

ORTEC Workforce Scheduling 7

User Manual Cyclical Schedule

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ORTEC

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1 Cyclical schedule

A cyclical schedule involves rotating patterns of shifts, which can be assigned to individual employees.

Example

Imagine a schedule that repeats every 10 weeks, with unique shifts assigned to each week listed in rows.

In the first week, one or more employees follow the shifts scheduled in row 4 (week 4).

In the second week, these employees follow the shifts scheduled in row 5 (week 5). The employee(s) assigned to row 1 continue with the shifts scheduled in row 2, while those assigned to row 2 continue with row 3.

This pattern continues until the full 10-week schedule is completed. The employees who started with the shifts in row 4 then start again at row 4 and the entire 10-week schedule is repeated.

This repeating pattern ensures that employees follow different shifts each week, but always in a predictable cycle.

Note: The length of each row (rotation line) can vary from one single week to multiple weeks. A cyclical schedule with 10 rows, each with a length of 2 weeks, takes 20 weeks to complete.

After the rollout of a cyclical schedule in a schedule period, the cyclical patterns are recorded as ‘shifts per date and person’ in the duty schedule. This simplifies the scheduling of employees who work in accordance with fixed shift patterns.

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2 Create a cyclical schedule

The workflow for creating a cyclical schedule is as follows:

1. Define rotation units.
2. Link an employee to a rotation unit.
3. Create cyclical schedule.
4. (Optional) Roll-out of duty demands.
5. Fill in the cyclical schedule.
6. Validate cyclical schedule.
7. Roll-out of cyclical schedule.

2.1 Define rotation units

The first step in creating cyclical schedules is to define rotation units. Rotation units are subsets of departments, and employees must be associated with these units to accommodate their cyclical schedules.

1. Go to **Maintenance** > **Organization**.
2. In the left pane, select a department.
3. Select the **Rotation units**tab.

> By default, a new rotation unit is created when adding a department. Click the **Change rotation unit name** button to change the name and continue with step 4.

   - Alternatively, select the **New** button.
   - Enter a **Name** and click **OK**.
4. (Optional) Enter a **Description**.
5. (Optional) Enter a **Code**.

> A code is used to exchange the information defined here with an external system.

6. To create an individual shift pattern for employees assigned to this rotation unit, select the checkbox **Personal rotation unit**. Rename the rotation unit accordingly for easy recognition.

> - In a personal rotation unit, each employee follows their personal shift schedule throughout the entire cycle. In contrast, a team rotation unit involves employees rotating and following different shift schedules until the cycle is completed. For a better

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understanding, read "Cyclical schedule" on page 1.

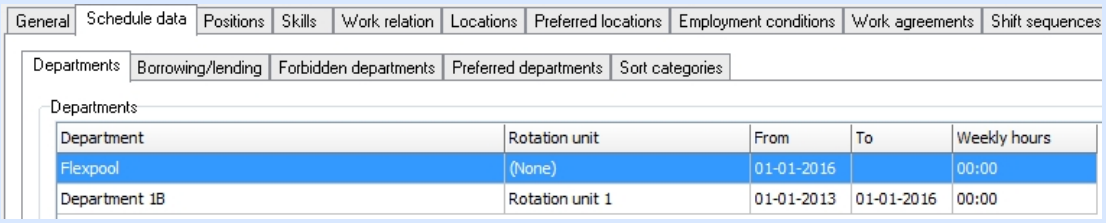
- Once a personal rotation unit is active, this checkbox cannot be deselected.

7. Click **OK**.

2.2 Link an employee to a rotation unit

For linking multiple employees to a rotation unit at once, contact your ORTEC representative.

Example



Each employee is linked to a department, rotation unit, period and hours per week.

