

# **DOCUMENTATION**

# Visual Jobs Scheduler (VJS)

Version: **1.13** | as of 20 December 2021

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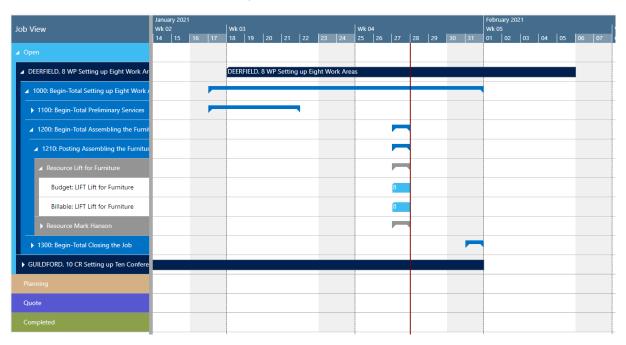


# 1. Technical requirements

Microsoft Dynamics 365 Business Central

### 2. Understanding the VJS

Since the VJS is a Gantt chart, it naturally has all its characteristics:

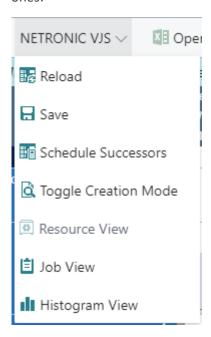


- A **timescale** at the top.
- A table at the left, listing jobs (in the Job View) or resource groups/resources in the Resource View
- On the right below the time scale, a **chart** displaying the job schedule with a **calendar** in the background indicating work free periods in grey while working times appear in white.
- A menu ribbon allowing to make basic settings that will be explained in detail in the following.

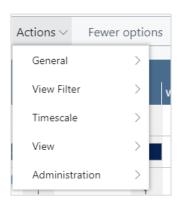




The item "NETRONIC VJS" summarizes all options that we think are the most frequently used ones:

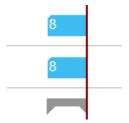


All options of the VJS can be found under "Actions":



In case the "Actions" item is not visible in the menu ribbon, click "More options". To hide it, click "Fewer options".

• A vertical line in the chart indicates the **work date** as having been set in Dynamics 365 Business Central.



- **Notifications** appear below the menu ribbon in case
  - o a job planning line gets moved behind the job's end date
  - o a resource overload occurs

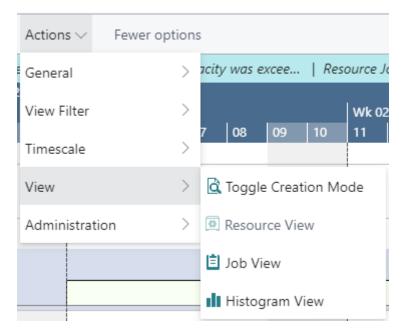


Notifications: 2 The job planning line DEERFIELD, 8 WP, 1120, 10000 has been placed past the end date of its job | Resource Mary A. Dempsey (MARY): Capacity was exceeded

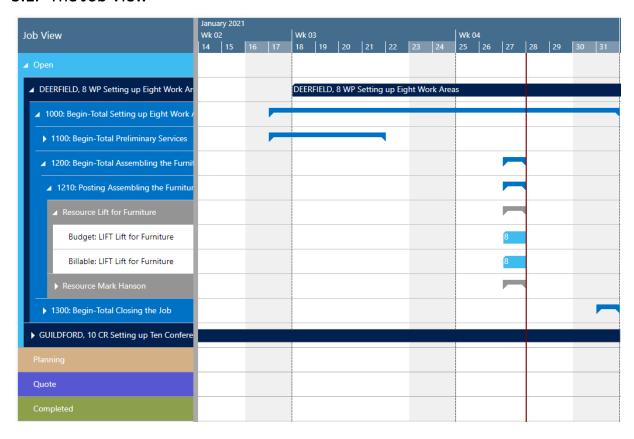


### 3. Three different views

There are three different views in the VJS: The Job View, the Resource View, and the Histogram View. You can switch between them by using the corresponding menu items:



### 3.1. The Job View



The Job View shows jobs categorized by their status. Each job, job task and job planning line is represented by a bar, the color of the job planning line bars depending on the job's category.



### 3.1.1. Elements and symbols in the Job View:

• Job – the green line beneath the bar showing the job's progress



• Job Task Line - the number beneath the bar showing the task's progress



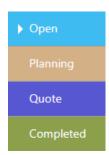
• Job Planning Line - the grey dot indicating a change not having been saved yet, the orange frame highlighting the currently marked task.



• Resource summary bar – can be hidden by the according option in the "User setup" dialog



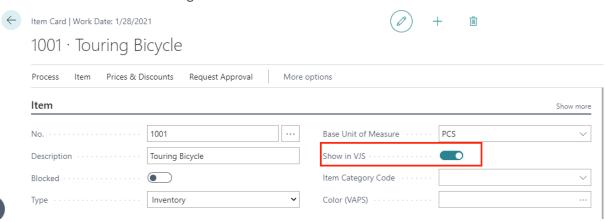
• The different colors of the categories:



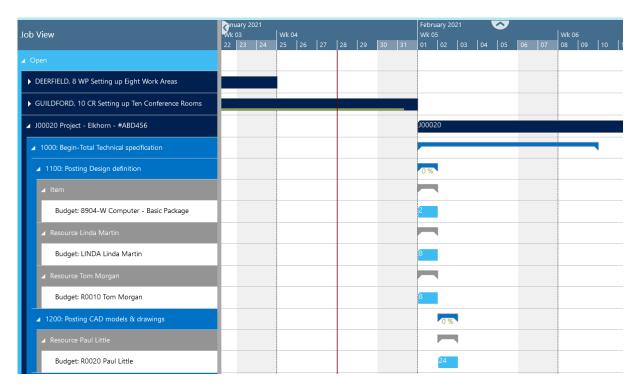
- Within a category, jobs and their belonging tasks are sorted in ascending numerical order, within jobs the task numbers are sorted the same. The sorting order can be changed via the contextmenu, or via the "Configurations" tab in the user settings.
- Job planning lines of the "item" type
   If you have specific items the timing of which you'd like to specify more precisely, we
   recommend that you let the VJS visualize and schedule job planning lines using these items.



