



BSCW 7.5

Manual

June 2022



BSCW – Basic Support for Cooperative Work, Version 7.5

<http://www.bscw.de/>

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OrbiTeam Software GmbH & Co. KG

in cooperation with

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1 Overview

1.1 How does BSCW benefit me?

BSCW supports collaboration with your partners via the Internet, in your intranet or in a network with your business partners (extranet).

BSCW provides *shared workspaces* where groups can store, manage, collaborate and exchange their documents, chats, tasks, e-mails, URLs, etc.

The main advantages:

- With a BSCW workspace you can share documents within workgroups - independent of the computer systems the members are working with.
- BSCW also offers everything you need for distributed collaboration. Essentially, these are chats, task management, effort estimation and scheduling, and audio-video conferencing.
- You do not need to install any software to use BSCW. All you need is one of the market-leading, freely available web browsers.
- You can access BSCW workspaces, browse folder overviews and save documents on your own computer.
- BSCW keeps you informed about all events in common workspaces that interest you.

1.2 What do I need to use BSCW?

The technical requirements for working with BSCW are extremely low:

You need a *personal email address* to register as a user at a BSCW server.

To access shared workspaces and save documents from them to your local computer, you need a modern *web browser* with JavaScript and cookies enabled. Suitable browsers include the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, Opera, and Apple's Safari (for the current minimum browser version requirements, see 3.5 "Configure browser" on p. 48). Drag-and-drop document upload is also supported by these browsers.

1.3 More information about BSCW

Visit the BSCW homepage at <http://www.bscw.de/>. Here you will find, among other things, further information about the latest BSCW version, areas of application and licensing issues, a list of reference installations and projects, and under the heading 'Support' a series of frequently

asked questions about BSCW with our answers. You will also find information on how to try out BSCW on a demo server.

1.4 The operation of an own BSCW server

You may install your own BSCW server if you are running a suitable web server under Unix, Linux or Windows Server.

The BSCW server software is distributed by OrbiTeam Software GmbH & Co. KG, Bonn, under license from the Fraunhofer Institute for Applied Information Technology (FIT).

You may download the BSCW server software from <https://www.bscw.de/download> and use it free of charge within the evaluation period of 90 days. The use of own BSCW servers is subject to licensing from the 91st day on. BSCW licenses are distributed by OrbiTeam Software GmbH & Co KG.

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Acknowledgement

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The JavaScript calendar integrated with BSCW is based on FullCalendar <http://fullcalendar.io/> © 2016 and is licensed under MIT License <https://github.com/fullcalendar/fullcalendar/blob/master/LICENSE.txt>

Direct editing of BSCW documents with local editors and applications is based on the Zope External Editor Client (Copyright © 2008 Thierry Benita, Jean-Nicolas Bes, atReal, Casey Duncan and Zope Corporation, <http://www.zope.org/>), which is not part of the BSCW software but has to be installed separately by the user. The Zope client is licensed under the Zope Public License (ZPL).

For faster document retrieval, BSCW optionally supports the integration of the indexing software PyLucene (<http://lucene.apache.org/pylucene/>). PyLucene is provided by the Apache Software Foundation under the Apache License.

BSCW further includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

2 BSCW Quick Start

This overview is intended to give you a quick start to using BSCW. The basic layout of the user interface is shown in the following graphic.

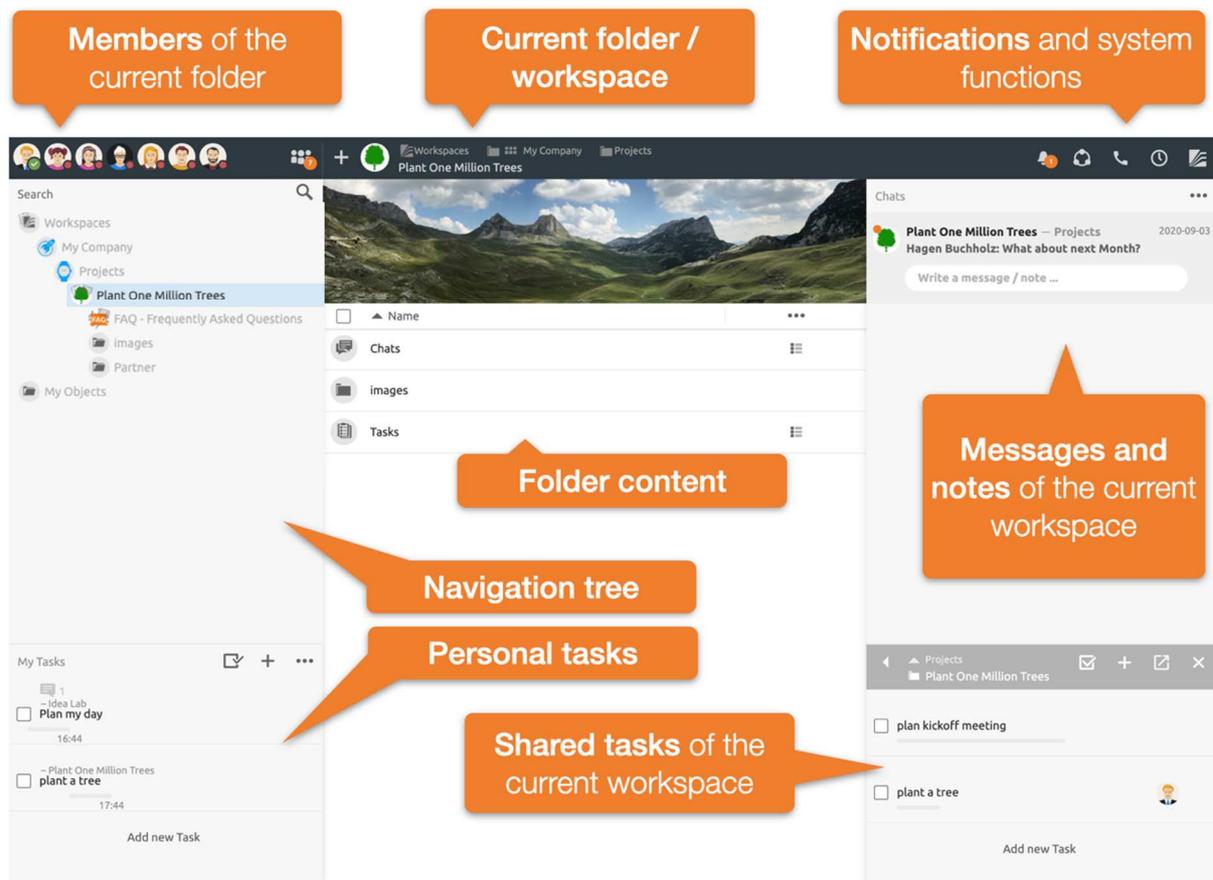


Figure 1: Overview BSCW7 user interface

At the top is the header with information about the current folder, notification indicators and access to general features like sharing live information about tasks in BSCW, Audio-video conferencing history and automatic time tracking or the main menu.

On the left side you will find the navigation tree and your personal task list. In the middle you can find the content of the current folder. On the right side you will see an overview of all messages, notes and tasks of the current folder and all subfolders.

2.1 Shared folders

The central concept of BSCW is the *shared workspace*, i.e. a folder with a specific group of users - represented by the group icon  who can access the objects in this folder and contribute new objects.

BSCW works with folders as you know them from the operating system of your computer. As a registered user of a BSCW server you may create new private folders. Additionally, BSCW allows you to invite further users to each folder and thus share the data of the folder and all subfolders with others.

The user interface is shown in Figure 1: Overview BSCW7 user interface BSCW displays the contents of a folder or a workspace in the center part. Above this is a header part that contains the members of the current folder, the folder path and general notification and function buttons. On the left side the *navigation tree* is displayed and below it the personal task list. The right side shows the messages at the top and the tasks of the current workspace below them.

Chapter 4.1 "The standard user interface" on p. 51 explains the structure of the folder page in detail.

2.1.1 Objects of a folder

A folder in BSCW basically behaves like a local folder on your computer. It may also contain the usual documents and subfolders. In addition, you may add further objects to the BSCW folder.

- Chats and notes
- Tasks
- Search folder or saved search
- Calendar
- Template folder
- Folder cover / description
- Wiki or website folder
- Flow Folder
- Date coordination
- Contact list

You can add new objects using the button  in the header.

All these objects can be shared with other users. You can apply a variety of actions to any object in BSCW. For example, folders may be compressed, documents may be frozen or shared via e-mail link, and much more. All these actions can be found in the *context menu*  of the respective object. Open the context menu  of an object by right-clicking on the corresponding element.

Note: Some of the objects and actions described here may not be available to you in all your workspaces if you lack the necessary rights (see 5.2 "Access rights and roles"), or if they have generally been hidden on your server by the administrator.

2.2 Header

The *members* of the current folder are displayed in the header on the left. The members button allows you to manage the members of the current folder, invite additional members or manage roles and rights.

The current folder name is displayed in the center of the header Figure 2: Header bar of the BSCW (see Figure 2: Header bar of the BSCW). You may assign a separate icon to each workspace - this then also applies to all subfolders.

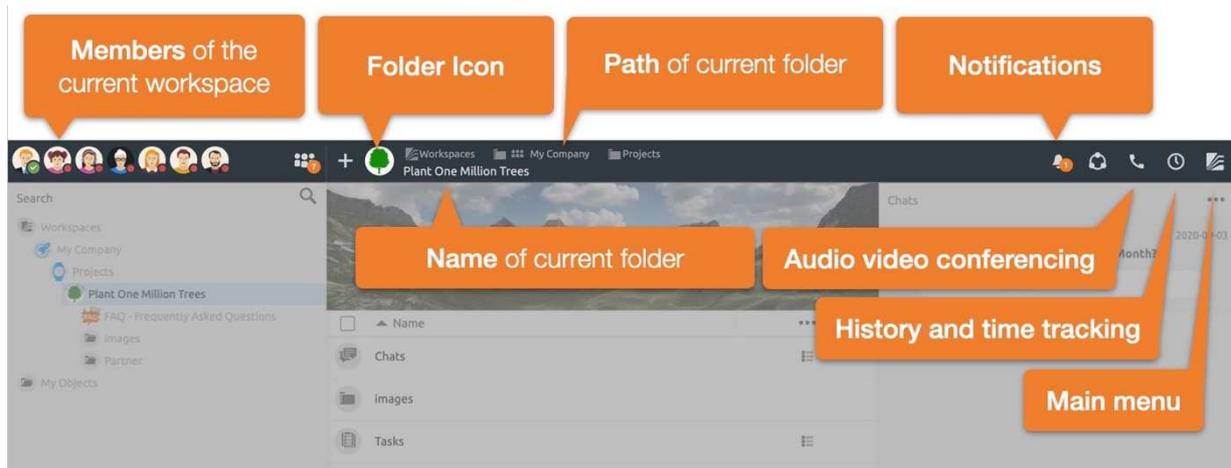


Figure 2: Header bar of the BSCW

While the information and function buttons on the left and in the center of the header bar essentially refer to the current folder, you will find basic functions on the right side. These include notifications about the latest news, control of audio-video conferences, functions related to time tracking, and the main menu.

2.3 Latest news and tasks

BSCW shows an overview of all *conversations* and *tasks* located in the current folder and all subfolders on the right hand side.

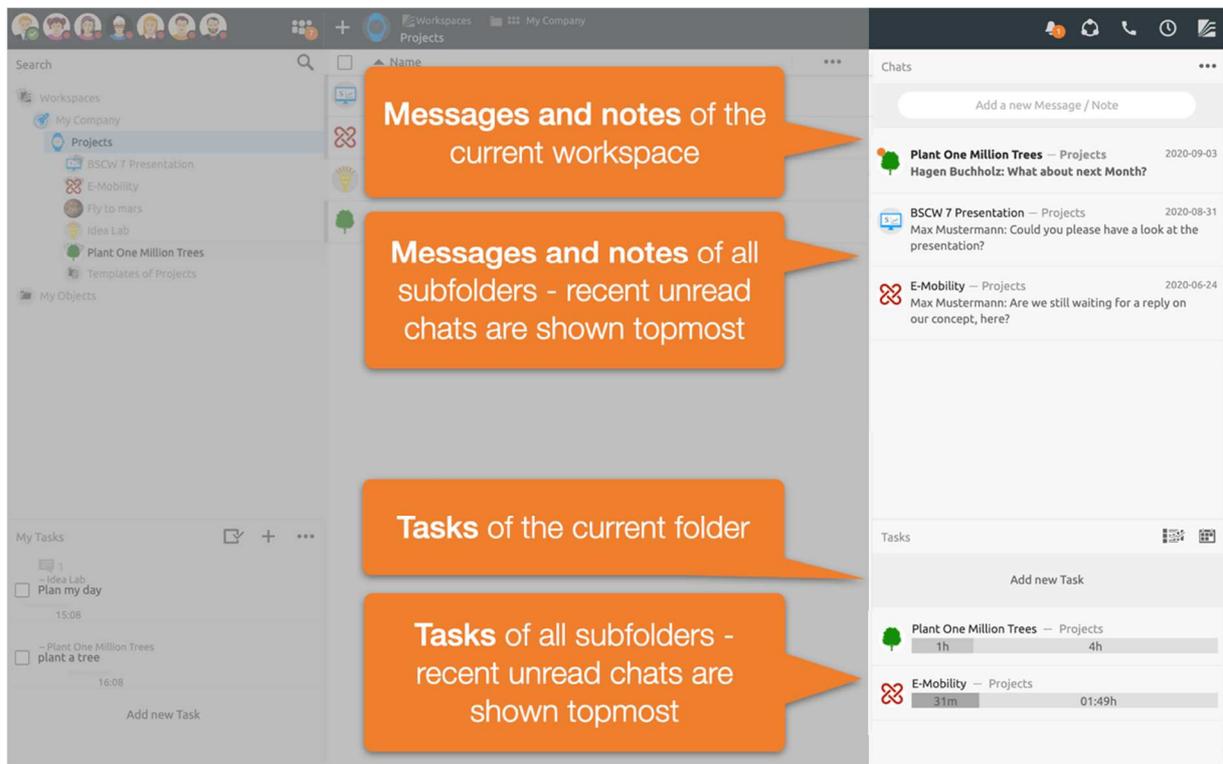


Figure 3: Latest news and tasks

The messages or tasks of the current folder are always displayed first. Below that are the newest topics of all subfolders. These are again divided into unread and read.

Use the possibility to assign your own icons to folders. These icons are also used for all subfolders, making areas more quickly recognizable. This is especially useful in overview views, for example, to quickly assign tasks or messages.

2.4 Chats and notes

The message overview of the latest messages takes you to individual *chats*. A *chat* consists of several messages and can in turn contain further *chats*.

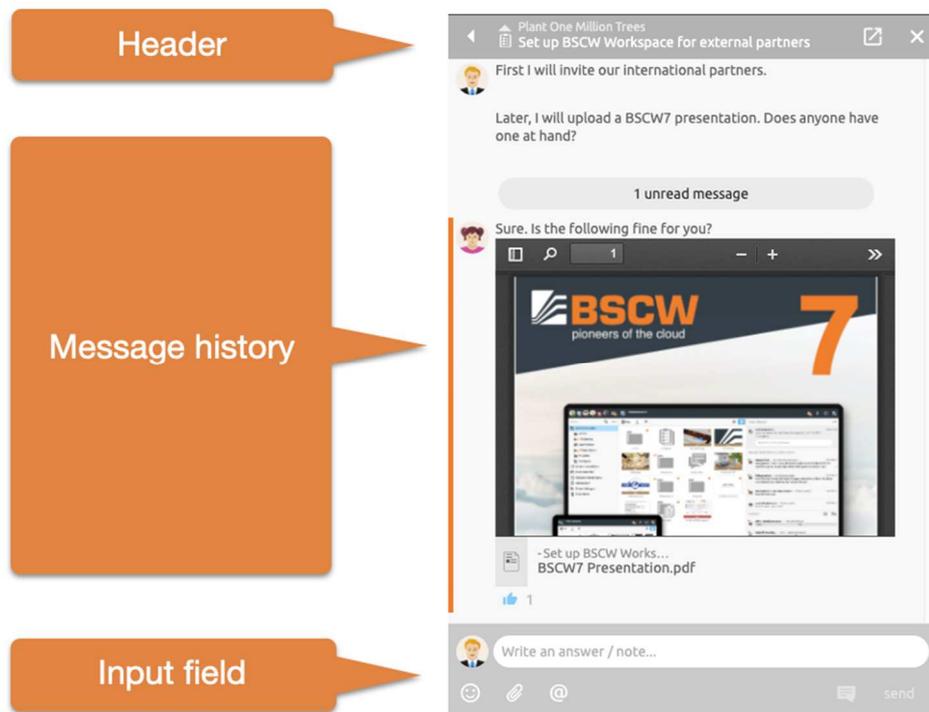


Figure 4: Message list

The title of the chat is displayed in the *header bar* - the title can be edited directly here. You can also switch to the parent folder or chat.

In the message history, all messages are mapped chronologically from the oldest (top) to the newest (bottom).

Add a new message to this *chat* using the input field. If desired, your messages can also be formatted in the process.

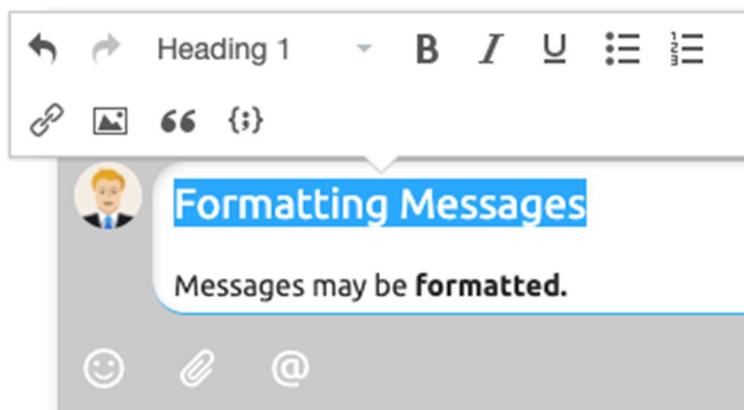


Figure 5: Message texts can be formatted

To do this, first select the text to be formatted. A menu appears that can be used to specify the formatting. Alternatively, *Markdown* is also supported.

Add references to any BSCW objects such as images, videos, folders, tasks or other messages simply by *dragging and dropping* them into messages.

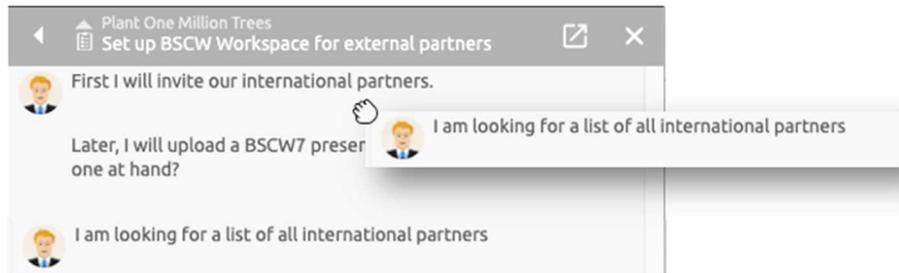


Figure 6: Thematically nesting messages

In BSCW messages may also be *dragged and dropped* into other folders or moved thematically into each other. A message element with a submessage is shown below.

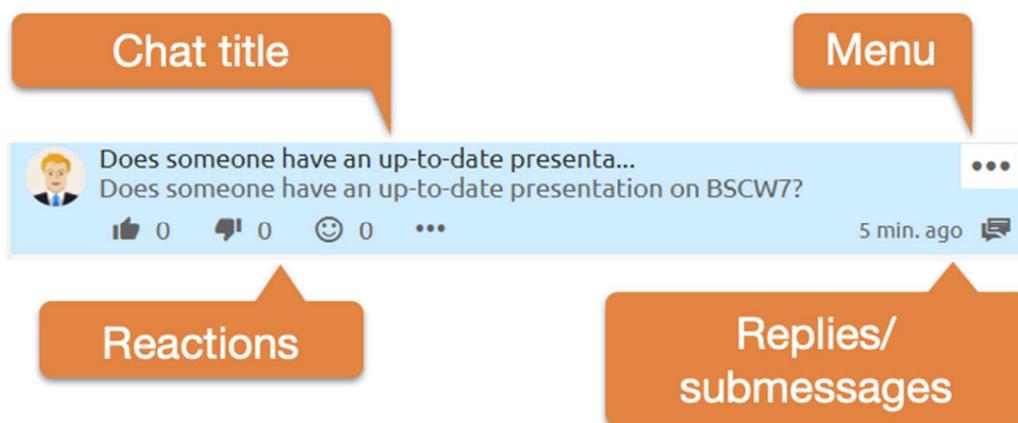


Figure 7: Message element

Messages usually show the author and the message text. If a message contains submessages or replies, the *title of the chat* is also displayed. As soon as you position the cursor over a message, further details become visible.

Below each message you will find icons for *reactions*. Reactions provide users with an easy way to signal feedback on messages. Thus, they can also be used as a *voting tool*.

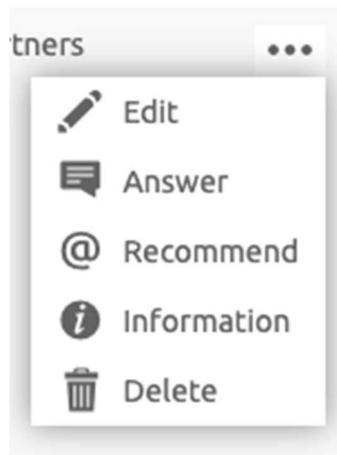


Figure 8: Message element menu

Using the menu, you can edit your own messages at any time, provided that this right is not blocked for you on the corresponding folder. It is also possible to *recommend* messages to other members. They will then receive the message text as e-mail with reference to the original message in BSCW. Via *Information* you get, as with any other BSCW object, further details about when messages have been created, edited, or read.

Chats can also be used for ad-hoc surveys or to determine a best answer, more at 2.12.1 Using BSCW elements in the description.

2.5 Tasks

The overview of all task packages is represented by progress bars that take you to the list of individual tasks. Behind each progress bar there are several subtasks, which in turn can consist of further subtasks.



Figure 9: Task overview and progress bar

At the top, the progress of the task list of the current folder is displayed. Below that are the latest tasks of all subfolders. The newest tasks of the subfolders are again divided into unread and read. Unread tasks appear first, below them are read tasks. A click on a progress item opens the corresponding task list and switches to the corresponding subfolder.

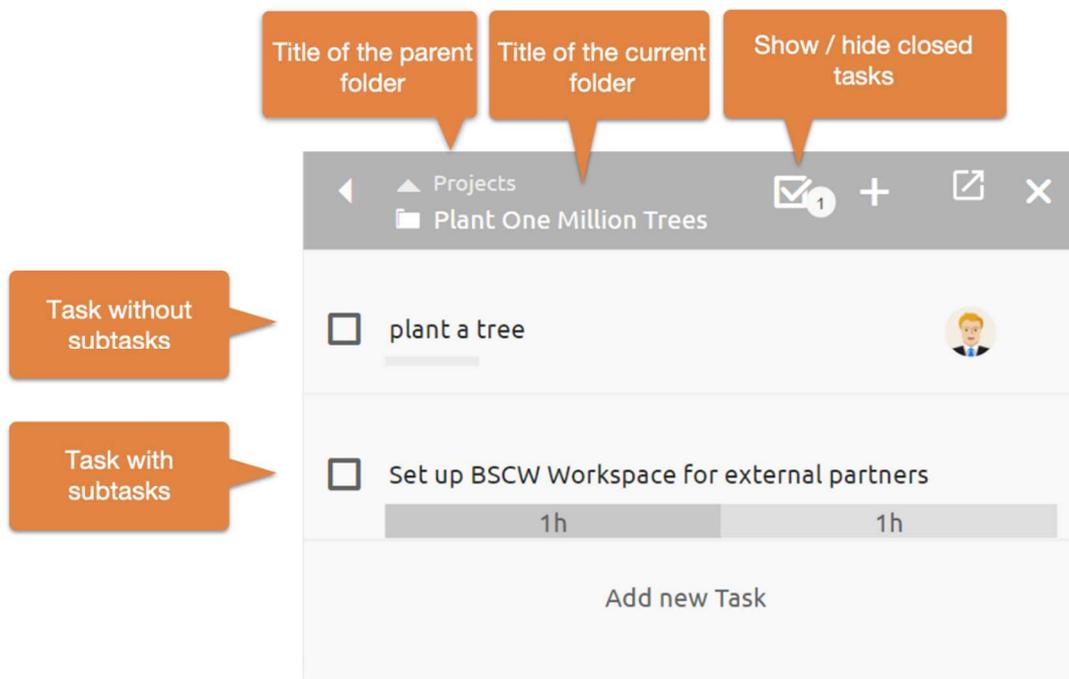


Figure 10: Task list

The task list consists of the list header and the contained tasks of this folder. If tasks in turn contain subtasks, this is indicated by a progress overview of the closed (left), in-progress (center) and open tasks (right).

Each task may in turn contain all BSCW objects such as documents, messages, appointments, a schedule or a description. In the task element, any contents are displayed as follows.

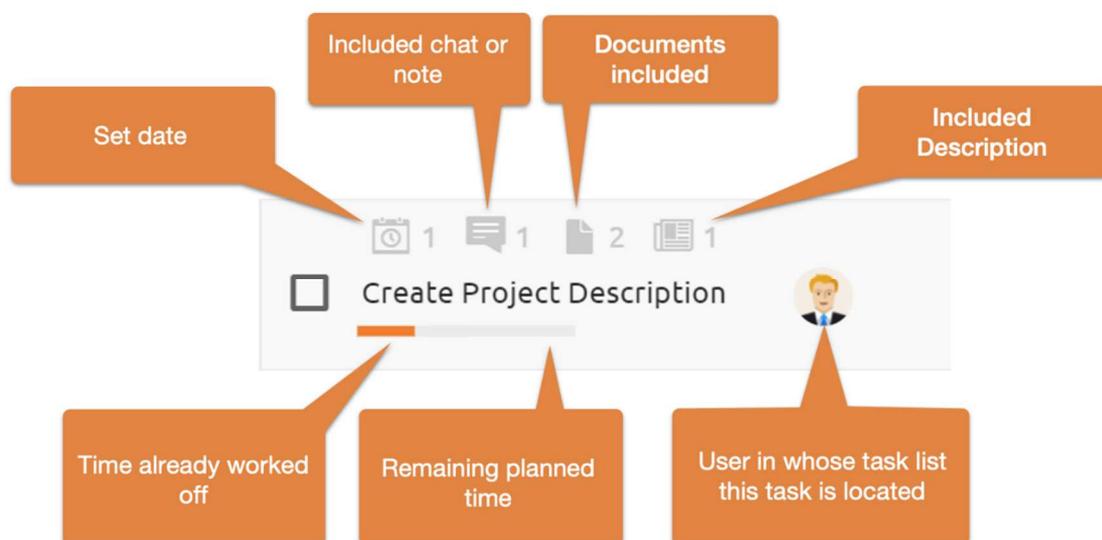


Figure 11: Task element

Clicking on one of the display icons or on a free area of the task element opens the contents of a task. In the center of a task element, the *title* is displayed. This can be edited directly with a mouse click. The bar below the task title shows the time already worked through in orange and the estimated remaining time in gray. The elapsed times or the *estimated duration* can be adjusted by clicking on the progress bar or via the **•••Estimated duration** menu.

Note: While creating new tasks, the Estimated Duration can also be set via keyboard. To do this, finish entering the title with Ctrl+Enter (Cmd+Enter) to open the *Estimated Duration dialog*. Further on the input field of the duration gets the keyboard focus, so that you can immediately continue with the input of the time. Finally, the time unit can be adjusted using the keyboard shortcuts "h" or "m".

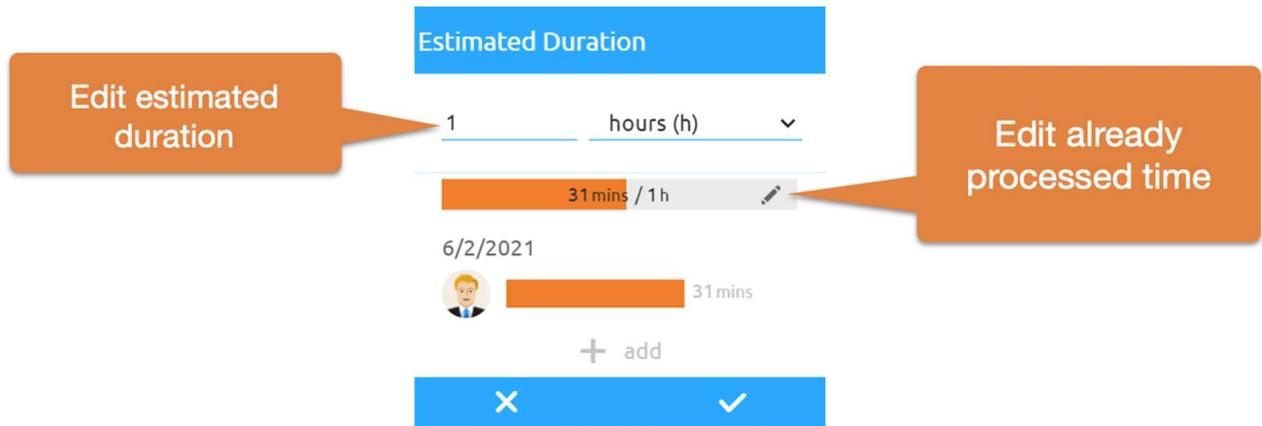


Figure 12: Edit estimated duration

If the mouse pointer is over a task element, further editing options become visible.



Figure 13: Edit task elements

You can assign an appointment to each task. Based on the time of the appointment and its estimated duration, it can also be displayed in their calendar.

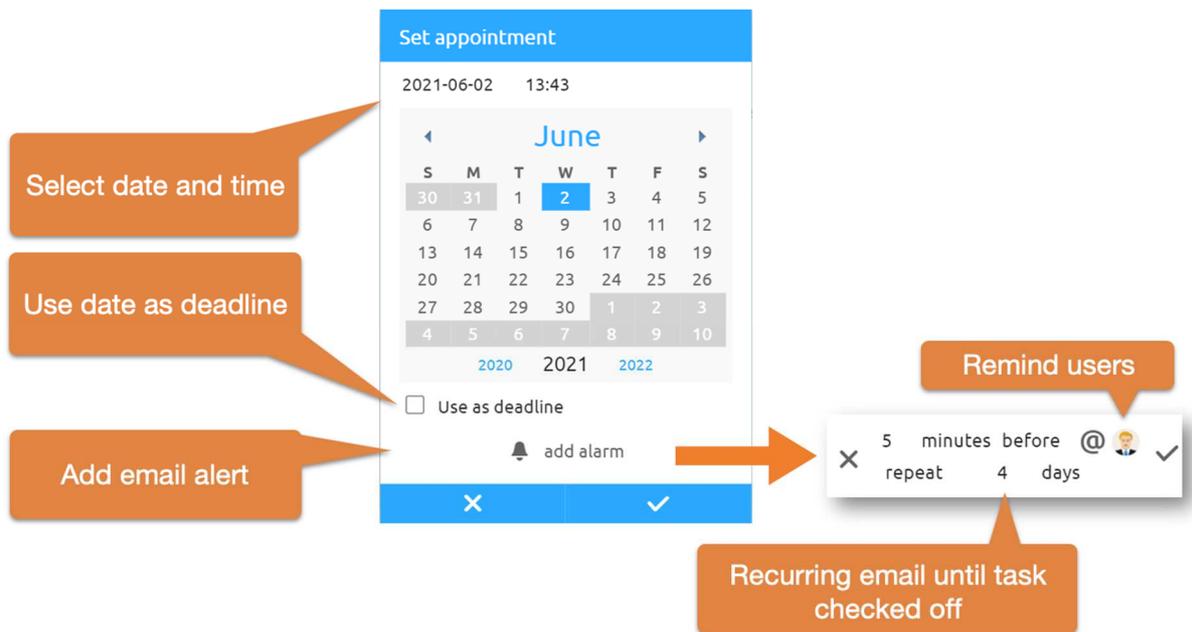


Figure 14: Set deadline or time limit

Add an alarm to an appointment to ensure that the task is processed. In this case, the selected recipient(s) will be reminded of the task by e-mail on the selected date. Here it is possible to set recurring email reminders at a certain interval after the deadline has passed until the task is completed.

Sort tasks into the desired order using DragNDrop. Here, each free area of a task element serves as a drag area. While you are reordering a task, the blue line marks the insertion position.

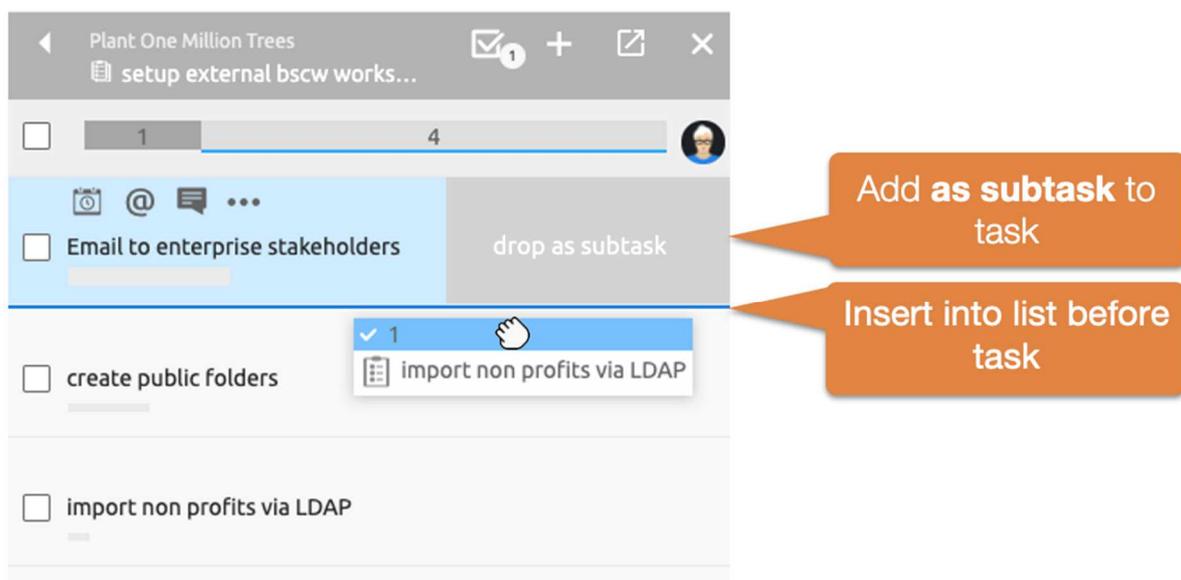


Figure 15: Sort task list via dragNDrop

Note: You can also drag tasks into other tasks and drop them *as subtasks*. To do this, drag the task into the *Subtask* area at the side of the target element.

Assign your own tasks by dragging and dropping them into your *Personal Task List*. As soon as you press the "Start Task" button, the working time will be recorded automatically.

Additional functions can be called up for each task via the Task menu. **More information menu** provides detailed information about access rights and an event history.

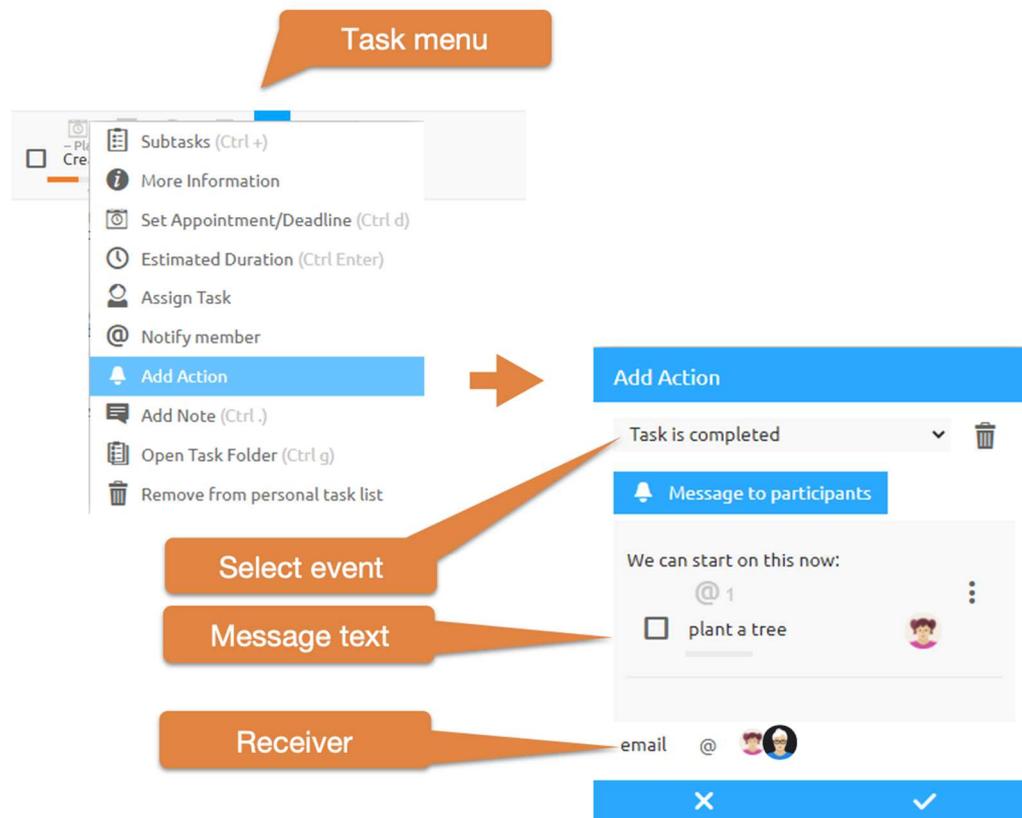


Figure 16: Email notification when task is completed

The **Add Action** entry in the **menu** offers the possibility to automatically send a message to specific users linked to the closing, opening, starting or stopping of a task. Other BSCW objects may also be included in this message.

2.5.1 Personal task list

Use the personal to-do list to make your day more efficient. It is recommended to plan the upcoming tasks at the beginning of a working day. Use DragNDrop to sort the task list. As soon as you start a task, it will be automatically placed at the top of the list.

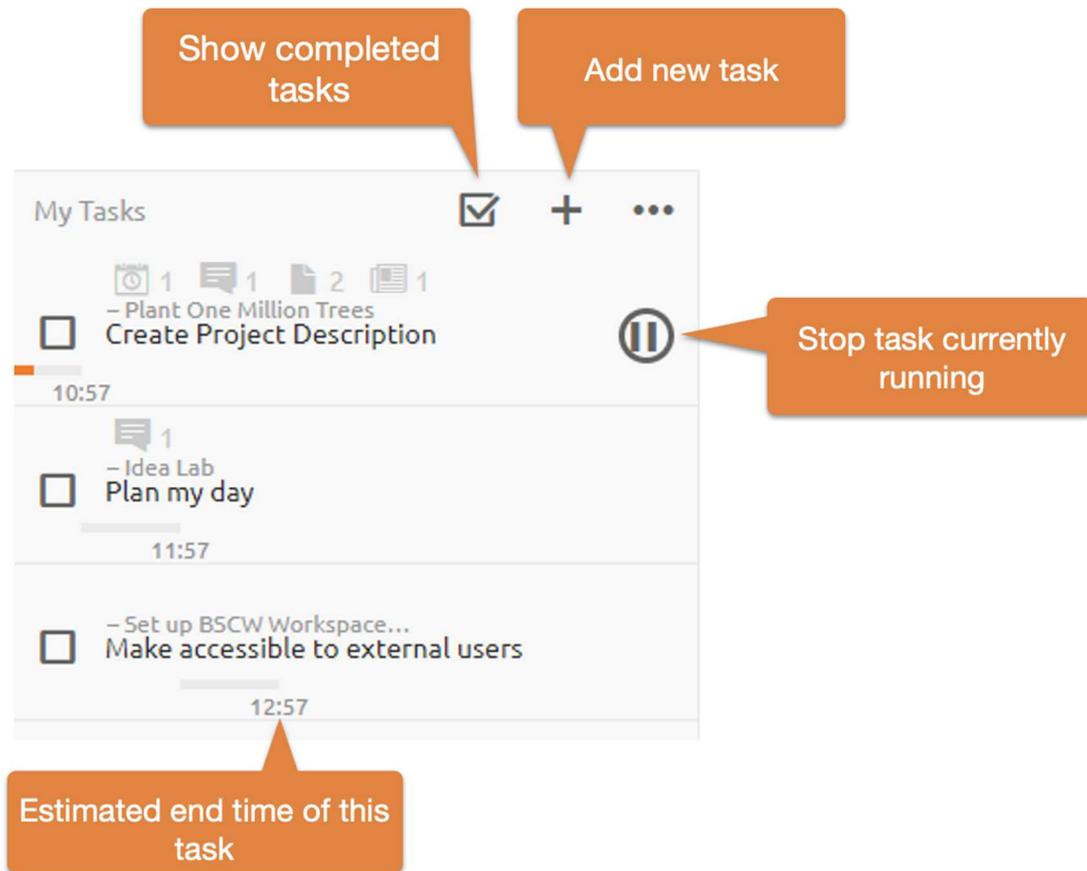


Figure 17: Task items menu

The *Personal Task List* also shows you the expected end time of the tasks based on the scheduled times, the previous tasks and the already worked times. According to the expected end time, the visual display of the duration is adjusted.

2.6 Focused work

While you are working on a task in BSCW, the system switches to *Focused Work mode*. To reduce interruptions, simple notifications are withheld in this state until you stop working on the task.

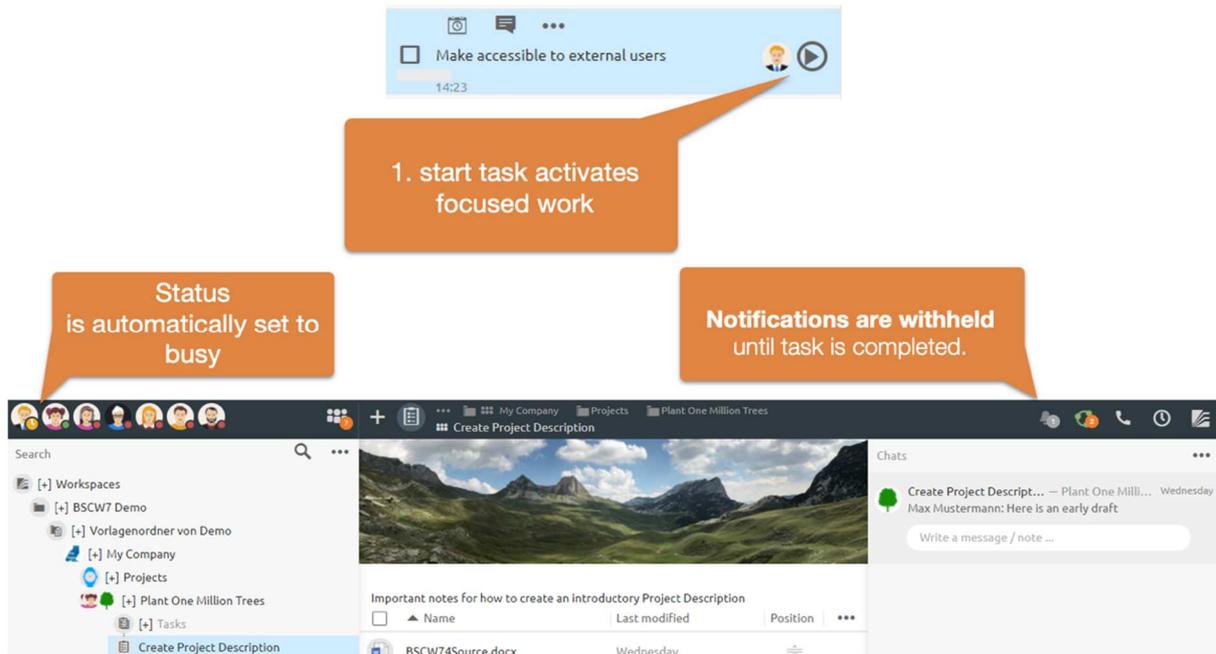


Figure 18: Focused work

Only messages recommended by @ or calls to audio-video conferences are displayed in the system. Focused work can be disabled via the Notifications menu, as shown below.

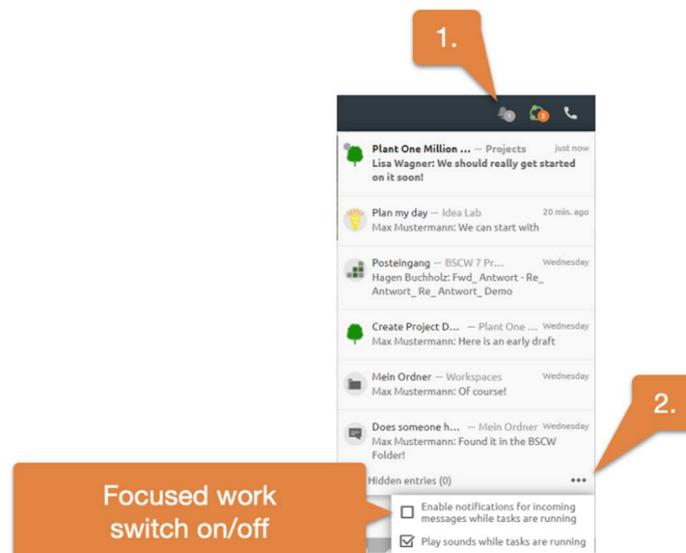


Figure 19: Disable focused work

2.7 Shared calendars

You can create shared calendars in any folder or workspace. All shared calendars can be combined in the personal calendar. It is also recommended to synchronize calendars with your local calendar application via CalDAV.

To integrate a BSCW calendar into your local calendar application like Outlook, Thunderbird Lightning or Mac calendar, you need the Internet address of the calendar. You get this address by selecting Copy Internet Address in the context menu of the calendar.

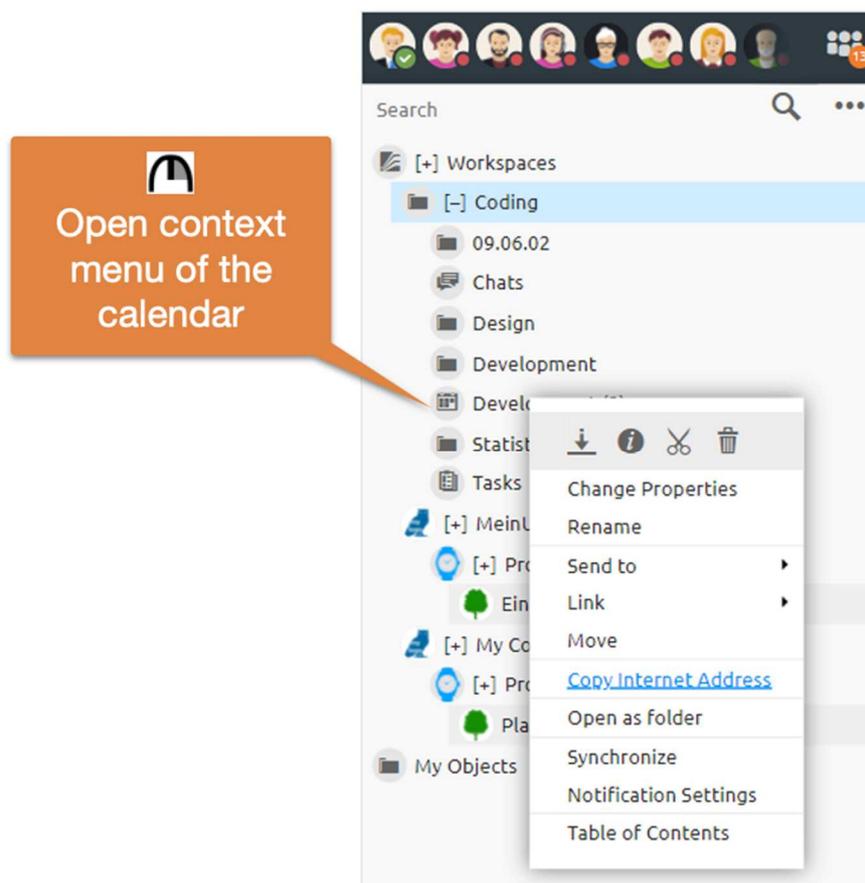


Figure 20: Context menu

In the following you can integrate them in your calendar application. For Outlook you may use a CalDAV plugin for this purpose. In Mac Calendar and Thunderbird Lightning the BSCW calendar can be added without a plugin. In your Mac calendar application *add* a new account in the menu *Calendar->Add Account->Other CalDAV account*. In Thunderbird Lightning you can do this by creating a *New Calendar->Place Network->Format CalDAV*.

Furthermore, tasks of a workspace can be automatically synchronized with your calendars.

2.8 Document release

BSCW also allows to define and apply Document sharing

You may create a release process individually on single documents or on folders. If a release process is defined on a folder, all documents in this folder are subject to the given release process. Normally, you must have the Manager role for this.

You create a sharing process via the context menu in the  **Change Properties** dialog. There, select the Document sharing tab.

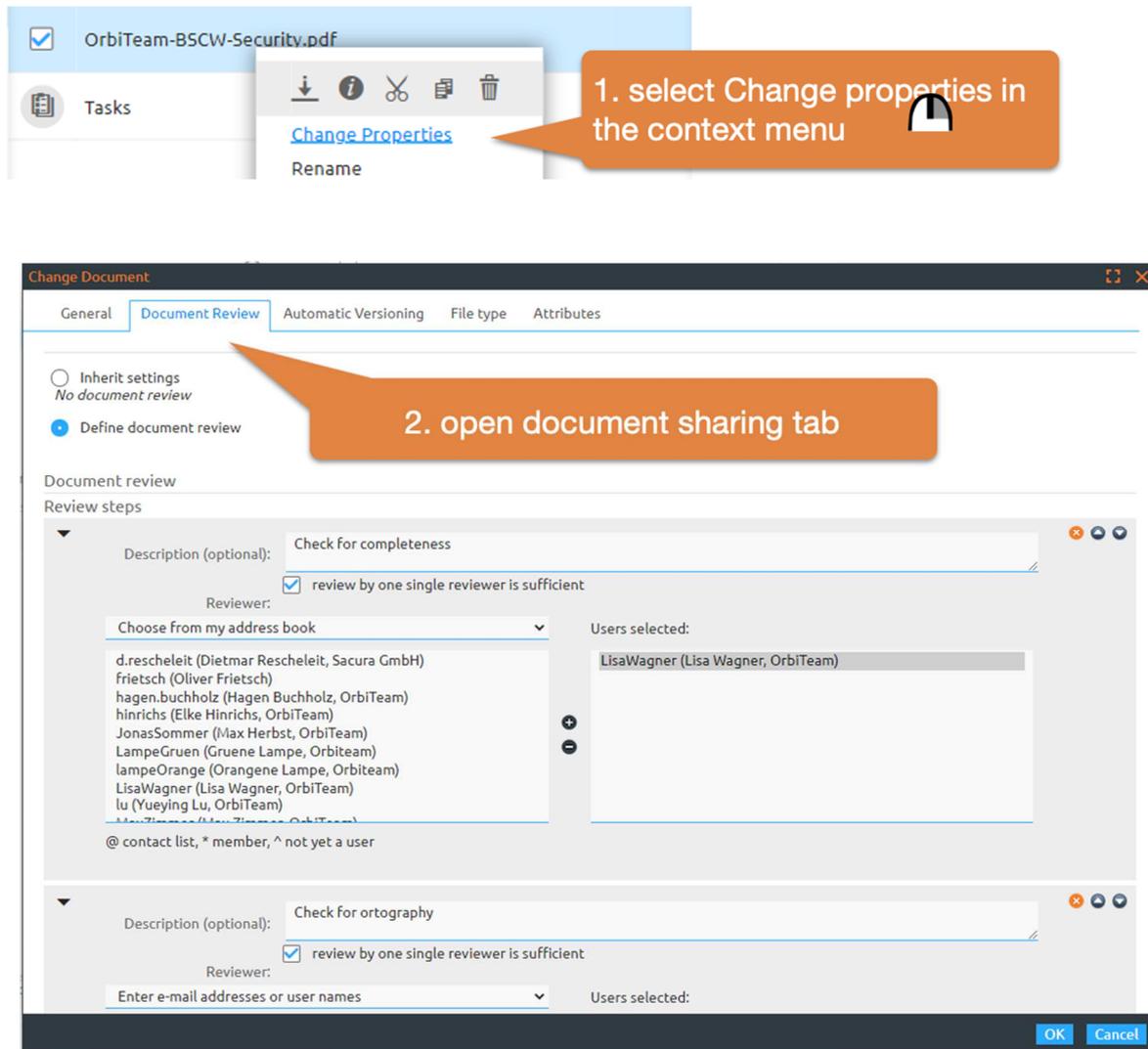


Figure 21: Creating a document release process

Further control of the process, such as starting the process, is also done via the context menu of the respective document.

2.9 Audio-video conferencing

BSCW allows to start an audio-video conference in any workspace. The advantage: All participants automatically have an immediate overview of all relevant content. For example, keep the minutes of your conference together in the *chat* and use the *Tasks* feature to assign follow-up tasks.

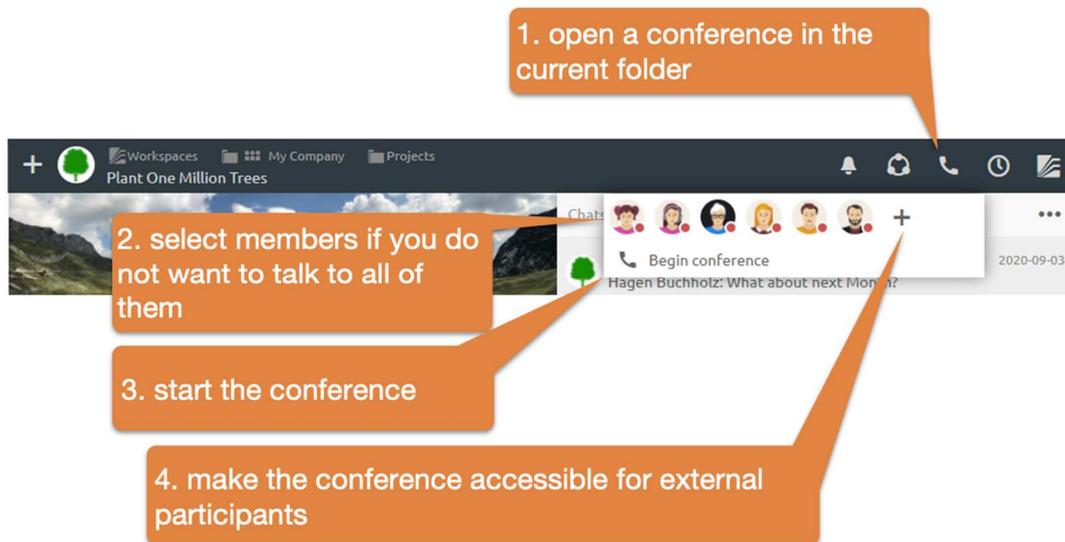


Figure 22: Start audio-video conference

By default, all members of the workspace are notified of newly started conferences with a ring.

Select specific members: Select specific members if you only want to talk to a selection of users. In this case, all unselected members will only receive a discreet visual indication of the started conference. After starting a conference, the conference window appears in the context of the current folder. I.e. you have access to all data, messages and tasks of the corresponding folder also in the conference window.

Conference link for scheduled conferences and external participants: You may schedule conferences or use the + button to display the *conference access link*. Send this link by e-mail to invite *external participants*.

If you schedule a conference, a task will be created automatically, which contains a corresponding invitation message. If you have synchronized your tasks with your calendar, you only need to set the appointment in this task to display the conference information in your calendar. How to synchronize tasks with the calendar can be found in 2.5 Tasks.

2.10 BSCW folders can receive e-mails

Folders can be enabled to receive e-mail.

