Release Notes: Visual Jobs Scheduler for Microsoft Dynamics 365 Business Central

Product	Visual Jobs Scheduler
Version	1.21
Build	1.21.0.0
Date	31 January 2024

List of enhancements

- Performance improvement when loading and scheduling.

List of fixed bugs

- Links were loaded two times when the VJS was started.
- Too many bars were updated during link creation.
- Links between job tasks will now be scheduled correctly when "Schedule Successors" is called:
    - In certain constellations, links between job tasks were treated as if they had a duration of 1 instead of a duration of 0.
    - In some cases, the duration kept increasing.

Product	Visual Jobs Scheduler
Version	1.20
Build	1.20.1.0
Date	11 December 2023

List of fixed bugs

- Performance improvement for environments with a lot of resources and employees.

Product	Visual Jobs Scheduler
Version	1.20
Build	1.20.0.1
Date	28 November 2023

List of fixed bugs

- The "Progress" dialog was called too fast after its last update and sometimes didn't change its header correctly
- Job tasks with empty Job Task No. were loaded and caused unrelated errors. Now this doesn't happen anymore and a warning message will appear in these cases.
- Job tasks and job planning lines stayed in their old places when their job was moved because of a "Schedule successors" call.
- API: links reappeared after having been deleted.

Product	Visual Jobs Scheduler
Version	1.20
Build	1.20.0.0
Date	30 September 2023

List of enhancements

- A new info window shows progress information while the data are being loaded/reloaded to the VJS.
- Use of flow fields within table extensions to simulation tables for tooltips, bar, and table labels:
  Until now, flow fields could be created in the original tables of Microsoft Dynamics 365 Business Central or its extensions and calculated as required via the *OnBeforeTransfer* events.
  Now, under certain conditions, flow fields can also be created directly in NETRONIC's own simulation tables and used for tooltips, bar, and table labels.
  Important: Only persistent records can serve as the basis for calculating the values in the formulas for the flow fields, i.e., values that come about as a result of interactive rescheduling in the planning board are not included in the calculation. In addition, there is no event that is triggered before the value of the flow field is calculated. Therefore, it is not possible, for example, to use a date filter to restrict the calculation to dynamic values. Therefore, the feature should only be used in combination with values from standard Microsoft Dynamics 365 Business Central tables.
- Performance improvements.

List of fixed bugs

- Percentage on parent job tasks will no longer be shown.
- The notification for the violation of the end date did not update correctly.
- In some cases, links could not be deleted.
- Fields could not be moved up in the tooltip definition
- Excessive recursion error in CodeUnit 5529043 in handleOnTransfer is fixed.
- Creating an absence at a time when an allocation already exists no longer causes a crash on reload.

Product	Visual Jobs Scheduler
Version	1.19
Build	1.19.0.0
Date	30 June 2023

List of fixed bugs

- Some links could not be deleted
- When creating tooltip, label and table definitions, a search is now made for double entries

Product	Visual Jobs Scheduler
Version	1.18
Build	1.18.1.0
Date	12 May 2023

List of fixed bugs

- Sub project planning lines had a wrong calculated end date.
- Too many events were thrown when expanding and collapsing large projects.
- The progress in procent was not displayed on all project tasks.

Please note: All methods with an "obsolete" flag were set to "internal."

Product	Visual Jobs Scheduler
Version	1.18
Build	1.18.0.0
Date	31 March 2023

List of enhancements

- Output of decimal values: It is now possible to **round the decimal places** which are displayed in the tooltip, on the bars and in the table.
- Performance improvements.

List of fixed bugs

- Warning symbols for link conflicts are now showing in the correct rows.
- Moving a Resource Summary Bar to the right now updates its parents correctly.
- Job Tasks now snap to the correct intervals while being moved.