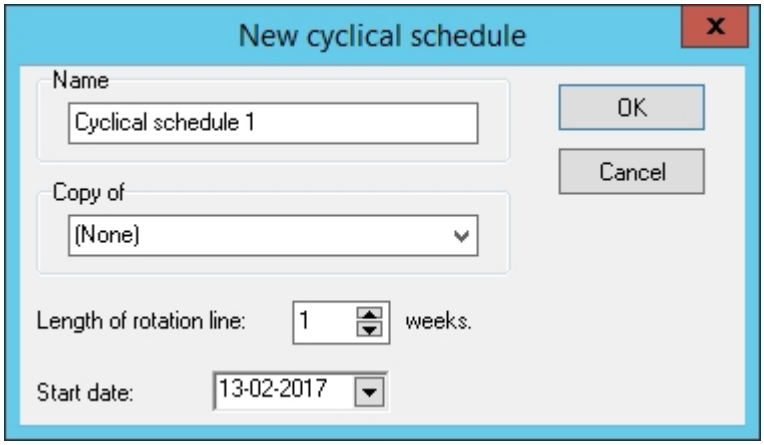
1. Go to **Employee** > **Employee management**.
2. Select - from the **Department filter** drop-down list - a department.
3. Select - from the **Name** drop-down list, an employee.
4. Select the **Schedule data** tab.
5. In the **Departments** tab, either add or change the rotation unit inside an existing department line, or add a new line:
   - Double-click on a line or click on  to change the rotation unit of a selected line. For example, from '*(None)*' to '*Rotation unit 1*' .
   - Click on  to add a new line. If you add the same department again but select a different rotation unit, the old line will be closed.

     Select a personal rotation unit if you want to create an individual shift pattern.

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2.3 Create cyclical schedule

1. Go to **Planning** > **Schedule management**.
2. Select a **Department**.
3. Select the **Duty sets** tab.
4. In the **Maintenance cyclical schedules** section (bottom right), select the  button. The **New cyclical schedule** window appears.



   - Define the **Name** of the new cyclical schedule.
   - (Optional) To copy the settings another cyclical schedule, select it from the **Copy of** drop-down list.
5. Fill in the **Length of rotation line** (for example, 2 weeks for bi-weekly schedule pattern).

> The rotation line refers to the length of a shift pattern. This pattern can be a weekly, bi-weekly, or other weekly interval. Please note that a team cyclical schedule consists of multiple rotation lines that are all followed. For example, a cyclical schedule with 10 rotation lines, each with a length of 2 weeks, takes 20 weeks to complete.

6. Fill in the **Start date** (this indicates when the cyclical schedule is used for the first time).

> ORTEC WS has a default setting for starting cyclical schedules on Mondays. The starting date therefore jumps automatically to the nearest Monday.

7. Click **OK**.

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2.4 Roll-out duty demands

Optional
The roll-out of duty demands is optional, but may be useful when duty demands apply to the relevant department which are – wholly or partly – filled in by the cyclical schedule.

1. Go to **Planning** > **Schedule management**.
2. In the **Duty sets** tab, select the applicable **Duty Set** and **Duty Demand**.
3. Select the cyclical schedule for which the duty demand is to apply.
4. (Optional) To create a cyclical schedule that complies with the labor rules, it's possible to select a labor rule set. This way **ORTEC WS** checks the cyclical schedule on the labor rules during scheduling.

   By default, *(none)* is selected, which disables the labor rule check. You can change the selected labor rule set of an existing cyclical to *(none)* if you want to disable this feature in a specific cyclical schedule.

5. Click on the **Apply duty demand** button (at the bottom-right of the cyclical schedule); the shifts to be planned (= duty demands) are now available for creating the cyclical schedule.