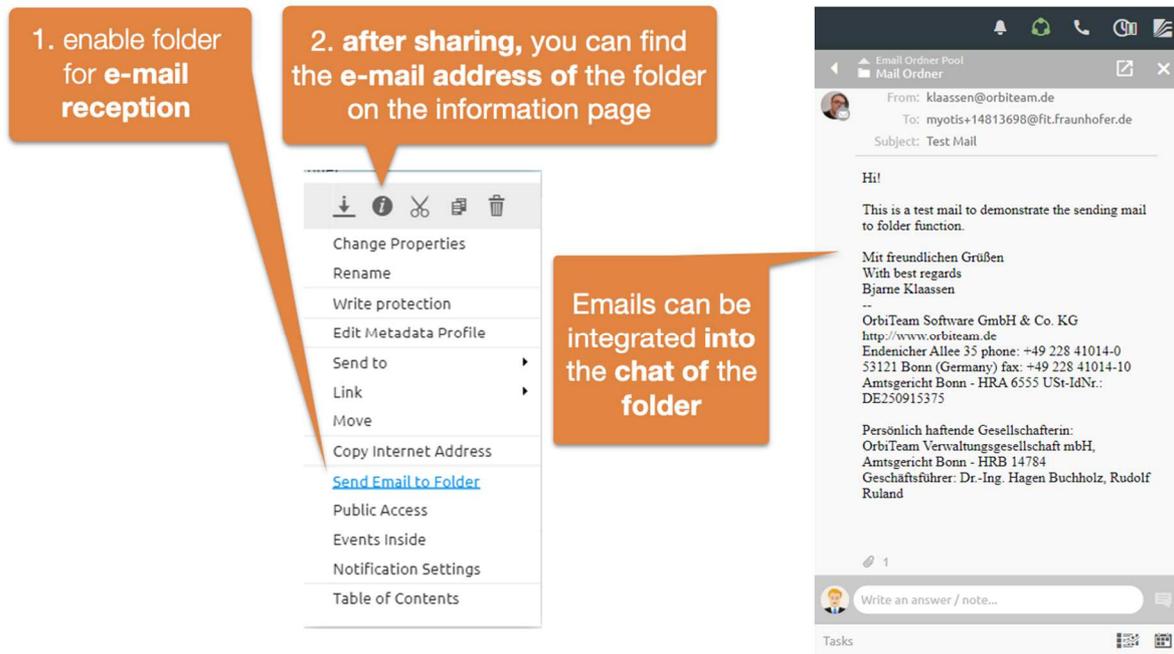


Figure 23: Enable folder for e-mail reception

Emails can be sent to folders or uploaded via DragNDrop. The email address can be found on the folder's *information page*.

It is advisable to display e-mails in the chat. This allows them to be tracked seamlessly with documents and telephone notes in chronological order.

2.11 Working with templates

Working with templates is of great importance especially in quality management for mapping standard procedures, service instructions or checklists. You may make any BSCW object, be it documents, folders, chat messages or task lists, contextually available as a template.

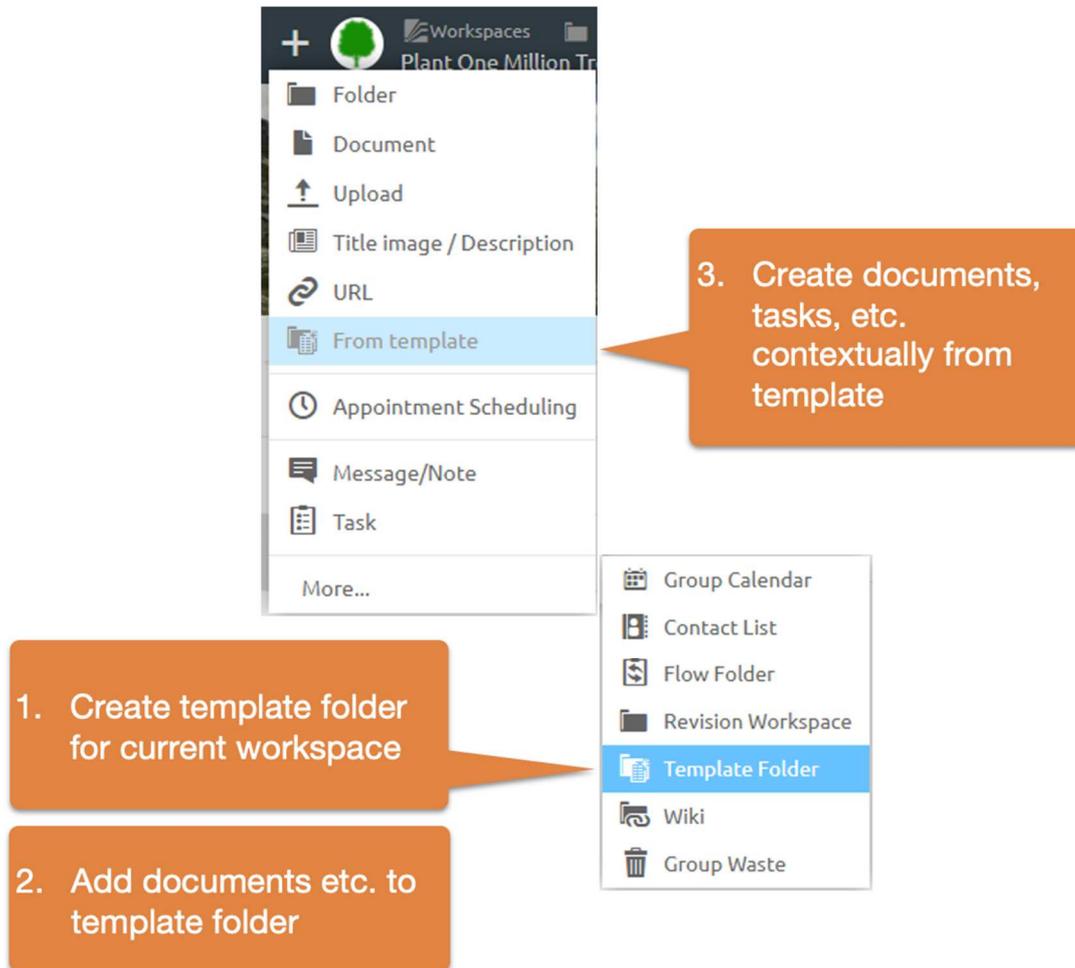


Figure 24: Working with templates

To do this, create a template folder in the desired workspace and add BSCW objects. These are now also available as templates in all subfolders of the workspace.

2.12 Description and cover image (banner)

Each folder may contain a description and a *title image* (formerly banner) in addition to the *subtitle*. A *description* is an HTML document that is typically displayed centered above the content list. *Descriptions* can be used to collect essential information,

- create block-based texts,
- create dashboards or logs with task lists
- model processes with standard templates
- create forms

and much more.

Descriptions can be formatted like messages. Furthermore, images and other BSCW elements can be inserted into the text via dragNDrop.

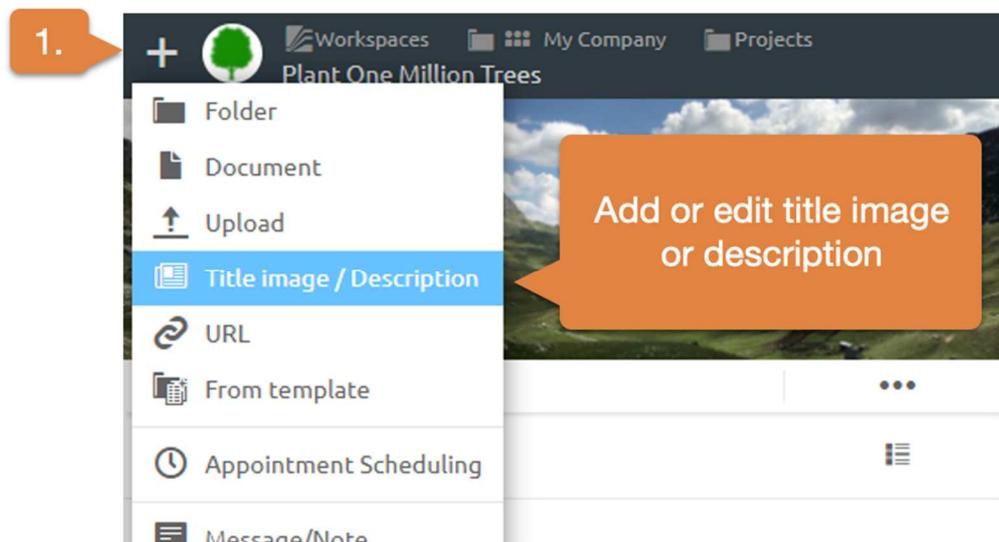


Figure 25: Add banner or cover image

Add description: You add a *description* using the **+**.

You can additionally set a *title image*. This *title image* is automatically set for all subfolders.

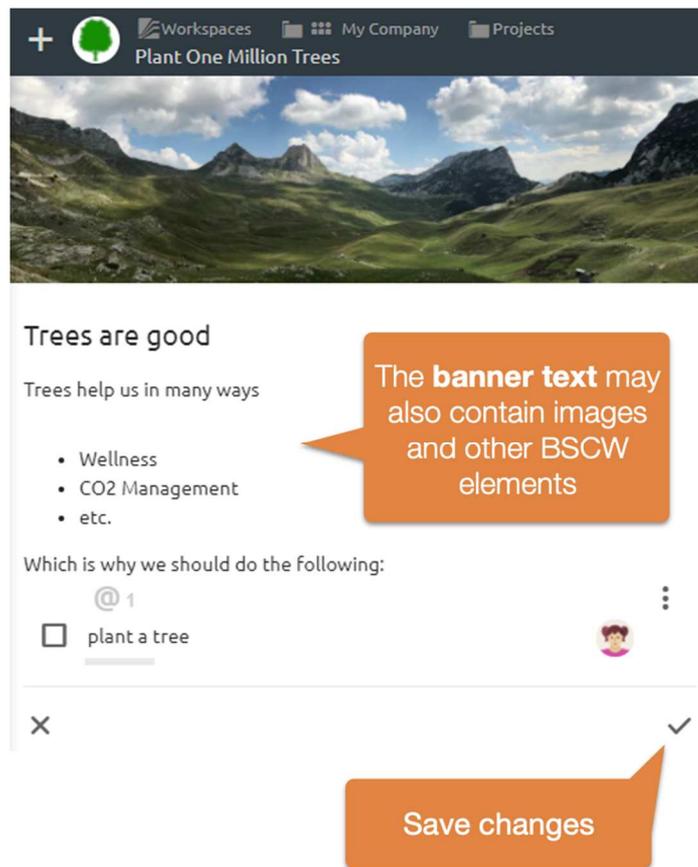


Figure 26: Change banner text or title image

Edit description: Edit existing *descriptions* using the  you can also set a new title image.

2.12.1 Using BSCW elements in the description

By including BSCW elements, the description can easily be used to display dashboards, compose texts from individual building blocks, create forms or model process flows. The following is an overview of the possible preview elements.

To adjust the preview of an element, the edit mode of the should be active first. If you now move the mouse over a BSCW element, a menu button appears on the right side of the element. Via this menu button you may choose how the element should be previewed.

The default preview offers the basic information of an element, which typically contains the name and the folder name of the element. For tasks, a task item can also be displayed here. For messages, it is also possible to display the message content.

It is also possible to display the description of the item, which offers a number of possibilities. The following figure shows the summary of frequently asked questions by merging different messages.

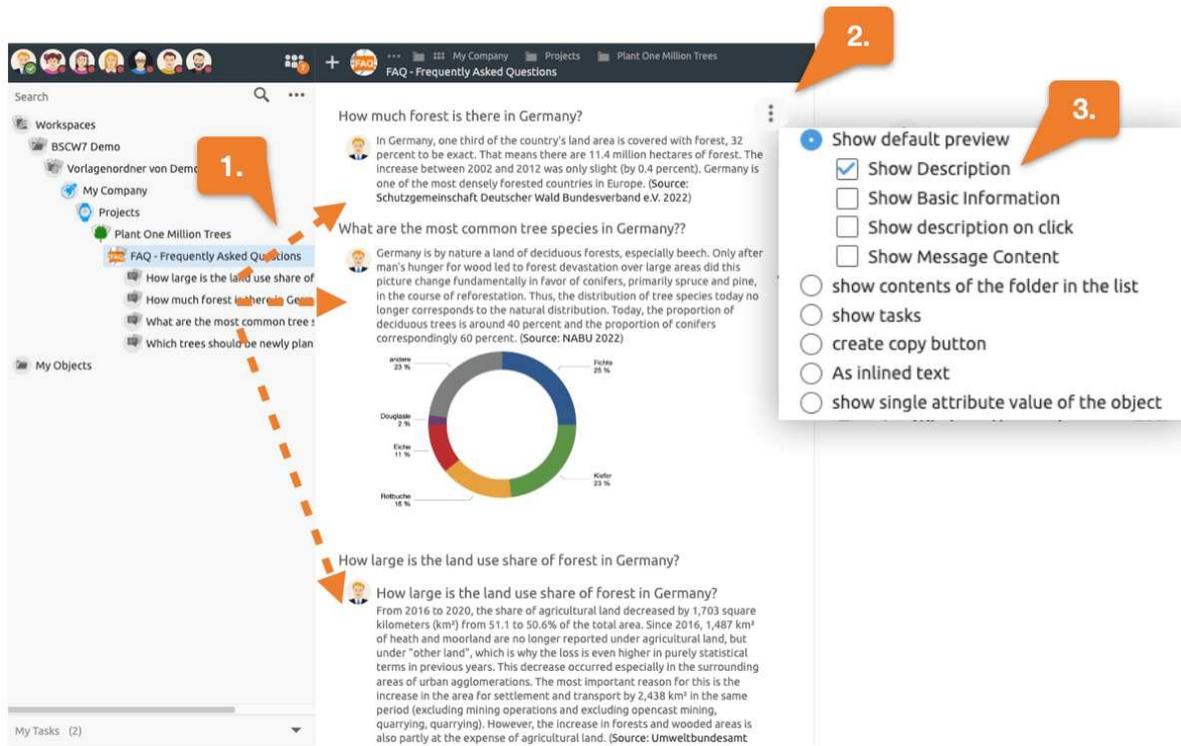


Figure 27: Example of an overview of frequently asked questions by displaying the description of various conversations.

Besides collecting essential information, the description can also be used to make working with templates easier. In the following, for example, a folder "As template button" is inserted. From now on, this button is directly visible to everyone. At the push of a button a copy of the project folder is created.

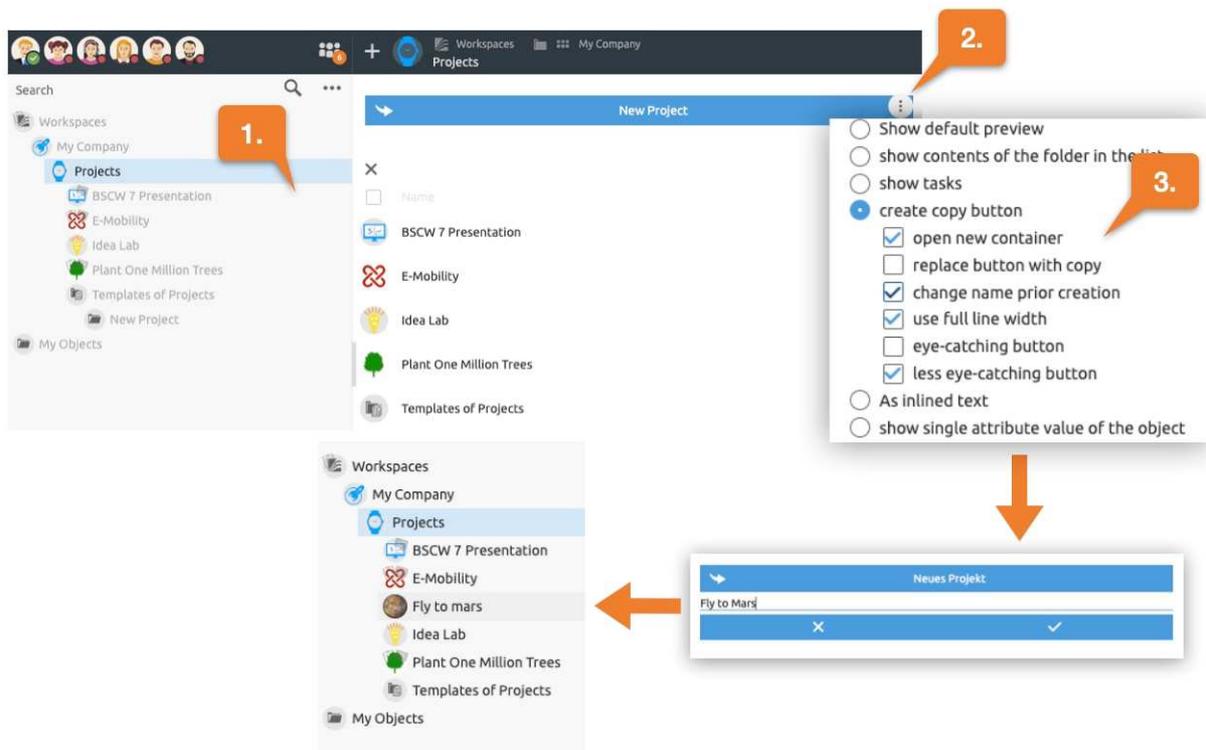


Figure 28: Example of creating a button to create a project folder at the click of a button from template.

The button was further set in such a way that first the name of the new project folder can be defined. Subsequently, the view changes to the new folder, where all further necessary steps, buttons or even input fields can be compiled in the description.

For example, a form could now be displayed here where project-specific information such as a project number, start and end date can be entered. Such form fields are directly linked to attributes of BSCW objects. Since you can add your own attributes (metadata) to each BSCW object, this offers a wide range of possible applications.

In the following example, e-mail address and telephone number of a contact person shall be entered directly via the description. To do this, we first drag and drop an empty contact into the description and select the option "Show single attribute value of object". Now we select e-mail from the attribute list. Then we repeat the process and select Phone.

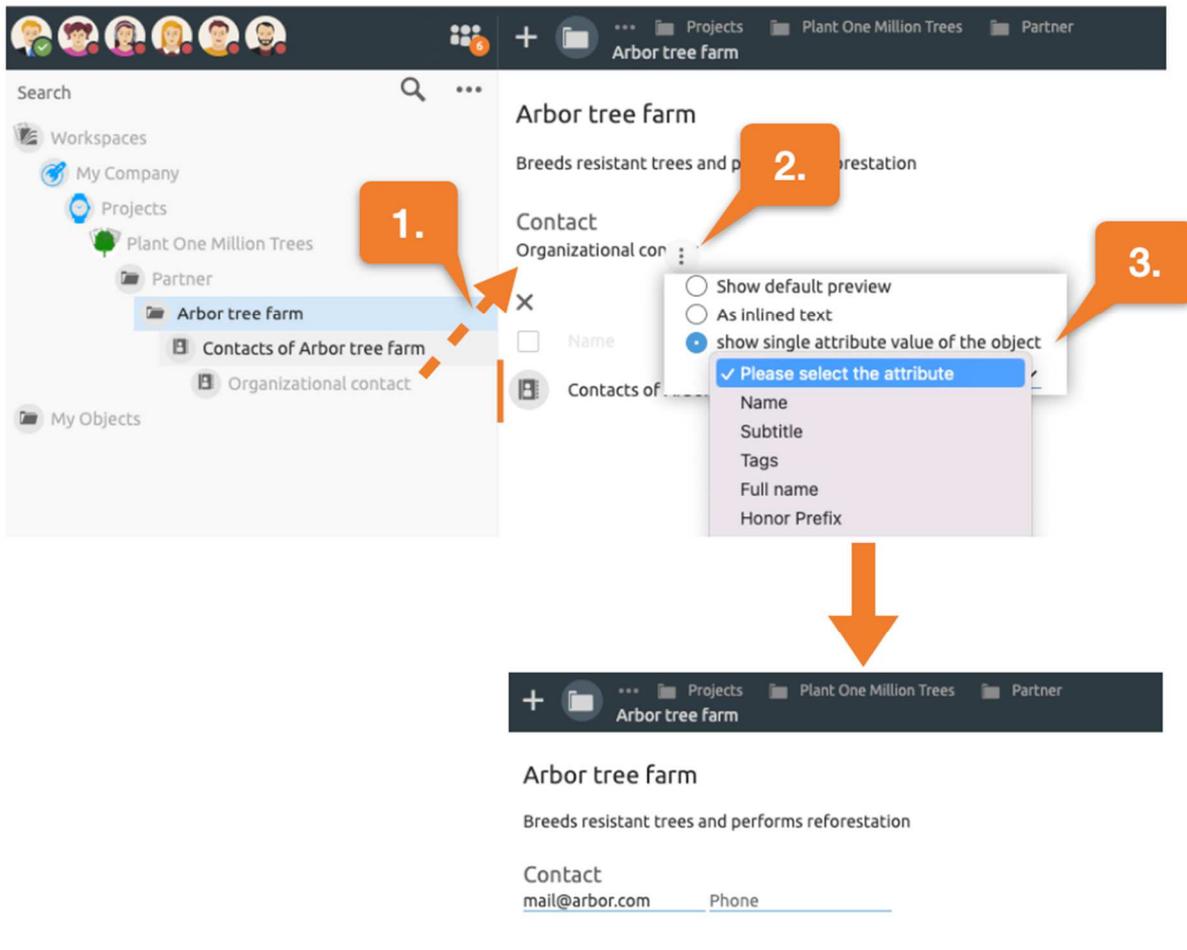


Figure 29: Example for creating form input fields in the BSCW description.

This creates two input fields that are directly linked to the corresponding attribute of the contact element in BSCW. I.e., the values entered are automatically stored in the contact.

Thus, not only information is displayed in the description, but also captured at the same time. This allows to tailor BSCW for everyday use and to minimize complexity for users.

2.13 Ad-hoc polls and best answer

You can turn chats into ad-hoc polls at any time. To conduct an ad-hoc poll, first create a message that contains the question. Now switch to the messages pane and convert the conversation into an ad-hoc poll using the button in the messages pane header, as shown in the figure below.

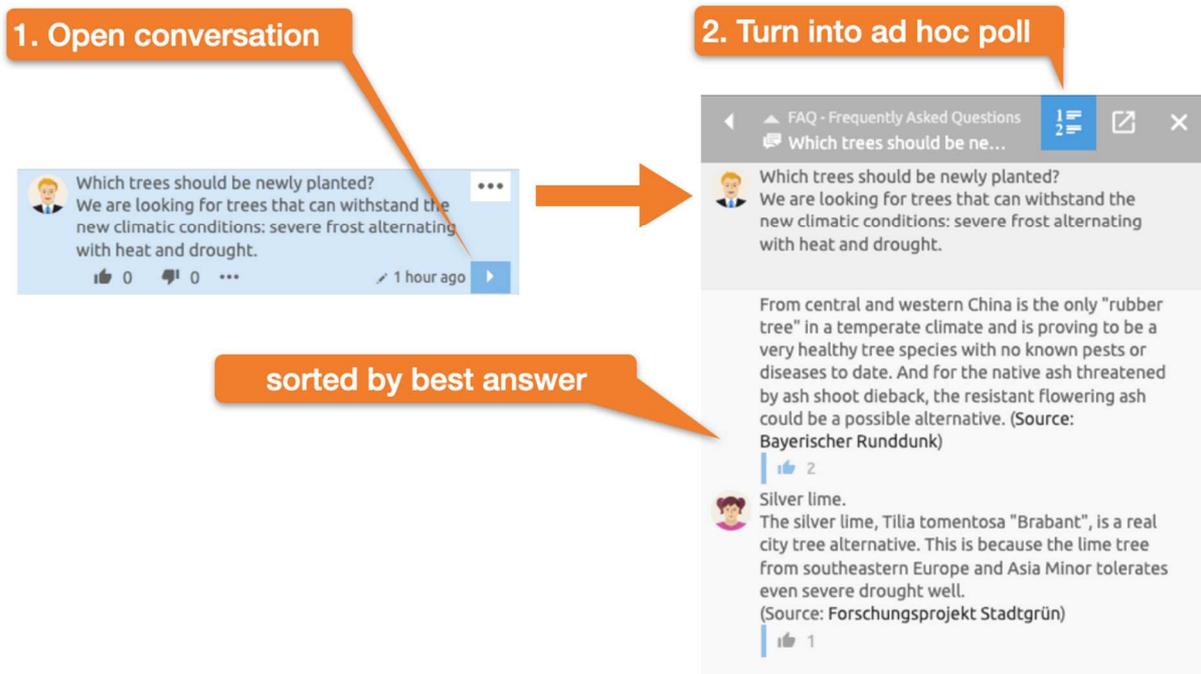


Figure 30: Create an ad-hoc poll sorted by best answer.

From now on, the answers are sorted according to the most positive reactions. Optionally, the questioner's preferred answer can be recorded in the description. See also 2.12.1 Using BSCW elements in the description.

2.14 Add or manage members

You can see the members of the current folder in the top left corner of the header. Open the menu in the list of members of the current folder and select the entry **Add member**.

Note: By default, every member has the right to invite other members. If the **Add member** entry is not available, you lack the right to invite members. In this case, contact the manager or owner of the folder.

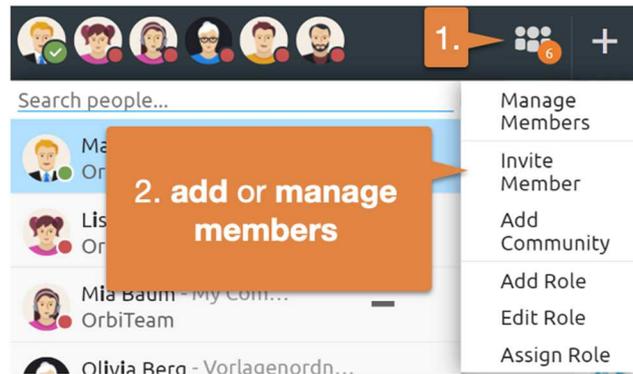


Figure 31: Add or manage members

The Invite Members dialog opens.

Invite members: Enter information such as name, e-mail address or organization of the desired members in the search field and subsequently select suitable entries from the suggestion list.

Add selected users to the selection list by dragging and dropping or by using the **+** button.

You can still *write a personal invitation text* via the **>>** button.

Invite new users to BSCW: Users who are not yet registered on BSCW may be invited by entering their e-mail address in the search field. Subsequently, an entry of the new user's e-mail address will appear in the suggestion list, which you may select for inviting.

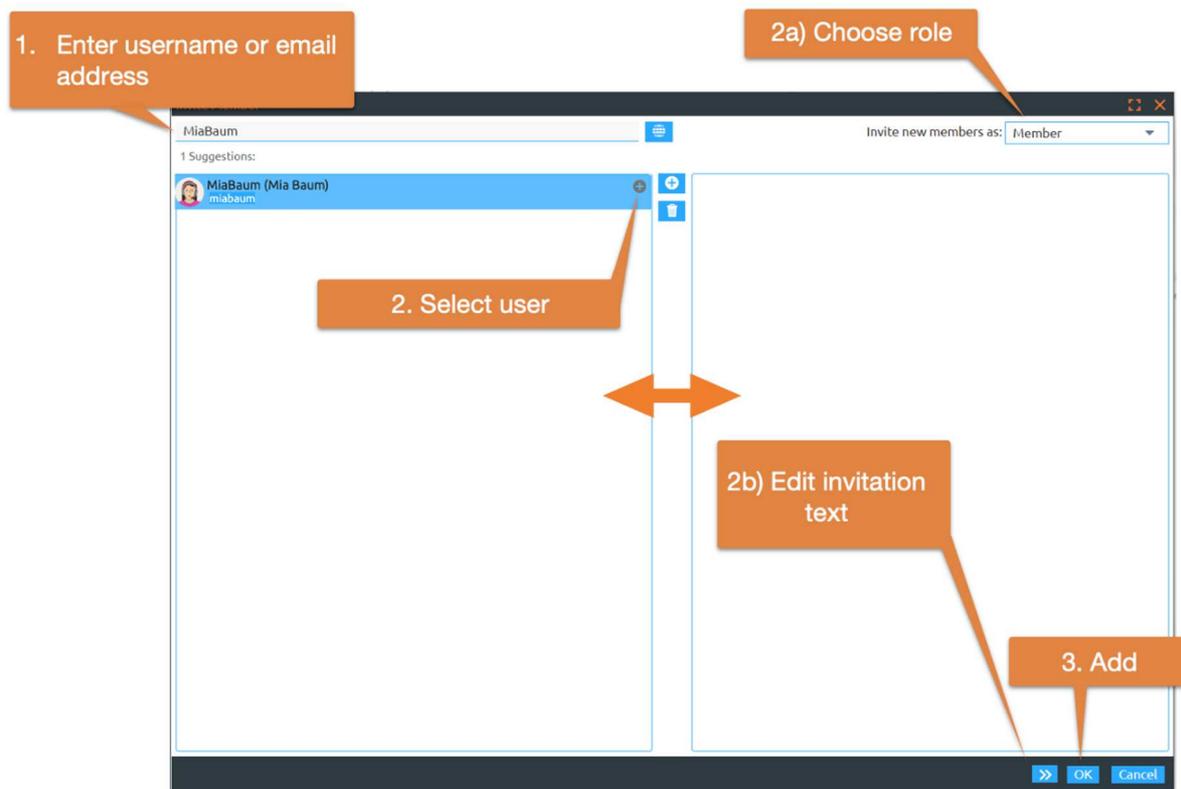


Figure 32: Add new members

By default, new users are invited in the "Member" role. You also have the option to choose a different role in the *Add Member dialog*.

Close the invitation by clicking the **OK** button.

Note: A strict exception is your *personal workspace ('home folder')*. It is not possible to invite other users to this area.

2.15 Roles and rights

BSCW offers extensive role and rights management. You may define new roles, modify existing ones and subsequently assign them to users or groups. The *roles and rights dialog* may be opened via the member menu  shown in the following figure.

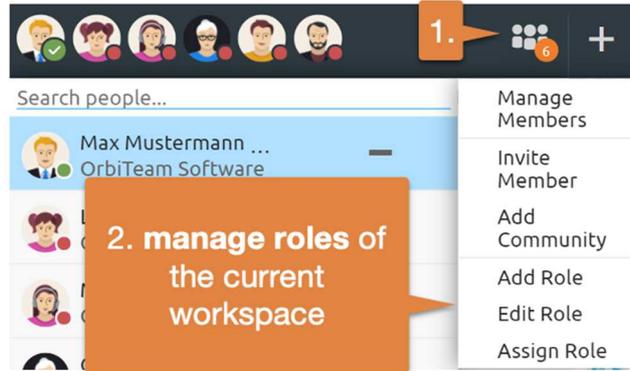


Figure 33: Opening the "Manage roles" dialog

The predefined roles are usually sufficient and do not need to be changed. If you still want to create your own roles, you can find an overview of the possible rights [here](#).

Edit Role: Set up BSCW Workspace for external partners

Select actions for role *Member*

Get ✓ ✕

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Copy | <input checked="" type="checkbox"/> Get Sensor Average | <input checked="" type="checkbox"/> See |
| <input checked="" type="checkbox"/> Export Evaluators | <input checked="" type="checkbox"/> Get Sensor Data | <input checked="" type="checkbox"/> Synchronize Outlook |
| <input checked="" type="checkbox"/> Export Incidents | <input checked="" type="checkbox"/> Get Sensor Trend | <input checked="" type="checkbox"/> vCard Export |
| <input checked="" type="checkbox"/> FTP Server | <input checked="" type="checkbox"/> Open | |

Get ext. ✓ ✕

- | | |
|--|--|
| <input checked="" type="checkbox"/> Change Reminders | <input checked="" type="checkbox"/> More Information |
|--|--|

Add ✓ ✕

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Add Appointment | <input checked="" type="checkbox"/> Add URL | <input checked="" type="checkbox"/> Copy from Template |
| <input checked="" type="checkbox"/> Add Appointment Scheduling | <input checked="" type="checkbox"/> Add Voting | <input checked="" type="checkbox"/> Import (iCalendar) |
| <input checked="" type="checkbox"/> Add Contact | <input checked="" type="checkbox"/> Attach Document | <input checked="" type="checkbox"/> Import (vCard) |
| <input checked="" type="checkbox"/> Add Note | <input checked="" type="checkbox"/> Attach Note | <input checked="" type="checkbox"/> Upload Document |
| <input checked="" type="checkbox"/> Add Poll | <input checked="" type="checkbox"/> Attach URL | |
| <input checked="" type="checkbox"/> Add Resource | <input checked="" type="checkbox"/> Branch | |

Add ext. ✓ ✕

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Add Contact List | <input checked="" type="checkbox"/> Add Folder | <input checked="" type="checkbox"/> Add Templates |
| <input checked="" type="checkbox"/> Add Discussion Forum | <input checked="" type="checkbox"/> Add Group Calendar | <input checked="" type="checkbox"/> Add Wiki |
| <input checked="" type="checkbox"/> Add Flow Folder | <input checked="" type="checkbox"/> Add Search Folder | |

Change ✓ ✕

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Add Incident | <input checked="" type="checkbox"/> Edit | <input checked="" type="checkbox"/> Revise |
| <input checked="" type="checkbox"/> Add Sensor | <input checked="" type="checkbox"/> Edit Contact List Settings | <input checked="" type="checkbox"/> Set Character Set |
| <input checked="" type="checkbox"/> Change Appointment | <input checked="" type="checkbox"/> Edit Query | <input checked="" type="checkbox"/> Set Lock |
| <input checked="" type="checkbox"/> Change Attributes | <input checked="" type="checkbox"/> Edit URL | <input checked="" type="checkbox"/> Starttime |
| <input checked="" type="checkbox"/> Change Banner | <input checked="" type="checkbox"/> Import Incidents | <input checked="" type="checkbox"/> Tags |
| <input checked="" type="checkbox"/> Change Description | <input checked="" type="checkbox"/> Rate | <input checked="" type="checkbox"/> Version Control |
| <input checked="" type="checkbox"/> Change Name | <input checked="" type="checkbox"/> Redo Search | <input checked="" type="checkbox"/> Version Info |
| <input checked="" type="checkbox"/> Change Type | <input checked="" type="checkbox"/> Replace | |
| <input checked="" type="checkbox"/> Change Wiki Properties | <input checked="" type="checkbox"/> Resubmit | |

Change ext. ✓ ✕

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Delete | <input checked="" type="checkbox"/> Forward Flow Folder | <input checked="" type="checkbox"/> Start Review |
| <input checked="" type="checkbox"/> Destroy versions | <input checked="" type="checkbox"/> Permanently destroy | |

Share ✓ ✕

- | | |
|---|---|
| <input checked="" type="checkbox"/> Add/Remove Participants | <input checked="" type="checkbox"/> Publish |
| <input checked="" type="checkbox"/> Invite Member | <input checked="" type="checkbox"/> Remove Member |

Share ext. ✓ ✕

- | | | |
|---|---------------------------------------|---|
| <input type="checkbox"/> Add Community | <input type="checkbox"/> Delete Token | <input type="checkbox"/> New Community |
| <input type="checkbox"/> Add Role | <input type="checkbox"/> Edit Review | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Admission Policy | <input type="checkbox"/> Edit Role | <input type="checkbox"/> Reveal Group |
| <input type="checkbox"/> Assign Role | <input type="checkbox"/> Freeze | <input type="checkbox"/> Send Email to Folder |
| <input type="checkbox"/> Automatic Versioning | <input type="checkbox"/> Link | <input type="checkbox"/> Unfreeze |

Edit ✓ ✕

- | | | |
|--|---|--|
| <input type="checkbox"/> Change Poll/Voting | <input type="checkbox"/> Edit Note | <input type="checkbox"/> Reorganise Sensor |
| <input type="checkbox"/> Change appointment scheduling | <input type="checkbox"/> Edit Resource | <input type="checkbox"/> Reset Poll/Voting |
| <input type="checkbox"/> Cut | <input type="checkbox"/> Edit Sensor | <input type="checkbox"/> Restart Sensor |
| <input type="checkbox"/> Cut Attachment | <input type="checkbox"/> Export Responses | <input type="checkbox"/> Show Responses |
| <input type="checkbox"/> Delete Attachment | <input type="checkbox"/> Export Results | |

OK Cancel

Figure 34: "Change role" dialog

Furthermore, roles can be derived from other roles, so that rights are inherited. For more information, see 5.2 "Access rights and roles".

2.16 Working with groups

It can be useful to create separate groups for different fields in your company, such as CRM, accounting or management. If you organize your workspaces via groups, new users can be invited to the corresponding groups and thus get access to all relevant workspaces without much effort. In addition, the group folders serve as interest-related exchange folders or distribution lists.

To do this, create a new folder for each group and load the associated members there. Now open the menu to  each folder and select the entry **Manage members**. Here you can *disclose the group*

Note: By default, this action is only for managers. Also, new members must have been invited directly in this folder.

Visible groups can be subsequently invited to other folders in a specific role.

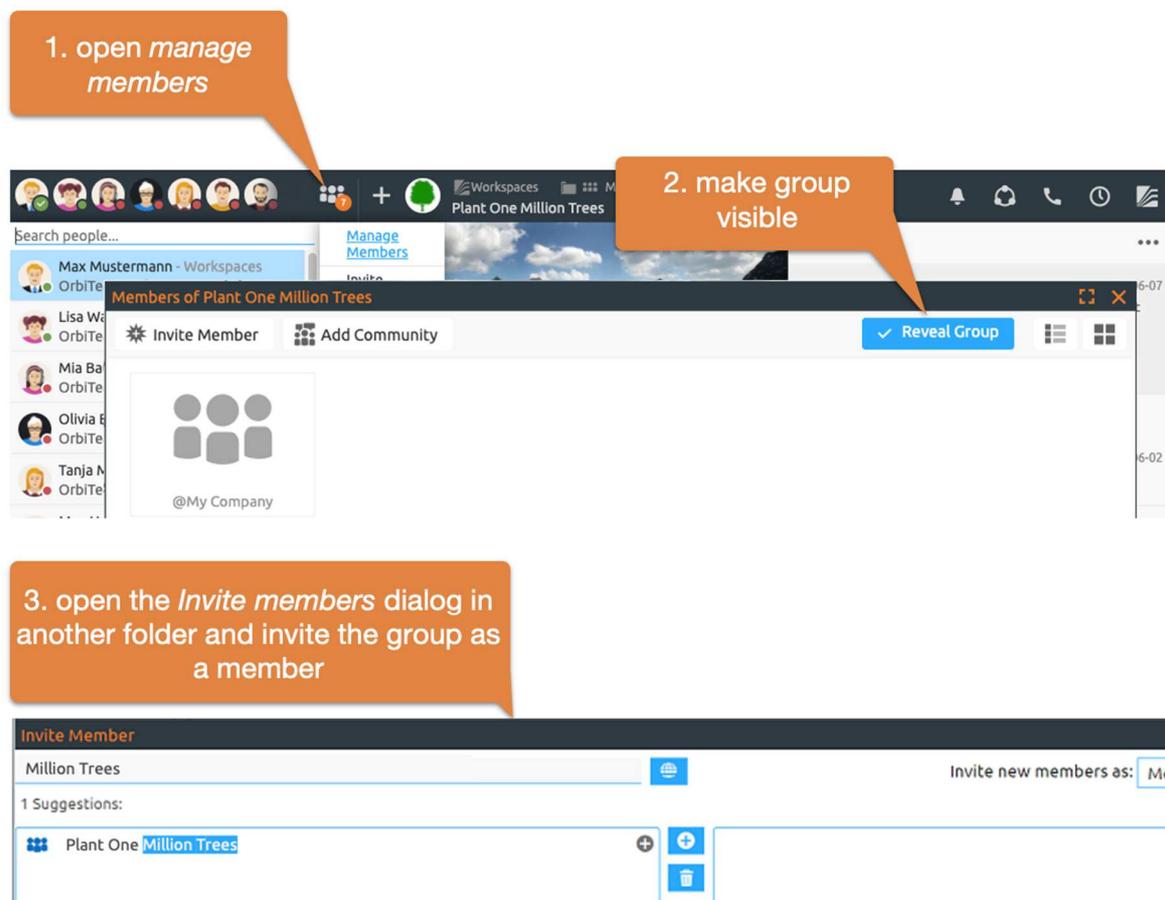


Figure 35: Using groups

2.17 Live Community - Activity Gyro

BSCW allows you to share your current work context and other activities in the system "live" with colleagues in a workspace. If other colleagues have also shared their activities with you, you can see where they are in the system and what they are currently working on. This makes working together on projects or in specific workgroups much more efficient.

Start live community: First, go to a folder whose members you want to share your activities with live. In this folder, open the Live Community menu to share your activities.



Figure 36: Live sharing of activities with members of a workspace

If the Live Community icon is colored (red or green), you share your activities. You always share your activities with the members of a certain folder, as long as they also share your activities. This folder is displayed at the top of the Live Community menu. Below it you can see the total team working time, divided into planned and unplanned time. Planned work time is shown in dark - it indicates how much time was spent working on tasks in the team as planned. Correspondingly, unplanned working time shows how much time was worked in the team today without starting a task - it is a typical indicator of the frequency of interruptions.

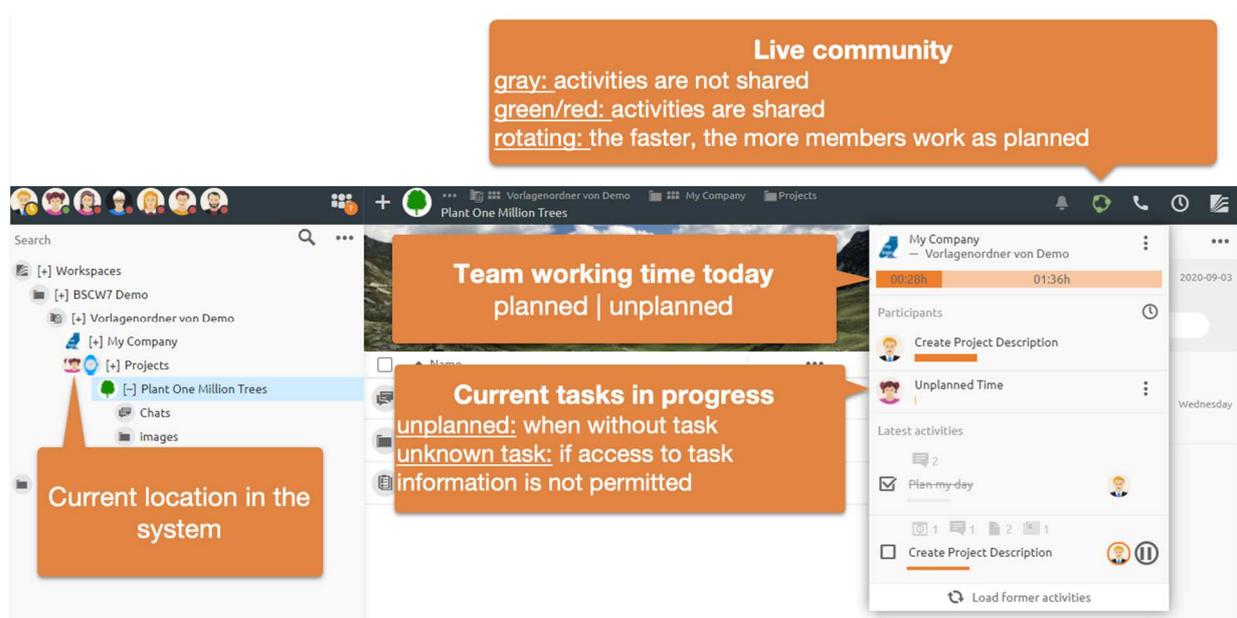


Figure 37: Sharing activities with specific users to increase team efficiency

The participants list in the menu shows what the members of the shared folder are currently working on. You will also see user heads floating around the system. These show you the current work context of the other members. Of course, you and other members only see tasks and locations that you are allowed to see.

Stop Live Community: As shown below, you can stop or configure sharing of your activities at any time.

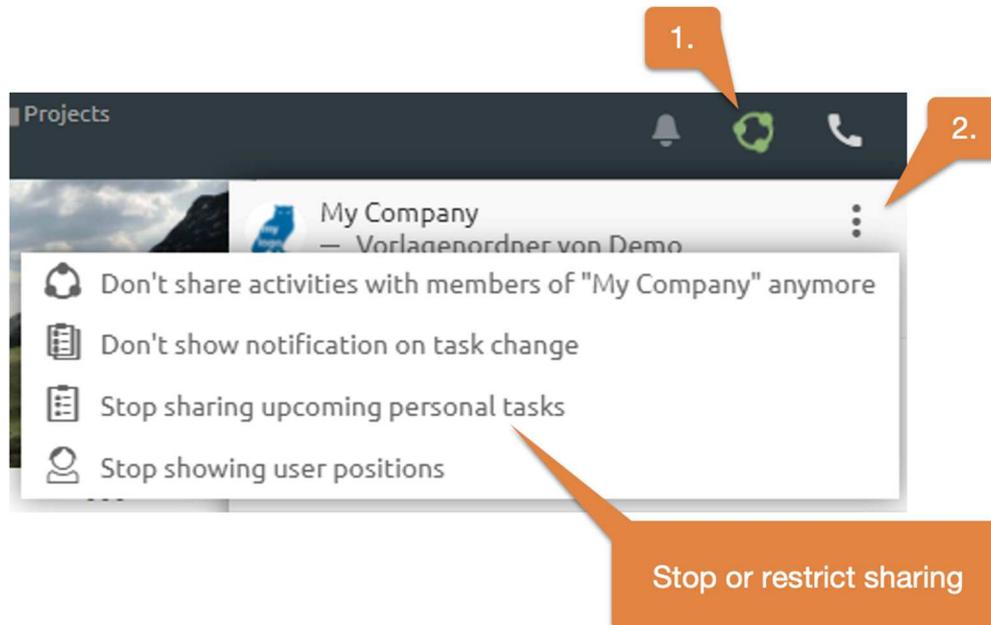


Figure 38: Stop or restrict live sharing activities

Note: You can see the activities of others only as long as you share activities yourself and vice versa.

2.18 Quick Search and Advanced Search

The quick search is located below the member display. The quick search is strongly adapted to your usage and does not analyze all contents of messages or documents. If an expected hit is not included, the full text search is recommended below.

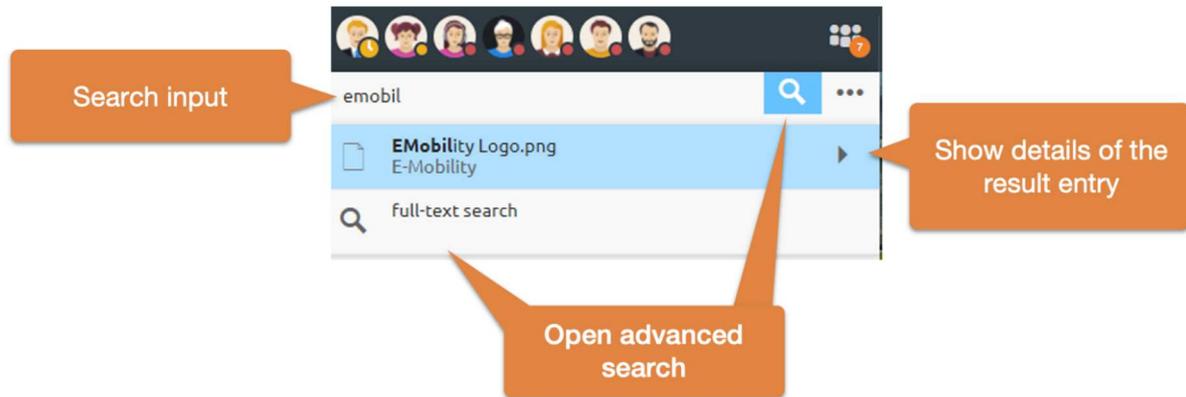


Figure 39: Open quick search input field and advanced search

The arrow of each result entry can be used to display further information such as a preview, an event history or paths. The quick search can also be controlled via the keyboard.

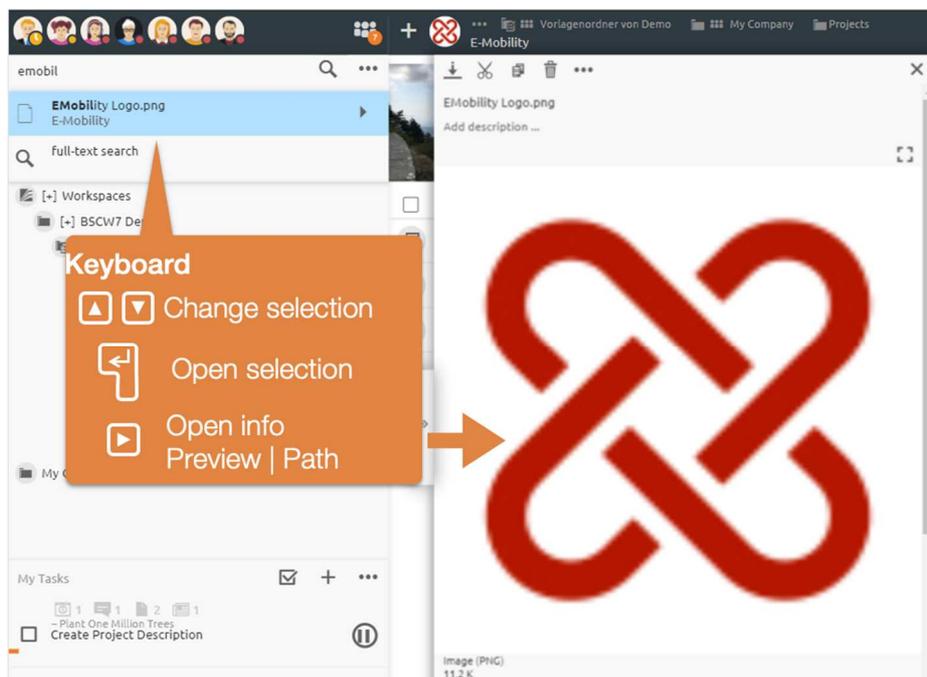


Figure 40: Keyboard operation of the quick search

You can open the information view by pressing the *Right arrow key* and navigate through the results by pressing the *Up* or *Down* arrow keys. When the desired result is found, it can be opened by pressing the *Return* key.

DragNDrop of search results: Search results may be dragged and dropped like any other BSCW element or referenced in messages.

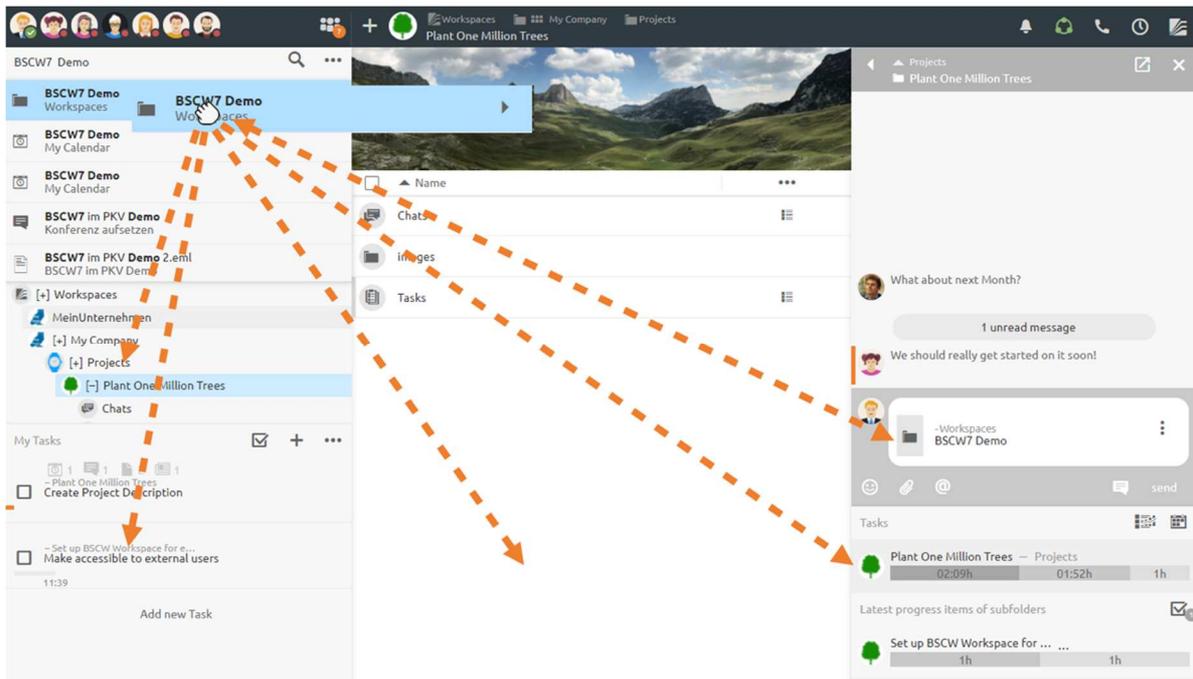


Figure 41: Drag-N-Drop of search elements

You can not only drag search result entries into other elements, but also drag elements into a search result the other way around if this makes sense.

Add members via quick search: Members can also be added or removed from a workspace via the quick search. For this purpose, a + or - button appears next to the result entry of the corresponding member.

2.19 Time recording

BSCW offers an *automatic time recording feature*. The times are recorded together with the corresponding folder names.

Note: The times are not transferred to the server. They are stored only in the respective browser of the user. If the user actively logs off, the times are also no longer available. If you want to transfer times, you have to export them before - as described below.

The History menu  in the header bar provides access to time tracking.

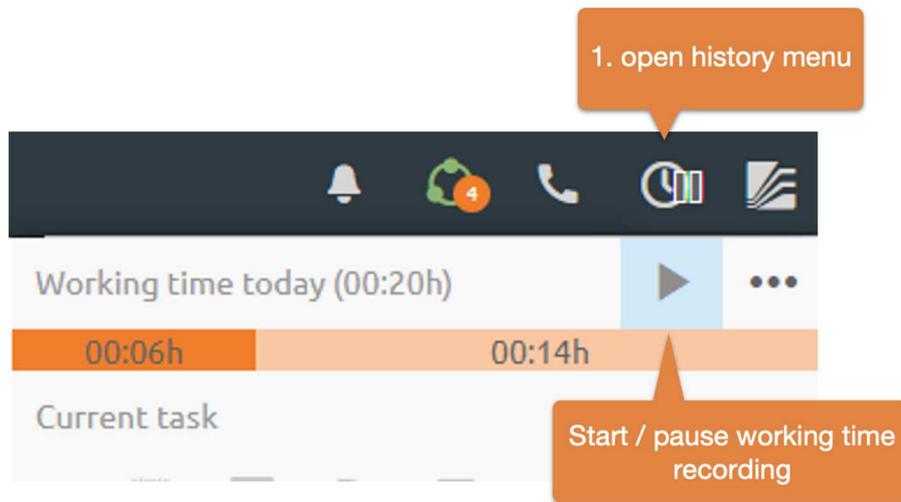


Figure 42: Use time tracking

Start / pause time recording: Use the  Start / Pause button to start or pause time tracking, respectively. The *pause icon* on the  history button in the *header* indicates that time tracking is currently paused. Time tracking is also automatically paused when the computer is turned off or put into standby, or when the browser is closed.

In the menu you can see the current working time. This is divided into *planned* and *unplanned*. The planned working time is counted up as soon as you have started a task using the start button of the task element (Figure 13: Edit task elements).

Time recording details: A detailed listing of the working times can be reached via  in the history menu.

