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1 Summary

1.1 Benefits of using BSCW

BSCW supports asynchronous and synchronous cooperation with your partners over the Internet, in your Intranet or in a network with your business partners (Extranet).

For **asynchronous** (not simultaneous) cooperation, BSCW offers **shared workspaces** that groups can use to store documents, manage them, jointly edit and share them.

The essential **advantages**:

- With a BSCW workspace, workgroups can share documents -- independent of the specific computer systems that the members use.
- You need not install any software before using BSCW. You only need a standard Web browser.
- You access BSCW workspaces, browse folders and download documents to your local system just like "normal" Web pages.
- BSCW keeps you informed of all relevant events in a shared workspace.
- You can upload documents to a shared workspace using any standard Web browser.
Uploading documents is even more efficient if you enhance your browser with a small 'BSCW Helper' program. You can download the BSCW Helper free of charge from <http://bscw.gmd.de/Download.html>.

For **synchronous** (simultaneous) cooperation, BSCW provides tools for

- planning and organizing meetings,
- starting 'virtual' meetings on the basis of conferencing programs or by telephone,
- ad hoc communication with partners who are currently logged in to a shared workspace and therefore are likely to be working on a common task.

1.2 Prerequisites for using BSCW

GMD -- Forschungszentrum Informationstechnik GmbH provides BSCW as a **service** that may be used free of charge: <<http://bscw.gmd.de>>

Requirements for using BSCW are minimal:

- You must have a **personal email address** to register as a user of a BSCW server.
- To access shared workspaces and to download documents to your local computer you need a **WWW browser** that supports *forms* and *basic authentication*. Most browsers (e.g. Netscape Navigator and MS Internet Explorer ...) do that. We recommend using Netscape's Navigator 3.0 (or better). MS Internet Explorer 4.0 (or better) also provides all the functionality for using BSCW.
- The easiest way to upload documents to a BSCW workspace is to use the built-in file upload function of Navigator or Internet Explorer 4.0 (or better). For other browsers you may need to install a small BSCW Helper program (see. section 4.14), which you can download free of charge from the public BSCW server at GMD (<http://bscw.gmd.de/Download.html>). BSCW Helper programs are currently available for several UNIX variants (including Solaris 2.3, SunOS 4.1.3, HP-UX, AIX), for Macintosh (MacOS 7.0 or higher) and Windows (3.1x, NT and 95).

1.3 Additional information about BSCW

A number of WWW pages offer additional information about BSCW:

- The BSCW Home Page (<http://bscw.gmd.de/>)
- The BSCW Table of Contents page (<http://bscw.gmd.de/Overview.html>) and the BSCW Site Map with links to detailed information (<http://bscw.gmd.de/sitemap.html>)
- **FAQ**, a list of frequently asked questions and our answers (<http://bscw.gmd.de/faq.html>)
- News about BSCW (<http://bscw.gmd.de/WhatsNew.html>)
- A list of publications on BSCW (<http://bscw.gmd.de/Papers/>)

In addition, there is a workspace with anonymous access where you can **test** all BSCW functions (<http://bscw.gmd.de/pub/english.cgi>). Please, read section 1.4 before you go there !

Note:

Your documents are **not** stored permanently in this 'try out-workspace' -- and "the whole world" may read them while they are there.

1.4 BSCW at a glance


This section can touch upon only a small subset of BSCW functions. It is intended to give you a first impression of what a BSCW workspace looks like and to help you use our try out-workspace (<http://bscw.gmd.de/pub/english.cgi>).

Please bear in mind that the example of the folder overview, the information objects we describe and also the actions we discuss may not be available to you in some of your workspaces. This may be due to

- variations in access right,
- the level of proficiency with BSCW Version 3.2 that you have chosen for yourself (at the *Beginner* level -- the default when you start using BSCW 3.2 -- you will see fewer objects and actions than shown here),
- the configuration of the BSCW server you use.

1.4.1 The folder overview

The central concept of BSCW is the **Shared Workspace** -- in Macintosh or Windows terminology: a **folder**

- for a specific group of registered users -- represented by the  icon, who can
- access the information objects contained in this folder and add new objects.

BSCW presents the contents of a folder or workspace as the central part of a page -- between a header and a footer with much of the text and icons acting as command buttons.

Figure 1.4-1 shows a view of a folder with examples of the kinds of objects which BSCW can store. Notice that different icons are used to represent the different types of objects.




You are: **Marock** (Expert) [Edit Prefs] [Edit Details] [Change Pwd]

Figure 1.4-1: View of the Folder 'BSCW Demo'

1.4.2 Shareable objects in a workspace

Several different classes of objects can be shared in a BSCW workspace. Figure 1.4-1 shows an instance of each class. For the purpose of demonstration, each object has been given the name of its class. Obviously, users would choose names describing the contents or purpose of each individual object. Since BSCW is designed to make sharing of information easier, it is very important to choose descriptive names which will be understood by the other people sharing the workspace.