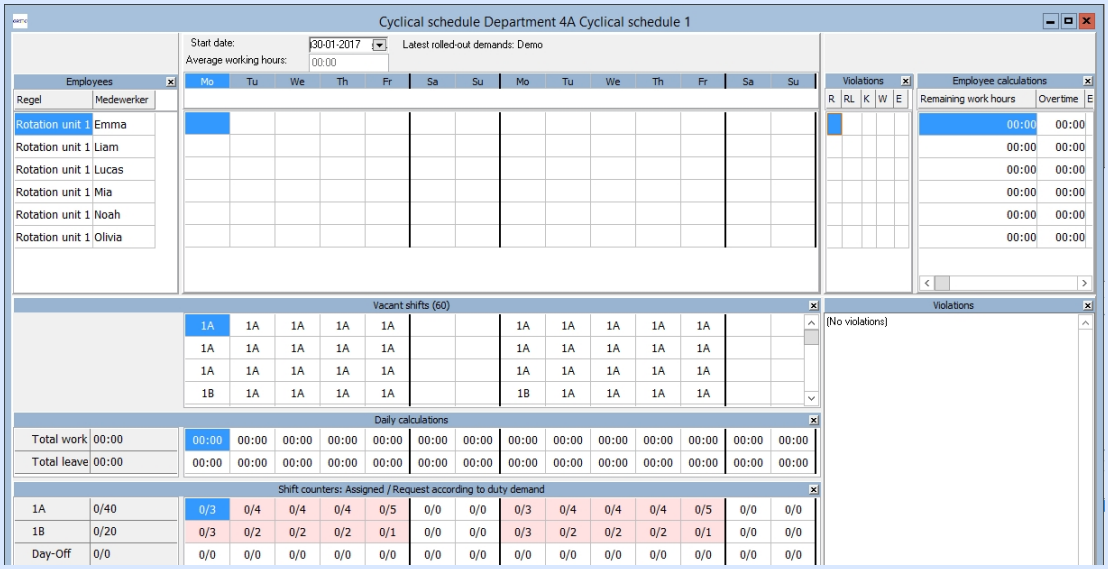
2.5 Fill in cyclical schedule

The cyclical schedule can now be filled in. Shifts can be entered in two ways:

- With the aid of the duty pallet or list
- From the duty demands (if prepared)

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Example



Filling in the cyclical schedule.

1. In the **Schedule Management** window > **Duty sets** tab, select the applicable **Duty Set** and **Cyclical Schedule**.
2. Select the  button.
3. Define the shift pattern by adding shifts to each rotation line.

> Not all rotation lines require having one or more employees assigned to them, as the rotation system ensures that each row is covered by an employee at different times. The advantage of not assigning employees to a specific row is more flexibility when planning the shifts.

> **Example**
>
> Imagine a cyclical schedule of 10 weeks, where the last 2 rows aren't assigned to employees (but are filled with shifts). During the first week, only the shifts planned for row 1 to 8 are performed. During the second week, only the shifts planned for row 2 to 9 are performed. During the third week, only the shifts planned for row 3 to 10 are performed, etc.

4. (Optional) Employees can be added to a single shift pattern (rotation line) by right-clicking on an employee, selecting **Change employee**, and adding a **Name** to the **Employees** section.
5. To validate if the shift pattern matches the employees being used, view in the

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Average working hours field the average weekly hours.