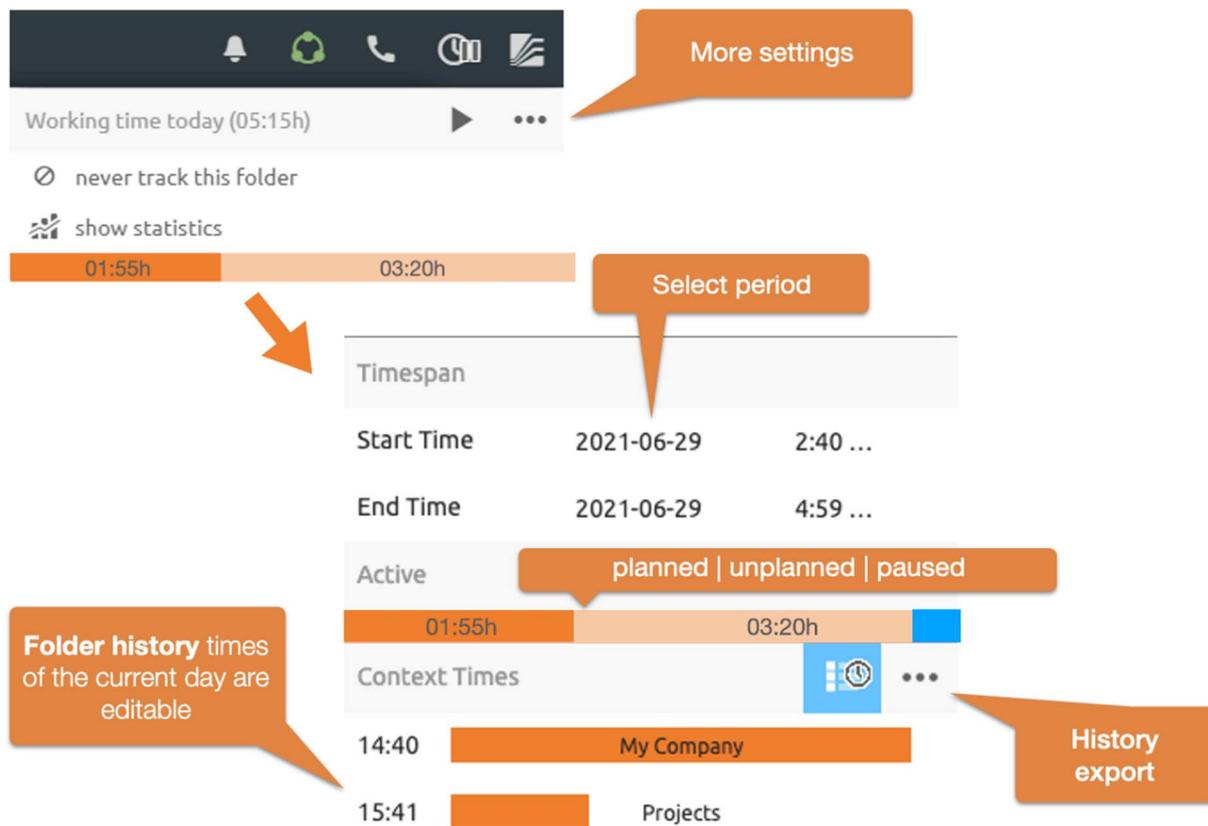


Figure 43: Detail view of the automatic time recording

At the beginning, the times of the current day are displayed here. Click on the start or end date to select a different *period*.

In the "Active" section you can see the sum of the times you have worked scheduled or unscheduled for the period selected above. In addition, the paused time is also displayed here in blue.

According to the selected period, you will see a detailed chronological listing of the times of your history in the "Context times" section. You can edit the start times of individual entries or delete entire entries. The button shows  you the history data *aggregated by folder*.

Share or export data: Your history data is not transmitted to the server for privacy reasons. You can still share or save the data by exporting it. [Download this data](#) downloads the displayed data as a CSV file. Furthermore, the CSV file does not contain folders or task names, but only identification numbers and can therefore only be decrypted by persons who have access to the corresponding elements. The name of the generated file contains the period and the sum of the working time.

2.20 Your private objects

In the navigation tree you will find all your private objects on the lowest level. These include:



Workspaces ('home folder'): Your personal workspace ('home folder') is the folder accessible only to you, containing all the folders you have created and all the workspaces to which you have been invited by other users.



Recycle bin: The recycle bin prevents the accidental loss of objects. In BSCW, objects can only be irrevocably destroyed from the owner's recycle bin.



Address Book: The address book is used to invite new members to a workspace and manage contacts.



Document inbox: In the *document inbox*, you will find documents that have been assigned to them in workflow processes, such as Document sharing or Flow Folder.



My calendar: Your personal calendar.



My bookmarks: Your bookmarks.

3 First steps

The sections of this chapter describe what you need to do to use BSCW. Some of these steps are essential and others will make your work with BSCW easier. Read the whole chapter thoroughly before you start using the system.

3.1 Register as user

To be able to work with BSCW, you must be registered with your BSCW server. Following the uncomplicated login procedure, the BSCW server 'knows' a *registered user* by the combination of

- username,
- password and
- email address.

You can access your folders and workspaces with your username and password from any computer that has Internet access.

3.1.1 Register as a new user

When configuring a BSCW server, it is specified whether and how to register as a user. There are the following possibilities:

- Anyone may register on the BSCW server itself.
- Self-registration is not allowed, but all or certain users are allowed to invite others to register via their email address.
- Self-registration is not allowed, only the BSCW administrator may create new users.

For self-registration, proceed as follows.

- You click on [Register] on the entry page of your BSCW server (e.g. <http://Ihr-BSCW-Server/pub/>) to register with your email address and possibly further required information (name, organization, phone number).
- BSCW will then send an email message to the specified address. This message contains a special URL that you open with your web browser.
- When you open the URL (which you can *only do once* for security reasons), a form appears where you enter your username and password.
- After submitting the registration form, you may log in to your BSCW server with the chosen username and password.

If you are invited to a workspace of the BSCW server by an already registered user via your email address, you will again receive an email message from this BSCW server and proceed as from step 2 above.

When you register through the BSCW administrator, the administrator will tell you your username and password. You may change the password, but not the username.

Choose username

The username you choose serves your identification in the entire area of the BSCW server. We recommend choosing your *last name* as username (without umlauts: ä = ae etc.).

Note: By default, BSCW does not distinguish between upper- and lower-case letters for the username.

If your last name is already used as username on the server, so that you are not uniquely identifiable for BSCW with it, BSCW reports an error to you in the registration procedure. In this case, append e.g. your first name or a number to your last name.

Attention: You cannot *change* your username yourself *afterwards!*

Choose password

In the interest of the security of the information on the BSCW server to which you have access, choose a sufficiently secure password, keep it secret and change it regularly! In the interest of the security of your own computer, you should not choose the same password for BSCW as for your local computer.

3.1.2 Change password

You can change your password at any time as you wish.

- Select  Change Password from the main menu.
- Fill in the '*Change password*' form and click [OK]. Now you will be asked to authenticate yourself again.

3.1.3 Password forgotten?

If you have forgotten your password, you cannot access your BSCW workspaces anymore - and therefore, of course, you cannot change your password as described above.

For exactly this emergency, BSCW offers the following procedure:

- Open the entry page of your BSCW server (on the public BSCW server this is <https://public.bscw.de/pub>) and click on the reference "Forgot password?" to register a new password with your BSCW server. The normal registration form also contains this reference.
- In the following action form, enter an email address that BSCW *has already associated with your name* (e.g. your primary email address) and confirm with [OK].
- BSCW will then send a message to the given email address containing the URL of a form where you may set a new password.

3.1.4 Register additional email address

If you have more than one email address that you use in different contexts (e.g. business and private), you may be asked to register again on your BSCW server because someone has invited you to a workspace. This is because another user of your BSCW server has invited you under an email address that is not the same one under which you are registered as user.

In such a case you have two options: You can register under a new username that you want to use for this your email address (this is of course possible without invitation by other users!). You may also combine your different email addresses under one user account. Then your BSCW server knows your different email addresses and when you are invited via one of your email addresses, your username will always be assigned.

So if you receive a message to one of your additional email addresses asking you to register to your BSCW server, please repeat the registration procedure. If you want to register the new email address as an additional address under your old username, enter exactly the username under which you are already registered and your current password. BSCW will then send you an e-mail message with the URL of a form (usable only once!) to the new address. In this form you may confirm that you want to register a secondary e-mail address for your username by entering your password.

However, you can also register additional email addresses under your username without having received an invitation.

- Select  **Personal profile** in the main menu and enter an additional address in the 'Additional email address' field in the 'Personal data' tab under 'Email'.

For this additional address, the above abbreviated registration procedure will be run to ensure that the association of the additional email address with your username is valid. You can repeat this procedure for additional addresses.

Registering additional email addresses is also useful if you want to send documents to a workspace from different email addresses. In these cases, BSCW will then be able to correctly assign your username to each of the specified addresses.

Regardless of the registration of additional email addresses, BSCW will continue to use your *primary email address* to send you e.g. the regular email report about activities in your workspaces. This address will also be displayed on your user info page.

If you have registered multiple email addresses, you can convert your primary email address,

- by selecting  **Personal profile** in the main menu and selecting the desired address from the displayed list of your registered addresses in the 'Personal data' tab of the action form under 'E-mail' in the 'Primary email address' field.

3.1.5 Delete own user account

For some BSCW servers that allow self-registration, you may also delete your own user account again if you do not want to use this BSCW server anymore. Note that this action is irreversible and deletes all data on the server to which only you have access.

- Select **Delete account** in the main menu 
- Enter your password for confirmation and click [OK] to permanently delete your user account.

Note: This action must be enabled by your BSCW administrator. By default, it is not available.

3.2 Register with BSCW

As a registered user, you log in at the beginning of *each work session*.

3.2.1 Start working session

You start a work session on a BSCW server where you are registered as user by entering

- call the URL `http://Ihr-BSCW-Server/sec/bscw.cgi/` or
- access an object in one of your folders or workspaces directly via its URL, e.g. via a bookmark.

Note: The address of your BSCW server is `http://Ihr-BSCW-Server/sec/bscw.cgi/` by default on newer installations but may be set differently by your administrator.

To log in, enter your username and password. Instead of your username you may also log in with your *email address*. Your BSCW server may offer other ways of logging in (see 3.2.5 "Other methods of authentication" on p. 46).

After checking the submitted data, BSCW will by default show you your personal home page or the object in a workspace whose URL you have entered directly. If e.g. someone sends you the URL of a folder, you will see the corresponding folder overview immediately after logging in (provided you have the necessary access rights).

If you do not work with BSCW for a longer period of time, your BSCW session will end automatically, and you will be asked to log in again.

3.2.2 First time registration with BSCW

If you have been invited to a workspace, you at least have a concrete example of what collaboration in BSCW looks like. Otherwise, your personal workspace ("Workspaces") is empty, and you may wonder how to get started with BSCW.

The easiest way to start is to create your own workspace that you share with other users:

- Click on  **Neu** and select **Folder** in the header bar of the folder's content view. In the 'General' tab, enter the name and optionally a description of the new workspace. Names are subject to restrictions on the use of special characters, which may be pointed out to you.
- In the 'General' tab you may further select a template for the subfolder structure of the new workspace. Such templates may be available for your BSCW server. For the moment you may leave it with the selection 'no template'.
- In the tab 'Attributes' you can add tags. Tags are freely assigned keywords under which you or other users would like to find the workspace again.
- In the 'Shared Objects' tab, you can also have certain shared objects automatically created for your new workspace: a contact list, a folder for uploading by e-mail, a template folder and a shared recycle bin. Make your selection by ticking the relevant checkboxes.

Note: The *shared recycle bin* of the workspace holds all objects removed from the workspace by its members. Only the workspace manager and the creator can put back objects from the recycle bin or delete them permanently. The recycle bin itself cannot

be removed; the setup is irrevocable. If you delete objects in a workspace without a shared recycle bin, they will end up in your personal recycle bin.

- Now go to the 'Members' tab of the action form and select the future members of the workspace:
 - Enter the e-mail addresses of users who are already registered on your BSCW server (you probably do not know their exact usernames) or of users you want to invite to register on your BSCW server (if you are authorized to invite new users or the server allows self-registration). Now select the users you want from the proposed users and click the add button 
 - On the right side, select the desired role, e.g. 'Member', for the members of your workspace.
 - Click the Next button  in the footer of the dialog if you want to write a personal invitation text. This invitation text will be added to invitation- emails sent to these members.
- The 'Document release' and 'Automatic versioning' tabs are about defining a release process and automatic versioning for the documents of the new workspace. You can leave these tabs of the action form unnoticed for the time being.
- Click [OK] to create the new workspace.

Open the new workspace, upload documents you want to share with the other members, create a new chat within the workspace or convene a meeting in the workspace calendar.

For a more detailed introduction to shared workspaces, see 5.1 "Create and manage workspaces" on p. 91.

Note: Do not confuse workspaces and communities. When you start with BSCW, you will most likely want to create workspaces and not communities. Communities are meant for very large user groups with common interests and have their limitations regarding the design of access rights.

3.2.3 End work session

To end your work session with BSCW

- Select  Logout top menu of the main menu.
- Before the final logout, any private data stored by BSCW in your browser will be deleted. These are e.g. backup copies of the integrated HTML editor or locally cached chat messages . Afterwards, you will be shown the publicly accessible welcome page of your BSCW server.

Note: If an error occurs when deleting the private data, you will receive a message to that effect and will have to delete the private data manually. For Windows browsers, use the Ctrl-Shift-Del key combination to bring up a dialog for deleting the browsing history or browser history, select the 'Website Data' option (for Firefox, select the 'Cookies' option) and delete this data. For Safari, choose Safari > Reset Safari, check the 'Remove all website data' option, and then click [Reset].

- Some browsers require you to authenticate again before logging out. In this case you have to authenticate with a *blank* password to actually close the work session. Canceling authentication does not close your work session with BSCW.

For some Web browsers explicit logout cannot be offered. In this case you have to terminate the work session with BSCW by closing or exiting the Web browser on your local computer. Until you log out or close the browser, the access rights granted to you under your username apply.

Attention: If other people are also using your local computer (e.g. in a public Internet café), you should definitely *terminate your BSCW work session* as soon as you have finished your work with BSCW.

3.2.4 Parallel working sessions

You may be registered on several BSCW servers, e.g. on your own server in your company and on a public BSCW server. You may be registered under the same or different usernames.

Your Web browser may represent *only one registered user* at one and the same BSCW server at the same time; parallel work sessions of multiple registered users with one and the same browser at one BSCW server are *not* possible.

However, with most Web browsers it is possible to be logged in as user to several BSCW servers at the same time; parallel work sessions with different BSCW servers are thus possible.

Note: BSCW objects can be transferred between different servers to which you are logged on simultaneously *only via your local computer* as physical relay station: You store the data on your local system and then upload it to the other BSCW server. Your clipboards on the different servers are not connected to each other, even if they are represented by identical icons.

3.2.5 Other methods of authentication

The default authentication method for BSCW servers is the login to your web browser with username and password as described above. Make sure to use the BSCW server via HTTPS (a combination of HTTP and a cryptographic transport protocol) so that the communication of your browser with the BSCW server is encrypted. Ask your administrator about this possibility if HTTPS is not available at your BSCW (recognizable by the fact that your server address starts with `https://` instead of `http://`).

However, your BSCW server may also be configured to allow completely different authentication methods. Especially methods that may also be used for other Web applications without having to remember different usernames and passwords each time or even without having to authenticate again when the application or Web site is changed (so-called single sign-on methods) come into question here. Alternative methods of authentication for your BSCW server are offered on the normal login form.

An example of a single sign-on method is *OpenID*, where authentication runs via a special identification service (so-called OpenID provider) with which you maintain an OpenID identity. If you see the OpenID icon  on the BSCW login page, you may log in to BSCW using the URL of your OpenID provider.

- Enter the URL of your OpenID provider into the corresponding field of the BSCW registration form. You may obtain an OpenID identity from one of the many OpenID

providers. E.g. users with an account at Google may log in to BSCW using the URL <https://www.google.com/accounts/o8/id>.

- Afterwards, you will be asked by your OpenID provider to authenticate yourself. After that you are logged in to BSCW.

The main advantage of this procedure is that you are now logged in to all websites that allow OpenID. You can learn more about OpenID at <https://openid.net/>.

3.3 Select language

The choice of the language of the BSCW user interface is a personal setting determined by the user. It *only* affects *your personal view of the* data displayed. When you register as user, BSCW takes as user interface language by default the language you use in your web browser. You may also choose another language:

- Select **Settings** in the main menu  and set the language of your user interface in the 'General' tab of the action form using the offered 'Language (BSCW)' menu.

If you select German as the user interface language, the online help is also in German. The same applies to English. All other languages, however, currently do not have their own online help and use the English version instead.

3.4 Set personal profile

In BSCW you have a personal profile that contains useful information about yourself such as full name, organization, address, phone numbers, photo, references to additional information on the web, e.g. to a personal homepage and your organization's website, as well as your contact information in social networks and instant messaging services that make it easier for other users to get in touch with you.

To enter or change information in your personal info page,

- select the **Personal Profile** entry in the main menu .

The '*Change personal profile*' form, where you enter or change information for your personal profile, consists of different sections, each containing a group of information for your personal profile:

- Personal data
- Communication
- Image

Personal data

Your personal data includes email address, full name, organization, address, business and private phone numbers, fax numbers and web pages. All these personal data are displayed on your personal info page and are thus accessible to all users of your BSCW system. Full name and organization from your personal profile are also used in entries about you in address books and member pages. Such an entry is written e.g. as follows

schmuecke (Erika Schmücke, Regex AG)

if full name and organization have been specified. However, if the full name is missing, the user will be displayed as follows:

```
schmuecke <e.schmuecke@regex-ag.de>
```

You can add tags and a description to your personal data, which will also appear in the description of your user entry on member pages.

The 'Primary email address' field is set to the email address to which BSCW sends your messages (e.g. the regular email reports about activities in your workspaces). By default this is the Email address you have registered with. If your email address has changed or if you want to use additional email addresses, please enter the new or the additional addresses under 'Add additional email addresses'. For each of these additional email addresses you will have to go through a process similar to your first registration.

If you have registered multiple email addresses, you can specify a new primary email address by selecting it in the corresponding field. Note that depending on the server configuration, not every user can enter additional addresses and the range for allowed addresses may be limited to certain email domains.

Communication

Here you can enter contact information that will allow other users to contact you on social networks. To add a social network in your personal profile,

- select an entry from the list offered and click on [+ Add].
- Enter the URL where you can be reached on the network in question. Expand the description of the social network, if necessary.
- To remove a social network from your personal profile, click on  in the corresponding line.

The information provided here will be listed under 'Contact Information' on your User Info page and will be used for other users to contact you.

Image

In this tab your picture will be displayed, for example, on your user info page, in chat or tasks. If there is no picture of you yet, you can add a picture of yourself to your personal profile.

- Select 'Upload image from external website' and enter a URL in the 'Image URL' field that points to such an image on the web,

or

- select 'Upload image from my computer'. Use the [Browse...] button in the 'Local File' field to select an image on your local computer. The uploaded image file will be saved in the system and the access rights will be set to allow all users to view the image.

In the same way, you can replace an existing image of you.

3.5 Configure browser

Before using the BSCW server, please check the version and configuration of your browser.

- To use BSCW, a current version of one of the popular browsers is required. BSCW works best with the following versions:

- Chrome,
 - Edge (Internet Explorer 11 with restrictions),
 - Firefox,
 - Opera.
 - Safari,
- Make sure that the clock on your computer is set correctly. Otherwise there may be problems with synchronization between the BSCW server and the pages in your local cache.
 - BSCW uses JavaScript, cookies. For BSCW to work properly you have to configure your web browser to enable JavaScript and accept cookies. BSCW cookies are used for authentication purposes only and are valid for one BSCW session only.

Most popular browsers support Javascript, including those listed above.

Provided that documents downloaded from your workspaces can be displayed by your Web browser (possibly with the help of previously installed plug-ins), you do not need to change the configuration of your browser to be able to use BSCW.

However, if you want to share *documents in specific application formats* with other members of a workspace (that is, file formats that require a specific application, such as WordPerfect, Excel, or Photoshop), you should configure your browser to evaluate the file type of downloaded files and open the files with the correct program depending on the type. How you need to do this depends on the platform and browser you are using. Please consult the manual of your browser.

If you do not adjust your browser in this way, it will ask you for the desired action for every file it cannot display. If you are using a newer browser, it will offer to establish a fixed relationship between the file type and the program you have chosen for it, which it will fall back on when a file of that type is submitted again.

4 Basic terms and functions

The sections of this chapter provide you with basic knowledge about BSCW. Some of the details described here may not be present or may work differently in some of your workspaces. This may be due to the following reasons:

- You were invited into a workspace in a role with reduced privileges.
- The configuration of the BSCW server you are using does not support certain functions.

4.1 The standard user interface

BSCW manages two basic classes of objects:

- Objects that do not contain any other objects:
 - Document
 - URL
 - Date
 - Date coordination
 - Contact
 - User
- Objects that can contain other objects ('container objects'):
 - Folder
 - Search folder
 - Chat message or note
 - Task
 - Calendar
 - Email message
 - Template folder
 - Wikis or Wiki
 - Task
 - Flow Folder
 - Contact list
 - Member group (of a workspace)

- Community
- Address book
- Wastebasket

The contents of container objects are represented by BSCW in overview pages that share a common basic structure and functionality. The overview page of a folder may be regarded as a model for such pages.

The representation of a folder is divided into

- a header
- a list of entries
- chat messages or notes
- and tasks.

The following sections describe the general structure and functionality.

The display automatically adapts to the width of the browser window you have selected, so that the essential functions can still be accessed even with a narrow browser window.

4.1.1 Header

The *members* of the current folder are displayed in the header on the left. . You can use the button to manage the members of the current folder, invite additional members or manageroles andrights. The current folder name is displayed in the center of the header. You can assign each workspace its own icon - this then also applies to all subfolders.

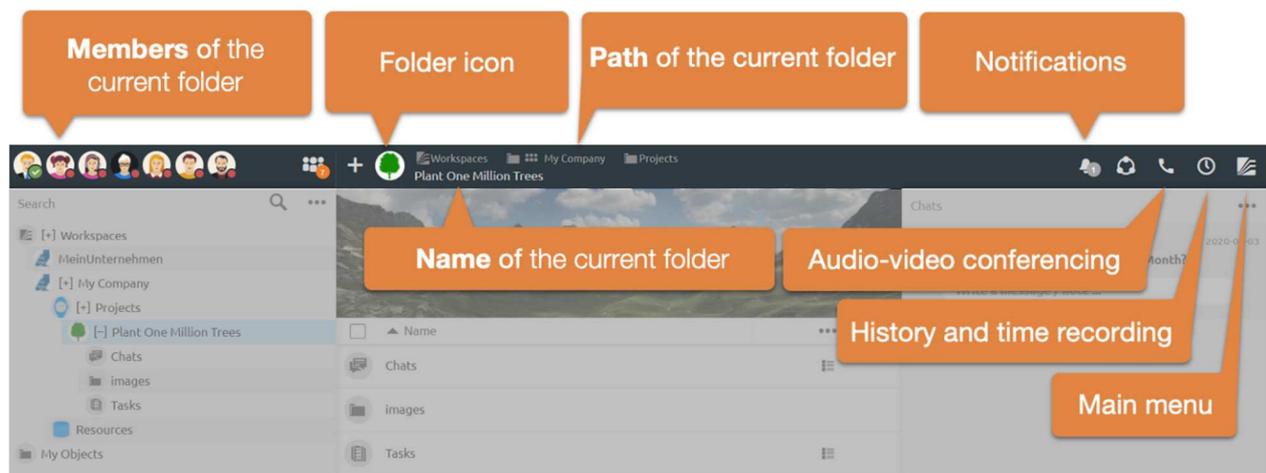


Figure 44: Header bar of the BSCW

While the information in the header bar mainly refers to the current folder, you will find basic functions on the right side. These include the latest news, audio-video conference control, history and time tracking functions, and the main menu.

You can get the context menu of the current folder by right-clicking on its name in the header.

4.1.2 List of contents

The content part of a folder page, address book page, etc. consists of a list of entries, each representing an object contained in that folder. In the *detail view*, which is offered by default, an object entry usually consists of the following elements:

- Checkbox
- Symbol for the object type
- Object name

Each entry contains an object-specific context menu with the actions that can be applied to the object. The context menu can be opened by right-clicking with the mouse on the entry.

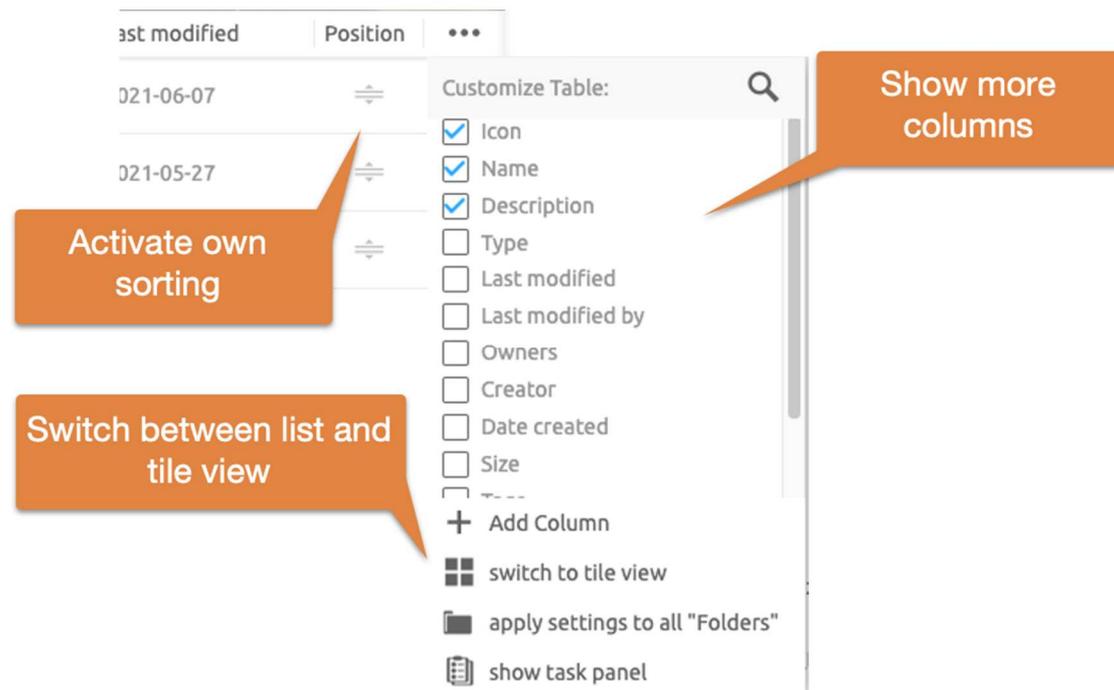


Figure 45: Customize folder content view

You can configure the information that is displayed together with an entry in the **...** menu behind the last column title.

In addition to the detailed view of a folder, you can also *select the tile view*. The *sorting of* entries can be changed by clicking on the column titles. A special feature here is the position column. Here you can sort elements manually by DragNDrop. The *custom sorting* is shared with all other members.

Please note that *calendar pages look and function differently* than the folder pages described here.

4.1.2.1 Open documents and document preview

To display the contents of a document in the contents list of a folder,

- click on the name of the corresponding object entry,
- *double-click* on the line, or

- select  the context menu of the document.

The behavior when opening a document depends on your personal settings (see below) as well as on browser, operating system, the installed plugins and your browser configuration. For example, for PDF documents you can set whether they should be displayed in the browser (in a so-called PDF plug-in) or directly in the Adobe PDF reader.

If you want to open a document that your web browser cannot display, you can download the corresponding file and then open it with a suitable application.

The full-screen preview contains buttons in the header to [Download], [Edit] (as far as this is possible) and to return to the folder view. You can also use the two arrows at the edge of the header to browse all documents in the current folder for which there is a preview.

4.2 Shared objects

In BSCW you may create, manage and share objects of different types in one workspace (for sharing see 4.3.3 "Invite members" on p. 61).

The symbol in front of the object indicates to which type the object belongs.

4.2.1 Document

Any file uploaded from your local system is represented in BSCW as a *document*. Documents may contain text, graphics, spreadsheets, print files, images or audio and video data that are typically stored in different, partly application-specific file formats. All documents in BSCW have a corresponding file type that they receive when uploaded. BSCW represents the respective file type by a special symbol in front of the document name if the BSCW server has such a symbol for this file type. File types are represented on the Internet in the form of so-called MIME types. The info page of a document shows the rather technical MIME type.

BSCW supports special features for the following two types of documents.

Text and HTML documents:

Documents of the file type 'HTML document' (MIME types `text/plain` or `text/HTML`) may be created and edited directly in BSCW (Actions  Neu `HTML document` and  Edit, see 8.1 "Edit documents directly" on p. 119).

Zip and Tar archives:

BSCW may create a Zip or Tar archive from the objects of a folder (including personal objects like your recycle bin). Such archives are again BSCW documents (file type 'Archive (Zip/Winzip)' or 'Archive (Tar)'). In addition, BSCW can extract the files from Zip and Tar archives that you have uploaded from your local system; the files are placed on your clipboard as documents and folders (Actions  Archive and  Extract, see 13.1 "Archive and transfer objects" on p. 191).

When you click on a document name, different things can happen depending on the file type of the document and the configuration of your web browser:

- the web browser interprets the document and displays it as an image, text, or web page.
- a program on your local computer, which can display or edit the document, is started.
- a dialog box is displayed that allows you to save the document locally.

- the web browser offers you a number of options to deal with the document.

For some document types BSCW also offers a preview of the contents. See 4.1.2.1 "Open documents and document preview" on page 53.

4.2.2 Document under version control

Version control is a powerful and convenient tool that prevents accidental overwriting of a document of which several editing stages or versions are to be saved. It also ensures that only the latest version of the document is used for each edit.

4.2.3 Chat message or note

A note is typically a short message that you create in BSCW. Notes are a suitable means to

- To inform the members of a work area about a topic,
- Start or participate in a discussion about a problem,
- to ask all members to comment on a topic.

Chats are displayed on the right side of the screen. Within a folder, chats or notes can be created as standalone posts or as replies to other chats. Outside of chats, a chat can exist as an entry in your trash if you have removed it.

4.2.4 URL

Similar to an entry in a list of bookmarks or favorites in your Web browser, a URL object provides direct access to an object that is not located in the current folder but on the Web, on an FTP server or similar. A URL object may also be used to access a BSCW object in another folder on the same BSCW server (see 8.5 "URLs for objects in workspaces" on p. 131).

You create a URL by typing

- click on  Neu URL in the top menu.
- In the 'General' tab of the action form, enter the address under 'URL' (e.g. <https://www.bscw.de/files/help-7.3/german/>) and specify whether the address should be saved as a reference or the document to which the address refers. In the latter case, a local copy of the external document is created, which you can access even if the original source is no longer available, e.g. because the corresponding server is no longer running or the document has been moved to another location. Furthermore, you can give the URL object a name (by default, the last part of the address is used as name) and optionally enter tag and description.
- Click [OK] to create the new URL.

A URL object has the following special actions in the context menu:

 **Information Check** checks the URL for accessibility.

 **Upload URL** saves the contents of the document or object referenced by the URL in addition to the URL object in your workspace.

 **Change Rate** lets you rate the quality of the document or object referenced by the URL on a 5-point scale.

4.2.5 Folder

Folders are the basic tool to organize the objects you have created or transferred to BSCW. A folder may contain any objects, including other folders, chats or a calendar.

- Click the folder icon or name to display the folder's contents in the current folder overview.

The folder overview is divided into a header and a contents list that lists entries for each object contained in the folder. For details, click on the references provided.

4.2.6 Contact list

Contact lists are special folders where you may manage contact information about persons you are in contact with. Contact lists may be created in arbitrary folders so that contacts may be created and managed in the context of a specific workspace - even about persons who are not members of this workspace or users of your BSCW server.

4.2.7 Email message

You may send email messages directly to a BSCW folder if this folder allows it. Such email messages may contain any attachments and are stored in BSCW as objects of type email message according to Internet standard RFC 822.

For example, you can easily create a complete email archive of your project by adding the email address of a folder to your email distribution list. The members of your project team now no longer need to store all important email messages in their own email systems.

Email dispatch is also a convenient way to contribute documents to BSCW workspaces - as an alternative to uploading these documents via the Web-based user interface.

4.2.8 Search folder

A search folder contains the results of a search as a list of references to BSCW objects. You may modify the contents of a search folder as a whole by repeating the search query identically (to update it) or modified (e.g. to make it more precise).

4.2.9 Template folder

Template folders are special folders with templates that can be copied to other folders. Any objects can be used as templates, e.g. documents of any kind, surveys, circulars and tasks or even folders with their entire content. Typical examples of templates are letter or form templates with extensive layout and formatting information and, if necessary, calculation formulas. The templates are filled with specific content after copying.

In addition to user-defined template folders that contain templates for the use of a single person or a workgroup, there are system-wide template folders that are accessible to all registered users of the BSCW server and that are managed by the system administrator.

4.2.10 Wikis or Wiki

Wiki provide a convenient way to create and manage miniature Web sites within BSCW. Apart from the HTML documents ("pages") that make up the content of the website, a wiki contains three special documents: the start page that is displayed when clicking on the name or icon of a wiki, the layout page that serves as the default frame for all other HTML documents of the wiki and thus ensures a consistent layout of all pages of a wiki, and finally the style definition, a style sheet that defines e.g. colors and fonts for the HTML elements used in the pages of the wiki.

In addition, wikis have their own system of elements with a wiki-like syntax (`[element ...]`) that allows you to include BSCW system functions in the pages of a wiki. Examples are the date of the last modification of a page, links to edit a page, the display of a page's history or even whole context menus.

4.2.11 Calendar

The calendar supports different views (year, month, week, day), as you are used to from conventional calendars. Users can enter their appointments directly into the calendar. In addition to the personal calendar that each user has, you can create group calendars in any workspace (but not in your personal workspace). These calendars can then be used by the workspace members and other users.

The calendar functions support you both in planning and preparing appointments and in documenting them for the invited participants. Of course, you can also invite people to appointments who do not belong to your current work area.

4.2.12 Date coordination

Appointment scheduling helps to find an acceptable date for a joint meeting. The organizer creates an appointment scheduling and specifies the possible dates and the intended participants. Not only BSCW users but also other persons may participate. The participants are notified by email and can vote on the proposed dates. Depending on the outcome of the poll, the organizer will set a final date of which all participants will be informed.

4.2.13 Community

Communities are designed to allow large groups of users to access workspaces with equal access rights without sacrificing consistent performance. Communities are also suitable as self-organized forums for users with similar interests.

4.2.14 Task

A task describes an activity to be completed. A task can have one or more responsible persons who complete the task or supervise its completion. Tasks can have an estimated duration and a completion date. Each user has a personal task list that contains all tasks.

Tasks can be further subdivided into subtasks and themselves again contain all kinds of objects, such as chats, calendars or documents.

4.2.15 Flow Folder

Flow folders resemble normal folders in that they can contain other objects such as documents and notes. In addition, flow folders are assigned a set of tasks to be performed on the contents of the folder. A flow folder is assigned to the users responsible for each task in turn, in the order specified.

The tasks of a flow folder do not represent a separate object type and only have a name, an informal description and a responsible person. They are not to be confused with the independent task objects mentioned above.

4.3 Actions

In BSCW, an action is invoked by selecting a menu item or by clicking a button, reference or icon, each of which represents the action.

In the following part of this section we will focus on the actions that are invoked by menu selection and that require a more detailed explanation. Note that the actions offered to you in the various menus also depend on

- your BSCW competence, which you have defined in the options yourself, and
- the access rights you have for this object.

4.3.1 Create and change objects

The menu items for creating objects can be found in four different places on a folder page:

- In the Header you can create objects in the current folder by selecting  Neu desired object type from the menu. For example, with  Neu Folder you create a new subfolder of the current folder. The action form has three tabs:

- In the 'General' tab enter name and optionally tags and description.

Note: In BSCW only a restricted character set may be used for folder and document names. This serves to improve compatibility with the restrictions of different operating systems (e.g. when downloading BSCW archives). When you create new folders, you will be notified of an invalid name (e.g. if it contains one of the characters \ * : ? / < > | "). In this case you have to correct the name before you can create the folder. Invalid names of already existing folders or documents from an older BSCW version are not changed unless your BSCW administrator initiates this or you duplicate these folders or documents e.g. by copying them.

- If you are the manager of the current workspace, you can define the release process for documents in this folder in the 'Release' tab (details in 12.3 "Document sharing" on p. 186) and define whether documents in the new folder should be automatically placed under version control in the 'Automatic Automatic versioning' tab (details in 8.3.6 "Automatic versioning" on p. 128).
- Finally, click [OK] to create the new folder.

All actions for creating new objects include an action form where you enter the information that BSCW needs to create the new object. The form depends on the selected object type. For an overview of object types see 4.2 "Shared objects" on p. 54.

You can also change the properties of an object once it has been created, by

- You can call **Change Properties** in the context menu of the object.

The action form is similar to the action form for creating objects and again depends on the object type. For folders, for example, you can use the 'General', 'Sharing' and 'Automatic versioning' tabs to change the name, description and tags of the folder, as well as adjust the document sharing and automatic versioning settings for the documents contained in the folder (the latter if you are a manager).

Some objects can only be created within certain other objects, e.g. contacts can only be created within contact lists. The creation of communities via the **Manage members** menu is only possible in your personal workspace ('home folder').

4.3.2 Upload and modify documents in BSCW

You may upload a file from your local computer to a folder on the BSCW server where the file is treated as a document. The common browsers (e.g. Chrome, Edge, Firefox, Internet Explorer, Opera or Safari) feature the file transfer function by drag-and-drop: You select a file on your local computer, drag it to the browser window of the BSCW folder with the mouse button pressed, and drop it there by releasing the mouse button. This way you may also upload multiple files or the contents of entire folders.

The uploaded documents are given the names of the original files. If the names do not comply with the restrictions for BSCW document names regarding the use of special characters (see note below), the names are automatically corrected.

Besides drag-and-drop, there is also the possibility to specify the file to upload in a file selection dialog. For this purpose

- select above the **↑ content list**.

With this method you can freely choose the name of the document and provide additional information about the document (description and other attributes such as tags).

You can subsequently change the name and other details of uploaded documents again by

- You can call **Change Properties** in the context menu of the document.

Both actions use essentially the same action form, which consists of four tabs.

- **General**: specification of local file to upload (omitted when modifying), name, tags and description of the document.
- **Release** (for managers only): define a release process for the document that differs from the general rules for the folder in which the document is created (see 12.3 "Document sharing" on p. 186).
- **Automatic versioning** (for managers only): define a versioning rule for the document that differs from the general rules for the folder in which the document is created (see 8.3.6 "Automatic versioning" on p. 128).
- **Attributes**: Specification of metadata attributes for the document.

General

- In the 'Local file' field (only when uploading), use [Browse...] to select a file from your local file system to upload. The name of the selected file is automatically entered in this

field. In BSCW, the same file name applies unless you assign a new name in the 'Name' field.

The suffix in the document name (e.g. .doc) that indicates the file type on some platforms should be kept because it facilitates the recognition of the file type when the document is downloaded again by other members of the workspace: the BSCW document name is used as local file name by default!

Note: Only a restricted character set may be used for document (and folder) names. This is for improved compatibility with the restrictions of different operating systems (e.g. when downloading BSCW documents). When you add new documents to the system, you will be notified of an invalid name (e.g. if it contains one of the characters \ * : ? / < > | "). In this case, you must correct the name before you can post the document.

Invalid names of already existing documents or folders from an older BSCW version are not changed unless your BSCW administrator initiates this or you duplicate these documents e.g. by copying them.

- In the 'Tags' field you can enter freely selectable keywords that characterize the new document. These keywords can be used when searching. Multiple tags are separated by spaces. There is no distinction between upper and lower case letters.
- In the 'Description' field you can enter a description of the document content or instructions on how to use it.
- The document's file type is usually correctly recognized and assigned by the web browser (default setting). You can also specify the file type yourself by selecting a file type from the menu offered. If the correct file type is not offered, you can also explicitly enter the associated MIME type (standardized designation for file types on the Internet). The info page of a document shows the MIME type.

Likewise, the coding method, if used, will be recognized correctly. Only in exceptional cases do you have to explicitly specify the encoding method in the corresponding field. Later, you can use  **Change Properties** in the document's context menu to change the file type and encoding again.

Attributes

- In the 'Attributes' tab you can specify metadata attributes for the new document. These attributes can be used when searching. The default attributes are arranged in two groups. The first group contains category and priority; these two attributes are displayed in the folder overview if the display of the corresponding columns is enabled. The second group contains attributes for classifying documents according to the Dublin Core standard (see 4.9.1 "Metadata profiles" on p. 84); for these attributes you can add further values by clicking .

You can also define your own attributes later, which you combine in a new or modified metadata profile and assign to the document (for details, see 4.9.1 "Metadata profiles" on p. 84).

- Click [OK] to upload the document or to make the changes you have made to the document effective.

Caution: If you place a new document in a folder that has the same name *and* file type as an existing document, the existing document will be overwritten without prompting. To prevent this, you can lock the document:

- Select  Write Protect in the context menu of the document to set a (subsequently removable) lock.

If the document in question is under version control, it will not be overwritten, but a new version will be created automatically.

Note: Documents *that* you upload to a shared workspace do not belong to you, the creator, but to the owner of the workspace. The storage space used by these documents is therefore also allocated to the owner of this workspace. If disk space monitoring is activated for your BSCW server ('quota system'), the upload of large documents by the members of a workspace may cause problems for the owner because of exceeding the allotted disk space. The owner of a workspace is usually also the manager and in this capacity can of course also delete documents in case of problems. If disk space monitoring is activated for your BSCW server, the disk space you have used is displayed on the info page of your personal workspace ('home folder'). The info page can be accessed by clicking the button  in the context menu of the document or folder.

4.3.3 Invite members

A personal folder becomes a *shared workspace* by inviting other users as 'members'. You yourself are the first member and the owner of the workspace.

- Select  Add member .

For the details of this action, see 5.1.1 "Create shared workspaces: Invite other users" on p. 91. By inviting members to a shared workspace, you increase the group of people who are allowed to access the workspace and the objects in it. Before you invite someone and turn a personal folder into a shared workspace, see 5.1 "Create and manage workspaces" on p. 91; section 5.2 "Access rights and roles" on p. 99 explains how to change members' access rights.

 Public access in the context menu turns a personal folder, a workspace or a discussion forum into a *public workspace* (by default only allowed for managers). However, this option may be disabled by your BSCW administrator for security reasons.

Define which actions on this object should be freely accessible. This way you have extended control over possible accesses. By default, only read access rights are granted. All objects on your BSCW server that have been made publicly accessible in this way are listed in the public area of the server.

If you plan to invite a large number of users to a workspace, consider adding a community to the workspace. Communities can accommodate a large number of members and provide access to the community workspace without increasing the load on the server.

4.3.4 Actions on objects in a folder

Actions on objects in a folder may be invoked in different ways. BSCW distinguishes between

- simultaneous application of the action to several objects by
 - Marking the objects by clicking on the corresponding check boxes on the left side of the object entries and
 - Selection of the desired action in the multi-selection toolbar;
- Apply the action to a single object by selecting the action from the context menu  .

The actions of the multiple selection toolbar are generally also offered in the individual context menus of the object entries. Some actions are also offered in the upper menu bar for the current folder or under **Edit for** a selected selection of object entries.

4.3.4.1 Multi-selection toolbar: Actions on selected objects

If actions are to be applied to *several objects simultaneously*, first select the objects by

- Clicking the corresponding check boxes on the left side of the object entries;
- Selection of all objects of the current folder by clicking on in the multi-selection toolbar. The same effect has **Edit Select All** from the top menu bar.

During object selection for a simultaneous action, you can also remove the selection marker from all objects already selected.

After you have selected the objects for a simultaneous action, you must click the corresponding icon in the multi-selection toolbar to set the action in motion. The names of the actions the icons stand for are displayed as a tooltip when you move the cursor over an icon.

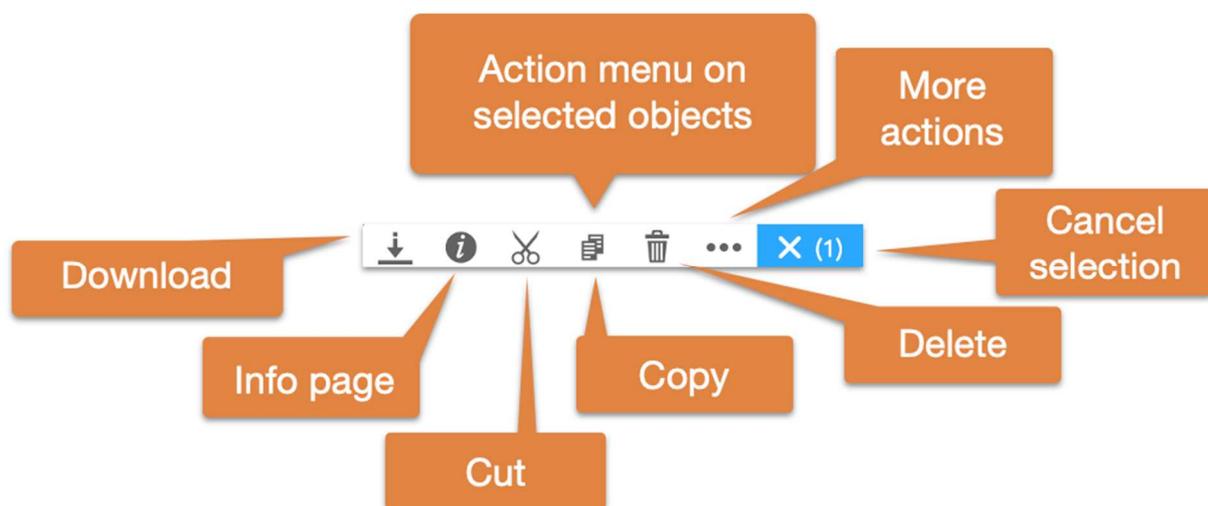


Figure 46: Selection menu

If one of the objects you have selected does not allow the desired action, BSCW will apply the action *only* to those objects for which it is allowed. If *no* object in the folder allows a certain action, the corresponding action icon will *not* be offered in the multi-selection toolbar.

In the following we describe how the individual actions of the multi-selection toolbar work.

-  **Send to e-mail recipient** - sends the selected objects by email, attaching objects with their subobjects as attachments or sending references to the objects. The action leads you to a form where you can enter the corresponding addresses. You can use data from your address book as well as enter new contact data directly.
-  **Cut** - moves the selected objects to your clipboard.
-  **Copy** - puts copies of the selected objects to your clipboard.
-  **Paste** - moves the objects of the current selection in your clipboard. to the selected folder. If nothing is selected, the current selection will be moved from your clipboard to the

current folder. Note that you can select only one folder to which the clipboard objects will be moved.

-  **Remove** - moves the selected objects to your trash.
-  **Put back** - puts the items selected in your Trash back into the folders from which they were removed, if these folders still exist.
-  **Archive** - packs the selected objects into a Zip or Tar archive. Archive is especially useful if you want to download a large number of documents from BSCW.
-  **to address book** - puts references to the objects selected in a member page into your address book (if not already there).
-  **to community** - creates a community that has the objects selected in a member page as members.
-  **vCard export** - saves the user objects selected in a member page or in your address book as a vCard file (*.vcf) on your local computer; the included contact data can be imported into local applications such as Microsoft Outlook.

4.3.4.2 Context menu: Actions on individual objects

Actions on a single object can be displayed by selecting the corresponding entry in the context menu by clicking the right mouse button somewhere in the object entry (pressing the Ctrl key together with a right mouse click at the same time usually opens the original browser menu, e.g. for "Save target as").

If you position the cursor over the context menu icon, an additional horizontal context menu with icons for frequently used actions is offered (e.g. Edit, Change Properties, Attach Note, Cut, Move, Copy, Remove for documents).

Some of the entries in the context menu are intended for a specific type of objects. For example, the offered actions differ for folders and for documents.

BSCW will only show you actions that you are allowed to use from the access rights to a given object.

We list below most of the actions offered in the context menus.

In addition, there are a number of actions in the context menu that are specific to certain object types and are dealt with there.

Change Properties lets you change all properties of the current object. This includes all the settings you made when creating the object. This includes name, description, tags, rating and attributes, for folders and documents for the managers still the automatic versioning and the document release.

Version control places a document under version control. Additional information includes a description of the base version, an initial version number, and the state. For a document under version control, the Modify menu offers other actions such as **New Version**, **Manage Versions**, etc., all of which are discussed in detail in 8.3 "Documents under version control" on p. 124

Notifications lets you specify in detail in which form you want to be notified about which events concerning the current object.

Resubmit lets you specify one or more times when you want to receive an email message reminding you about the document.

Table of Contents shows you the complete contents of a folder as an indented list that lists not only the objects contained directly in the folder, but also the objects of subfolders, sub-

subfolders, and so on. The contents of discussion forums, calendars and other container objects are also displayed here.

i **Information** shows you the info page of the object.

Events... shows you all change events that have occurred since this object was created.

New events shows you all the change events that have occurred since this object was created.

Acknowledge events signals to BSCW that you have taken note of the recent read and change accesses to the object. The corresponding event symbols are removed.

Export as CSV returns the events of the current object as a comma-separated file for further processing, e.g. with a suitable spreadsheet program.

Open as folder displays the item (calendar, messages or tasks, etc.) in the folder view.

Edit lets you edit text and HTML documents, e.g. notes, directly on the BSCW server. Under certain circumstances, Microsoft Office files may also be edited this way.

Replace loads a document from your local computer system into your workspace and places it in the place of the current document. The replaced document is overwritten and is no longer available.

Public access makes the folder or discussion forum a public area. You can specify which actions should be allowed to the public (adding documents, folders, discussion forums, notes, URLs). By default, only read permission is granted here for security reasons.

Email sharing shares the workspace for uploading documents via email.

Write-protect locks a document to protect it from accidental modification or deletion. Specify the reason for the lock. This text is displayed when the icon  in the 'Share' column is clicked. You can use this opportunity to unlock the document; other members of the workspace can also 'take over' the lock.

Freezing protects a document from changes by other members of a workspace. Frozen documents can only be read by others. By default, freezing is available only for creators and managers.

Send to This menu summarizes all actions that transform the current object into another format or export it in another way. The possible actions depend on the type of object. Examples are archiving folders, converting documents or preparing them for printing folder overviews or contact lists in PDF format

Link This submenu summarizes all the actions that create a reference to the current object and place it in another object. Using references, you can have entries in different places of your folder hierarchy that all refer to the same object without having to copy the object. Deleting a reference does not delete the object as long as there are other references, i.e. entries in any folder that refer to the object.

as a bookmark creates a reference to the current object in your bookmarks.

Copy Internet Address copies the Internet address of the current object to your computer's clipboard if you have the Adobe Systems Flash plug-in installed in your browser.

Cut moves the object to your clipboard.

Copy puts a copy of the object on your clipboard.

Note: Copying a folder means that you recursively copy all objects, subfolders, etc. contained in it. In some cases, referencing to the clipboard or cutting serves the same purpose and saves a lot of disk space.

Paste moves the current selection of objects from your clipboard to the object, in this case a folder, discussion forum or other container object.

Remove moves the object to the trash.

4.4 Personal objects

Every user in BSCW has direct access from anywhere to a set of personal objects whose icons are displayed in the navigation tree on the left side.

The personal objects *cannot* be shared with other users on your BSCW server.

 Personal workspace ('home folder')

 Wastebasket

 Address book

 My calendar

 My bookmarks

 Document input

 Your personal workspace ('home folder') is the folder accessible only to you, containing all the folders you have created and all the workspaces of which you are a member by invitation of other users. If you click on the icon of your personal workspace from other personal data areas (e.g. clipboard or address book), you will return to the one of your workspaces that you last viewed; only clicking on the icon again will actually take you to your *personal* workspace.

 The address book, your personal address store, is mainly used to invite new members to a workspace.

 The calendar is intended for your personal use. In addition to the personal calendar, BSCW offers *group calendars* to organize collaboration in any workspace. Group calendars are stored in workspaces.

 My bookmarks provide direct access to important objects. This personal data area contains the bookmarks you have created.

 MyTemplates contains templates for frequently used objects (e.g. documents or folder structures) that you have defined for copying, and metadata profiles that you have defined in addition to the predefined system profiles .

Bookmarks, personal templates and recycle bin are explained in more detail in the following subsections.

4.4.1 My bookmarks

BSCW bookmarks are links to Web pages and also to BSCW objects that are of personal interest to you. Your bookmark folder is a personal object where you may collect these references similar to web browsers.

- Click on in the  navigation tree to open your bookmarks folder. You can now  Neu add new references with URL.

In any other folders, references to BSCW objects may be added to the bookmark folder with  Link bookmark.

Within the bookmark folder, the references can be structured into subfolders, sub-subfolders, etc. by creating corresponding subfolder structures using  Neu folders. This is done in the same way as for normal folders. Note that bookmarks can only exist in the bookmark folder. You can move bookmarks and bookmark subfolders anywhere in the bookmark folder, but not to other folders.

BSCW bookmarks can be exported to the so-called Netscape bookmark format and then imported to other browsers that support this format (e.g. Chrome, Firefox, Internet Explorer, Opera or Safari).

- Select  Send to Archive to archive all your bookmarks in Netscape format. Download this archive to your local computer, unpack the contained HTML file with your bookmarks and import these bookmarks into your browser.
- You can also perform this operation for a part of your bookmarks by selecting individual bookmark subfolders and clicking on  in the multi-selection toolbar.

This export feature is especially useful for users who frequently use foreign computers - e.g. on business trips. As soon as they use a new computer, they may first download and install their BSCW bookmarks. This way they always have their familiar BSCW bookmark environment available.

4.4.2 Personal templates

In your personal templates you store custom templates and metadata profiles for your personal use. These objects are available when you want to make copies of templates with  Neu From Template or assign a new metadata profile to an object with  Metadata Profile.

Templates are used as patterns for frequently used types of documents (letters, reports, forms) that usually contain extensive layout and formatting information and possibly calculation formulas. In BSCW, arbitrary objects may also be declared as templates: Surveys, flow folders, tasks and even folders with their entire contents including a subfolder structure.

Metadata profiles summarize metadata attributes of a specific BSCW object type. In addition to the predefined system profiles, you may define your own metadata profiles that you may store in your personal templates.

- Click on  in the navigation tree to open your personal template folder.

You can create new templates and metadata profiles in your personal templates.

- To do this, create a new object through the menu  Neu . Then you have to edit this object (e.g. document, folder, survey) so that it can serve as a template.
- Select  Neu Metadata Profile for the newly created object to create a new metadata profile for a specific object type.

Of course, you can also copy or cut existing templates and metadata profiles and paste them into your personal template folder.

You can also create template subfolders in your personal template folder with template  **Folder**, where you can also create and store templates and metadata profiles. This way you can structure your personal templates.

You can make individual metadata profiles and entire template subfolders accessible to other users with  **Add Member** access.

For more details on handling templates, see 8.4 "Templates and template folders" on p. 129 and on handling metadata profiles, see 4.9.1 "Metadata profiles" on p. 84

4.4.3 Wastebasket

The recycle bin contains all the objects that you have  removed from your folders. You can find the recycle bin in the navigation tree on the left side.

Two actions for objects in the recycle bin are additionally offered in the multi-selection toolbar (and in context menus of object entries):

-  *Put back* - puts the selected objects back into the folders from which they were removed, if these folders still exist. Otherwise, you can simply cut the objects and paste them back in a suitable place.
-  *Delete* - removes the selected objects from your Recycle Bin. This causes you to lose access to these objects via the deleted entries (you can still have access to these objects via other entries). If you delete a workspace of which you are the sole owner and where you completely lose access by deleting it, the workspace will also be inaccessible to any other members. In this case, you will be notified of this fact before the workspace is actually deleted. If you delete a shared workspace that you do not own or that has other owners, this only terminates your membership in that workspace; the workspace itself remains for the other members.

Special rules for deleting versions apply to documents under version control (see 8.3.5 "Manage versions" on p. 127).

Who owns removed and deleted objects?

This question becomes important if disk space monitoring is enabled for your BSCW server ('quota system') because all objects that you own are attributed to your disk space share. This may eventually lead to exceeding the disk space allotted to you and the related problems. Removing and deleting objects may result in changes to the ownership of those objects.

When you remove an object, i.e. move it to your Trash, the same ownership and membership rules apply as when you cut the object, i.e. move it to your clipboard. This means for the standard cases of a document you created in a folder you do not own and a workspace you have been invited to, that you become the owner of the removed document in your Trash and that any other members of the folder lose access to the document, while removing the workspace leaves ownership and membership unchanged.

Deleting items from your trash takes away ownership if you are the owner at all and do not still have access to the deleted items via other entries.

