Resource management

Optimise your resources and schedule more efficiently.

Introduction

Keep track of your resources

This document describes the resource management feature, including how to use and incorporate two new interfaces: the **Resource planner** tool and the follow-up feature **Booked vs. registered work**.

This document will appeal to project managers and resource coordinators looking for an easy overview of employee allocations and opportunities to grant employees access to register time and set hourly rates – and to determine the level of detail they wish to allocate.

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Index

1 From workload to resources

Resource management is challenging for many organisations, as human resources are in play and should be planned, and many stakeholders may influence the process. Maybe more than one project manager share the same resources, overview of absence and the amount of work in progress on their projects.

That is why it should be easy to get an overview and plan and follow up on your work and change the existing plans if something comes up. In this way, you are still able to reach you deadlines.

1.1   An easy overview

Because TimeLog Project collects all relevant data and already booked allocations, it is possible to see the workload of the employees when creating a new project. This provides the project manager a realistic overview of the resource situation, and (s)he avoids double booking of the available resources.

In the **Resource planner**, the user gets an overview of all resource planning parameters and planning resources in detail based on project scheduling. You find it clicking on **Employees -> Resource planner**.

You can make all relevant operations from the **Resource planner** directly. It lets you attach new projects to consultants and start scheduling per day, week or month without having to open each individual project first. Project schedules are now automatically updated with resource plan data, providing a quick and easy overview of project scheduling using TimeLog Project's Gantt charts.

Furthermore, it should be easy to move time budgets from one resource to another without leaving the overall overview.

If it is not easy to get an overview, the planning is done differently from person to person, and the company loses the overall overview.
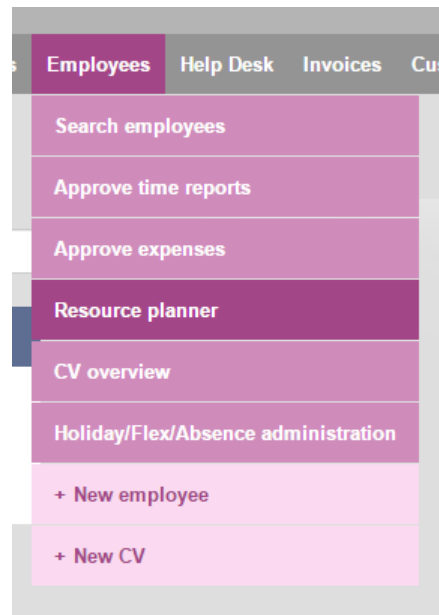
NB: The resource management module is available for all customers using TimeLog Project Business or TimeLog Project Enterprise editions.

Figure 1

Where to find the **Resource planner**

Booked vs. registered work (see Figure 2) is the tool for following up on last week's scheduled and finished work. It is also the tool for moving work in progress to an upcoming time at the click of a button. The report is found clicking **Reports -> Salary and staff reports -> Booked vs. registered work**.

Figure 2

Where to find **Booked vs. registered work**

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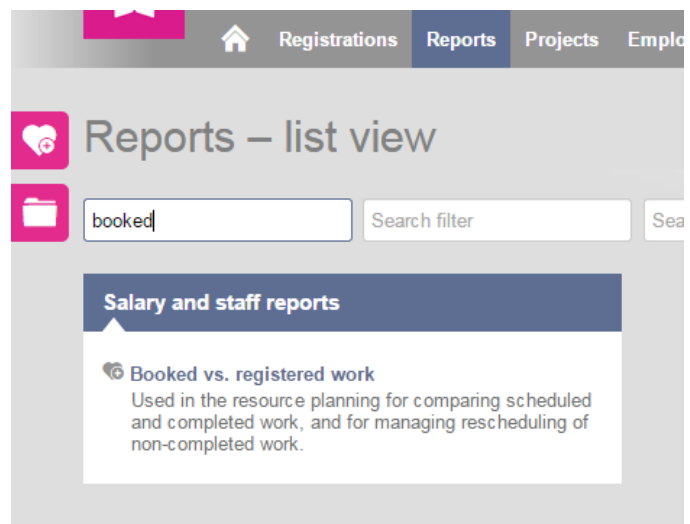
2 The resource planner in detail

The resource planner is the main interface of the Resource Management module. Using the classic TimeLog Project interface, it contains a filter section and a work section. The filter section is collapsible, however, yielding more space for the work section.