Set this into work on the relating item card:

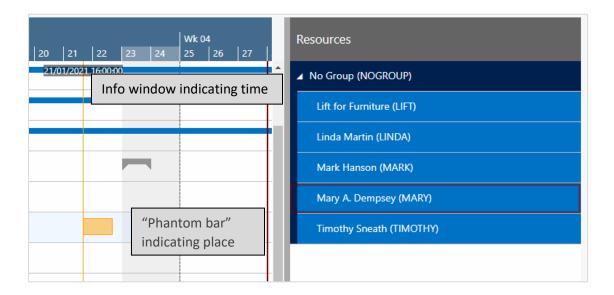


Once activated, the result looks like this:

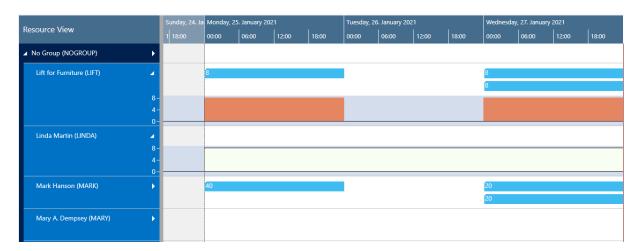




By switching on the "Creation Mode" the VJS displays a list with your resources. You can interactively allocate a resource by dragging it from the list to the chart. An orange "phantom" bar and an info window indicate where and when the new job planning line will be placed if you release the mouse button.



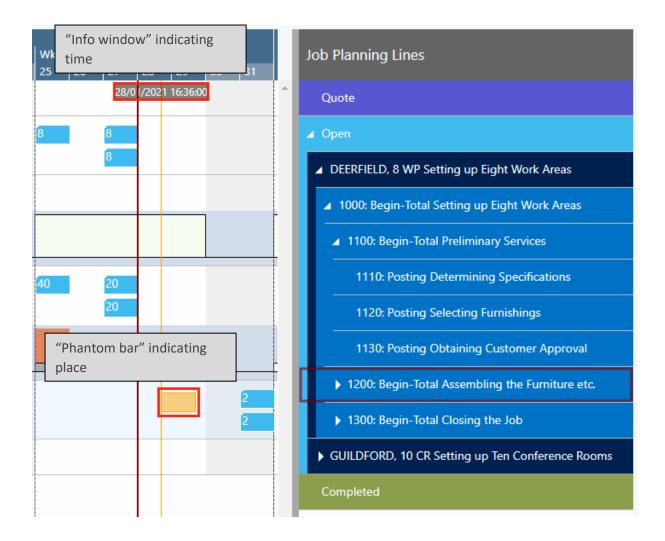
#### 3.2. The Resource View



The resource view shows resource groups and their respective resources.

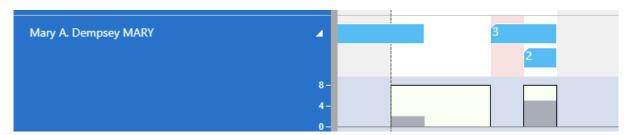
- It visualizes capacity bottlenecks and date conflicts.
- The different category colors are applied as in the Job View
- By switching on the "Creation Mode" the VPS displays a list with all your jobs, job planning lines
  and job tasks. You can interactively allocate a job task to a resource by dragging it from the list
  to the chart. An orange "phantom" bar and an info window indicate where and when the new
  job planning line will be placed if you release the mouse button.





### 3.2.1. Elements and symbols in the Resource View

• Calendar: A calendar in the background of the Gantt chart shows weekends in grey, working times in white. Absences of employees that are linked to resources are visualized in a light pink in the calendar and by a corresponding capacity curve.



• Bars: Each job task is represented by a bar, the color of the job planning line bars depending on the job's category. . The Job categories are indicated as follows:

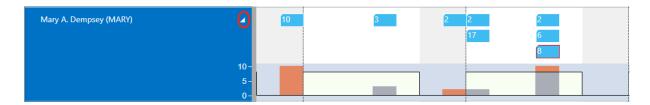




The grey dot indicates a change not having been saved yet, the orange frame highlighting the currently marked task.



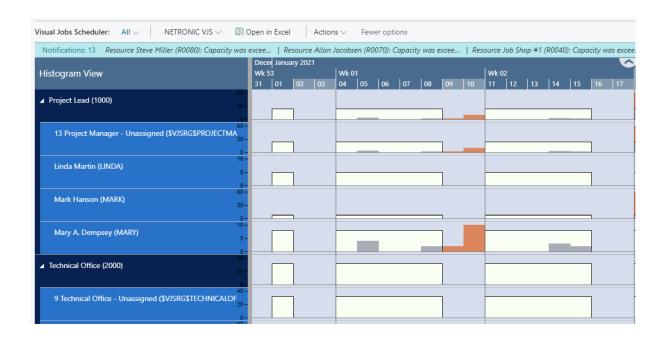
- Sorting order: Within a resource group, resources are sorted in ascending alphabetical order.
- Capacity curve: In the VJS, you can show a capacity curve in the Resource View to see free and exceeded capacities, a red box indicating an overload:



### 3.3. The Histogram View

A histogram offers visual decision support by showing impending capacity problems. In the Histogram View all histograms of resource groups and resources are displayed in the same order as in the resource view.

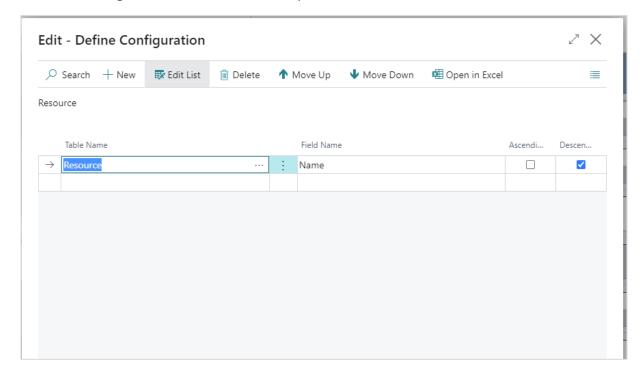






### 3.4. Sorting order

You can change the default sorting order for nearly all elements in the plan either by context menu or via the "Configurations" tab in the user setup.