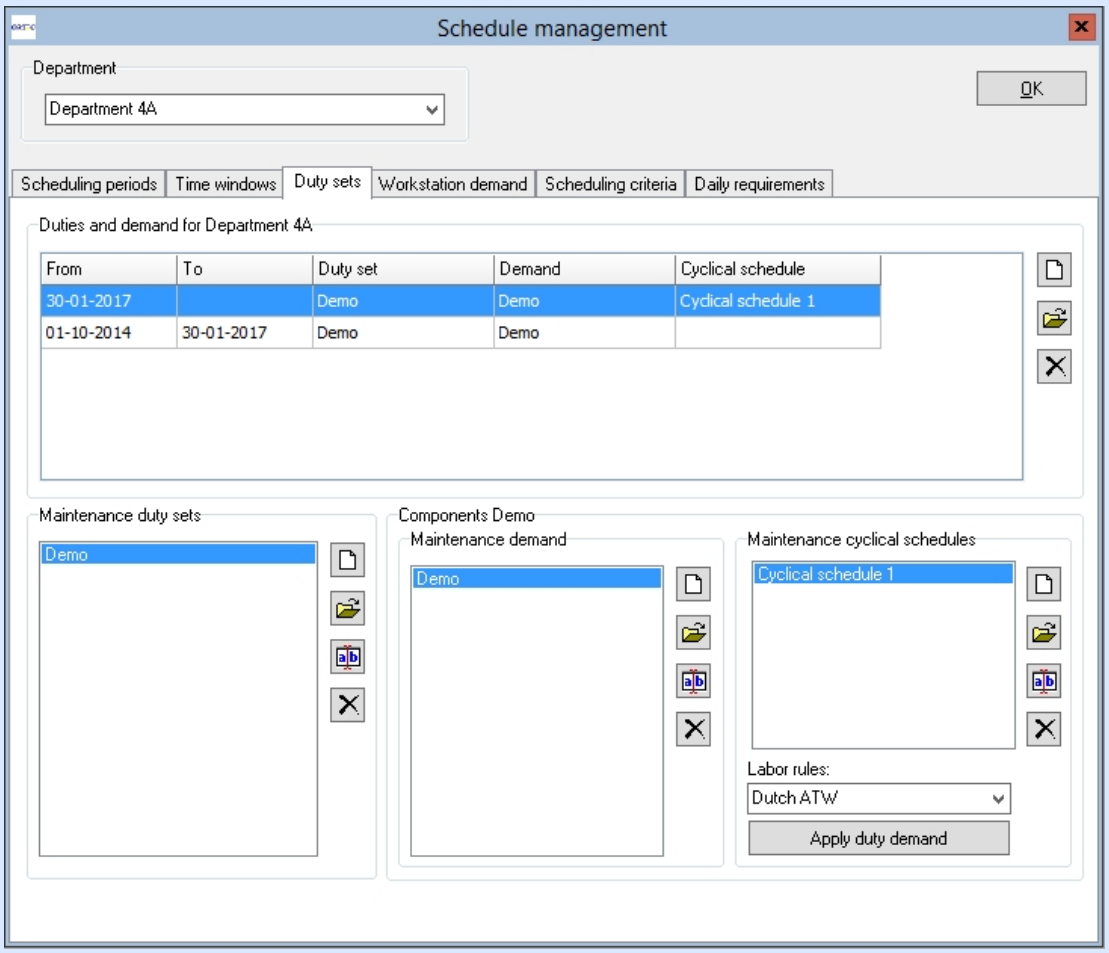
6. Close the cyclical schedule.

2.6 Validate cyclical schedule

Before the cyclical schedule can actually be rolled out in the schedule, it's first linked to a duty set and – where applicable – to duty demands. This is recorded in a line that links a number of things:

- Period (**from** ... **to** ...)
- Duty set
- Duty demands
- Cyclical schedule

Example



Validating a cyclical schedule.

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1. Ensure that no schedule is open (master schedule and/or cyclical schedule).
2. Where applicable, close the old combination by filling in a closing date. When adding a new line without closing the previous line, the begin date of the new combination is automatically filled in with the end date of the previous combination.
3. Create a new combination line. In this line, link duty set, duty demands and cyclical schedule.

