Labels
- New Angle Tags section
- Clickable breadcrumb that leads to Angle description
- Model info, model timestamp, number of items, execution time moved to the white space under the Display tabs, so that it is always visible
- New tab groups for Published and Private Displays

- Drag and drop function to reorder Published Displays
- New option to "Show only my own private Display" in User Settings

Organize Your Angles More Effectively

Introducing Angle Tags: any Web Client user can now create new Tags on the fly and attach Tags to Angles, making it easier to organize and find Angles.

Tags can be created and attached to an Angle in the Angle sidebar. Just start typing to create a new Tag. A list will appear if the Tag matches existing Tags. Use the new Tag cloud in the Search page to filter on Tags. This Tag cloud shows the 15 most used Tags and will adjust to your search result to help you zoom in.

Improve the Performance of Exports to Data Lakes

When exporting all data on a daily basis, the target database will soon become very large, containing redundant data if you use the **Append** export type option. With Delta export, you only store a record if it is new or different compared to a previous export.

You can now use delta export to export incrementally to SQL. To do this, use the **Update** option as the export type in the SQL datastore settings in the IT Management Console.

Using delta export has the following benefits:

- Only export changed data
- Less volume to export
- Less storage needed on SQL
- Fast exports

Add Angle to any Automation Task

The logic of the Schedule Angle function, that allows privileged users to Schedule Angle in an Automation Task from the Web Client, has been changed. It is no longer necessary to own a task in order to add new Angles. This means that admins no longer need to create Tasks for every user. It is now possible to add new Angles to any Automation Task that exists in the system, if you have the schedule_angles privilege.

Better Understand Changes Made to Orders

Which order due date has been changed? When was this order closed? Who changed the quantity of the order? These and many more questions arise on a daily basis when managing your daily operations. All the information needed to answer these questions is stored in the change documents in SAP. To make this information easy to access and use, we have added 4 new standard EA change data objects including the related references to our EA model:

- Purchase Document Changes [EINKBELEG]
- Purchase Requisition Changes [BANF]
- Sales Document Changes [VERKBELEG]
- Material Document Changes [MATERIAL]

Each of these objects contain the most common tables and fields for that area. Because the amount of change data can be substantial, we have made it possible to customize the data you need for your business processes. The different change objects can be activated or de-activated including their underlying tables and fields. This way you can limit the amount of data to be loaded, while answering all your SAP change related data questions. This can be customized by your consultant at upgrade, by EA functional support or by your own EA administrator.

Summary of the tables included per change object:

EINKBELEG	Tables	Description
Purchase Document Changes	EKKO	Purchase Document header
	EKPO	Purchase Document item
	EKES	Vendor Confirmations
	EKKN	Account Assignment in purchase document
	EKET	Scheduling Agreement Schedule Line

BANF	Tables	Description
Purchase Requisition Changes	EBAN	Purchase Requisitions
	EBKN	Purchase Requisition Account Assignment

VERKBELEG	Tables	Description
Sales Document Changes	VBAK	Sales Document Header
	VBAP	Sales Document Item
	VBEP	Sales Document Schedule Line
	VBKD	Sales Document Release Order
	VBLB	Sales Document Business Data
	VBPA	Sales Document Partner
	VBUK	Sales Document Header Status
	VEDA	Sales Document Contract

MATERIAL	Tables	Description
Material Data Changes	MAKT	Material Description
	MARA	Material Data
	MARC	Material Plant Data
	MARD	Storage Location
	MARM	Units of Measure
	MBEW	Material Valuation
	MLGN	Material Data Warehouse
	MLGT	Material Data Storage Type
	MVKE	Sales Data for Material

End user - Usability improvements

Set filter values when Dashboard is executed

Earlier, if the first Display in a Dashboard (the Display in the top-left widget) has an execution parameter, you would be prompted to set a value when the Dashboard is executed. This filter would then be applied to all Displays in the Dashboard (when applicable).

Now that there are Dashboards filters, the original implementation has been removed, and the "Set value when Dashboard is executed" option for Dashboard filters has been introduced. This new implementation works exactly the same as for Angle/Display filters: if the option is activated, a lightning icon indicates that user will be prompted with the Execution parameters dialog box when executing the Dashboard.

Download Angle/Dashboard directly from its page

You can now download an Angle or Dashboard directly from the Angle results page or Dashboard results page. You no longer need to go back to the search results page and look for the item in order to download it.

Option to include/exclude end date for "is between" and "is not between" operator

You can now include or exclude the end date when applying an "is between" or "is not between" operator on date fields.

Excel templates and default datastore improvements

Implemented several improvements with regards to Export to Excel:

- Introduced a default datastore for Export to Excel. The settings from this default datastore are used as default for Export to Excel from the Webclient. Managing the default datastores and their settings can be done on a new page in the ITMC.
- Introduced Excel template management: admin user can manage (upload/delete/download) Excel templates on a new page in the ITMC.
- Introduced new Excel template setting for Displays: user can select a default Excel template per Display. This can always be overruled on the fly.

