3. Reschedule

On the Job Scheduling Control Panel the user can initiate semiautomatic rescheduling or he can reallocate the operations manually.

3.1. Manual rescheduling

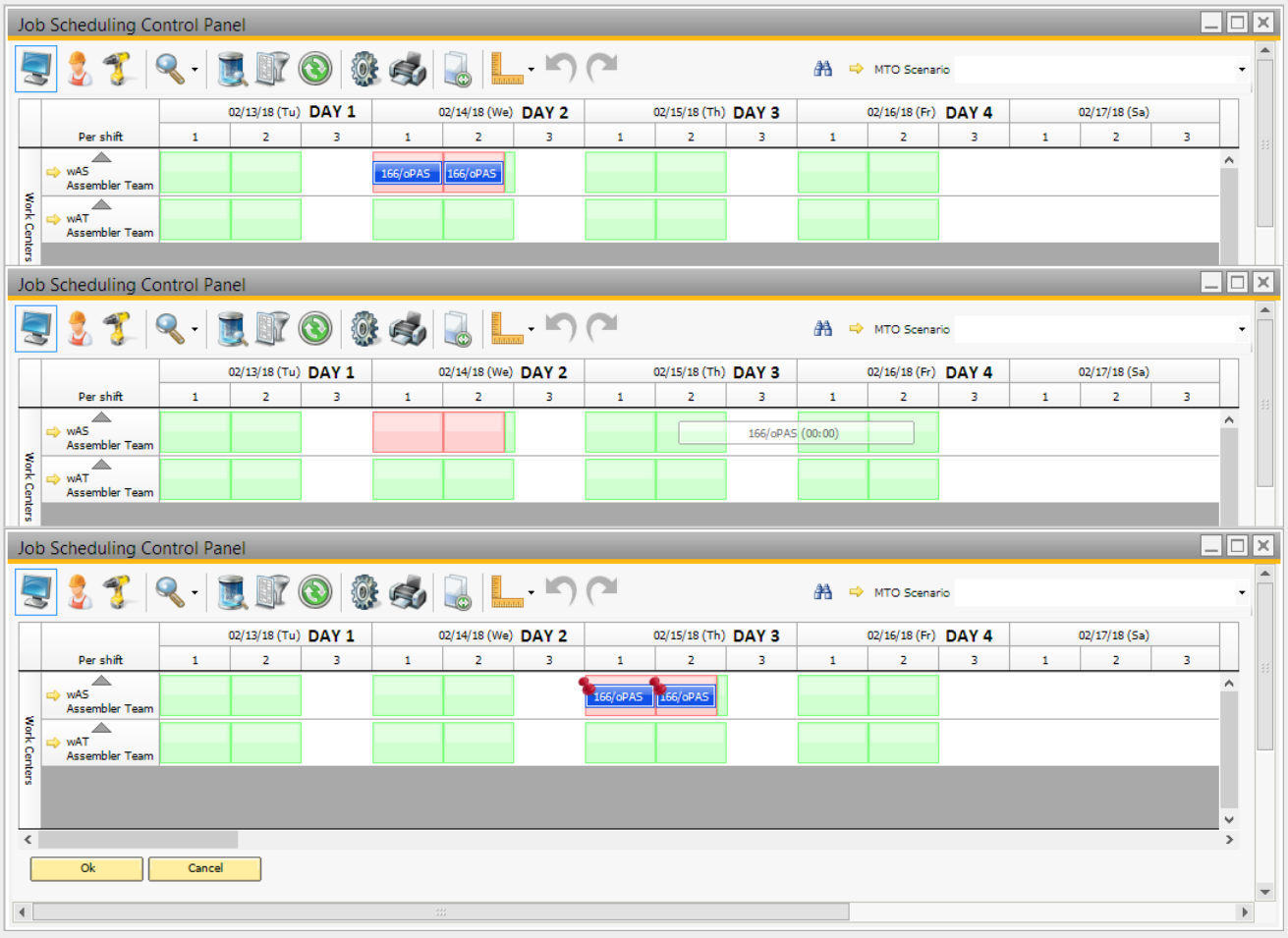
3.1.1. Drag &Drop

If the ’Enable drag & drop in Job Scheduling Control Panel’ option is enabled on Produmex Manufacturing settings, operations can be reallocated manually on the Job Scheduling Control Panel.