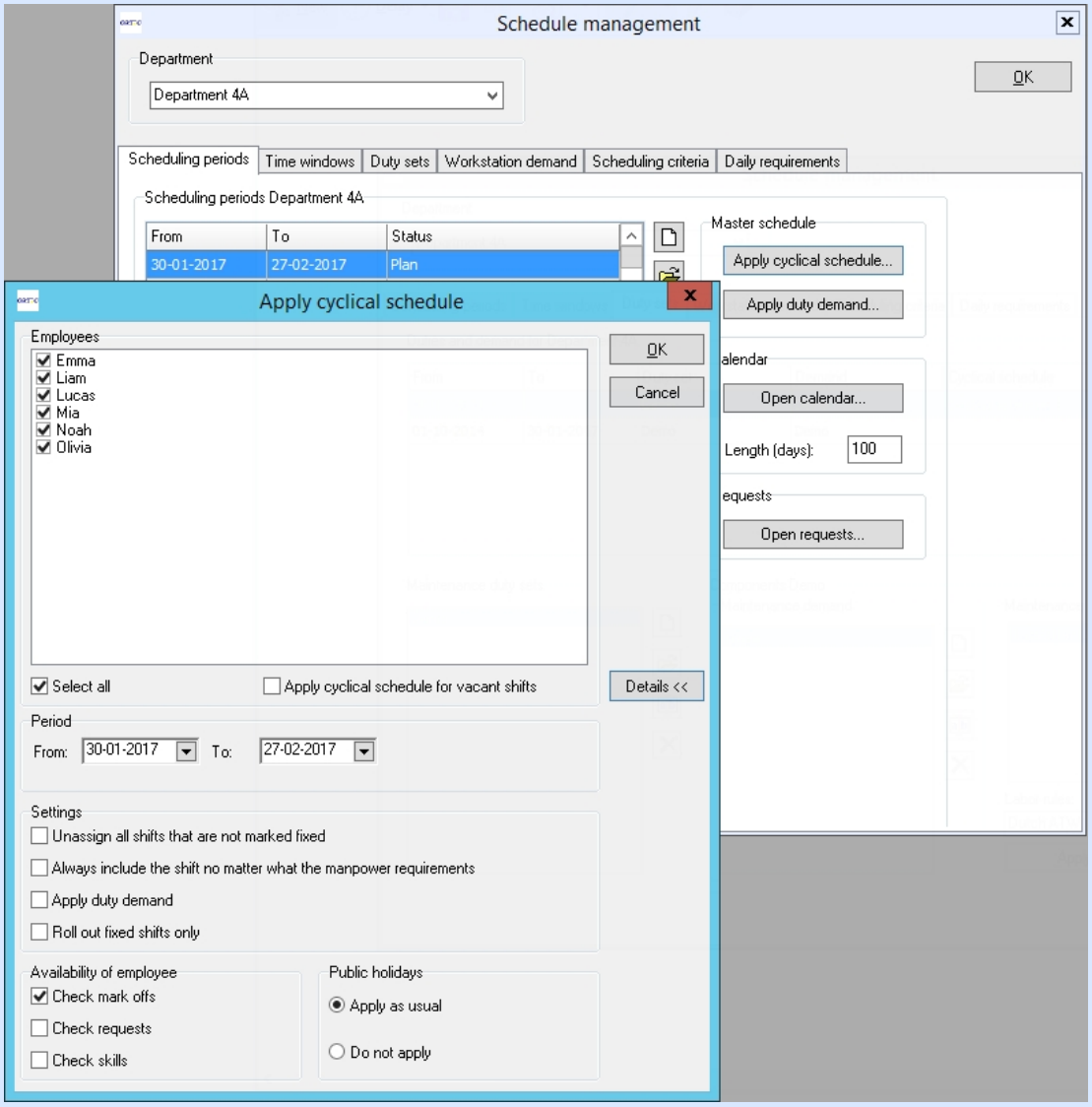
It's possible to edit an existing combination, but as this can cause conflicts with existing schedules this is typically not recommended.

2.7 Roll-out cyclical schedule

All preparations have now been made and the cyclical schedule can be implemented. The shift patterns of the cyclical schedule can be rolled out in the master schedule.

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Example



New scheduling periods can use a cyclical schedule by rolling it out.

1. To create a new scheduling period, go to **Planning** > **Schedule Management** > **Scheduling periods** tab.

   The new scheduling period must fall within the period of the applicable cyclical schedule.

2. Select the correct department.
3. Select or create the new scheduling period.
4. Click the **Apply cyclical schedule** button. A window opens where details can be selected. Select the desired "Options" on page 10 and click on **OK**.

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5. Click the **Open master schedule** button  ; the new master schedule has now been filled in with the cyclical schedule.