Product	Visual Jobs Scheduler
Version	1.17
Build	1.17.0.0
Date	23 December 2022

List of enhancements
- Refined handling of operations whose start or end date is outside the defined timeframe:
- If the length of a job planning line is calculated by the VJS and the bar is moved before the start of the working area, the bar will be highlighted by a warning symbol and a border pattern.
- An average capacity (loaded capacity / loaded days) is used for the days within the time frame.
- If a bar gets moved beyond the end of the timeframe by scheduling, its start date will be set to the last day within the view instead.
- A warning symbol is shown when a resource without capacities is loaded.

List of fixed bugs
- The line type was not set correctly when a job planning line was split.

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Product	Visual Jobs Scheduler
Version	1.16
Build	1.16.1.0
Date	5 December 2022

List of enhancements

No enhancements in this release.

List of fixed bugs

- Link warnings did not update correctly.
- Job planning lines created in the creation mode were duplicated when saving if the last job planning line of the job task was not visible in the view.
- Context menus were shown in English, although German was set as language.
- The histogram value was not calculated correctly when "Calculate Job Planning Line Duration" was disabled.

Product	Visual Jobs Scheduler
Version	1.16
Build	1.16.0.0
Date	4 November 2022

List of enhancements
- Like tooltips and bar labels, the **texts in tables** can now also be defined as having more than one line.
- **API**: Two new functions allow to call the VJS with a predefined data and/or view filter from an external BC page. When the VJS is started this way the startup filter dialog will not be shown.
    - **Data filter**:
      procedure presetFilters(var pJobRecord: Record Job; var pJobTaskRecord: Record "Job Task"; var pResourceGroup: Record "Resource Group"; var pResource: Record Resource)
    - **View filter**:
      procedure presetViewFilters(var pJobRecord: Record Job; var pJobTaskRecord: Record "Job Task"; var pResourceGroup: Record "Resource Group"; var pResource: Record Resource)

List of fixed bugs
- Improved performance on closing the Setup page.

Product	Visual Jobs Scheduler
Version	1.15
Build	1.15.1.0
Date	4 August 2022

List of enhancements

- Improved handling of operations whose start or end date is outside the defined timeframe:
    - The operation is highlighted with the help of a dashed frame.
    - If a planned end date is set for a job planning line, no more capacity is displayed.
    - If the length of a job planning line is calculated by the VJS and the bar is pushed over the end of the working area, the capacity of the days within the timeframe is displayed and the capacity for the days outside the timeframe is not displayed/discarded.
- 35% load performance increase (sample data with 100 jobs, 88 resources, 516 job tasks, 2393 job planning lines).

List of fixed bugs

- Job planning lines did not get a "changed" flag the first time their end date was adjusted.

Product	Visual Jobs Scheduler
Version	1.15
Build	1.15.0.0
Date	30 June 2022

List of enhancements

- A vertical line is now shown at the end date of the currently selected job. This is helpful for planning job tasks and job planning lines in larger jobs where the job bar might be outside of the current view.
- Performance improvements.

List of fixed bugs

- Reload cleared all entries in the entities table shown in the creation mode.
- Schedule successors did not always work.
- No link conflict warning appeared when predecessor quantity was increased.

Product	Visual Jobs Scheduler
Version	1.14
Build	1.14.0.0
Date	1 April 2022

List of enhancements

- Link conflicts are now indicated by a warning symbol on the participating element, its parent elements and in the Gantt chart table header.

List of fixed bugs

- In some cases, bars could not be moved to the past if that action would have caused a link conflict and were scheduled instead.
- Business Central warning about "reduced functionality" when handling events from our Javascript add-in.
- Renaming jobs and job tasks no longer causes problems with links.
- Job planning lines being outside of the view are no longer loaded.

Product	Visual Jobs Scheduler
Version	1.13
Build	1.13.0.0
Date	16 December 2021

List of enhancements

- **Extended tooltip configuration**: it is now possible to customize the tooltips for resource groups, resources, and resource summaries.
- In the Job View you can now also **sort by status**.
- Resources and resource group data filter entries will **now limit the Job Planning Lines the user can see and interact with**. Hiding resources via the view filter also hides the corresponding Job Planning Lines.