To reallocate an operation manually, simply drag it and place it on a new date or work center.

The *Timescale* setting defines how the start time of the dropped allocation is rounded. The dropped allocation is aligned to the beginning of the first period it was dropped into.

Example: The timescale is set to ’Day’. If we drop the allocation between day 3 and day 4, the allocation will be pinned to the beginning of the first shift on day 3.

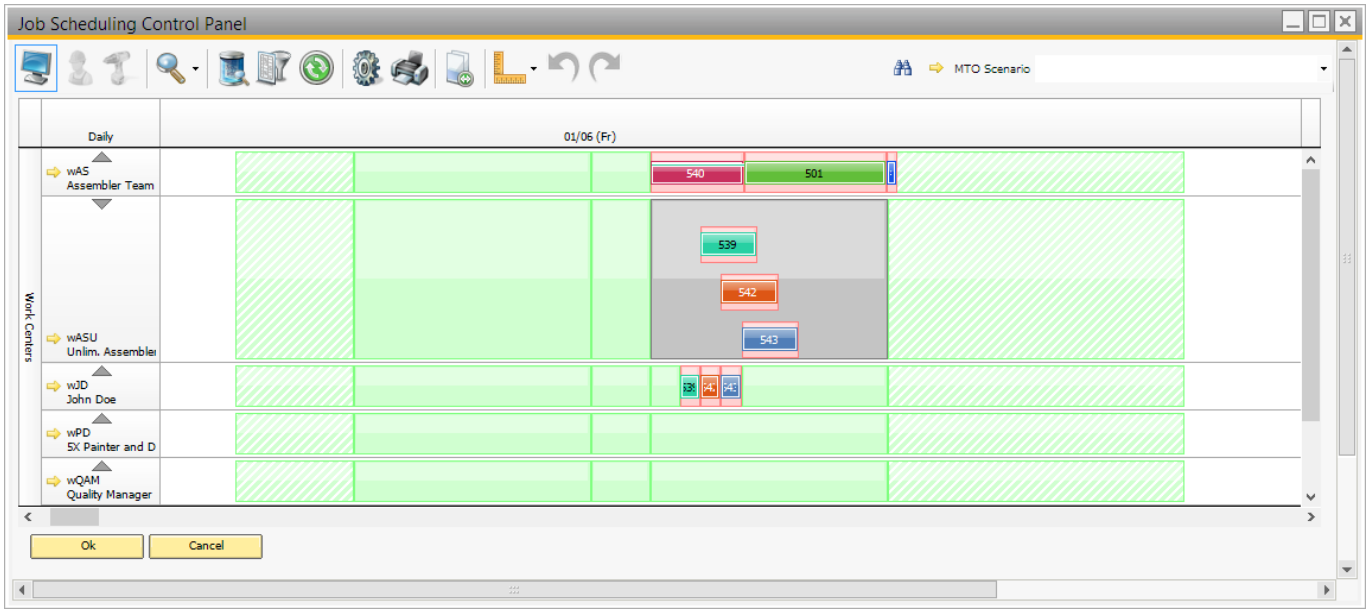


Use the Undo/ Redo arrows to undo or redo the move. To apply the rescheduling, click on the 'Update' button. After an update the action cannot be undone. The system will automatically pin down manually allocated operations for released and planned production orders. Order recommendations will not be pinned down.

If an operation of the production order was rescheduled, the *'Allocation Strategy'* of the operation is automatically changed to the default strategy set as the *'Default ProdOrd. Allocation Strategy'* on the Production order tab of Produmex Manufacturing settings.

Please note: the manual scheduling of parallelizable operations is not supported because such operations cannot be pinned down.

Operations can only be moved to a supplementary work center and to an empty slot. Because unlimited work centers have boundless capacities, in the case of an unlimited work centers multiple allocations can be moved to a slot where are already allocated operations.



The allocation of the first operation of a production order defines its begin date.

The first operation can be shifted to any new point in time that is later than today 00:00. A subsequent operation cannot be moved earlier than the end date of the previous operation, except for overlapping operations. Such operations can be scheduled backward to the begin date of a previous operation.