2.1   The filter section

The filter section (see Figure 3) is divided into the following subsections:

1. An employee/resource filter for employee allocation purposes
2. A project filter for choosing which of the employees' projects are visible in the resource plan

Figure 3

Filter section of the **Resource planner**

2.1.1 The resource filter

Filter section contains the primary options for creating a resource plan:

1. Which employees to include, with the option of pre-selecting a department
2. The chosen time period
3. The grouping (day, week, month, total) for presenting data

If you have enabled the extension module, TimeLog Departments, the list of employees by default contains all employees within the user's department and shows seven days grouped per day.

2.1.2 Legend

The legend is vital for understanding the background colours used in the resource plan.

The legend consists of four items:

- Absent during a time period (red background)
- Partially absent during a time period (yellow background)
- Calculated work (light blue background)
- Booked work (navy background)

Absent during a time period (red background)
In the event an employee is absent for an entire time period, e.g. a day or a week, due to holiday, leave, time off in lieu, etc., the time period will have a red background. Absent resources cannot be booked during these time periods.

Partially absent during a time period (yellow background)
In the event an employee is absent for part of a time period, e.g. two days in a week or half a working day, due to holiday, leave, time off in lieu, etc., the time period will have a yellow background. Partially absent resources can be booked during these time periods. In this case, booking the resource pertains to the specific days or hours in which the employee is present.

Calculated work (light blue background)
When a project is scheduled and resources are allocated, the resource planner is capable of automatically calculating resource workloads per task and distributing

these across the remaining duration of the task. This is called calculated work, as it does not require user entries in the resource plan. In addition, calculated work is dynamic, as the numbers are constantly updated based on project progress. Say four working days go by during which an employee does not track their time. This leads to an increase in calculated daily work for the remaining days because the amount of allocated work needs to be finished before the task's deadline.

Booked work (navy background)
Unlike calculated work, booked work is created from user entries in the resource plan only. Booked work can be created on a daily, weekly or monthly basis, and a task can hold any number of bookings during its duration.

Booked workloads in a task will remain unchanged, whether time for this task is registered or not. Similarly, it is possible to follow up on booked work by comparing it with finished work based on employee time registrations.

2.1.3 Project filter

As you see in Figure 3, the filter section contains a filtering feature for projects that are to be included in the resource plan. Projects may be filtered using any TimeLog Project parameter, including project manager, salesperson, project type and task type. In this way, you can choose e.g. which project type is relevant for your resource planning, thus creating a simple overview.

2.1.4 View options

The view options are designed to match the resource plan to your current data needs (see Figure 3):

- Show projects and tasks

- Show tasks in which employees are allocated with zero hours

- Show general projects

- Show tasks with time plans outside the selected period

- Show start and end dates and Show project manager

- Show calculated workload

- Show allocated work

Show projects and tasks

If this view is not selected, the resource plan provides only one line per employee and the total workload of that employee per time period and in total. Booking work within this view is not possible.

If this view is selected, underlying projects and tasks are shown too. In this view, you can book resources in the resource plan, as booking is always made at task level. By default, this view is always activated.

Show tasks in which employees are allocated with zero hours

Select this view if you would like to see projects and tasks in which employees are allocated with zero hours. This is typically used for when company resource management is vested in a resource coordinator in charge of managing projects based on the preferences of a project manager. In this case, the project manager typically allocates preferred resources with zero hours, after which the resource coordinator allocates hours as part of prioritising.

If this view is selected, underlying projects and tasks are shown too. In this view, you can book resources in the resource plan, as booking is always made at task level. By default, this view is always activated.

Show general projects

This view is for when you wish to include projects that do not require allocation or resource group management by the project manager.

In TimeLog Project, operation projects are typically created as general projects. Operation projects are seldom relevant in terms of resource management, so omitting general projects facilitates resource planning. By default, this view is deactivated.