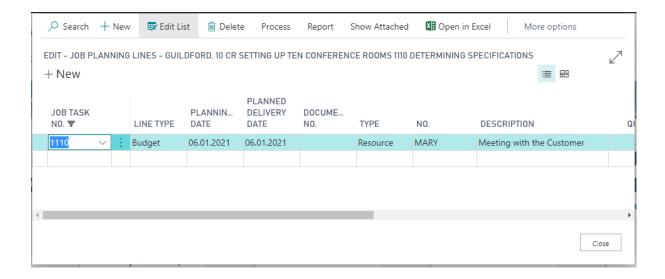
### 4. Open Microsoft Dynamics 365 Business Central dialogs

The VJS fully integrates with Microsoft Dynamics 365 Business Central. This means that by double-clicking the according element (job, job planning line, resource etc.) either in the table area or in the Gantt area, you'll directly switch to the according Dynamics 365 Business Central dialogs where you can navigate and make changes as usual:

Double-clicking a job planning line...



...will call the according dialog:



# 5. Collapsing and expanding

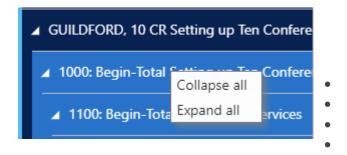
The VJS allows viewing your data from different angles easily and quickly. Collapse and expand jobs, resource groups, groups etc. There are two ways how to collapse/expand the above-described elements of your plan:

### 5.1. Collapsing/expanding by clicking the corresponding symbols

- collapse
- expand

# 5.2. Collapsing/expanding by context menu

By opening the context menu either in the table or on the bar you collapse/expand all levels below the current one in one go.

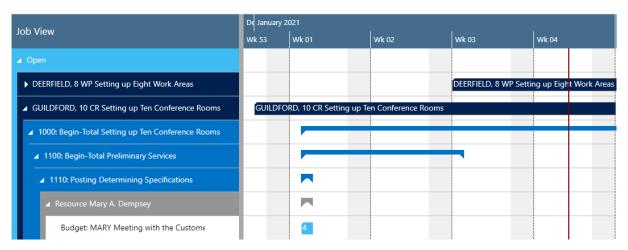


All projects collapsed:





After having expanded parts of project "GUILDFORD, 10":





# 6. Progress information

The VJS provides overview of a Job's or a Job Task's progress:

• The Job's progress is shown as a green line in the lower part of the Job bar.

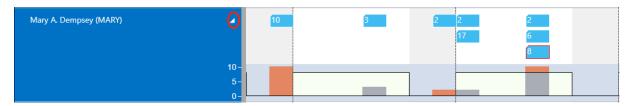


• The progress of a Job Task is shown as number below the Job Task bar.



# 7. Capacity information

In the VJS, you can show a capacity curve in the Resource View, to see free and exceeded capacities, a red box indicating an overload:



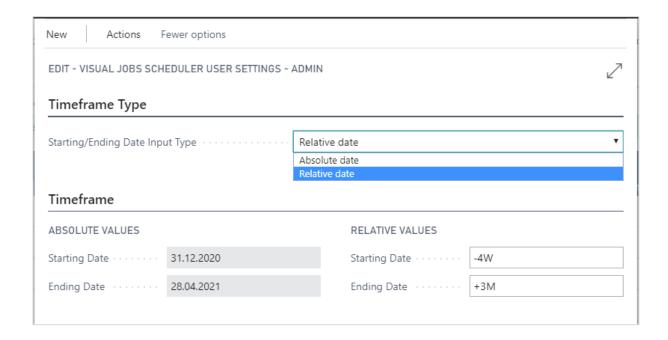
# 8. Navigation in the VJS

Navigating in the VJS largely comprises setting the time range for which parts of your plan are shown, modifying the timescale solution and quickly scrolling to certain parts of your plan.

### 8.1. Setting the timeframe

The timeframe specifies the time range covered by the timescale, either fixed by absolute values or relative to the workday. This is done in the "Setup" dialog, to be reached by clicking the "General" item in the "Actions" ribbon.

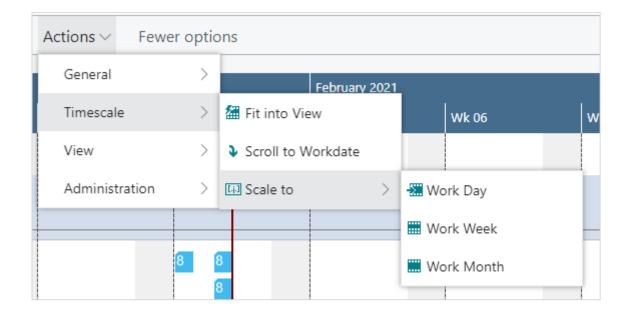




### 8.2. Change the timescale resolution

For zooming in a certain area of your plan or to zoom out for a better overview, you can change the timescale resolution either by

- scrolling the mouse wheel in the timescale area
- or, more specifically, by the corresponding items of the "Actions" menu, based on the work date as having been specified in the settings of Dynamics 365 Business Central.

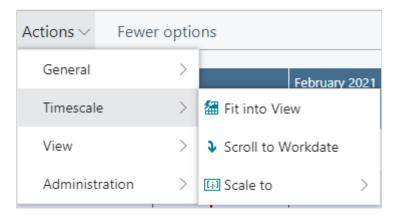




### 8.3. Scrolling

The VJS offers the following options for quickly navigating to certain positions in the diagram:

- the common scrolling options by vertical and/or horizontal scrollbar
- dragging the timescale either right or left
- Scroll directly to the Dynamics 365 Business Central work date by selecting the corresponding item from the "Actions" menu.



#### 8.4. Fit into view

Select this item from the "Timescale" item in the "Actions" menu to switch directly to the timescale as defined in the "Setup" dialog.

### 8.5. Adjust the width ratio between table and diagram

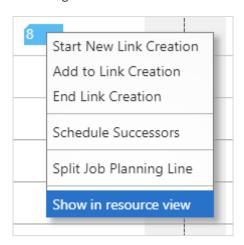
For adjusting the width ration between table and diagram, put the mouse cursor on the sash between the two parts and drag the double arrow appearing then.