List of fixed bugs

- Integer overflow and interaction error in resource view.
- Adjust sort order of pseudo resource group resources.
- Unable to start link creation on job tasks and jobs
- When opening the "Sort Order" dialog on a collapsed job or job task, the job or job task got expanded.
- Tooltips on curves were missing.
- Summary bars seemed to be dependent of the visibility of its sub-elements. If a sub element got filtered via a view filter, the summary bars changed.
- "Start New Link Creation" caused the "Save" dialog to be shown when using "Reload".

Product	Visual Jobs Scheduler
Version	1.12
Build	1.12.0.1
Date	22 November 2021

List of fixed bugs

- Interactions in the resource view got stuck if the job planning line to be moved was not selected prior to the drag and drop.
- Jobs and job tasks with a duration of more than 20 years caused a crash on loading.
- In Firefox, the German texts were not shown correctly in the time scale.

Product	Visual Jobs Scheduler
Version	1.12
Build	1.12.0.0
Date	27 October 2021

List of enhancements

- **Consideration of employee absence:** Absence times of employees that are linked to resources can now be visualized in the calendar and the histogram capacity curve. This feature can be ticked on or off by a new option in the VJS user setup.
- **Change sorting**: A new dialog, which is opened via a corresponding entry in the context menus of almost all elements, can be used to configure the sorting of the respective element. The configuration can also be done in the user setup, like the configuration of tooltip, label, and table texts.
- **Automatically adjusting items to changes of job task** You can now have job planning lines of the type "item" be moved automatically according to the changes of their job task when saving in the VJS. This can be activated in the company setup of the VJS.
- **Items visible**: on the item card you can define that you want to see and schedule job planning lines using this item in the VJS. This is useful for specific items for which you may want to define the timing more closely.
- **Tooltip delay**: You can now define a delay time after which the tooltip should appear. This is done in the user setup in the "Appearance" area.

List of fixed bugs

- Improved loading performance.
- Divide by zero error on absence for a resource.
- Double click on newly created job planning lines is now possible after a simple save.
- Splitting a job planning line with link information did not copy the link information correctly.
- The link duration was not adhered to correctly in some cases.
- Jobs that started or ended at the start of the timescale were not shown correctly.

Product	Visual Jobs Scheduler
Version	1.11
Build	1.11.1.0
Date	5 August 2021

List of enhancements

- **Show allocations on a job in the job line:** A new option was added in the „Appearance" area of the user settings that allows to highlight all dates on the job line in the Gantt view on which job planning lines are planned and occupy resources.
- **Link duration**: You can now define the duration of a link when creating a new one or editing an existing one. This link duration will be considered after a drag and drop interaction or after scheduling successors. If the time interval between the linked elements is smaller than the specified link duration, the link will appear in red.
- **Edit links**: The new context menu item "Adjust links" lets you edit a link to modify its type and/or duration.
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List of fixed bugs

- Creating or splitting multiple job planning lines in one session caused multiplication of job planning lines and a target switch of links on the job task.
- Schedule successors did not consider all links in a longer link chain.
- An error occurred if a job task did not have job planning lines while it was part of an interaction
- If a link pointed to a job with user defined starting and ending dates, this job would shrink down to a single day in length.
- Parallel links were not considered correctly.
- After searching for a job planning line, the "Expand All" function did not work correctly.

Product	Visual Jobs Scheduler
Version	1.11
Build	1.11.0.0
Date	30 June 2021

List of enhancements

- **New search dialogs**: In the Job View it is now possible to search for jobs, job tasks and job planning lines, in the Resource View for job planning lines and resources and in the Histogram View for resources. The found element is indicated by a blinking frame and, if possible, selected, so that the links are shown. If a view filter is active the search dialog will only show the visible elements in the VJS.

  The search dialogs can also be personalized the same way as is done in Business Central, by adding columns in the fields list.