These improvements make it possible to use Process Runner templates and to export Angle data directly to Process Runner-ready files, to make the desired changes and upload directly to SAP.

SD 1810 3589 - Added partner roles of type US (User)

Implemented support for partner roles of type US (User). This was already available in the Workbench screens to add it but was never implemented.
This information on users can be very helpful to figure out why a document is stuck in the workflow and who to contact to get the document approved.

3. End user - Fixes and improvements

Terminology changes

The following short and long names have been changed, for consistency purposes:

English

Old EN short name	**New EN short name**
Cum. Quant. Curr. Release [FS]	Cum. Quant. Curr. Rel. [FS]
Cum. Quant. Curr. Release [JIT]	Cum. Quant. Curr. Rel. [JIT]
Old EN long name	**New EN long name**
Approval date	Approval Date

Dutch

Old NL short name	**New NL short name**
Cum. Quant. Curr. Release [FS]	Cum. Hoev. Huid. Vrij. [FS]
Cum. Quant. Curr. Release [JIT]	Cum. Hoev. Huid. Vrij. [JIT]
Old NL long name	**New NL long name**
Cumulative Quantity Current Release [Forecast Schedule Lines]	Cumulatieve Hoeveelheid Huidige Vrijgave [Forecast Schedule Lines]
Cumulative Quantity Current Release [JIT Schedule Lines]	Cumulatieve Hoeveelheid Huidige Vrijgave [JIT Schedule Lines]

German

Old DE short name	**New DE short name**

Kum. Menge Akt. Freigabe [FS]	Kum. Menge Akt. Freig. [FS]
Kum. Menge Akt. Freigabe [JIT]	Kum. Menge Akt. Freig. [JIT]

French

Old FR short name	**New FR short name**
Qté Cum. Publi. En cours [FS]	Qté Cum. Publ. En cours [FS]
Qté Cum. Publi. En cours [JIT]	Qté Cum. Publ. En cours [JIT]
Old FR long name	**New FR long name**
Date de l'autorisation	Date de l'Autorisation

Spanish

Old ES short name	**New ES short name**
Ud .medida Base	UM Base
Old ES long name	**New ES long name**
Fecha autorización	Fecha de Autorización

S2D Material Document Item - new field Amount in Local Currency +/-

The new field 'Amount in Local Currency +/-' has been introduced in the object Material Document Item. This field is the same as the SAP field MSEG-DMBTR, with the only difference that this new field is not an absolute value but shows a positive or negative value, based on the SAP field (MSEG-SHKZG) Debit/Credit indicator (S = 1 = Debit, H = -1 = Credit).

This new field will make it more efficient to report on the Material Document Item Transactions in local currency.

QM: long texts added to QM objects

Long texts have been added to the following QM objects: Inspection Plan Characteristic, Inspection Method and Master Inspection Characteristic.
So from now on you are able to display this more detailed free-text information in Every Angle as well.

QM: Addition of Specifications field to the object QI result

The field Specifications has been added to the QM object Quality Inspection Result. This field shows the specifications for which the characteristic result is recorded. This specification is derived from the SAP results recording structure [QAMKR]. This field can be found in SAP transaction QE03. By adding this field in an Angle you will have an overview of the test specifications, the target value range, and the result of your inspection.

QM: Classifications added to objects Inspection Method and Master Inspection Characteristic

Classification information has been added to the objects 'Inspection Method' (class type 006) and 'Master Inspection Characteristic' (class type 005). This additional information will simplify your master data management on related objects.

QM/O2C: Date fields added to objects Shipment Header, Inspection Result and Sample Result

Overview of the fields added per object and the origin:

Shipment Header:

- Creation Date: [VTTK-ERDAT]
- Order due Date: [VTTK-DTDIS]
- Realized Finish Date: [VTTK-DATEN]

Object Inspection Result:

- Creation Date: [QAMR-ERSTELLDAT]
- Order due Date: [QAMR-PRUEFDATUV]
- Realized Finish Date: [QAMR-PRUEFDATUB]

Object Sample Result:

- Creation Date: [QASR-ERSTELLDAT]
- Order due Date: [QASR-PRUEFDATUV]

- Realized Finish Date: [QASR-PRUEFDATUB]

QM: new references added from Inspection Point to Equipment and Functional Location

Two new references have been added from the object 'Inspection Point' to the objects 'Equipment' and 'Functional Location'. These new references will give more insight into the details of a specific inspection point and will provide a link to the EA Plant Maintenance functionality.

QM: Sample Procedure Description added

The SAP field Sampling Procedure [PLMK-STICHPRVER] only contained the number/code of the sampling procedure. We have now added the SAP short description to this field. This way it is easier to identify the different sampling procedures.