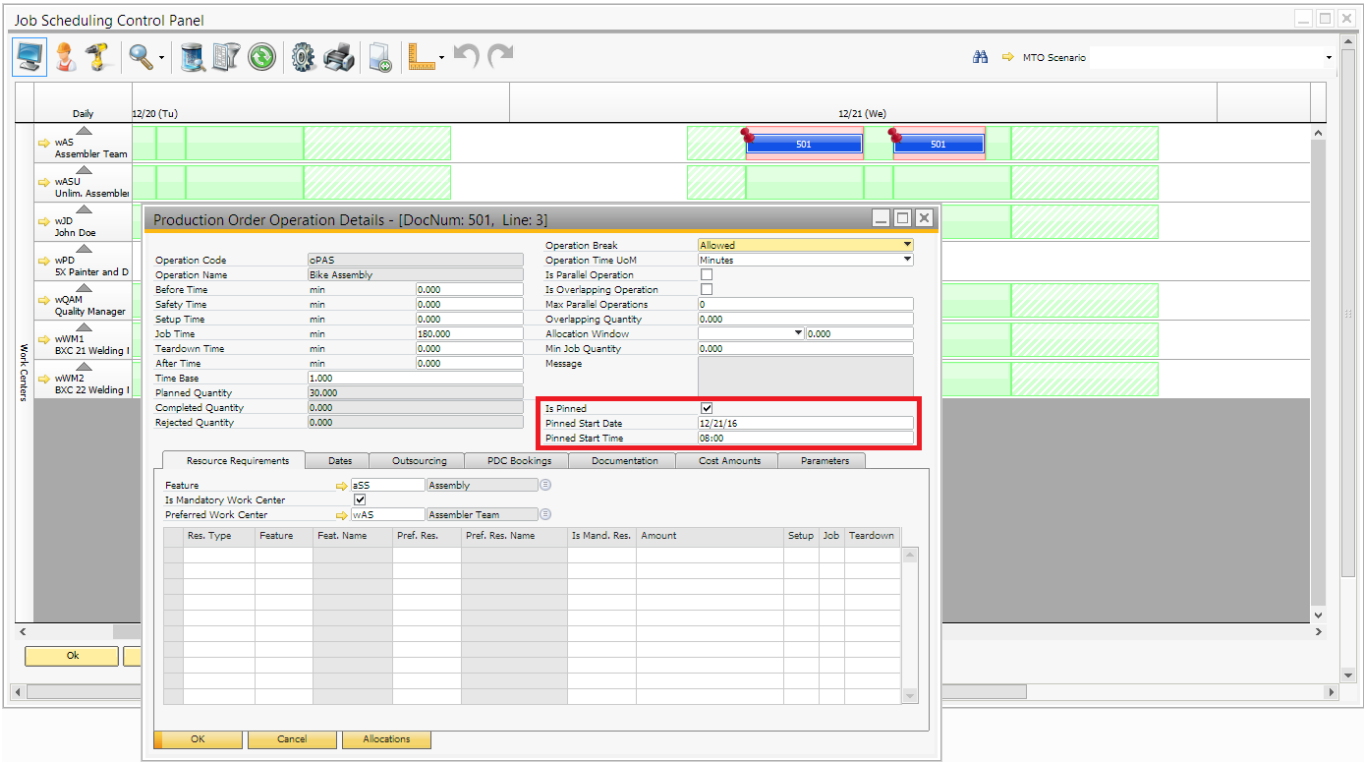
An operation can be shifted later than the subsequent operation but the subsequent operations of the same production order will be automatically shifted later into an available free capacity slot on the timelines of compatible work centers. The overlapping is considered if the subsequent operation can be overlapped.

When scheduling operations manually, please keep in mind that allocations scheduled to an inadequate slot might be lost.

3.1.2. Pin Down an operation

Another way to schedule an operation manually is to pin it down to a start date and time on a work center.

On the Production Order Operation Details form tick the 'Is Pinned' box and select the Pinned Start Date and Time. Click on 'Update' then update the production order too. Subsequent operations will be scheduled accordingly.



3.2. Semiautomatic rescheduling

The user can initiate rescheduling from the right click menu of an allocation/work center row.

The system will reschedule operations that are assigned to the selected work center, but the rescheduling might affect allocations on other work centers too. Subsequent operations of the respective production order and other production order operations (eg: MTO, auto-roll) will be rescheduled too.