Options

When applying a cyclical schedule, options can be selected that influence what is rolled out. Available options are:

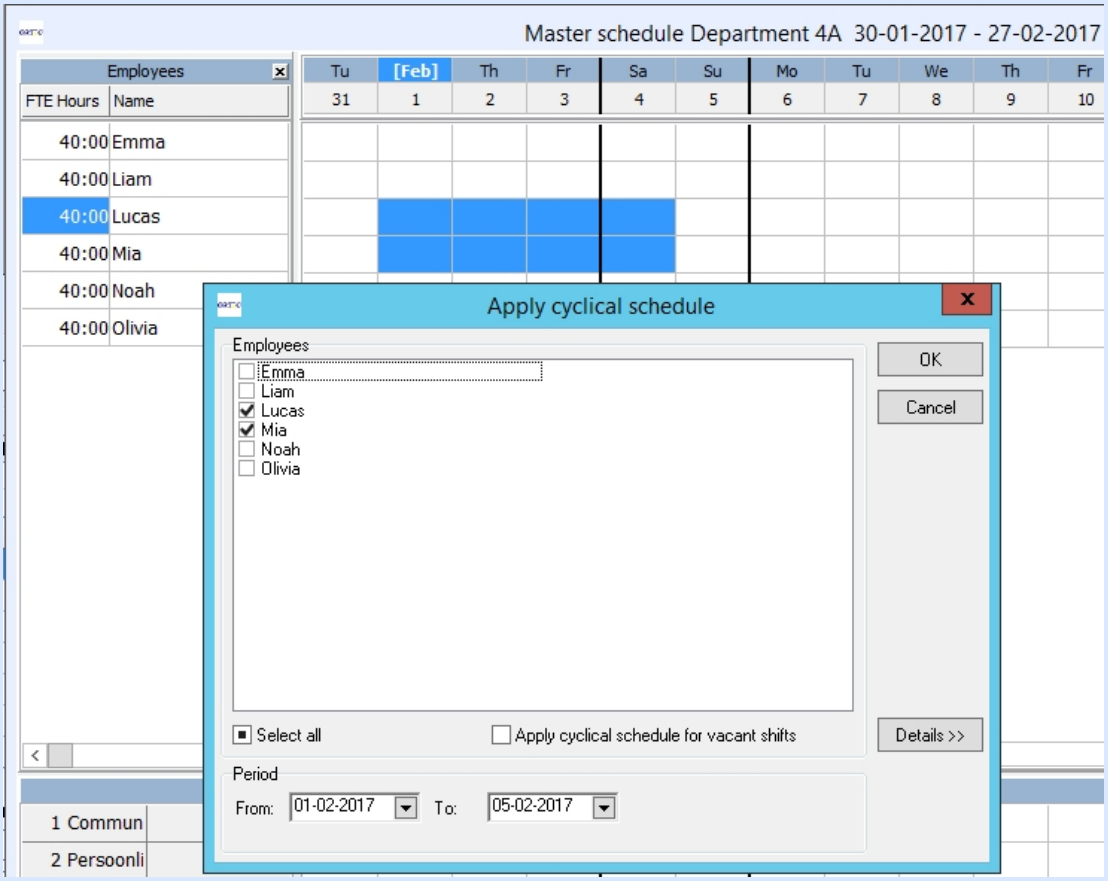
- **Employees**: you can select all or a limited number of employees that are included in the roll-out of the cyclical schedule.
- **Apply cyclical schedule for vacant shifts**: if selected, the shifts in the cyclical schedule that aren't planned at an employee but are still vacant, are included in the roll-out. These shifts will be vacant in the selected scheduling period.
- **Period**: it's possible to set the period of roll-out, by default the scheduling period is taken.
- **Unassign all shifts that are not marked fixed**: if selected, all shifts in the scheduling period to-be-rolled-out are unassigned if these shifts aren't marked as fixed.
- **Always include the shift no matter what the manpower requirements**: if this option is *deselected*, shifts in the cyclical schedule are only included when the shift matches the duty demand. If this option is *selected*, the duty demand is ignored in the roll-out.
- **Always assign the shift regardless of other non-overlapping shifts**: if this option is *deselected*, shifts in the cyclical schedule aren't included when there's already a (non-overlapping) shift assigned on that day. If this option is *selected*, shifts in the cyclical schedule are added even when there's already another (non-overlapping) shift assigned on that day.
- **Apply duty demand**: if this option is selected, the duty demand is first applied before the cyclical schedule is rolled-out.
- **Roll out fixed shifts only**: only shifts that are marked as fixed in the cyclical schedule are rolled-out in the scheduling period.
- **Availability of employee**: three options can be selected that determine whether a shift in the cyclical schedule should be rolled-out for an employee. When the check determines that the shifts isn't supposed to be assigned, the shift moves to the vacant shifts if the duty demand allows for this, otherwise the shift will be excluded. The three options to check are:
  1. **Check mark offs**: Checks whether an employee is marked off (ill) in the scheduling period.
  2. **Check requests**: Checks whether an employee has a required request which causes a violation.
  3. **Check skills**: Checks whether a violation is created by a missing skill.
- **Public holidays**: select whether on public holidays, the shifts from the cyclical schedule should be **applied as usual**, **do not apply**, or **Apply Holiday schedule**. With that last option selected, you can define for which employees - with a specific property - the schedule can be applied as usual.