Show tasks with time plans outside the selected period

By default, this view is deactivated. The resource plan shows only projects containing a part of the scheduling within the current filtered view period.

Sometimes, however, it is necessary to include projects with start or end dates outside the selected view period – for example if you want to move a project to an earlier date due to sudden extra capacity. Simply activate this view to make your project visible for scheduling.

"In TimeLog Project, operation projects are typically created as general projects"

Show start and end dates, and Show project manager

These views define whether particular columns are shown or hidden. By default, these options are deactivated to leave as much space on the screen as possible for resource planning.

Show calculated workload

This view determines whether to include calculated workload in the resource plan. By default, this view is activated. Deactivating it is normally done if you wish to create a resource plan containing only booked work, which is easier to read.

Show allocated work

This view defines whether the resource plan shows two columns with allocated work and remaining work, respectively (remaining work is allocated work minus registered work). These columns are useful if you use the resource plan for allocating employees for projects and reconciling planned work with allocated work.

2.1.5   Saved searches

You can save an unlimited number of searches as favourites, making future resource planning much easier:

Click **Save search**, and name your search. Once saved, your search can be opened at the click of a button.

2.2   The resource planner

In Figure 4, options for selecting the unit used in the calculations are presented in the scheduling area at the top. Options are **Hours**, **Percent**, **Workdays** and **Estimated revenue**.

- **Hours** show the number of booked hours.

- **Percent** shows how many percent of the resource's normal working time is booked. If a resource has 7.4 hours as normal working time, and 7.4 hours are booked, it corresponds to 100%.

- **Workdays** are calculated by dividing the number of scheduled hours with a reference value set in **System administration -> Reports -> Report settings** in TimeLog Project.

- Estimated revenue shows the expected value creating based on the chosen hourly rates. If an employee is booked with seven hours at an hourly rate of EUR 100, the overview will estimate a revenue of EUR 700.
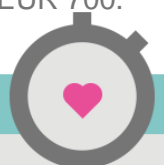
Below, a list of employees incl. relevant information is shown. As default, the following is shown under **Work in period (h.)**: **Avail.** (Available hours), **NPW** (non-planned work), **Calc.** (calculated workload), **Booked** (Booked work) and **Workload**, and the days of the week are shown to the right. **NPW** covers work that does not fit into the scheduling area, either because the deadline of the task(s) is in the past or because there are no more available calculated work periods in which to place the work.

The total numbers show the total of planned work per period, and the total of free capacity for the shown employees.

Figure 4

The resource planner

In the scheduling area, which is the matric with the chosen timeframe, the user prepare detailed schedules and work bookings. The resource coordinator is free to book work per employee, task or period and in workdays, hours or % of availability. If the capacity graph is shown, the user can easily identify any unexploited or over-allocated capacity at employee or group level.

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2.3   Using the resource planner

Using the resource planner is typically done in three steps:

1. Preparing the project list
2. Managing budget reconciliations and delayed work
3. Detailed scheduling per time period

2.3.1   Preparing the project list

The project list basically shows the projects with task periods within the chosen time period as well as employees with more than zero-hour allocations. In addition, projects with non-planned work requiring management are shown (further information below).

2.3.2   Expanding the project list

If some projects and tasks are missing from the project list, there may be several reasons. These are the most common:

Employees are not allocated to the task(s)

As a minimum, employees must be allocated to a task for the project or task to show on the employee project list in the resource plan. If the employee is not allocated to the project, allocation is possible directly from the resource plan. Click the context menu next to the employee, and choose **Add project to resource plan**. Now you can choose which projects and tasks each employee should be allocated to. Please note that if the added project does not have a schedule within the current view period, the project will still not be shown even if the employee has been allocated. The paragraph Schedules are outside the chosen time period below describes how to include projects and tasks in the project list even if the schedule is outside the chosen time period.

The project or task is deactivated

Select the project in the project module, and check whether the project and its tasks are set to **In progress/Pending/Offer/Paused**. The resource plan shows only projects or tasks with these statuses.