# 8.6. Show job planning line in other view

Show the currently marked job planning line in the respective other view while it gets highlighted by a blinking frame.

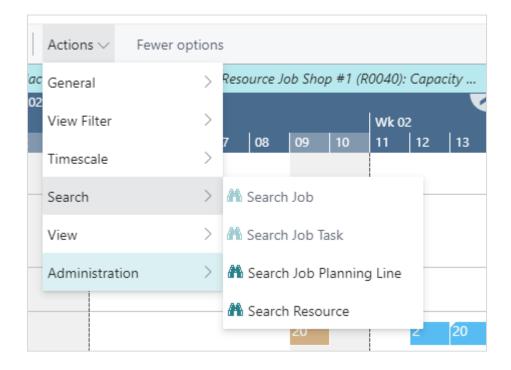


### 8.7. Search function

All three views offer a comfortable search function:

- In the Job View, you can search for jobs, job tasks, and job planning lines
- In the Resource View, you can search for job planning lines and resources
- In the Histogram View, you can search for resources.

The respective view automatically scrolls to the first search result which gets highlighted 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.





### 9. Move operations

You can move operations by mouse either horizontally or vertically, either way having a different impact.

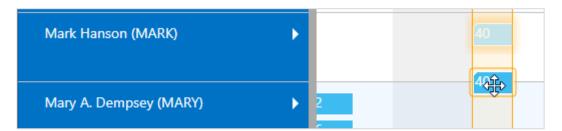
### 9.1. Move operations horizontally by drag & drop

To schedule an operation, you can move it horizontally along the time scale both in the Job View and in the Resource View: as a consequence, the operation will be worked off at a different time. If in the Job View a job task or job planning line is moved, every subordinate operation will shift as well.



### 9.2. Assign an operation to another resource

In the Resource View, an operation can also be moved vertically when scheduled – to a different resource. As a consequence, the operation will be worked off by the resource it was moved to.



### 9.3. Notifications

Notifications appear in a window below the menu ribbon and alert you to possible problems. They pop up in the following cases:

when a job planning line gets moved behind the job's end date

Notifications: 4 The job planning line GUILDFORD, 10 CR, 1130, 10000 has been placed past the end date of its job

when a resource's capacity gets exceeded

Resource Mary A. Dempsey (MARY): Capacity was exceeded

### 9.3.1. Show/hide notifications

If you don't want the notifications to be shown, you can hide them by ticking the according option in the VJS User Setup.





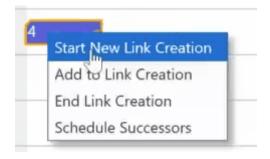
### 10. Create links

The VJS enables creating links on all levels of your plan - meaning between jobs, job tasks and job planning lines, even between different levels, e.g., job to job planning line and job task to job - by a context menu. According to your needs and planning situation, you can select between two possible relations:

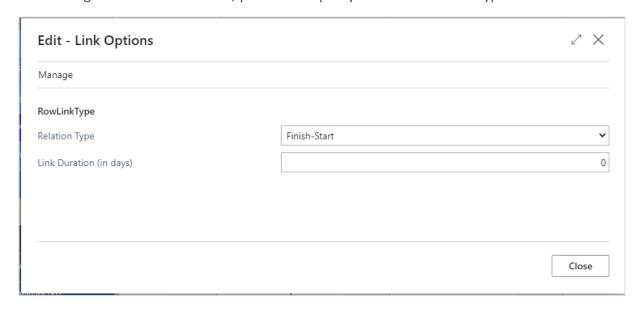
- Start-Start (the successor must not start before the predecessor)
- Finish-Start

### 10.1. How to proceed

Click "Start New Link Creation" on the job planning line you want to start with and "End Link Creation" on the job planning line you want the link chain to end.

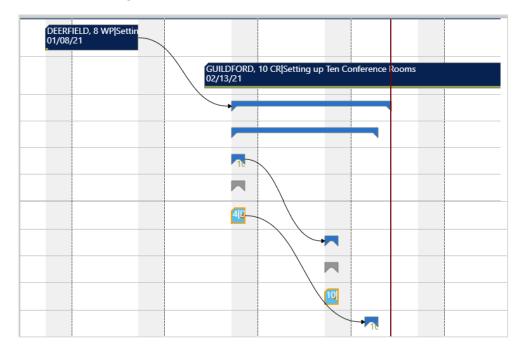


After having ended the link creation, you need to specify the desired relation type and link duration:

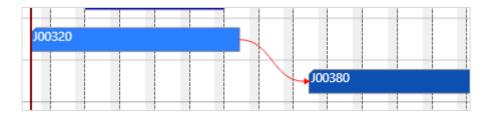




The link structure you build this way will be considered when one element – job, job planning line etc. - in this chain gets moved.



The 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:



### 10.2.Edit links

To modify or delete links, click the according item of the link's contextmenu:

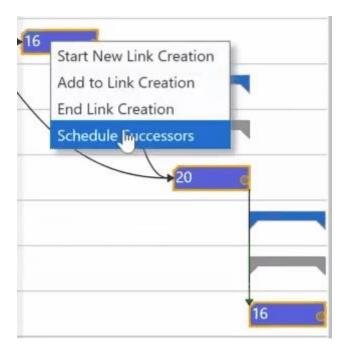


The "Adjust link" item will call the above shown "Edit link options" dialog.

### 11. Schedule successors

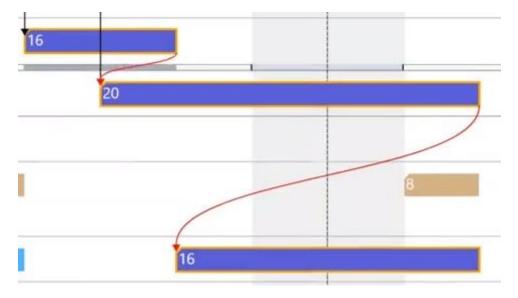
This option that can be found in the menu ribbon ensures that the link structure is taken into account with no buffer time, i.e., linked operations are processed without temporal offset. This applies for the selected node and all its successors.