QM/PM: New QM business license label introduced & Notification objects moved from PM to SAPSCM license label

To enable the activation or deactivation of our new QM business model, a new business license QM has been introduced. The following QM business related objects are assigned to the new QM license label:

- Inspection Method
- Master Inspection Characteristic
- Assignment of Inspection Method to Characteristic
- Quality Info Record PO
- Quality Info Record SD
- Inspection Plan Characteristic
- Inspection Point
- Inspection Result
- Sample Result
- Inspection Lot Origin
- Material Specification
- Physical Sample
- Sample Drawing Procedure Header
- Sample Drawing Procedure Item

At the same time, the notification related objects have been transferred from the PM license label to the SAPSCM license. This will keep the notification related objects available for use without activating the PM or QM license label. This change is related to the following objects:

- Notification
- Notification Activity
- Notification Cause
- Notification Item
- Notification Task

QM Template Basic List: reference to Batch and field Shelf Life Expiration Date / Best Before Date (SLED/BBD) added

The fields Batch (reference) and Shelf Life Expiration Date / Best Before Date (SLED/BBD) have been added to the standard Basic List of the following templates:

- Sample Result
- Quality Inspection Result
- Inspection Characteristic Result
- Sample Inspection Result

By adding this fields you can directly see the related batches and drill down directly to the batch details.

P2P: Check fields introduced to indicate spend on PO and/or Contract

Two new boolean fields have been introduced on the object AD G/L - Accounting Document (AD) General Ledger Item, to check if a purchasing invoice is connected to a contract or a purchase order. These fields can be used to determine the percentage of spend on contracts or purchase orders (spend analysis).

PM: Sublist added from Equipment to Work Order

A sublist has been added from the object Equipment to the object Work Order. This will make it possible to display in which work orders an equipment is used (jump from equipment to work order).

New P2P fields: 'First Time Right %' and 'Number of Changes' on objects PD Header and Purchase Requisition

On the objects Purchase Document Header and Purchase Requisitions two new fields have been introduced. One indicates how many changes are made on these objects and the other provides information on First Time Right creation.

These fields are helpful indicators to monitor the efficiency of your purchase order/purchase requisition entry process.

This addition is part of the introduction of the new Change Document Header/Item object, and the newly introduced standard P2P Dashboards (see chapter End User - Highlights). To use these fields the module 'Dashboard Requirements P2P' must be enabled.

New field: Service Level %

A new field has been added: Service Level as a Percentage
This field has been introduced to support service level calculations in pivots. The value of this field is equal to 0% in case the service level is late or delivered late, otherwise it is 100%. When you use this field in a pivot or chart, set the calculation type to AVERAGE. This new field can be found in the following objects; Planned order, PD header, PD item, PD schedule line, Purchase requisition, SD schedule line, SD item, SD header and Work order.

New fields: 'Work Order Created' on object Notification and 'First Day Fiscal Period' on object Controlling Cost Total

On the object Notification a new field has been introduced: Work Order Created.
This field indicates if a Work Order has been created on the notification. This is helpful to follow-up on the process of notifications. For example, has a maintenance order already been created for a maintenance request?

On the object Controlling Cost Total a new field has been introduced: First Day Fiscal Period.
This field shows the first day of a fiscal period, based on the Year and the Fiscal Period, in a date format. This field is helpful when you want to create Dashboards based on date.

P2P Process Performance Measurement; new fields and a reference added

The following fields have been added to support the performance management on your P2P process:

On the object Purchase Document Header:

- Lead time PO/Preq: Lead time between the creation date of the Purchase Requisition and the creation date of the Purchase Order.
- Approval Lead time: Lead time between the creation date of the Purchase Order and the date on which the Purchase Order was approved.
- Total Lead time: Lead time between the creation date of the Purchase Order and the date on which the Purchase Order was delivered.
- Approved by: User who approved the Purchase Order.
- Approval date: Date on which the Purchase Order was approved.

On the object Accounting Document Header:

- Payment on time: Indicates if a payment based on the clearing date is made before the ultimate pay date.
- Batch user: Indicates if an Accounting Document has been automatically created by the system.

New reference from the object PO-Item to the object Purchase Requisition.

All these new fields and reference are used in our standard P2P Dashboards to get a real grip on your process. See chapter 'End user - Highlights' for more information.

F2R new EA field: Fiscal Year Period to enhance fiscal year reporting

This new EA field shows the Fiscal Year and Period of a document. A fiscal year is important for accounting purposes and for preparing annual financial statements. It does not have to be the same as a calendar year. Each fiscal year is further broken down into segments called fiscal periods. Because the fiscal year can extend across two different calendar years, the calendar year and fiscal year will not always match. For example, if the fiscal year runs from July till June, the Fiscal Year 2020 runs from July 1, 2019 till June 30, 2020.

Wrong reference from Material Document Item to Delivery Item

Because the year (MSEG-MJAHR) was not used in the positioning of the material document table, an incorrect reference to the delivery item was made in case of multiple deliveries. This has now been corrected, matching all material document items to the correct delivery item.