Schedules are outside the chosen time period

If none of the task schedules overlap the current view period in the resource planner, the project is not shown. To show the project, you can:

1. Open the project and adjust scheduling to include one or more tasks in the report's view period
2. Activate **Zero-hour allocations**. Projects and tasks are now shown regardless of whether they contain remaining work (allocated hours minus registered hours above zero)

Project allocations are zero-hour allocations

Projects or tasks including only zero-hour allocations are not shown by default even if the task schedules overlap the resource planner's view period. However, they can be shown by activating **Show tasks in which employees are allocated with zero hours** in the resource planner's view options.

Zero-hour allocations are typically used for allocating an event to an employee without considering the amount of time needed. Instead, this is decided in the resource planner.

2.3.3   Editable items directly from the resource planner

There are a number of options for adjusting projects directly from the resource planner, providing the benefit of not having to open projects to make changes.

In the project list, each employee line offers the possibility of adding new projects (see Figure 5 on the next page):

Each project line on the project list has the following options (see Figure 6 on the next page):

1. Allocate new employee to one or more project tasks.
2. Move allocation (the event) to another employee.
3. Edit project.

Each task line on the project list has the following options (see Figure 7 on page 14):

1. Allocate more employees to the task
2. Move allocation (the event) to another employee
3. Edit task
4. Adjust task scheduling (change start and end dates)

Figure 5

The short cut allows the project manager to allocate employees to more projects directly,

even if the employee is not allocated to the project beforehand.

Figure 6

Editing options at project level

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Figure 7

Editing options at task level

07-07-15 – 13-07-15	Work in period (h.)				
⊿ **Name**	**Avail.**	**NPW**	**Calc.**	**Booked**	**Workload**
▷ COL (Carl Larsen)	37,00				0,0
⊿ GOS (Gordon Sumner)	37,00		5,39	23,00	28,3
▷ ATC - Expence report			5,39		5,3
⊿ Seminar				10,00	10,0
Afholdelse					0,0
Evaluering					0,0
▷ Website					3,0
▷ MNI (Malene Nimand)					0,0
▷ MPB (Marianne Bertelsen)					0,0
⊿ PES (Peter Olsen)					8,1
▷ Seminar					9,1
⊿ Website					8,9
UI » UI Design					3,9
UI » UI Coding					5,0

View: ● Hours ○ Percent ○ Workdays ○ Estimated

Menu options shown in popup:
- ▷ Add new resources to the task ...
- ▷ Move allocations ...
- ▷ Edit task
- ▷ Task information ...
- ▷ Align allocated work with planned work ...
- ▷ Adjust timeplan ...
- ▷ Set calculated workload in the period to 0
- ▷ Remove bookings of 0 and restore calculated workload
- ▷ Cancel

2.3.4   Reconciling project plans with resource plans

Now that the projects are on the list, we are ready to move on. Before starting the detailed scheduling of time periods in the resource plan, however, we need to check potential budget conflicts and non-planned work. For this purpose, we use the **Work in period (h)** section (see Figure 4 on page 10).

The section summarises the number of hours allocated to each project within the view period and according to the underlying schedules, booked work and non-planned work.

The section contains the following columns:

1. Avail.   Availability during the time period
2. NPW   Non-planned work from previous time periods
3. Calc.   Calculated work during the time period
4. Booked   Booked work during the time period
5. Workload   Total workload per employee during the time period

Avail. (Availability)

Availability during the time period is the number of hours available to the resource planner. Availability is calculated as employee normal working time (working hours per day according to normal working time as per employee timesheets) minus scheduled absence. Scheduled absence includes holiday, leave and similar time registrations for the future made with absence codes. Additionally, public holidays are subtracted according to local calendars.

NPW (Non-planned work)

NPW shows how much work is left for overdue events or where remaining work is not automatically placeable in the remaining duration of the task. As such, NPW constitutes work that takes up employee time, but which is not shown in the workload report, as available time periods have not yet been decided on.

NPW ensures that overdue events are not forgotten during future scheduling.

Calc. (calculated work)

Calculated work is a dynamic calculation performed each time the resource planner starts. The calculation is based on each task/allocation shown in the resource plan.