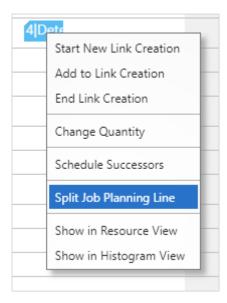
### 11.1. Violated link orders appear in red

If the link order within a link structure gets violated, the according link(s) appear in red.



# 12. Split job planning lines

By splitting a job planning line, you will add a new job planning line to your plan. Click the according context menu item on the job planning line you want to split

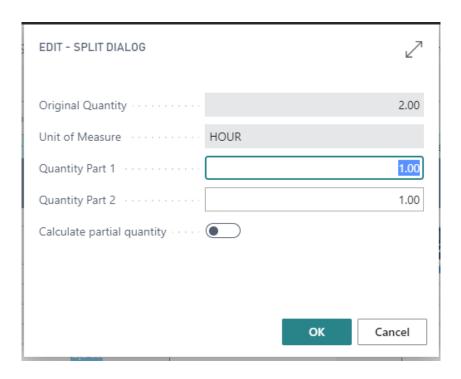


In the dialog popping up you can specify

- How the quantity is to be distributed between the two lines.
- Whether you want to calculate partial quantity, so that when you enter the value for the first line, the quantity for the second line will be calculated automatically. At the same time, you

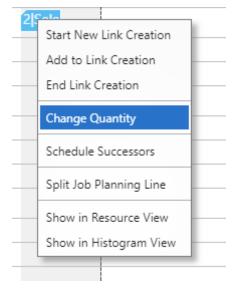


get an error warning, when the quantity of part 1 is calculated higher than the original quantity.



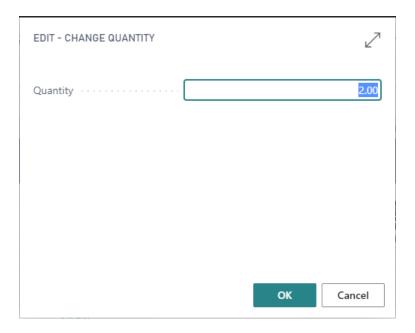
# 13. Change the quantity of job planning lines

The quantity of a job planning line can be changed directly in the plan. Open the context menu of the job planning line you want to change the quantity of and click the according item:



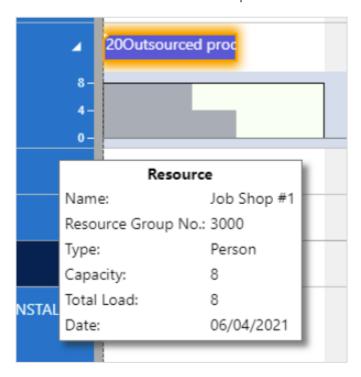
This leads you to the self-explanatory "Edit - Change Quantity" dialog:





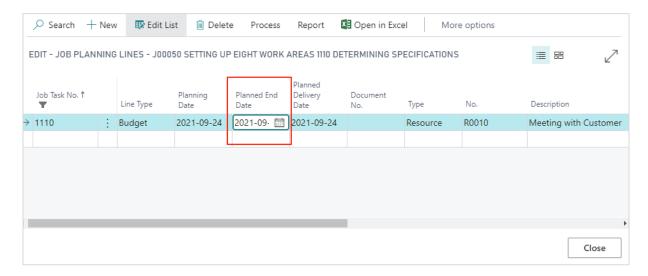
### 14. Distribute workload of a resource individually

The standard allocation of workload to a resource in the VJS runs in such a way that 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 is a rather inflexible approach that does not take into account the individual work pace of each resource.

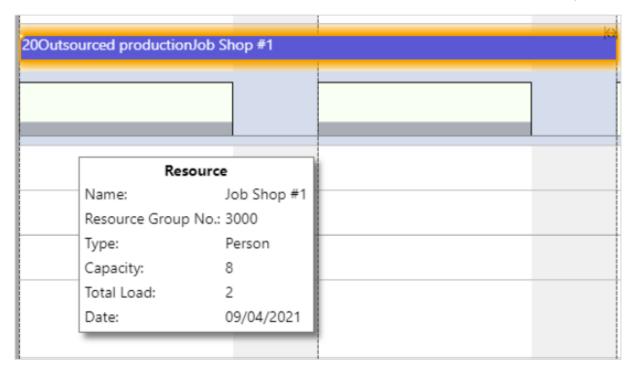


To get around this, you can define a "planned end date" on the job planning line page:





This sets a date by which the work on this job planning line should be finished. This means that with the planning date as a start and with the planned end date as end, the VJS can 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.

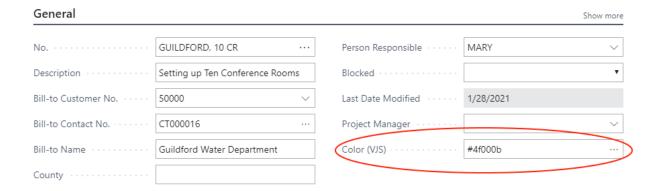


# 15. Apply individual colors to jobs

You can define individual colors for jobs that are then used for the job line and all of its job planning lines. Thus, you can very easily highlight certain jobs, e.g., the most important one.

The job color gets changed on the job card. If you want to switch to the standard VJS color again, you only need to delete the hex code from the color field on the job card.





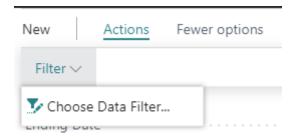
### 16. Use filters

### 16.1. Data filters

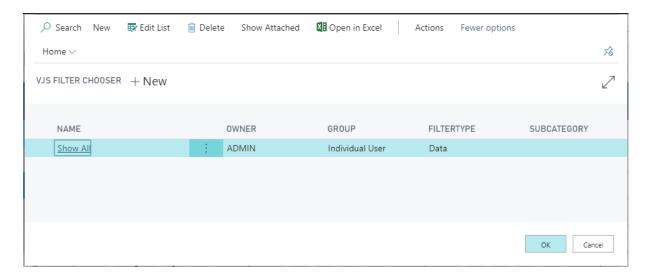
Data filters work as Dynamics 365 BC filter on reading the data (either when the VJS is started or on reloading) so that they are already effective at the data interface to make sure that only filtered data are handed over from Dynamics 365 BC to the VJS.