For further discussion, see also 5.2.5 "Ownership and ownership role" on p. 105.

4.5 Public access

The public area represents that part of a BSCW server that is accessible to everyone via the World-Wide Web without being registered as a user on the BSCW server. Folders, discussion forums and other objects may be made publicly accessible via  Make Public Access in the context menu of the object. By default, this action is only allowed for managers. Access rights for anonymous users are set when an object is published. By default, anonymous access is limited to read-only.

Note: For security reasons, the BSCW administrator may remove the public area of your BSCW server. In this case no objects may be made publicly accessible.

The public area is realized as a community workspace named 'public'. Its community is the group of anonymous users, i.e. all users who access the public part of a BSCW server anonymously. (Communities in general are described in 11 "Communities" on p. 169). The folder 'public' is included in the list of community workspaces of each registered user of your BSCW server.

4.5.1 Allow anonymous access

BSCW makes it easy for you to publish objects on the World-Wide Web. Private folders, shared workspaces, wiki, discussion forums, calendars, blogs, contact lists and other objects may be published by allowing anonymous access from the Internet. By default, this action is available only to the managers of the objects in question. Also note that your system administrator may have disabled this action completely for security reasons.

- Select  Public Access in the context menu of the object you want to publish, check 'Make Public' and click [OK].
- For some object types, in addition to the default read permission, you can allow other actions on the folder that involve adding objects of a particular type.
- In this case, you can also set whether public access should be *moderated*. In this case, the objects created anonymously via the Internet are not visible during anonymous access until they are explicitly released for anonymous access by a member of the folder by  releasing them.

By publishing an object, the fictitious user becomes *an anonymous* member of the object, which is indicated by the icon  behind the object name in the navigation bar.

You may revoke public access at any time by either

- Select  Public access in the context menu of the published object, deselect the 'Make public' checkbox and click [OK], or
- remove the user *anonymous* from the member list of the published object.

4.5.2 Access folders anonymously

If you want to make a BSCW object that is publicly accessible accessible from the World-Wide Web, e.g. from your home page, proceed as follows:

- Note the URL of this object (most web browsers can copy the URL of a reference to your local clipboard).

- Change the URL so that the login procedure is bypassed and the object is addressed directly by replacing `.../sec/...` with `.../pub/...` in the URL.
- Insert the modified URL e.g. into your home page to allow direct access to the publicly accessible BSCW object from there.

The change of the URL is illustrated by the following example. Let the internal address of an object be:

`https://Ihr-BSCW-Server/sec/bscw.cgi/d18147/ein.docx`

The bold part of this address must be replaced for anonymous access as shown below:

`https://Ihr-BSCW-Server/pub/bscw.cgi/d18147/ein.docx`

Replacing "sec" with "pub" has the effect of bypassing the login procedure that normally occurs each time the server is accessed. Nevertheless, this does not disable access control: BSCW will give an error message if public access to the requested object is not allowed.

Note: The internal addresses of BSCW objects are `https://Ihr-BSCW-Server/sec/bscw.cgi/...` in standard installations. However, your administrator may have set the addresses differently. This also applies to the address component **pub** for the public area. If in doubt, ask your administrator.

4.5.3 Public entry pages for anonymous access

Shared workspaces or private folders with public access can be provided with an additional entry page for anonymous access. While the members of the folder can work in the folder with the 'normal' user interface, the anonymous user is presented with the special entry page. This way, even with anonymous access, the folder remains hidden and only selected contents are presented to the anonymous user who may not even realize that he is in a BSCW workspace.

The creation of public entry pages is intended for users who know how to create HTML pages.

Please note that public entry pages only work if they have been allowed by the BSCW administrator beforehand. For this purpose the administrator must

```
INDEX_PAGE_EXT='index*.html'
```

into the BSCW configuration file.

The entry page is an HTML file named `index.html` that must be contained in the published folder. The mechanism of `index.html` in published BSCW folders acts similar to the presence of a page named `index.html` in a website directory: when accessed from the World-Wide Web, the contents of the directory or folder are not displayed, but the `index.html` file is.

How to create public entry pages in BSCW:

- Create the `index.html` file with  **Neu** **HTML document** in the menu of the folder to be published with an entry page.
- Edit `index.html` according to your requirements. Relative references in `index.html` allow you to refer to other objects in the BSCW folder. A schematic example is given later in this section.
- Open the folder for anonymous access through  **Public Access**.
- Anonymous users may now use your folder with the usual addressing scheme of BSCW:

`https://Ihr-BSCW-Server/pub/bscw.cgi/Ordner-Id`

Under the URL

<https://Ihr-BSCW-Server/sec/bscw.cgi/Ordner-Id>

the portal folder is of course still available in its full functionality for non-anonymous users.