- **Filter on Job Tasks**: The data filter and view filter have been extended to include the job task table. This will enable users who only want to see a specific portion of big jobs to do so. Since this data filter may result in a list of projects for which no project tasks were found, there will be a message for the user indicating that the specified filter conditions did not allow for any job tasks to be loaded.

- Improved **distribution logic**: Currently, the VJS will either show all job planning lines as allocated to the planning date or, if activated, will visualize the allocation according to the available resource capacities and allocate all capacities starting from the planning date until the quantity has been fully allocated. This follows the idea that as soon as a job planning line is assigned to a planning date and a resource that all efforts of the resource should immediately be dedicated to this job planning line.

  This has now been extended to allow the users to supply a "planned end date" on the job planning lines page, on which the work for that job planning line should be completed. This means that with the planning date as a start and with the planned end date as end, the VJS can then visualize a proportional usage over all available dates with capacity between start and end for this job planning line. This gives the user and the resource a more realistic approach to plan the intended workload over a certain amount of time and leave it to the resource to fulfill the workload on their own pace.

- Automatically generated translations were removed and exchanged by **manually created proper translations in English and German**. For partners wanting to create an own translation in their language, we provide the English xlf files as basis.

- **API:** A new set of **OnBeforeTransfer** events was added. These events can be used to modify Business Central data before transferring them into our simulation data. This way, the customer can use flow fields, for example.

  The values of a field class Flowfield of standard BC are dynamically calculated and can be used in fields added by partners, but currently they are not triggered to get calculated during data transmission from Business Central to the SIM tables. By using the new events, these fields can nevertheless be processed in a meaningful way and can be provided for tooltip, bar, and label texts. The partner enhances the BC as well as the SIM tables by new fields accordingly. The events occur on loading and are structured as follows:

*OnBeforeTransfer**BCTableName**(pClientGuid: Guid; var p**BCTableName**Record: Record " **BCTableName"** var pHandled: Boolean)*

BCTableName has to be replaced with the concrete table name. The following tables can be used:

- Job
- Job Task
- Job Planning Line
- Resource Group
- Resource

The event delivers the BC record to be transferred. Then an own or an already existing FlowFilter can be set and FlowField values fields be calculated – the new value will be stored in the record. After this, the VJS will process the record and transfer it to the SIM tables. The calculated value is then used as well but it is also possible to describe "nonFlowFields" so that the BC data for the simulation can be modified. These data can be displayed in tooltip, bar, or table.

List of fixed bugs

- Scheduling performance enhancements.
- When dragging a new job planning line from the entity list, the newly created job planning line would start at the date indicated by the mouse cursor, not the date the bar was visualized at during the interaction.
- After loading or reloading data from Business Central it could happen that an interaction on an element with a link did not adhere to that link at all.
- If you opened the Toggle Creation Mode with an active view filter, the view filter was only applied to the Creation Mode table if you switched into a different view and back.
- Jobs with a manual end date were visually extended when a job planning line got moved past the end date.
- In case of a job with a manually set ending date but a blank starting date it could happen that the error message "Date is invalid" popped up and the VJS aborted the loading process.
- Changes to links were not reset when a reload was performed without saving.
- In certain situations, the VJS format strings "(" and ")" were automatically removed in the table and bar configurations.

Product	Visual Jobs Scheduler
Version	1.10
Build	1.10.0.0
Date	31 March 2021

List of enhancements

- **Links on all levels**: It is now possible to create links between jobs, job tasks and job planning lines, which are also being considered during interactions. These links can also be created between different levels, e.g., job to job planning line and job task to job.

- **Extensibility of the app**: Partners can now make changes to the Visual Jobs Scheduler via an extension. Specifically, this means that **baseline information can be defined** for job planning lines for comparison with a previous state.

List of fixed bugs

- The information about the last used data and view filter is now saved correctly again.

- Unintended link deletion has been corrected.

- A validation error when saving a job planning line with an alternative unit of measurement has been fixed.

- The calendar in resource lines now reflects the available capacity on that date.

- In the tooltip, label and table configuration, fields of the type Boolean and Time can now also be selected.