BOM item connection to Standard Info record/Vendor is wrong

The reference from BOM component to Info record referred to the info record of the BOM Header Material. This should be a reference to the info record of the BOM component Material. This has now been corrected.

GRC/GRC free set label assignment changed

The following changes have been made to the label assignment:

- GRC Full-Set (License) only: all class and function templates under the GRC licence have been labeled GRC. These are only available in the GRC package.
- GRC Free-Set: all class and function templates available in the GRC free-set have been labeled with the GRC and a process label. Making them general available without the need of loading the GRC package.

Object Material UoM; fields MARM-UMREN Denominator, MARM-UMREZ Counter and FactorfromBuoM made available again

In the object Material UoM the following fields have been made available again:

- SAP field MARM-UMREN: Denominator
- SAP field MARM UMREZ: Counter
- EA property: FactorfromBuoM

These fields are helpful when maintaining your master data on (alternative) units of measure.

Fixed warning about inactive module when configuring FSV extensions

The Financial Statement Version (FSV) configuration screen showed no warning that you had to activate the module, when adding configuration. This has now been fixed.

SD 1808 1282 - Functions for hardcoded fields that are not of type string

It was not possible to use functions in configuration on hardcoded fields that where not of the type 'string'. For instance, the IssuingPlant field could not be used in the IsEmpty() function. This has now been fixed.

SD 1808 10559 - Default columns did not show when jumping with a sublist based sublist

When you perform a Jump, you will see the default columns for the class(es) you are jumping to. This did not work anymore when the Jump was defined on a sublist-from-a-sublist ('sublist based sublist'). This has now been fixed.

SD 1808 14221 - Field Price per Unit for Purchase/Sales Document re-introduced

After a refactoring of purchase/sales document quantities and values in release 2018SP2, the field 'Price per unit' was removed. This was a misjudgment because this field is often used in Angles. This field has now been re-introduced.

SD 1902 0119 - Empty references due to separate objects Internal Orders and Work Orders

Since R2012SP6 (classic), internal orders and work orders were split into two separate objects to make it easier for users to select the different order categories. With the introduction of the current M4 version there are separate templates available to select the different order categories.

The two separate objects had a negative side effect because not all work order fields were available via one reference, resulting in empty references.

In line with other EA objects where you can filter on order type/document category to select specific order types, the object internal order has now been integrated back into the work order object. For this reason the object internal order no longer exists in EA.

SD 1902 4105 - Lookup fields less often downgraded to string fields

Lookup fields that exceed the maximum for the number of elements, automatically become a string field, that has reduced functionality. The calculation of the number of elements is now more accurate by ignoring the records for languages that are not activated. This leads to less rejected lookup fields.

SD 1905 2277 - When the SD Item is rejected, the execution status is cancelled so the quantity open = 0

For SD items with the execution status cancelled, the field Quantity Open incorrectly showed the quantity ordered. This has now been corrected. So for all SD items with the execution status cancelled the field Quantity Open will show a zero quantity.

SD 1912 3565 - The used SAP columns are shown on more Every Angle fields

The technical source (i.e. the SAP columns) from a field was not shown for publishing classes. This has now been fixed.

SD 2002 2453 - Fixed leading zeros on MATNR on S4

SAP removes leading zeros for some fields when displaying values. Every Angle replicates this behavior, but this behavior was changed on S4. Now Every Angle also changed its behavior to match S4 again for MATNR fields.
We might discover more of these cases where S4 is slightly changed. We will then adapt the software accordingly.

SD 2002 17036 - Fixed classification values

In some occasions the incorrect classification value was written to the output table during table restructuring. This has now been fixed.

SD 2002 19644 - PD Ordered value has failed to convert the value from CURR to Group Currency

In the specific scenario that a purchase document and the related invoice document have different currencies, and the company code currency differs for both the purchase document currency and invoice document currency, there was a currency conversion issue. We have now fixed this issue so all ordered values will be converted correctly in the different currencies (LC, DC).

SD 0018 6034 - QI-lot LongTexts did not have a value

Some LongTexts for QI-lot did not show a value. This has now been fixed at the expense of manually setting up language support for QI-lot LongTexts (EN, DE, ES, FR and NL are configured by default).

SD 0018 8528 - Fixed classification lookup fields

Lookup fields (aka enums) in classifications were shown with their short code instead of their description. This has now been fixed.

Fixed Mediatype error in some occasions when executing Angle

In rare occasions users could get a Mediatype error when executing an Angle. This happened when the Display did not exist in the search database because of synchronization issues between the storage database (MSSQL) and the search database (SOLR). This error is now fixed.
The underlying synchronization issue is not addressed.

Added fallback language for missing English texts during Export

Some customers only maintain the Dutch language in their SAP system, for example, for certain Materials/Material groups. When users set the language in the Web Client to English and perform an Export to Excel, these values would be missing in their Excel file.

The Web Client has a fallback mechanism to fall back to Dutch in this scenario. This fallback is now also applied to all the Export functions, to ensure that the output is always identical to the result in the Web Client.