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2.7.1 Roll-out from open plan board

It's also possible to (re)apply the cyclical schedule directly from the plan board. This enables you to (visually) select a limited number of employees and days in the schedule. The selection is used to pre-configure the parameters of the **Apply cyclical schedule** window.

Example



In an existing scheduling period, the cyclical schedule can also be (partial) rolled-out.

1. Open a scheduling period via **Planning** > **Schedule Management**.
2. Select a schedule and click on  to open it.
3. Select the days and employees you want to apply the cyclical schedule to.
4. Right-click and select **Apply cyclical schedule**.
5. A window opens where the employees and period is filled in from the selection. Further options in the window are as described above.

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3 Modify cyclical schedule

Sometimes it's necessary to modify the cyclical schedule:

- Change in weekly work hours
- Add employee (new hire)
- Change employee (if a member of staff takes over the cyclical schedule from a colleague)
- Delete employee (removal from cyclical schedule or termination of employment)

3.1 Change in weekly work hours

To change the weekly hours for an employee, best practice is to move this employee to another rotation unit that matches the new weekly work hours. If no such rotation unit exists, a new rotation unit should be defined. For more information, see "Define rotation units" on page 2.

If the weekly work hours are changed for an employee assigned to a personal rotation unit (see "Define rotation units" on page 2, step 6), double-click on the shift hours in the related rotation line, and adjust them.

3.1.1 Move employee to another rotation unit

1. Go to **Employee** > **Employee management**.
2. Select - from the **Department filter** drop-down list - a department.
3. Select - from the **Name** drop-down list, an employee.
4. Select the **Schedule data** tab.
5. In the **Departments** tab, double-click on a line or click on  to change the rotation unit of a selected line. For example, from '*(None)*' to '*Rotation unit 1*' .
6. Click **OK**.
7. Now add the employee to a cyclical schedule. For more information, see "Add employee" on page 13.

3.2 Add employee

1. To add an employee to an existing cyclical schedule, first add the employee to an existing rotation unit. For more information, see "Link an employee to a rotation unit" on page 3.
2. Go to **Planning menu** > **Schedule management**.

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3. Click on the **Duty set** tab; in the frame bottom-right one or more cyclical schedules are shown.
4. Open the cyclical schedule that is in use.
5. In the **Employees** section, click with the right mouse button on an employee in a rotation line.
6. Select **Change employee**.
7. In the **Employees** section, select - on a new line - an employee from the dropdown list of employees and change the validity period if desired (by default the start date of the rotation unit assignment is today).
8. Click **OK**. The employee is added to an existing rotation line.

> You can also add a new row to a cyclical schedule. However, when adding a row, the pattern of the cyclical schedule is expanded and will take longer to complete. This will have an affect on all employees. Best practice is to only add rows inside a personal cyclical schedule.