3.2.1. Eliminate gaps

Use these functions to optimize the scheduling of a critically important work center (key resource). These functions work best for 7×24 manufacturing.

Before initiating the aligning process, set its parameters on the Prod. Order tab of Produmex Manufacturing Settings. The *'JSCP align max days'* parameter defines the total duration of the aligning process and the *'JSCP align gap minutes'* parameter defines the maximum gap length the system eliminates.

The process might reschedule the pinned operations too. After the reallocation the originally pinned operations will be pinned to the new date & time of allocation. The allocation strategy of the production orders will be changed to ‘Forward’.

3.2.1.1. Align allocations

Select the ***‘Align allocations’*** option from the right click menu of the work center line. The system will optimize the scheduling plan meaning that it aims to eliminate the gaps and to align related operations.

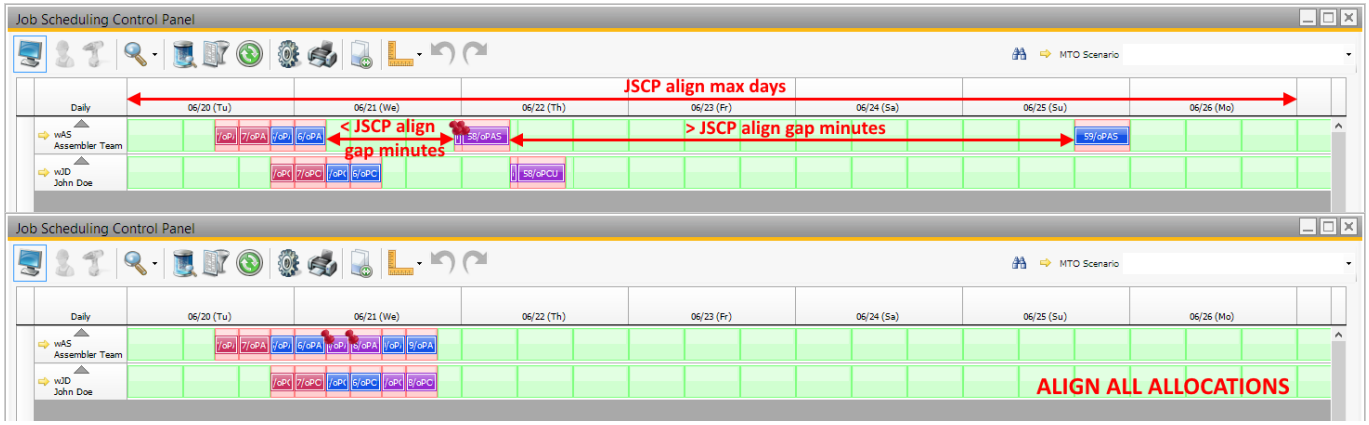
When there is a longer free capacity between two allocations than the defined gap, the aligning process stops, therefore the actual duration of the aligning can be shorter than the '*JSCP align max days*' value.

This way the rescheduling of production orders with further due dates can be prevented.

Please note: Inactive periods are included to the gap between the two allocations.

3.2.1.2. Align all allocations

Select the ***‘Align all allocations’*** option from the right click menu of the work center line to align every allocation in the defined period. This function does not consider the *‘JSCP align gap minutes‘* setting.



3.2.2. Reallocate

Use these functions to reschedule an allocation or every allocation for a work center. Originally pinned operations will be pinned to the new date & time of the allocation. The allocation strategy of the affected production orders will be changed to ‘Forward’.

3.2.2.1. Reallocate allocations

With this popup function allocations for a work center can be optimized and erroneous allocations can be corrected.

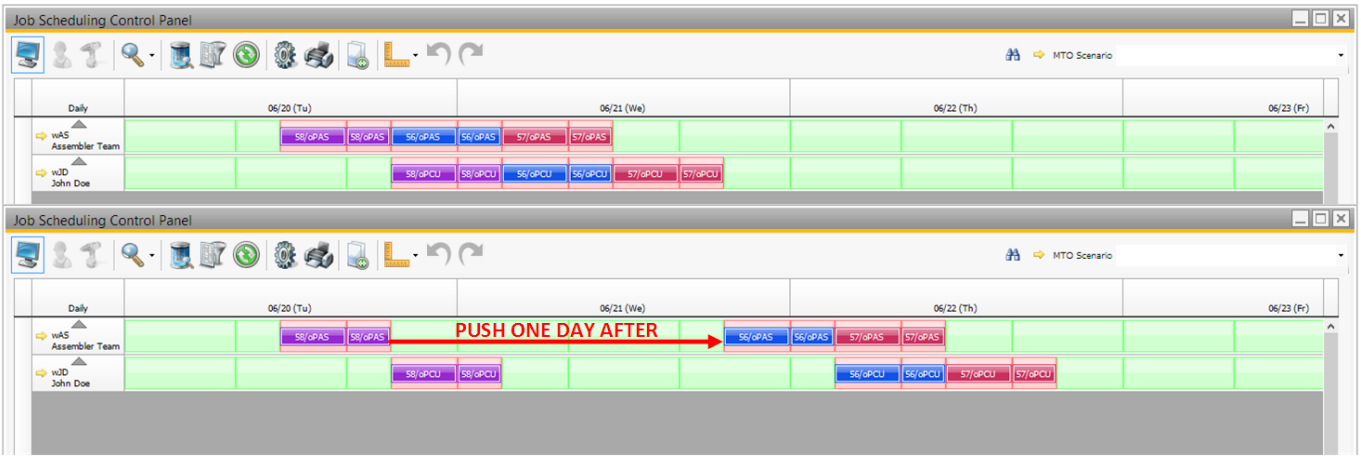
Select the ***'Reallocate Allocations'*** option from the right click menu of a work center. The system will collect every existing allocations for the work center then gather all operations from released production orders assigned to that work center. Then the system will reschedule these operations starting with the existing allocations that were pinned to the lifeline. Every operation that can be disposed will be allocated.

During the reallocation, MTO chains and auto-roll is considered. Works with unlimited work centers too.

3.2.2.2. Push one day before/after

Select the ***'Push one day before'*** option from the right click menu of an allocation to move the allocation to the previous day. The allocations following the selected allocation will be rescheduled too.

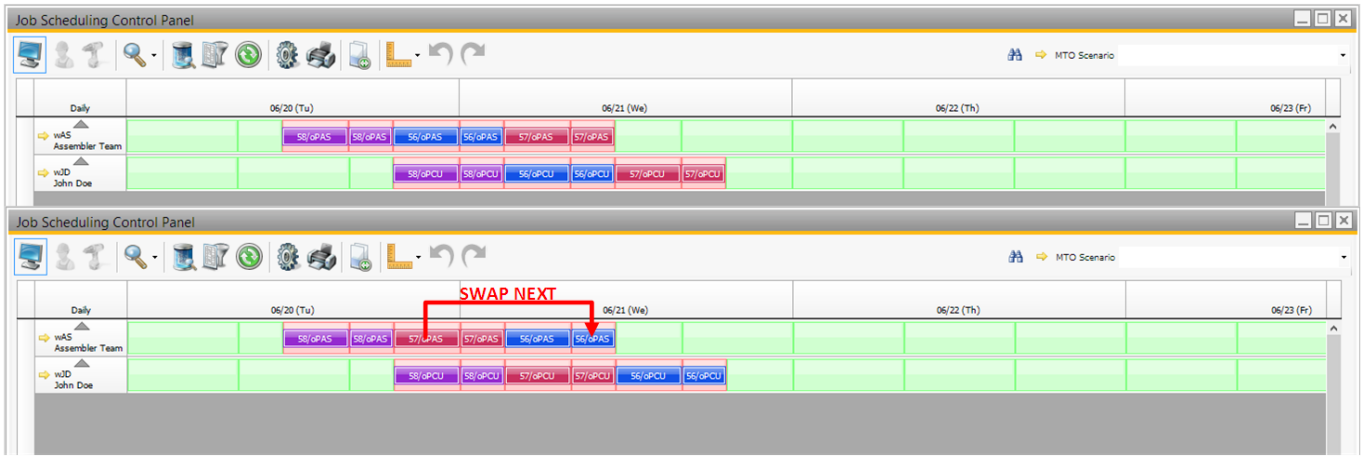
Select the ***'Push one day after'*** option from the right click menu of an allocation to move the allocation to the next day. The allocations following the selected allocation will be rescheduled too.



3.2.2.3. Swap allocation with next/previous allocation

Select the ***'Swap allocation with the next allocation'*** option from the right click menu of an allocation to swap the selected allocation with the next allocation.

Select the ***'Swap allocation with the previous allocation'*** option from the right click menu of an allocation to swap the selected allocation with the previous allocation.



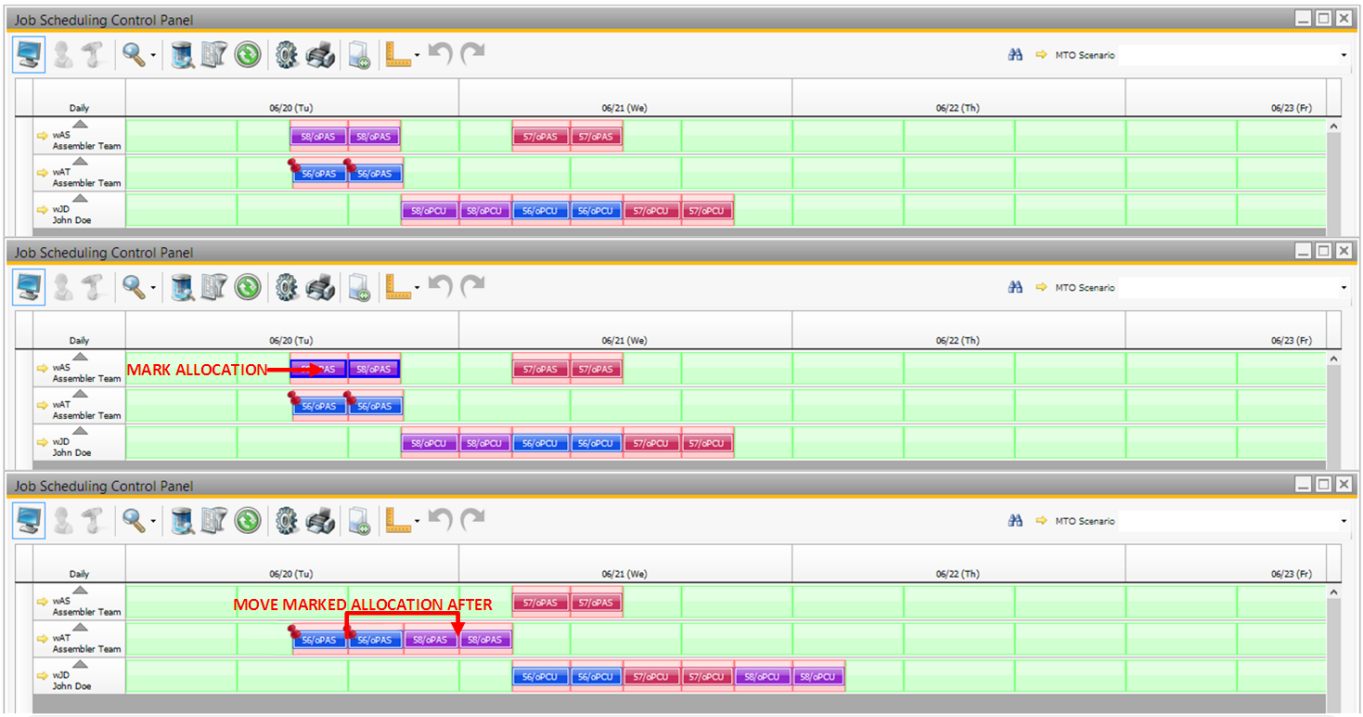
3.2.2.4. Move marked allocation before/after

It is also possible to move a marked allocation before/after another allocation, if the allocation is on a work center that supports the work center feature the marked allocation requires.

First mark an allocation: select the ***'Mark allocation'*** function from the right-click menu of the allocation. The marked allocation will be highlighted with a blue frame.

Then right click on the allocation to move.

- Select the ***'Move marked allocation before'*** function to move the marked allocation before the allocation the rescheduling was initiated from.
- Select the ***'Move marked allocation after'*** function to move the marked allocation after the allocation the rescheduling was initiated from.



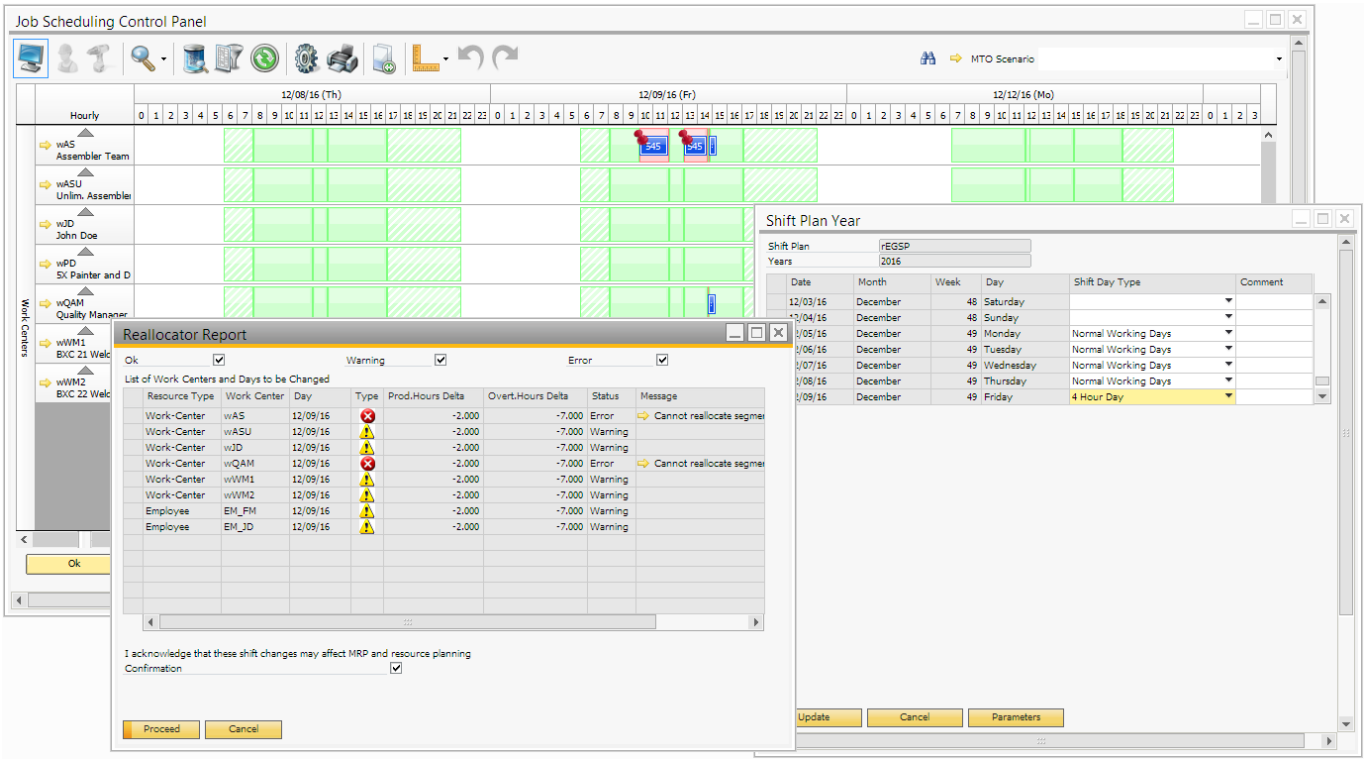
In the example first we marked the *58/oPAS (purple)* allocation. Then we right-clicked on the

56/oPAS (blue) allocation and selected the ***'Move marked allocation after'*** function. The system moved the *58/oPAS (purple)* allocation after the *56/oPAS (purple)* allocation and also rescheduled the *58/oPCU (purple)* allocation because the *58/oPAS (purple)* and the *58/oPCU (purple)* allocations were created for sequential operations.

3.3. Actions that trigger automatic rescheduling

3.3.1. Shift day capacity decrease

With default settings the capacity of a shift day can only be shrunk when there are no allocations that have to be rescheduled due the capacity decrease.



When the *'Allow rescheduling Production Orders when shift day capacity is shrunk'* option is enabled on the MRP tab of Produmex Manufacturing Settings, the shift day capacity can be decreased regardless of the allocated operations. In the case of a capacity decrease, the system will automatically reschedule all relevant released production orders.

Please note: Automatic rescheduling does not work when using multi-dimensional allocation.

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Last update: **2021/04/20 09:58**