F2R: Jump from 'G/L account on Company Code level (CCL)' or 'G/L balance on Company Code level (CCL) to sublists are missing

When jumping from 'G/L account on Company Code Level (CCL)' or 'G/L balance on Company Code Level (CCL)', the sublists Accounting Document Item Tax, Material, Customer, Vendor and General were missing. This has now been corrected.

User default settings are now applied correctly

The User default settings were not always applied correctly. If users did not make any changes to their User settings since their account was active, this could result in, for example, unwanted date formats. Now, format settings are always applied correctly.

Improved Application Server login performance

With many concurrent users the Application Server did not scale as intended and users experienced slowness and often the inability to login. This was mostly caused by inefficiencies in the way user sessions were handled and this is now greatly improved.

We addressed the following technical areas with regard to user sessions:

- Reduced cache size on session scope by centralizing the model fields cache
- Improved garbage collection handling
- Removed unnecessary locking
- Removed a redundant call on login

SD-00239014 - Module Dependency: field LFB1_AKONT

When enabling the module SCM Basic without the module FiCo Basic, an error occurred in the log files of the SAP field Reconciliation Account in General Ledger [LFB1-AKONT]. This has now been corrected.

Corrected drilldown with filters on Pivots and Charts

Filters were not applied correctly when drilling down in Pivot and Chart Displays in unsaved Templates. Pivots and Charts are now filtered correctly when drilling down.

Fix concurrent login issues

Concurrent logins from users with the same authorization profile could lead to login failures. This resulted in accessibility issues during the 'morning rush' for a large customer. This is now fixed.

Authorization denies Angles with the 'Orders and Stocks' follow-up

The 'Orders and Stocks' and several less used follow-ups wrongly reported that they could potentially deliver all existing classes as the result of the follow-up. This led to denial to execute the Angle when the user has an authorization profile that denies any class. For example by a widely used authorization profile that denies FiCo classes for a user. This is now fixed, by reporting the correct classes that those follow-ups can deliver.

IT user - Highlights

Disabling a user no longer causes private items to disappear

Private Angles, Displays, Dashboards, settings, Stars, and Personal notes are no longer deleted when the user that owns them is disabled. If the user is re-enabled, everything will still be there and be usable.

Skip delta replication when mass change is done on SAP

In the past, the option to skip the delta replication download when the amount of changes was above 50% was available. This typically happens when a mass change is done on SAP. The impact of a mass change is that delta replication will need to check a huge amount of entries which will cause the extraction to take much longer.

Every Angle now checks if the amount of changed records is below 50%, and if so, continues with the delta replication download. If the amount of changed records is 50% or above, a full download will be performed.

This threshold value can be adjusted in the IT Management Console.

Execute Single action in Automation tasks

You can now execute single Actions in the Automation tasks, and it is no longer necessary to execute the entire Task to test or rerun an Action.

Data Export to SQL now has an option to use field length

When exporting data to SQL, NVARCHAR(MAX) was used. This way, the data would always fit in a field, and it would consume the actual size of a field in memory.

Exporting to SQL will now set the maximum field length to either what is defined in the metadata (Modules) or, when the field size is unknown, the **Fallback export field length** setting is read from the IT Management Console, setting the field length to a fixed maximum length.

By default, this feature toggle is off, because changing it will impact existing exports. The field length will need to be changed in SQL.

Use Web Client url to create a package

Admin users can now select Angle/Templates/Dashboards for packages in a new, convenient way:
1. Use the filter options in the search page of the Web Client to make a selection of the items that you want to include in the package.
2. Copy the url from the address bar of the browser and paste it to the new input field in the IT Management Console > Global settings > Packages > Create package > Url.
The package is created automatically.

First fatal refresh error shown in IT Management Console

The first fatal error during a refresh is now shown in the Refresh History in the IT Management Console. This should decrease the time to troubleshoot errors.

The reported error is not yet perfect on all cases because some fatal errors might still have an underlying error, that should be the actual first fatal error. We tried to find a balance between completeness and having this functionality available.

Future plans are to improve the errors where needed. And to show the error also in the EA4IT model and Every Angle monitoring and reporting tooling (EAMonitor, EA4EA).

TLS 1.2 support

All components now support TLS 1.1 and TLS 1.2 for encrypted communication. Customers installing this as a hotfix need to upgrade the following components:

- Model Server
- Repository
- Web Server
- Real-time Model Server

When the server is locked to TLS1.2 and ZEA03N is used, then enable TLS1.2 on SAP. See SAP documentation for instructions.

5. IT user - Usability improvements

Automatic database logging cleanup

The Application Server is now configured to clean up the database when it is started, and every night at 00:00. In total, 8 database tables, including their sub-tables, will be cleaned.

Database changes:

- The **max_event_log_stored_records** database field has been renamed to **max_general_history**. This field contains the number of months after which items will be removed from the database.
- For the audit log table, the **max_audit_log_history** setting is still being used.
- Both settings have a default value of 13 months.