The calculation is based on the following three parameters:

1. Remaining work for the allocation in question (allocated hours minus registered hours)
2. Availability during the remainder of the task (from today until the task ends)
3. Booked work during the remainder of the task (supersedes calculated work)

Booked (Booked work)

Booked work is work that has been entered into the resource plan by the resource coordinator. As regards the calculation of daily workload, booked work supersedes calculated work. In other words, if five hours of work are booked at a certain date, the availability of that date will no longer factor in the calculation of calculated task work. Consequently, calculated work is allocated to other non-booked dates.

In cases where calculated work is a shortcut to creating long-term resource plans, booked work is the short-term way of increasing the resource plan's level of precision. As a result, longer lasting projects typically start out as purely calculated projects in the resource plan, as no final decision has been reached regarding which days are booked for which tasks. Rather, a general schedule for the project has been laid out.

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Then, as the project's tasks are nearing completion, it is time for detailed scheduling. As the pieces of the detailed schedule fall into place, an increasing amount of scheduled project work is moved from the calculated to the booked (confirmed) column.

Workload
The **Workload** column contains the sum of **NPW**, **Calculated work** and **Booked work**. As such, workload is a specific figure of just how many hours each employee is expected to put in during the time period shown.

An employee might show free capacity during individual time periods in the resource plan, but at the same time be severely overloaded according to the figure in the workload column. This type of situation arises when employees have an excess of **NPW** from previous time periods that has yet to be entered into the resource plan, but is considered a workload on the employee during the coming work period.

2.3.5   Data conflict resolution
The **Work in period (h)** section contains three key figures, which are effective in checking for data conflicts in non-matching project budgets and scheduled work as well as **NPW** to be managed.

NPW column
If a task or project contains NPW, the user must decide when the remainder of the work can be finished or whether it is simply not meant to be finished (the task must be finished).

The Allocated (Alloc.) column
This column is only visible if **Allocated work (h)** is activated.

If the amount of work booked to an allocation exceeds the number of remaining hours on the allocation, the remainder is highlighted in red and shown with a warning triangle indicating that booked work exceeds remaining work.

Remaining work (Rem.)
If the amount of registered work exceeds the amount of allocated hours, the remainder is highlighted in red and shown with a warning triangle indicating that the number of allocated hours has been exceeded.

Once these data conflicts are resolved, you can proceed with detailed work scheduling.

"Workload is a specific figure of just how many hours each employee is expected to put in during the time period shown"

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2.3.6   Detailed resource planning

Once the project list is complete and any data conflicts resolved, it is time to have a look at the current resource plan, prepare detailed work schedules, and enter data as booked work. Ultimately, resources need to be optimised but not overloaded. Equally important is updating project schedules with end dates for individual tasks.

In project-oriented organisations, resource management typically progresses like this:

1. The project manager creates the project and breaks it down into tasks (events).
2. The project manager adds resources with budgets to the project tasks.
3. Using the resource planner, the resource coordinator checks whether calculated work per day, week or month corresponds with other projects, and then makes any adjustments directly in the resource planner (details are described below).
4. In case project schedules start sliding or budgets are exceeded, the resource coordinator can extend deadlines, reallocate tasks, increase budgets and re-plan work in progress directly from the resource planner.

To a certain extent, the resource plan governs the project schedule once it is up and running and daily prioritisations are made.

2.3.7   Working with the resource planner

The resource planner contains a number of figures and information, and if you are not familiar with these, it can seem a bit confusing. The following is a walkthrough of the elements found in the resource planner.

Reconciling total workload in the view period

Before any detailed scheduling, the total workload in the view period needs to be adjusted to prevent exceeding availability. The total workload is shown next to each employee in the **Workload** column. If the amount has a red background, the employee's availability is exceeded, and if the amount has a yellow background, the employee's availability is almost exceeded.

To decrease the total workload on the employee, you can do the following:

1. Move allocations to other employees (use the context menu in the project list)
2. Close tasks that are no longer active
3. Extend/move schedules (use the task context menu in the project list)
4. Prioritise the employee's tasks for the time period by de-prioritising other tasks directly in the resource plan – more on booking work in the resource plan)

Once the total workload for the view period is equal to or below the number of available hours, it is time to reconcile sub-periods (days, weeks or months). Enter the preferred grouping of sub-periods into the resource planner's filter section.