Example of a public entry page

The following example shows how the HTML source code of a public entry page might look like. This entry page shows anonymous users links to two documents in the published folder embedded in text of your choice.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title> page title</title>
  </head>
  <body>
    <h1>Header</h1>
    <p>Any text</p>
    <p><a href="./Document1.txt">reference to document 1</a>
      <p>Any text</p>
    <p><a href="./subfolder/document2.txt">reference to document 2</a>
    <p>Some text</p>
  </body>
</html>
```

Consider preferred language

You can provide a public entry page in different languages, for example, by placing an `index-fr.html` file in this directory that contains the French translation of the `index.html` file. Now anonymous users with French browser interface will see this page in the French version.

4.6 Events

In cooperative work it is especially important that all members of a workspace are informed about what is happening in the workspace. BSCW handles the logging of events automatically and records each action on an object in the workspace as an *event*. Each member of a workspace is informed about the events within the workspace.

BSCW provides several event services that give different prominence to activities in shared workspaces. You may select among these services those that are most suitable for your needs. In addition, you may specify for which types of events you want to use the selected services. The services include event icons on the web-based user interface that indicate changes to objects, a regular email report, and also instant email notification.

Note: Some of the above event services may not be available on your BSCW server because they have not been activated by your BSCW administrator.

4.6.1 Show events

BSCW may inform the members of a workspace about events in different ways. Events for BSCW objects may be found on the info page of the respective object.

- *Event icons* in folder overviews inform at a glance which actions have recently been performed on an object. BSCW distinguishes between different event types: , ,  and . Each of these icons behind an object name indicates that at least one action of the respective type has recently taken place. Click on the event icon to get a list of these events.
- A detailed history of all events on an object is kept available for all objects. It goes back as far as your BSCW administrator keeps events. In the context menu of an object select   to see its history. The button shows more events.
- The *regular email report* lists all interesting events or microblog messages of the past day or week across all your work areas.
- *Instant email* informs the user immediately about events or microblog messages.

You can also export all events of an object in the form of a comma-separated *.csv file*. In the context menu of an object select   to see its history and subsequently open the entire event list via the button . This way you can further process the event data e.g. with a spreadsheet program.

4.6.2 Event types

BSCW distinguishes five event types which are represented in the folder overview by specific event icons for one object each.

-  *New object*: This is a newly created object (document, folder, note, etc.) that you have not seen before. The event may have been created by yourself or by another member of the workspace.
-  *Changed object*: The object has been changed. This can refer to the content or description of the object, for example. Adding document versions and modifying meta information also falls under this type.
-  *Moved object*: The object has been moved from one place to another, for example by cutting, pasting, removing and putting back, archiving, extracting and converting already existing objects.
-  *Events inside*: There are change events for objects contained in this folder. This also applies to objects contained in any subfolders. This icon is displayed only for folders. Events of this type are displayed only as an event icon and are not conveyed by the other event services
-  *Read object*: The object has been accessed without modification, e.g. it has been read, downloaded or copied. If a user has performed several of these actions, BSCW will display only the most recent event for that user. As far as event symbols are concerned, read events are propagated to parent folders and are also listed under their event symbols.

4.6.3 Take note of current events

Event symbols indicate current events. Exactly those events are *current* that took place after the last confirmation of the event list.

- Call  **Confirm** in the context menu to indicate that you have taken note of the object's current events.

This means that these events are no longer current for *you*. BSCW will therefore no longer display the icons to you - but they will continue to be displayed to the other members until they confirm them as well.

You can confirm events of certain types:

- Click an event icon of an object to display its list of current events of this type.
- In this page, click [Confirm].

All events shown in this list are now out of date for you. Any events that occur while your web browser is displaying the event list are, of course, up to date and are again indicated by an icon.

Note: Unlike BSCW Classic, new events are also indicated by an orange bar or dot in the content view of a folder. Once you have seen a folder, all events of the folder are automatically confirmed.

4.6.4 Subscribe to event services

You can specify in detail in which form you want to be informed about which events in your workspaces. For the general case, the default options for event notification are set, which specify which event types you want to be informed about by the various event services. These default options can be overridden for individual objects.

4.6.4.1 Setting the default options for notification

Depending on your BSCW installation, different event services are available that may be configured individually.

- *Event icons* indicate events on the user interface.
- The *regular email report* contains events and microblog messages of the previous day or week for all your workspaces.
- *Instant email* informs you directly about relevant events or specific microblog messages.

To specify about which types of events (new, changed, moved, read object) you want to be notified with which event services,

- Select  **Settings** the main menu.
- The '*Settings*' action form offers a 'Notifications' tab with the subsections 'Active Event Services', 'Subscribed Event Types' and 'Microblog Messages' where you may set your default options. The subsection 'Microblog Messages' only appears if microblogging is enabled for your BSCW server.
- In the subsection 'Active event services' you can tick those event services you want to use. For the regular email report, you can select daily or weekly and additionally specify whether you also want to be notified about events and microblog messages that you have caused or published yourself. Such events and messages are in principle not transmitted via the other listed event services.
- In the 'Subscribed event types' subsection you can tick for each activated event service those event types about which the respective service should notify you.

The default options apply to all objects in your workspaces unless you have changed the notification options at the object level.

Note: The selected options for notification about microblog messages are valid for all microblogs. There is no way to change these options for microblogs in specific workspaces, for example.

You can change the default options at any time, e.g. to disable an entire event service or to exclude read events from the regular email report. While changes to the event types in the default options do not affect the event options set individually at the object level, disabling an event service also applies to the individual event options. Thus, the default options provide a central location to enable and disable an entire event service. If you want to take individual settings into account when deactivating an event service, do not deactivate the event service itself, but all event types of this service in the standard options.

Please note that certain services may not be installed on your BSCW server and consequently not offered at setup.

Warning: Subscribing to direct email notification for an object that may contain other objects may result in numerous email messages being delivered to your primary email address.

4.6.4.2 Changing the notification options at the object level

For certain objects you can define about which events concerning this object and possibly objects contained in it you want to be notified in a special way. To do this, call  **Notification settings** in the context menu of the object. The '*Change notifications*' form has sections for all event services that you have enabled in the default options.

For each service you have enabled, you can select the types of events you want to be notified about with that service. You have the choice to either inherit the options from the parent folder or make specific settings by using the checkboxes provided for this purpose. If no specific notification options have been set in parent folder, the inherited options will be the default options. In this case, the corresponding selection will be labeled 'Apply default options', while otherwise it will say 'Use inherited settings'.

If the notification options for the current object have been changed (for at least one event service the selection 'Select special settings' is made), you can undo these changes by clicking on [Reset]. Afterwards, the settings of the parent folder apply again - or the default options if no specific notification options have been set in any parent folder.

Event services can only be enabled or disabled as a whole in the default notification options. If you want to use an event service for the current object that has not been activated in the default options, click [Change default options]. After you have changed the default options accordingly, return to the '*Change notifications*' action form to set the individual notification options for the current object.

Warning: All changes in the '*Change Notifications*' form will be lost if you click [Change Default Options].

A setting of the notification options that differs from the options of the parent folder is indicated by the icon at the affected object entry . Click this icon to view or change the notification options.

4.7 Search

BSCW helps you to find objects (documents, folders, contacts etc.) in BSCW. BSCW offers searches of different quality.

4.7.1 BSCW Quick Search

The quick search is located below the member display. The quick search has a limited search space that adapts to your usage. In addition, the quick search only takes into account the name of each object.

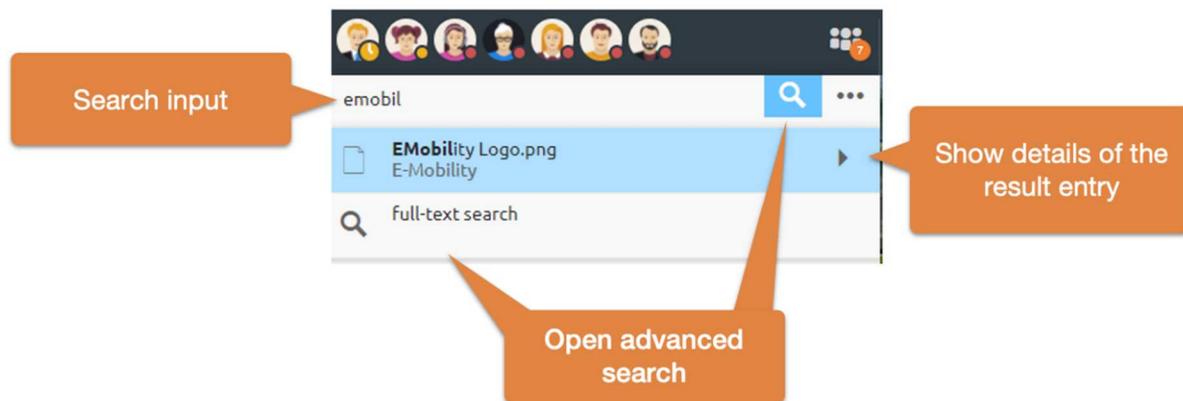


Figure 47: Quick Search Open Input Field and Advanced Search

The arrow button of each result element opens more information, like a preview, events or paths.

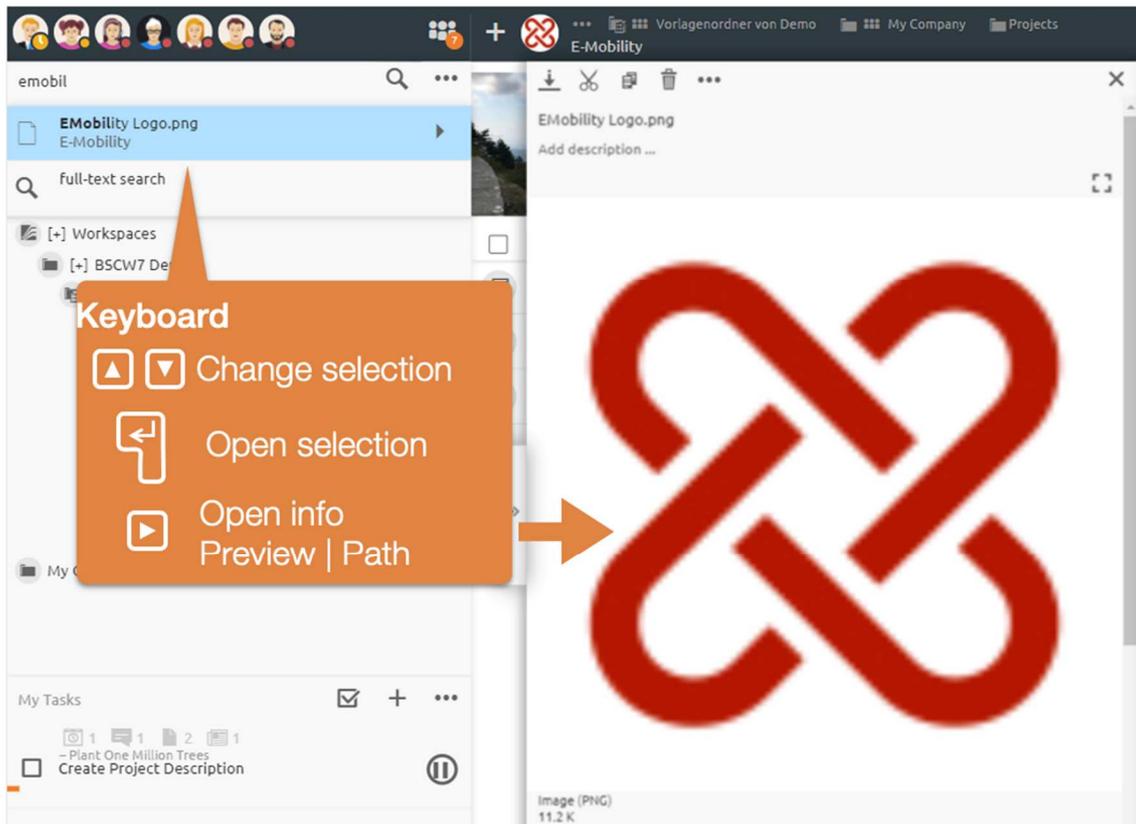


Figure 48: Keyboard operation of the quick search

The quick search can also be controlled via the keyboard. You can use the Right arrow key to open the information view and then use the Up and Down arrow keys to navigate through the results. When the desired result is found, it can be opened by pressing the Return key.

If an expected hit is not included, the full text search is recommended below.

4.7.2 Full text search

If you could not find the object you are looking for using the Quick Search, the Advanced Search offers many more ways to refine your search. The search criteria can refer to object attributes such as name, description, tags or object type and, in the case of documents, also to the entire content. Different search criteria can be logically linked. The search range may be the current folder or workspace, all your workspaces including your personal workspace ('home folder') or the entire BSCW system. The latter also includes your clipboard, your trash and your calendar.

Open the full-text search via the **Search** button  above the navigation tree.

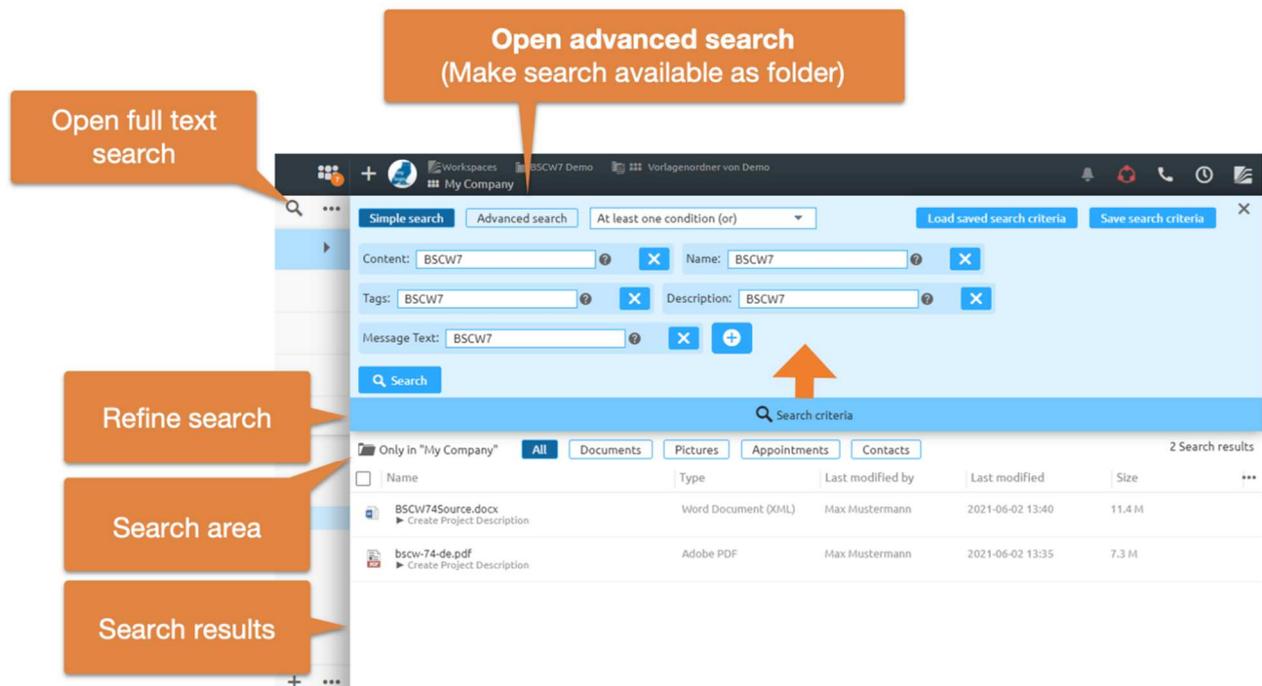


Figure 49: BSCW search form

Search results in special search folder

Regardless of how you started your search, the results of the search are displayed in a temporary search folder. The description of each found object contains the folder where it is located.

4.7.3 The search form

The search form consists of an upper line where you specify the search range, and in its lower part a number of nested search expressions represented as boxes, each enclosing some search criteria.

A search expression can be of AND or OR type, i.e. an object satisfying the search expression must either satisfy all its criteria (AND) or at least one (OR). A search criterion can either be a simple criterion, requiring e.g. that the name of the searched objects contains the string "bscw", or be a search expression itself, which is where the nesting of search expressions comes from. A simple search criterion can also be negated, requiring, for example, that the name of the

searched objects does not contain the string "bscw". Search expressions can also be negated - with the exception of the top-level search expression.

Simple search criteria can refer to all metadata of objects and, in the case of documents, to their content. In detail, search criteria can refer to

- general object attributes like name, description, tags or BSCW object type,
- Content and specific attributes of documents like file type or Dublin Core attributes,
- Events that have occurred with an object,
- special metadata attributes of individual object types such as organization and email address for contacts or tasks for flow folders. User-defined metadata attributes can also be referenced here.

For text fields (name, description, tags, content, etc.) you can also enter multiple search terms and also parts of searched terms. When doing so, keep the following note in mind.

Note: When searching with textual search terms, the following rules apply, using document search by content as an example; the same rules apply to similar cases such as object search by name.

When entering a single search term, all documents are found whose content contains this search term as part of a word. If several search terms separated by spaces are entered, all documents will be found whose content contains all search terms as parts of words. The order does not matter. If documents are to be found with a specific phrase that also contains spaces, this phrase must be enclosed in quotation marks.

Non-alphanumeric characters are treated as what they are by default. However, if an indexing service is installed on your BSCW server, these characters are searched for exactly in phrases, but in simple search terms they are interpreted as separators like the space character (except for . and :).

There are no wildcard characters for the search.

Upper and lower case are not distinguished, not even in search phrases.

You can also remove and move the expressions and criteria of your query again. To do this, proceed as follows.

- You remove a criterion or an expression by clicking the icon on the right  edge of a criterion or the header of an expression. For the top-level search expression, this operation means that all contained criteria and expressions are removed. Note that this operation cannot be undone.

4.7.4 Advanced search

The Advanced Search allows you to combine multiple search queries or save search results as a folder to share with others or quickly rerun later. This allows you to create different views of your data. You open the advanced search from the full text search form. See Figure 49: BSCW search form .

Combine different search queries or search criteria in blocks. The order in which criteria and expressions are executed can be changed by holding down the mouse button and dragging  the corresponding block to the desired position using the icon. In this way you can also move a criterion or expression inside another expression or from another expression to a higher level.

When you are done editing your search query,

- click [OK] to start the search. The search results are displayed in a temporary search folder.

Please note that searching the contents of documents only includes plain text and HTML documents (MIME type `text/plain` and `text/html`) if no indexing service is installed on your BSCW server. You may recognize this by the fact that the drop-down menu does not  offer a quick search for documents as a search expression. Otherwise contact your BSCW administrator.

Search Save

Search folders represent a separate object type in BSCW that allows some special actions. For example, you may repeat the search with a modified query and save the search results permanently by saving the temporary search folder as a permanent search folder somewhere in your folder hierarchy. Permanent search folders allow you, for example, to repeat the search at a later time (see 4.7.5 "Special actions in search folders" on p. 78).

Open the context menu of the search folder to save the result of an advanced search as a folder

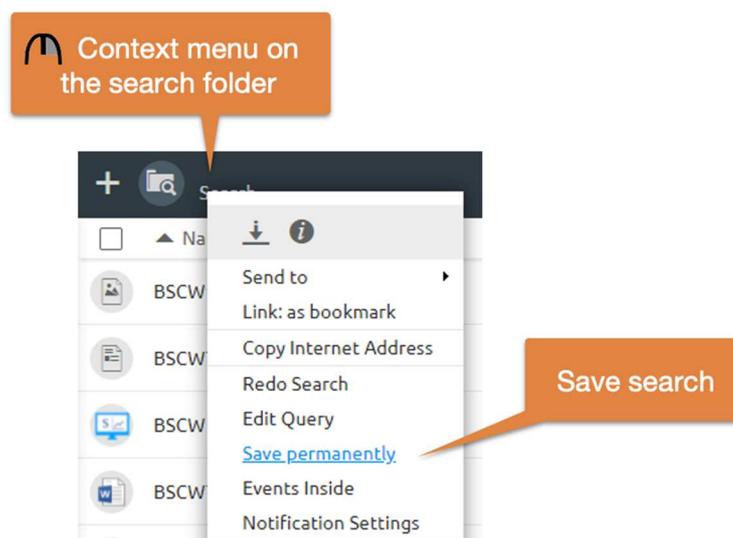


Figure 50: Save BSCW search as folder

Note: This option is only available after performing an Advanced Search (see Advanced search).

4.7.5 Special actions in search folders

Search folders show query and search range immediately above the list of search results. The query, which in the general case can be very complex, is shown in an abbreviated form containing only its type (AND, OR) and the search criteria involved.

For simple queries that use only one specific search term to search (possibly in multiple search expressions), you can change that one search term and start a new search without having to fill out the search form.

- Enter the changed search term in the offered search field and click on [Search again].

In a search folder, the following additional actions are offered in the context menu.

- Select **⌘ Edit query** to repeat your search with modified query.
- Select **⌘ Repeat Search** to repeat your search unchanged.
- Select **⌘ Save as** temporary search results permanently. Specify optional name, description and tags for the search folder if you want the name to be different from the default name. In the navigation pane, select the destination folder where the search folder should be saved. By default, the search folder is saved in the current folder. If your browser does not support Dojo (see also 4.8.1 "Personal settings" on p. 80), the permanent search folder will appear in your clipboard, from where you can paste it in a suitable place.

All these actions are also available as icons in the Quick Launch toolbar if you have configured it that way in your personal settings.

Ignore search results

You can exclude individual, non-interesting search results from the display by selecting

- Select **⌘ Ignore** in the context menu of a search result.

As a result, this result will no longer be displayed in the search folder, even if the search is repeated or the query is modified. If search results are ignored, 'Result list' is displayed at the right end of the multi-selection toolbar.

The ignored results are summarized in the Ignore list, which can be displayed by **Ignore list**. Here you can also undo the ignoring of a result by **⌘ ignoring** again in the context menu. By clicking on **ResultList** you return to the result list. Switching from the result list to the ignore list and back can also be done in the menu that is offered after clicking on 'Result list' or 'Ignore list'.

The Ignore list is not a personal setting, it applies to all members of the search folder.

Filter search results

If your BSCW server *does not* use an indexing service for searching, you may filter search results by e.g. object type and file type just like in a normal folder. Ignoring search results has no effect when filtering by other criteria, i.e. in this case ignored search results are also displayed. If your BSCW server uses an indexing service, there is no possibility to filter search results by other criteria for performance reasons.

4.8 Customize user interface

The user interface of BSCW may be adapted to your personal needs with respect to both presentation and functionality, e.g. to special requirements for processing the current task, your personal working style or your knowledge of using BSCW.

Customize BSCW by setting your personal preferences and selecting your options regarding folder views. You may also configure BSCW to use additional file upload functions or to communicate with you in a specific language.

4.8.1 Personal settings

In BSCW you may set a whole set of parameters, the so-called personal or user preferences, that determine the appearance and functionality of your BSCW user interface. This allows you to customize your user interface: a common workspace does not necessarily have to look the same for all members.

Attention: These settings are set for a *specific server*. If you want to work with several servers in the same way, you must set identical settings on all of them.

To check or change your personal settings

- Select  Settings in the top menu

The 'Settings' action form has a number of tabs where your personal settings are grouped together

- Basic settings
- Representation
- Calendar / Document input
- Notifications

Basic settings

Subsection ,Language':

Language: Select the language of your user interface from the menu offered.

Subdivision ,Representation

Display Theme: Select 'Black / White' for a less colorful interface or BSCW (Orange) to return to the default.

Save view settings for each folder individually: Check this option if you want to save the folder view settings individually for each folder. If this option is not in effect, the view settings for one folder will automatically apply to all other folders. For details, see 4.8.2 "Folder views" on p. 81, especially the subsection on the scope of view settings.

Use internal PDF display for preview: If you open text, HTML and PDF documents in a BSCW preview (see previous option), enabling this option avoids possible problems with the preview that may be related to your browser settings, e.g. if these settings specify that such documents are always offered for download.

Subdivision ,Email

Email: Specify the format in which you want to receive messages from BSCW (especially the regular email reports about activities in your workspaces) and whether you want to automatically receive a copy of all email messages you send via BSCW (automatic entry of your email address into the BCC field; "blind carbon copy").

File handling

External editor programs: Select those document types for which direct editing with local (for BSCW external) editors should be activated. You may then edit documents of the corresponding type directly in BSCW without downloading the documents and uploading them again after editing. The  Edit (Desktop) action opens the local editor (e.g. MS Word) corresponding to the document type directly from the Web browser. Direct editing requires the *installation of a utility*

program on your computer. For installation instructions and further details, see 8.1.3 "Edit documents with external editors" on p. 121.

Calendar / Document input

Timescale, start of week, working days: Specify how appointments should be displayed in the day and week view, which day is the start of the week and what counts as working days for you. This has an influence on the display of your calendars.

Tasks that you create, basically transfer to your document inbox: This refers to tasks that you are assigned as part of a workflow, such as a document release process or a flow folder. (see Workflow Management)

For *dates* you can determine,

- whether appointments you have created yourself in a group calendar should be automatically copied to your personal calendar (even if you do not participate in it!),
- whether appointments where you are uninvited should be automatically removed from your personal calendar,
- whether to automatically cancel your participation in appointments that you remove from your personal calendar, and
- whether appointments should be displayed in a new browser window.

Notifications

BSCW provides several event services that inform about new events in your workspaces and new microblog messages. The different services use different transmission paths for event and microblog message notification. For event services that you have enabled, you can subscribe to notification of specific event types (read items, new items, etc.) and message types. For details, see 4.6.4.1 "Setting the default options for notification" on p. 72.

Subdivision '*Active Incident Services*':

Here you can select by ticking those event services with which you want to be informed about new events and microblog messages.

Subscribed event types' subsection:

Here you can check the event types for the active event services, about which you want to be notified with the respective service. You can access the individual event types by expanding the menus for the individual services. You can also select all event types for a specific service.

4.8.2 Folder views

You may customize the way your folders and other container objects (discussion forums, calendars, etc.) are displayed at the BSCW user interface to your personal preferences.

The content part of a folder page, address book page, etc. consists of a list of entries, each representing an object contained in that folder. In the *detail view*, which is offered by default, an object entry usually consists of the following elements:

- Checkbox
- Symbol for the object type
- Object name

Each entry contains an object-specific context menu with the actions that can be applied to the object. The context menu can be opened by right-clicking with the mouse on the entry.

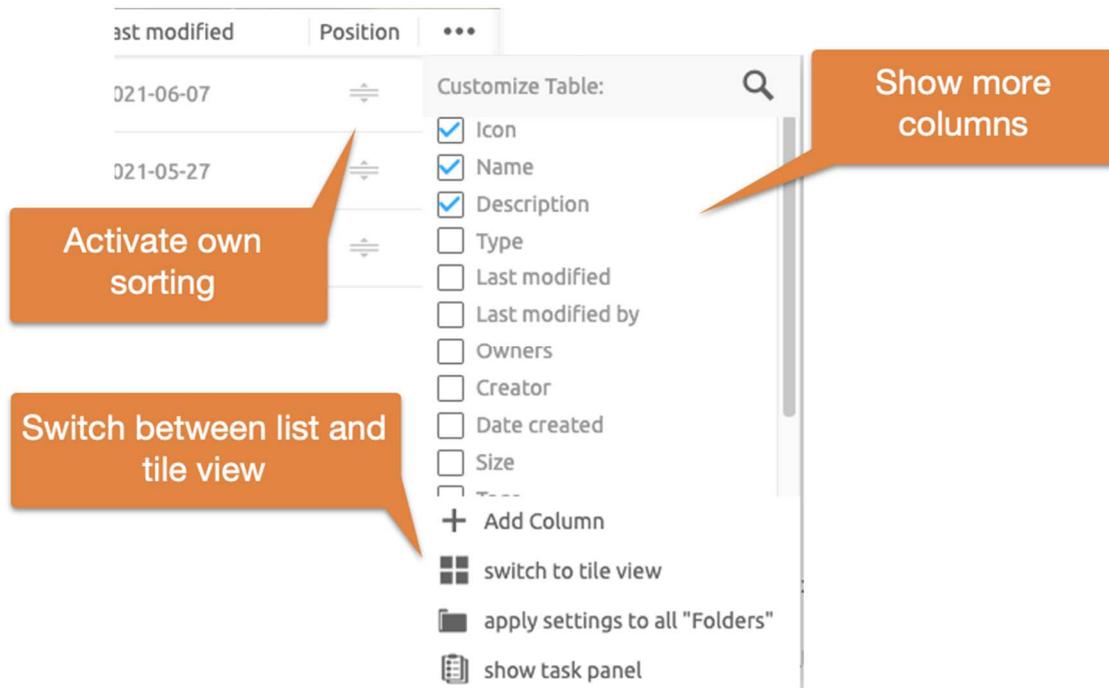


Figure 51: Customize folder content view

○

You can set the columns displayed using the menu **•••** in the title column of the content view.

- Select **•••** **Apply to all similar** to apply the view settings of the current folder or container object to all other folders or container objects of the same or similar type. This action applies the view settings of one folder to all other folders, website folders, template folders, flow folders, shared folders as well as to personal objects such as clipboards and briefcases (and vice versa). Likewise, view settings are transferred from one calendar to all other calendars and from one discussion forum to all other discussion forums. With regard to this action, member lists and the address book are also considered similar.

In addition to the detailed view of a folder, you can also *select the tile view*. The *sorting of entries* can be changed by clicking on the column titles. A special feature here is the position column. Here you can sort elements manually by DragNDrop. The *custom sorting* is shared with all other members.

Please note that *calendar pages look and function differently* than the folder pages described here.

4.8.3 Banner

Each folder overview page has a header consisting of several lines. By default, the space below the navigation bar is empty.

A banner is an HTML document that is typically displayed centered above the content list. Banners can be used to

- To give a description of work areas

Banners can be formatted like messages. Furthermore, images and all BSCW elements can be inserted into a text via DragNDrop.

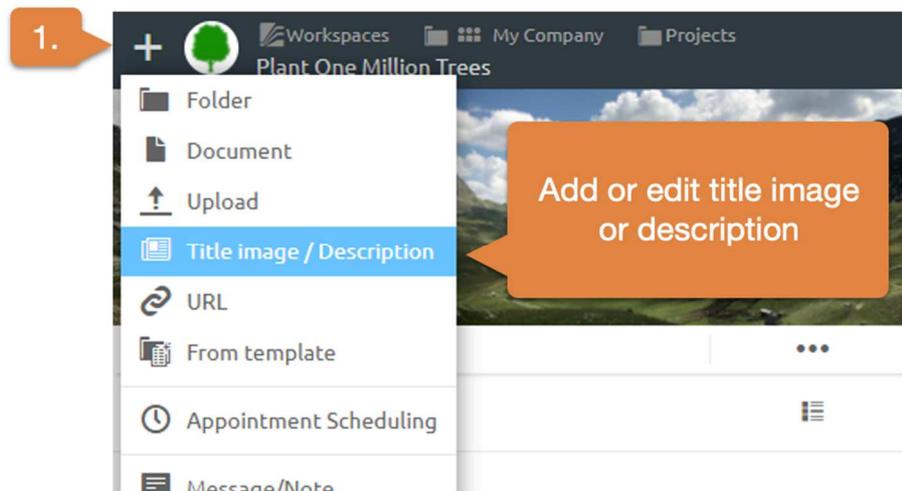


Figure 52: Add banner or cover image

You can additionally set a background image in the banner. This background image is automatically set for all subfolders.

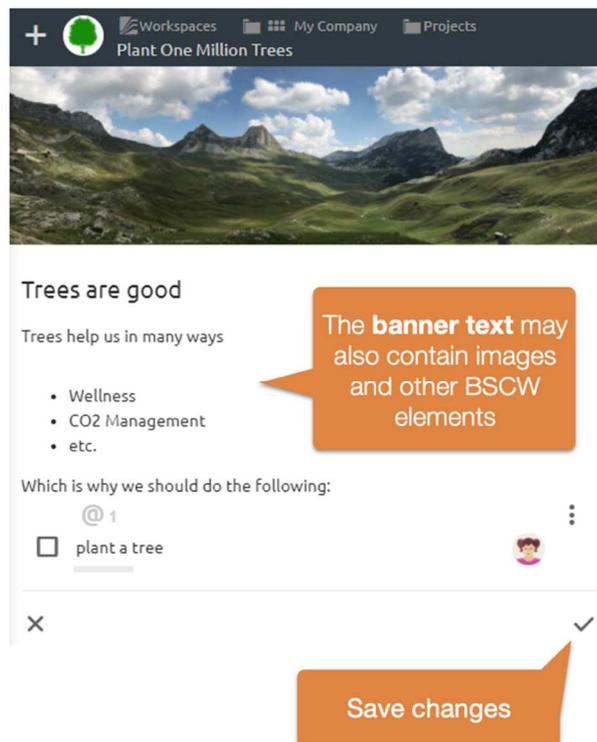


Figure 53: Change banner text or title image

Typical actions:

Add banner: You add a banner using the banner button as shown above.

Edit banner: Edit existing banners using the banner button. In edit mode you can also set a title image. Finally confirm

4.9 Metadata and info page

Metadata in BSCW is used to describe objects in more detail and to find objects again when searching. The metadata associated with an object are displayed on the object's info page.

BSCW objects have a set of metadata that are either set by the user (e.g. name and description) or set by the system (e.g. date of creation or name of creator). In addition, there are metadata attributes that are combined into a *metadata profile* for a particular object type. In addition to the predefined system profiles for the existing object types, the user can create his own metadata profiles, which are stored together with templates in template folders.

Another approach to describing and classifying objects is to *tag* them with freely definable keywords. Many types of objects in BSCW may be tagged including folders, documents and users. Tags may also be used for searching in BSCW.

On the *info page* of an object, all descriptive information about an object is presented in a bundle. This includes the metadata attributes and tags assigned by the user.

4.9.1 Metadata profiles

The metadata attributes that a user can specify for an object, except for name, description, and tags, are grouped in a metadata profile. Metadata attributes have a name and a data type (like text line or date) and may be structured in groups within a profile. For most of the existing object types in BSCW there are predefined system profiles. Examples are the following metadata profiles.

- *Documents* have the attributes of the 'Dublin Core Metadata Element Set' (title, author, language, etc.) in addition to general attributes such as priority and category.
- *Contacts* essentially consist of metadata attributes that pertain to names, address, phone numbers, organization, and so on.
- By default, *tasks* have the attributes Customer, Contact, Location, URL, Priority and Category

The system profiles of object types may initially also be empty, as e.g. for folder and URL. Number and type of system profiles depend on the configuration of your BSCW server. You may create your own metadata profiles based on the given system profiles and save them for further use in your personal folder 'Personaltemplates from *your-username*'. It is also possible to define metadata profiles for a specific workspace and save them in a template folder of this workspace. This way they are available for all members of this workspace.

4.9.1.1 Use metadata attributes

You can assign values to the metadata attributes of an object during creation by entering values in the fields provided in the 'Attributes' tab of the action form. If this tab does not appear in the action form, the object type in question has an empty or no metadata profile.

You can also assign values to an object's metadata attributes or modify existing values after creation.

- Select  **Change Properties** in the context menu of the object in question and go to the 'Attributes' tab of the action form. There you can enter, change or delete values. Any existing grouping of the attributes is indicated by enclosing the group in a separate box and placing an optional group name above it.
- For some attributes, multiple values can be specified by clicking on to  the right of the input field. By clicking on to the  right of the field of a multiple value, you can delete it again.
- With [Reset Attributes] you can delete all values displayed in the 'Attributes' tab.

Metadata attributes with values are displayed below the description of an object in the folder overview. If the view settings are set so that no descriptions are displayed or only in compact form, the attributes appear as a tooltip of the  icon or the one-line description.

The info page of an object shows the attributes provided with values, specifying the name of the underlying metadata profile and, if applicable, the names of attribute groups (example "Dublin Core").

When copying objects, the metadata attributes are also copied.

When searching for objects in BSCW, you may use all metadata attributes (see 4.7.3 "The search form" on p. 76). The search form offers to use these attributes in search criteria.

Wikis also allow you to display metadata attributes of individual objects and object tables with selected metadata. You may also filter wiki content displays by the values of specific metadata attributes (see 8.7.5 "Use text elements" on p. 151 and 8.7.4 "Use BSCW elements" on p. 139). For these operations you need to know the internal identifiers of metadata attributes that are not specified on the info page of metadata profiles. For example, the metadata attribute 'tags' is identified by the identifier `bscw:keywords`.

You get a complete list of metadata identifiers of a metadata profile, including the custom attributes,

- by calling  **Specification** in the context menu of a metadata profile. The identifiers are displayed as a text file, one identifier per line.

4.9.1.2 Define new metadata profiles

You may extend the metadata profiles provided by the system according to your needs and define your own profiles. A user-defined metadata profile is always intended for a certain BSCW object type (e.g. folder, document, contact). When defining a metadata profile, you start from the system profile of the object type and may delete existing attributes in any way and define your own attributes or groups of attributes.

When you create a custom metadata profile of a container object (folder, contact list or similar), you can specify not only the attributes of the container object, but also specify the metadata profiles of contained objects. For example, you can define a metadata profile "Association" based on the contact list and having additional attributes such as address and association number, specifying that the contained contacts should have the metadata profile "Association member", deleting certain contact attributes that are not needed and defining additional attributes related to membership such as membership number or membership fee.

You can create new metadata profiles in two ways. You *explicitly create* a new metadata profile by

- Select  **Assign metadata profile** in the context menu of your personal templates or a template folder and determine the desired object type, e.g. for **documents**, in the submenu.

Metadata profiles from your personal templates are available everywhere, metadata profiles from the template folder of a workspace are available to you (and the other members of the workspace) only there.

You create a new metadata profile ad hoc when assigning a profile if you find that the available profiles are not sufficient for your purpose.

- Select  **Assign metadata profile** in the context menu of an object. If the profiles available for selection in the '*Metadata Profile*' action form are not sufficient for you, click [New Metadata Profile] to define a new metadata profile for the object type of the current object.

Such ad hoc defined metadata profiles are stored in your personal templates and are then ready for assignment.

The subsequent interaction to define a new metadata profile is the same in both cases.

- In the '*New metadata profile*' action form, the system profile of the selected object type or the object type of the current object is displayed, which you can now edit as follows. Note that a system profile like that of a folder can also be empty.
- Enter a name for your new metadata profile and possibly a description that explains the purpose of the new profile.
- In the "Attributes and Groups" tab of the form, use the [Add] drop-down menu to add individual metadata attributes or entire groups of attributes to your profile. You can choose from attributes and attribute groups of existing metadata profiles.

Added groups can be edited afterwards. You can also add an empty group to your new profile with the 'Empty group' selection, which you then fill with attributes. Do not forget to give your new attribute group a name. Groups are used to structure profiles and can also be nested.

With the selection 'New attribute' you define your own attribute with name and data type; tick if the attribute can have multiple values.

- You remove an attribute or group by clicking the icon on the right  edge of an attribute or group.
- You can rearrange attributes and groups by holding down the mouse button and dragging them to the desired location using the icon ( left of ). In this way, you can also move an attribute or group to the inside of another group or from another group to the top level.
- If you define a new metadata profile for a container object type (folder, contact list or similar), the action form has another tab "Metadata profile for new objects". There you can define metadata profiles for the objects that will be created in the container, if they should differ from the system profiles.
 - Select an object type from the 'Add' drop-down menu for which you want to specify a custom metadata profile.
 - In the assignment line that now appears, you can select the metadata profile that you want to assign to the object type and that will be automatically assigned to all objects of this type that are created in the current container. All metadata profiles for this object type that are available to you are offered.

You can delete and reassign these assignments in the same way as in the Attributes and Groups tab. You can also make the assignment of contained objects to metadata profiles later by changing the metadata profile itself (see below).

- Click [OK] to save the new metadata profile to your personal templates or a template folder.
- If you have defined the new metadata profile ad hoc, you return to the '*Metadata Profile*' action form and the name of the new metadata profile appears as a selection in the 'Select' drop-down menu. Click [OK] to assign this profile to the current object as a metadata profile.

4.9.1.3 Assign metadata profiles

You can assign an existing custom metadata profile to an object,

- by selecting  **Assign Metadata Profile** in the context menu of this object, selecting the desired metadata profile in the 'Select' drop-down menu and clicking [OK]. Besides the system profile, all user-defined metadata profiles for the object type of the current object that are located in your personal templates or a template folder of the parent workspace are offered here. If no other metadata profile is offered besides the system profile for the object type of the current object, then such further user-defined metadata profiles do not exist.
- If the current object contains other objects, you have three options when assigning a metadata profile to also specify the metadata profiles of these already existing contained objects. You can specify that these metadata profiles remain unchanged, that they are adjusted according to the assignment of metadata profiles for newly created objects in the container, or that they are all set to the appropriate system profiles.

If you assign a new metadata profile to an object and it already has attributes with values from the old metadata profile, these attributes are listed with their values at the end of the profile.

You can also use metadata profiles when creating templates by assigning specific custom metadata profiles to template objects. For example, you can define a contact list as a template with a metadata profile whose contained contacts should always have a specific contact metadata profile.

4.9.1.4 Modify and share metadata profiles

You can also change the metadata profiles you have defined again. Changing a metadata profile defined by another user is possible only for the manager of the template folder where the profile is located.

You can change metadata profiles in two ways. Once, you can explicitly change a metadata profile in your personal templates or in any template folder,

- by selecting  **Change Properties** in the context menu of this metadata profile.

The interaction for changing metadata profiles in the '*Change metadata profile*' action form is the same as for defining a new metadata profile, which also consists of changing the corresponding system profile.

- Finally, click [OK] to save the modified metadata profile, which now applies to all objects with this profile.

If, when modifying a metadata profile, you delete an attribute that is already assigned a value for some objects, this attribute will appear with its value at the end after the other attributes of

the profile. If such deleted attributes are no longer provided with a value, they disappear completely.

If you delete a metadata profile, it still remains as long as there are objects with that metadata profile.

You can invite other users to a profile to enable the sharing of metadata profiles beyond workspaces. The profile then appears at the top level for the members of this profile in the respective personal folder "Personal templates" and can be used from then on when assigning profiles.

4.9.1.5 Export metadata attributes

You can save and export the metadata attributes of documents, contacts, tasks, and flow folders of a folder in the form of a comma-separated .csv file. Subfolders, sub-subfolders, etc. are also searched. In addition to the metadata, access path and BSCW object ID are output for each object in the file.

- Select **Send to Metadata CSV File** in the context menu of the folder.
- In the '*Export metadata*' action form, you can select the attributes you want to export: tick complete metadata profiles or expand a profile and select individual attributes for export. For user-defined metadata profiles, only the new attributes are offered for export.
- Optionally, you can download the metadata file directly, save it to the clipboard or to the folder itself.

This way you can further process metadata with a spreadsheet program, for example. You can also invoke the action with **Send to Metadata CSV File** in the context menu of a folder.

4.9.2 Tags

Tags are freely assigned keywords that may be used to describe and classify most BSCW objects. Thus folders, documents, URLs, notes, RSS feeds, communities and even users may be tagged. Tags are used to find objects and discover relationships between objects.

Tags can be assigned to new objects when they are created by filling in the 'Tags' field of the action form. Objects can have any number of tags. Enter your tags as space-separated words. Note that tags are not case sensitive.

You can assign new tags to existing objects, or modify or delete existing tags by

- You select **Change Properties** in the context menu of the object in question and change the tags in the 'Attributes' tab.

Tags - like attributes with names - are displayed below the object description. They also appear as tooltips if the view settings are set so that no descriptions or only compact descriptions are displayed.

Tags displayed in a folder overview can be clicked to trigger a search for objects with the same tag. In this case, the search is performed in the smallest workspace that contains the current folder, i.e. the workspace that inherits its members from the current folder.

Apart from this possibility to start a tag search, tags may also be used in normal BSCW searches.

4.9.3 The info page

BSCW creates and maintains a set of descriptive information for each object (folder, document, user, group, etc.). Some information may be edited by users with appropriate access rights, others are protected from manual modification and are updated automatically by BSCW. Some information (e.g. name and type of an object or the name of its owner) is displayed in the Web-based user interface of BSCW depending on the context. On the object's *info page* all information about an object is presented in a bundled way.

- Select in  the context menu to get the info page of the object

The info page provides some technical information about the object, shows tags and attributes with values assigned to the object, and lists the current access rights, i.e. which users in which roles are allowed which actions on the object. The rest of the info page content depends on the object type. Examples are:

- *Document under version control*: For a document under version control, the info page additionally shows the version history as a table. Click the version number in the left column to download the desired version to your local system.
- *Contact*: The info page displays all the information describing a contact. They correspond to the information that a user can provide in the personal profile under 'Personal data'.
- *User*: A user's info page contains, in addition to the username and email address, all the information that has been provided in the user's personal profile, such as their phone number or a picture. It also contains contact information on how to reach a user via social networks or instant messaging services if such information has been provided in the personal profile. You can also view the workspaces that you personally share with the respective user.

5 Workspaces, access rights and roles

5.1 Create and manage workspaces

A shared workspace is a folder that is used by several people. *Members of* a workspace are usually a group of registered BSCW users. According to the default settings, which you may of course adapt to your needs, each member of the workspace may

- see all objects of the workspace,
- directly perceive the effects of all actions of other members on objects in the workspace and themselves perform actions on the folder and the objects it contains (for restrictions, see 5.2 "Access rights and roles" on p. 99).

A folder signals its special status as a shared workspace by the icon  behind its name in the navigation tree. You can see the members of the current folder in the top left of the header bar. Open the menu in the list of members of the current folder and subsequently  **Manage members** to view or edit the rights of individual members.

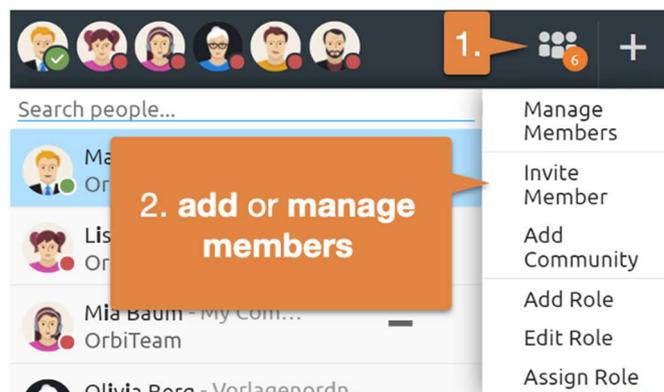


Figure 54: Manage members

The rules described here and below for folders essentially also apply to all 'container objects' derived from the folder class: discussion forums, group calendars, projects, tasks - see the relevant sections for details that may differ from the general rules as presented here.

5.1.1 Create shared workspaces: Invite other users

You create a shared workspace by inviting other users to one of your personal folders as members. You can thus turn any private folder into a shared workspace. You grant the invited members access rights to this folder and all the objects it contains.

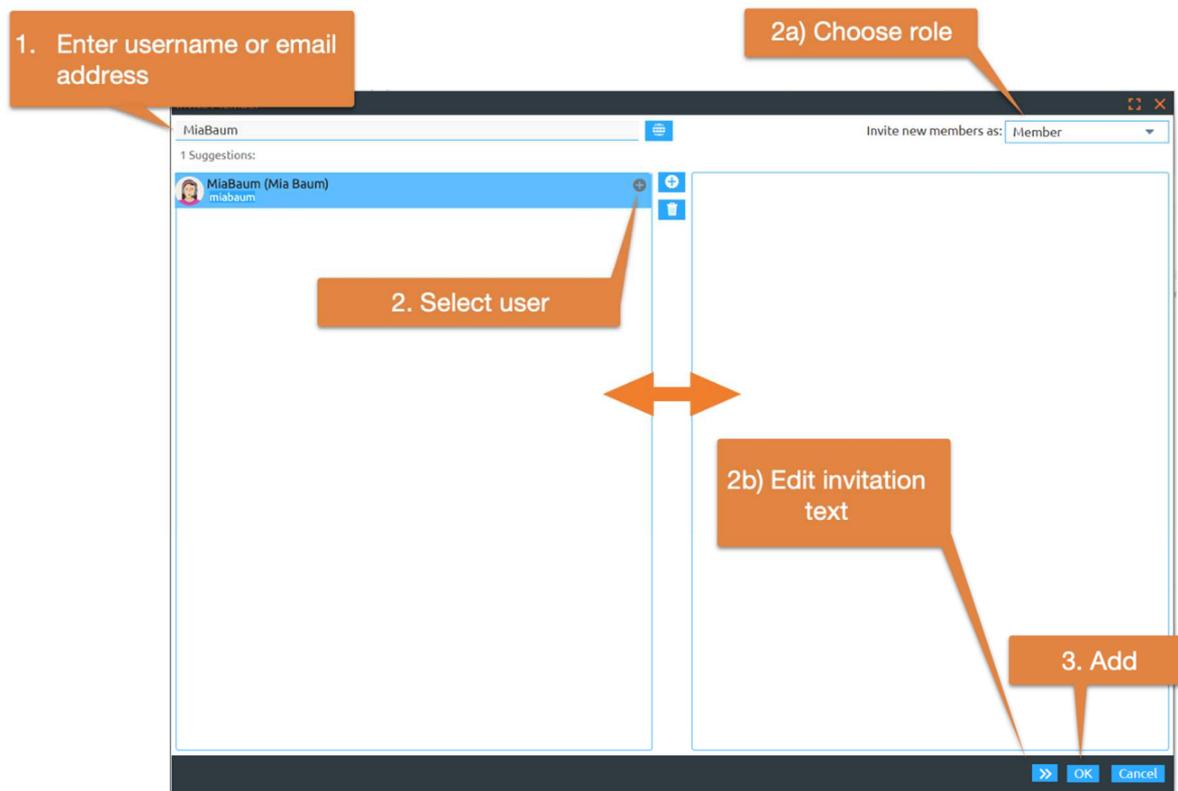


Figure 55: Add new members

- Select **+** **Add member** in the folder's member list to display the 'Add member' form.
- First, enter the new member's username or email address in the search box. Then select the corresponding users. Add selected users to the selection list by dragging and dropping or by using the **+** button. Complete the invitation by clicking the **OK** button. You can also **-** remove entries from the 'Selected users' field with **-**.

Note: If an LDAP directory is installed on your BSCW server, you may also use the 'Add Member' form to search for users you want to invite in this LDAP directory. Ask your system administrator.

- By default, new users are invited in the *Member role*. You can also select a different role in the Invite dialog. Use 'Invite as' to specify the role in which the new members should use the workspace. The role determines which actions the new members can perform in the shared workspace. By default, the role for new members is 'Member' (see 5.2.1 "The BSCW role concept" on p. 99 for a description of the default roles). If you want to invite members in different roles, you have to execute the invitation action multiple times.
- You can still use the **>>** button to write a *personal invitation text*. Write a personal message in the 'Invitation text' field. This personal message will be added to the

automatically sent invitation message that all persons receive who are not yet registered users of your BSCW server.

- In 'Invitation email in:', specify in which language the automatically generated part of the invitation message is sent to users who are not yet registered.
- Click [OK] to grant the new members access to the workspace and send the email message to the invitees.

If you -have entered or selected e-mail addresses that BSCW has *not yet* associated with registered users, BSCW automatically sends an email message to these addresses. This message, sent on your behalf, is an invitation to register as a new user on your BSCW server. This message is sent in the language you selected above, with the personal invitation you entered under 'Invitation text' appended to the default text.

Note: The language you select for the invitation message will be taken by BSCW as the language for the user interface for newly registered users if setting the language via the preferred language of the respective browser fails.

In your personal workspace ('home folder') and only here you can also create workspaces all at once: instead of first creating a private folder and then inviting other users as members,

- select  Neu Folder in the upper menu bar. The action form offers the possibility to define the members of the new workspace in addition to the general information for folders in the 'Members' tab. In the 'General' tab, you can check whether a start page, a group calendar, a contact list and a template folder should also be created for the new workspace.

You as creator of the new workspace automatically have the role 'Manager', which includes more rights than the role 'Member'(see 5.2.1 "The BSCW role concept" on p. 99 for a description of the standard roles).

5.1.2 Be invited to a workspace

Users become members of a workspace *only* by being invited by the manager or another member authorized to do so.

If you are a registered user of a BSCW server and have been invited to a new workspace, you will at least recognize this by the fact that this new workspace appears marked with an orange bar in your personal workspace ('home folder'). New members are additionally informed by an invitation message if the corresponding option in the 'Add member' form has been activated.

In your regular email report on activities in your work areas, you will also be informed about invitations to work areas from the previous day.

Your personal workspace ('home folder') is the default position BSCW uses for new shared workspaces. You may drag and drop such a new shared workspace or use the context menu to  cut and  paste it somewhere in your personal folder hierarchy. This moving of the whole workspace is *not* visible for the other members, unlike moving objects *within the workspace*. If you move the new workspace into an already existing workspace, it becomes part of this workspace and the members of the parent workspace (its member group) become members of the new workspace (see also 5.1.4.2 "Embedding one workspace into another" on p. 98).

If you are invited to a workspace and you are not yet a registered user, you will receive an invitation message along with a request to register. After registration, the workspace you have been invited to appears in your personal workspace ('home folder').

BSCW does not offer a special feature to decline an invitation to a workspace. You may terminate your membership in two ways:

- You *remove yourself from the* member group by
 - click on the menu  and select **Manage Members** to display the members page of the workspace, and
 -  in the context menu of your own entry.
- You *delete the workspace*, i.e. you remove it and then delete it in the Trash. Simple removal is not enough: even if the workspace is in your Trash, you still remain a member.

To gain access to the workspace again after leaving, you must ask another member to invite you back. It is not possible to invite yourself to someone else's workspace.

5.1.3 Member page

The members page of a workspace shows the list of members of the workspace.

- Open the menu to  listing and select **Manage Member**.

The members page lists those users of your BSCW server who are currently members of the workspace. email addresses, member groups and communities may also appear as members.

- People with *provisional membership* are displayed as email address. A membership is *provisional* if a person has been invited but has not yet registered on the server. This person *cannot* use the shared workspace until he/she has registered. A person whose membership is provisional can be reminded to register:
 - Click  **Invite new** the context menu of the member entry to send another invitation to the email address.
- Persons who are registered users of BSCW are referred to as
 - *Username (Full name[, Organization])* or
 - *Username <email address>*

is displayed. Entries of the latter form indicate that no further personal information about the user is available.

- Click on the username to display the member's user short info. Here you will find information about the user's organization, e-mail address and phone number (if specified in the personal profile), as well as the user's contact status (small colored dot in front of the name).
- With the buttons [Details], [Email] you can open the user's info page or a form for sending an email message to the user.
- A user's Info page contains much of the information that the user has entered under  **Personal Profile**. Under 'Shared Folders' you can view there all the workspaces that you currently share with the user. In the 'Contact details' section of the form, the info page displays the information that the member has entered in his personal profile in the 'Communication' tab. You can contact the member directly by clicking on the offered buttons. You can find out more about the respective communication service by clicking [More information].

- All current members of a workspace form the *member group* 'Members of *workspace name*'. Member groups can be invited into a workspace as a whole (see above) or implicitly become members when a workspace is embedded into another (see 5.1.4.2 "Embedding one workspace into another" on p. 98). Groups are entered on the member page in the form 'Members of *workspace name*'. Members of these groups are represented exclusively by their group and are not visible as individual members on the member page.
 - Click on the name of a member group to display the member page of that group.
- Communities in BSCW allow large groups of users to access workspaces with equal access rights without sacrificing consistent performance. A workspace may have at most one community as a member.

A community is displayed as 'Community of *community workspace name*', where the community workspace is the workspace to which the community belongs - in this case, the workspace whose member page you are currently viewing. Members of the community are represented by the community and are not visible as individual members. By default, *only community managers* can view a community's member page.

You can save the entries on a member page as a vCard file (*.vcf) on your local computer. Such vCard files contain users' contact information and can be imported into local applications such as Microsoft Outlook.

- Select  **Send to vCard** in the context menu to save the whole member page, selected entries or a single entry as a vCard file (*.vcf) on your local computer.

The members of a workspace listed on the member page form the member group 'Members of *workspace name*'. Conversely, each member group also has a workspace assigned to it, i.e. there is no workspace without its member group and no member group without its workspace.

Note: Like all BSCW objects, member groups have a history that contains as events the addition or removal of members. You may use this history to get information about former members. Select in   the context menu of the member page to view the entire history of a member group.

In the menu bars of the membership page you will find all the functions to manage the membership, which will be covered in the next section.

What else you should know about member groups can be found in the section after next.

5.1.3.1 Manage membership

On the member page of a workspace you can manage the membership in this workspace. You can

- Remove existing members,
- invite provisional members again and
- invite new members.

All these actions are available by default not only to managers, but also to normal members of a workspace.

You remove members from a workspace on the Members page as follows.

- Select the checkboxes of those members you want to remove and choose in  the multi-selection toolbar or
- select in the   context menu if you want to remove a single member from this workspace.

Removed members are also *removed from all other workspaces* they had access to only because they belonged to that workspace. All other workspaces, your address book and the address books of all other registered members are not affected by this action.

You invite a provisional member - recognizable by the entry as an email address - again with another invitation by

- click  **Invite new** in the context menu of the member entry.

On the member page of a workspace, you can also invite additional members to that workspace.

- Select  **Add Member** the menu at the top right of the Member List to display the 'Add Member' form. It allows you to specify additional members who should be granted access to this workspace.
- Continue as described in 5.1.1 "Create shared workspaces" on p. 91 If you invite additional members as a normal member, only Member and Restricted member are offered as roles. Only as Manager you can invite new members in the Manager role.

5.1.3.2 Groups

Groups are a useful tool for managing workspace membership and access rights. In particular, you can use a member group to store and edit the assignment of people to roles and their associated access rights in a *single* place.

If you organize your workspaces via groups, new users can be invited to the corresponding groups and thus get access to all relevant workspaces without much effort. In addition, the group folders serve as interest-related exchange folders or distribution lists.

You may make this information available to all users of your BSCW server by making the group visible when inviting them to workspaces. This makes the group as a whole available for invitation to any workspace. Membership and role assignment in the group is *automatically* updated on changes in all places where the group appears as a whole.

- Create workspaces for those smaller groups of people who, by their function or the task they are working on, are important for your application area in BSCW and whom you want to treat as a group.
- Open the menu to  **Manage Members**.
- Select **Reveal Group** from the top menu to make the group as a whole available to all users of your BSCW server for invitation to workspaces. The button turns blue. The name of the group corresponds to the '*workspace name*'. Click [OK].

Note: By default, this action is for managers only. Also, new members must have been invited on this folder.

- You (and other users) can now invite these member groups as a whole to any workspaces: in the 'Add member' action form. The groups become members of the workspace as a whole.

If you want to undo the inviteability of a member group,

- select **Reveal Group** in the top menu of such a workspace or on its member page. The button will now no longer appear in blue.

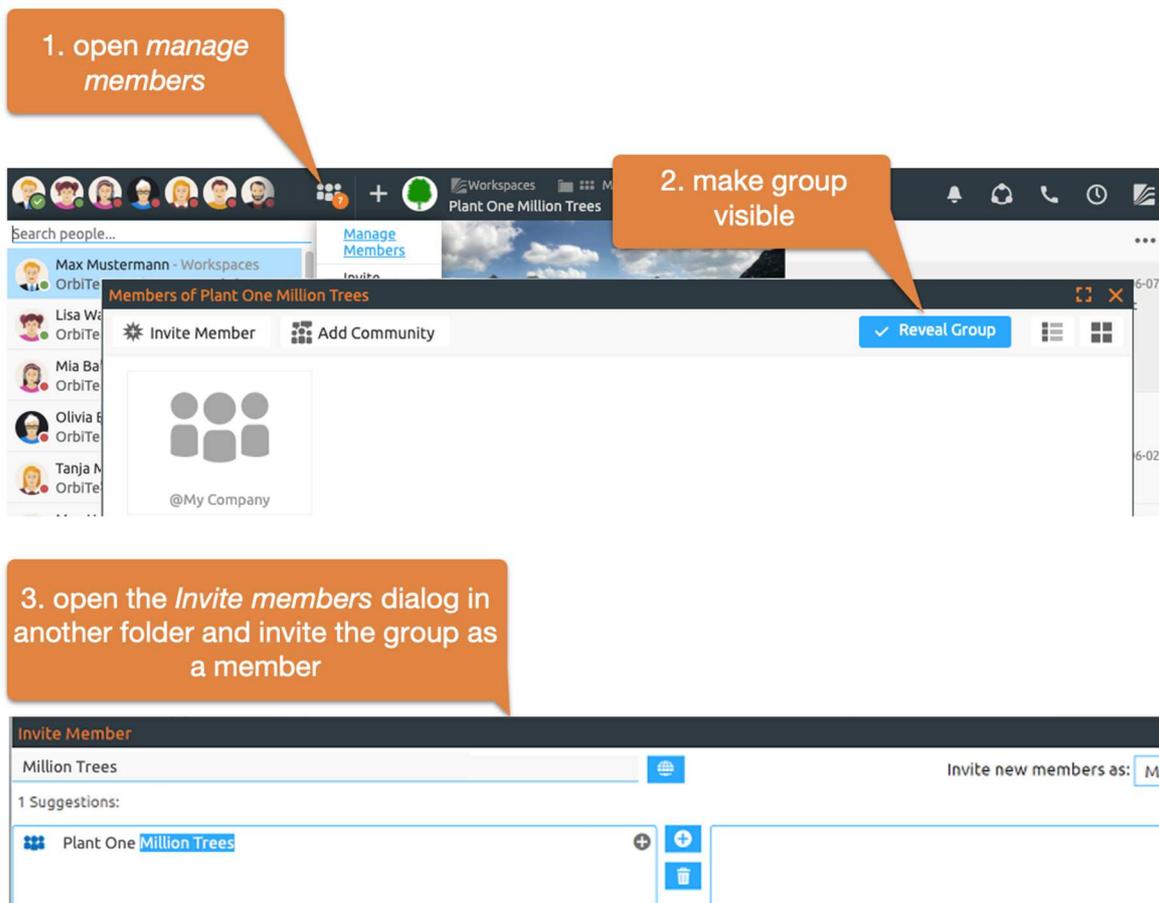


Figure 56: Using groups

Note: For member groups of community workspaces, i.e. workspaces with a community as a member, the availability for invitations to other workspaces is determined by the community's admission policy. In case of a hidden community, the member group of the corresponding workspace cannot be invited to other workspaces, in case of closed and open communities that are visible to all users anyway, this is possible. Therefore, the action **Reveal Group** is not possible for such member groups.

If you invite the member group of a workspace X to a workspace Y, 'members of X' become members of 'members of Y', i.e. 'members of X' are included in 'members of Y'. This relationship between groups of members implies the inverse relationship between the corresponding workspaces: Workspace Y automatically becomes part of workspace X, i.e. is contained in workspace X (see also 5.1.4.2 "Embedding one workspace into another" on p. 98, where workspaces are embedded into each other with analogous consequences for the member groups).

Note: All members of an invited group get the role regarding the workspace they are invited to - only the restricted members become anonymous members (so they have only reading rights, no info rights anymore). If a member has several roles due to such an invitation, he/she has all rights resulting from the different roles.

You may use this mechanism to map a hierarchical organization to BSCW workspaces and their member groups. First create workspaces for all organizational units, then invite the users belonging to the lowest units to the corresponding workspaces and add the member groups of these workspaces to their address book. Next, invite the member groups of the lowest units to the workspaces one level higher to which they belong (plus some managers and staff members, if necessary). By working your way up the organizational hierarchy in this way, you create a corresponding hierarchy of member groups and workspaces.

Note: If you plan to create *large groups of members*, where the vast majority of members have the same role, you should consider using communities to reduce the load on the server.

5.1.4 Move shared workspaces

5.1.4.1 Positioning a workspace in the folder hierarchy

There is a default position that BSCW uses for shared workspaces that have not yet been assigned a position in the folder hierarchy by the user: the top level in your personal workspace ('home folder'). This affects workspaces to which you have just been invited as a new member. This is independent of the position this folder has in the respective folder hierarchy of the other group members.

For example, if a folder B contained in a workspace A is itself converted into a shared workspace by inviting additional members to B, the position of workspace B in the original workspace A does not change for the members of workspace A. For the *new* members of workspace B, it appears in the top level of their respective personal workspaces.

You can move a shared workspace to another workspace simply by dragNDrop. This moving of the whole workspace is *not* visible for the other members, unlike moving objects *within the workspace*.

When you move a shared workspace to another *shared* workspace, it has consequences for workspace membership, which we cover in the following section.

5.1.4.2 Embedding one workspace into another

You can create additional workspaces within a workspace, i.e. 'embed' them in this workspace, by selecting

- switch to a subfolder and select  Add member in the Members menu. Now invite more members to the subfolder.

You can also embed one workspace into another by transferring one workspace into another with  Cut and  Paste. The members of the parent workspace are automatically added to the members of the embedded workspace as a member group. If the embedded workspace has been cut from another workspace, its member group is automatically removed from the set of members. Embedding one workspace into another or removing a workspace from another automatically changes the group of members. Remember to check if these automatic changes correspond to your intentions and correct the group of members and their access rights if necessary.

5.2 Access rights and roles

In a shared workspace, the workspace and the objects it contains are edited jointly by the various members of the workspace. The access rights in the workspace regulate which actions a particular member may perform. Access rights are assigned to members by *roles* (Manager, Member, Restricted Member, etc.) that they receive when they are invited. For example, by default, normal members may invite additional members and remove existing members, restricted members may not; restricted members have read-only access to the objects of a shared workspace, normal members may modify objects and create new objects.

The default access rights can be changed by a manager of the workspace by allowing additional actions for certain roles or by excluding actions. For example, you can make it so that only managers can manage workspace membership or that restricted members can upload new documents.

The access rights defined via the roles are inherited by all objects contained in a workspace, i.e. also by all subfolders and the objects contained therein. However, the access rights can also be changed for certain objects, e.g. by the manager specifying for a certain subfolder that normal members also have read-only access. This regulation then applies again to all objects contained in this subfolder.

Note: Access rights to documents are often restricted because they are to be protected against *accidental* overwriting or deletion. BSCW offers simpler ways to avoid this besides the somewhat complex modification of access rights:

- temporarily *lock the* document with ;
- *Freezing* the document with  write protection Freeze;
- Introducing *version control* for the document with  version control.

By default, the management of access rights is reserved for the managers of a workspace, but even this circumstance can of course be changed by modifying the access rights. One should use the change of access rights sparingly and discuss it within the workspace to avoid possible irritations ("Why is this action not possible here, which is allowed in every other workspace?").

In the following, we will explain the role concept in BSCW and show how to

- Finds out about the current distribution of roles and the associated access rights,
- Assigns roles,
- Roles changes and also
- new roles defined.

To conclude the section, we will go over the owner role, which governs which user is responsible for the space occupied by an object.

5.2.1 The BSCW role concept

BSCW manages access rights via the role or roles a user holds. A role is defined by a name and a set of actions that are allowed for the role owner. Access control via roles is very simple: A user may always apply an action to a certain object if this action is contained in one of his roles regarding this object. Only allowed actions are offered in the menus at a time.

When users have multiple roles, they are allowed to perform an action if the action is allowed in one of the roles; thus, users are allowed the union of actions that result from their roles.

The predefined standard roles

As examples for BSCW roles, the predefined default roles that are offered when inviting new members shall be used here.

- *Member* can
 - read and copy, cut and remove the objects of a workspace,
 - look at the info pages,
 - create new objects such as upload documents, modify objects (name, description, etc.) and edit them as far as the object allows,
 - search for objects, introduce version control for documents,
 - invite new members and remove existing ones.
- *Manager* can
 - everything a member can do, and beyond that
 - Change the access rights in a workspace: Assign roles, change roles, define new roles and allow public access.
- *Restricted member* has read-only rights, so can open objects, copy and view the info page.
- *Associate member* has access rights like a member, but cannot invite new members or remove existing ones.

Inheritance of roles: The scope of a role

So that an explicit assignment of roles is not necessary for each newly created object, definitions and assignments of roles *inherit* along the folder hierarchy. For example, if a user creates a subfolder in a folder, this subfolder inherits the user group of the parent folder including all role assignments.

The scope of a role is the object for which the user has a role, and everything 'below' that object, until the user is assigned another role in the object hierarchy.

Note: Although this principle also applies to special folders such as the personal areas *personal workspace* ('home folder'), *clipboard*, *recycle bin*, the default role held by the user in his personal areas is not inherited to shared workspaces located in these personal areas.

An example

By default, you are the *manager of* your personal workspace and thus of all folders within it. The *Manager* role is *inherited* on the scope of your personal workspace.

Let's assume that you are now invited to contribute to a shared folder '*Project Documentation*'. The *manager of* this folder invites you in the role *Restricted member* to grant you only restricted rights, in this case only read rights. This gives you the rights of a *Restricted member* in the '*Project Documentation*' folder and in all subfolders.

On the other hand, the '*Project Documentation*' folder is located in your personal workspace, where you are a *manager*. Which roles are valid for you in '*Project Documentation*'? If you would inherit the *manager rights* also in '*Project Documentation*', you would be a *restricted*

member and *manager* at the same time. This would be technically possible, but would certainly not be in the interest of your host. For this reason, the special personal areas inherit their role assignments only to private folders, but not to shared workspaces. Shared folders can inherit role definitions and assignments only from other shared folders.

Extended access rights for the BSCW administrator

BSCW administrators may assign and change roles in all folders regardless of their current membership (in the Members menu  Assign Role and  Change Role).

Because of the extensive rights, *administrator* is not a role in the actual sense of the BSCW role concept for security reasons. This avoids that the special rights of the BSCW administrator may be manipulated via the user interface.

5.2.2 Information about current access rights

For each object, the access rights are displayed in the access rights table on the Info page.

- Select to get the info page  

The table 'Access rights' on the info page shows for each role those users who exercise them and what actions are available to them with them.

If a role for this object has been changed, i.e. additional actions are allowed or actions allowed by default are not allowed, you can recognize this by the fact that some actions are underlined (additional actions for the role) or others are crossed out (actions no longer allowed). If such underlined or crossed-out actions do not occur, the role definition corresponds to the predefined standard.

Underlining or strikethrough of role holders in the table indicates that the users in question have been given an additional role by explicit role assignment (see next section) (underlined) or have lost a role received during invitation (strikethrough).

For workspaces, you can view the access rights for the workspace itself and the folders it contains in the form of a table.

- In the context menu of the corresponding folder, select  Table of Contents and, in the subsequent dialog, the Show access rights button .

The table shows for the workspace itself and each subfolder the roles, the role owners and the allowed action groups. The actions belonging to an action group are displayed in the tooltip of an action group. To do this, hover the cursor over the name of the action group.

Crossing out an action group indicates that certain actions belonging to the action group are not allowed for the role in question. The tooltip shows which actions these are in detail. If the action group is bold and crossed out, it is not allowed for the role in question as a whole. Underlining an action group indicates that this action group is not part of the standard scope of the role in question, but that actions of this group are allowed for the role in question. The tooltip shows the actions (underlined) that are allowed for the role. If the action group is bold and underlined, all actions of the group are allowed.

For self-defined roles that are initially empty, i.e. do not allow any actions, the allowed action groups are always underlined.

Note: The action groups Change (erw.) and Share (erw.) of the role Producer do not have the standard scope, but are restricted without this being indicated separately.

Striking through and underlining role owners has the same meaning as in the access rights table on the info page (see above).

The hierarchical folder structure is indicated in the access rights table by indentation. In addition to the subfolders contained, objects for which the access rights have been individually changed are also listed in the access rights table.

You can also display an access rights table for other container objects such as wiki, flow folders or tasks.

The access rights table can be exported as a PDF file and printed on your local computer. To do this, use the button  at the top right of the table.

5.2.3 Assign roles

Role assignment can happen in two different ways:

- when inviting users to the member group of a workspace, folder, discussion forum or similar;
- explicitly in the member menu  **Assign Role**.

Role assignment during the invitation

When you invite users to a workspace, the roles that can be assigned are displayed in the selection list of the 'Invite as' field of the 'Add member' form. Normal roles like *Manager* or *Member* and restricted roles like *Restricted Member* occur here, but not system-defined roles like *Owner* or *Creator*. Managers of a workspace can invite users in all roles valid for a given workspace, but ordinary members can do so only for roles at their 'level' or below, e.g. as members or restricted members, but not as managers.

Since not only individual users but entire groups of members can be invited, it is possible to assign a role to an entire group, which then applies to all members. This may result in multiple roles for one user, for example, if you invite two member groups that both contain the same user in different roles.

Role assignment by means of 'Assign role'

In the Members menu of the current folder  **Assign Role** you can grant (or deny) certain rights to individual users differently from other members by modifying the role assignment that was set during the invitation or inherited from higher-level workspaces.

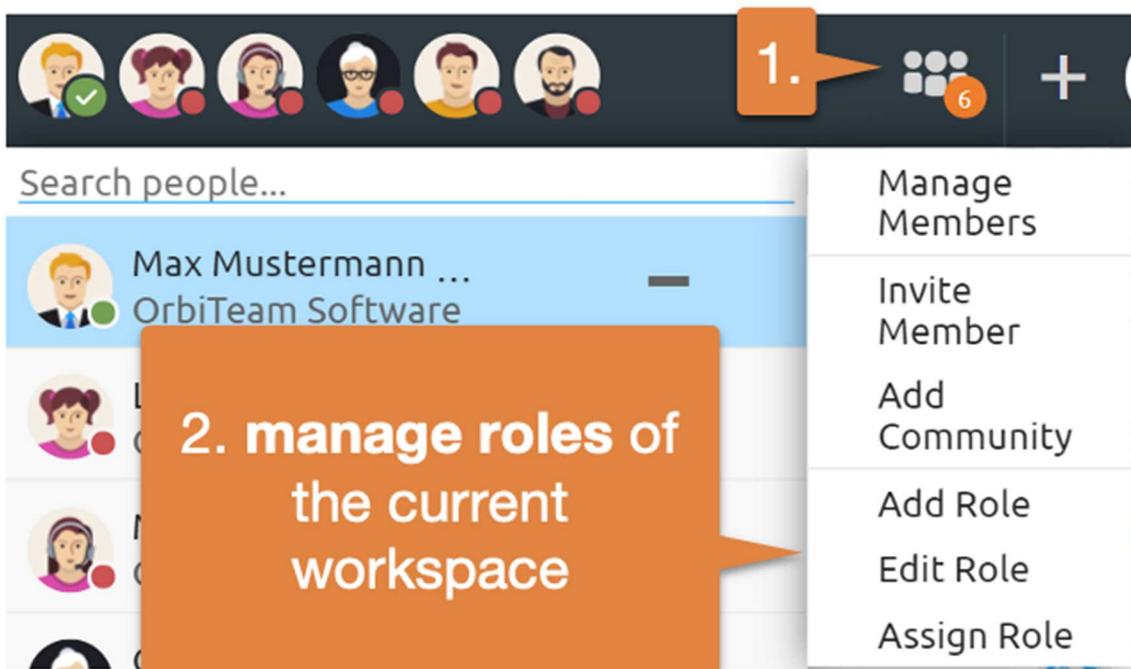


Figure 57: Manage roles

The 'Assign Role' form shows you a list of all members with their roles, to which a new role can be assigned by clicking on it. If the setting of a user is to be kept, no action is necessary for the user in question. Assignment of system-defined roles such as *owner* or *creator* cannot be changed here. By clicking on [Reset role], you can reset any individual changes to the role assignments for this object.

By default, the **Assign role** action is reserved for managers of an object.

If the object for which the role assignment is made is contained in more than one folder, you will first be presented with another form where you can choose for each parent folder whether you want to inherit all role assignments from that folder (including the owner role) or whether you want to assign a specific role for the object to all members of that folder. The latter option may again result in multiple roles for a user. Click [Specify specific role assignments] to go to the role assignment form for each member.

Note: You can use the **Assign Role** action in the Members menu to involve others in the ownership of an object or to exclude them as owners altogether if this object is contained in multiple folders. To do this, select the option to take over the role assignments and ownership from a parent folder, thus making the owners of the parent folder owners of the object as well. You can also give up ownership of the workspace altogether by turning off role inheritance from the parent folder you own (and thus have become the owner of the workspace we're looking at here).

The question of ownership becomes important if disk space monitoring is enabled for your BSCW server because all objects that you own are attributed to your disk space share. This may eventually lead to you exceeding your allotted disk space and the associated problems. Shared ownership of costly resources and thus shared storage allocation may be a fair solution.

5.2.4 Define and change roles

Some roles in BSCW are already predefined by the system such as *Manager*, *Member* or *Restricted Member*. These roles may be assigned to users for all BSCW objects and may therefore be used everywhere.

In addition, you can define new roles if you need them for a specific application. Examples would be *teacher*, *student* or *guest*. To do this, proceed as follows:

- In the Members menu, select  **New Role** of the object for which you want to define a new role. If this is a folder, the new role also applies to the contents of the folder.
- In the 'New role' form, enter the name for the new role. Now you define which access rights future role owners should have and which not. You have two options for this:
- You can fall back on roles that are already defined in the current workspace. To do this, select a role template from the list of existing roles and check the box next to it. You can then adapt the role template to your needs with [Change role...].
- You can also compile the access rights of the new role completely new. To do so, deselect the use of a role template and mark the action groups to which the role owners should be authorized. All BSCW actions that are subject to access control are divided into action groups. In the following, the action groups are listed with some typical examples:

Read: Open, Copy

Read (erw.): More information

New: Upload Document, New Note, New URL

New (erw.): New folder, New discussion forum

Modify: Change Properties, Lock, Put under version control

Modify (Enhanced): Remove, Delete versions

Share: Add member, Remove member

Share (Enhanced): New Role, Change Role, Upload by email

Edit: Cut, Edit note

Blog: New blog entry, Change blog

Select [Change Role...] to view all action groups in detail - those you have checked as well as those you have not checked.

- Confirm with [OK] if you are satisfied with the action groups you have selected or click on [Change role ...] to make necessary fine adjustments to the newly defined role on action level (cf. below under **Change role**).

Self-defined roles are limited to the scope of the object in question and can only be used there.

Both predefined and self-defined roles are called *normal roles* because they can be assigned without restrictions in their scope. In addition, there are also *special roles* that can only be assigned to other users in a restricted manner or inherit in a special way. Only system administrators can redefine (or delete) special roles. Examples of special roles are *owner* and *creator*.

All roles (normal roles as well as special roles) can be changed for any objects.

- To do this, select  **Change Role** in the Members menu of the object for which you want to change roles.
- Select the role you want to change and confirm with [OK]. At this point, any role changes already made can also be undone in their entirety for the object with [Reset all role changes].

- In the following form, select those actions that should be allowed for the changed role and confirm with [OK]. If it is a self-defined role, it can also be deleted here with [Remove role].

Note: If the action 'Cut' is allowed for a role, the action 'Remove' is also automatically allowed, even if it has not been checked. This is because an object can be removed from the clipboard without any further restrictions after it has been cut. The action 'Cut' therefore indirectly includes the action 'Remove'.

The changed role definitions apply to the scope of the object where they were changed, but not outside! This means that there can be different roles with the same name in different scopes, i.e. *members* in two workspaces may well have different access rights.

5.2.5 Ownership and ownership role

The owner role is a system role, i.e. it is calculated by BSCW and not set arbitrarily by the user. Each object has one or more owners who share the responsibility for the disk space occupied by the object they own - important if disk space monitoring ('quota system') is enabled for your BSCW server.

Ownership and the transfer of ownership (as well as the transfer of roles in general) is best understood by taking a closer look at the entries in folder overviews that act as references to the BSCW objects themselves. An object is accessed using the entries, and an object may have multiple entries. Example: If you click on the entry of an HTML document in one of your shared workspaces, the document is displayed to you. When another member of the same workspace clicks her entry of the same HTML document, she also sees the document. You both have (at least) read-only access to the HTML document because of your entries in the shared workspace, which both point to the same object.

When you cut, remove or paste an object, you do not actually cut or remove or paste an object, but you move an entry that refers to the object to your clipboard, your trash or from your clipboard to a folder. Moving objects in BSCW means moving entries, not the objects themselves.

How are entries created? When you create an object, entries for that object are created for all members of the folder in which you create the object. Other actions also create additional entries for an object, e.g.  **Link in other path** creates an entry that refers to the object, and inviting new members to a workspace creates entries for the workspace and its contents in the personal workspace ('home folder') of the newly invited members.

There are two varieties of entries that differ in terms of ownership, membership, and role transfer:

- *Entry transfers roles:* This is typically the case when an object is created along with its entries in a folder. In this case, the object inherits all members and their roles, including the owner role, from the folder in which the object was created.
- *entry sets roles:* This is typically the case when a user A is invited to a folder in the role 'xyz'. This is because an entry is then created in the personal workspace ('home folder') of user A that points to the folder and sets the role 'xyz' for user A. The owners of the folder remain unchanged, only user A comes in the role 'xyz'. The owners of the folder remain unchanged, only user A in the role 'xyz' is added.

If you have the necessary access rights - by default the rights of a manager, you can often change the property of entries to assign roles or set roles. Calling the **Assign Role** action in the Members

menu  entry per object that transfers the owner role from a parent folder, since the owner role cannot be set by the user. The specific role assignments for the listed users override the role assignments resulting from role transferring and role setting (see 5.2.3 "Assign roles" on p. 102).

Unfortunately, the two kinds of entries cannot be easily distinguished in a folder overview. The icon , where owner and parent folder owner are different, are good candidates for role-setting entries, whereas entries without are  good candidates for role-transferring entries. To be sure, however, you must invoke  the **Assign Role** action in the Members menu.

When entries are moved (cut, pasted, removed), they do not change their ability to transfer or set roles. If you move a role-setting entry to your clipboard, it will remain role-setting and you will keep your role(s) that you had before as well.

The members and their roles in relation to an object result as the sum of what is transferred or set by the individual entries that refer to the object. If necessary, this can still  be overridden by specific role assignments in the Members menu with **Assign Role**. When no more entries refer to an object, i.e. when all entries have been deleted, the object will also be removed from the system at the next opportunity (see 'Delete' below).

Having presented the general principles, we now turn to the question of how cutting, pasting, removing, and deleting entries that refer to an object affect the ownership and membership of that object.

- *Cut*: Cutting an entry from a folder F moves the entry to your clipboard. If the entry transfers roles, it now transfers roles and members from your clipboard instead of from folder F. This gives you the role of owner and manager. When the entry sets roles, your role remains unchanged. Any other members of F will lose access to the object referenced by the entry via that entry. Membership and ownership derived from other entries that reference the same object remains unchanged.
- *Paste*: Pasting a role-transferring entry from your clipboard to a folder G now makes that entry transfer the members and roles of folder G instead of from your clipboard. Consequently, all members, managers, and owners of G also become members, managers, and owners of the object referenced by the entry. You lose your role as owner/manager if you are not also owner/manager of G. Pasting a role-setting entry from your clipboard into a G folder leaves you in the role you already had on the clipboard. Any other members of G will have access to the object referenced by the entry in the role of the role-setting entry - overridden, if necessary, by the object's specific role assignments - with the exception of restricted and anonymous members of G who become anonymous members of the object to ensure at least minimal access to the object. Ownership of the object, which is after all based on other role-transferring entries, remains unchanged.
- *Remove*: works like cut; the entries are just moved to your trash instead of your clipboard.
- *Put back*: works like insert; the entries are only moved to their original location.
- *Delete*: removes entries from your trash. When you delete a role-setting entry, you lose access to the object referenced by the entry through that entry; if the entry was your only access to the object, you are no longer listed as a member of the object. If you delete a role-transferring entry - you own and manage the object in this case because you own and manage your recycle bin - you lose the owner and manager roles to the extent they were transferred via that entry. If the entry was your only access to the object, you will no longer be listed as the owner and member of the object. The disk space used by the

object is no longer attributed to your disk space usage if disk space monitoring is enabled for your BSCW server. If the role-transferring entry to be deleted is the last role-transferring entry that refers to an object and there are other role-transferring entries that refer to the same object, we have a problem. If the role-transferring entry were simply deleted, the object would no longer have an owner; moreover, you would think you had deleted the object that belongs to you, while other members still have access to it. To avoid such a situation, the other role-conferring entries are also deleted. Because this causes the other members to lose their access to the object, BSCW will warn you before you delete the last role-setting entry that refers to an object that still has other members. If you proceed, the object will have no more entries and will be removed from the system at the next opportunity.

6 Address book and contacts

The personal address book supports the management of contact data of arbitrary persons, i.e. both users of your BSCW server and persons who do not belong to the circle of users. The contact data of a person are stored in a contact object. To increase clarity, the contacts of the address book may be grouped in contact lists. The entries of your address book are available when inviting new members to workspaces, participants to a meeting or a scheduling.

Contact lists are special folders that contain only contacts. Contact lists can also be created in any workspaces in order to be able to create contact data also in the context of a workspace and make them available to the members of the workspace. However, such contacts must first be copied to the personal address book before they can be used for invitations to workspaces.

The email addresses and cell phone numbers stored in contacts may be used- to send messages or BSCW objects to contacts if your BSCW server is configured appropriately.

6.1 Contact lists

Contact lists are special folders where you can manage contact data of people you are in contact with. The contact data of a person is stored in a contact object. Contact lists contain only such contacts. Contact lists can be created in any folders, so that contacts can be created and managed in the context of a specific workspace - even to people who are not members of that workspace. The representation of a contact list is similar to the representation of a member page.

You create a new empty contact list as follows:

- Select  Neu **Contact List** in the top menu and enter name and optional tags and description.

You change the name, tags and description of a contact list as follows:

- Select  **Change Properties** in the context menu of a contact list and enter your changes.

6.1.1 Create contacts

To create contacts in a contact list

- open the contact list and select  Neu **Contact**. In the *'New contact'* form, enter the desired information about this contact.

All information can be changed at any time with  **Change Properties** in the context menu of a contact.

- You can assign the contact to one or more categories, according to which the contacts can be sorted and filtered.

- Instead of entering contact information manually, you can also [Select user]. This button opens the action form 'New Entries'. Here you may enter names or email addresses directly, select them from the result of a BSCW user search or a search in the LDAP directory and then transfer them to the 'Selected Users' field. By clicking [OK] you create new contacts whose details correspond to the personal profile of the selected users. Such contacts are called original contacts.

6.1.2 User contacts and original contacts

If an email address is entered for a contact that also has a user, the contact is assigned to this user. It is then a *user contact*. The same applies to so-called provisional email addresses, i.e. addresses to which an invitation to self-registration has gone out. A contact with such an email address will be assigned to the respective provisional email address. In these cases, the username or provisional email address is added to the contact's name in parentheses and the type of the contact displayed in the 'Status' column of the contact list overview changes from 'Contact' to 'User' or 'Provisional email address'.

You can also recognize the contact's type by its icon:

-  normal contact
-  contact assigned to a user
-  Contact assigned to a temporary email address

Note: If several email addresses are entered for a contact-, it will only be assigned to one user if this is clearly possible, i.e. if there is only one user who has email addresses matching the contact.

Contacts that you have created using the [Select user] action are not only always assigned to a user or a temporary email address, but also have the original attributes that the respective user has set in the 'Personal data' tab of his personal profile. Such contacts are called *original contacts* and have the type 'User' or 'Provisional email address'.

Original contacts can be distinguished from other contacts of the same type by their symbol:

-  original user contact
-  original contact of a temporary email address

The special feature of original user contacts is that they always have exactly the attributes that the respective user has set in his personal profile, i.e. the attributes of an original user contact are automatically updated.

The original contact of a temporary email address is automatically converted into an original user contact as soon as the user in question registers.

Original contacts usually have a member group of restricted members, indicated by the group icon  in the share column. This is the group of those users who have this original contact in their address book or a contact list.

-For the sake of completeness, it should be mentioned that user contacts may also have other types depending on the state of your user account: for example, 'Invalid email address' (user whose email address has become invalid), 'Locked user' (user whose user account has been locked by the administrator) or 'Expired user' (temporary user whose user account has expired).

6.1.3 Change contacts

All contact information can be

- be changed with  **Change Properties** in the context menu of a contact.

When editing a user contact, i.e. a contact assigned to a user, there are the following peculiarities:

- Under the fields of the *'Change contact'* action form, in case of discrepancies, those entries are displayed in green that the user himself has made in his personal profile for the corresponding field. His/her username is added in brackets.
- Select the [Match with original] button to apply the values of the assigned user for one or more fields.
- Select the [Replace with original] button to apply the values of the assigned user for all fields. This converts the contact into an original user contact and automatically adjusts the contact details whenever the user changes their personal profile.
- Select [Edit] to continue with the usual editing of the contact.
- Finish the editing with [OK].

Note: Even if you have transferred user data to a contact with [Match with original], as described above, these fields are *not* automatically matched when the user himself makes changes.

When you change an original user contact, the original contact becomes a normal contact and the contact details are no longer automatically matched to the user's personal profile. You will be notified of this fact by a message in the *'Change contact (copy)'* action form.

6.1.4 Import and export contacts

Contacts of a contact list can be imported in vCard format from local applications like Microsoft Outlook.

- Contacts are automatically created from vCard file (*.vcf) in contact lists. To do this, upload vCard files from your local computer via DragNDrop or via the Upload button in the desired contact list to import them.
- Alternatively, you can upload one or more vCard files to a contact list using drag-and-drop.

Contacts and contact lists can of course be re-exported in vCard format.

- To export a single contact as a vCard file, select  **Send to vCard** in a contact's context menu and save the file to your local computer.
- Multiple contacts can be exported to a vCard file at once by selecting the contacts to be exported by clicking their checkboxes and then pressing the  **Send to vCard** context menu on a selected entry.

Exporting contact information contained in user entries of your address book or any member pages is possible in vCard format with the same actions.

Note: Importing Microsoft Outlook contacts is not straightforward; they must first be saved in Outlook as a vCard file (*.vcf).

If you are using Windows on your local computer, you may synchronize your BSCW contact lists with local contacts in MS Outlook. For details see 13.6 "Outlook or Lightning and Mac email matching" on p. 197.

Contacts and contact lists can also be copied to your address book. Contacts and contact lists from your address book can be used when inviting new members to workspaces.

- Select in the context menu  **Link address book** to copy single or multiple contacts to your address book.

6.1.5 Contact contacts

You can send a message to a contact with an email address by

- Select  **Send to Email** in the context menu of the contact. For details, see **Send to**.

In the case of a user contact, i.e. a contact assigned to a user and identified  by the or  icons, you can also try to contact the corresponding user via social networks or instant messaging services. The prerequisite is that the user has made corresponding entries in the 'Communication' tab of his personal profile.

- Click on the user contact to display the user short info.
- Click [Email] to send an email message to the user.
- Click [Details] to go to the user info page. The 'Contact details' tab of the info page summarizes the information about social networks and instant messaging services that the user has provided in his personal profile. If this section is missing, the user has not provided any such details.
- Click the icon of a social network to go to the user's entry in that network. Click the icon of an instant messaging service to contact the user through it.

6.2 Address book

Your address book is a personal object to which only you have access. It supports the management of contact data of arbitrary persons, i.e. both users of your BSCW server and persons who do not belong to the circle of users. The contact data of a person are stored in a contact object. To increase clarity, the contacts of the address book may be grouped in contact lists. The entries of your address book, contacts as well as entire contact lists, are available when inviting new members to workspaces, participants to a meeting or participants to a meeting.

The content of your address book is displayed as a list, which corresponds to the representation of a contact list. Most actions on contacts in contact lists are also possible on contacts in your address book.

- Click the icon  in the navigation tree .

6.2.1 Create entries in the address book

New entries in your address book come from two sources: first, BSCW automatically adds all users and email addresses that you invite to workspaces; second, you may make entries explicitly manually.

You can create new entries in the address book just as you would in a contact list.

- Select  Neu Contact from the top menu and fill out the action form.
- Confirm with [OK] to create new contacts in your address book.

Instead of creating new address book entries manually, you can also copy users from member pages or contacts from contact lists to your address book.

- In the member page or contact list, select the entries you want to add to your address book
- Select  Link address book in the context menu of individual entries. If this action is not offered in the context menu, it is because your address book already contains a corresponding contact.

Contacts that you copy from a member page are *original* contacts.

You can also import contacts in vCard format from local applications such as Microsoft Outlook into the address book via dragNDrop. This works in the same way as for contact lists (see 6.1.4 "Import and export contacts" on p. 111). You can also export contacts and contact lists of your address book or the entire address book with  Send to vCard in the context menu again in vCard format for use in your local computer.

Note: As of this BSCW version, member groups can no longer be transferred to personal address books and invited from there to workspaces. Instead, member groups may be made generally available for an invitation and found via a global search when inviting.

6.2.2 Change address book entries

With the exception of the original contacts (icon ), you can change the contacts of your address book at any time by

- You select  Change Properties in the context menu of a contact.

When editing a user contact, i.e. a contact assigned to a user, there are the following peculiarities:

- Under the fields of the 'Change contact' action form, in case of discrepancies, those entries are displayed in green that the user himself has made in his personal profile for the corresponding field. His/her username is added in brackets.
- Select the [Match with original] button to apply the values of the assigned user for one or more fields.
- Select [Edit] to continue with the usual editing of the contact.
- If you want to turn the user contact into an original contact in order to have the user data currently available in the contact at all times, select [Replace with original].

Note: Even if you have transferred user data to a contact with [Match with original], as described above, these fields are *not* automatically matched when changes are made by the user himself, as is the case with original contacts.

You can't really change an original contact, because you would be changing the user's personal profile. However, you can copy an original contact into an ordinary user contact and then edit it.

- Select  **Change Properties** in the context menu of an original contact.
- In the '*Change contact (copy)*' action form, you will be informed that you are creating a copy of the original contact and thus losing the automatic tracking of the contact's attributes.
- Select [Cancel] to keep the original contact or edit the copy and replace the original contact with [OK].

However, you can change your *own* original user contact, which you have created e.g. via [Select user] in your address book, with  **Change Properties**. This has the same effect as if you would edit the 'Personal Data' tabs of your personal profile with  **Personal Profile**.

Entries in your address book can only be removed manually; BSCW does *not automatically delete* entries that have been created automatically either.

- Highlight the entries you want to remove on your Address Book page and select in  multi-select toolbar. This will move the selected contacts to your trash.

When you delete your own original contact in the Trash, you also remove it from other address books and contact lists. In this case, you will receive a corresponding warning message. Otherwise, deleting contacts has no effect on other address books or the membership status of those users whose entries have been deleted.

6.2.3 Organize address book

To divide the contacts of your address book into different sections, you can create contact lists in the address book.

- Select  **Neu Contact list** in the top menu and enter name and optional description. Both can be changed later.

You can create new contacts in such a contact list of your address book as described for your address book, or transfer contacts from your address book by cutting or copying and then pasting them into such a contact list.

Contact lists of a workspace can be transferred as a whole to your address book with the action  **Link Address book** in the context menu, if you have selected all contacts before.

Contact lists from the address book may be used when inviting to workspaces by inviting all or certain contacts of a list to a workspace (for details see 5.1.1 "Create shared workspaces: Invite other users" on p. 91). To appear in the action form when inviting, such contact lists must contain at least one contact that is assigned to a user or a temporary email address or contains an email address allowed for self-registration on your BSCW server.

6.2.4 Use address book

The main use of the address book is to support the selection of people for invitations to workspaces, appointments and voting: for this purpose, the 'Select from my address book' option is always offered in the respective action form.

You can contact the people represented by the contacts of your address book, provided that email addresses, cell phone numbers or other contact data are available. This works the same way as in normal contact lists and is described in 6.1.5 "Contact contacts" on p. 112.

7 Chats and notes

You can access individual *chats* via the news overview of the latest messages.

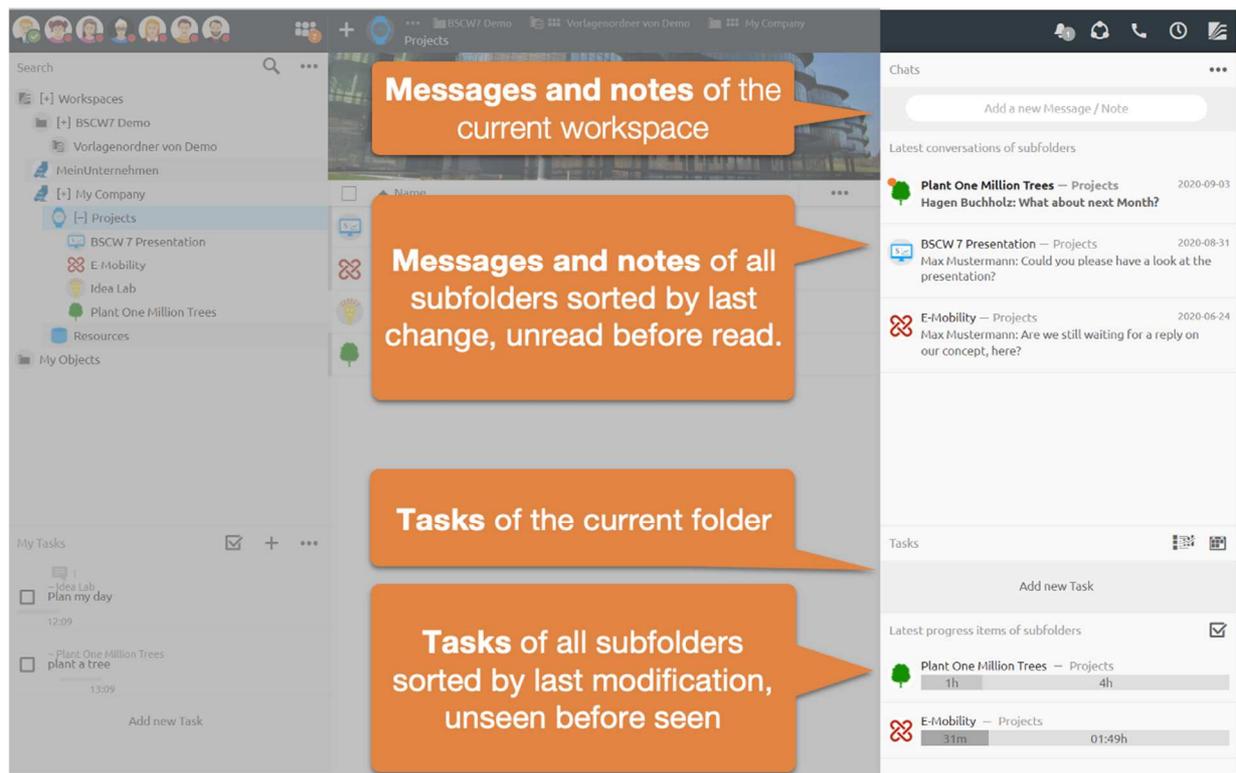


Figure 58: Latest news and tasks

7.1 Chats or notes

A *chat* consists of several messages and may in turn contain other *chats*.

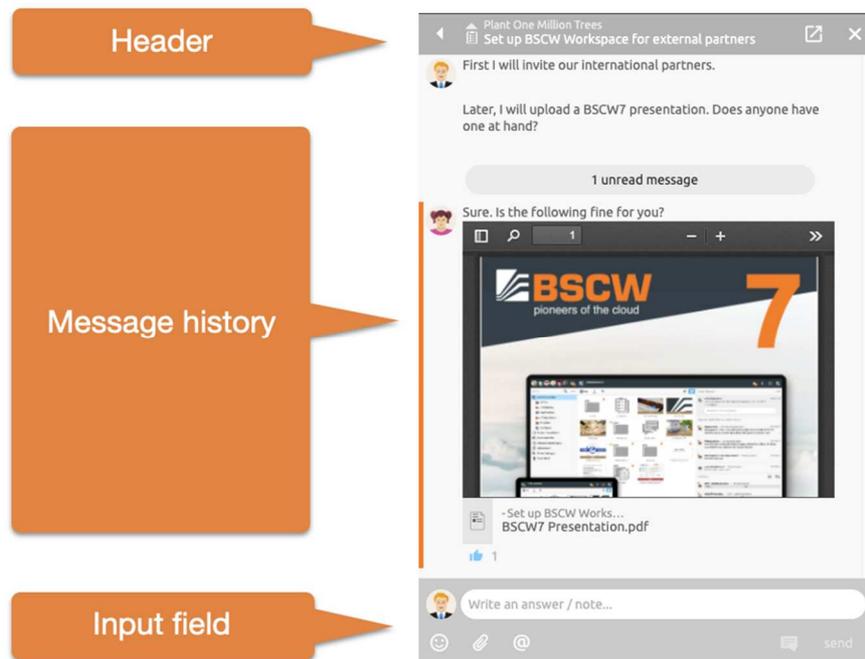


Figure 59: Messages list

In the *header bar* the name of the *chat* is displayed - it can also be easily edited here. You can also switch to the parent folder or *chat*. Pin the *chat* if you want the *chat* to remain visible even after a folder change.

In the message history all messages are displayed chronologically from the oldest (top) to the newest (bottom).

Add a new message to this *chat* using the input field. Messages can be formatted via a menu. First select the text to be formatted. You can now specify a formatting via the menu that appears. Alternatively, *Markdown* is also supported.

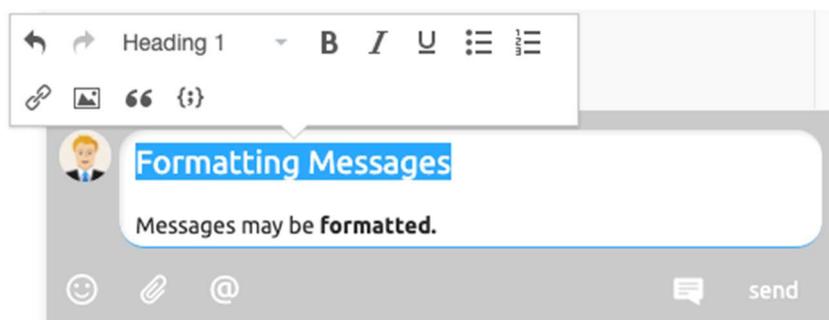


Figure 60: Message texts can be formatted

Add references to any BSCW objects such as images, videos, folders, tasks or other messages simply by *dragging and dropping them* into messages.

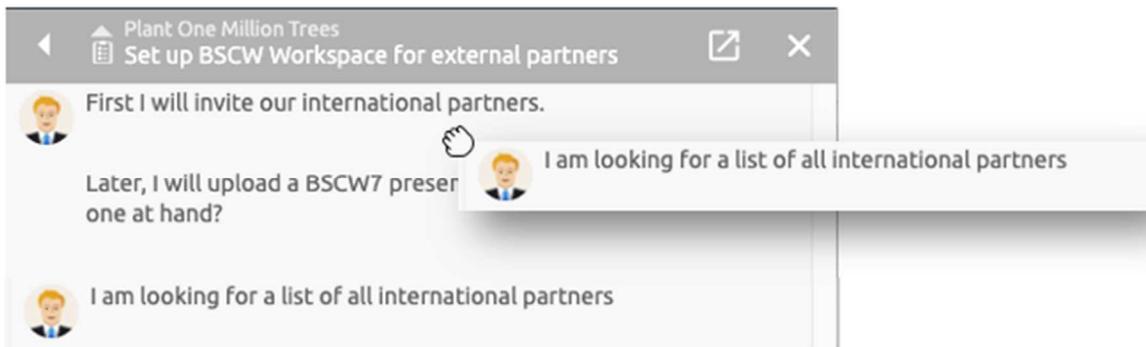


Figure 61: Move messages thematically into each other

In BSCW messages can also be *dragged and dropped* into other folders or moved thematically into each other. A message element with a submessage is shown below.

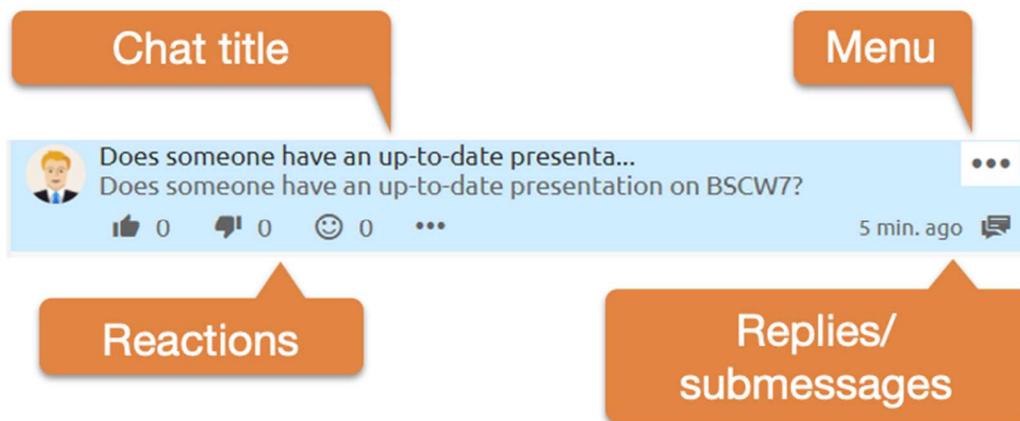


Figure 62: Messages element

Simple messages show the author and the message text. As soon as you move the mouse over a message, more details become visible. The title of a chat is only displayed if a message contains submessages. Reactions provide users with an easy way to signal feedback on messages. They can thus also be used as a *voting tool*.

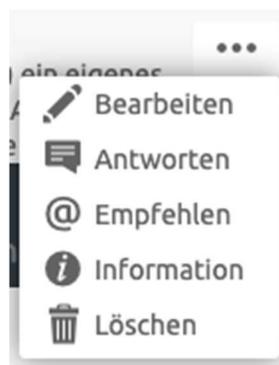


Figure 63: Messages element menu

You can edit your own messages at any time via the menu, provided that this right is not blocked for you on the corresponding folder. Recommend messages to send messages to other members

also as e-mail. The information provides more details about when messages were created, edited or read.

8 Document and content management

Any file uploaded from your local system is represented in BSCW as a *document*. Documents may contain text, graphics, spreadsheets, print files, images or audio and video data and are a basic object type in BSCW. Uploading documents to BSCW is described in 4.3.2 "Upload and modify documents in BSCW" on p. 59.

BSCW supports the management of documents and their contents:

- Text and HTML documents may be *created* and *edited directly* on the BSCW server. MS Office and other documents may also be edited directly on the BSCW server under certain conditions.
- Documents can be *resubmitted* as reminders; documents can be *locked* or *frozen to* protect them from accidental replacement or editing.
- Documents can be placed under *version control* to track changes when a document is edited by different authors in a shared workspace.
- Documents can serve as *templates*, which are kept in specific template folders and can be copied from there to other places. Typical examples of templates are letter or form templates with extensive formatting or complicated calculation formulas.
- Collections of interrelated documents (HTML documents, image, audio and video files, etc.) may be created and managed in BSCW using URLs for objects in workspaces. Such collections may be shared with other members of a workspace or made public for anonymous access via the Internet.
- HTML documents can be grouped in a *wiki to be* managed there as a kind of miniature website. Wiki have two special pages: the start page and the layout page; the latter serves as the default frame for all other HTML documents of the wiki.

8.1 Edit documents directly

Editing a document stored in BSCW normally requires downloading the document, editing it on the local computer and then uploading the edited document. Under certain conditions, however, documents may also be edited directly on the BSCW server from the Web-based user interface:

- Text and HTML documents through editors integrated into the web browser;
- MS Office files by using WebDAV (*only possible* if you use Internet Explorer on Windows).

- any documents by connecting a local helper application that allows direct editing with external editors.

In addition, you may create text and HTML documents directly on the BSCW server.

8.1.1 Create and edit HTML documents

You may create and edit HTML documents (MIME type `text/html`) directly on the BSCW server. For the current versions of Chrome, Edge, Firefox, Internet Explorer, Opera or Safari, an HTML editor integrated in BSCW is used for this purpose. If you use a browser for which the integration with the HTML editor does not work, HTML documents are edited like ordinary text documents.

To create an HTML document,

- select  Neu HTML Document in the top menu of the current folder.
- Enter the name and optionally tags and description of the new document. Enter the contents of the document in the HTML editor window.
- When you click [OK] or invoke the 'Save' editor operation, you create the new HTML document. If you forgot to specify a name for the new document it will be saved as "Document from <your-username>".
- If you click on [Cancel and edit source], you lose all your previous entries and can enter the HTML document in source code, i.e. with HTML tags.

To edit an HTML document directly on the BSCW server

- Select  Edit the context menu of the document. If you are using the built-in HTML editor, this action automatically *locks* the document until you finish editing.

Note: Automatic locking during editing does not generate its own events and is not included in the document's history.

- The content of the HTML document is displayed in the HTML editor window, where you can edit the document.
- Clicking [OK] replaces the existing document with the revised one, or creates a new version if the document is under version control.
- If you click on [Cancel and edit source code], you lose all your previous entries. You can then edit the HTML document in the source code.

The editor used has the facility to save *backup copies* of documents and to restore them when needed. The backup copies for all edited documents are kept during a BSCW session, i.e. until logout. There is also a backup copy for aborted editor sessions.

- Click on [Create backup now] in the upper toolbar of the editor to create a backup copy. A backup is also made automatically every minute. The date of the last backup is indicated on the left of the toolbar.
- Click on [Restore backup] to restore the last backup. Before the restore, the backup copy is displayed.

During the generation of the HTML document (either by upload or direct generation on the BSCW server) the *character set of the* document is usually inferred from the browser information of the creator. However, you may also set the character set explicitly via  Change Properties. To do so, deselect the checkbox 'Automatically select character set for text file

contents if possible' and confirm with [OK]. You can then enter the character set for the HTML document in the action form.

8.1.2 Edit MS Office files

For direct editing of MS Office files, there is the possibility to access the functionality of current versions of Windows, Internet Explorer and MS Office. Prerequisites for this approach are:

- Windows 7 or higher;
- Internet Explorer 9 or higher;
- Office 2010 or higher;
- the document is a Word, Excel, PowerPoint, Project or Visio file;
- the document has a valid file name extension on the BSCW server (e.g. '.doc' for a Word document).
- Furthermore, on the BSCW server
- WebDAV must be enabled (see 13.7 "WebDAV" on p. 197)

If you have any questions, please contact your BSCW administrator.

If the prerequisites are met, edit an MS Office file directly on the BSCW server as follows.

- Select  Edit in the context menu of the document.
- This action locks the file and automatically starts the corresponding office application. The operation "Save" in the Office application writes the file back to the BSCW server. There the original file is replaced or, in case of documents under version control, a new version is created.

Note: Automatic locking during editing does not generate its own events and is not included in the document's history.

- The document is unlocked by closing the file in the Office application.

Note: If direct editing with the auxiliary application for external editors for MS Office files is enabled (see next section), this procedure has priority over the direct editing procedure described here.

8.1.3 Edit documents with external editors

Using a local helper application for external editors you may edit any document directly on the BSCW server. Such a helper application must be installed on your local computer. It is called by the browser for direct editing of a BSCW document, starts the local editor suitable for editing the document type and saves the result on the BSCW server during and after editing. Depending on the document type, the editor may be a word processor like Microsoft Word or OpenOffice Writer, a graphics editor or a spreadsheet program.

If you want to use this procedure, proceed as follows:

- Installing the helper application for direct editing with external editors on your local computer.

- Configuration of your personal BSCW settings so that the helper application launches the appropriate local editor for direct editing for specific document types.
- Direct document editing with  **Edit** for the appropriately configured document types.

Installation of the auxiliary application for direct editing with external editors

BSCW supports as helper application the BSCW desktop extension based on the Zope External Editor Client. The BSCW desktop extension is available for Windows and Mac. After download and installation, the BSCW desktop extension is immediately ready for use. The common document types are already preconfigured.

- Download the BSCW desktop extension from <https://www.bscw.de/en/social/#externalEditor> for your platform.
- Install the BSCW desktop extension on your local computer (on Windows, for example, by running the downloaded installer and following the instructions of the installation wizard).

If you use a special network connection (e.g. a proxy server), further configuration steps may be required. For details and references to further information please refer to <https://www.bscw.de/en/social/#externalEditor> on the BSCW website.

Configuration of the external editors in your BSCW settings

Select the document types that you want to edit directly in BSCW using locally available applications - the external editors.

- Select  **Settings** in the top menu of the main menu and go to the 'File Handling' subsection of the 'General' tab of the action form.
- Under *External editor programs* you select the document types that you want to edit with local (for BSCW external) editors via the BSCW desktop extension directly on your BSCW server, e.g. MS Office or OpenOffice files. If you check 'plain text file' for example, text files are not edited with the simple text editor integrated in BSCW, but via the BSCW desktop extension with your local text editor.
- Confirm with [OK].

Direct editing via the helper application

Direct editing of BSCW documents via the BSCW desktop extension is done as follows.

- Select  **Edit** in the context menu of a document for whose type an external editor has been configured.
- Your browser will now ask you what to do with the working copy of the document (Open, Save or Cancel). Confirm that you want to open it with *BSCW desktop extension*. Some browsers allow you to suppress this dialog for the future by checking or unchecking a corresponding option.
- After that, the editor corresponding to the document type is automatically started with the current document, the document itself is locked in BSCW.
- After editing, save the document using the editor's "Save" operation and close the editor. After that, the BSCW desktop extension will ask you to confirm the completion of editing. Then the original document is replaced by the edited document or, in the case of documents under version control, a new version is created and the lock is removed.

8.2 Document functions

8.2.1 Resubmit documents

You may have a document *resubmitted* at specific times, i.e. you will then receive an email message from BSCW with a reference to the document and the folder containing it:

- Select  **Send to Resubmission** in the context menu of the document. Specify the time of the resubmission as well as the subject and the content of the reminder message. If the document is in a shared workspace, you can specify whether the message should be sent only to you or also to all other members of the workspace. Confirm with [OK].
- You then get an overview of the existing resubmission appointments. You can specify further resubmission appointments with [Add]. Existing resubmission appointments can be deleted or changed by clicking the icons or  in  'Action' column. With [Back] you return to the folder overview.

8.2.2 Lock documents

You can *lock* a document for other users for a certain time to avoid conflicts during concurrent editing by multiple authors. A locked document may only be read by other users, but not modified or replaced. It is also not possible to create a new version.

- Select  **Write Protect** in the context menu of the document and specify a lock note. Confirm with [OK].

As the owner of the lock, you can change the lock note at any time without removing the lock. To do this, click on the icon  'Share' column of the document entry in the folder overview. You can also take this opportunity to unlock the document for editing again by clicking on [Unlock]. Instead of clicking on the icon, you can also call up this action in the context menu by selecting  **Show Lock**.

If you absolutely want to change a document that has been locked by another user, you can apply the lock, provided you have the necessary access rights.

- Click on the icon  in the 'Share' column of the document entry in the folder overview, enter your own lock note and confirm with [Apply lock].

You have now locked the document for other users and can change it yourself. The previous owner of the lock will be informed about this process by email. If you do not have the necessary access rights to apply the lock, only the lock note is displayed. Accepting (or displaying) the lock can also be invoked by accessing  **Show Lock** in the context menu of the locked document.

If you lock a document of which you are not the owner, you become the *co-owner* of the document.

8.2.3 Freeze documents and folders

As the creator or manager of a document, you can also *freeze* the document and thus protect it from further changes by other members of the workspace. Changes to a frozen document are not possible, it can only be read. After unfreezing, the document can be edited again.

- Click the checkboxes of those documents in the folder overview that you want to freeze.

- Select  Freeze to obtain a list of those documents that are to be frozen. Confirm with [OK].
- If you want to freeze only one document, you can also select  Freeze in the context menu of the document.

Frozen documents are indicated by the icon in  the 'Share' column of the folder overview.

If you want to *unfreeze* documents again, use  Unfreeze in the context menu of a document.

As a creator or manager, you can also freeze *entire folders*, protecting all content from changes by other members.

- You can select  Freeze in in the context menu of the folder.

Frozen folders are indicated by the icon  the navigation bar and in the 'Share' column of the folder entry in an overview.

If you want to unfreeze a frozen folder, use  Unfreeze again in the context menu of a folder.

8.3 Documents under version control

Collaboration in a shared workspace can mean that a document is edited and revised multiple times by different authors. Without version control, the authors would have to do a lot of additional administrative routine work to keep the different versions of the documents apart in their chronological and content-related sequence. Because it is safer and also much more convenient, the authoring group should put their BSCW documents under *version control*.

When a document is under version control, its contents are not simply overwritten when changes are made; rather, an additional version is created that now represents the *current version*. The previous versions are preserved. Their sequence is indicated by version numbers (e.g. 0.1, 0.2, 0.3, etc.). You can still access them via the info page or directly via a URL with version number (see below).

As the manager of a folder, you also have the option to place all documents in the folder under automatic version control, so that when new documents are uploaded and existing documents are replaced or edited, documents are automatically created under version control.

8.3.1 Put document under version control

Setting up version control for a document means creating a new object of the 'Document under version control' type using the existing document as the initial version.

- Select  Version Control in the context menu of the document.
- In the '*Place under version control*' form, enter the description, state and number of the original version.

As a result of the action, the entry of the document changes:

- A *version number* is inserted after the name of the document.
- In the context menu of the document, the action [New version] is offered instead of [Replace].

In addition, when applied to documents under version control, the following BSCW actions affect the *current version* of the document:

- Clicking on the document name or the file type icon to the left of it will download the current version.
-  **Send to converter** and  **Send to archive** concern the current version.

You can only undo the version control setup for a document by deleting all versions of the document (see 8.3.5 "Manage versions" on p. 127).

Instead of placing documents under version control individually, you can also do this for *all* documents in an entire folder. For details, see 8.3.6 "Automatic versioning" on p. 128.

8.3.2 Create new version

You create a new version of a document under version control as you would edit or replace a normal document. When you edit a text or HTML document under version control directly on the server, a new version is created automatically. The version information should be completed to inform the other members of the workspace (see next section).

Explicitly create a new version of a document under version control as follows:

- Select  **New Version** in the context menu of the document; this action replaces the  **Replace** normal documents action.
- The '*New Version*' form lets you upload a file to the server as a new version. It also provides you with pre-filled values for the new version number and version state. You can overwrite these if necessary, for example if a profound or final change should be made clear by a jump in the version number.
- In the '*Changes in version version number*' field, you can enter a characterization of the difference from the previous version to help workspace members better understand the version history and find a specific, older version.

8.3.3 Change version information

Version number, version state and change description can only be changed subsequently for the *current version* - older versions are unchangeable.

To change parts of the version information of a document,

- Select  **Version Info** to access the '*Version Info*' form, which allows you to change the version information.

8.3.3.1 Version numbers

Versions are identified with unique version numbers. They consist of numbers with dots in between. The numbers must be in the range [0, 32767].

BSCW knows two variants of version numbers:

- The *major version number* has a position for (major) '*version jumps*' before the dot and a position for (minor) '*version steps*' after the dot. Examples are 0.1, 3.11, 4.5 or 8.1.
- A *branch version number* is formed by appending a *branch number*. *Step number combination* is appended to the version number from which the version branch originates. The branch number identifies the branch starting from the particular version, and the step number identifies the version in that branch. Only this rightmost step number is changeable in a branch version number. For example, version number 0.1.2.3

denotes version 3 in branch 2, which starts from major version 0.1. You can also create branch versions from branch versions again! For branching versions, see 8.3.4 "Branch versions" on p. 126.

When you create a new version of a document, BSCW offers you a pre-filled version number for it, where in each case the step number is incremented by 1 compared to the previous version. You may enter a higher step number. A lower step number is only possible for a major version number if you increase the step number at the same time, e.g. set the version number from 0.12 to 1.0.

Note: You cannot change the number of the current version if a version branch originates from this version, which happens automatically, for example, if another user has copied the current version.

8.3.3.2 Version state

You can use the version state of a document to indicate the status (e.g. maturity level) of an associated work process. For example, a document can initially be marked as 'draft'; after a review, the state could be set to 'accepted' and later to 'released'.

You may agree with your partners on suitable states for joint work processes and enter them in the version state field. To make work easier, BSCW offers a menu with three version states:

- experimental,
- stable,
- released.

8.3.3.3 Description of changes

All members of a shared workspace should understand and be able to interpret the sequence of document versions. This is important e.g. to find the last version before a critical change. To make this possible, each new version should be briefly described in the 'Changes in version ...' text field of the '*New version*' and '*Version info*' forms.

8.3.4 Branch versions

If a document is to be edited simultaneously by several authors or if different variants are to be managed in parallel, you may create version *branches* in BSCW: two or more parallel version branches with two or more current versions. A new version branch is again a document under version control that starts from any version of the original document. It is also possible to create new branches from version branches again.

- Select  **New Version Branch** in the context menu of a document under Version Control.
- In the form '*New version branch*' the version history is displayed. There, by clicking the radio button in the 'Number' column, you specify the version from which the new branch should start. Name the new version branch.

The first version of the new branch document is a copy of the initial version of the original document in the same folder. The state is taken over, the version number is formed by appending *next-branch-number*. 1; this can be changed via  **Version info**.

Note: Copying documents under version control means *branching*, i.e. a new version branch of the document is automatically created in the clipboard.

BSCW does not provide any special support for reunifying different version branches that have been developed in parallel. In this respect, it is particularly important to write meaningful change descriptions and to discuss the version structure with the members of the workspace who edit other version branches, thus facilitating a smooth merging of the version branches into one document.

Note: You cannot save a new branch version as a major version, i.e. you cannot specify a major version number as the branch version number when creating a new branch version.

Example: Suppose you created a new branch 0.1.0.1 starting from the major version 0.1. You edit the underlying file and save it as new branch versions 0.1.0.2 and 0.1.0.3. Now, if you want to save a new branch version as a major version, you cannot simply increase the version number from 0.1.0.3 to 1.0 for version safety reasons. Instead, you must enter 0.1.0.4 as the new version number and create a new major version by uploading the file underlying version 0.1.0.4 and saving it as major version 1.0.

8.3.5 Manage versions

In BSCW you may access older versions of documents under version control by clicking on the version on the document's info page or by entering the URL directly.

- Select  the context menu of the desired document.
- The Info page of the document contains the *Version History* section and another *Related Version Branches* section if the document has version branches. The tables show creation date, author, state and change description for each version.
- Click on the version number of the version you want to read or download.

You can also access an older version directly via URL - more on the procedure in general in 8.5 "URLs for objects in workspaces" on p. 131. For documents under version control, the version number is appended to the address for normal documents as in the following example:

<http://Ihr-BSCW-Server/sec/bscw.cgi/d12345/Bericht.doc?version=0.6>

Attention: You can change older versions of a document under version control afterwards only if you branch from the version you want to edit and then edit the branch version.

If you not only want to display the different versions of a document, but also compare them with each other and possibly delete superfluous ones,

- select  **Versions** in the context menu of the document. You will then see the version history with date, author, status and any change notes of all versions that can be deleted. Note that certain versions cannot be deleted for technical reasons, for example if they are the starting point of a version branch.
- For text, HTML, and other documents that can be converted to text form, you can compare two versions of each before deleting. Select the two versions and click [Compare Versions]. The comparison of the two versions appears in the action form: new text is underlined, deleted text is crossed out.

Note: Which documents can be converted to text form depends on the document types for which your BSCW administrator has installed appropriate converters.

- For deleting, select the version(s) you want to delete and carefully check that all versions you do not want to delete are also unchecked. Then click on [Delete versions]. Please note that deleted versions cannot be *restored*.

If you delete all versions of a document under version control, you thereby remove version control, i.e. the document becomes a normal document again.

8.3.6 Automatic versioning

As a *manager*, you can set version control for entire folders and their subfolders with the result that all documents that are newly created and all existing documents that are edited or replaced are automatically placed under version control.

- Select  **Change Properties** in the top menu of the folder you want to put under version control.
- The 'Automatic versioning' tab of the action form, which is also offered when creating a folder, offers you four settings:
 - The setting that is taken from a parent folder, or the BSCW default if no parent folder has a setting that differs from the default. The BSCW default normally does not provide for automatic versioning but may of course differ for your BSCW server; in case of doubt ask your BSCW administrator.
 - The remaining options are explicit settings for the current folder:
 - Automatic version control with an unlimited number of versions.
 - Automatic version control with a limited number of versions; creating a version that exceeds the specified maximum will cause the oldest version to be deleted.
 - No automatic version control; version control must be explicitly set for individual documents.
- The current setting is displayed by preselection. Make your selection and confirm with [OK].

Automatic version control is inherited by all subfolders of a folder, unless a subfolder has its own automatic versioning setting. So you can put whole subtrees of your folder hierarchy under version control, excluding certain subfolders by explicitly setting 'No automatic versioning' for them.

You can use  **Change Properties** in the context menu to specify automatic versioning for *individual documents* as well, e.g. to exclude certain documents from version control or to specify version control with a limited number of versions. This is also offered already when creating documents.

The automatic versioning setting that is valid for a folder or document is shown on the Info page under *Details* (click on  at the left margin of the object entry). If there is no entry 'Automatic versioning' in the *Details* tab, the BSCW default setting is valid for this folder or document.

If you set automatic version control for a folder (unlimited or limited number of versions), the following will happen to the already existing documents and subfolders:

Documents without version control: remain unchanged, i.e. remain documents without versions. However, a subsequent **edit** or **replace** will automatically place such documents under version control with the original as the first version and the edited or replaced

document as the second version. Of course, you can also explicitly place such documents under **version control**.

Documents under version control: If automatic versioning with an unlimited number of versions has been specified, such documents remain unchanged. If automatic versioning with a limited number of versions has been specified, documents with more versions than the specified maximum are placed under version control with an unlimited number of versions to avoid unintentionally deleting existing versions; for documents with a version count below the maximum, automatic versioning applies as specified.

Documents under version control with explicit setting of automatic versioning: remain unchanged and keep their setting.

Subfolders: Subfolders with an explicit setting of automatic versioning keep this setting, all other subfolders inherit the setting from the current folder.

Any new documents created within the folder, such as via  **Neu** Document or via DragNDrop Upload, will be placed under version control as specified (with the new document as the first version). Note that documents added to the folder via  **Paste** are not automatically placed under version control; only a subsequent edit or replace will do this, as mentioned above. When a  **Neu** Version Branch is created from a document that is already under version control (see 8.3.4 "Branch versions" on p. 126), the branch document is placed under the same kind of version control as is valid for the folder. Note that versions from which a version branch originates cannot be deleted. Such versions do not count for automatic versioning with a limited number of versions.

If you undo automatic versioning for a folder, i.e. you choose the 'No automatic versioning' setting or the BSCW default setting if that amounts to the same thing, the documents of the folder (and its subfolders) are not changed and no existing versions are lost. Documents and subfolders with an explicit automatic versioning setting keep that setting, other subfolders inherit the new setting, other documents become normal documents - either with or without version control but without their own automatic versioning setting.

Note: As shown above, undoing automatic versioning or limiting automatic versioning to a smaller maximum number of versions does not delete versions. If you want to delete versions that you do not need anymore, you have to do this manually with **Manage Versions**. If this affects many folders and documents, ask your BSCW administrator to help you with an automated script.

8.4 Templates and template folders

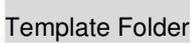
Templates are used as patterns for frequently used types of documents (letters, reports, forms) that usually contain extensive layout and formatting information as well as calculation formulas, if applicable. In BSCW, arbitrary objects may also be declared as templates: Surveys, flow folders, tasks and even folders with their entire contents.

All templates must be contained in your personal templates or in template folders, which are special folders containing only templates and metadata profiles. Template folders can have any name; they are identified  by the icon. Because template folders behave just like normal folders, they can be shared with other users. This way, you can create shareable templates for your workgroup, for example. In addition to user-defined template folders that contain templates for the use of a single person or a workgroup, there are system-wide template folders

that are accessible to all registered users of the BSCW server and that are managed by the system administrator.

8.4.1 Create template folder

You create a new template folder in the current folder just as you would create a normal folder:

- Select  Neu  from the top menu.
- In the 'New Template Folder' form, which is displayed next, enter the name and optionally tags and description of the new template folder in the 'General' tab. You can also specify document sharing and automatic versioning in the other tabs of the action form.
- Confirm with [OK] to create the template folder. This is initially empty and must be filled with templates.

When you create a template in one of your template folders, it is recommended to add a description to the template explaining its purpose and use. Such a description is displayed when the template is copied.

Every object you create in your personal templates - with the exception of template folders and metadata profiles - is considered a template.

BSCW follows a certain strategy when searching template folders for copying templates. You should consider this search strategy when creating template folders. The templates offered for copying to the current folder come from template folders in the following locations:

- *Your personal templates and template folders contained in them* - your personal templates can contain any number of templates and template folders with additional templates.
- *Template folders in the current folder* - The current folder (as well as all other folders) can contain any number of template folders. Again, template folders in subfolders of the current folder are not considered when templates are copied to the current folder.
- *Template folders in folders on the current path* - BSCW also considers template folders contained in folders on the path from the current folder to your top level folder (the current path is shown in the navigation bar). Also in this case only template folders that are *directly contained in folders on the current path* are considered. So, if you create a template folder on the top level of a shared workspace, the templates of this template folder can be used by all members of the workspace in all subfolders of the workspace.
- *System-wide template folders* - Apart from personal template folders in your clipboard and shared template folders for workspace members, there are template folders that are accessible to *all registered users*. Such system-wide template folders are created and managed by the BSCW administrator. Contact your BSCW administrator if you have a need for further system-wide templates.

8.4.2 Copy templates

You copy a template as follows:

- Select  Neu  in the top menu.

- In the '*Copy from Template*' form that is displayed next, select the template to be copied. The description of the template is also displayed if there is one.
- If necessary, change the default name of the copy and optionally specify a description.
- Click [OK] to create the copy of the selected template.

The templates that are offered for copying are determined by BSCW's search strategy with respect to template folders (see previous section).

8.5 URLs for objects in workspaces

You may create and manage collections of interrelated documents (HTML documents, .gif and .jpeg files, audio and video files, etc.) in BSCW using URLs for objects in workspaces. You may share them with other members of a workspace or make them public for anonymous access via the Internet (see 4.5.1 "Allow anonymous access" on p. 68).

References to BSCW objects may also be contained in notes, in the description of an object and in various other text fields.

- If you want to create a reference to an object that is contained in another workspace on the same server, make sure that the members of your workspace are allowed to access that object.
- If you want to create a reference to an object on another server, make sure that the object has been made public, i.e. that the user can access it anonymously.

To create a reference, you need the URL of the object. This URL can be specified in two different ways:

- in the BSCW internal address format or
- through the path in a directory tree.

Each of these formats has specific advantages:

BSCW internal numeric addresses are short and do not change when the object is moved to another folder or when a folder is renamed. They may be used as entry points to a set of documents linked by references from outside a BSCW server.

On the other hand, if you use the common *relative pathnames*, you can keep a set of documents linked by references portable. For example, you can archive them or move them to another server or to another location in the folder hierarchy, and the references will still work - provided that you don't delete or rename any documents from the set.

8.5.1 BSCW internal address format

Each BSCW object has an internal address. It is written in the address line of your Web browser while the object is displayed. If a document of type `text/html` named *article* is displayed, the address field might say e.g.:

```
http://Ihr-BSCW-Server/sec/bscw.cgi/d3014/Artikel.html
```

You can use this internal address for references in any HTML document:

```
<A HREF="http://Ihr-BSCW-Server/sec/bscw.cgi/d3014/Artikel.html">Article</A>
```

If the document containing the reference is located on the same BSCW server, you may also write the following as an abbreviation:

```
<A HREF="/sec/bscw.cgi/d3014/article.html">article</A>
```

If you want to allow anonymous access from the Internet to `article.html`, the address must be modified as follows:

```
<A HREF="http://Ihr-BSCW-Server/pub/bscw.cgi/d3014/Artikel.html">Article</A>
```

Allow anonymous access details, see 4.5.1 "Allow anonymous access" on p. 68.

8.5.2 Directory path URLs

BSCW can convert path names as shown in the 'Your Position:' field of a folder view into the corresponding BSCW internal addresses. This allows you to use this common format of relative path addresses to define references to objects in a workspace of BSCW, especially from other objects in that workspace.

For example, consider a document `Article.html` that contains an image `Image.gif` and references a second document `Document2.html`. The text of `Article.html` might then contain the following information:

```
< img src="Bild.gif">
...
<a href="Document2.html">Document 2</a>
```

If the three files `Article.html`, `Image.gif` and `Document2.html` are located in one folder, BSCW will convert the references correctly and display the requested files.

Files in subfolders, in folders further up the folder tree or in another branch of the folder tree may be addressed in the same way, using the usual UNIX notation. For example, if the image file `Bild.gif` is located in the subfolder *Bilder* and the second document is located in a folder *Documents* of the subfolder *weitere*, BSCW will convert the following references correctly:

```
< img src="Images/picture.gif">
...
<a href="more/documents/document2.html">Document 2</a>
```

Likewise, if the document `document2.html` contains a reference

```
<a href="../../article.html">preceding document</a>
```

and `Article.html` is located two folder levels up relative to `Document2.html`.

8.6 Time-limited access to documents

You may send BSCW objects and, if necessary, their entire contents to members of a workspace and external others.

you can give time-limited access to documents and send the access link by e-mail. Alternatively, documents can also be attached directly to e-mails. However, in this case you should keep an eye on the size of the documents.

The BSCW objects are sent as attachments to an email message. When sending an email message you may also send *links* to the objects instead of sending them as an attachment, which may be advantageous especially for large documents.

- Select the objects you want to send and on a selected object open  **Send to** **e-mail recipient**.

- In the '*Send email*' form, enter the email addresses of the addressees, the subject and the text of the message; the objects that will be sent as attachments are listed at the bottom of the form.
- With [Add members] you may add all members of the workspace you are currently in to the addressee group, with [Remove members] you may remove them again. You may use contacts with email addresses from your BSCW address book by using the [To:], [Cc:] and [Bcc:] buttons.
- Under 'Send as reference or as attachment' you can choose how you want to send the selected objects.
 - Select the 'Send as attachment to all recipients' option if you want to send the objects as an attachment to the email message. This option is not recommended if the documents are large or if you want to stay informed about who reads the documents.
 - Choose one of the two options 'Send as reference ... Send as reference' if you want to avoid e-mail messages with attachments.

If you also send references to documents to non-members of the workspace, these non-members can also have read access to the objects via reference. Read access is done via a token and is limited to the specified time period. You can also block access to a sent object before the specified time period has expired by deleting the token: Open the info page of the object; under 'Access rights' the access with token is listed there; with the action [Delete token] in the right column of the access rights table you block access via token for non-members.

The option 'Send as reference to members only' ensures that no one except members with read permission can access the objects: non-authorized recipients will be removed from the recipient lists and will not receive an email message (in this case a warning to this effect will appear before sending).

Note: The action Send email is only available if your BSCW server has been configured by the administrator to send emails.

8.7 Wiki or website folder

Wikis offer a convenient way to create and manage miniature Web sites within BSCW. Apart from the HTML documents ("pages") that make up the content of the website, a wiki contains up to five special documents:

- the *start page* that is displayed when you click on the name or icon of a  wiki,
- the *layout page*, which serves as the default frame for all other HTML documents of the wiki and thus ensures a consistent layout of all pages of a wiki,
- the *search results page*, which presents the results of a search in the wiki,
- the *print template*, which is the template for printing a page of the wiki, and
- the *style definition*, a stylesheet that specifies, for example, colors and fonts for the HTML elements used in the wiki's pages.

The latter four documents, which are responsible for the appearance of the wiki, are called *wiki resource documents* and are stored in a wiki subfolder called Resources. When you create a

wiki, predefined start pages, layout pages, search results pages, print templates, and style definitions are applied.

Wikis can also be opened like normal folders bypassing the start page (via **Open** in the context menu instead of via **Web View**, which displays the start page) and have the functionality of normal folders, i.e. they can contain other objects besides HTML documents and also subfolders, which themselves may or may not be wikis.

Wikis have their own system of elements with a wiki-like syntax (`[element ...]`) that allows you to include general BSCW system functions and elements developed specifically for wikis in your pages. Examples for system functions are the date of the last modification of a page, buttons for editing a page, the display of recently visited pages or whole context menus. Examples of special elements are pages for search results, sortable content lists, photo galleries, and a way to comment on a page and display the comments.

In addition, you can also define your own text elements to use elsewhere in the wiki. For example, this way you can define the page title in each content page, which is then used in the layout page to display the page title. Figure 64 shows an example wiki page that uses some of these options.

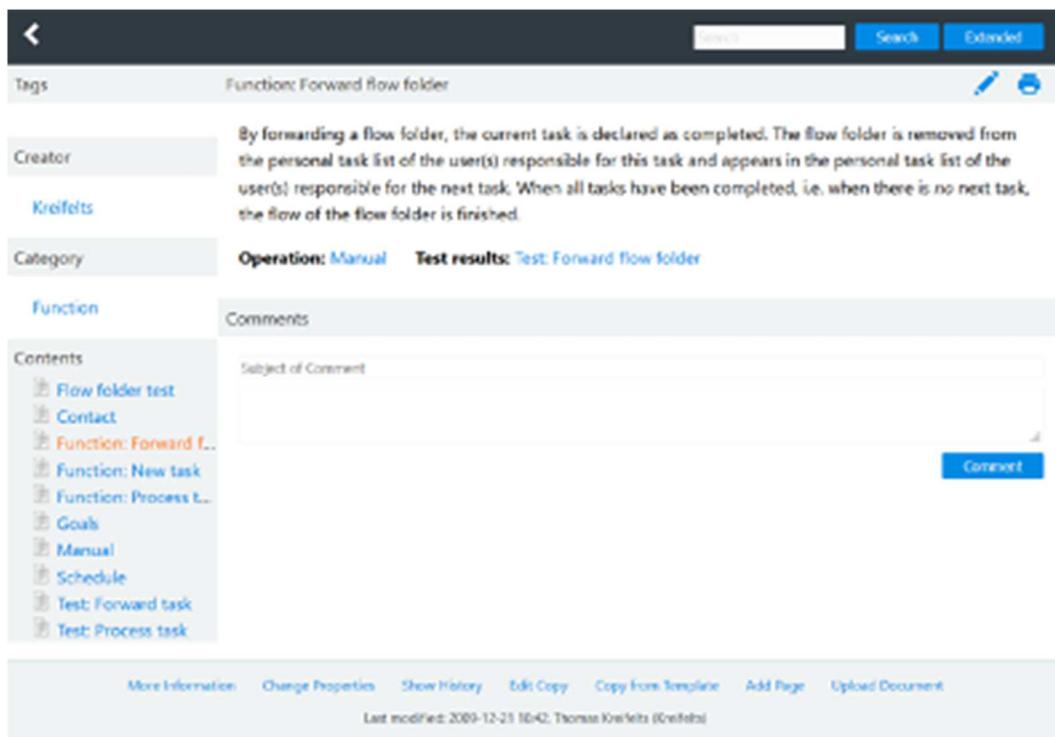


Figure 64: Example page of a wiki

BSCW elements as well as references to other pages or existing images of the wiki may very easily be inserted into pages of the wiki by using the HTML editor integrated in BSCW. This editor offers five related buttons when editing HTML documents within a wiki.

Wikis may also be exported and made publicly available in the form of a static copy. The static copy is the result of an evaluation of the wiki where all text and BSCW elements are replaced by their values and the content pages are then embedded in the layout page. BSCW elements that cannot be used in an external environment, e.g. references to actions or context menus, are omitted during this process. Subfolders are included in a static copy.

Wikis are only available on your BSCW server if the related functionality has been enabled by your system administrator.

8.7.1 Create wiki

To create a wiki in the current folder, do the following:

- Select  from the top menu.
- The 'New Wiki' form has the tabs 'General', 'Content', 'Design' and 'Automatic versioning'.
- *General*: Specify the name and optionally tags and a description. You can also set the default view of the wiki (web view or normal folder view) and decide whether to create a template folder "Page Templates" with a template "Empty" that will be used when creating new pages with .
- *Contents*: Select the initial content of the wiki. The default option "Basic" only provides an empty start page. The remaining options give an impression of the possibilities of a wiki and must of course be adapted to your specific circumstances. The "Demo" option attempts to demonstrate as many wiki design options as possible. Regardless of which choice you make, you can revise the start and other pages later.
- *Design*: You are offered three layouts, each with two styles. The "Tree" style is suitable for hierarchically organized websites, the "Query" style for an unstructured set of pages where you can find your way around by author names, tags and categories. For PC-oriented layouts, you can include or not include the ability to comment on pages. So, in total, you can choose from ten design options. Your selection results in two corresponding documents of your wiki, the layout page and the style definition. Both can be revised later.
- *Automatic versioning*: Select the strategy for automatic versioning in your wiki. The default is to store a maximum of 10 versions of a document in the wiki, so that you can still undo changes later. In the web view, the latest version of a page is displayed. To revert to an earlier version, you must delete the newer versions.
- Click [OK] to create the new wiki according to the specifications made so far. All properties of the wiki can be changed afterwards.

After you have created a wiki, you can now proceed to create or upload the content pages of your wiki (see the next section for this). Your new wiki will contain at least a *home page* (can have a different name) and a *Resources* folder with the four resource documents: *Layout* (the layout page), *Print* (the print template), *Search* (the search results page), and *Style* (the style definition), depending on the automatic versioning option you choose as versioned documents.

You can change the name, tags, description and setting for automatic versioning of a wiki with  in the context menu of the wiki again as with other folders. How you can also change the appearance of the wiki here is explained below.

If you want to structure your new wiki hierarchically, create sub-wiki as follows.

- To do this, use the  context menu to open the wiki as a folder
- Select  from the context menu of the wiki to which you want to add the sub-folder.
- Specify a name and optionally tags and description and click [OK].

The new sub-wiki contains an empty start page with the name of the sub-folder as its title. It inherits all other settings (appearance, automatic versioning) from the containing wiki. Sub-wiki are displayed as content of the wiki in the web view by default, normal sub-folders are not.

8.7.2 Create and edit wiki content

You can create new pages for your wiki as follows:

- To do this, use the  **Open as Folder** context menu to open the wiki as a folder
- Select  **Neu** **Page** in header of the wiki. The "Empty" page from the "Page Templates" template folder is taken as the template if you created this template folder when you created the wiki. You can also create a template folder afterwards and create an HTML page with the name "Empty" there, which is to serve as a template for new pages of your Wiki. Of course, you can design this page according to your wishes. If no "Empty" page is found in any of the wiki's template folders, the system template is taken as the template, an empty page with the name of the page as the title.
- Specify name and optionally tags and description of the new page.
- Afterwards you may edit the page with BSCW's built-in HTML editor.

You can also derive new pages from existing pages by copying them and then editing them. In doing so, the original style of the page is preserved. These operations are combined into one action.

- Select  **Copy** in the context menu of a wiki HTML or text document in the normal folder view.
- In the '*Edit Copy*' form you can specify a name for the copy and an optional description.
- Click [OK] to create the copy and start the editor with which the copy can be edited.

If the wiki functionality is enabled, the *Edit Copy* action is available for all HTML and text documents on your BSCW server.

You can edit existing pages of your wiki as follows.

- Select  **Edit** in the context menu of the page in the normal folder view or
- click the icon  the page.

For editing new or already existing pages, the HTML editor integrated in BSCW is used. This editor displays an additional toolbar on wiki pages. This toolbar offers five buttons that facilitate the editing of wiki pages:

- *Insert BSCW element* - offers frequently used BSCW elements. Selecting one of the offered elements inserts the corresponding [element ...] code at the cursor position into the source code of the document. To keep the menu short, not all available BSCW elements are listed there. For a complete list see the section after next.
- *Reference to existing object* - offers the names of other objects in the current wiki. If you select and confirm one of the names, a reference to the corresponding object will be inserted at the cursor position in the source text of the current document. The active layout page is not displayed in this menu.
- *Existing Image* - offers existing images in this folder for selection to help you insert existing images. Images from the 'Resources' folder also appear on this list.

- *Insert folder action* - offers selected actions on the current wiki. Selecting one of the action names inserts the corresponding [element ...] code at the cursor position in the document source. For a complete list of possible actions see the section after next under folderactions.
- *Insert document action* - offers selected actions on the edited document. Selecting one of the action names inserts the corresponding [element ...] code at the cursor position in the document source. For a complete list of possible actions see the section after next under document actions.

Click [Preview] in the integrated HTML editor to preview the current page in the web view in a separate browser window.

You can print the pages of a wiki by selecting **Print** the context menu of the page in the normal folder view or by clicking the icon in the web view . This uses the active print template of the wiki.

Convert document references to BSCW notation

The **Modify** menu of a wiki also offers an action that lets you change the references to other BSCW documents in the pages of your wiki from normal HTML notation to BSCW notation.

- To do this, select **Change** links between documents.

In contrast to ordinary HTML links, BSCW links are independent of the location of the target document. This allows you to set references and subsequently move the referenced documents in your workspaces without fear of broken references.

Note: If you use the editor menu "Insert BSCW reference" for references to BSCW documents, these references are created in BSCW notation. The action **References** between documents is mainly intended to convert references in wikis created with earlier BSCW versions all to BSCW notation.

8.7.3 Edit appearance of wikis

If you want to change the start page, layout page, print template, search results page or style definition of a wiki, you have several options.

- Selection of a system-supplied start page or other system-supplied resource document.
- Creation and activation of own start pages or other resource documents.
- Editing active home pages or other resource documents.
- Disabling the home page or other resource documents.

Select other standard resource documents

You select other system default start pages or resource documents as active for your wiki as follows.

- Select  **Change Properties** in the wiki context menu and go to the 'Appearance' tab of the action form.
- Select the aspect of the appearance you want to change, e.g. layout page, and select a new system standard under 'New layout page'. Continue in this way for other resource documents and add the selected resource documents to your wiki with [OK]. These new

pages are thereby set as active start page, layout page, etc. and determine the appearance of the wiki.

- The previously active start page, layout page, etc. are deactivated by this action, but not replaced, so that they can be reactivated later if necessary.

A new system default home page, layout page, or style definition can also be

- To do this, use the  **Open as Folder** context menu to open the wiki as a folder
- with  **Neu** **Home Page**,  **Neu** **Layout Page** or  **Neu** **Style Definition** in the context menu of the wiki and thus activate it.

Activate self-generated resource documents

You can create the appearance-defining documents yourself: upload them to your wiki, copy and edit existing pages and style definitions, or move such resource documents from other wikis to your current one. The resource documents such as layout pages, print templates, search results pages and style definitions should be placed in the *Resources* folder. You activate such self-generated pages and style sheets as follows.

- Select  **Change Properties** in the wiki context menu and go to the 'Appearance' tab of the action form.
- Select an aspect of the appearance, e.g. layout page, and select a page you have created as a new layout page in the drop-down menu under 'Select layout page'. The respective active page or style definition is preselected in the menu. Continue in this way for other aspects and activate the selected pages and style sheets with [OK].

Before creating start pages and other resource documents, you should have a look at the predefined pages and familiarize yourself with the BSCW elements used there (see 8.7.4 "Use BSCW elements" on p. 139). For example, layout pages and print templates must contain the special element `[element content]` exactly once. This element determines where the other pages of the Wiki, the content pages, are embedded in the layout page, or where the content of the page to be printed is embedded in the print template. Furthermore, all BSCW elements may also be used in layout pages and print templates. However, these elements are not evaluated with respect to the layout page or print template, but with respect to the embedded page. For example, if you have used a BSCW element in the layout page that displays the page size, the size of the embedded page is displayed, not the size of the layout page itself. Search results pages must contain the special element `[element searchresults ...]` exactly once.

Designing your own style definitions requires knowledge of how stylesheets work. In any case, take a look at the predefined style definitions that come with a newly created wiki.

Edit active resource documents directly

You may also edit active start pages and other active resource documents in the *Resources* folder directly on the spot. Here, too, you should have a look at the system predefined pages and familiarize yourself with the BSCW elements used there.

- Select  **Edit** in the context menu of the relevant document, edit the document and confirm with [OK].
- Home pages, layout pages, and style definitions can also be edited using the  **Home Page**,  **Layout Page**, or  **Style Definition** actions in the wiki context menu.

If you have automatic versioning turned on for the wiki, these actions will create new versions of the corresponding documents and you can revert to an old look by deleting the newer versions of home page and other resource documents.

For details on editing HTML pages in wikis, see the previous section.

Disable resource documents

You can use the  **Change Properties** action to disable the Home page and other resource documents.

- In the 'Appearance' tab, select 'No start page' in the drop-down menu under 'Select start page', select 'No layout page' under 'Select layout page', etc. and confirm with [OK].

Disabling the start page (for whatever reason) makes the wiki appear as a normal folder.

Customize style definitions during server upgrade

After upgrading your BSCW server to a new version, it may happen that your style definitions no longer fit to the new version of wikis. In this case you will receive an error message that cannot be overlooked and you have to adjust your style definitions. Style definitions of wikis are not automatically converted during a server upgrade because they exist as documents that may have been modified by you or other users.

If you are working with default style definitions, you only need to recreate and thus activate one of the system default style definitions, as described above. If you are working with style definitions that you have revised, you have two options.

- You can incorporate your changes (such as a different color scheme) back into a new system-side style definition.
- You can revise your own style definition and adapt it to the new wiki version. To do this, you must enter the current version number at least in the first line of the style definition document, e.g. `/*bscw-style-v2*/`. Compare your style definition with the current standard version of the style definition from which your style definition originated and make the necessary changes.

The procedure for editing active style definitions is also described above.

If you work with style definitions that do not correspond to the current version of the wiki, a variety of errors may occur: Context menus are displayed incorrectly, navigation in tree-like wikis does not work properly anymore or newer BSCW elements do not work at all. So you should not ignore the related error message.

8.7.4 Use BSCW elements

Wiki have their own system of elements with a wiki-like syntax (`[element ...]`) that allows you to use BSCW elements in your pages. Examples are the date of the last modification of a page, links to edit a page, the display of a page's history or even whole context menus. BSCW elements have a name and may also have parameters with values. An abstract example for the syntax of BSCW elements is

```
[element name param1=True param2="A long text with spaces"]
```

This element name has two parameters `param1` and `param2` with the values `True` and `"A long text with spaces"` respectively. Note the quotation marks that are only needed for values that contain spaces. A concrete example for a BSCW element is

```
[element documentactions action=edit text="Edit document"]
```

This element represents the *Edit* action that is applied to the current document. In the Web view of an HTML document in a wiki, the BSCW elements are evaluated and the results are inserted into the document. In the example above, a link with the text `Edit document` would be inserted into the document; clicking on the link would invoke the *Edit* action on the document itself.

Note: In the context of use in BSCW elements of wikis, some actions have different names than usual. Examples are *Undo Changes* instead of *Delete Versions* and *New Subfolder* instead of *New Sub-Wiki*.

Although the BSCW element syntax uses square brackets, you may still use square brackets in the text of wiki documents. Only the string `[element` is taken as the beginning of a wiki element. Errors in BSCW element specifications lead to error messages that are inserted into the evaluated text of a page while the rest of the page still behaves as expected.

You may embed a BSCW element in arbitrary HTML text that is only displayed if the evaluation of the BSCW element results in non-empty content, as shown in the following example.

```
[decoration] <HTML text> [element ..] <HTML text> [/decoration]
```

Here all text between `[decoration]` and `[/decoration]` is not displayed if the BSCW element does not provide any content.

In the following, the available BSCW elements are listed in alphabetical order. The attribute 'Static' indicates whether the element in question is included in a static copy of the wiki or not (see 8.7.6 "Export Wiki and make it publicly available" on p. 152). You may insert the BSCW elements directly into the source code of your wiki pages or use the related menu in the integrated HTML editor.

- **authors** Inserts a list of authors of documents of the current wiki. Clicking on an author name restricts the display of objects in the *contents* list created by *contents* to those objects created by that author. Note that clicking on an author name has no effect on hierarchical lists created with *tree*.

Static: No

Parameters: None

Example:

```
[element authors]
```

- **back** Inserts a link that leads out of the wiki to the first parent non-wiki.

Static: Yes

Parameters:

icon (optional)

Instead of a text you can also underlay the back reference with an icon. Specify the URL of the *icon as the* value for the icon parameter. If both *icon* and *text are* specified, the action reference is underlaid with the icon and the text acts as a tooltip.

text (optional)

By default, the text for the *back link* is set to the corresponding BSCW text in the user's language (i.e., "Back" in German). You may use the *text* parameter to specify a different label for the link.

Example:

```
[element back text="Up"]
```

- **categories** Inserts a list of categories assigned to objects in the current wiki. Clicking a category restricts the display of objects in the content list generated by *contents* to those objects that have been assigned that category. Note that clicking a category has no effect on hierarchical lists created with *tree*.

Static: No

Parameters: None

Example:

```
[element categories]
```

- **comments** Lists the existing comments on the current page and offers an input field for new comments by default, if the user has the right to enter comments. Any replies to comments are not displayed.

Static: Yes

Parameters:

latestfirst (optional, default `False`).

Comments are sorted by date of creation. By default, the oldest comment appears at the top of the list. If you want the list to start with the newest comment, set the parameter to `True`.

maxcomments (optional, default value `None`, i.e. no limit).

The number of displayed comments is not limited by default. You can use the *maxcomments* parameter to limit the number. If there are more comments than can be displayed due to the limit, a link will appear that allows you to view all comments as a discussion forum in the normal BSCW view.

showform (optional, default `True`).

By default the input field for new comments is shown. You can disable this by setting the parameter to `False`.

Note: if the user does not have the right to enter new comments, the input field will not be displayed regardless of the value of the parameter.

Example:

```
[element comments latestfirst=True maxcomments=7]
```

- **contents** Inserts a list of all objects directly contained in the current wiki as clickable links. After a full-text search, the search results replace the contents list if no separate search results page has been defined with *searchresults*.

Static: Yes

Parameters:

emptymsg (optional, default `True`).

By default, if the content list is empty (e.g. due to filtering), the "no results" message is displayed. If you set the parameter to "", this message will not appear. If you set the parameter to `False`, the whole element will remain empty.

In the latter case *[decoration]* (see above) can be used.

indextopmost (optional, default `True`).

By default, the start page of a wiki is displayed first in the content list. However, you can also sort the start page into the content list according to the valid criterion by setting the *indextopmost* parameter to `False`.

metafilterdocs (optional, default `None`).

The *metafilterdocs* parameter allows you to display only documents in the content list that meet certain criteria regarding one of their metadata attributes. The parameter value consists of a metadata attribute and a comma-separated list of possible values. It

can be checked for equality (=), inequality (!), and containedness (%). Qualifying the operators with a preceding * causes a display even of those documents that do not have the searched metadata attribute. The examples below explain the use of the parameter. The metadata attributes are to be specified with their internal identifiers. A list of possible metadata and their identifiers can be found below after the examples. In the default case, metadata is not filtered.

metafilterfolders (optional, default `None`).

Works like *metafilterdocs*, but refers to the display of folders in the content list.

onlynames (optional, default value `"*"`)

The *onlynames* parameter allows you to exclude from the contents list documents whose names do not contain certain strings. Specify a comma-separated list of allowed names, such as `image??.jpg` or `*.html` (where * stands for any string and ? for any character). Folders are not affected by this filtering by name.

onlytypes (optional, default `"text/html"`).

Has the same effect as *onlynames*, except that it filters based on the MIME type of the objects. Specify a comma-separated list of allowed types as the value of this parameter, e.g. `text/html` for HTML documents. Specification of whole groups of MIME types is also possible, using * as wildcard, e.g. `text/*`. Folders are not affected by this filtering by MIME type. If you want to turn off the filter, specify `"*"` as the value. You can use *onlytypes* at the same time as *onlynames*. In this case, only documents that meet both criteria are displayed.

paging (optional, default `True`)

Determines whether the entries of the contents list, if necessary, are split into multiple pages that can be switched between, or not. The number of entries per page corresponds to the user setting "Maximum number of visible entries in folder views" defined in the top menu under the "Appearance" tab in the [main Settings menu](#).

showextensions (optional, default `False`).

By default, file name extensions (such as `.html`) are not shown in the contents list. However, you can display these extensions by setting *showextensions* to `True`.

showfolders (optional, default `"webonly"`).

Determines which folders are displayed in addition to the other objects, and can have one of the following three values:

- `all` All folders are displayed.
- `none` No folder is displayed.
- `webonly` Only wiki with active start page are displayed.

showhome (optional, default `True`).

By default, the home page appears in the content list. You can deviate from this procedure by setting the parameter to `False`.

showlayout, *showstyle* (optional, default `False`).

By default, layout page and style definition do not appear in the content list. You can force this by setting the corresponding parameter to `True`.

showtemplatefolders (optional, default `False`).

By default, template folders are not shown in the content list. You can force this by setting the *showtemplatefolders* parameter to `True`, provided that these folders would be displayed at all according to the value of the *showfolders* parameter.

showtitle (optional, default `False`).

Determines whether the name of the current folder should be displayed above the contents list.

sort (optional, default value `"byName"`).

Sets the sort order of the content list and can have the following values:

- `byType` Sorting by object type
- `byName` Sort by name
- `bySize` Sort by size
- `byDate` Sort by date of last change
- `byRating` Sort by rating

Multiple sort criteria can also be specified as a comma-separated list. A `-` before the sort criterion reverses the sort order. If *sort* is not specified, sorting is done by name.

uplink (optional, default `False`).

By default, the content list for all sub-wiki contains a reference to the parent wiki, but not in the top-level wiki. You can suppress this reference by setting the *uplink* parameter to `False`. You can also make the reference appear at top level by setting the value to `True`.

target (optional, default `""`)

Specifies in which browser window documents of a certain type included in the content list should be opened. The value of the parameter consists of a comma-separated list of specifications related to the target window and the MIME type of the document. Specifying a window name alone refers to all documents, specifying `[MIME type]:[window name]` refers only to displaying documents of the mentioned MIME type. For the use of the parameter see also the examples below. By default, all documents are opened in the current window of the browser, thus replacing the display of the contents list.

topitems (optional, default value `""`).

Specifies the items of the current folder that should be displayed first, regardless of the selected sort order. The value of the parameter consists of a comma-separated list of object names.

Examples:

```
[element contents showlayout=True topitems="First,Second"]
```

Displays a contents list that includes the layout page. The `First` and `Second` objects appear at the top of the list, regardless of the sort order.

```
[element contents onlynames="*.html"]
```

Displays a contents list that contains only objects whose names end in `.html`, in addition to folders.

```
[element contents onlytypes="text/plain, text/html"]
```

Displays a contents list containing only text and HTML documents in addition to folders.

```
[element contents metafilterdocs="bscw:keywords=cat,dog"]
```

Displays a contents list containing only those documents that contain the tags `cat` or `dog`.

```
[element contents metafilterdocs="bscw:keywords*=cat,dog"]
```

As before, except that documents without tags are also displayed.

```
[element contents metafilterfolders="bscw:keywords!cat,dog"]
```

Displays a contents list containing only those folders that do not contain the tags `cat` or `dog`.

```
[element contents target="_blank"]
```

Causes all documents in the contents list to open in a new browser window.

[element contents target="application/pdf:_blank"]

Causes all PDF documents in the contents list to open in a new browser window. All other documents will be opened in the current window.

[element contents target="_blank, application/pdf:myWindow"]

Causes all PDF documents in the contents list to be opened in the `myWindow` window. All other documents will be opened in a new window.

Metadata identifier selection

General metadata of BSCW objects

`bscw:category` (category), `bscw:description` (description), `bscw:keywords` (tags), `bscw:name` (name), `bscw:priority` (priority)

Dublin Core attributes of documents

`DC:author` (author), `DC:coverage` (area), `DC:created` (created on), `DC:format` (format (MIME type)), `DC:language` (language), `DC:publisher` (publisher), `DC:source` (source), `DC:subject` (subject), `DC:title` (title)

Metadata of users and contacts

`bscw_contact:givenname` (first name), `bscw_contact:mail` (email address), `bscw_contact:org` (organization), `bscw_contact:surname` (last name)

Document attributes for document approval

`bscw_doc:approval_status` (status), `bscw_doc:responsible` (responsible)

Metadata of flow folders

`bscw_flowfolder:responsible` (responsible), `bscw_flowfolder:task` (task)

For a complete list of available metadata, contact your BSCW administrator. You may get a list of metadata identifiers of a specific metadata profile by selecting `Specification` from the profile's context menu.

- **contentsmetatable** Inserts a table with selected metadata of all objects directly contained in the current wiki into the current document. This contents table can be sorted by the user according to the metadata displayed. By default, the columns of the table display the metadata name, tags and description of the contained objects. You can also display other metadata. Metadata attributes are identified by their identifiers. You can get a list of metadata identifiers for a metadata profile by calling `Specification` from the metadata profile's context menu. For examples of metadata identifiers, see *contents* above.

Static: Yes

Parameters:

columns (optional, default "`bscw:name, bscw:keywords, bscw:description`")

By default, the content table displays in its columns the metadata name, tags and description of the directly contained objects in this order. Specify a comma-separated list of metadata names here if you want to deviate from the default.

In addition, the following parameters are available, which have the same effect as in *contents*, namely to exclude certain objects from inclusion in the contents table.

metafilterdocs (optional, default `None`)

metafilterfolders (optional, default `None`)

onlynames (optional, default value `"*"`)

onlytypes (optional, default `"text/html"`)

showfolders (optional, default value `"webonly"`)

showhome (optional default `True`)

showlayout (optional, default `False`)

showstyle (optional, default `False`)

showtemplatefolders (optional, default `False`)

Example:

```
[element contentsmetatable]
```

Shows the contained documents and web folders in tabular form with names, tags and description.

- **date** Inserts the current date and time.

Static: Yes

Parameters:

format (optional)

If you don't like the default format for date and time (example: 2007-07-10 14:31) and you are familiar with Python programming, you can specify your own format here. Consult the Python manual under `strftime`.

Example:

```
[element date format="%A, %d. %B, %H:%M"]
```

Inserts the current date and time in a custom format that results in Tuesday, July 10, 14:31 instead of the default format above.

- **documentactions** Inserts a complete context menu for the current document or a reference to a specific action.

Static: No

Parameters:

action (optional)

If this parameter is omitted, a whole context menu will be inserted. Otherwise a direct reference to the specified action will be created. The allowed values for the *action* parameter are listed below. If the specified action is not allowed for the current user, the *documentactions element* will be replaced by the value of the *forbiddentext* or *forbiddenicon* parameters, or by an empty string.

forbiddenicon (Optional; used only if *action* is set).

If the specified action is not allowed for the current user, the icon referenced by the value of this parameter is displayed instead of the reference to the action.

forbiddentext (Optional; used only if *action* is set).

If the specified action is not allowed for the current user, the value of this parameter will be displayed instead of the reference to the action. If the parameter is omitted, an empty string will be displayed in this case.

icon (optional; only used if *action* is set).

The *icon* parameter can be used to provide the reference to the action with an icon. The value of the parameter is a URL that points to the icon. If the value is set to `True`, the BSCW icon for the action will be taken. If both *icon* and *text* are specified, the action reference is underlaid with the icon and the text acts as tooltip.

onlyif (optional, default "")

Defines a condition for displaying the context menu. If the condition is not met, the whole element remains empty. The value of the parameter is a string. Currently available conditions check whether the current page is the start page of the wiki (`index`) or which skill level the user has (`beginner`, `advanced`, `expert`: `profile_ui_beginner`, `profile_ui_advanced`, `profile_ui_expert`). The competence level is set in the upper menu under the `main menu Settings` in the tab "General". The logical operator `not` can also be used. Compare also the examples below.

text (Optional; used only if *action* is set).

The text of the reference to the specified action corresponds to the value of the

text

parameter. If the *text* parameter is omitted, the text of the reference consists of the BSCW name of the action in the language of the current user. Remember that text containing spaces must be enclosed in quotes.

Examples:

```
[element documentactions]
```

Inserts the user interface context menu for the current document.