Changes for the IT Management Console:

- The JSON field **max_event_log_stored_records** in the system settings is not being used anymore, but is still accepted and returned by the Application Server for backwards compatibility.
- A new JSON field named **max_general_history** is added to the system settings, which should be used to read and update the general retention time (described in the release note of issue 77211).

New refresh e-mail: New model data available

During the refresh a new e-mail is sent during the process. The mail has the subject 'New model data available'. From that moment on users can run Angles on the new model. The existing e-mails did not capture this exact moment that is relevant for end-users.

The e-mail is sent every time the Application Server switches to a new Model Server. So this will also happen outside the refresh if you do a manual restart from the Model Server. You are probably troubleshooting issues when you do this and when all succeeds the notification is also useful for the end-users.

Robust Reboot

If you rebooted a server, there was a chance that Every Angle might not function.
This has been investigated, and the bugs that were found that caused this have been fixed.

Added CorrelationID for refresh

Each component that is affected during the refresh now has a correlationID, with which you can link each log to a specific refresh.

Possible to change settings in the Classic Model Server while its running

You can now adjust runtime settings in the Model Server without the need to restart the entire model service.

The following settings can be changed runtime:

In the management console on the content parameter for a model:

- MaxNumberOfQueriesExecutingInParallel - the number of queries the Model Server can execute at the same time.
- MaxQueryExecutingTimeInMinutes - running queries will be canceled after the specified timeout in minutes.

Via the EAModelserver1 (or 2).ini

- PreferredStackTraceStyle - Madshi or JCL for stacktraces.
- MaxLineLengthInBytes - maximum length of a single log line.
- LogDebugCategories the log level for more detailed logging.

Available categories: Query, MAE, Progress, Iterator, Authorization, Http

If multiple object roles are used, objects are now ordered in the consolidated role

Objects in the consolidated role view are now ordered alphabetically to make it easier to read.

Apache Tomcat service is now stopped and undeployed automatically during setup

Apache Tomcat is no longer needed as a prerequisite since 2020SP1, but during installation you had to stop and undeploy the service and SOLR manually. In this release, these manual steps are taken care of automatically during the setup.

External scheduled refresh erroneously showed refresh failure

When scheduling a refresh via the Application Server Web API, an error occurred because a security token was missing, but the refresh continued anyway. The requirement to supply a token to start a refresh has been lifted. You can now schedule a Web API call to run a refresh.

6. IT user - Fixes and improvements

Create 'Empties' for the different data types to support configuration

Throughout the config, there are 'Empty' properties being declared. This 'Empty' is a check to see if a certain field has a value or not. To avoid all these 'Empties' being created separately, it is required to have a set of 'Empty' fields for all data types so that this can be used when creating additional configuration.

These 'Empties' already exist (partly) distributed over several modules. They have now been moved to the SAPSettings section of the LicenseActivationBasicSAP.ini.

Registry key for SQL timeout setting automatically created during setup

The creation of the Windows registry key that facilitates the timeout setting for Export to SQL is now integrated in the Application Server's setup. This means that you do not need to run the reg file that was delivered in 2018SP9 Update 3 manually anymore.
The intention is to facilitate more settings in the Windows registry instead of in the Application Server in the future.

Query results automaticly cleaned up

When an Angle is executed, the result is cached in the Model Server. This cache can be deleted via the Application Server if the Model Server receives a **delete** command, or when the Model Server is stopped (for example, when a refresh is executed). This may not happen often enough, causing old results to take up a lot of memory.

You can now automatically clean up the results via the option

MaxQueryResultRetentionTimeInMinutes. If you set this option to 60, the results will be deleted after they have not been requested for over sixty minutes.

Using this option will keep the Model Server clean, and it will use less memory.

New retention time setting in IT Management Console

A new setting called "Retention time" has been added to the IT Management Console. This is a general setting that admins can use to set the Retention time for all log data in the system.

Configurable retry to start a new refresh

The Application Server uses configurable retry to start a new refresh with the Model Agent. This makes starting a refresh more resilient. The corresponding registry setting is:

HKLM\Software\EveryAngle\AppServer\RefreshModelRetryOnFailDuration.

Added communication resilience when starting a refresh

A retry mechanism has been added between the Model Agent and the CloverETL service when starting a refresh. This makes the starting of a refresh more resilient against network errors or very busy services.

Improved logging from metadata import

The AppServer log file on metadata import has some colors that make it easier to see where processes start and end. Moreover, errors are logged in the log file itself and you do not have to jump to the errors log anymore, but you still can.

Improved refresh status when having a long 'CopyPrevious'

When refreshing a model with multiple Model Servers, some tables will be downloaded and some tables will be copied from the current model. When that copy action takes longer than the download action, the IT Management Console did not show the correct refresh status. This has now been improved.