#### 16.1.1. Create and edit data filters

First, you have to open the according dialog by clicking "Choose Data Filter" in the "Setup" dialog:

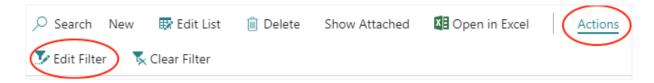


In the dialog, you can edit, create and apply not only one but multiple data filters.





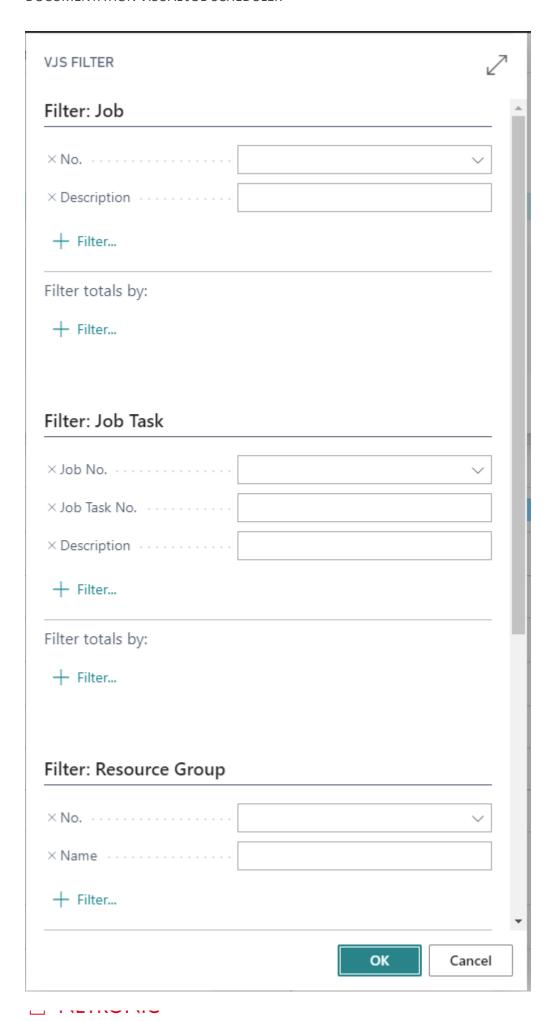
To create a data filter, click "+New" and then enter the name of the new filter. To specify the filter settings, click "Actions" "Edit Data Filter".





You can filter by jobs, job tasks, resource groups and resources:





The job task filter enables 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.

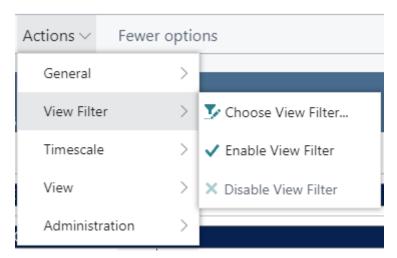
If you want to make sure that the "Edit Data Filter" dialog pops up when you start the VJS, tick the according option in the "Setup" dialog:

Filter
Show Data Filter on Start · · · · · · ·



### 16.2. View filters

View filters are applied to data already having been loaded into the VJS. Accordingly, only the capacity utilization by the visible activities are shown in the histograms. To work with the filters, the "Actions" menu offers three according options:



Click "Choose View Filter" to open the list of existing filters where you can create, delete and edit filters as described in the "Data filters" section.



# 17. The User Setup dialog

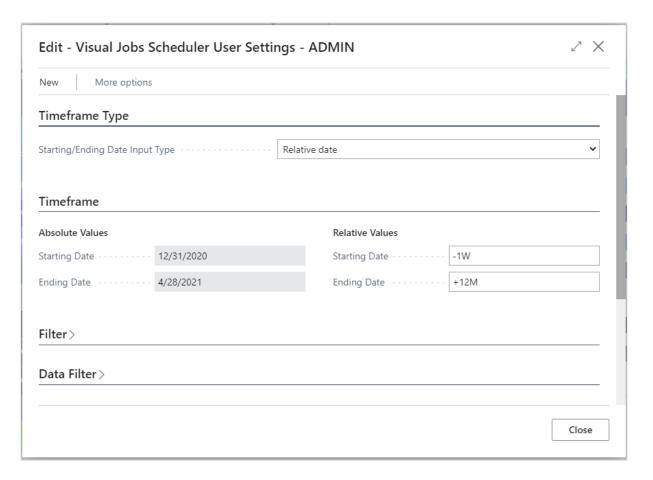


The "User Setup" dialog allows customizing basic settings of the Visual Jobs Scheduler. You reach it via "Actions" -> "Administration

Here you can make or see the basic settings for:

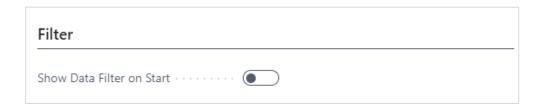
### 17.1.Timeframe:

 Specify the timeframe that sets the time range covered by the timescale, either fixed by absolute values or relative to the workday (see also 7.1., "Setting the timeframe).



### 17.2.Filter

o Decide whether the "Edit Data Filter "dialog pops up when you start the VJS.





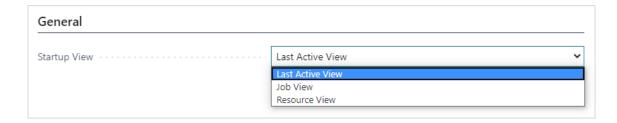
#### 17.2.1. Data Filter

See which data filter is currently active.