```
[element documentactions action=get text="Source text"]
```

Inserts a link to open the current document with the text "source text". This action displays the source text of the document, i.e. BSCW and text elements are not evaluated and replaced.

```
[element documentactions action=replace]
```

Inserts a reference to replace the current document with the default text, action name "Replace".

```
[element documentactions action=printweb icon=True onlyif="not index"]
```

Inserts the default icon for printing the current document into the current document, unless it is the home page.

```
[element documentactions action=edit icon=True onlyif=profile_ui_expert]
```

Inserts the default icon for editing the current document into the current document if the user's skill level is set to "Expert".

Possible actions:

attachnote (attach note), checkout (lock), chtype (change type), copy (copy), cut (cut), cutattachment (cut attachment), duplicate_edit (edit copy), edit (edit), editobject (change properties), export (Export), freeze (Freeze), get (Open), history (Show history), info (More information), link (Link to clipboard), printweb (Print), rate (Rate), replace (Replace), resubmit (Resubmit), revise (New version).

- **fileupload** Inserts an interaction element for uploading images to the current folder. Only one *fileupload* element is allowed per page.

The interaction element consists of three buttons [Select file(s) to upload...], [Upload] and [Cancel upload] as well as a preview area for the files to be uploaded. The first button initiates a standard file selection dialog, the second button causes the actual upload, and the third button cancels the upload process. You can also drag files to be uploaded over the [Upload] button and drop them there. The files selected for upload are displayed in the preview area below the buttons.

Note: Currently, the fileupload element is intended for uploading image files only.

Static: No

Parameters: None

Example:

```
[element fileupload]
```

- **folderactions** Works exactly like *documentactions*, but the current wiki is the subject of the context menu or the individual actions that are referenced.

Static: No

Parameters:

The same as for documentactions.

Examples:

```
[element folderactions] Inserts  
the user interface context menu without JavaScript for the current wiki.
```

```
[element folderactions action=get text="List of all objects in BSCW style"]
```

Inserts a link to open the current wiki with the text "List of all objects in BSCW style". This action displays the BSCW-style list of entries of the wiki.

```
[element folderactions action=history]
```

Inserts a reference to the history of the current wiki with the default text, action name "show history".

Possible actions:

addcal (New group calendar), addctlist (New contact list), addmember (Add member), addnotes (New discussion forum), addpage (New page), addsubwebfolder (New folder), addrole (New role), addSearch (New search folder), addurl (New URL), chbanner (Change banner), chrole (Assign role), copy (Copy), cut (Cut), editindex (Edit home page), editobject (Change Properties), editrole (Change role), editstyle (Edit style definition), edittemplate (Edit layout page), export (Export), get (Open), getweb (Show web view), history (Show history), info (More information), link (Link to repository), make (Static copy), pubaccess (Make public), uploaddoc (Upload document).

- **gallery** Represents the images contained in the current wiki in the form of a gallery with miniaturized views. Images are understood to be documents with a corresponding MIME type (*image/jpg*, *image/png*, etc.).

Static: Yes

Parameters:

emptymsg (optional, default `True`).

By default, the "no results" message is displayed when the image gallery is empty. If you set the parameter to "", this message will not appear. If you set the parameter to `False`, the whole element will remain empty. In the latter case [decoration] (see above) can be used.

hover (optional, default `False`)

If the parameter is set to `True`, a gallery image over which the cursor is located will be slightly enlarged.

lightbox (optional, default `False`).

If the parameter is set to `True`, a full-screen preview is displayed when a gallery image is clicked.

paging (optional, default `False`)

Basically works like *contents*. Only here you can additionally specify the maximum number of entries per page directly as the value of the parameter, which replaces the user setting "Maximum number of visible entries in folder views".

size (optional, default `"small"`)

Controls the size of the displayed gallery images. Other possible values are `"medium"` and `"large"`.

sort (optional, default value `"byType, byName"`).

By default, images are sorted by type and name. Different sorts are defined with this parameter as with *contents*.

Example:

```
[element gallery paging=10 sort="byName" lightbox=True]
```

- **history** Inserts the list of recently visited documents as clickable links.

Static: No

Parameters:

divider (optional, default ", ").

By default, references in the list are separated by commas and spaces. You can use the *divider* parameter to specify another string as a separator.

maxdocs (optional, default value 5).

By default, a maximum of five documents are displayed in the list. With *maxdocs* you can set a different maximum number.

showextensions (optional, default `False`).

By default, file name extensions (such as `.html`) are not shown in the *history list*. However, you can display these extensions by setting *showextensions* to `True`.

Example:

```
[element history divider=" | " maxdocs=7]
```

- **lastmod** Inserts the date and time of the last modification of the current document.

Static: Yes

Parameters:

format (optional)

You can specify your own format here, as explained above for *date*.

Example:

```
[element lastmod]
```

- **lastmodby** Inserts the name of the user who last modified the current document.

Static: Yes

Parameters: None

Example:

```
[element lastmodby]
```

- **location** Inserts the path to the current document as clickable links.

Static: Yes

Parameters: None

Example:

```
[element location]
```

- **message** Inserts a BSCW system message. These messages are displayed in the language set by the current user.

Static: Yes

Parameters:

name (required)

The name of the message to be displayed. The available messages are listed in the `BSCW directory/messages/en/lg_msgconfig.py` on your BSCW server. Ask your BSCW administrator for the contents of this file or the exact location of this file in your BSCW installation.

Example:

```
[element message name=location]
```

Displays the message with the name 'location'. In German this results in "Ihre Position".

- **metadata** Inserts a list with the metadata of the current object, organized by the groups of the respective metadata profile, and provides a button to change the metadata. Unlike *contentsmetatable*, this is about *an* object.

Static: Yes

Parameters: None

Example:

```
[element metadata]
```

- **search** Inserts the input area for the full text search in the wiki. If possible, a [Advanced] button appears to the right of the search field, leading to the full search form. The results of the search appear on a search results page that you have defined with *searchresults* for the current wiki. Without a special search results page, the search results replace content lists or content trees created with *contents* or *tree*, respectively. The use of *search* only makes sense if *searchresults*, *contents* or *tree* are used at the same time, because otherwise *the search results will not be displayed*.

Static: No

Parameters: None

Parameters:

selectscope (optional, default `False`).

Determines whether the search scope (whole wiki or current folder) can be selected at the user interface.

scopeall (optional, default `True`)

Specifies whether the search will take place in the whole wiki or not. Set the parameter to `False` if you want to limit the search to the current folder.

Example:

```
[element search]
```

- **searchresults** Defines the search results page that displays the results of searches in the current wiki.

Static: No

Parameters:

The same as for *contents* with the following additions:

grouping (optional, default `False`).

Allows grouping search results by the folders they are contained in. By default, the results are listed as a normal list, sorted according to the criteria of the *sort* parameter. If you set the value to `True`, the search results are displayed in groups: each group contains all hits in a given folder; the groups themselves are sorted by the path leading to the folder in question; within the group, the search results are sorted according to the criteria of the *sort* parameter. If you set the value of the *grouping* parameter to a number $n > 1$, then a maximum of n search results will be displayed per group.

paging (optional, default `False`).

Basically works like *contents*, i.e. the search results are split into several pages if necessary, if the parameter does not have the value `False`. As with *gallery*, you can also specify the maximum number of entries per page directly as the value of the parameter, which replaces the user setting "Maximum number of visible entries in folder views".

The way search results are divided among pages still depends on the value of the *grouping* parameter here. If *grouping* has the default value `False`, the search results are split to pages according to the value of *paging*. If *grouping* has the value `True`, the parameter *paging* controls how many groups (not search results) are displayed on a page at most. Also if *grouping* has a value $n > 1$, the value

of paging controls how many groups at most are displayed on a page, only that now not all results per folder appear, but at most *n*.

showpath (optional, default `False`).

Specifies whether the path to the folder containing the search result should be displayed after the search result name.

Example:

```
[element searchresults grouping=8 paging=4]
```

Specifies that search results are grouped by the subfolders they are contained in, that a maximum of eight search results are displayed per group, and that a maximum of four groups are displayed per page.

- **size** Inserts the size of an object.

Static: Yes

Parameters:

filename (optional)

By default, the size of the current document is displayed. You can specify another object whose size should be displayed by specifying its name in the *filename* parameter.

unit (optional, default value `B`).

The default unit is byte (`B`). If your object is quite large, another unit might be more appropriate. Valid units are `B`, `KB`, `MB`, `GB`.

Example:

```
[element size filename="files/dvd-image.iso" unit=GB]
```

Inserts the size of the `dvd-image.iso` object in the `files` subfolder of the current folder in gigabytes.

- **systembanner** Inserts the system banner; by default this is the normal BSCW system banner.

Static: Yes

Parameters: None

Example:

```
[element systembanner]
```

- **tags** Inserts a list of tags assigned to objects in the current wiki. Clicking a tag restricts the display of objects in the content list generated by *contents* to only those objects that have been assigned that tag. Note that clicking a tag has no effect on hierarchical lists created with *tree*.

Static: No Parameters: None

Example:

```
[element tags]
```

- **toc** Displays a table of contents of the current document consisting of the headings as clickable links that allow navigation in the document.

Static: No

Parameters:

headingcount (optional, default `1`).

Sets the minimum number of headings in the table of contents. If this value is not reached, no table of contents will be displayed at all. This parameter is intended to allow the *toc* element to be used on layout pages as well, preventing the table of contents of embedded content pages from being too sparse.

highest (optional, default value 5)

Specifies the level up to which headings should be included in the table of contents. For example, a value of 3 specifies that headings `<h1>` , `<h2>` and `<h3>` should be included in the table of contents, but not headings `<h4>` , `<h5>` etc.

lowest (optional, default value 1)

Specifies the level at which headings should be included in the table of contents. For example, a value of 2 specifies that headings `<h2>` , `<h3>` , etc. should be included in the table of contents, but not headings `<h1>`.

title (optional, default None)

This parameter can be used to specify a title line for the table of contents.

Example:

```
[element toc headingcount=5 highest=3 title="Contents"]
```

Displays a table of contents consisting of at least five headings with headings `<h1>` , `<h2>` and `<h3>` and preceded by the title line Contents.

- **tree** Inserts a tree view of the current folder and all parent wikis consisting of clickable links. After a full-text search, the search results replace the content tree if no separate search results page has been defined with *searchresults*.

Static: Yes

Parameters:

The same as for *contents* except for *paging* and an exception for the default value.

showhome (optional, see below for default).

By default, the home page is shown for the top folder, but not for the subfolders in the tree. You can deviate from this procedure by setting the parameter to `True` or `False`.

Examples:

```
[element tree showlayout=True]
```

Displays a content tree with layout pages.

```
[element tree onlynames=*.html]
```

Displays a content tree that contains only objects whose names end in `.html`, in addition to folders.

8.7.5 Use text elements

Text elements are wiki elements that represent a custom piece of text that can be defined in one page of a wiki and used in another. For example, this allows you to define the page title in each content page, which is then used in the layout page to display the page title at the top of the page.

Text elements have a name and a value. You define a text element as follows:

```
[element set name="name of text element"]value text element[/element].
```

The definition can be done anywhere in the source code of a page. Once the text element has been defined, you can use it by

```
[element get name="name of the text element"]
```

into the source code of a page. In the web view of this page, the text element is evaluated and replaced with its value.

Text elements defined in the layout page can be used in any content page of the wiki, e.g. as an abbreviation for a frequently used text passage that may still be elaborately formatted. Text

elements defined in a content page can *only be used* in this same content page and layout page. If you define text elements with the same name in both a content page and the layout page, then the definition in the content page takes precedence over the definition in the layout page. So you can define default text elements in the layout page, which you may or may not override in the content pages. See the source code for the start page and layout page demonstrations to learn more about using text elements.

There are also some predefined text elements that you can use:

- *title*: the BSCW name of the current object;
- *description*: the description of the current object from BSCW;
- *author*: the name of the creator of the current object;
- *meta:bscw:keywords*, *meta:bscw:category*: The tags and category assigned to the current object; other metadata is also available this way by appending the internal identifiers of the metadata attributes to `meta:`. The identifiers used in a metadata profile are obtained by appending
 - You can call up the `specification` ▾ the context menu of the metadata profile • (see also 4.9.1 "Metadata profiles" on p. 84).

For example adds

```
[element get name="title"]
```

the name of the current page and

```
[element get name="meta:bscw:description"]
```

the description of the current page. In addition, you can use

```
[element get name="foldermeta:bscw:description"]
```

insert the description of the folder where the page is located and confirm with

```
[element get name="topmostfoldermeta:bscw:description"]
```

the description of the highest-ranking wiki where the page is located.

Furthermore, it is possible to access metadata at an unspecified location in the access path of the displayed page. This way