Fixed TableRestructure error in AUSP/IBIN classification

The TCLA table was sometimes used in an unmanaged way, without a proper WaitFor. This could lead to a TCLA indexing error, which then leads to failure from classification restructure (AUSP/IBIN), that needs the TCLA data. This has now been fixed by only using TCLA during classification.

Force unique identifier when having many Schedule Lines

The internal administration from the Model Server could contain duplicate sequence numbers in case you'd have more than 65,534 schedule lines generated for one document. No customer impact is currently known, but the issue is now fixed as a preventive measure.

Removed log message: GetModelserverStatus check postprocessing body

Log message *GetModelserverStatus check postprocessing body* has been removed from the AppServer logs as it flooded the logs while not offering any value.

Dependency issue between Customer Contact Partner and Customer Partner Function

Due to an incorrect dependency, an error occurred in the error log when activating 'Customer Partner Function' while not activating the module 'Customer Contact Partner'. This has now been corrected. The Customer Partner Function can no longer be activated without activating the Customer Contact Partner module.

Password masking in Model Agent logging

The request and response logging from the Model Agent could reveal passwords that were sent over a secure connection. This has been fixed by masking the password in de logging.

Model Server no longer hangs when using old model

One part of the upgrade procedure is to commit the new model definition and do a refresh to acquire the new model. When you skip this part of the procedure, the Model Server could hang resulting in a lot of troubleshooting time. The Model Server now stops loading and the existing error is clear enough for troubleshooting.

Prevent SAP password from being logged

The password from the read-only download account on SAP could end up in the logs. The password is now properly masked in the logs.

Masked clean text password in logs

The e-mails for status monitoring could contain a clear text password in the message logs. This has been fixed by masking the password in the logs.

Plain-text password could show up in Model Agent files

The Model Agent logs and storage files no longer contain plain passwords.

RMS handles permanently inaccessible database better

When the source database for the Real-time Model Server was migrated (or otherwise permanently inaccessible) and at the same time the Real-time Model Server was restarted, it was impossible to correct the connection string to the source database. This only applied to a SAP HANA database.

Module export now contains all helptexts

When exporting a module from the Workbench, all referenced helptexts are exported too. But the export did not contain the helptexts that did not follow the naming convention. These are typically helptexts that existed from importing custom content during upgrades from pre-Workbench versions. This has now been fixed.

Remove redundant status requests from AS to CMS

The Application Server performed a status request to the Model Server before checking query progress. This is not needed and is now removed to reduce stress on the Model Server.

Vulnerabilities found in penetration test have been addressed

The following vulnerabilities that were found in penetration test by Honeywell have been solved:

1. Fixed insufficient HTTP Response Headers:
    1. X-frame-options header is now being set
    2. Cookies are now set with secure flag
2. XSRF token is now set

Deactivating packages that partially succeeded is now possible

If a package fails during activation, you can now deactivate it to remove the items that have been imported already.

SD 1911 1692 - Demoted warning to hint: Missing displayname for language English

This TableRestructurer warning message is demoted to a hint because the warning was not always actionable:
Warning: Missing displayname for column XXXXX for language English

No more error on opening IT Management Console > Global settings > System Settings

You no longer encounter an error message when opening the System settings page of the IT Management Console.

Automatic clean up of OData logfiles

OData logfiles will now be cleaned up automatically based on retention settings, which can be set by admins in the Webconfig-file of the Web Server. We have also moved the location of the log folder to the data directory, instead of the IIS folder on the C: drive.

SD 2001 12714 - More robust file moving after download

When a download is completed, all files are moved from the work folder to the model folder in one go. When this move failed halfway, there was an attempt to undo the partial move that was done already. This had some issues leading to files with postfix '_old' in the model. This has now been fixed.

Open tables with more than 134 million records

In releases 2019 and 2020 it was no longer possible to open tables in the EATableBrowser with more than 134 million records. This has now been fixed.

Automation Tasks sometimes did not run on new model data

It could occur that a fresh Model Server was not properly detected, leading to misfire of the corresponding event. The result was that the Automation Task did not run on the availability of new model data. This has now been fixed.

Improved export speed

A single export now runs in parallel threads, speeding up single exports significantly. When you are running multiple exports at the same time, the improvement will be less noticeable though. To further improve export speed, set a page size of 5000 records in the **IT Management Console > Global settings > System settings**.

Regex setting now passed to SAP correctly

The regex setting (MINLEN_TEXT_REPL) was not passed to SAP. This has been solved, and automatic tests have been created to prevent this from happening again.

Workbench can handle large amount of classifications

Getting an overview of all the Material classifications in the Modeling Workbench took too long, and it did not show all available classifications. The join query has been optimized to show all classifications.

Fixed concurrency issue in Model Server authorization profiles

Fixed a scenario where sending an authorization profile to the Model Server multiple times at the same time, could locked-up the Model Server and no further queries where possible. This could happen in rare occasions when running a dashboard as the first action after login.

SD 0020 3432 - Refresh status accounts for metadata import

The refresh status in the IT Management Console now takes the status from the metadata import into account. The import is retried at most 3 times in case of failure.