3.3 Change employee

1. Go to **Planning menu** > **Schedule management**.
2. Click on the **Duty set** tab; in the frame bottom-right one or more cyclical schedules are shown.
3. Open the cyclical schedule that is in use.
4. Click on an employee with the right mouse button.
5. Select **Change employee**.
6. In the **Employees** section, fill in the closing date of the contract in the **To** column. The cyclical schedule will no longer be applied to that employee after this date has passed.
7. Add another employee on the next line.

   > Only employees that aren't yet assigned to this rotation unit can be selected.

8. Click **OK**.

3.4 Delete employee

1. (Optional) Fill in a closing date for the relevant employee in **Employee** > **Employee management** > **Schedule data** > **Departments** tab.

   > This step is only required when the contract is terminated and when this information isn't already imported from the HR system. Automatically, the cyclical schedule period for this employee will be

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closed. When you only want to remove this employee from the cyclical schedule, start with step 2.

2. Open the cyclical schedule via **Planning** > **Schedule management** > **Duty sets** tab > **Maintenance cyclical schedules** section.
3. Click on an employee with the right mouse button.
4. Select **Change employee**.
5. In the **Employees** section, fill in the closing date of the contract in the **To** column. The cyclical schedule will no longer be applied to that employee after this date has passed. Alternatively, remove the employee completely by right clicking the employee and selecting **Delete row**.

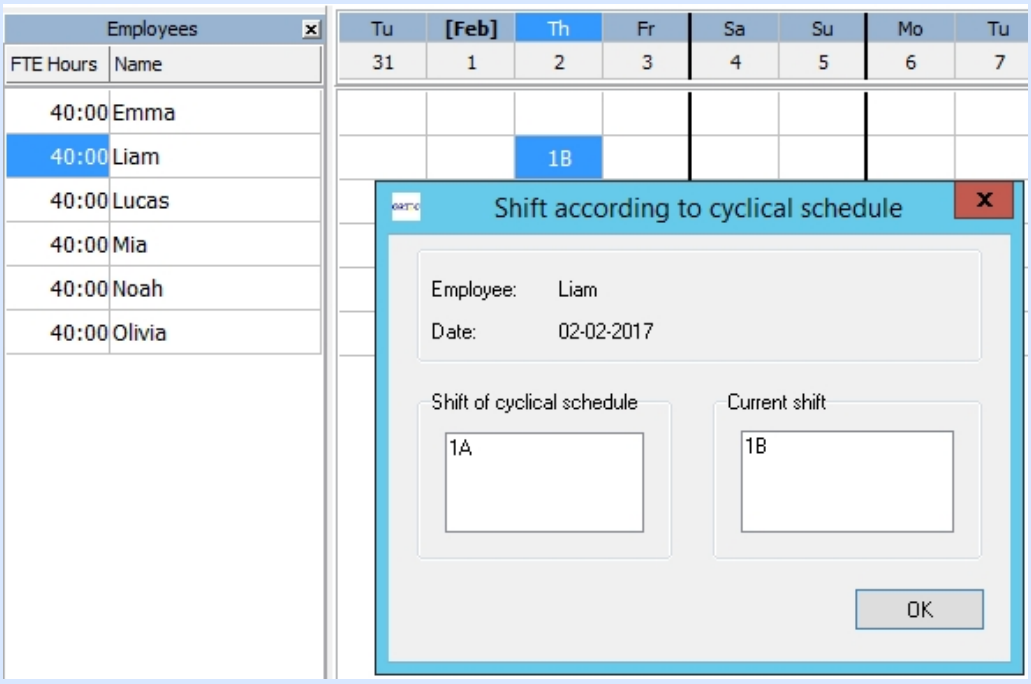
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4 Compare shift with cyclical schedule

In the master schedule plan board, it's possible to easily compare the assigned shift of an employee with the shift according to the cyclical schedule. A difference between the two might have an effect on remuneration, resource allocation or operational efficiency.

1. Open a scheduling period via **Planning** > **Schedule Management**. Select a schedule and click on  to open it.
2. Right-click on a shift and select **Shift according to cyclical schedule**.
3. A window opens with the shift information.

Example



Window that shows the assigned shift and the shift according to the cyclical schedule active on that day.

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