### 17.3.General

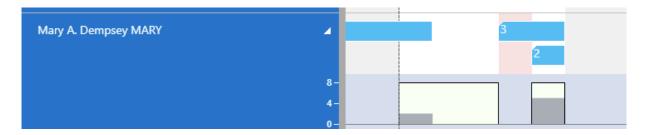
Decide which view is shown upon starting the VJS



### 17.4. Company settings

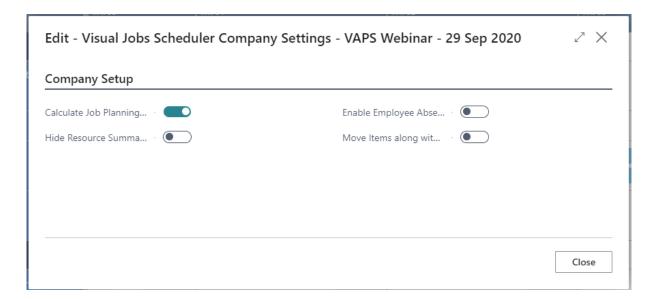
This section of the "User Setup dialog" gives you an overview of settings being applied companywide. See

- which way of calculating the quantity of job planning lines is activated. In standard
  Dynamics 365 Business Central the quantity of job planning lines is calculated
  independent of the resource's capacity. The VJS allows to bypass this way of visualizing
  the quantity by activating "Calculate Job Planning Line Duration" in the "Company
  Setup" dialog.
- whether the resource summary bar gets displayed or not
- whether to enable employee absences for calculation: Absence times of employees that are linked to resources can be visualized in the plan, both in the calendar and in the histogram capacity curve:





• whether you want to move items along with job tasks: You can let the VJS track whether the time of the job task has changed and then automatically adapt the time of the item job planning line. Thus, you needn't adjust the timing of a job planning line of the type "item" to possible shifts of the belonging job task manually in the job planning line list.





### 17.5. Show Notification

When a job planning line gets moved behind the job's end date or in case of a resource overload, a notification window pops up, informing the user about possible problems.

Notifications: 3 Resource Mary A. Dempsey (MARY): Capacity was exceeded

If you don't want this notification window to be shown you can switch it off here:

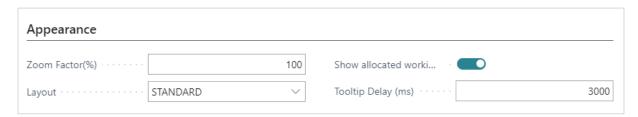


### 17.6. Calculation



 Absence times of employees that are linked to resources can be visualized in the calendar and the histogram capacity curve.

## 17.7.Appearance

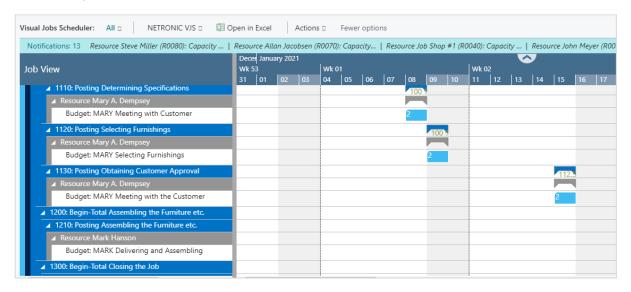


o Specify a **zoom factor** in percent.

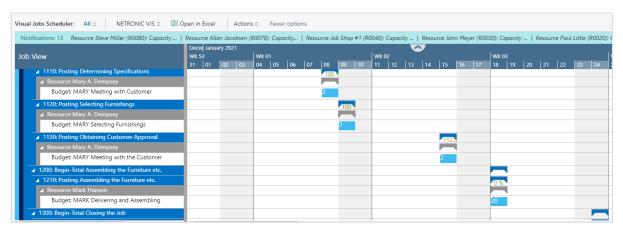
#### DOCUMENTATION VISUAL JOB SCHEDULER

 Choose a layout: In the "Compact" layout, the display is reduced as much as possible to provide a better overview, especially with large plans.

#### Standard layout:



### Compact layout



Show allocations on a job in the job line: This option allows to highlight all dates on the job line in the Gantt view on which job planning lines are planned and occupy resources:





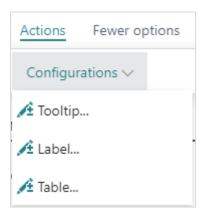
o Specify a **tooltip delay**: give a time in milliseconds after which the tooltip shall appear

## 17.8. Configure tooltips

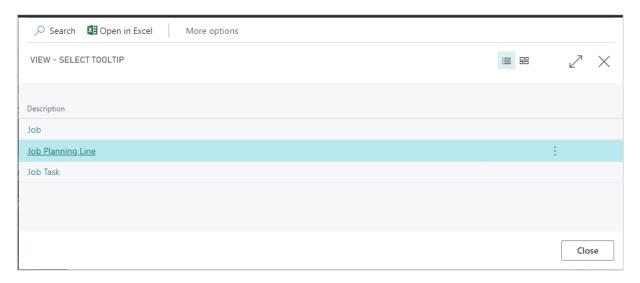
The tooltips in the VJS provide further information on the following items of your jobs schedule:

- o Jobs
- Job planning lines
- Job tasks
- o Resource groups
- o Resources
- Resource summaries

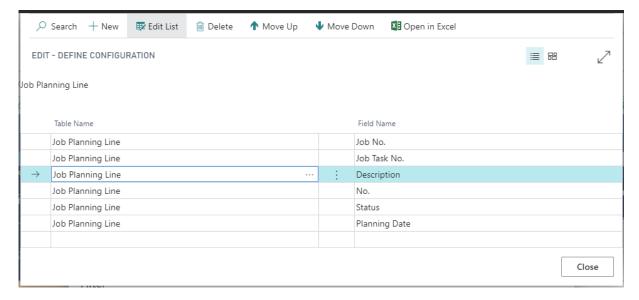
You can specify which information is to be shown in the tooltip of the respective item in the according "Configurations" dialog - to be reached by clicking "Configurations" in the "Actions" menu of the "User Setup" dialog.



In the dialog popping up, you just click the item for which you want to customize the tooltip:



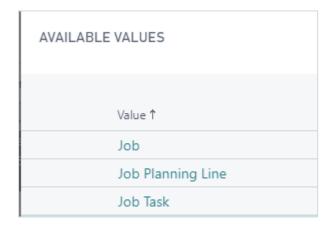
### The "Edit – Define Configuration" dialog pops up.:



### Here you can:

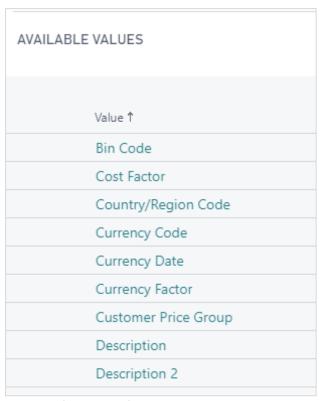
#### o Add a new field:

either click +NEW or just click in the last row. You can select the desired table name and field name from your Dynamics 365 BC data by clicking "...":





#### The list of available table names



The list of available field names depending on the table selected previously

- o **Insert a new field**: Select the field above which you want to insert a new one and proceed as described above.
- o **Delete a field**: Click "Delete" in the menu ribbon
- o **Change the order** by clicking "Move up" or "Move down"

# 17.9. Configure bar labels

You can decide which D365 BC information is to be shown as bar label.