Product	Visual Jobs Scheduler
Version	1.9
Build	1.9.0.0
Date	17 December 2020

List of enhancements

- **Custom fields**: In addition to the default fields available in tooltip, label, and table text it is possible now to equip custom fields with data to use them in tooltip, bar label and table text.
- The **notifications window** can now be **switched off** by a new option in the VJS User Setup dialog.
- Support of alternative connection to Microsoft's Base App. Requires Dynamics 365 BC v16.4 and higher.
- Performance improvements.

List of fixed bugs

- The Color picker was not working in IE11 environments.

Product	Visual Jobs Scheduler
Version	1.8
Build	1.8.0.0
Date	2 October 2020

List of enhancements

- Changing the quantity of a job planning line:
    - A dialog for changing the quantity of a job planning line can be opened via a context menu.
    - When a new job planning line is created, the dialog in which the quantity can be defined opens.
    - When splitting existing job planning lines, the quantity is no longer automatically distributed equally to both lines but can be defined in the dialog.
- A **histogram view** is now available.
- The **texts in tables** can be designed individually, in analogy to tooltip and bar label.
- **Link structures** created in the VJS will now be **copied** when you copy the job or job tasks.

List of fixed bugs

- Error upon calculating a job planning line when a resource capacity was changed

Error upon creating a new job planning line in case of already existing job planning lines

Product	Visual Jobs Scheduler
Version	1.7
Build	1.7.0.0
Date	22 June 2020

List of enhancements

- The **bar label can be customized** in the "Setup" dialog. The new "format strings" allow, among other things, the multi-line display of the label or the separation of the individual fields by a "|".
  In this context, the new feature "Extendible bar text separator" was added that is to be implemented by the partner.
- The setup dialog was enhanced by the option to select the view the VJS shows upon starting.
- New section "Appearance" in the "Settings" dialog where you can specify
  - The zoom factor in %
  - In the "Compact" layout, the display is reduced as much as possible to provide a better overview, especially with large plans.

List of fixed bugs

- It was ensured that UTF8 text coding is used internally.

Product	Visual Jobs Scheduler
Version	1.6
Build	1.6.0.0
Date	3 April 2020

List of enhancements

- Customizable tooltip the settings of which are made in a new dialog in the "User setup."
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List of fixed bugs

- Missing color picker in the Chrome browser.
- Performance issues lead to extraordinary long loading times for jobs and to crashes when filters were used.
- After clicking "Open in new window," the VJS appeared without data.

Product	Visual Jobs Scheduler
Version	1.5
Build	1.5.0.0
Date	6 February 2020

List of enhancements

- Show progress:
    - The Job's progress is shown as a green line in the lower part of the Job bar.
    - The progress of a Job Task is shown as number below the Job Task bar.
- Notifications only occur when they concern data within the time range as defined in the "User Setup" dialog.
- The "User Setup" dialog now also shows the setting of the resource summary level as being specified in the "Company Setup" dialog.
- Performance enhancements: Only data that are needed for the visualization are loaded into the VJS.
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List of fixed bugs

- Job planning lines no longer show up in the Creation mode.
- Switching filters via the "Setup" dialog led to an incorrect histogram.
- No unnecessary entries on the page LatestError anymore.
- The job planning line duration calculation was giving the wrong result close to the end of the chosen time range.

Product	Visual Jobs Scheduler
Version	1.4
Build	1.4.0.0
Date	27 November 2019

List of enhancements

- The "User Setup" dialog was enhanced by an option that lets you determine whether the "Data Filter" dialog comes up on starting the VJS or not.
- The "Data Filter" dialog can be called any time by clicking "Choose data filter" in the "User Setup" dialog.
- The user can now define individual colors for jobs that are used for the job line and all of its job planning lines. For this, a new option has been added to the Job card.
- A new context menu for either table line or bar allows to collapse/expand all levels below the current one.
- The resource summary bar can be set to "hidden" in the "Company Setup" dialog. This is useful for companies with processes including either several allocations per resource for one job task or considerably more than two resources per job task.
- The notification window now also pops up in case of a resource overload.
- The dialog "VJS Company Setup" can be opened from within the VJS via the "Administration" item.
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List of fixed bugs

- Several bugs concerning the notifications:
  - They will now disappear once the condition for that notification is not met anymore.
  - They won't appear twice for the same element anymore.
- Double clicking a job planning line caused an error message.
- Saving the views: Loading or saving data doesn't let all groups collapse any more.