```
[element get name="searchmeta:bscw:description"]
```

the metadata `bscw:description`, i.e. the description, from the lowest object along the access path to which the metadata `bscw:description` *could be* assigned according to configuration. So if there is no description stored there, you get an empty output.

8.7.6 Export Wiki and make it publicly available

You may create an evaluated copy of your wiki, i.e. a copy where the BSCW and text elements have been evaluated and replaced and where all content pages are embedded in the layout page. Such a copy is called a "static" copy because all elements that determine the appearance of the wiki have been evaluated once and for all. Static copies are created in your clipboard and can be pasted from there into a normal folder, exported to an external web server, or sent by email. You create a static copy as follows:

- Select  `Static Copy` from the wiki context menu.
- In the '*Static copy*' action form you can choose whether all objects of the wiki are copied or only the HTML documents and sub-wiki with their HTML documents.

- Click [OK] to start the copy process. If there are BSCW elements in the wiki pages that cannot be transferred to a static context, you will be informed about this in an additional form.

A static copy of a wiki does not look exactly as it would when viewed directly in BSCW. BSCW elements that cannot be transferred to a static context (action links, menus, etc.) are missing in a static copy; other elements may look slightly different.

9 Traceability and social cooperation

BSCW offers the possibility to get information about user activity in your social network in BSCW, i.e. the set of users with whom you share a workspace, to track this activity based on events in these workspaces and to enter into informal communication within the social network of your workspaces.

You can find out which users are currently available on your computer.

- The *contact status display* shows the "BSCW presence" of the members of a shared workspace.

You can enter into informal communication with members of a workspace.

- *Chat messages* in BSCW supports the exchange of short text messages in the context of a shared workspace. The events in the workspace are also recorded.

9.1 Contact status display

The contact status display provides information about the "presence in BSCW" of members of a shared workspace, i.e. about their current activity in BSCW. The contact status display is indicated by the member list of the current shared workspace.

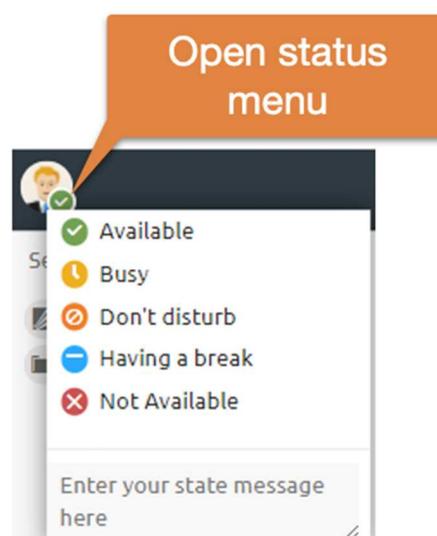


Figure 65: Contact status display

You may deactivate the display of your presence in BSCW by clicking on your own status display and setting the contact status permanently to Busy. The display is reactivated when you set the status to Available.

Presence in BSCW is measured by the time span between now and the last user activity in the BSCW browser window. Activation of this window, mouse movements or keystrokes in this window count as activity in terms of BSCW presence. The contact status is signaled by different colors of the status icon in front of the username and a corresponding tooltip:

- *green / available (< 5 min)*: the user was active during the last five minutes;
- *yellow / not active (< 60 min)*: the user was not active during the last 5 minutes, but was active during the last hour;
- *red / busy*: the user has been inactive for more than one hour or is not logged in to the BSCW server at all.

The specified time periods correspond to the default configuration of the contact status display. Your server may be configured differently. If in doubt, ask your BSCW administrator. When a user is active, the contact status display is refreshed automatically.

You also have the option to leave a note that will be displayed to other users when they point the cursor at your contact status icon.

Note: The contact status display is also shown in your private *personal workspace* ('home folder') and provides information about the current BSCW activity of all users with whom you share workspaces.

10 Calendar and scheduling

10.1 Calendar

Your personal BSCW calendar is a personal object like your clipboard, your recycle bin or your address book.

- Click on  in the navigation tree to access your personal calendar.

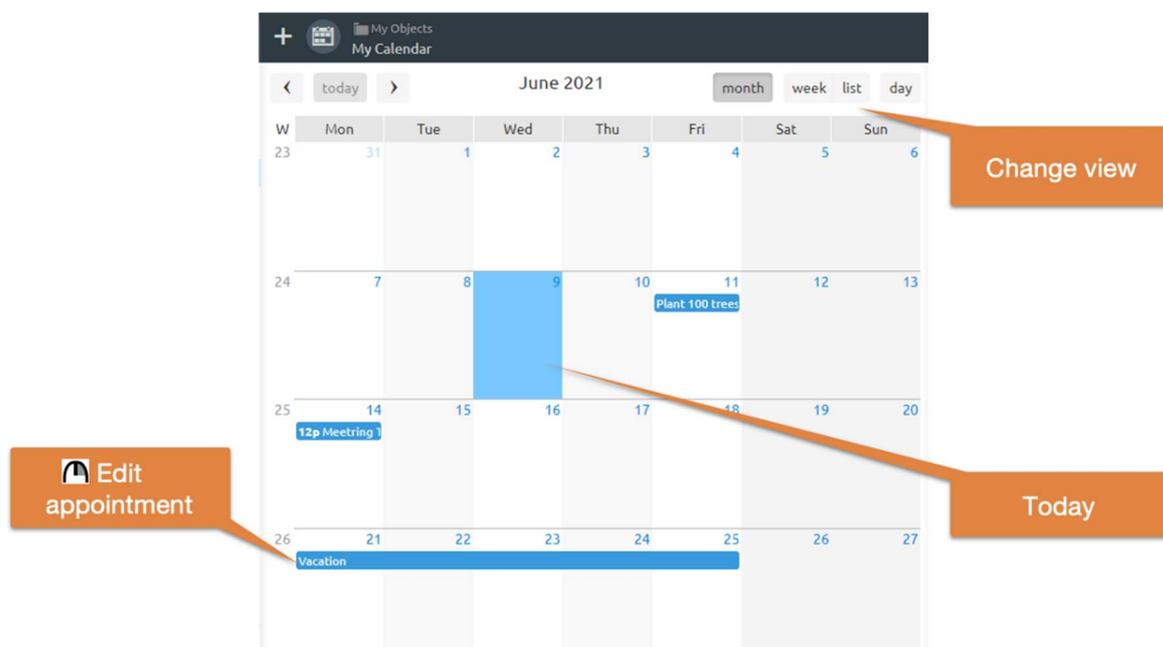


Figure 66: Month view in a group calendar

Besides your personal calendar, which is intended for managing your personal appointments, there are *group calendars*, which are intended for coordinating work in a particular workspace by the members of that workspace.

- Select  **Neu** **Group Calendar** in the top menu of a workspace to create a group calendar for this workspace. Enter the name and optionally tags and description of the new group calendar and click [OK] to create the new group calendar.
- In BSCW versions prior to 7.3 you could *only* create *one* group calendar per workspace - as of version 7.4 this has changed.
- Name, tags and description of a group calendar can be changed with  **Change Properties** in the context menu of the group calendar.

What is said below about handling calendars applies to both personal and group calendars.

10.1.1 Create an appointment

You may enter appointments in a BSCW calendar to organize timed events of different kinds (private appointments, group meetings, telephone conferences). An appointment includes at least a date and a designation (name). If it is a group appointment, a list of participants can be specified, who will be automatically invited as desired and whose individual status (accepted, canceled) will be managed together with the status of the entire appointment. Besides the name, date and possible participants, you can also specify repeats of the appointment and sending reminders.

- To create an appointment, select  Neu Appointment from the top menu in a calendar or click on  in a day entry of a week or month view.
- The 'New appointment' action form has four sections where you can enter the details of the new appointment:
 - Appointment,
 - Participants,
 - Repetition,
 - Memories.
- 'Appointment': Enter name and optionally tags and description of the new appointment. Furthermore you can specify:
 - *Category, priority*: Select a category and the priority of the appointment. You can display appointments of different category in different colors (see 10.1.6 "Calendar options" on p. 161).
 - *Date/Time*: Specify the date and time of the appointment. Optionally, you can specify the end of the appointment and a time zone.
 - *Location*: Specify the location of the appointment (if appropriate).
 - *Status*: defines the status of an appointment (undetermined, confirmed, canceled). If an appointment will take place in any case, regardless of the participants' confirmations or cancellations, select 'confirmed' here, for example. The default status 'automatic' means that the status is initially displayed as 'undetermined' and then changes automatically when all participants have accepted or cancelled.
- 'Participants': You select the participants for the appointment just as you would invite new members to a workspace: You can use your address book, enter usernames directly, or do a user search first. Tick whether the participants should be invited to the meeting by email. For group calendars, you can also invite people to an appointment who are *not* members of the workspace to which the group calendar belongs. If you want to participate in the appointment, do not forget to invite yourself: You are not automatically a participant of an appointment you create!
- 'Repetition': Here you can add a *series of* repetitions to your appointment. You determine these with rules of different types (e.g. weekly, weekly on certain weekdays or monthly on a certain day), which you select in the 'Rule type' list box. By clicking on [Add recurrence] a recurrence rule appears, which you can design according to your wishes. You can add more rules in the same way, which will create more recurrences of

your appointment. Short notations are used for monthly recurrences: thus 2 means the penultimate day of the month and 1 Sa means the last Saturday of the month.

Exceptions, i.e. days on which a repetition of the appointment should not take place, are entered by selecting a rule type, clicking on [Add exception] and specifying the generated exception field more precisely according to your wishes. Of course, you can also define multiple exceptions this way.

Note: Selecting a rule type alone, e.g. 'Weekly', does *not* add a recurrence to your appointment; you must click the [Add Recurrence] button to do so.

- 'Reminders': Here you can specify how you yourself, the participants of the appointment, the members of your workspace or individuals should be reminded of the appointment by email. Select the group of people to whom the reminder message is to be sent in the 'Reminder type' list box. By clicking on [Add] a form field appears where you specify the details of the reminder message (when, how often, to whom). You can add a personal message to the automatically generated reminder message. By clicking [Add] repeatedly, you can have multiple reminders sent to different groups of people at different times.
- Confirm with [OK] to create the appointment according to the specifications you have made so far. You can also set all the specifications for the appointment at a later time or change them again.

10.1.2 Change an appointment

You can change all the properties of an appointment, provided that you are the creator or manager of the appointment.

- Select  **Change Properties** to change the appointment. The action form has the same tabs as the appointment creation form.
- If participants are assigned to the appointment and the appointment has not already expired, BSCW will offer to notify the participants about the change via email. Furthermore, you can have the participants reassigned or cancelled.

If you change the day and/or time of an appointment, you should set the status to 'undetermined' if there are participants, as it will have to be clarified again who will be attending the appointment.

If you change properties of an appointment that belongs to a whole series of repetitions of an appointment, the changes affect only the individual appointment, the other appointments of the series remain unchanged.

If you want to change the properties of a whole series of appointments (including the recurrence rules), proceed as follows:

- Select  **Change Series** in the context menu of any appointment of the series.
- Change any properties and confirm with [OK]. Note that your changes will affect all appointments in the series except those where a property has been changed individually. Furthermore, changes to the date affect only the first appointment of the series, changes to the time affect all appointments of the series except those created via rules of the type 'On a specific date'.

10.1.3 Remove an appointment

To *remove* an appointment from the day, week or month view of a calendar,

- Select  **Remove** the context menu of the appointment in question.

If the appointment belongs to a series of appointments, this will remove only the individual appointment. This also applies to the first appointment in the series. If you want to remove a whole series of appointments,

- select  **Change Series** in the context menu of any appointment of the series and delete the recurrence rules. This deletes the repetitions of the initial appointment. You have to remove this one individually as described above, if desired and not already done.

You cannot remove entries from the Quarter and Year calendar views.

An appointment you remove from a calendar is moved to your trash. If you remove an appointment from your *personal calendar*, it remains for the other participants. If you remove an appointment from a *group calendar*, it is no longer accessible for the other members of the related workspace, but for the participants of the appointment it remains in their personal calendars. You can restore an appointment that you have removed by mistake by putting it back from your recycle bin.

If you remove an appointment to which you are invited, you cancel your participation (see the **Cancel** action in 10.1.5 "Calendar actions" on p. 161); putting the appointment back does not change this.

The same rules apply to the final deletion of appointments in the trash as for other objects (see also 5.2.5 "Ownership and ownership role" on p. 105). If, for example, you delete an appointment of which you are the sole owner from a group calendar and this appointment also still occurs in your personal calendar, the appointment is still accessible (also for the participants) and you remain the owner - you have only deleted the appointment entry in the group calendar. However, if the appointment had not been entered in your personal calendar, it would no longer be accessible to anyone.

10.1.4 Use different views

You can view a calendar in different views.

- Select the format that suits your current needs from the top menu bar.
 - *Day* displays all appointments of one day.
 - *Week* shows the whole week.
 - *Month* shows the whole month.
 - *Appointment overview* shows a list of all appointments in the calendar.

In the other views you can  navigate  with the and icons.

In addition, you can also view the appointments of a calendar in a familiar folder view and sort them by category or status, for example. To do this, select  **Open as** in the context menu of the calendar.

Furthermore, via the  **Settings** in the tab 'Calendar / Document input' you can specify with which day the week should start and how the time division in the day and week view should be arranged.

10.1.5 Calendar actions

In the upper menu you can use the **Today** button to display the current date in the respective calendar view.

You can export calendar data for printing as a PDF file,

- by selecting **Send to file (PDF)** in the context menu of the calendar. The monthly, weekly and list view are available as print view. You can also set the period from which you want to have calendar data printed.

The context menu of an appointment offers the actions you can use to handle appointments. The following actions are specific appointment actions.

- **Send to iCalendar** exports the appointment data in a format that is also understood by other calendar programs such as Outlook or Libre/OpenOffice. A corresponding file is sent to your web browser, which can then be imported by such calendar programs to take the appointment. You can also export all appointments of a calendar by selecting **Send to iCal file** in the context menu of the calendar.
- Event data in iCalendar format (MIME type `text/calendar`, Windows file suffix `*.ics`) may also be uploaded to a BSCW calendar.
- **Commitment** says your participation in the appointment (offered only if you are invited as a participant and have not yet committed).
- **Cancel** cancels your participation in the appointment (offered only if you are invited as a participant and have not yet canceled).
- **Cancel appointment** cancels the whole appointment, i.e. the status of the appointment is set to 'canceled', all participants are notified about the cancellation of the appointment by email and any scheduled reminders are overridden. Cancel an appointment removes the appointment from the calendar where you performed the action. By default, this action is available- only for *managers*.
- **Change Properties** lets you edit the various details of an appointment.
- **Attach** lets you add a document, URL or note as an attachment to an appointment. The presence of attachments is indicated  by the icon in the day and week view. Document and URL attachments to appointments are treated as attachments to notes, attached notes are added to the attachment folder as single notes.
- **Link in calendar** creates a reference in your personal calendar to an appointment in a group calendar.

The remaining actions in the context menu of an appointment are generic functions that have the same behavior for appointments as for other objects.

10.1.6 Calendar options

Via the  **Settings** in the tab 'Calendar / Document Inbox' you can set various options concerning the division of your calendars as well as regulating the automatic transfer and automatic deletion of appointments. So you can specify here,

- with which day the week should begin,
- what counts as a working day for you and

- how the time division should be arranged in the daily and weekly view.

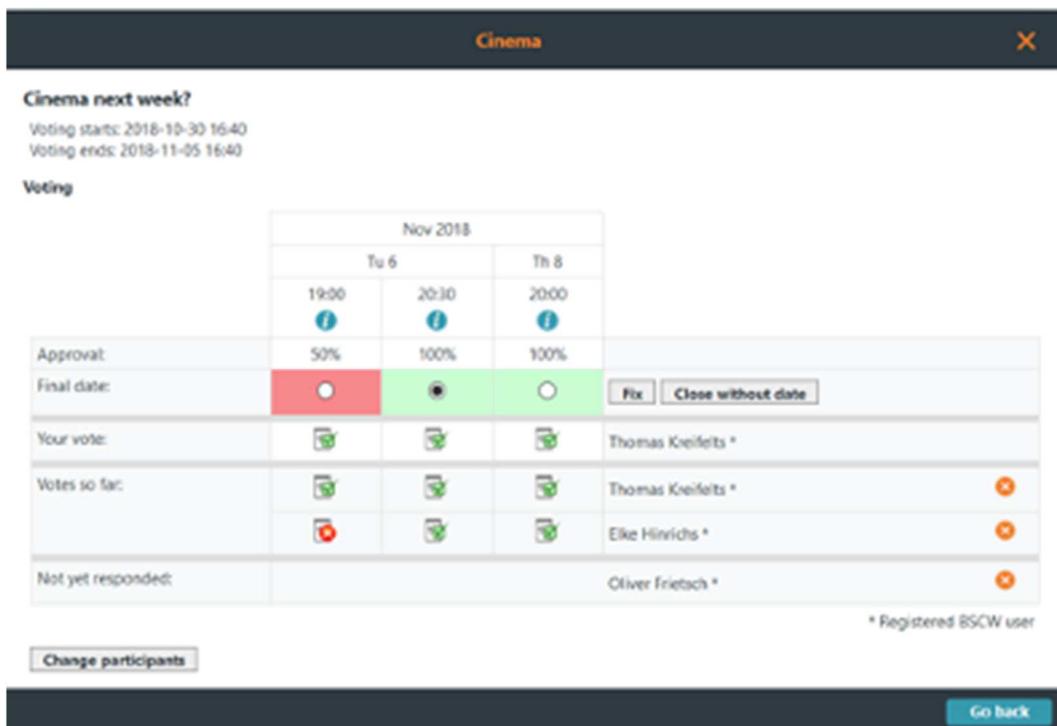
Furthermore, you can specify,

- whether appointments that *you* create *yourself* in a group calendar should also be automatically entered in your personal calendar (even if you do not participate!)
- whether appointments where you are uninvited should be automatically removed from your personal calendar, and
- whether to automatically cancel your participation in appointments that you remove from your personal calendar.

Via  **Change Properties** in the context menu of a group calendar you can further determine in the 'Personal settings' tab whether appointments to which you are *invited* in this calendar should automatically be transferred to your personal calendar.

10.2 Appointment Coordination

Appointment scheduling helps to find an acceptable date for a joint meeting. The organizer creates a scheduling request, specifying the possible dates and the intended participants. Not only registered BSCW users but also other persons may participate. The participants are notified by email and can then vote on the proposed dates until the voting period has expired. The organizer will set a final date depending on the outcome of the voting. All participants will be informed about this date, which they may transfer to a BSCW calendar or another calendar system.



Nov 2018			
	Tu 6	Th 8	
	19:00	20:30	20:00
Approval:	50%	100%	100%
Final date:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Your vote:	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Votes so far:	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Not yet responded:			

Figure 67: Appointment coordination

10.2.1 Create and change appointment reconciliations

You create an appointment reconciliation as follows:

- Select **New Appointment Reconciliation** in the top menu.
- In the 'General' tab of the '*New appointment reconciliation*' action form, specify the following details of the planned appointment reconciliation.
 - *Name* and optional *heading*, *tags* and *description*. The heading appears at the top of the voting form. If no heading is specified, the name acts as the heading.
 - *Suggested dates*: Select dates for your meeting. Use the menus to do this or click on the calendar icon to activate a date entry tool. The time fields can be left blank. You can add a comment to the appointments, for example, about the location or duration of the scheduled meeting, which will be displayed to the participants. Click on [Add appointment suggestion] if you want to make more than three suggestions.

Note: Once votes have been received for the appointment poll, you can only change the appointment proposals after you have reset the appointment poll. When resetting, all previous votes of the participants will be *lost*.

- *Time frame and reminder*: Enter the start and end of the voting. Participation in the appointment poll is only possible within the specified time frame. Specify when you want to be reminded about the end of the appointment voting.
- *Participation and notification details*: Specify whether you want to be notified about each individual vote. You can further allow participants to suggest additional participants and vote on a date with "Maybe" (as an additional option to the default Yes-No alternative).
- In the 'Participants' tab you define the participants and details about their notification.
 - Select the participants of the meeting (as you would select the members of a workspace). You may also specify the email addresses of persons who are not registered users of your BSCW server; in case of appointment polling, these persons may participate without registering as users. When you create an appointment poll in a shared workspace, the members of the workspace are preselected as participants by default.
 - *Language*: Select the language in which you want the automatic invitation email to be written.
 - *Personal comment to invited participants*: Optionally enter a personal comment for the otherwise automatically generated invitation email that is sent to all participants.
- Click on [OK] to generate a *preview* of the voting form. The preview offers the possibility to still make changes or to start the appointment reconciliation immediately: click on [Change appointment reconciliation] or on [Start appointment reconciliation now]. Click on [Back] if you are satisfied with the preview and you want to start the appointment reconciliation at the scheduled start date.
- If you have started the appointment voting in the previous step and are a participant yourself, you will next be asked to vote on the appointment proposals, which is explained below. You can also edit the participant list here by clicking on [Change participant].

You as the organizer can change most of the details of the appointment voting. However, after the first vote has been cast, you cannot change the dates and the voting scheme ('Yes-No' or 'Yes-No-Maybe') (you would need to reset the date voting to do this).

- Select  **Change Properties** in the context menu of the appointment poll and change the name, description, end of the poll, details of participation and notification, and participants. Optionally, enter a personal message that will be attached to the notifications of the participants of an ongoing appointment voting.
- Click [OK] for the changes to take effect. All participants in an ongoing appointment poll will be notified of the changes, new participants will be invited, and participants you have uninvited will be notified.

You can start a scheduling session that has not yet started at any time.

- Select  **Change Properties** in the context menu of the appointment scheduling or click on the entry of the appointment scheduling in the folder overview. Then click [Start appointment scheduling now] in the action form.

If a participant suggests new participants and this has to be confirmed by you (depends on the configuration of your BSCW server), you will receive an email message containing a link that leads you directly to the action form where you may invite the new (and also further) participants.

- The *'Invite proposed or new participants'* action form displays the current participants. You can add new participants and remove existing ones.
- Optionally, specify a personal message that will be added to the invitations of new participants and the notifications of uninvited participants. Click [OK] when you are finished.

You as an organizer can send an e-mail message to the participants of an ongoing appointment coordination.

- Select  **Send to participants** in the context menu of the appointment poll, enter your message and click [OK]. You can send the message to all participants, all participants who have already or not yet voted, or select the recipients of the message among the participants.

Note that not only the organizer, i.e. the creator of the appointment scheduling, but also the manager of the workspace containing the appointment scheduling can modify an appointment scheduling and send messages to the participants.

You can also display the reconciliation periods of appointment reconciliations on a timeline.

10.2.2 Vote on proposed dates

When the start time of an appointment poll is reached (or the organizer has manually started the appointment poll as described above), all participants will be invited by email to vote on the proposed appointments. In this invitation message, you as a participant will receive a *personalized* link (URL) that allows you to access the appointment poll to vote, change your own vote or view the current status of the poll. Do not forward this reference to other people (they could use this URL only to participate in the appointment poll under your name), but use the second reference in the message (if any) to suggest other people to participate in the appointment poll. If you are a member of the workspace that contains the appointment poll, you can simply open the appointment poll to vote.

You vote in an appointment reconciliation by

- click the "Go to appointment scheduling" link in the invitation message or select  **Change Properties** in the context menu of the appointment scheduling (the latter only if you are a member of the workspace containing the appointment scheduling).

- The action form displays the appointment voting as a table: the appointment proposals form the columns, the participants with their opinions form the rows. Vote on the appointment proposals by clicking on the fields corresponding to your opinion for the individual proposals and finally click on [Vote]. If you have already voted and want to change your opinion, click on the icon  next to your name.
- The comments on an appointment are displayed as a tooltip of the information icon of  an appointment.
- The line 'Approval' shows the percentage of participants who have approved the respective appointment, and the line 'Current status' shows the aggregated status of the proposed appointments:
 - Green: All participants have agreed.
 - Orange: At least one participant has voted 'Maybe' and no participant has declined.
 - Red: At least one participant has declined.

Your vote has an immediate effect on the current state of an appointment: for example, if you vote 'No', the current state will be set to red.

- You can also [Suggest other participants] if the organizer has provided this option (see next section).
- Click on [Back] to return to the folder overview.

You can change your mind or view the other results of the voting by clicking the same reference in the invitation message. So you should not delete this message. Access to the appointment voting is possible as long as the voting has not ended or the organizer has not ended the appointment voting earlier (about which you will be notified by email).

If you as an organizer vote on appointment proposals, the current status is displayed in the line 'Final appointment', which you as an organizer can set by selecting an appointment (see below). You can also edit the participant list with [Change participant] as explained above.

10.2.3 Suggest other people to participate

The organizer of an appointment poll can allow participants to suggest other participants. If this is the case, the invitation email for a meeting also contains a URL that points to a page where you can suggest other people to participate in the meeting, for example, if you do not want to participate yourself.

They suggest other people to participate in the appointment as follows.

- Click the Suggest Attendee link of the invitation email or open the appointment poll and click [Suggest Attendee] in the appointment poll form. If you are a member of the workspace that contains the appointment scheduling, you can also suggest new participants by selecting Suggest  Participants the context menu of the appointment scheduling.
- In the action form '*Suggest participants*' you select additional participants (just as you would select members of a workspace). You may also enter e-mail addresses of persons who are not registered users of your BSCW server; these persons may participate in a meeting *without registering as BSCW users*.
- Click [OK] to either invite your proposed people directly or to inform the organizer about your proposal, who will then decide how to proceed with your proposal.

Depending on the configuration of your BSCW server and the specifications of the organizer, the persons you propose will either be invited directly or the invitation has to be confirmed by the organizer beforehand. In the latter case, the organizer will receive an email message. The organizer may also

- Select **Edit suggestions** in the context menu of the appointment scheduling.
- In the action form 'Invite proposed or additional participants' the proposals are already entered under 'Selected users'.
- Click [OK] to invite the suggested persons. At this point, you can also invite other people to the appointment coordination.

10.2.4 Set final date

The organizer of a meeting can get information about the current status of the meeting by opening it (either by clicking on the meeting entry in the folder overview or by selecting **Change Properties** in the context menu of the meeting). The organizer can also be reminded of the approaching end of the voting by email. Such a reminder message contains a reference to the appointment reconciliation.

The 'Final Appointment' line in the Appointment Reconciliation form shows the aggregated status of the proposed appointments:

- Green: All participants have agreed.
- Orange: No participant has declined, at least one participant has voted 'With reservation'.
- Red: At least one participant has declined.

As an organizer, you are offered two additional buttons here to set the final date or to cancel the date coordination, e.g. because apparently no date can be found that suits all participants.

- Set the final date by clicking on a date in the 'Final date' row and then clicking on [Set]. This also ends the voting.
- In the '*End appointment voting*' action form you can specify a comment that will be added to the otherwise automatically generated email message informing the participants about the end of the voting. You can also add the final appointment to your personal calendar or the group calendar of the workspace that contains the appointment voting (if such a group calendar exists).
- Click [End without appointment] to end the appointment voting without setting a final appointment. In the '*End appointment voting*' action form, you can again specify a comment that will be added to the email message informing the participants about the end of the voting.

All participants will be notified by e-mail about the final date or the end of the voting. If a final date has been set, this message contains a reference that also allows participants to copy the final date (in iCal format) to their BSCW or other calendar.

Note that not only the organizer, i.e. the creator of a schedule, can set a final date, but also the manager of the workspace that contains the schedule.

10.2.5 Reset appointment reconciliations

If you want to change the dates or the voting scheme ('Yes-No' or 'Yes-No-Maybe') of an appointment voting after the first votes have already been cast, you have to reset the appointment voting, change it and start it again. However, *all previous votes* will be *lost*.

- Select  **Reset** in the context menu of the appointment scheduling and confirm the warning with [OK].

The appointment coordination is given the status 'in preparation' and can now be

- be completely revised with  **Change Properties** in the context menu of the appointment scheduling.

Changing the reset appointment scheduling will not start it automatically. To do this

- click on the entry of the appointment scheduling or select  **Change Properties** in the context menu. Click [OK] to restart the reset appointment scheduling.

11 Communities

Communities in BSCW allow *large* groups of users to access workspaces with *equal* access rights without sacrificing consistent performance. Communities are also suitable as self-organized forums for users with similar interests.

In the following *example cases*, one would choose a community in BSCW.

- You want to create a forum for all hobby astronomers who are users of your BSCW server. This should be a workspace that is announced to the users of your BSCW server and to which all users may gain access to read the content and also post relevant documents and references ("astronomy forum").
- You want to create a workspace for all 250 members of a tab in your organization, where you and some other managers can post documents, references and whole subfolders that represent useful information for the whole tab ("bulletin board").
- You manage a workspace whose number of members has grown very strongly over time. As a result, the server's response times have become unsatisfactory even for simple operations on the workspace ("Crowded workspace").

A community is a group of users, its members. Each community is a member of exactly one workspace, the community workspace, which is also called the *associated workspace* of the community. A workspace can have at most one community as a member, i.e. there is a one-to-one relationship between a community and its workspace. Community members can access the community workspace in a single role, the *Community Role* (not to be confused with the role that community members hold in relation to the community itself this is the *Member* role, which is set for communities with minimal rights). The managers of the community workspace are also the managers of the community.

Note that accessing a workspace through a community with many members in a *single* role is significantly superior in terms of performance to accessing the same workspace by the same number of members in different roles, each with different access rights. Communities can be treated as a single user in many contexts, which significantly reduces the overhead of calculating access rights.

Communities differ in terms of their recording rules and visibility to other users:

- *Open communities* are visible to all registered users of your BSCW server, and users may become members by themselves by joining the community.
- *Closed communities* are visible to all registered users of your BSCW server, but users cannot become members on their own, they have to ask the community managers to join.
- *Hidden communities* are not visible to the users of your BSCW server. You may become a member of a hidden community only by invitation of a community manager.

Open and closed communities can be invited to other communities, hidden communities cannot. The same applies to the member groups of community workspaces with regard to invitations to other workspaces.

11.1 Become a member of a community

To find out which non-hidden communities exist on your BSCW server,

- select **Show Other Communities** in the top menu, whereupon a list of all communities where you are not a member will be displayed. You can tell by its icon whether a community is open () or closed ()

You can now become a member of such a community by

- Select  **Join Community** in the context menu of an open community, which makes you a member immediately, or
- Select  **Apply for membership** in the context menu of a closed community. This leads to an email form that lists the community managers as addressees and where you can apply for membership in the community.

For hidden communities, you can only become a member by explicit invitation of the community manager.

After you become a member, the community disappears from the 'Other communities' folder. The associated workspace appears instead in your personal workspace ('Workspaces of *your-username*') and in the 'Communities of *your-username*' folder, which contains the community workspaces of all communities where you are a member. To access this folder,

- Select  **Show My Communities** in the top menu. Alternatively, you can click on  in the navigation tree.

The folder 'Communities of *your-username*' also still contains the entry 'public' with all folders and discussion forums that are publicly accessible.

Leaving a community is possible only for community members in *open* communities: to do so, remove the related community workspace from the 'Communities from *your-username*' folder. For closed and hidden communities, you must ask a community manager to uninvite you as a member from the community. You cannot remove the community workspace of closed or hidden communities from the list of your communities yourself.

11.2 Create communities

There are many different ways to create a new community. We will demonstrate some of these ways using our three use cases above. We'll start with the "Astronomy Forum". If you are starting from scratch, do the following.

- Select  **Neu Community** in the top menu of your *personal workspace* ('home folder'); this is the only place where you can create new communities in this way. The '*New Community*' form contains several sections.
- In the tab 'General' you enter the name of the new community (e.g. 'Hobby Astronomers') and optionally a description and keywords. The latter will also be

displayed in the 'Other communities' folder for other users. The associated community workspace is created together with the new community. This workspace, initially empty, will appear in your personal workspace and you will be its owner and manager. The workspace will have the same name, description and keywords as the new community.

- Next, select the 'admission policy' for the new community: open, closed or hidden. You should only create non-hidden communities if you are really sure that your communities are of interest to other users of your BSCW server. Non-hidden communities appear in the 'Other communities' list of every registered user of your BSCW server. In our case, we choose the open community because we want to encourage other users to join our community of hobby astronomers. The admission rules of a community can be changed later by a community manager. So if you think that enough members have joined your community, you can change its admission rule to 'closed'.
- Finally, select the 'Community member role', i.e. the community role in which all community members access the community workspace. You should select a role that is appropriate for the purpose of your community. For example, if you want community members to be able to read the workspace content only, select the *Restricted Member role*; if you want them to contribute to the workspace content, select *Associated Member* as the role (the default role offered), which includes actions to modify the content. Note that the *Member* role gives community members the right to uninvite other members of the workspace, including the community itself, which you usually don't want. In our case, we would select the default *Associate Member* role because we expect future community members to contribute to the content of the community workspace, but not to modify its membership. The community role can be changed later by the community manager.
- In the 'Members' tab you determine the initial members of the new community. If you already know some hobby astronomers who are users of your BSCW server, you could create your community by starting with these community members. When selecting members, you can use the same mechanisms as if you were inviting new members to a workspace. - with the difference that you cannot invite groups of members from other workspaces, only communities (see also 11.5 "Hierarchical organization of communities" on p. 163 and 11.6 "Invite communities to member groups and vice versa" on p. 176). You as a community producer and manager are not automatically a member of the community, but you are of course a member of the community workspace in the role of manager.
- The 'Automatic versioning' tab concerns the rules for automatic versioning of documents in the new collaborative workspace.

The new community workspace 'Hobby Astronomers' will appear in your personal workspace ('home folder'), but will not be listed under 'Communities of *your-username*' unless you are a member.

Normally, you would now create a structure with appropriate content for the workspace. Then you could either wait for other users to join your community or directly invite some astronomy interested users to join your community.

- Click the icon  that appears in the 'Share' column of the community workspace entry to view the members of the community workspace. This icon generally indicates that a community is a member of a workspace.
- Select  **Add member access** in the context menu of the community.

Next, let's consider our example bulletin board case. We assume that the workspace with the initial bulletin board content already exists to the tab, with you as the manager and some other users who should also provide input as members. You now add a community to this workspace that contains all your tab members (by default, you must be a manager of the workspace to do this).

- Select  **Add Access** **Community** in the context menu of the workspace.
- The new community that will become a member of the workspace will have the same name as the workspace.
- In the '*Add community*' form, select the 'Admission policy' for the new community: open, closed or hidden. In our case we choose the hidden community because we do not want to make the existence of the community known to all other users, but we want to invite the members of the community themselves.
- Next, select the 'Community member role', which is the community role in which all community members access the community workspace. In our case, we would select *Restricted member* because we want to give read-only access to the community members.
- Finally, you invite the members of the new community, in our case the members of your department. You could use the option 'Search for BSCW users' with the department name as search criterion.

In our last example case, "Crowded Workspace", you want to merge the many members of the workspace into a community that then becomes a member of the workspace as a whole, thereby significantly improving server response times for workspace operations. By default, you must be a manager of the workspace for this action.

- Click the icon  in the 'Share' column of the workspace entry to view its member page.
- Select those workspace members who should become members of the community by checking the checkboxes of the corresponding member entries. (It may be faster to select all members by clicking on and then deselecting Manager and Owner). Select **Edit to Community** from the top menu or click on in  the multi-select toolbar. Workspace owners cannot be made community members in this way.
- In the '*Add Community*' form, proceed in the same way as described above for adding a community to a workspace with **Add Community access** ▾ The default value offered for the community role is the role that most members hold in relation to the workspace. In the usual case where all members of the workspace except the manager have the *Member* role, the access rights remain unchanged when this role is selected as the community role. Note that the access rights of community members are changed if they have a role in the workspace that is different from the community role. As an admission rule, you would choose the hidden community in our example case because the community is not for the purpose of attracting other users to the community, but to improve the response time of the server.

11.3 Manage communities

Communities are managed by community managers, i.e., managers of the associated community workspace. The basic management functions are:

- Invite users to a community,

- change the community role,
- change the admission rules of a community,
- Remove members from a community,
- remove the community as a member from the community workspace, which also deletes the community.

To access a community

- click the icon  including the community.

Now, as a community manager, you can invite other users to the community:

- Select  **Add member access** in the context menu of the community.

If you want to make community workspace members,

- select these members by checking the checkboxes in front of the related entries, and then click on  in the multi-selection toolbar or select **Edit to Community** in the top menu. This action can change the access rights of the affected members if their role in the workspace is different from the community role. Note that workspace owners cannot be made community members in this way; they must be *additionally* invited as community members.

By default, the info page of a community does not display its individual members for performance and privacy reasons. Also, by default, a community is not accessible to its members, that is, community members cannot open the community to view the list of members; this is reserved for community workspace managers. You can change this behavior as a community manager by editing the community's member role to allow the 'Open' action (see 5.2.4 "Define and change roles" on p. 104). You change the inclusion rule of a community with

-  **Change Properties** in the context menu of the community.

The community role, i.e. the role in which the community members access the community workspace, can be changed by selecting

-  **Access Assign role** in the context menu of the community or community workspace and invite the community in a different role.

Note that communities cannot become owners of the associated community workspace.

You can remove members from a community by

- first click on the entry of the community to display the list of its members, and then
- select the community members to be removed by ticking their checkboxes and click on  in the multi-selection toolbar.

You can remove the whole community as a member of a workspace by selecting

-  **Access Remove** in the context menu of the community. This action also deletes the community. If the community has members, the '*Remove Member*' form will ask you whether you want to remove all members before deleting the community or transfer them to the member group of the associated workspace. The latter will make the community members members of that workspace in the community role.

Note that not only the managers of a community workspace can remove the community from the workspace's member group, but also the members of the community workspace in the *Member* role.

11.4 Communities as a common email distribution list

Communities may also be used as shared email distribution lists, provided that your BSCW server has been configured by the administrator to send e-mail. By default, any member may send email messages to the whole community. Of course, the members of the associated community workspace may do so as well.

How to send an email message to a community:

- Go to the members page of the community workspace by clicking the icon  in the 'Share' column of the workspace entry.
- Select  **Send to email** in the context menu of the community (). This will display the 'Send email' form with the community's address already entered in the 'To:' field. Alternatively, you can select the community and then use (-Send email) in the multi-selection toolbar.

If you plan to use a community as a shared email distribution list, the inclusion rule of a *hidden* or *closed* community should be chosen and the community role should not include the right to invite or remove members, so that you yourself keep control over the membership. As a community role you should choose e.g. *Associate member*, but not *Member* (has the right to delete the whole community) or *Manager* (has the right to manage the community membership).

11.5 Hierarchical organization of communities

Communities can be organized hierarchically by making communities members of other communities. In this way, for example, the hierarchical organization of a company can be mapped to BSCW communities.

Members of a subcommunity can access the community workspace of the upper community. However, the related community workspaces are not necessarily contained within each other. This is different from the seemingly similar relationship between workspaces and their member groups.

As an example, let's take the case of the bulletin board for a large department, which we had organized above as a community workspace. The associated community has as members all employees of the department. If you as a community manager now want to set up bulletin boards for subdepartments A, B and C, for example, which are also to be implemented as community workspaces, proceed as follows:

- Go to the department community member page by first clicking on the icon  the 'Share' column of the community workspace entry to view the members of that workspace, and then clicking on the community entry.
- Tick the checkboxes of all the employees belonging to the subdivision A and click on  in the multi-selection toolbar to create the new community for the subdivision A.
- In the 'New Community' form that appears next, enter the name of the new community (in our case 'Subdivision A bulletin board') and select the inclusion rule as well as the community role (in our case *Hidden Community* and *Restricted Member*). This will also create the associated community workspace that will appear in your personal workspace with you as the owner and manager. If you do not want to manage the subdivision

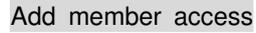
bulletin board yourself, invite someone from subdivision A to be the manager in the new community workspace.

- Repeat the above steps for subdivisions B and C. Now the bulletin board member page no longer shows the tab the employees of the three subdivisions, but only the three entries of the subdivision communities.

In this way, you have created three subcommunities of the original community. You could now further subdivide the subcommunities by proceeding exactly as described above. Note that the members of sub-communities access the community workspace of the parent community in the community role of the *parent community*, i.e. the community role of the parent community determines how the members of the sub-communities and further subordinate sub-communities access the community workspace of the parent community - independent of the community roles in the sub-communities.

Instead of subdividing an existing community to form a hierarchical organization of communities, you can also proceed from below by unifying existing communities so that these communities become sub-communities of the new unified community. Suppose you have already created three communities A, B, and C for the three subdivisions and now you want to create a department community with these three communities as members so that all members of the existing communities can access the community workspace of the new department community.

- Set the admission rules of all three communities A, B and C to 'closed'. Hidden communities cannot be invited to other communities.
- Create a new community in your personal workspace via  Neu Community in the top menu. In the 'General' tab of the action form, enter the name of the new community (in our case 'Bulletin Board of Tab D') and select the inclusion rule as well as the community role (in our case *Hidden Community* and *Restricted Member*). This will also create the associated community workspace that will appear in your personal workspace with you as the owner and manager.
- In the 'Members' tab, select 'Search for BSCW groups' and enter e.g. 'brett' as query assuming that this string appears in the name of all three bulletin board communities A, B and C. Transfer the three communities found to the 'Selected users' field and click [OK] to create the new community.
- Set the recording control of the three communities back to 'hidden'.

Alternatively, you could first create the department community D and then invite the three communities A, B and C as subcommunities via  the context menu of community D or you could first create a workspace D and then add a community to it with the three communities A, B and C as members. However you proceed, you would always use the same mechanism of searching for BSCW groups in the invitation form.

If you have access to a community because you are a member of a subcommunity, that community will also be displayed under 'Communities of *your-username*' even though you are not a member.

When you remove a community from the community workspace member group, the community is deleted, but not any subcommunities. They are only removed as members of the community before the community itself is deleted. However, in the '*Remove Members*' action form, you can optionally accept the members of the community, including a sub-community, as members of the community workspace in the community role. In the case of a subcommunity, you should keep in mind that it is not the individual members of the *subcommunity* that are adopted as

members, but the *member group of the subcommunity workspace*; this includes at least its managers and/or owners. Furthermore, this has the consequence that the community workspace becomes part of the subcommunity workspace.

11.6 Invite communities to member groups and vice versa

You *cannot* invite communities into member groups and you *cannot* invite member groups into communities. Here, by community we mean the group of community members in the narrower sense, i.e. not the associated community workspace and also not the member group of this community workspace, which also contains at least the manager and/or owner.

- If you could invite a community into a member group, then that community would be a member of two workspaces, which contradicts the principle of a 1:1 relationship between the community and its associated community workspace.

Note: When searching for BSCW groups that you want to invite to the member group of a workspace, *only member groups* are found. However, this may also include member groups of community workspaces that themselves contain a community as member.

- If you could invite a member group into a community, the potentially different roles held by members of a member group would be contrary to the concept of the community as a group of many members with the *same role*.

Note: When searching for BSCW groups you want to invite to a community, *only communities* are found.

If you want to give a community A access to a workspace B, you have two options.

- Create a (possibly empty) community for B and invite community A into B's community.
- Invite the community workspace *member group* from A to workspace B.

If you want to give the member group of a workspace B access to a community workspace A, you also have two options.

- Invite the member group from B to the community workspace A.
- Make the member group a community B (as in the example case "crowded workspace") and invite this community B to community A.

If you invite a member group A to a member group B, this always means embedding workspace B in workspace A (see 5.1.4.2 "Embedding one workspace into another" on p. 98) if you invite a community A to a community B, the community workspaces A and B remain independent. Which of the solutions outlined above is preferable depends on the individual case.

Reminder: When inviting communities or member groups, always use the option 'Search for BSCW groups' in the invitation form.

12 Workflow Management

Workflow management is supported in BSCW in the following areas:

- *Tasks and projects*: Scheduling in projects and phases, handling and control of structured tasks, possibility of defining user-defined workflows.
- *Walking folders*: Mapping linear business processes as "walking" folders.
- *Document approval*: Review and approval of documents in several steps.

Workflow management support has to be enabled by your BSCW administrator for your server to use the respective functionality.

12.1 Tasks and projects

You can access individual tasks via the tasks overview of the latest progress. Behind each *progress there* are several subtasks, which in turn can consist of further subtasks.

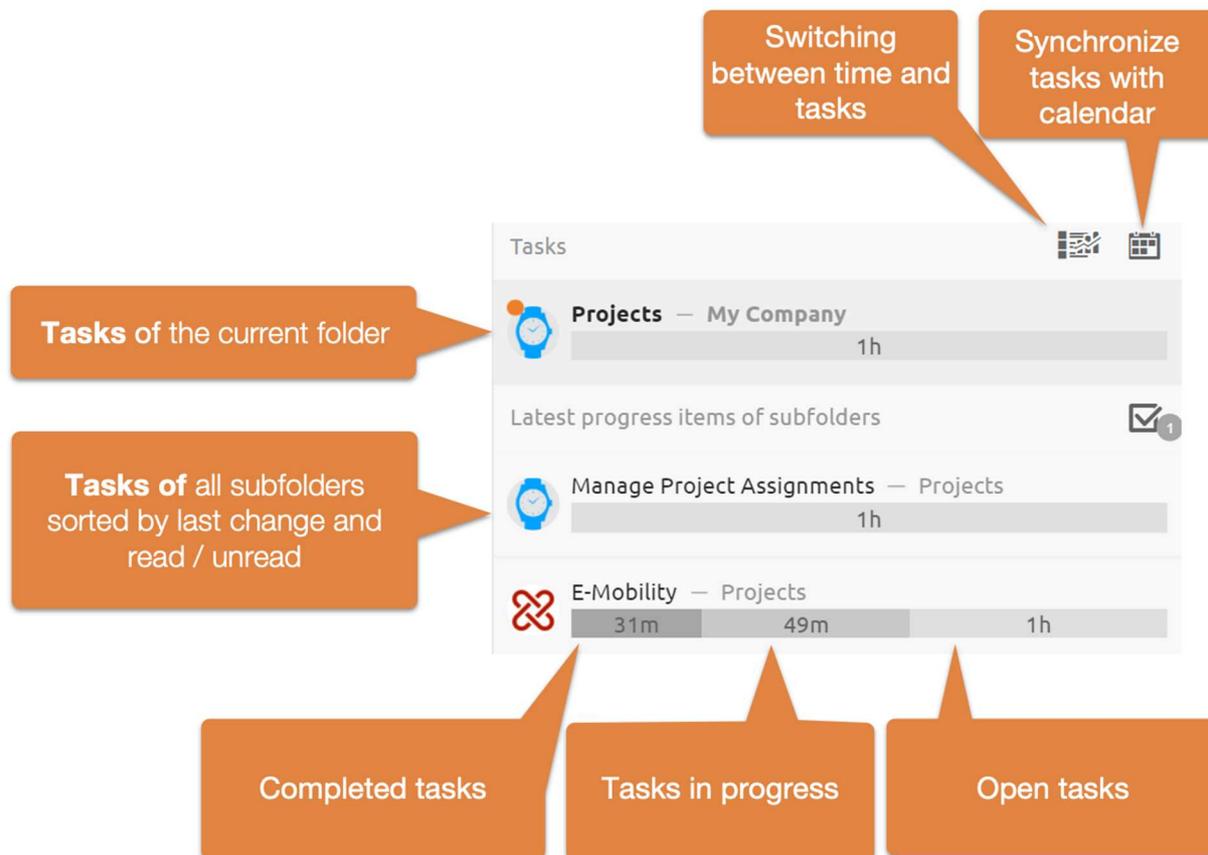


Figure 68: Tasks overview and progress bar

At the top, the progress of the task list of the current folder is displayed. Below that are the latest tasks of all subfolders. The newest tasks of the subfolders are again divided between unread and read. Unread ones appear at the top, read ones at the bottom. Clicking on a progress item opens the associated task list and switches to the corresponding subfolder.

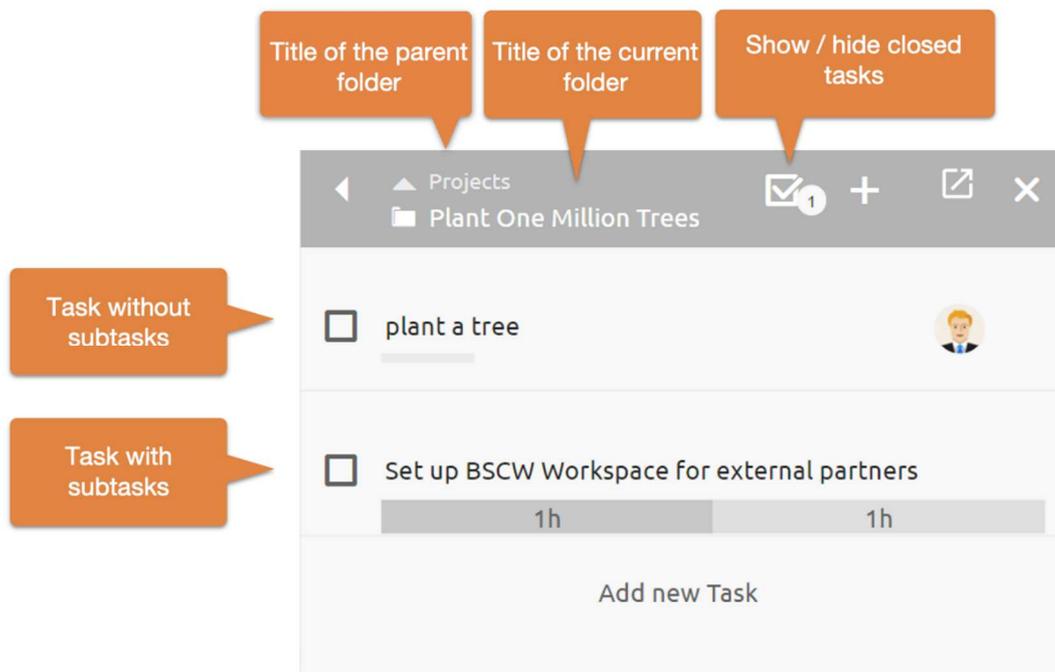


Figure 69: Tasks list

The task list consists of the list header and the contained tasks of this folder. If tasks in turn contain subtasks, this is indicated by a progress overview of the closed (left), in-progress (middle) and open tasks (right).

Each task may in turn contain all BSCW objects, e.g. documents, messages, appointments, a schedule or a banner. In the task element, any contents are displayed as follows. A click on one of the display icons or on a free area of the task element opens the contents of a task.

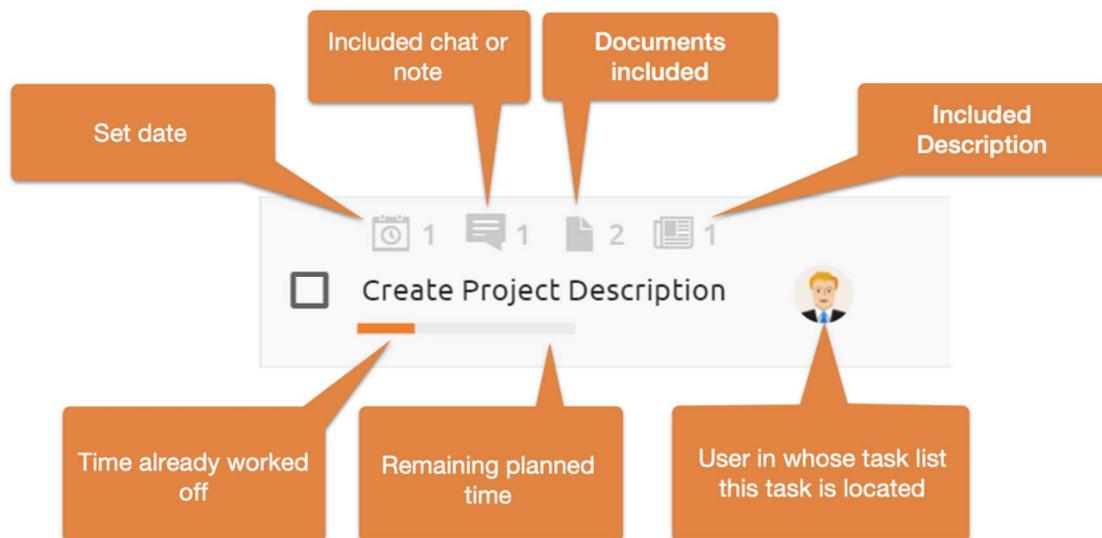


Figure 70: Tasks element

The *title* is displayed in the middle of a task element. This can be edited directly with a mouse click. The bar below the task title shows in gray the estimated duration and the time already completed. The completed times or the *estimated duration* can be adjusted by clicking on the progress bar or via the Estimated duration menu.

Note: While creating new tasks, the Estimated Duration can also be set via keyboard. To do this, close the input of the title with ctrl+Enter (cmd+Enter) to open the Estimated *Duration dialog*. In the further the focus is in the input field of the duration. The time unit can nevertheless be adjusted using the keyboard shortcuts "h" or "m"

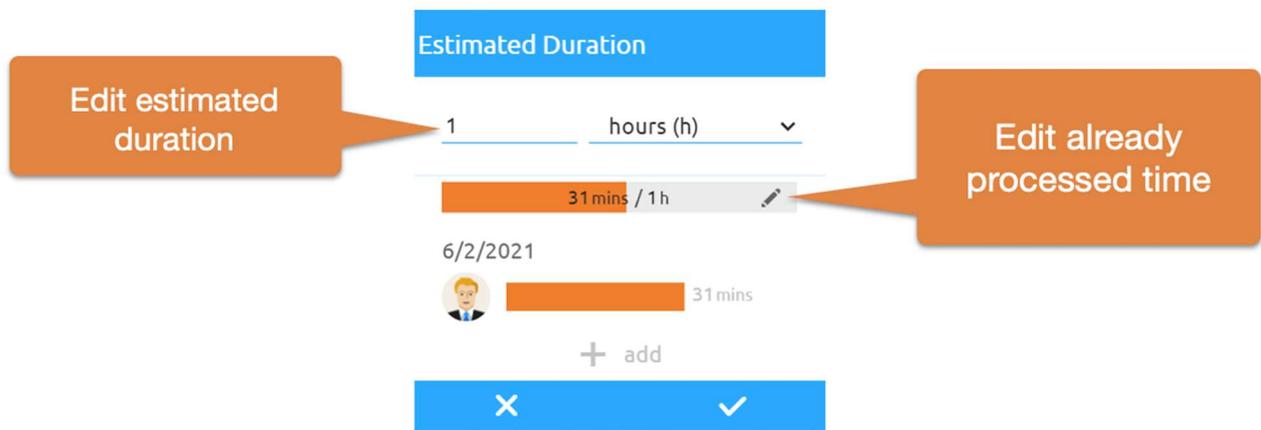


Figure 71: Edit estimated duration

If the mouse pointer is over a task element, further editing options become visible.

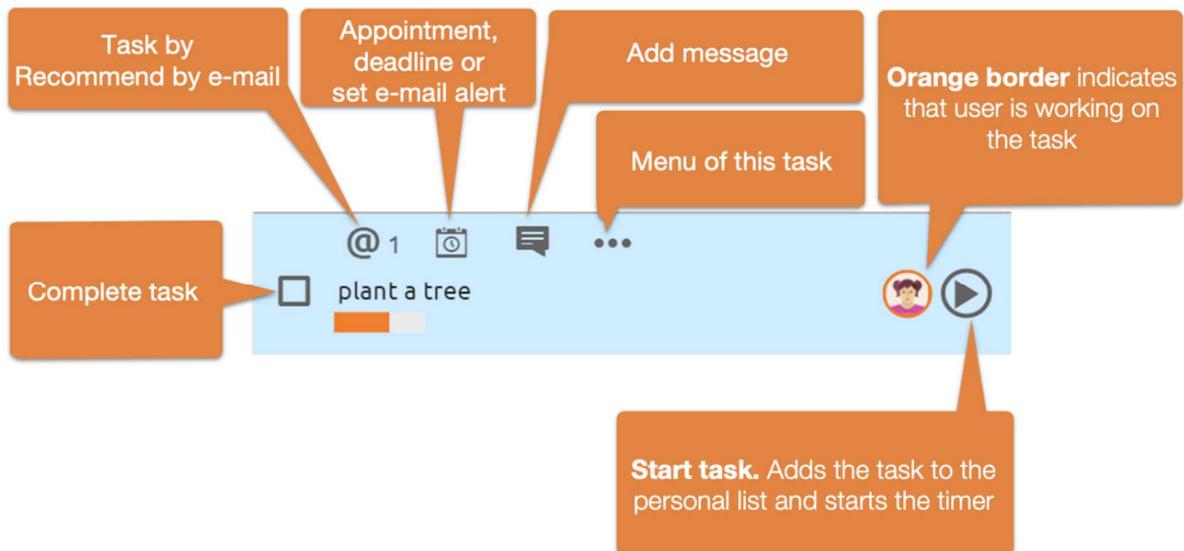


Figure 72: Task element with mouse over element

You can add an appointment to each task. Based on the time of the appointment and its estimated duration, it can also be displayed in their calendar.

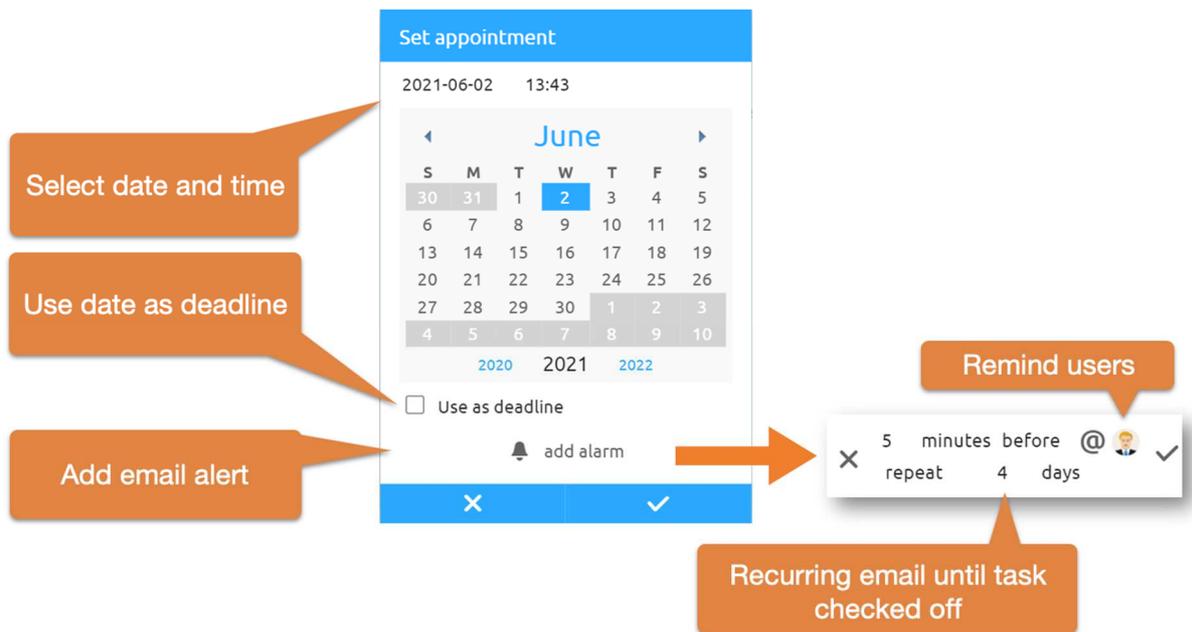


Figure 73: Set deadline or time limit

Add an alarm to an appointment to make sure that the task is completed. Here it is possible to set recurring email reminders at a certain interval after the deadline has passed until the task is checked off.

Sort tasks using DragNDrop. Each free area of a task element serves as a drag area. A blue line marks the insertion position.

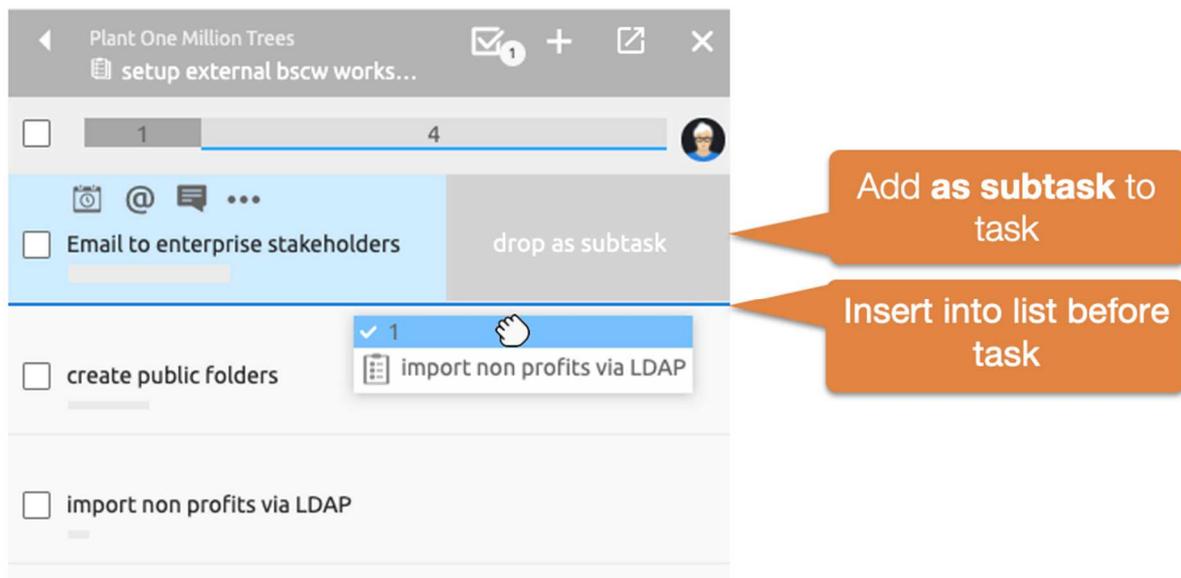


Figure 74: DragNDrop task list

Note: You can also drag tasks into other tasks and drop them *as subtasks*. To do this, drag the task onto the area *as a subtask* on the side margin of the target element.

Assign your own tasks by dragging and dropping them into your *personal task list*. Use the *Start Task* button to record the working time automatically.

Additional functions can be called up for each task via the Task menu. **More information menu** provides detailed information about access rights or an event history.

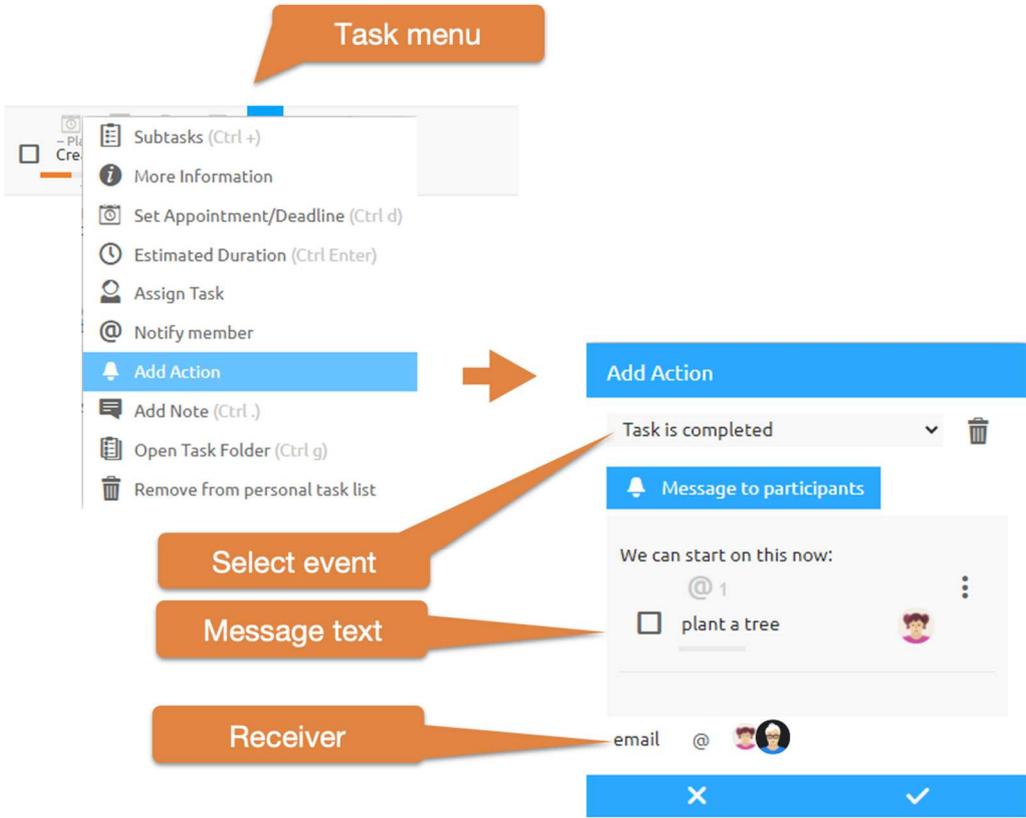


Figure 75: Email notification when task is completed

Menu Add action offers the possibility to send a message to specific users after certain task events like closing, opening, starting or stopping the task. These messages may also include other BSCW objects as shown in Figure 16: Email notification when task is completed

12.1.1 Personal task list

Use the personal to-do list to make your day more efficient. It is recommended to plan the upcoming tasks at the beginning of the working day. Use DragNDrop to sort the task list.

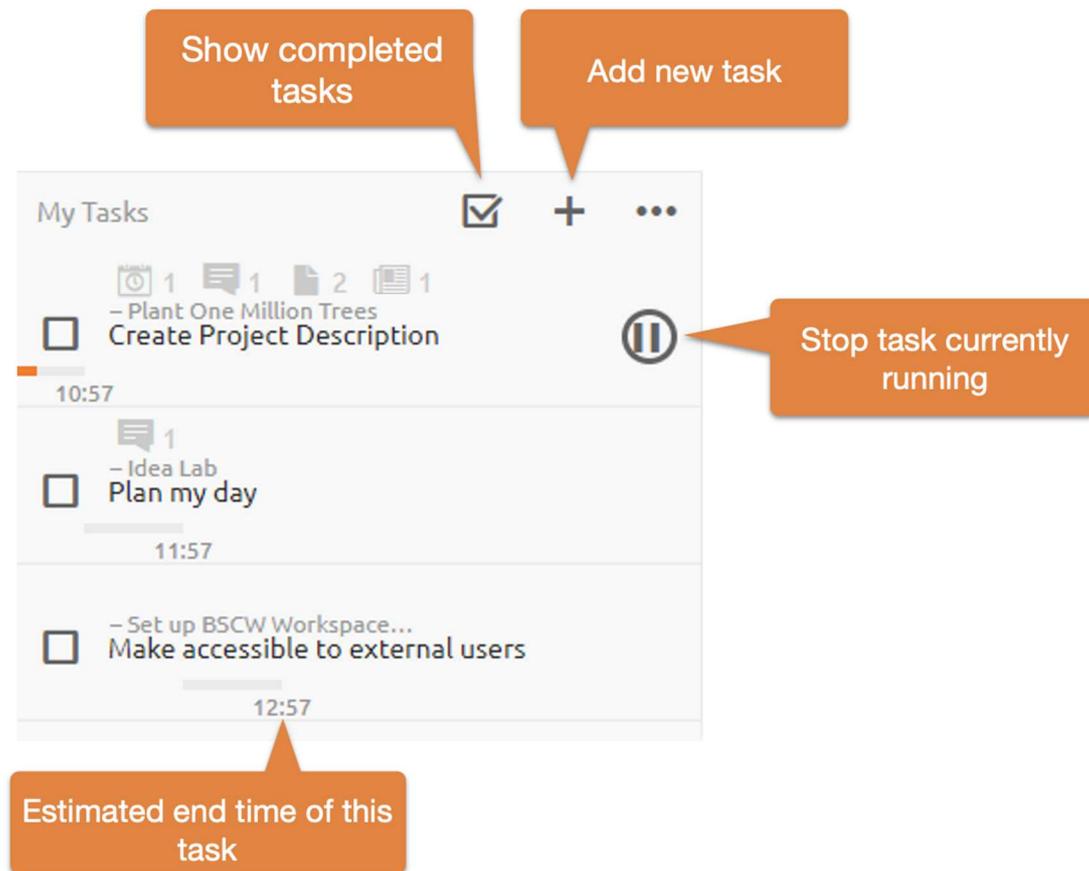


Figure 76: Tasks element menu

The Personal Task List also shows you the estimated end time of the tasks based on the scheduled times. If you start a task, it will be automatically moved to the top of the list.

12.2 Flow Folder

Flow folders are folders with special functionality: With a flow folder, you can emulate a business process in which documents follow a specific processing flow and are passed from one user to the next user for processing. Each flow folder is assigned a set of tasks that are to be completed by the designated users in the specified order. Flow folders can contain objects of all possible types, e.g. other folders, documents or discussion forums.

A flow folder follows its processing flow by being forwarded. The flow folder and thus the documents or other objects it contains are forwarded to the users in the task list in sequence. The processing flow of the flow folder can - depending on how it is defined - also branch to one of several stations after processing a task, thereby leaving the processing user the choice of which user the flow folder should be forwarded to next.

A flow folder is accessible to the currently responsible editor via his personal task list. After forwarding, the flow folder disappears from this list and the agent then only has access to the flow folder if he or she is also a member of the flow folder - flow folders are also workspaces that can have several members.

Independent of the current processing station, the members of the flow folder can inform themselves about its status, change the content as well as the tasks and also forward the flow folder for their part if the currently responsible processor does not react.

12.2.1 Create and change flow folders

To create a new flow folder, proceed as follows.

- Select  **Neu**  **Flow Folder** from the top menu. The action form 'New flow folder' has three tabs 'General', 'Tasks' and 'Automatic versioning'.
- In the 'General' tab, enter the name and optionally tags and description of the new flow folder.
- In the 'Tasks' tab, enter the tasks of your flow folder.
 - Click on [Add new task] to create a new task. In the task form, you specify the name and optionally tags and description of the task.
Under *Forward to you* determine the next station in the flow folder sequence. The default setting is that the flow folder is forwarded to the agents of the next task in the sequence. Alternatively, you can allow the flow folder to be forwarded to another station or to one of several other stations.
Finally, you select one or more users to be responsible for the task, just as you would invite members to a workspace.
 - Collapse the task by clicking the triangle ▼ in the upper left corner of the task form.
 - Proceed to add new tasks by clicking on [Add new task].
 - In the collapsed and compact view, tasks are numbered. If you have deviated from the standard sequence of task processing, task numbers after the task name indicate to which task or to which of several tasks the flow folder is forwarded.
 - Use the and   arrows to change the order of tasks, and  to remove already created tasks.
 - You can change the tasks yourself by unfolding them (click on ►) and changing all the details in the task form as you wish: Name, description, next station, responsible person.
- In the 'Automatic versioning' tab you can set a version control for the new flow folder and its subfolders with the consequence that all documents that are newly created are automatically placed under version control.
- Click [OK] to create the new flow folder.

After creating the new flow folder, you can now add documents or other objects that are important for the flow folder to the flow folder folder.

As a member of the flow folder, you can change the flow folder at any time. This concerns not only the contents of the flow folder, but also its tasks. You can define new tasks, remove tasks, change the order of tasks or redefine individual tasks, which also includes the responsible agent. Changing the flow folder is also possible for the responsible agent of the current task.

- Select  **Change Properties** in the context menu of the flow folder you want to change. The action form for changing flow folders works exactly like the flow folder creation form we described above.
- Remember to expand  tasks you want to change in the 'Tasks' tab.

You can also *copy* a flow folder including its tasks. The state of the processing of the tasks is *not* copied: the state of a copied flow folder is the one before the first start. However, this concerns only the tasks, the content of the flow folder is copied in its current state!

12.2.2 Start and forward flow folders

Start flow folders

After you have placed the relevant material in the flow folder, you can start processing the tasks of a flow folder by forwarding the flow folder to the users who are responsible for the first task, i.e. the top one in the list.

- Select  **Forward** the context menu of the flow folder. In the action form, you can notify two groups of people about the startup:
 - the manager of the flow folder and the other users responsible for the current task, and
 - the users who are responsible for the next task and to whom the flow folder will be forwarded.

When starting the flow folder, the first set of people consists of the flow folder manager (probably yourself) and the other members of the flow folder (in this context, "current task" means starting the flow folder. The second set of people consists of the users responsible for the first task of the flow folder.

You can add a personal comment to the automated message.

- Confirm with [OK].

This action enters the flow folder in the *document inbox* of the responsible agent(s) of the first task. You can find the  document inbox in your navigation tree.

Forward flow folders

After the flow folder has been started, it appears in the personal task list of those users who are responsible for the first task. These users can then execute the task, for example by editing the material in the flow folder or adding new documents, and then forward the flow folder to their next station. The users responsible for the next task continue to execute their task and in turn forward the folder. If there is no next task, forwarding ends the processing of the flow folder.

You as a user responsible for a task of a flow folder will find the flow folder in your personal task list. You may have been notified by email about the receipt of the flow folder. After you have completed the task, forward the flow folder to its next station as follows.

- Select  **Forward** the context menu of the flow folder.
- In the action form, you can notify (a) the flow folder manager and other users who may also be responsible for the *current* task and (b) the users who are responsible for the *next* task about the forwarding. You can add an additional processing note to the automatically generated notification.

- Under *Forward to*, the next task and the person or persons responsible are specified. If several tasks are possible as the next station of the flow folder, you can select yourself to which task the flow folder should be forwarded next. If there is no more next task, this is indicated by *End flow folder*.

By forwarding the flow folder, you declare the current task completed. The flow folder disappears from your personal task list and also from the personal task lists of other users who may also have been responsible for this task. Before forwarding, you should make sure that the task has indeed been completed, e.g. that a requested document has been created and uploaded to the flow folder or that a document of the flow folder has been revised according to the task.

What else you should know about editing flow folders:

- If you remove the flow folder from your personal task list, you will be deleted as the responsible agent of the current task. You will no longer have access to the flow folder.
- Not only the responsible agents of the current task can forward a flow folder, but also the members of the flow folder. In this way, they withdraw the current task from the responsible user(s) and forward the flow folder in its current state to the responsible processor(s) of the next task.
- When the last task is completed and there is no next task, the flow folder run is finished. A finished flow folder can be reused. After a possible revision of its content or tasks, it can be restarted by a member by forwarding it.

12.2.3 Flow folder status and history

The current task and the agent(s) responsible for it are displayed with the description of the flow folder. A lack of this information means that the flow folder has not been started yet or its run is already finished. The info page of a flow folder shows its tasks. Here you can also recognize the current task by the fact that the responsible person is noted in **bold**.

The history of a flow folder describes the entire history of a flow folder, i.e. who forwarded the flow folder when and, if applicable, with which processing note. The history of the flow folder does not show the current task.

- Open the Info page via the context menu of  

12.3 Document sharing

Document approval is used in the production of documents that are to meet a certain quality standard. After being created and edited, a document is checked by one or more responsible persons and finally released or rejected. In the case of rejection, the process can also be run through several times after reprocessing.

In BSCW, document release is defined for individual documents or entire folders by specifying the individual steps of the review and the persons entrusted with it. If document sharing is defined for a folder, it applies to all documents of that folder and all its subfolders.



Figure 77: Document release (schematic representation, 2 release steps)

After the process has been defined, the release for a document can be started by a member of the folder in which the document is located. The document is placed under version control and is blocked from further editing for the duration of the review. The people involved in reviewing the document are notified by email when the review is pending and can now review the document and either accept or reject it. The individual steps of the approval process are run through one after the other. If a document is accepted in the last step, it is thus released. Rejecting the document at any step ends the approval process and the document can be edited again and subjected to the approval process once more. The initiator of the approval process is also notified of approval or rejection by email.

12.3.1 Place documents under release

12.3.1.1 Define release process

You can put folders or individual documents under sharing only if you are the *manager* of the workspace where the folder or document is located.

You place an entire folder and thus the documents it contains under release if, for example, you want to define a standard release procedure that is to apply to all documents in a specific folder. You do this as follows.

- Select **Change Properties** in the context menu of the folder and go to the "Document sharing" tab of the action form (if this section is missing, you are not a manager). You can also set the sharing process when creating a folder.
- You now have the option to define your own release process (option 'Define release process'). If a sharing process has already been defined for the parent folder, you can adopt this process (option 'Adopt settings').
- To define your own sharing process, select the appropriate option. First determine whether the release process should be started automatically when a document is uploaded or inserted into the folder. This is indicated, for example, if the folder is not to contain drafts, but only final versions of documents for release.
- Then click on [Add share step].
 - Optionally, provide a description of the release step.
 - Specify whether, in the case of multiple reviewers, review by one reviewer is sufficient or whether all reviewers in this step must accept a document for it to be considered accepted (in the case of rejection, one reviewer is *always sufficient* to reject a document).
 - Finally, determine the reviewers, i.e. the users who are responsible for reviewing a document in this step.

Note: Reviewers do not have to be members of the workspace where the documents to be reviewed are located. They are given separate access to such documents for the review.

The same user *cannot* participate in the review of a document more than once.

- Repeat adding release steps as many times as desired.
- Use the and   arrows to change the order of the steps, and  to remove steps already created.
- You can change the individual steps by expanding them (click on ) and changing all the details as you wish: Description, single tester sufficient or not and responsible testers.
- Click [OK] to set the sharing process for the folder.

After you have set the sharing process for the folder, you can start this sharing process for all documents that are already in the folder. Sharing starts *automatically* for uploaded or inserted documents if you have set it that way. The document sharing process is described below.

You can also place individual documents under release, e.g. to specify a release process that differs from the standard procedure for a folder. The procedure is the same as for folders.

- Select  **Change Properties** in the document context menu and go to the Document Sharing tab of the action form (if this section is missing, you are not a manager).
- Define the release process by first clicking the 'Set release process' radio button.
- Continue by clicking [Add Share Step] to define your sharing process as described above for folders.

12.3.1.2 Change release process

As a manager, you can also change the approval process for documents and folders at any time, but not for documents that are currently under review.

- Select  **Change Properties** in the context menu of the folder or document whose sharing process you want to change and go to the Document Sharing tab of the action form (if this section is missing, you are not a manager).
- You now have several options:
 - The 'No sharing process' option allows you to specify that the sharing process set for the parent folder will not be applied.
 - The 'Apply settings' option allows you to apply the release process of the parent folder and thus also override a release process that applies to the document or folder.
 - The 'Define release process' option allows you to define a new process or modify the existing release process, if any, by changing, adding, deleting or moving release steps.
- Click [OK] to set the modified sharing process for the folder or document.

If you have changed the release process for a folder, it now applies to all the documents and folders it contains, unless you have specified a release process for these documents and folders individually. Even if a document is already in review, the release process remains as it was set when the release was started - even in the case of a new review after rejection.

12.3.2 Share documents

You can recognize documents for which a release process is defined by the fact that the entry  **Release** appears in the context menu. On the info page of the document or its parent folder you can see the steps of the release process and the responsible reviewers. If you have activated the columns 'Status' or 'Progress' in the detailed view of the folder, 'In process' appears in these columns and  for documents for which a release process is defined.

Any member of the folder containing such a document can start the approval process. As a rule, this will happen when the editing of the document is finished.

- Select  **Start Sharing** in the context menu of the document.
- You can add a note to this action, which will be attached to the document and visible to reviewers in the approval process.
- Click [OK] to start the share.

Now the document is placed under version control, if this has not already been done, and locked for further editing. The document appears in the task lists of the reviewers responsible for the first release step. These reviewers are also notified by email that a review of the document in question is pending.

In the folder view, the start of the approval process for the document is visible by the indication 'under review' in the 'Status' column and the icon in the 'Progress' column . Do not forget to turn on the 'Status' or 'Progress' columns in the folder view.

After starting the approval process, you wait to see how the review turns out. The info page of the document shows the current status and which review step is being performed. You will be notified by email about the outcome of the review. The status and progress column of the document in the folder overview shows either 'released' and  or 'rejected' and . When the document is released or rejected, the version status is also set to 'released' or 'rejected'.

During the review, the document is locked for editing. However, as the initiator of the release process or manager of the folder, you can cancel the release at any time by

- You can select  **Cancel release** in the context menu of the document. You can also add a note to this action for the other collaborators. In the status and progress column of the document in the folder overview, 'canceled' appears and .

After aborting or finishing the approval process, the document can be edited again. Afterwards, the approval process can be started again,

- by selecting  **Restart Share** the context menu of the document.

A new document release is also possible for released documents if, for example, the quality requirements for the document release have changed.

If you participate in the approval process as a reviewer, you will receive corresponding notifications by e-mail. The documents to be reviewed appear in your navigation tree in the document inbox .

- Select  **Accept Document** from the document's context menu when you are satisfied with the document. Alternatively, you can click the icon  in the document's progress column as a shortcut. Add an optional note to your action. Depending on how the approval process is defined, other reviewers may still need to accept before the document can proceed to the next approval step. After successfully passing the last approval step, the document is considered approved.

- Select **Reject document** in the context menu of the document if you have any objections, which you should also express in a note for the editors. The document now has the status 'rejected' and can be edited and subjected to the approval process again.
- Select **Delegate review** in the context menu of the document if you do not want to perform the review for this document yourself, and select one or more representatives in the action form. Again, you can add a comment to your action, which will be sent to the representatives with the email notification. The delegation remains in effect for the review of this document, even if the approval process is cancelled and restarted.

After you, as the reviewer, accept or reject the document or delegate the review, the document disappears from your task list.

13 Import/Export

13.1 Archive and transfer objects

You create an *archive* to transfer many or very large files as quickly and inexpensively as possible. This involves transforming copies of a set of objects (folders, documents, discussion forums, etc.) into a compact document that saves storage space and transfer time. You can also encode the resulting archive document - usually with the aim of reducing the file size of the archive document even further.

You may archive objects in BSCW to upload the archive to the local machine and extract the original files there or to send the archive, as well as pack files and folders on your local machine into an archive (Zip or Tar) to upload it to a BSCW workspace and extract these files and folders there. You may also archive entire BSCW workspaces to extract them again later on the same or another BSCW server.

You may optionally archive BSCW metadata as well. The optional archiving of metadata in the form of an XML file provides additional information about the archived objects and may be evaluated automatically by other programs. When extracting an archive created with metadata on a BSCW server version 5.0 or higher, the archived objects are restored with their stored metadata.

When archiving, you should keep in mind that not all BSCW objects can be archived and that not all BSCW metadata such as event history, attachments or ratings are archived either, i.e. that a completely lossless archiving is not possible. Details about archivable object types and metadata can be found later in this section.

To archive a set of objects, proceed as follows:

- Select the check boxes of the objects from which you want to create an archive.
- Open the **Send to Archive** context menu on a selected item to call the '*Archive*' form. It contains a list of archive types that your BSCW server may create and encoding methods that may be applied to the archive file. The available archive types and encoding methods depend on the *configuration of your BSCW server*.
- Enter a name for the archive.
- Determine whether and where to save the archive by selecting an option under 'Save': download only, save to clipboard or save to current folder.
- At 'Options' you can select additional functions for the creation of the archive:
 - Activate the option 'Create index file' if BSCW should create an index file of the archived entries. The `index.html` file is a table of contents of the archive with BSCW meta information like descriptions.
 - Activate the option 'Create BSCW archive' if you want BSCW to create an additional file (`.bscw`) with further information about the archived objects (so-called

metadata) in the archive. This allows for a more lossless extraction of the archive on another or even the same BSCW server. Which metadata can be archived at all is explained below.

- Activate the 'Include document versions in archive' option if the versions of versioned documents are to be archived as well. If this option is not active, only the last version of versioned documents will be included in the archive.
- Activate the option 'Automatically select character set for filenames' if you want BSCW to automatically select the appropriate character set for encoding the filenames. If you deactivate this option, the Unicode character set UTF-8 will be used, which may cause problems when unpacking the archive on some operating systems.
- Choose the archive type that matches your local computer platform and select the encoding/compression to apply, if necessary.
- Start the archiving with [OK].

In the case of smaller archives, the message 'Archiving successfully performed' appears with a reference to the archive and an indication of the objects that cannot be archived. Which object types cannot be archived is described below. If the saving option 'Do not save, download only' has been selected, the created archive is immediately offered for download.

For larger archives, the archiving process is executed in the background. In this case, the message 'Archiving in progress' appears and you will receive an email message to your primary email address when the archiving process is complete. This contains a reference to the location of the archive and a list of all objects that could not be archived.

If the 'Do not save, download only' saving option has been selected for larger archives, the archive will be attached to the notification email or - for very large archives - saved to the clipboard; in the latter case, the notification will contain a reference to the archive.

Note: To open archives downloaded to a local computer, the necessary extraction programs must be installed and the web browser must be configured to launch these programs when it encounters the file type of an archive. If encoding is applied, the appropriate decoding programs must be installed and the web browser must be configured to launch these programs when it encounters the file type of an encoded archive.

To transfer local files to a BSCW workspace using an archive, proceed as follows:

- Create an archive on your local computer of those files you want to transfer to your BSCW server (zip or tar archive depending on your platform; also an email message with documents as attachments may be considered as RFC822 archive).
- Load the archive document into one of your workspaces.
- Extract the original files to your clipboard by calling  **Extract** in the context menu of the archive document.

For smaller archives, the message 'Archive extracted' appears with the list of extracted objects.

For larger archives, the extraction is performed in the background and the message 'Extraction in progress' appears. You will then be informed by another message from your browser when the extraction is complete.

- The extracted objects in the clipboard can be pasted to a suitable place in your workspaces after extraction.

Archivable and non-archivable object types

The following object types can be archived:

- Folder
- Documents
- Contact lists and contacts
- Calendar and dates
- Blogs and discussion forums with notes
- Website folder
- URL objects and RSS folders

If the metadata is archived at the same time, such objects can essentially be recovered during extraction. For other object types, e.g. tasks or flow folders, many details are missing during a subsequent extraction.

The following object types are not archived:

- Surveys, polls and appointment polls
- Workspace home pages and their widgets

Archival and non-archival metadata

The following metadata may optionally be archived (option 'BSCW archive'):

- Name, description and further details of the archived objects
- Information about the producer and the date of creation
- BSCW specific information like object type and object number

The following metadata is never captured during archiving and is no longer available in BSCW after an archive has been extracted:

- Events/History (apart from the creation and extraction itself),
- Members and access rights, i.e. workspaces are archived as simple folders,
- Attachments and ratings,
- Settings for automatic versioning for folders and documents,
- Locking and versions of documents,
- Attendees, reminders, tags and custom attributes of appointments,
- Start and end times of projects, phases and tasks,
- Responsible, condition and task details for tasks and flow folders.

13.2 Convert documents

Conversion helps you share documents in a workspace when not all members can use the same programs to edit documents. A conversion converts the given file format of a document into another file format that you or your partners can read and edit better than the source format. The original document remains unchanged.

Note: Just like conversion programs on your local computer, the conversion routines in BSCW cannot translate all features of specific file formats to other formats *without losses*. As far as possible, you will be informed about expected changes or losses during conversion.

You can additionally *encode* a converted document - usually with the aim of reducing the size of the document to save storage space and transmission time. When you encode documents, you need appropriate decoding programs on your local computer to make encoded documents readable again. Make sure that all members of your workspace have appropriate programs installed on their local machines and have configured their web browsers to launch these programs when the browser encounters the file type of an encoded document.

To convert a document, proceed as follows:

- Select **Send to New Format** from the context menu of the corresponding document.
- The '*Convert*' form contains a list of formats to which BSCW may convert your document. Arrows in this list indicate the path of conversion: e.g., if an arrow points from format A to format B, your document will first be converted to format A when converted to format B, and then to format B. This list indicates the more important types of possible information loss during conversion to the respective format.
- Enter the name of the converted document, select the target format and/or the type of encoding/compression to be applied, and confirm your selection with [OK].
- BSCW places the converted document on your clipboard from where you can paste it at the appropriate place and displays a form that lets you download the document immediately and that also summarizes the loss of information during the conversion.

Note: The conversion routines are *not* part of the BSCW server software. They have to be installed separately by the BSCW administrator. Thus the selection of the conversion routines available on your BSCW server is determined by the administrator.

13.3 Export to PDF

You can export print views of many container objects, i.e. objects that can contain other objects, in PDF format. Examples are folders and similar object types such as wiki, projects or flow folders, where a list of entries is generated. For discussion forums and blogs, the PDF view also includes the contents of the notes and blog entries. For contact lists, you can specify which contact information should be included in the print view.

- Select **Send to File (PDF)** in the context menu of the object whose print view you want to export as a PDF document. If this menu item is missing, then you cannot create a print view in PDF for this object type.
- For some object types you can make further specifications in the context menu '*PDF export*'. For example, for folders you can select whether you also want to include the

descriptions of the entries in the print view, and for contact lists you can select which information you want to include in the print view in addition to the name. For calendars you can choose a print view (month, week, list) and define the period for which you want to have calendar data printed. Click on [OK] to generate the PDF document. You will then be asked whether you want to save the document on your computer or open it with a suitable program.

- For object types where no further information is required, such as discussion forums or blogs, the PDF view will open in a form from where you can print it or save it to your computer.

13.4 Export folders and documents with FTP

The action 'FTP export' allows the transfer of entire folder structures to an FTP server, such as the entire folders and files of a website stored in BSCW. To do this, proceed as follows:

- Select  **Send to FTP server** in the context menu of the folder whose entire contents including subfolders you want to transfer. Empty subfolders are not transferred.
- The '*FTP Export*' form requires the following information:
 - FTP host,
 - FTP path on the FTP server,
 - FTP user identification,
 - FTP password,
 - Character set for file names on the FTP host (BSCW uses the Unicode character set UTF-8 for object names).

All FTP parameters, except the password, are saved and thus preserved for future transfers.

You can also export a single document by selecting  **Send to FTP Server** from the document's context menu. Calling this action from the context menu of a folder entry has the same effect as described above.

Note: If you repeat the 'FTP Export' action for the same FTP server, only those documents that have been modified since the last transfer will be transferred by default. However, you can also cause all documents to be transferred without exception by checking the appropriate option.

13.5 Upload by Email

As an alternative to uploading documents via drag-and-drop or the **New Document** action, you can send text messages or even documents as attachments to a folder via email.

Please note that for security reasons uploading by email has to be explicitly activated by your BSCW administrator for your BSCW server. This option is *not activated* in the default installation.

Folders can thus be enabled for e-mail reception. Emails can be sent to folders or uploaded via DragNDrop. The e-mail address can be found on the *information page* of the folder.

It is advisable to display e-mails in the chat. This allows them to be combined seamlessly with documents and telephone notes in chronological order.

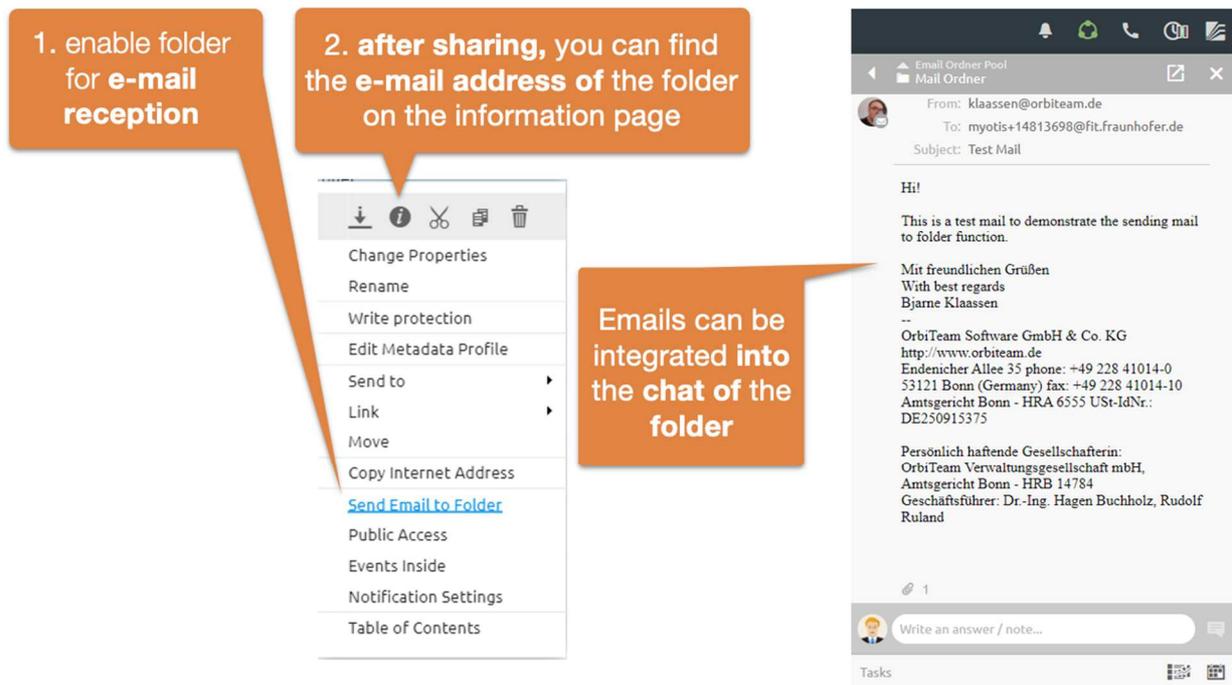


Figure 78: Enable folder for e-mail upload

In order to upload text messages and documents to a folder via email, you must first enable it for this purpose:

- Select **Email Sharing** in the context menu of the folder you want to enable for upload by email. By default, this action is available only to the managers of a folder.
- In the '*Upload by email*' form you can define who is allowed to upload messages and documents by email to your folder:
 - only members of this folder;
 - only registered members of BSCW - even if they are not members of this folder;
 - anyone, i.e. the folder is released for general public access.

You can also specify in the action form whether the attachments of e-mail messages to the folder should be extracted *automatically*. In this case, the attachments will be saved separately in a subfolder and you will save the manual unpacking of the attachments with the **Extract** action (see below).

Furthermore, you can have a message with the address of the shared folder sent to all members of the folder. This email address is usually `bscw+folderId@your-BSCW-server` or `bscw-folderId@your-BSCW-server` depending on the email server that is used. It is recommended to wait for this message before starting the upload.

Folders that are enabled for email upload are indicated by the icon .

Now to upload a message and documents to the shared folder, do the following:

- Compose an email message, add documents as attachments and send this message to the address of the folder. Of course, this action is now available to all the people you have shared the folder with.

- If the email message was successfully sent to the folder, there will be a new object of the email message type with the subject of the message as its name or a folder with the same name containing the message and attachments if you have enabled the automatic unpacking option. If no subject has been entered, the object will have the name 'Message from *username*'.
- In the former case, the new object is a document according to Internet standard RFC 822, which contains the text of the email message and its attachments (MIME type `message/rfc822`).
 - Click on the object name to read the message itself and any attachments with an email program, or
 - Select **Extract** in the context menu of the email message to access the message and its attachments. This works in the same way as with archives. The message itself and its attachments are stored in a folder with the name of the message subject. You have several options to choose where to put the folder: Your clipboard (to distribute it from there to appropriate places in your workspaces) or the current folder.
- In the latter case, the folder with the name of the message subject contains the message itself and all attachments. The message itself has as name again the subject of the message, the attachments the original file names. In addition, the message and attachments are numbered as part of the name.

BSCW identifies users by their sender address when uploading via email. Only if this address can be assigned to a user and the upload by email has been released for this user and the addressed folder, messages and documents may be uploaded to BSCW this way. Otherwise the upload will be rejected with a corresponding error message. You should add additional email addresses to your personal profile if you want to upload email messages from different email addresses (see 3.1.4 "Register additional email address" on p. 42).

You can also block the upload via email for a folder at any time:

- Select **Email sharing** in the context menu of a folder you have shared, activate the 'locked' option in the '*Upload by email*' form and confirm with [OK].

Caution: Be *very careful* when sharing your folders for upload via email: Just sharing them with all users of your BSCW server may give this right to thousands of people you usually do not know. You should consider even more carefully whether a general anonymous sharing is necessary and useful.

13.6 Outlook or Lightning and Mac email matching

13.7 WebDAV

WebDAV stands for "Web-based Distributed Authoring and Versioning". It is an extension of the HTTP protocol that allows users to collaboratively edit and manage files located on a web server. It is possible with WebDAV, for example, to upload files to the server or to rename files on the server.

BSCW supports the WebDAV protocol as server, so that from a WebDAV client, i.e. a client application that also supports the WebDAV protocol, it is possible to browse your workspaces, open documents, edit them, write them back to the server, move them, etc.

Probably the most interesting applications that support WebDAV are Microsoft's Internet Explorer, Windows Explorer and the Office package, which we will limit ourselves to in the following description (see www.webdav.org for other applications that also support WebDAV). If you access your BSCW server from these applications via WebDAV, you have the following *advantages*:

- Your BSCW workspaces appear as web folders of Internet Explorer or Windows Explorer. You may navigate in the workspaces as usual with Windows Explorer.
- You can perform the actions you are familiar with on the displayed objects using the right mouse button or also using drag-and-drop (e.g. copy, paste, delete).
- You may open Microsoft Office documents directly from a Web folder with the corresponding Office application starting automatically. After editing the document, you may use 'Save' or 'Save as...' to write the edited document directly back to your BSCW server. *No intermediate saving and uploading* is required anymore.

To connect to a BSCW server using WebDAV on Windows 7, you first have to make sure that the "WebClient" service is enabled, which is disabled by default. You check the status and enable this service as follows:

- Select "Control Panel" from the Start menu and click "Administrative Tools"; double-click "Computer Management" in the following window.
- Double-click Services and Applications in the details pane.
- Double-click on "Services".
- Scroll down, right-click WebClient, and then click Properties.
- Click Automatic in the Startup Type list box.
- Click on [Apply].
- In the Service Status section, click Start.
- Click on [OK].

To connect to a BSCW server, proceed as follows:

- Open the "Computer" folder (either by double-clicking the corresponding icon on your desktop, from Windows Explorer or from the Start menu).
- Open the context menu by right-clicking on an empty space of the window and select "Add network address".
- The "Add a network address" wizard opens. Confirm with [Next].
- Confirm the selection "Select a custom network address" by clicking [Next].
- In the field "Internet or network address" enter the URL of your BSCW server (e.g. *https://Ihr-BSCW-Server/sec/bscw.cgi*) and confirm with [Next].
- Enter your BSCW username and password in the login window.
- Enter a name for the new network address (e.g. "BSCW server") and confirm with [Next].

- Activate the option "Open this network address after clicking 'Finish'" and click [Finish].

If the new network address has been successfully created in the folder 'computer', you have access to your BSCW server via it. Your personal workspace ('workspaces from *username*') is accessible via the folder alias 'home'. You may now access documents in BSCW via Windows Explorer and upload or download documents by copy and paste or drag-and-drop. Violations of document name restrictions in BSCW are automatically corrected.

If the method described above does not work (e.g. because the dialog for entering username and password keeps appearing), please refer to the BSCW website (<http://www.bscw.de/>) under "Frequently Asked Questions" for troubleshooting advice regarding the WebDAV connection.

Since Microsoft has *partially* implemented the *WebDAV protocol in a way that is not RFC-compliant*, the following previously known problems of the WebDAV extension arise:

- The dialog boxes and error messages are sometimes misleading.
- Spaces and special characters in BSCW object names are displayed incorrectly in the Web folder view of Internet Explorer and Windows Explorer.
- The parent directory is displayed in the current directory.
- Drag-and-drop within the same directory copies the file.

Attention: To terminate the WebDAV connection to BSCW, it is not sufficient to close the browser or remove your WebDAV folders - *the network connection is still active with your username*. If someone else now wants to set up WebDAV on your local system for his username, *your personal workspaces will open* even though you entered correct credentials. To avoid this, log off under your Windows username ("start > shutdown... > *log off your username*") and log on again. This measure is necessary if other people have access to your local computer.

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