Reconciling sub-periods

Reconciling sub-periods is done directly in the resource plan by overwriting calculated or booked work with the final number of hours. This is done by booking at task level, which is then summarised at project and employee level.

On each task line, you can book per working hour, working day or workload percentage at sub-period level.

Light-blue backgrounds indicate calculated work, while navy backgrounds indicate booked work entered by the user. Light-blue or navy backgrounds also indicate the location of the underlying schedules, allowing you to view any bookings that extend the schedule.

For detailed scheduling purposes, the capacity indicator is a useful tool. Negative figures with red backgrounds indicate that the amount of planned work exceeds the time available, whereas positive figures on green backgrounds indicate free employee capacity.

Next, the user adjusts each task's planned work during the sub-period to fully optimise employee capacity (the capacity indicator is neither red nor green) bearing in mind the number of hours allocated for each task.

To delete a booking, simply delete the figure in the field (clear the cell). Finish by clicking Save, which completes the booking of work.

In the event work has been booked outside a task's time period, the period is automatically extended to make room for the booking.

Finally, the underlying allocations may require adjusting to cover the completed resource plan. Click the **Allocated work (h)** section, and point your mouse to any red figures; a warning message will inform you if it is a case of planned work exceeding allocated hours.

2.4   Do you use the TimeLog Tracker for Outlook?

When you book calendar events in Outlook, the resource planner is automatically updated with the information you enter on the event. You decide which project and which takes you want to track time on, and the future events will be visible in the resource planner.

You thereby see the actual workload for your employees, and you avoid unexpected surprises in the resource planning. Besides that, you get an automatic revenue forecast for the coming period, which provide insights on how much you can expect to invoice based on the planned events in Outlook.

If there is a little triangle on the number of hours, it means that one or more events from Outlook have been transferred and/or that a manual booking was made.

If you have registered more hours in Outlook than you have booked in the resource planner, this is the number of hours you will see in the resource planner. The hours are not added up, so if you book more hours in the resource planner than you have registered in Outlook, this is the number of hours you will see in the resource planner.

An example: If you register 4 hours in Outlook, and you have already booked 2 hours manually in the resource planner, the number of hours shown in the resource planner will be 4. You will still be able to see the registration from Outlook and the manual booking from the resource planner in the list below.

3 Follow-up: Booked work vs. registered work

In addition to the resource planner, the module contains a newly developed tool for evaluating schedules. The name of the tool is Booked vs. registered work and is located in the menu **Reports -> Salary and staff reports -> Booked vs. registered work**. Its purpose is to target ongoing follow-ups on agreed weekly schedules per employee – the perfect model for any SCRUM project.

The tool is based on work booked per week using the resource planner, which is compared with registered work for the same week. This makes follow-ups on the completion of booked hours easy, and it shows non-booked hours, which a given employee has worked on in a given week.

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Using this view, individual follow-ups on work schedules with employees, heads of department members or project workers are made easy.

For employees who have yet to complete their agreed bookings, upcoming week schedules usually need to be reconsidered. That is why the tool includes a feature for rescheduling remaining work (Difference (h)) at the click of a button.

The feature allows the user to move the work in question to another day or time period, or close the task if the work is completed.

Here is an outline of the workflow:

1. The resource coordinator launches the tool **Booked vs. registered work**
2. Booked work for the past week, which has yet to be completed, is transferred to a future day or time period.
   Booked work for the past week, which has not been completed and does not require completion, is not transferred to the coming week. It is possible to ignore **NPW** by right-clicking the arrow beside the number in the column **Remaining (h)**
3. The resource coordinator opens the resource planner and trims the total and periodic workloads to a suitable schedule, as described earlier in this document

Please note that only booked work is eligible for follow-ups, as calculated work is automatically pushed ahead if not completed. Retrospective analyses will not show whether calculated work is unable to be pushed ahead due to a lack of available time periods. The NPW column in the resource planner, on the other hand, will.

"The tool is based on work booked per week using the resource planner, which is compared with registered work for the same week"

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