Product	Visual Jobs Scheduler
Version	1.3
Build	1.3.0.0
Date	9 October 2019

List of enhancements

- New data filter that applies already at the data interface to reduce the amount of loaded data. When the VJS is started, a dialog pops up where you can edit, create, and apply data filters. You can filter by
    - o Jobs
    - o Resource Groups
    - o Resources

    The filter settings of the currently active data filter can be edited in the in the new "Edit Data Filter" dialog to be found in the "Setup" dialog"
- New view filter, to be reached via the "Actions" menu.
- Multiple data and view filters can be created, named, and stored.
- A new context menu allows to show the currently marked operation in the respective other view.
- Job planning lines can be split via context menu:
    A new job planning line will be added and the quantity evenly distributed to both job planning lines.
- When a job planning line gets moved behind the job's end date a notification window below the menu ribbon pops up, pointing out potential problems.
- The dialog "VJS Company Settings" can now be opened from the role center menu.
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List of fixed bugs

- The message "User settings not found" does not longer appear when the VJS Setup Page is opened for the first time after the installation.

Product	Visual Jobs Scheduler
Version	1.2
Build	1.2.0.0
Date	30 August 2019

List of enhancements

- The planning line quantity can now be calculated and distributed taking into account the resources' capacity. Since this is a company-wide setting, we implemented a new dialog "VJS Company Settings" where "Calculate Job Planning Line Duration" has to be ticked for activating the feature.
- Days without capacity are considered when rescheduling job planning lines.
- The feature "Plan successors" was renamed to "Schedule successors" and was also added to the context menu of the job planning lines.
- The menu item "NETRONIC promoted" was renamed to "NETRONIC VJS".

List of fixed bugs

- Links got lost during interactions.
- When moving job planning lines by the job tasks, the links sometimes weren't taken into account.
- The length of the field "Description" in the "Jobs" table was adjusted to the length in Microsoft Dynamics 365 Business Central.

Product	Visual Jobs Scheduler
Version	1.1
Build	1.1.0.0
Date	24 July.2019

List of enhancements

- A status window pops up during long calculations.
- A new context menu enables creating links between job planning lines.
    - Possible relations:
        - Start-start (the successor must not start before the predecessor)
        - End-start
    - The new feature "Plan successors" which can be found as new entry in the menu ribbon, ensures that linked operations are processed without temporal offset. This applies for the selected node and all its successors.
    - Violated link orders are indicated by red link lines.

List of fixed bugs

- Starting the setup of the Visual Jobs Scheduler triggered an error message when the Visual Jobs Scheduler hadn't been opened by the same user before.

Product	Visual Jobs Scheduler
Version	1.0
Build	1.0.0.0
Date	21.6.2019

Key Features

- The Job View provides an overview of all jobs and allows the drill down into project tasks and job planning lines.
- The Resource View shows all project employees/ resources and their allocation to job planning lines.
- The Creation mode allows to interactively assign a resource to a task or a job task to a resource by dragging it from a list to the chart.
- Drag & drop changes to job tasks and job planning lines. If job tasks are moved, the related job planning lines are moved automatically.
- Visual decision support in real-time.
- Complete integration into the standard jobs and resource planning modules of Microsoft Dynamics NAV.

Technical Details

- Available for Microsoft Dynamics 365 Business Central.
- Fully designed and implemented as future prove AL Extension.
- Designed for data of Jobs and Resource Planning module.
- Integration as page in Microsoft Dynamics 365 Business Central.