Moving files from secondary model sometimes failed

The Model Agent started to move files from a secondary model a few seconds too early. This could lead to the situation that the files from the secondary model where not yet in place and could not be moved to the primary model. This is now fixed.

Modeling Workbench more robust with regards to casing differences

In the Modeling Workbench, the committed model tree was case-sensitive. When doing a compare of two committed models, this could cause false positives if only the casing had changed. The committed model tree is no longer case-sensitive.
Accidental casing differences could also cause errors elsewhere in the Modeling Workbench. The object types, base config, and object types extensions are now saved differently, so that casing does not cause problems anymore.

Removed spaces from HelptextID

It was possible to add a space in a help text ID in the Modeling Workbench. This is no longer possible, and the help text ID does not support spaces anymore.

Improve handling of OData sync errors

When the OData service was unable to retrieve the list of available Angles, the list of Angles disappeared altogether in the OData service. This has been fixed. The OData service now keeps the current list when the new list cannot be retrieved. Also, the default timeout is increased from 30 seconds to 5 minutes.

SD-00213065 - Dependency issue module: Quality Inspection Point

When enabling the Inspection Result Sample an error occurred in the log files when the Quality Inspection Point module was not enabled. This has now been corrected.

SD-00221034 - Tables DD02L and T001W in EA Test are incorrectly non-essential tables

The tables DD02L and T001W were not indicated as essential tables. As a result, any issue with the test download would not be shown in the download result.
Both tables have now been made essential. When you run an EATest and those tables fail, the refresh will fail.

Changed default timeout for Component Status Manager

In previous versions you had to configure timeout values for the Component Status Manager (CSM). This is no longer required. It now uses a timeout of 15 seconds and it checks the component status with a 5 second interval.

Support for LongText restructurer with tables other then STXH

When you downloaded the STXH table with a different name, it was no longer possible to run a LongText restructurer on this renamed table. This has now been fixed so that you can use any table name as long as it has the layout from the STXH table.

SD-00230541 - Dependency issue module: BOM_AdditionalLinks

Due to a an incorrect dependency, an error occurred in the error log when activating BOM.ini and not activating BOM_Additionlinks.ini. This has now been corrected.

SD-00230757 - Module dependency: Rebate Agreements: Server errors on KONV_V_KWERT

An incorrect module dependency between Rebate Agreements and Price Condition Sales Order resulted in server errors when Rebate Agreements was activated but Price Condition Sales Order was not. This has now been fixed.

SD-00239014 - Module Dependency issue: Reference ControllingArea

When enabling the Material Document module without the FiCo Basic module, an error occurred on the Controlling Area reference. This has now been corrected.

SD 0023 9000 - Increased default max connections

The default value for MaxConcurrentOutgoingConnectionsPerServer has been increased from 100 to 200, to avoid connection shortage from the Application Server to other components. This makes the Application Server more resilient under heavy load.

Guard against component registration data corruption

Component registration data could become corrupt during forceful termination from the Application Server, like during a reboot. The corrupt data causes an availability issue because the components can not communicate anymore.
The guarding mechanism against file corruption has been updated and corruption should be handled correctly after this fix. Just in case it might still occur, the registration data is logged on errors, making it easier to troubleshoot. But this should not be necessary anymore.

Prevent port exhaustion by Application Server pings

The Application Server pings every component to see if they are available. This could lead to port exhaustion on the Windows server. This has now been fixed by re-using connections.

Cannot login at busy times

The Application Server used could a lot of memory (~10GB) when executing Angles that contain fields with large sets. The Garbage Collection process (ie: memory clean-up) could pause the application, leading to CMS ping timeouts, leading to a Model Server switch. This switch added high load where load was already high. The result was that the Application Server became unresponsive for a long time. The high memory allocation is now fixed.

Fix indexed access for tables with over 2 billion records

The data access layer could no longer use indexed access (aka FindKey) for records beyond the 2 billion range. A noticeable effect was that EATableRestructurer could no longer process IBIN classification for one customer. This is now fixed. It is not likely that other customers will encounter this issue soon.

Next to this the EATableRestructurer has performance improvements in the area of 5-10%. Your mileage may vary because there are multiple circumstances that determine the net result.

Please note that, when installing this as a hotfix, you also need to **import Standard Content** into the Workbench. This content contains a technical setting for EATableRestructurer (in SAPConversion.ini) and contains **no functional changes**.

Datastore Drop down is greyed out

When creating a new automation Action the Datastore Drop down is greyed out. This is now fixed.

Fixed 'Re-execute without sorting' message and fixed hanging Model Server setup

- The Web Client shows message **Re-execute without sorting** in case the Model Server did not apply sorting because the number of records was exceeded. Clicking this error gave an error and this is now fixed. (M4-91771 Closed)
- Model Server setup failed with errors because of a hanging curl.exe process. This is now fixed. (M4-91191 Closed)