Bar labels are shown on

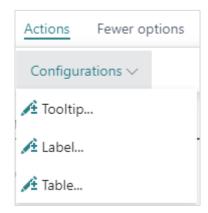
- jobs
- job planning lines in the Job View
- job planning lines in the Resource View

In the picture below, the bar label contains

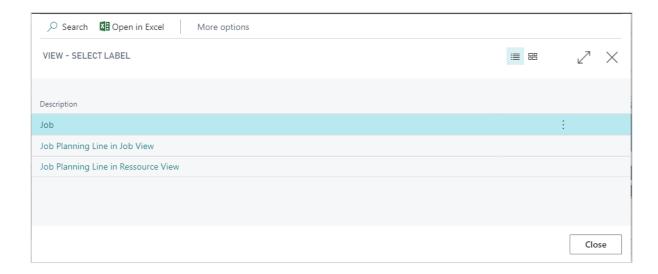
- the job number and the job description separated by "|"
- the job ending date in a new line



The settings are made in the corresponding dialog that can be found by clicking "Configurations" in the "Actions" menu of the "User Setup" dialog:

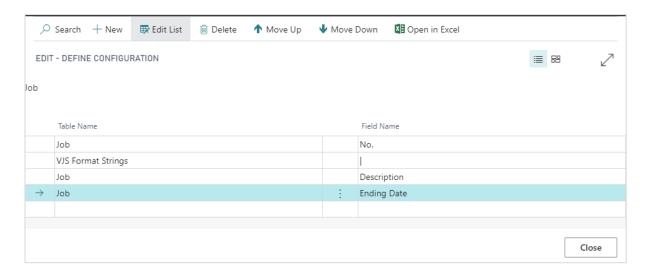


In the "View - select label" dialog, select the item and/or view for which you want to customize the bar label





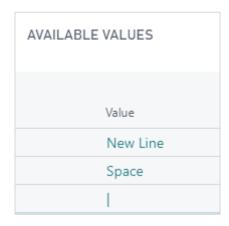
The "Edit – Define Configuration" dialog pops up:



Here you can add, insert, edit, and delete fields as well as change their order. You can select the desired table name and field name from your Dynamics 365 BC data by clicking "..."

### 17.9.1. Formatting the labels

Separate the field contents by a line break, a blank or a "|" by selecting the according separator from the "VJS Format Strings" table.



## 17.10. Configure table labels

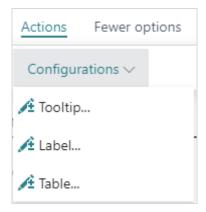
You can decide which D365 BC information is to be shown as table label.

Table labels are shown on

- jobs
- job tasks
- job planning lines
- resources
- resource groups
- resource summaries



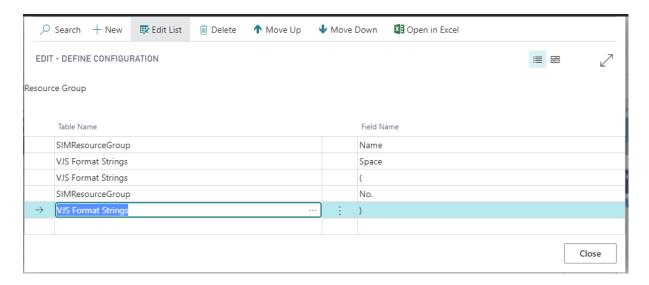
The settings are made in the corresponding dialog that can be found by clicking "Configurations" in the "Actions" menu of the "User Setup" dialog:



In the "View - select table text" dialog, select the item and/or view for which you want to customize the table label



The "Edit – Define Configuration" dialog pops up:



Here you can add, insert, edit, and delete fields as well as change their order. You can select the desired table name and field name from your Dynamics 365 BC data by clicking "..."

### 17.10.1. Formatting the labels

Separate the field contents by a blank, or by the separators shown below by selecting the according character from the "VPS Format Strings" table.



In the picture below, you see the table label of a job planning line and its corresponding entries in the dialog.

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## Budget: MARY Selecting Furnishings

Table Name		Field Name
Job Planning Line		Line Type
VJS Format Strings		:
VJS Format Strings		Space
Job Planning Line		No.
VJS Format Strings		Space
Job Planning Line	 :	Description



# 18. The Company Setup dialog

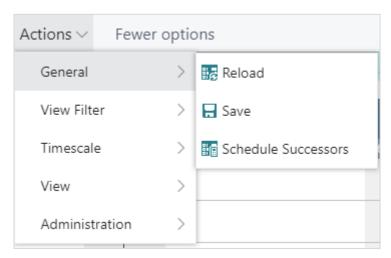
The settings in this dialog are applied company wide. Here you can

- Determine whether the quantity of job planning lines is calculated independent of the resource's capacity. In standard Dynamics 365 Business Central the quantity of job planning lines is calculated independent of the resource's capacity. The VJS allows to bypass this way of visualizing the quantity
- Hide or show the resource summary bar: some companies' processes include either several
  allocations per resource for one job task or considerably more than two resources per job task.
  These processes are much better visualized without a summary bar for the resources and so we
  created an option for hiding it.



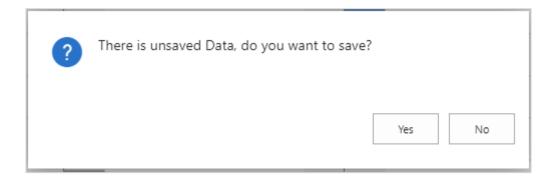
## 19. Reload and save data

You can always reload data, thus discarding your changes as well as getting the latest status of your NAV data. The "General" items allow reloading or saving.



If there are unsaved changes in your plan when you click "Reload", a dialog pops up where you can decide whether to save these changes or discard them.





After having saved your changes, a confirmation message pops up:



