ORTEC Workforce for Warehousing

Task Scheduling

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1 Task Scheduling

The **Task Scheduling** application of the **ORTEC Workforce for Warehousing Suite** is typically used by planners. A planner assigns tasks from the workload to employees to create optimal schedules for multiple teams and areas. Schedules can be planned for today and up to max 4 days.

1.0.1 Task Scheduling tab

The application opens on the **Task Scheduling** tab with an "Action list" on page 7 containing all the recurring items necessary for planning an optimal schedule. A quick overview of the workload and employees per scheduling interval is shown on the Dashboard. View and make manual adjustments to the planning in "Schedule" on page 27 view.

1.0.2 Staffing tab

On the **Staffing** tab, view - per selected scheduling intervals - the long-term outlook of the planning, powered by the "Lightweight optimizer" on page 7.

1.0.3 Employees tab

On the **Employees** tab, create specific rules for scheduling shifts for each employee. You can set active intervals for these rules and choose to ignore rules from rule sets during a user-defined period. This applies to both active and inactive rule sets. For example, if there are two rule sets, 'High Season' and 'Low Season,' and a rule called 'Task Balance' needs to be ignored for an employee, it will be disregarded in both sets whenever either is active. If a rule should only be ignored for one rule set, it must have different names in each set.

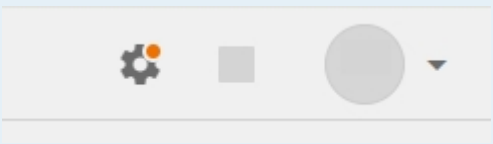
1.0.4 Menu options

In the top-right corner you can manage your rulesets, switch between the OWW applications, and manage your account.

Rulesets

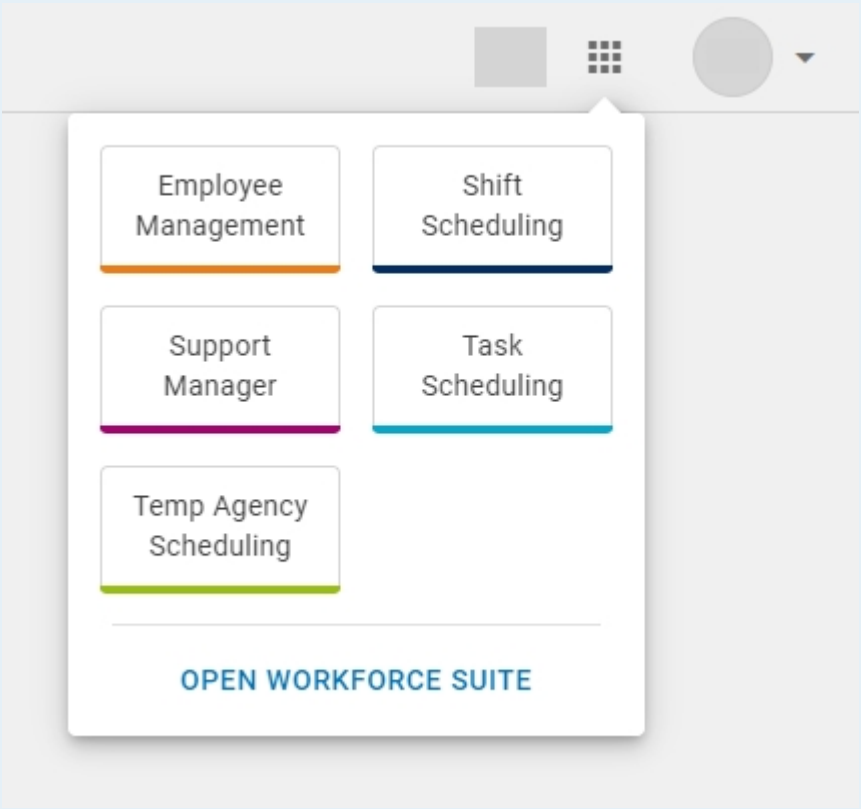
Rulesets are created in the **Support Manager** application. A ruleset consists of one or more rules that define how shifts should be scheduled or planned. It influences the behavior of the optimizer in the **Task Scheduling** application. After adding a ruletset, you can create user-specific rules. For more information, see "Employees" on page 40.

Example
A red dot indicates no rulesets have been added yet.



Switch applications

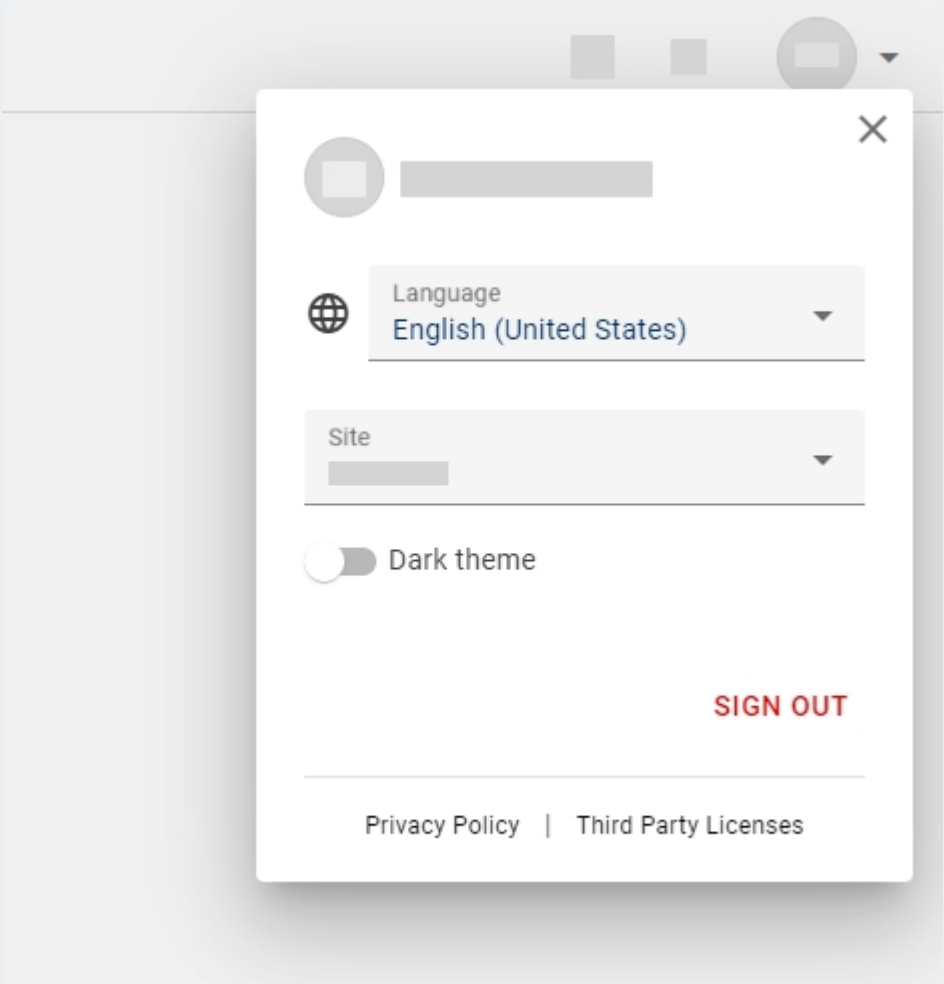
Example



Manage account

Via your account you can switch **Language**, **Site**, and toggle **Dark theme** on or off.

Example



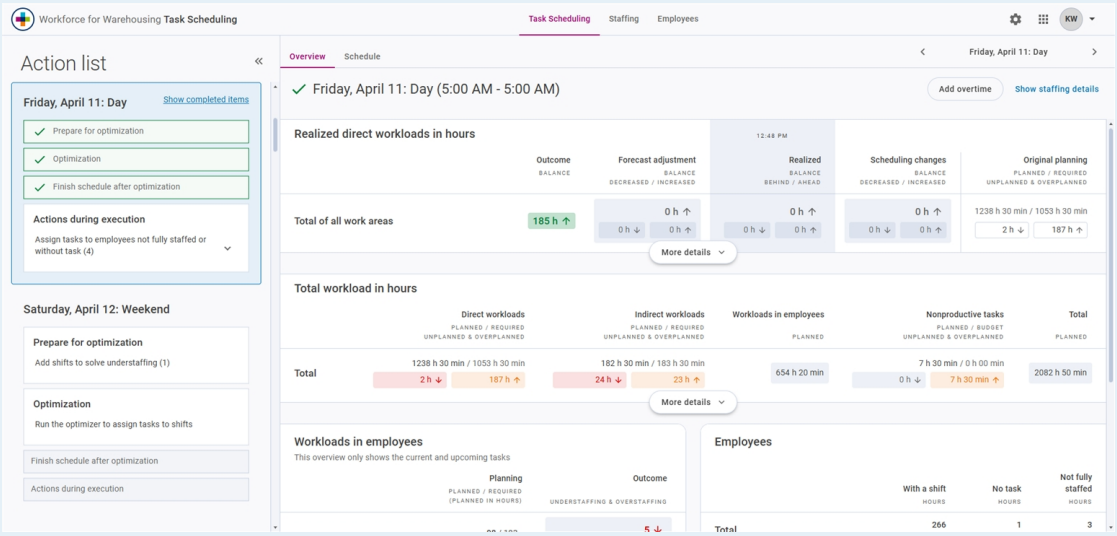
2 Action list

In the **Task Scheduling** application, planning starts and ends in the **Action list** pane. Complete, for each scheduling interval, these three sections: **Prepare for optimization**, **Optimization**, and **Finish schedule after optimization**.

Return to completed items with the **Show completed items** link. Some items can be rerun, but only the items without a question mark icon behind it.
It's not possible to rerun:

- Items based on an event. Violations occur when manually adjusting the planning. Once solved, you can't rerun the corresponding item.
- Publish

Example
The scheduling interval displayed here is Day or Weekend on a specific day.



2.1 Lightweight optimizer

In addition to the regular optimizer, the lightweight optimizer continuously updates long-term staffing overviews and "Staffing details" on page 38. No manual actions are required. The updates occur whenever there are changes in:

- Employee shifts
- Workload
- Scheduling intervals
- Employee skills

The lightweight optimizer quickly identifies potentially affected staffing and automatically optimizes them within seconds. It considers:

- 'Hard' constraints, which restrict certain task assignments
- Skill priorities
- Maximizing task assignments to employees

However, it doesn't make specific employee task assignments, so it doesn't consider individual criteria like skill levels or personal preferences at this stage.

2.2 Prepare for optimization

Planning always starts in the **Prepare for optimization** section with uploading the workload for a scheduling interval. Next, inspect and solve under- and overstaffing and/or labor rule violations.

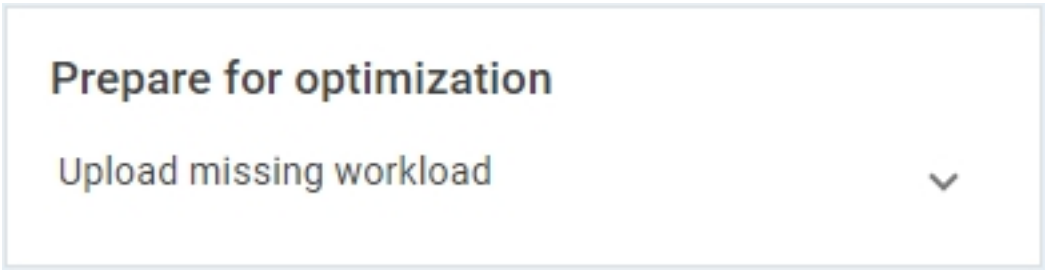
Productive and nonproductive tasks

A workload is a set of productive tasks that needs to be assigned to the scheduled shifts of employees. Productive tasks are the primary tasks you perform to accomplish a particular objective. In the **ORTEC Workforce for Warehousing Suite** productive tasks are calculated by counting the hours or by counting the employees.

Nonproductive tasks support tasks that enable the productive tasks to be completed efficiently. Nonproductive tasks and trainings are pre-assigned to a specific employee and not assigned by the optimizer. They are unrelated to any workload.

2.2.1 Upload workload

1. Select the arrow next to **Upload missing workload**.



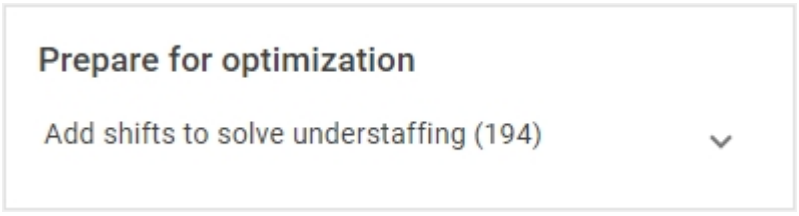
2. Click the **Upload workload** button.
3. Drag a .csv file of max 5MB inside the **Upload a workload file** box, or click inside the box to select one.
4. Click **Upload**.

Once a workload has been uploaded, you can view all completed actions inside a scheduling interval with **Show completed items**. Go back with **Hide completed items**.

2.2.2 Solve understaffing

Staffing is calculated based on the uploaded workload. Understaffing happens when the shifts of all available employees aren't enough to cover the staffing.

1. Select the arrow next to **Add shifts to solve understaffing (n)**.



2. Click the **Upload shifts** button.
3. Drag a .csv file of max 5MB inside the **Upload a file with shifts** box, or click inside the box to select one.
4. Click **Upload**.

2.2.3 Solve overstaffing

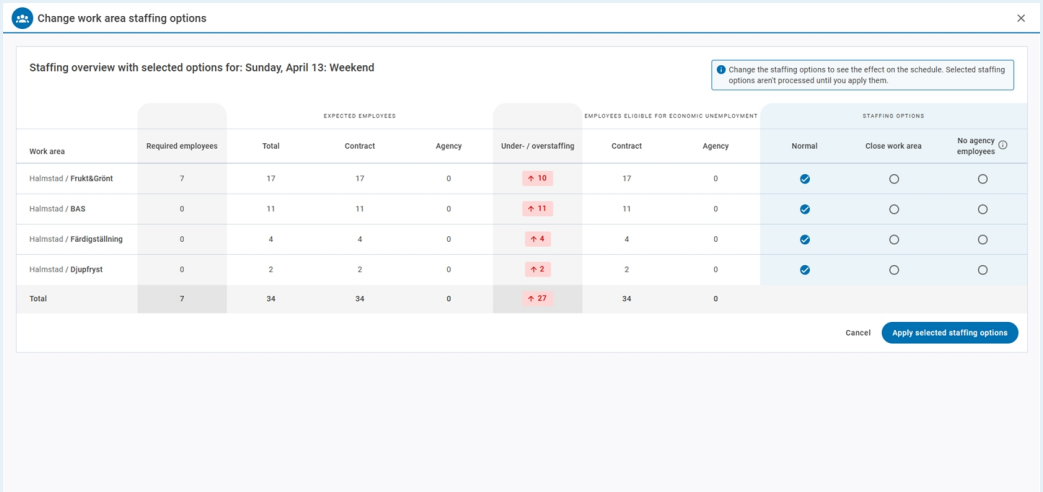
Staffing is calculated based on the uploaded workload. Overstaffing happens when there are shifts not used in the staffing.

1. Select the arrow next to **Check work area staffing options to solve overstaffing (n)**.
2. Click the **Check staffing options** button.

Example

The staffing in all work areas is shown in a staffing overview like the one below.

Overstaffing is identified via the red boxes: ↑ 50



3. Check the following information:
   - **Work area**
     All work areas on the site. A work area is a section within a warehouse used for planning a group of employees. Work areas are defined in the **Support Manager** application.
   - **Required employees**
     The number of requested employees per area according to the uploaded workload.
   - **Expected Employees**
     - **Total**
       The total number of employees with a scheduled shift for this scheduling

interval.
    - **Contract**
      The number of employees with a client contract.
    - **Agency**
      The number of employees with a temporary contract via the temp agency.
- **Staffing balance**
  View the number of under- and overstaffed employees per area.

> **Example**
>
> Overstaffed: ↑ 50
> 120 employees with a scheduled shift in this area, but only 70 are needed according to the workload.
>
> Understaffed: ↓ 7
> 120 employees with a scheduled shift in this area, but at least 127 are needed according to the workload.

- **Employees eligible for economic unemployment**

> Economic unemployment is an arrangement where the salary of an employee is partially paid for by the government.
>
> As economic unemployment is a regional setting, no information might be displayed here.

    - **Contract**
      The number of employees with a client contract that can be assigned with economic unemployment. Recovering employees with a personal working pattern aren't counted.
    - **Agency**
      The number of employees with a temporary contract via the temp agency that can be assigned with economic unemployment. Employees in the first week of their contract aren't counted.

4. Solve staffing per area with one of the following staffing options:
    - **Normal**
      Keeps the work area as is. This means that over- or understaffing is accepted in this work area.
    - **Close work area**
      The entire area will be closed and the scheduled shifts of all employees in this area are revoked. When economic unemployment applies, employees will be assigned to it.
    - **No agency employees**
      Only the scheduled shifts of temp employees will be revoked. When economic unemployment applies, employees will be assigned to it.
5. Click **Apply selected staffing options**.
6. Click **Apply**.
   The selected staffing options are saved and economic employment, when it applies, will be automatically assigned or revoked.

2.2.4 Solve labor rule violations

When solving over- or understaffing, labor rule violations might occur. When there is a new labor rule violation, the planner gets a notification. A labor rule violation can be recognized in the schedule with a red notification in the top-left corner of a shift.

1. Select the arrow next to **Solve labor rule violations (n)**.
   Or, select a shift with a labor rule violation in the **Schedule** tab and continue with step 4.

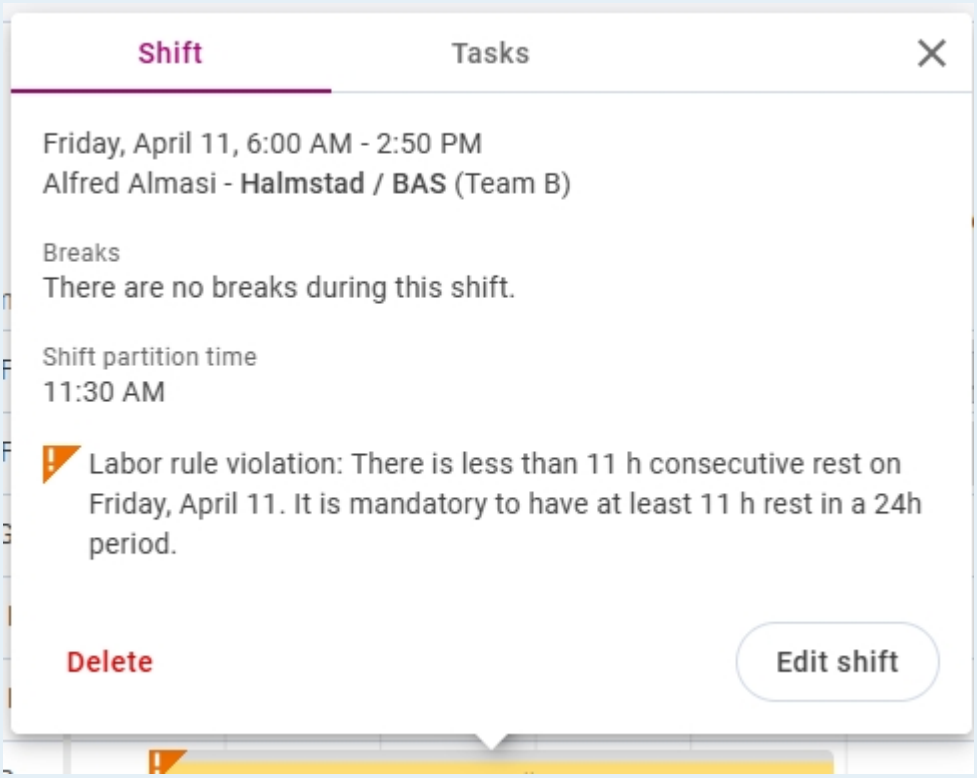
2. Click the **Show schedule** button.
   An automatically filtered schedule appears, containing only employees with labor rule violations.
3. Select a shift.

4. On the **Shift** tab, solve the labor rule violation with one of the following options:
   - **Delete**: removes this shift from the schedule.
   - **Edit shift**: in the **Edit shift** popup, select another **Team shift** and click **Save** to confirm. Click **Cancel** to go back.

   > A shift can only be moved to another team shift in the same scheduling interval.

Example

Solve labor rule violation.



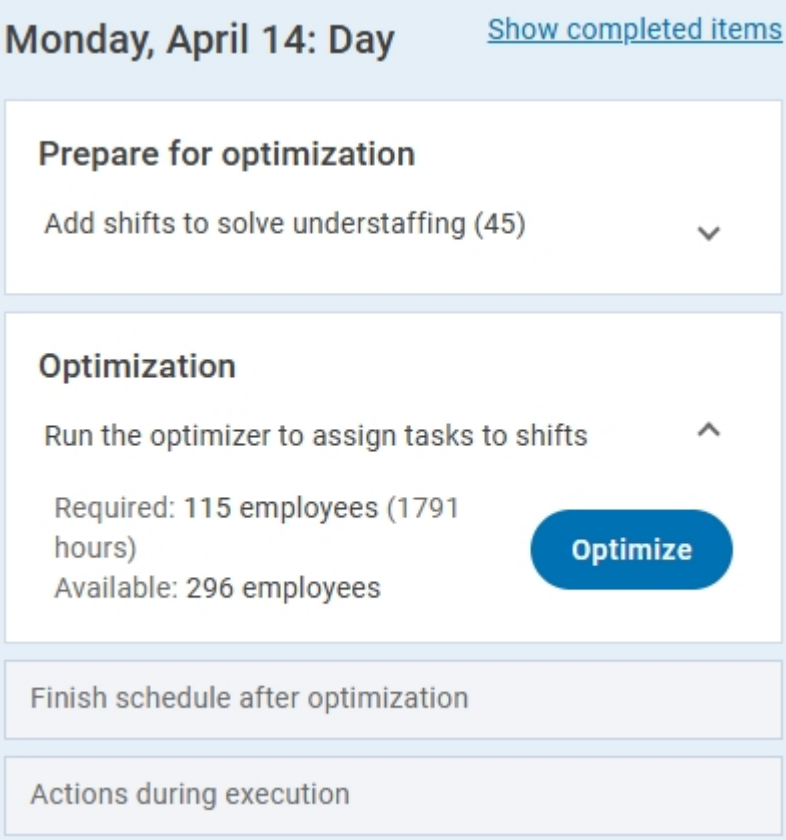
5. Repeat steps 3 and 4 for all shifts displayed in this filtered schedule until all labor rule violations are solved.
   Each time a violation is solved, the counter of the item in the **Action list** will go down. The item disappears when zero is reached.

2.3 Optimization

You can run the optimizer to assign tasks to shifts after uploading a workload, even if you've not completed all the items in the **Prepare for optimization** section. You can always return to complete the items in the **Prepare for optimization** section and run the optimizer again.

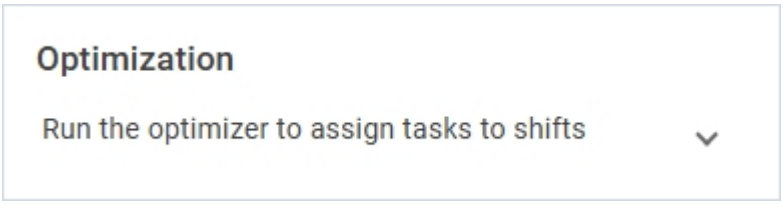
Assign nonproductive tasks and trainings before running the optimizer.

Example
The **Optimization** section gives a short overview of the required and available employees.



2.3.1 Run optimizer

1. Select the arrow next to **Run the optimizer to assign tasks to shifts**.



2. Click the **Optimize** button.

After optimization, inspect the **Finish schedule after optimization** section. Run through the action items and select **Optimize again** within the **Optimization** section. Please note that the entire planning, excluding assignments of economic unemployment, will be emptied.

After running the optimizer again, inspect the **Finish schedule after optimization** section again. You might want to adjust the temp agency employees request.

2.3.2 Optimizer rules

The optimizer aims to align the demanded and assigned workloads in hours and number of employees. It also aims to minimize costs and maximize the total skills assigned.

When there aren't enough tasks to fill all shifts, the application will use cost-based rules to assign tasks:

- Only employees with the correct skills are assigned a task.
- Workloads in employees are always assigned for the entire shift of an employee.
- Tasks requiring high priority skills are scheduled first.
- Tasks are first assigned in the area of the employee's team.
- During high demand, the most experienced employees are assigned tasks first to complete them faster. During low demand, the least experienced employees are assigned tasks first to gain experience.

The task scheduler tries to balance overlapping team shifts within a demand shift to avoid understaffing. For example, if there is a demand shift from 06:00 to 17:00 and two team shifts, one from 06:00 to 14:00 and the other from 09:00 to 17:00, the scheduler aims to evenly distribute employee assignments between the two teams to ensure similar working hours.

Further rules are:

- The threshold for determining if a shift is long enough for task assignment in employees is currently set at 4 hours. This is because workloads can be defined in both employees and hours.
- A workload of one employee is equal to a workload of 8 hours for the same tasks. However, the same rule doesn't apply to workloads in hours as they can be divided and scheduled across multiple shifts.
- Tasks that should be assigned together: This rule allows a user to select 2 tasks that preferably are planned together in the same shift, like forklift driving and picking.
- Assign only one task from selection: This rule allows the user to select a set of different tasks of which only one will be scheduled per shift, for instance when tasks are very heavy and it's unsafe for an employee to perform more than one.
- Task assigned in recent period: This rule allows the user to select tasks for which a set period of history will be checked. For each assignment of the task in the history, an extra cost will be added, which helps rotate desired tasks over multiple employees.

The optimizer reduces the number of different employees scheduled in cases of overstaffing. It also predicts optimal break placement when assigning workloads in hours, resulting in smoother schedules with fewer short task assignments under one hour.

Multitask solver

Any number of tasks and combinations of productive and nonproductive tasks can be scheduled per shift. Breaks are planned within shift break windows based on the following rules:

- Breaks are scheduled at least 2 hours apart.
- If no tasks are assigned during a part of the break window, breaks are scheduled during this period.

- If nonproductive tasks or tasks with a workload in employees overlap with the break window, breaks are planned at the end of that task.
- When a single nonproductive task or a task with a workload in employees overlaps with the break window, breaks are scheduled at the start of the window.
- With both nonproductive and productive tasks, breaks are planned during the nonproductive task.
- With both tasks with a workload in employees and tasks with a workload in hours, breaks are planned during the tasks with a workload in employees.
- For tasks with a workload in hours, breaks are scheduled and their duration is subtracted from the workload contribution.
- The optimizer always selects a task that matches a skill being trained.

Available hours

Direct workloads can include available hours for planning, setting maximum targets during the workload. For instance, a direct workload from 06:00 to 14:00 with 200 hours of picking can have a target set to make 80 hours available by 10:00. The optimizer will then ensure no more than 80 hours of picking are assigned before 10:00.

Economic unemployment

Additional cost restrains apply if economic unemployment is implemented:

- Employees that can't be assigned economic unemployment are assigned a task first.
- The optimizer ranking of an employee is used to determine which employees should be assigned a task next. For example, contracted employees can be scheduled before any temp agency employees with a temp agency contract.
- If there aren't enough tasks for every shift, the counter for economic unemployment is taken into account when selecting suitable shifts.

2.4 Finish schedule after optimization

After running the optimizer, the **Prepare for optimization** and **Optimization** sections are completed. You'll see action items in the **Finish schedule after optimization** section. Once the tasks are published, they will be available in all other applications in the **ORTEC Workforce for Warehousing Suite**. The published shifts will, for example, be available in generated reports.

- For more information on the action list item **Assign tasks to solve overstaffing (n)**, view "Solve overstaffing" on page 21.
- For more information on the action list item **Request agency employees**, view "Solve understaffing" on page 18.

2.4.1 Publish the tasks assigned to the shifts

Only publish when the planning is completely done. Though you can make changes after publishing, it's not recommended. After publishing the planning of a scheduling interval, all later changes will be reflected immediately in all related applications.

1. Click the **Finish schedule after optimization** tile.
2. Click the **Publish tasks** button.
3. Click **Publish**.
   The planning is synchronized with all related applications. Run reports to view and share the planning.

   Example

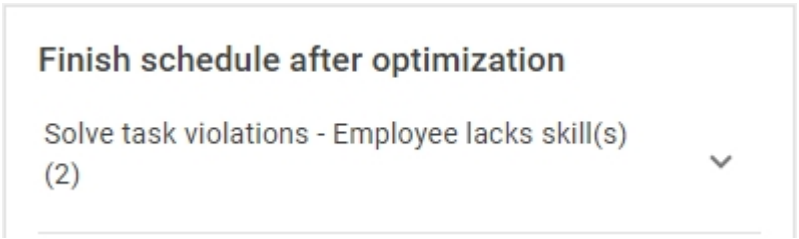
   When synchronizing the planning with an external application, it can (de)activate the badges employees use to enter warehouses.

After publication, view the realization status for each workload in hours, starting from the time of publication. This allows for a more accurate assessment of under- or overstaffing, as actual realization data is factored in. For example, if a workload is nominally perfectly staffed but shows a two-hour delay in realization, it will now reflect that two additional hours need to be planned.

2.4.2 Solve task violations

Moving or adding tasks manually can cause task violations. An employee might lack the appropriate skills or a task is assigned to a short shift. A task violation can be recognized in the schedule with a red notification in the bottom-left corner of a shift.

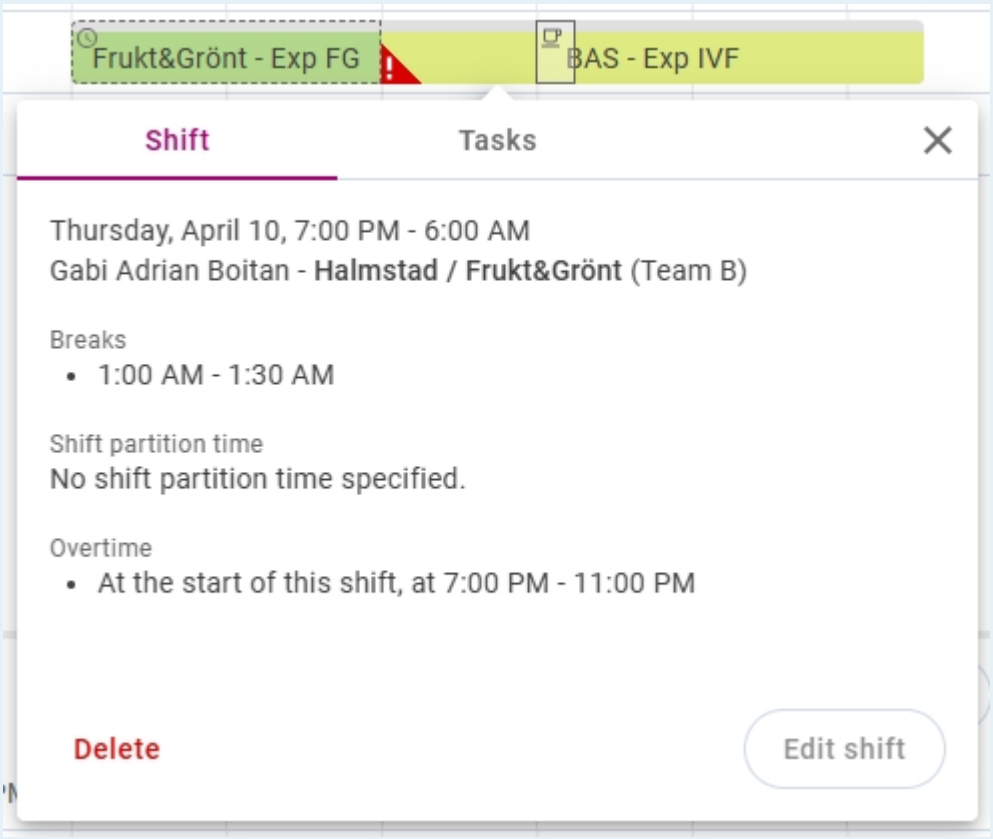
1. In the **Action list** pane, select the arrow next to the task violation(s).



   Or, select a shift with a task violation in the **Schedule** tab. Continue with step 4.

Example

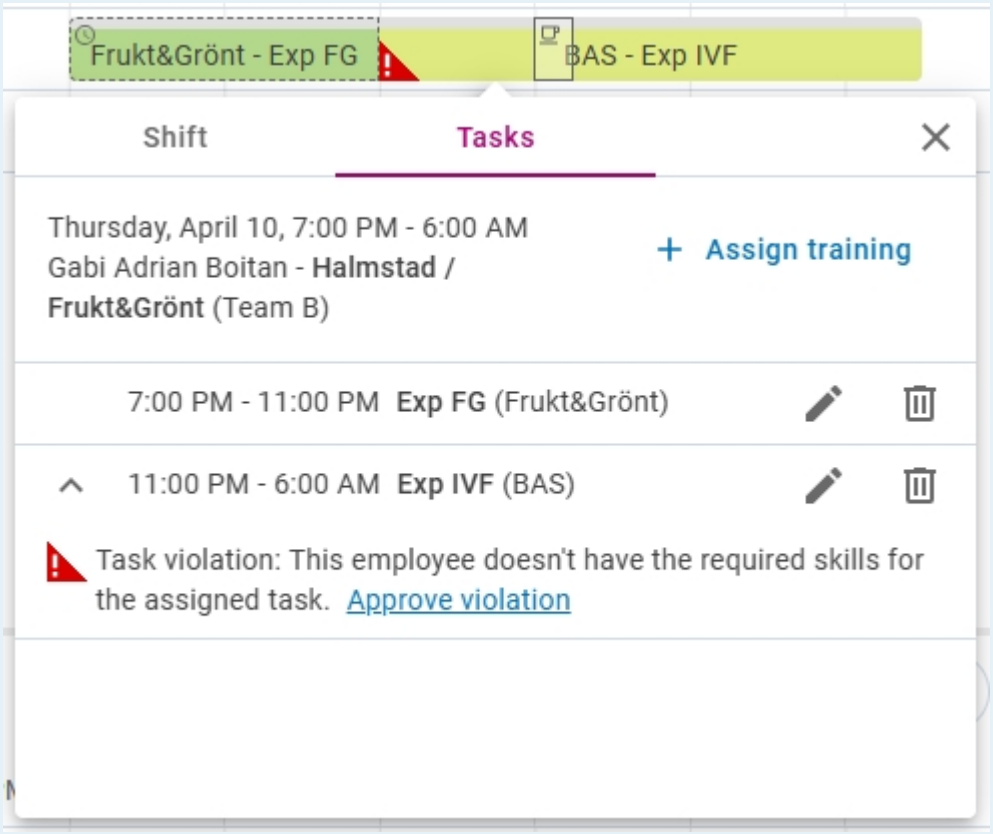
Shift with task violation.



2. Click **Show in schedule**.
   The schedule is automatically filtered on the correct violation.
3. Select the shift.
4. Select the **Tasks**tab.
   - **+ Assign training**: in the **Assign training** popup, define the **Work area**, the **Start time**, the **End time**, and the **Skill** that needs to be trained. Click **Assign training**.
   - : removes the task from this employee.
   - : in the **Edit task** popup, first define the kind of task (**Productive** or **Nonproductive**). For **Nonproductive**, define a **Start time**, an **End time**, and a **Task**. For **Productive**, also define the **Work area**. When done, click **Save changes**. Click **Cancel** to go back.
   - To approve the violation, select the arrow next to the task and select Approve violation. The task will be approved and assigned to this employee. The notification color displayed in the bottom-left corner of the shift turns green.

Example

Solve violation.



5. Each time a violation is solved, the counter of the item in the **Action list** will go down. The item disappears when zero is reached.

2.4.3 Solve understaffing

In case of understaffing, the planner can sent a request for temp agency employees. Based on unfulfilled workloads, a temp agency employee request is automatically generated for each task and team. Optionally, adjust the request manually before sending it to the temp agency. Workloads in hours are translated to workloads in employees:

- In the current implementation, 8 hours are translated to 1 employee.
- A rounding factor is applied to determine whether an extra employee is needed: greater than or equal to 0.5 is rounded to 1, less than 0.5 is rounded to 0. The total number of proposed agency employees is displayed in the action list item.

Although the application allows multiple temp agencies, it's not possible to select the temp agency when requesting temp employees.

Skip understaffing

Accept understaffing and close this action list item:

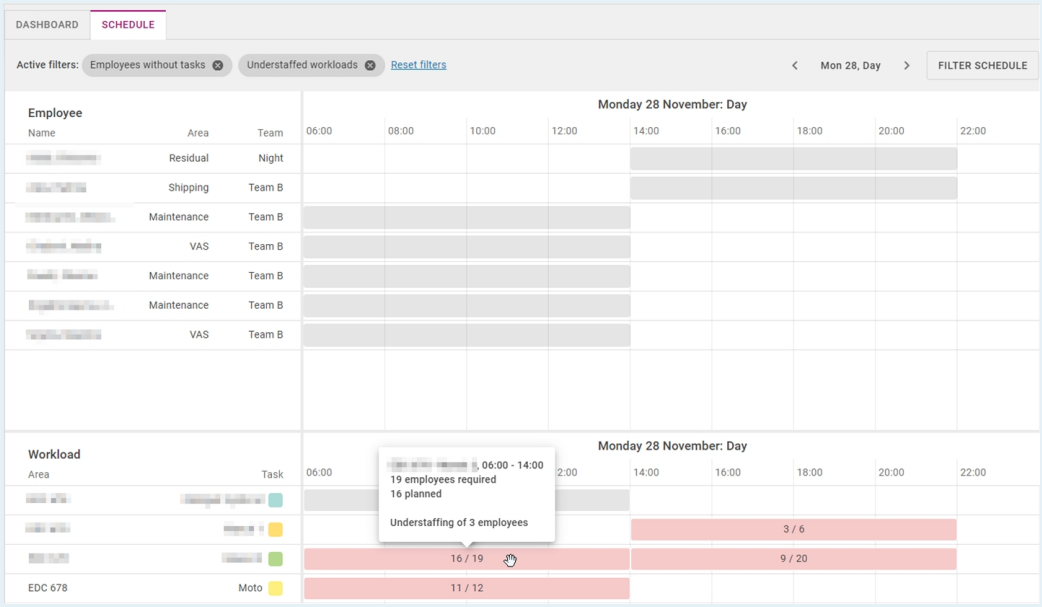
1. Select the arrow next to **Request agency employees (n)**.
2. To close this item without action, select **Skip** .
3. Click **Confirm**.

Show understaffing

Before making a decision on how to proceed, view the understaffing in the schedule:

1. Select the arrow next to **Request agency employees (n)**.
2. Click **Show understaffing**.

Example
In the **Workload** section, red shifts show the number of understaffed hours or employees.



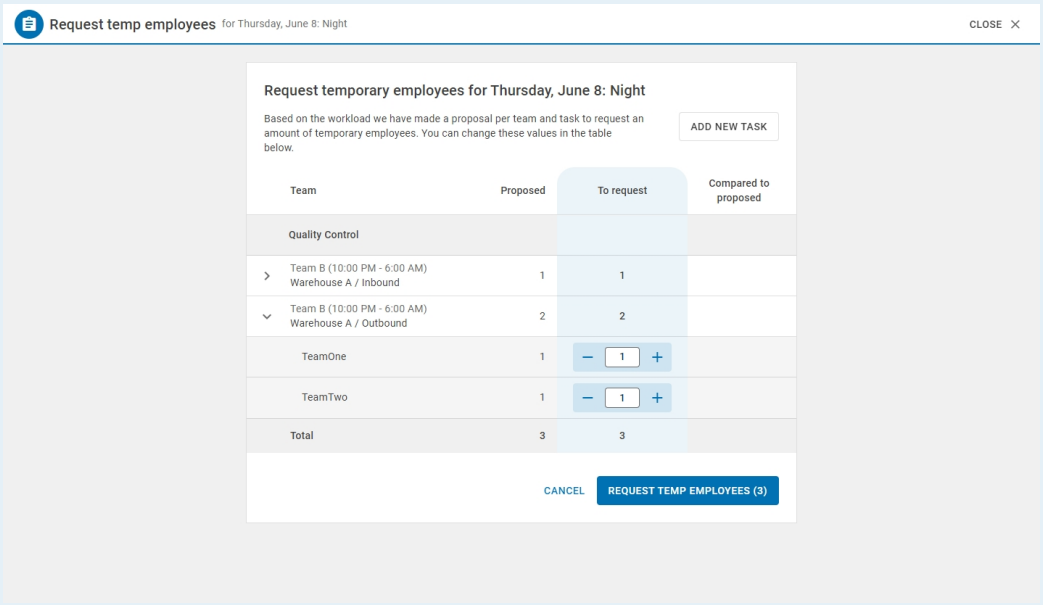
Request agency employees

1. Select the arrow next to **Request agency employees (n)**.

2. Click **Start temp agency request (n)**.

3. Use the plus and minus signs to request more or less employees or hours than proposed.

Example
Proposed employees are calculated based on the unfulfilled workload and shown per temp agency for each task. Each line can be adjusted separately.



In the temp request, it sums all hours per area and generates a single request for the area's default skill.

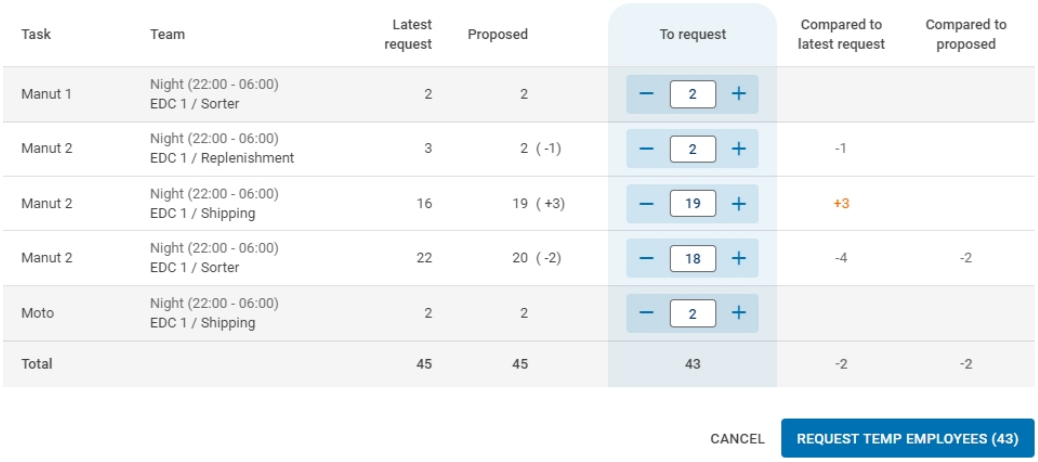
4. (Employees) When you're missing a task in the proposed request, click the **Add new task** button.
   a. In the **Add task to temp agency request** screen, first select an **Work area** and then select a **Team** to view the shift times.
   b. Select a **Task**.

      Please note tasks are defined in the **Support Manager** application.

   c. Define the amount of agency employees you want to request.
   d. Click **Add task**.

5. Click **Request temp employees (n)**.

> You might want to sent a new request, for example after a rerun of the optimizer. You can do that by selecting **Adjust temp request**.
>
> In the **Request temp employees** screen, you will then see the difference compared to the previous request:



Task	Team	Latest request	Proposed	To request	Compared to latest request	Compared to proposed
Manut 1	Night (22:00 - 06:00) EDC 1 / Sorter	2	2	2		
Manut 2	Night (22:00 - 06:00) EDC 1 / Replenishment	3	2 (-1)	2	-1	
Manut 2	Night (22:00 - 06:00) EDC 1 / Shipping	16	19 (+3)	19	+3	
Manut 2	Night (22:00 - 06:00) EDC 1 / Sorter	22	20 (-2)	18	-4	-2
Moto	Night (22:00 - 06:00) EDC 1 / Shipping	2	2	2		
Total		45	45	43	-2	-2

CANCEL REQUEST TEMP EMPLOYEES (43)

2.4.4 Solve overstaffing

> Depending on your configuration, you either get the option to **Assign tasks to solve overstaffing (n)** or to **Assign economic unemployment**.

Assign tasks to solve overstaffing (n)

Before making a decision on how to proceed, view the overstaffing:

1. Select the arrow next to **Assign tasks to solve overstaffing (n)**.
2. Click **Show in schedule**.
3. By default, the schedule is filtered on Employees without tasks and Understaffed workloads. Now, you can decide if you want to solve overstaffing manually or continue with the optimizer in step 4.

> You're filtering by employees with no tasks because those are the ones who are not being used.
> You also see understaffed workloads, because even if you have too many employees, it might not match:
>
> - The timing of the tasks doesn't line up (employees are free at the wrong time),
> - Or they don't have the right skills for the tasks.
>
> So, sometimes you need to manually decide what to do.

4. Select **Assign tasks to employees not fully staffed or without a task**. This will add the default task as defined for the specific work area in **Support Manager**. The optimizer will:
    - Assign breaks for any break windows without breaks
    - Assign unassigned workloads
    - Assign default tasks, which may result in overscheduling if there is overstaffing

If no workload overlaps a shift for a default task, that shift will remain partially unassigned. The action list item stays open so you can manually resolve this. Once all shifts have assigned tasks, the action list item closes.

Assign economic unemployment

In case of overstaffing, the planner can assign economic unemployment to eligible employees.

> Economic unemployment is an arrangement where the salary of an employee is partially paid for by the government.
>
> As economic unemployment is a regional setting, no option to assign economic unemployment might be displayed here.

1. Select the arrow next to **Check employees without a task**.
2. Click **Assign economic unemployment (n)**.
   All employees are assigned to economic unemployment. No further action is necessary.

2.5 Actions during execution

After the publication of tasks (see "Finish schedule after optimization" on page 15), the **Actions during execution** section becomes active. When temp agency employees are added, this is where you can add tasks and breaks.

1. Select the arrow next to **Assign tasks to employees not fully staffed or without task (n)**.
2. (Optional) Click **Show in schedule**. By default, the schedule is filtered on Employees without tasks and Understaffed workloads.
3. Select **Assign tasks to employees not fully staffed or without a task**. This will add the default task as defined for the specific work area in **Support Manager**. The optimizer will:
    - Assign breaks for any break windows without breaks
    - Assign unassigned workloads
    - Assign default tasks, which may result in overscheduling if there is overstaffing

If no workload overlaps a shift for a default task, that shift will remain partially unassigned. The action list item stays open so you can manually resolve this. Once all shifts have assigned tasks, the action list item closes.

3 Overview

In the **Task Scheduling** application, view aggregated employee and workload data for a selected scheduling interval. You can monitor this data across five distinct phases of the scheduling process:

1. **No workloads**: No workloads have been imported yet, so staffing calculations cannot be performed. However, you can still see the number of employees scheduled for shifts, with details by work area or team shifts.

2. **Before optimization**: Workloads have been imported, but the "Lightweight optimizer" on page 7 has not yet run. At this stage, you see the current balance, total workload in hours, employee workloads, employee shifts, absences, and temp agency information.

3. **Light optimization**: The lightweight optimization process has been completed. You will see under- and overstaffing data based on staffing calculations, unplanned workloads, and estimates for nonproductive tasks like training or breaks.

4. **After optimization**: Optimization and task assignment are complete. The dashboard now reflects actual task assignments, including employees with no assigned tasks, understaffed workloads, and temp agency needs. When configured, the economic unemployment feature also displays the number of employees assigned to economic unemployment.

5. **During execution**: The schedule has been published and is actively being executed. This phase shows realized direct workloads in hours (including outcome, forecast adjustments, realized work, scheduling changes, original planning), and remaining workloads that require rescheduling.

3.1 Key tiles and definitions

- **Current balance**: Shows total understaffing broken down into:
  - Unplanned workloads (hours of work not yet assigned to employees)
  - Expected under/overstaffing, calculated as the total available employee time without tasks minus expected absences and nonproductive task hours. For example, if you have 10 shifts of 8 hours (80 hours total), and 70 hours of tasks already planned, you have 10 hours of free capacity. If you must schedule 15 hours of training (nonproductive tasks) but have only scheduled 10, 5 hours remain to be planned. If you expect 20 hours of illness and leave but know about only 5, then 15 hours remain uncertain. The expected overstaffing is 10 (free capacity) - 5 (scheduled nonproductive) - 15 (expected absences) = -10 hours, indicating 10 hours of expected understaffing.
- **Total workload in hours**: Displays all planned workloads split into categories such as direct workloads (tasks directly contributing to output), indirect workloads (such as training), workloads assigned to employees, nonproductive tasks, and total workload hours.

- **Workloads in employees**: Shows workloads assigned to employees, including both planned hours and outcomes. After publication, it only displays workloads still to be completed on that day.
- **Employees**: Displays the number of shifts scheduled (With a shift), total shift hours, hours on shifts without tasks (No task), and hours in partially planned shifts (Not fully staffed).
- **Absences**: Shows estimated absence percentages for illness and leave compared with absences already known.
- **Temp requests**: Shows estimated temp employee requests versus what has been requested, and what the temp agencies have provided.

3.2 After publication

The tile **Realized direct workloads in hours**:

- **Outcome**: this is a sum of the **Forecast adjustment**, **Realized**, **Scheduling changes**, and **Original planning** combined and indicates, both in total and per work area, how many hours are needed to be planned extra, or are in excess of what is needed, for the remainder of the scheduling interval.
- **Forecast adjustment**: it might be that 20.000 order lines where forecasted, translating to 200 hours of picking. However, the new forecast is 21.000 order lines, meaning that 10 hours of picking extra are needed.
- **Realized**: during execution, there might be updates on the realization. Suppose it was forecasted that 10.000 order lines should be completed by 13:00. This translates to 100 hours of picking. However, only 9.000 order lines where picked. This means the operation is 10h behind of schedule, which means that 10h extra should be planned during the remaining part of the schedule. A time stamp indicates when the last update was received.
- **Scheduling changes**: scheduling changes made after publication, both up, down and the net sum of the changes. For example, if you had 8 hours of overstaffing in picking at the time of publication, this is shown in the original planning. If two employees who were assigned to picking call in sick afterward, you'll see -16 hours in scheduling changes and a total of -8 hours (8 - 16) in the net outcome.
- **Original planning**: the under/overstaffing of the direct workload at the moment of publication.
- The tile **Workloads in employees** will only show workloads that are at least partially in the future. This gives a better indication of workloads that need to be rescheduled, for example because the employee to which a task was assigned has become absent.

3.3 Navigation and controls

- The selected scheduling interval is highlighted with a blue background and remains consistent when switching between the Overview and Schedule tabs.

- Use the arrow buttons in the top-right corner to move to the next or previous scheduling interval.

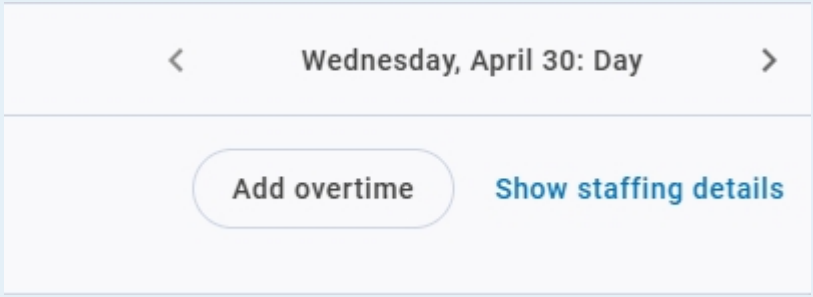
3.4 Overtime

When the **Overview** screen (**Realized direct workloads in hours**) highlights a significant negative balance—indicated in red—this signals understaffing. Click into the details to identify which work area is affected. To resolve the shortage, consider scheduling additional shifts or assigning overtime.

Follow the steps below to start the Overtime wizard:

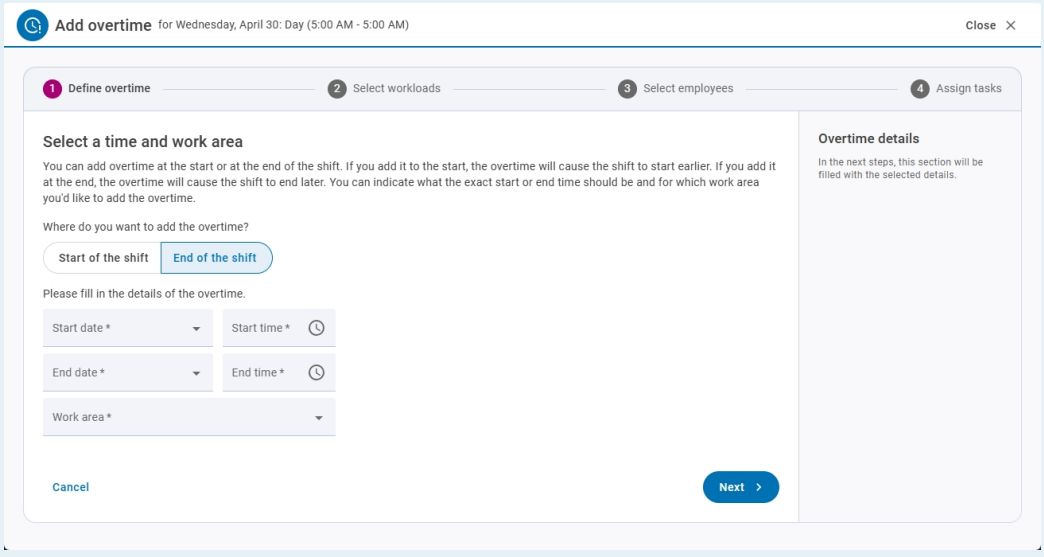
1. Select **Add overtime**.

Example



2. Define overtime.

Example



   a. Schedule overtime either at the beginning of a shift (early start) or at the end (extended finish).

b. Fill in the details of the overtime: the Start date and time, and the End date and time. Also select the work area.

c. Click **Next**.

3. Select the workloads.

   a. Review the list of tasks that are adjacent to or overlap with the overtime period.

   b. Select the tasks you want to apply overtime to. By default, the primary task and any tasks with understaffing are already selected.

   c. For indirect workloads, you can add additional hours/minutes to account for any extra time that may be needed during overtime.

   d. Click **Next**.

4. Select employees.

   a. From the list, choose the employees who need to work overtime. The employees displayed have shifts that are adjacent to or overlap with the overtime period. Employees are sorted in the following order: first by those already assigned to the tasks, then by skill, and finally by area.

   b. The suggested overtime hours at the top are based on the details you selected in the previous steps.

   c. Click **Next**.

5. Assign tasks.

   a. Select a task on the left.

   b. Search for an employee and select **Assign task**. Repeat this step as often as needed.

   c. (Optional) Select **Assign remaining employees**. This will assign the selected task to all employees who have not yet been assigned a task.

   d. (Optional) Click the red cross to unassign a task.

   e. Click **Save**.

6. Read what will be done and click **Add overtime and assign tasks**.

7. The workloads and dashboard are updated to clearly show the impact of overtime on the schedule. In the **Schedule**, you can filter on **Work area** to view all employees with overtime and their scheduled tasks. Select a shift to view the overtime.

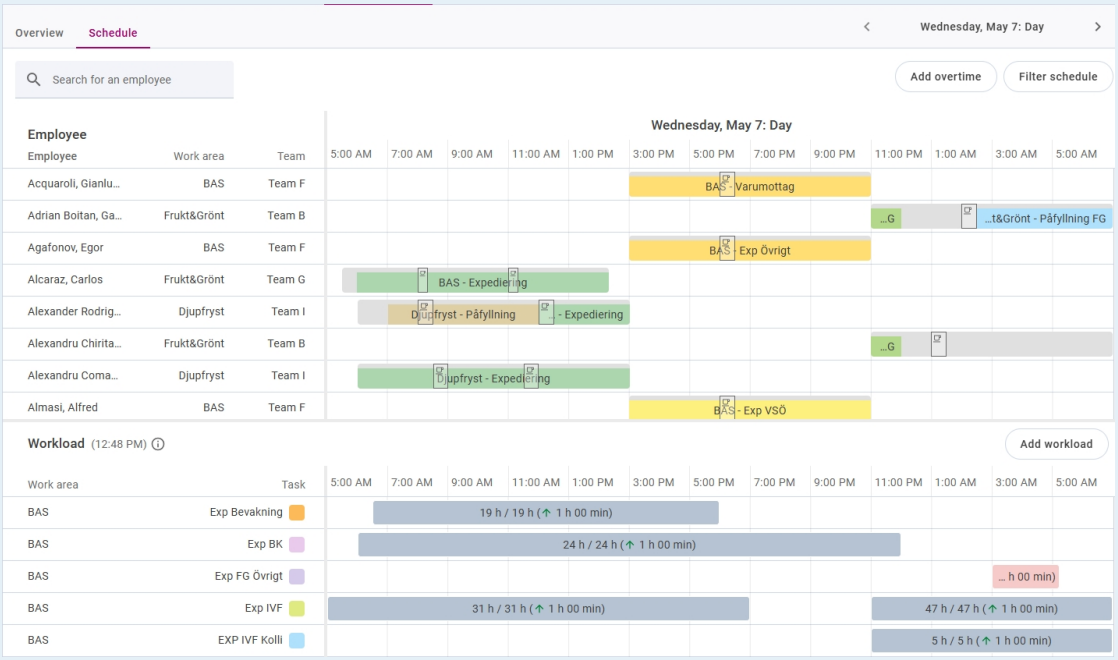
4 Schedule

In the **Task Scheduling** application, view and manually adjust the planning for each available scheduling interval on the **Schedule** tab.

- Schedules can be planned for today up to max 7 days.
- Only one scheduling interval is shown at a time. Navigate to adjacent intervals using the left and right arrows ("**<**", "**>**") in the top bar.
- A striped shift indicates that the employee has been assigned to economic unemployment.
- Shifts are based on the working patterns that were created in the **Support Manager** application. In the current implementation, absences are managed with a third-party application such as Protime.

Example

Schedule overview.



The **Schedule** tab consists of 3 parts:

- **Employee**: Employee's last name, first name, area, and team. Select an employee's name to view and edit their information. For more information, see "Employees" on page 40.
- **Workload**: Set of tasks grouped per area.
- **Scheduling interval**: Shift and task assigned per employee.

An optimal schedule is created once you finish all three items of a scheduling interval on the "Action list" on page 7 in the left pane.

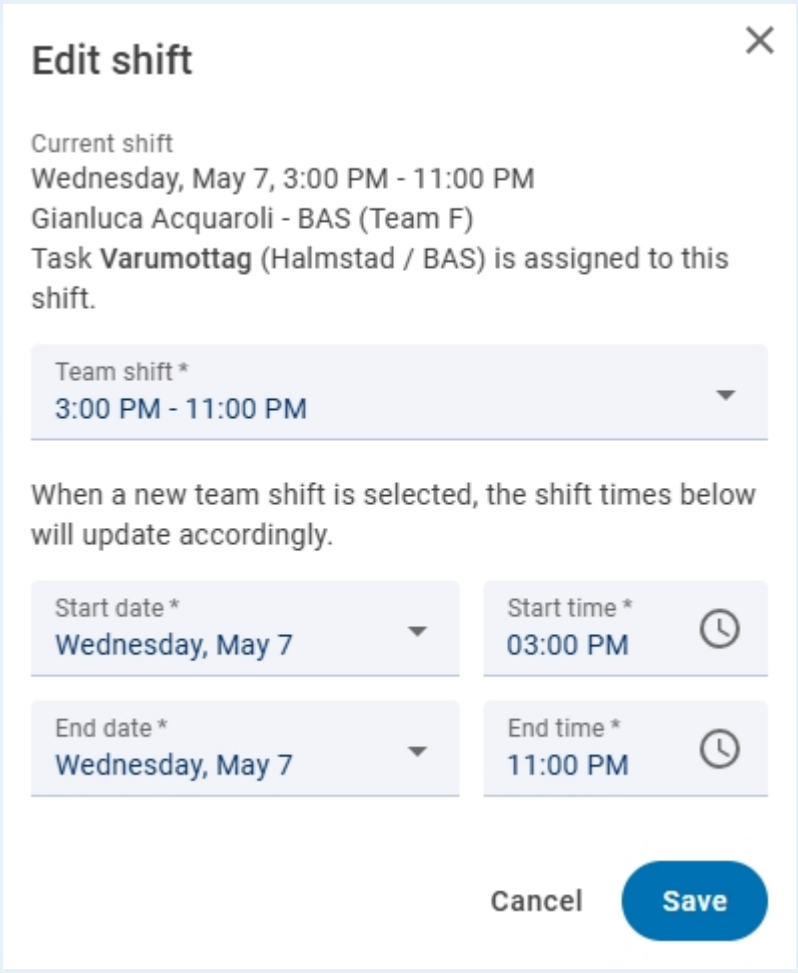
For more control when planning, you can make manual changes directly in the schedule.

4.1 Edit shift

1. In the **Employee** section, select a shift.
2. In the **Shift** tab, select **Edit shift**.
3. In the **Edit shift** window, adjust the **Team shift** and/or the **Start date**, **Start time**, **End date**, and **End time**.

- To ensure break rules are applied correctly, significant changes to shift times must first be made by assigning the shift to one with the correct default times. You can then adjust the shift times as needed. Shifts can be scheduled up to 2 hours outside the defined scheduling interval and must not exceed 12 hours in length.
- If you move a shift to a different team's shift time, the **Team** column in the schedule will continue to display the employee's original team. This better represents the team as the connection between the employee and their manager, even if the shift time was taken from another team's schedule.

Example

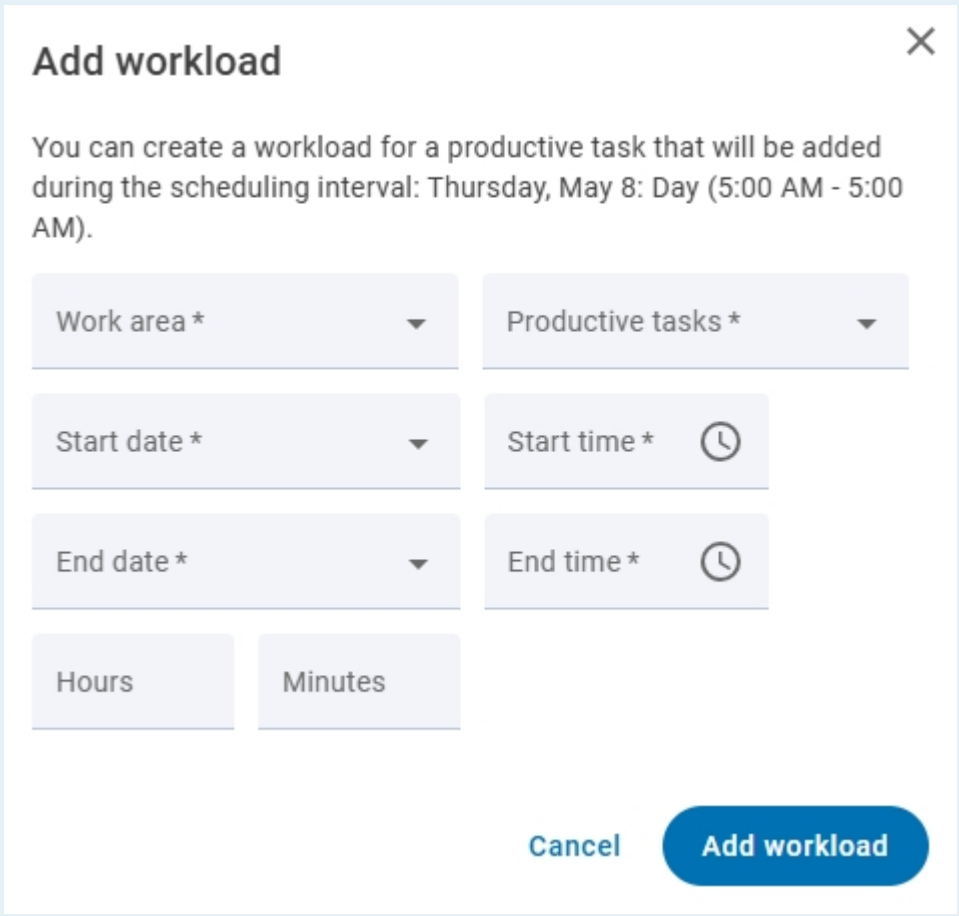


4. Click **Save**.

4.2 Add workload

1. In the **Workload** section, select the **Add workload** button.
2. Define the workload that will be added to the currently selected scheduling interval.

Example



- Select a **Work area**, **Productive task**, **Start date**, **Start time**, **End date**, and **End time**.
- Enter how many **Hours** and/or **Minutes** should be added as the demand for this workload.
- Click **Add workload**.

4.3 Add tasks

Drag a task from the workload to the shift of an employee or drag-and-drop a task from the shift of one employee to the shift of another employee. When the uploaded workload contains multiple tasks per shift, multiple tasks can be added to the same shift. For more information on uploading a workload, see "Prepare for optimization" on page 8.

Instead of dragging-and-dropping you can also follow the steps below:

1. Select the shift of an employee.
2. Select the **TASK** tab.
3. Click **+ ADD TASK**.
4. Select the kind of task, **Productive** or **Nonproductive**. For more information on the difference, view "Prepare for optimization" on page 8.
5. Select the **Work area**.
6. Define the **Start time** and the **End time**.

> - Ensure that you define the times before selecting tasks; an interval shouldn't overlap with multiple workloads. For instance, if your workload is from 06:00 to 10:00, and you choose an interval from 08:00 to 11:00, you won't see the task because your interval partially extends beyond it. However, if you select an interval from 08:00 to 10:00, you'll see it.
> - You can add two different productive tasks to the same shift.

7. Select the **Task**.
8. Click **ASSIGN TASK**.
9. Close the popup with the **X** in the top-right corner or click anywhere outside the popup.

4.4 Add trainings

> A training is used to acquire a certain skill. Whenever a training is assigned, the optimizer in Task Scheduling will assign a task that is linked to the skill that is being trained.

1. Select the shift of an employee.
2. Select the **TASK** tab.
3. Click **+ ASSIGN TRAINING**.
4. Select the **Work area**.
5. Define the **Start time** and the **End time**.
6. Select the **Skill**.
7. Click **ASSIGN TRAINING**.
8. Close the popup with the **X** in the top-right corner or click anywhere outside the popup.

4.5 Edit or remove tasks or trainings

1. Select the shift of an employee.
2. Select the **TASK** tab.
   - For tasks, click either the  or  icon.
   - For trainings, select the three dots and click either **Edit training** or **Delete training**.
3. Close the popup with the **X** in the top-right corner or click anywhere outside the popup.]

4.6 (Un)assign economic unemployment

Only possible when economic unemployment is enabled for the current site.

1. Select a shift of an employee.
2. In the **SHIFT** tab, (de)select **Economic unemployment**.
   A striped shift indicates that the employee has been assigned to economic unemployment.

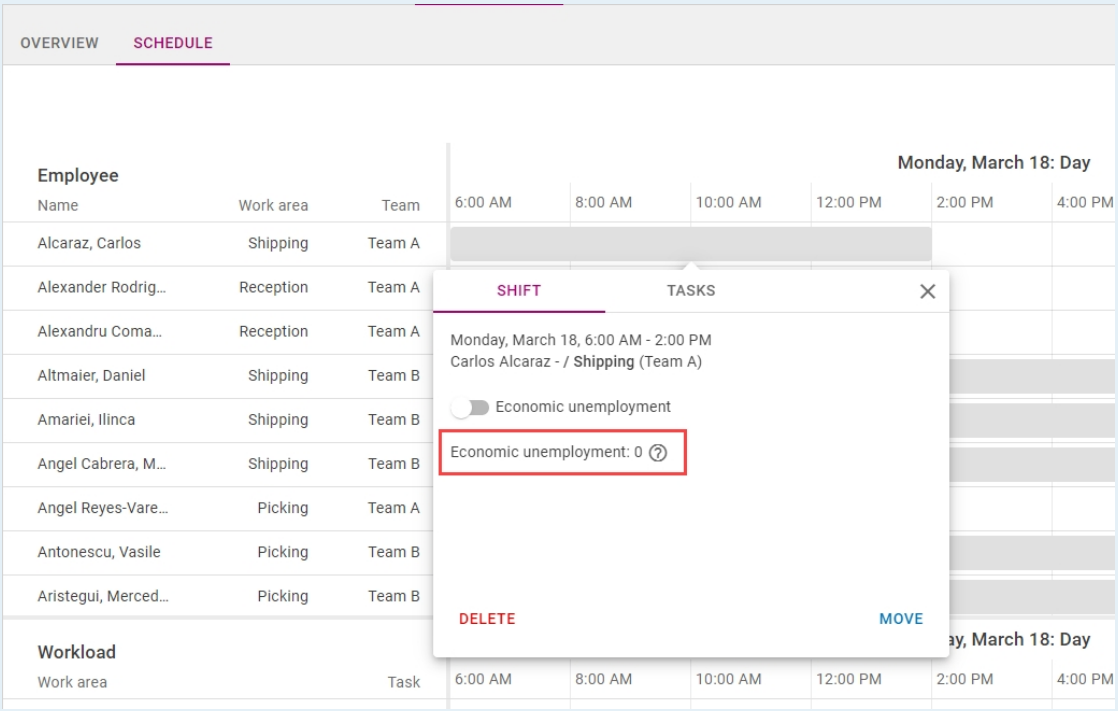
4.7 View economic unemployment counter

Only possible when economic unemployment is enabled for the current site.

1. Select a shift of an employee.
2. In the **SHIFT** tab, view **Economic unemployment: n**.

Example

The total number of economic unemployment this employee has this week is shown, including this shift.



4.8 Solve violations

Please note when making manual adjustments, violations can occur more often. Two types of violations can appear in the schedule:

- **Labor rule violations**
  Indicated with a red notification in the top-left corner of a shift.
- **Task violations**
  Indicated with a red notification in the bottom-left corner of a shift.

4.9 Filter schedule

Use various filters to "Filter schedule" on page 32.

Some filters are activated by the corresponding action list items.

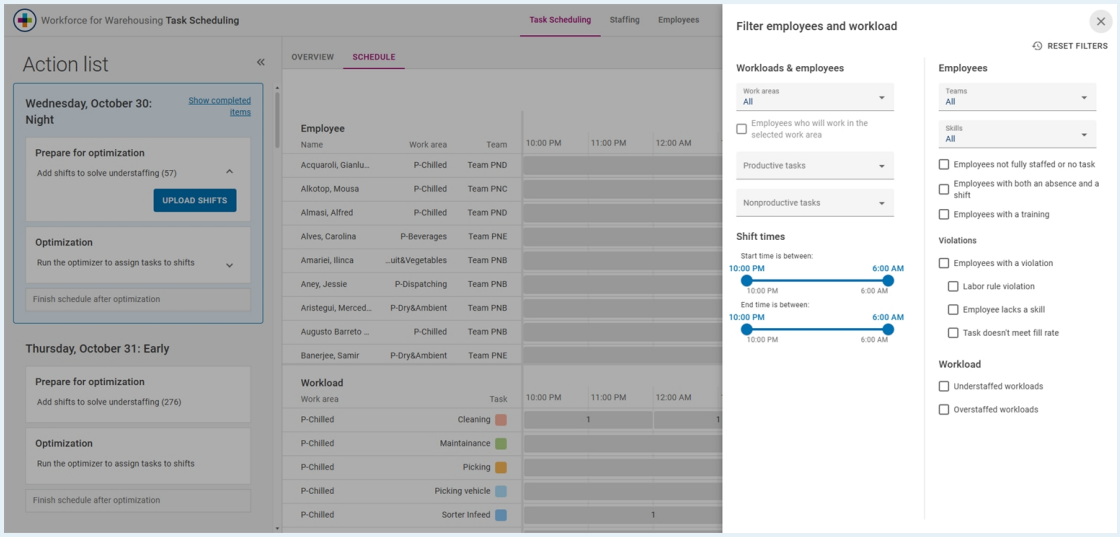
4.10 Filter schedule

A variety of filters helps you focus when planning.

Click **FILTER SCHEDULE** in the top-right corner of the **SCHEDULE** tab to set your filters. After filtering, select **RESET FILTERS** to go back. Select the **X** in the top-right corner to return to the **Schedule** tab.

Combinations of filters are always executed with the AND parameter.
Exception: The sub-filters for violations are executed with the OR parameter.

Example



The filters for **Work areas**, **Teams** and **Skills** are multi-select filters showing any shift and workload (for the work areas and teams filters) or employee (for the skills filter) that matches at least one of the selections.

4.10.1 Workloads & employees

- **Employees who will work in the selected work area**
  Displays, in combination with the **Work areas** filter, only those employees who have a scheduled task in the selected area after optimization.
  When selected, only shows those planned to work in that area, which includes:
    - Employees actually scheduled to work in that area, and
    - Employees without a task and without economic unemployment that work for a team in that area.

  When not selected, shows employees working for a team and employees with a scheduled task in the selected area.

- **Productive tasks** and/or **Nonproductive tasks** multi-select filters
    - By default, with no filters applied, all tasks (productive and nonproductive) are shown.
    - When you apply the task filters:
        - Only shifts that have been assigned the selected tasks will be displayed.
        - Tasks must be scheduled to shifts for the filter to show them; unscheduled tasks are not displayed in filtered views.
    - The selected task filters also apply to workloads. Only workloads associated with the filtered tasks will be visible.

  This setup ensures you're only viewing relevant shifts and workloads based on the tasks you've filtered.

- **Shift times**
  Filter on start and end times of shifts.

4.10.2 Employees

- **Employees not fully staffed or no task**
  Use this option to solve overstaffing.
- **Employees with both an absence and a shift**
  Use this option to check if an absent employee has been assigned a shift by mistake.
- **Employees with a training**

Violations

Employees with a violation

- Labor rule violation
- Employee lacks a skill

- Task doesn't meet fill rate

Workload

- **Understaffed workloads**
  Understaffed tasks are displayed in red.
- **Overstaffed workloads**

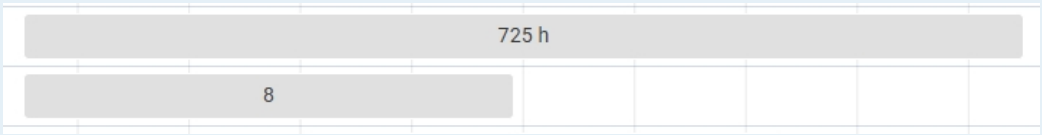
4.11 Extend workload

Extend an existing workload either by increasing its duration (in hours), which extends the original time interval, or by increasing the number of employees assigned. In the latter case, the system generates an additional workload in hours for the same task and area to reflect the expanded team capacity.

1. Select a workload in the **Schedule**.

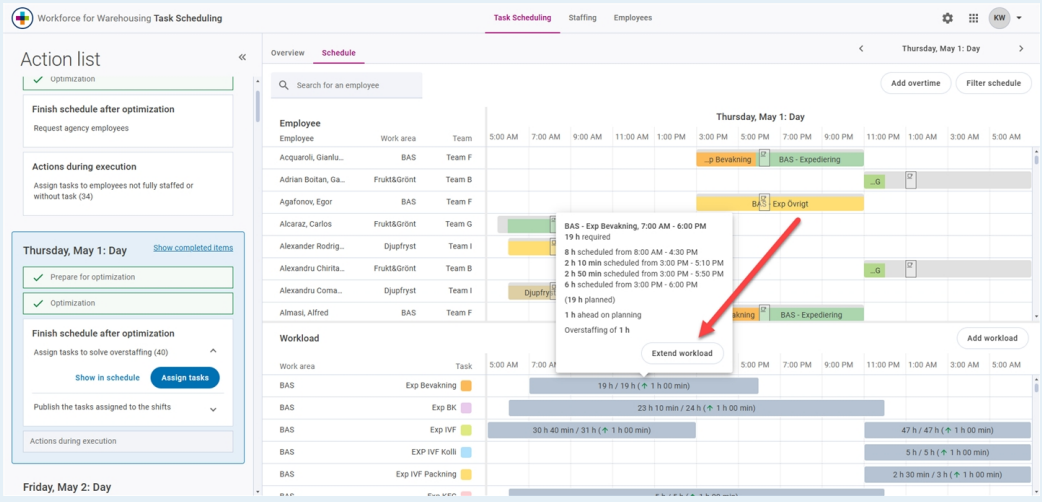
Example

Workloads are measured in hours or number of employees. The impact of extending a workload varies based on its definition.



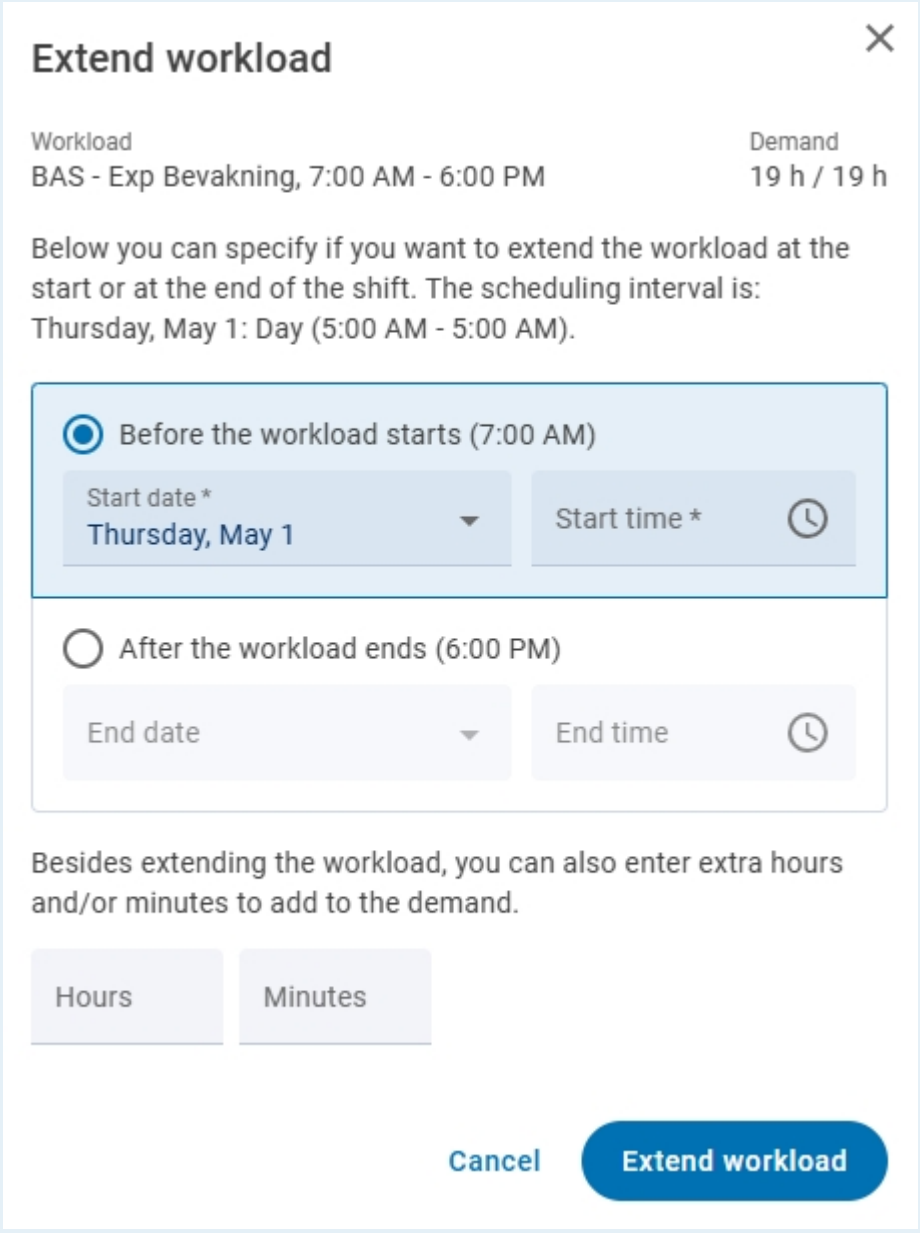
2. Click **Extend workload**.

Example



3. Specify how you want to extend the workload in the **Extend workload** window.

Example



a. Select to extend the workload **Before the workload starts** or **After the workload ends**. This will extend the original time interval.
b. Define the Start date and time or the End date and time.
c. (Optional) Add extra hours and/or minutes to add to the demand. When extending the workload for employees, this will result in an additional workload in hours for the same task and area to reflect the expanded team capacity.

> It is possible to use a backend setting to remove the possibility to add extra hours of workloads when extending the workload. Contact your ORTEC representative when needed.

d. Click **Extend workload**.

5 Staffing

In the **Task Scheduling** application, view - per selected scheduling intervals - the long-term outlook of the planning, powered by the "Lightweight optimizer" on page 7.

Two weeks before execution, not all illnesses, leaves, or nonproductive tasks are known, even though there is a general idea of the workloads to plan for. Therefore, the staffing overview corrects for:

- Leave
- Illnesses
- Nonproductive tasks

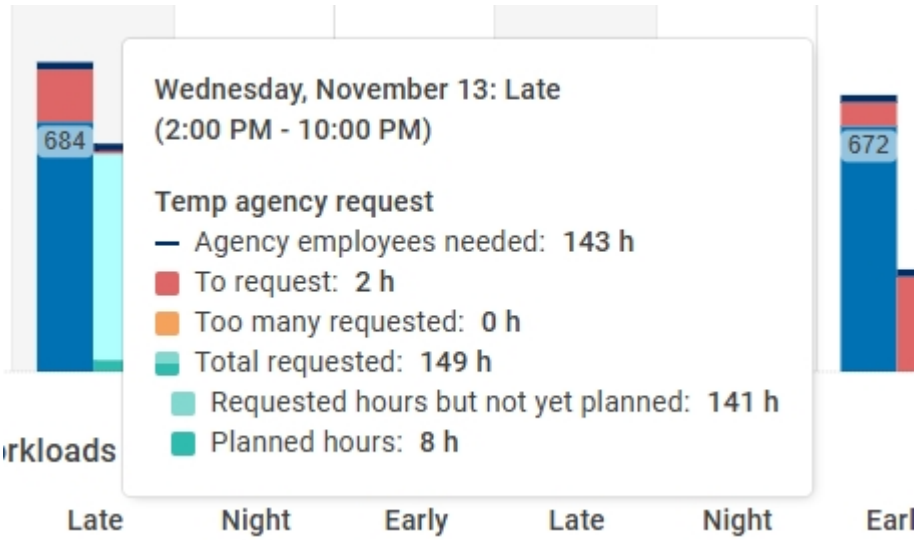
For leave and illnesses, a percentage (e.g., 5%) per scheduling interval and area is imported, indicating that 5% of all shift hours will likely be unavailable due to illness. Known illnesses are subtracted from this percentage to avoid overcorrection. For nonproductive tasks, a budget is imported per task, area, and scheduling interval, with assigned hours for these tasks then subtracted. The workload graph in the staffing overview displays the estimated hours needed before execution.

5.1 View staffing

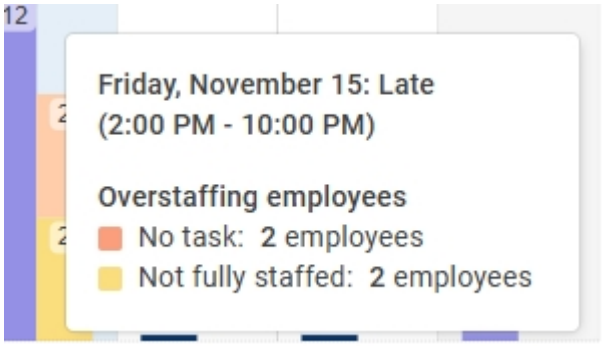
1. Select the **Staffing** tab at the top of the window.

Example

2. Hover over the bars for more information on the assignment of workloads and temp agency request in hours or workloads and overstaffing in employees.



3. Select either the **HIDE LEGEND** or **SHOW LEGEND** button in the top-right corner to hide or view an explanation of the colors being used.
4. After uploading the workload, the bottom part of the graph provides information on employees that aren't (fully) staffed.



5. Zoom in on a particular scheduling interval via the dropdown menu in the top-left corner.
6. Start a new temp agency request by selecting the **TEMP AGENCY REQUEST** button. Navigate through all scheduling intervals and enter a request for each one.
7. To view the "Staffing details" on page 38, click on a scheduling interval.

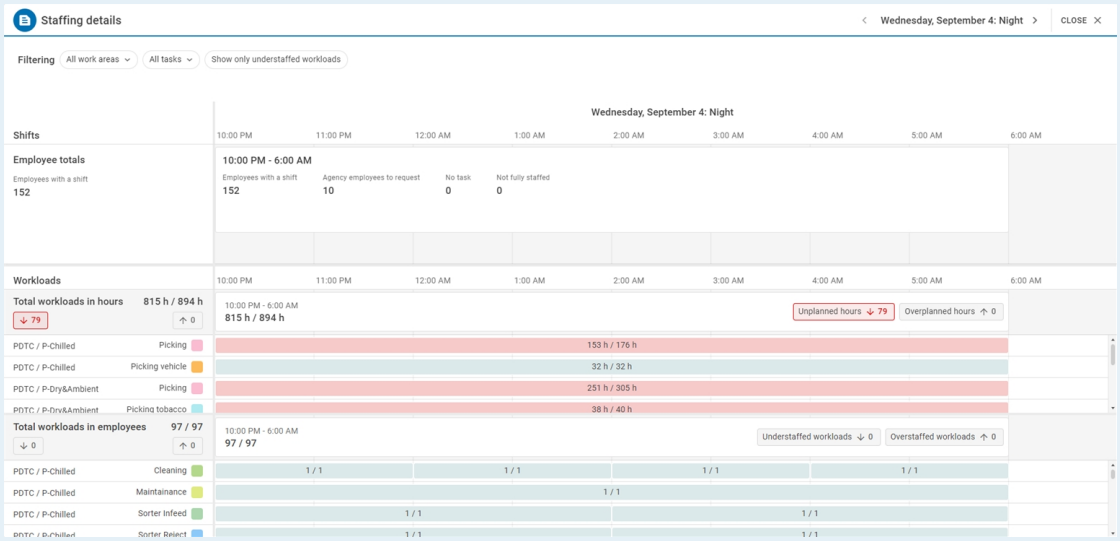
5.2 Staffing details

View all staffing details for a selected scheduling interval.

> It's advised to view the staffing details after optimization for making informed decisions.

Example

The staffing details displays - per scheduling interval - the shifts (employee totals) and workloads (workloads in hours and workloads in employees) totals.

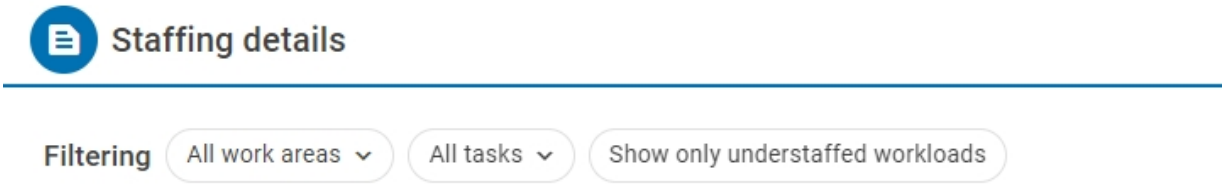


The **Employee** part displays team shifts within the selected scheduling interval. After optimization, it counts the employees with a shift, those unassigned (**No task**), the employees still needed (**Not fully staffed**), and a temp request summary. When using economic unemployment, it also shows the count of employees on economic unemployment.

The **Workloads** part displays the **Workloads in hours** and **Workloads in employees**. In the left pane the workload totals are displayed for the selected scheduling interval (all shifts). In the right pane the workload totals per shift are displayed.

5.2.1 Filtering

Workloads can be filtered on work area, task name and there is an option to only see understaffed workloads (after optimization).



6 Employees

6.1 Task scheduler rules

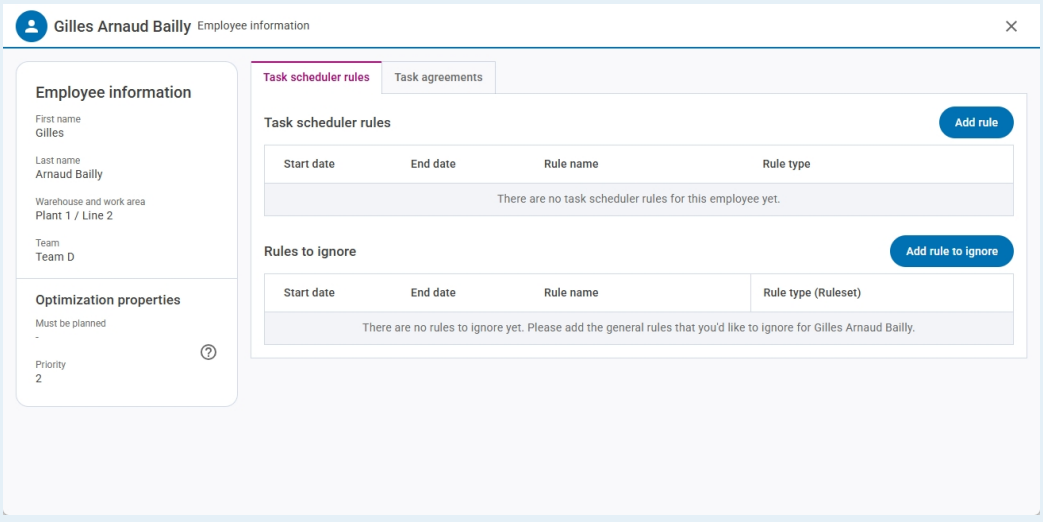
Create specific rules for scheduling shifts for each employee. You can set active intervals for these rules and choose to ignore rules from rule sets during a user-defined period. This applies to both active and inactive rule sets. For example, if there are two rule sets, 'High Season' and 'Low Season,' and a rule called 'Task Balance' needs to be ignored for an employee, it will be disregarded in both sets whenever either is active. If a rule should only be ignored for one rule set, it must have different names in each set.

> Make sure at least one ruleset has been added via the gear icon in the top-right corner. Rulesets are created in the **Support Manager** application.

1. In the **Task Scheduling** application, select the **Employees** tab at the top of the window and search for an employee. Select an employee to see or edit more information.
   - Alternatively, select via **Task Scheduling** > **Schedule** an employee.
2. On the **Employee information** window, view the **Employee information** and define the **Task scheduler rules** to be followed and/or ignored.

Example

Within the **Optimization properties** section, view whether this employee must be planned and the related priority. The lower the number, the more priority this employee has.



3. To add a rule, select **Add rule**.
   - Select one of the default rule types from the dropdown list.
   - Select **Continue**.
   - Fill out the rule details. For more information, see "Rule types" on page 42.
   - Select **Save**.
   - To add more rules, select **Add rule** again.

4. To ignore a rule, select **Add rule to ignore**.
    - Define the **Start date** and **End date** during which the rule(s) should be ignored.
    - (Optional) Search for a rule name.
    - Select the rule name of the rule(s) you want to ignore.
    - Click **Save**.

6.2 Task agreements

Create task agreements for employees. Task agreements enable flexible scheduling of nonproductive tasks across any planning horizon. Tasks can be assigned:

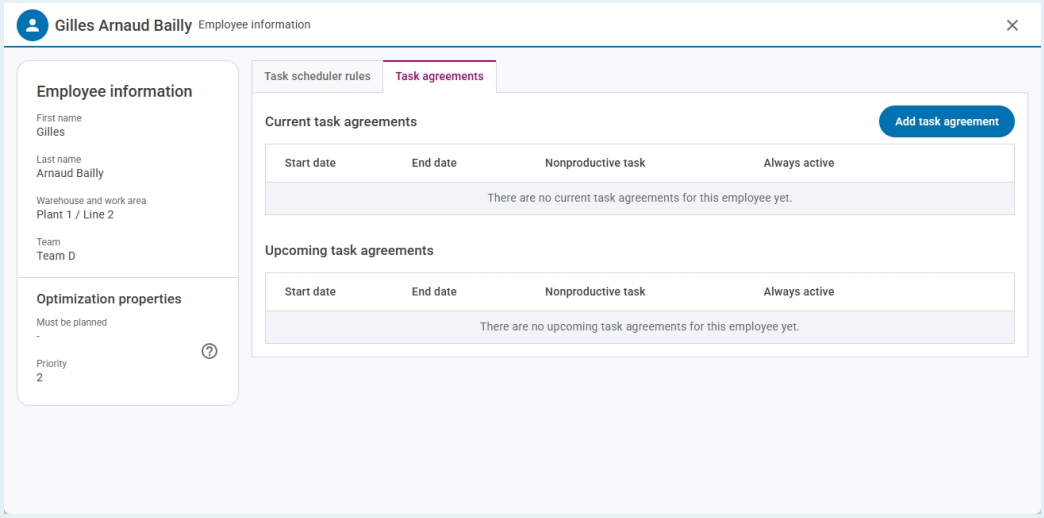
- For all days within a selected interval
- For specific days of the week
- For specific time windows on any day of the week

Once shifts are rolled out, the tasks are automatically planned into the corresponding shifts.

Nonproductive tasks created through a Task agreement cannot be removed.

1. In the **Task Scheduling** application, select the **Employees** tab at the top of the window and search for an employee. Select an employee to see or edit more information.
    - Alternatively, select via **Task Scheduling** > **Schedule** an employee.
2. On the **Employee information** window, select the **Task agreements** tab.

Example



3. To add a task agreement, select **Add task agreement**.
4. Select one of the nonproductive tasks from the dropdown list.
5. Define the **Start date**.
6. (Optional) Define the **End date**.
7. (Optional) Specify moments when this task agreement should be active by selecting the corresponding slide button.
    - Select a **Day of the week**.
    - Define the **Start time** and the **End time**.

- Select **+ Add moment** to add more days and time intervals.

8. Select **Save**.
9. To add more task agreements, select **Add task agreement** again.

6.3 Rule types

Each rule is based on a rule type, as outlined in this topic. Some rules can be categorized as hard rules, which remove specific assignments, or soft rules, which impose costs for assignments. The higher the cost compared to another rule, the lower the change of the rule being executed. A rule can apply to all or one or more specific weekdays or scheduling intervals. Users can view a concise summary of each rule being added or edited for easy reference.

6.3.1 Assign task max once in shift

Select the tasks that can only be assigned once in a single shift.

1. Define the **Name**, **Start date**, **End date**, and **Description** of the rule.
2. Select one or more **Tasks**.

> Even though multiple tasks can be selected, only one of these tasks will be assigned in a single shift.

3. (Optional) Select specific days or scheduling intervals for this rule to be applied. First, select the slide button; then, define those days and scheduling intervals.
4. Click **SAVE**.

6.3.2 Tasks not allowed to be combined

Select the tasks that are not allowed to be combined with each other in a single shift.

1. Define the **Name**, **Start date**, **End date**, and **Description** of the rule.
2. (Optional) Assign a **Cost** to the rule. First, select the slide button; then, define the cost.
3. Select two **Tasks** that are not allowed to be combined.
4. (Optional) Select specific days or scheduling intervals for this rule to be applied. First, select the slide button; then, define those days and scheduling intervals.
5. Click **SAVE**.

6.3.3 Only same task can be assigned

Select the tasks that can only be assigned with identical tasks in a single shift.

1. Define the **Name**, **Start date**, **End date**, and **Description** of the rule.
2. (Optional) Assign a **Cost** to the rule. First, select the slide button; then, define the cost.
3. Select one or more **Tasks**.

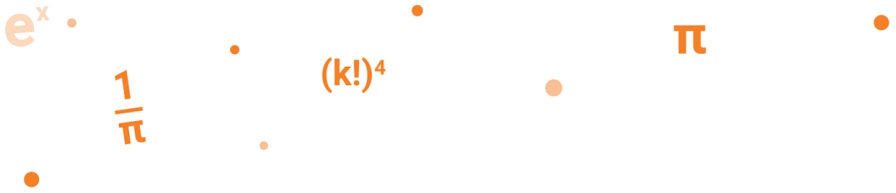
> Even though multiple tasks can be selected, only one of these tasks will be assigned and combined in a single shift.

4. (Optional) Select specific days or scheduling intervals for this rule to be applied. First, select the slide button; then, define those days and scheduling intervals.
5. Click **SAVE**.

6.3.4 Assigned tasks must be different

> As all tasks within a single shift should be different from each other, there's no need to select specific tasks.

1. Define the **Name**, **Start date**, **End date**, and **Description** of the rule.
2. Assign a **Cost** to the rule.
3. (Optional) Select specific days or scheduling intervals for this rule to be applied. First, select the slide button; then, define those days and scheduling intervals.
4. Click **SAVE**.



Contact information

For further information contact ORTEC, either through your existing ORTEC representative or by using the appropriate contact details listed on www.ortec.com

Our website offers case studies, white papers, brochures, demos and much more.

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