Each object name is preceded by three icons:

- a checkbox to select the object for specific actions (for details, see section 1.4.5).
- the  icon to call up the information page of the object. In addition to a variety of other information, it shows the access rights for the object (see section 4.6).
- an icon that represents the class of the object. This icon also distinguishes the MIME type of a document (see section 2.5.) the search area or search engine of a search, the type of an article. (For details about the classes of information objects, see section 3.2)

The object names are followed by

- the user name of the owner of the object
- the time or date of the latest relevant modification and,
- possibly, a number of icons which indicate recent actions on the object.

Note that different actions are possible for different types of objects. The actions permitted on an object are indicated in the [Action] line below the object name.

1.4.3 Personal objects

The footer of every folder overview presents the icons of four objects which, though resembling folders from a technical point of view,

- **cannot** be made accessible to other users, but are
- available to you in each of your folders or workspaces:



The BSCW **calendar** manages your BSCW meetings (see section 5.2).



The **address book** is used to invite members to your workspaces (see section 4.5) and to assign specific access rights (see section 4.7).




The **bag** represents your clipboard; for information about its functionality beyond [COPY], [CUT] and [DROP], see section 3.5.



Your **wastebasket** is indicated by this icon. It helps to prevent unauthorized or unintentional deletion of objects (details in section 3.5).

1.4.4 Actions on the current folder or workspace


Objects are added by performing actions on the current folder:

- **existing** objects that were brought into your bag from anywhere in your folders or workspaces by *the most recent* cut or copy action can be added via  ;
- **new objects** are added by click one of the other buttons, according to their class:

- Click




to create an object of the specified type directly on the BSCW server.


- Click  to upload a file from your local computer system to the current BSCW folder or workspace.

The most popular browsers (Netscape Navigator, MS Internet Explorer 4.0 or better) provide the required functionality for file upload. If you use any other browser, you may have to install a BSCW Helper program for uploading files (more in section 4.14).

1.4.5 Actions on multiple objects in the current folder

Directly above and below the list of objects in a folder or workspace there are two identical button bars. The bigger buttons on the right trigger actions on all the selected objects. Objects are selected by marking their checkboxes.

 moves the selected objects to your bag;

 moves copies of the selected objects to your bag;

 moves the selected objects to your wastebasket.

1.4.6 Actions on one particular object

Below each object name in the folder view, BSCW may display a number of [Action] buttons for operations to be applied only to that particular object, for example

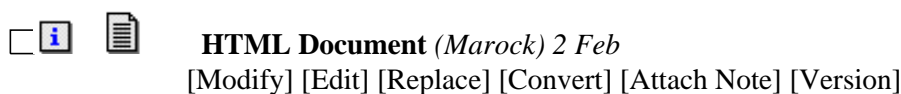


Figure 1.4-2: [Action] line of a document

The [Action] line depends on the class of the object -- for example, different actions are appropriate for 'URL' objects, meeting objects and documents.

1.5 Operating your own BSCW server

You may operate your own BSCW server as an extension of a suitable Web server running on a Unix or Windows NT platform.

The BSCW server software is distributed by OrbiTeam GmbH, Sankt Augustin, Germany, under license from GMD -- Forschungszentrum Informationstechnik GmbH.

You may download the BSCW server software *free of charge for a 90-day evaluation period* from <<http://bscw.gmd.de>>.

You have to pay a license fee for any commercial use beyond the evaluation period. Please apply for a free license if you plan to operate a BSCW server in a not-for-profit Educational or R&D institution: <info@orbiteam.de>

2 Getting started

The sections of this chapter describe in detail what to do before starting to use BSCW. Some of these actions are essential and others will make it easier for you to use BSCW -- you should read through them all before using the system and should consult them again if any problems arise as you begin to use BSCW.

The section '2.3 Choosing the interface language' concentrates on a restricted number of options to be defined by every user on registration.

More sophisticated options are discussed in section 4.2. These options are not essential to beginning to use BSCW since, initially, most BSCW users will be satisfied with the default options.

2.1 Registering as a BSCW user

Before starting to use BSCW, you have to register **once** as a user of the BSCW server. After a simple authentication procedure (more in section 4.1), the BSCW server "knows" a **registered user** as a combination of

- your **user name** with
- a current **password** and with at least
- one **valid** personal **email address**.

This combination is *mobile*:

Using your user name and password, you can access your folders and shared workspaces from any computer with Internet access and a suitable Web browser.

2.1.1 Starting the registration process

A BSCW server may -- or may not -- allow *self-registration* by prospective users. If a server has not been configured for self-registration, then only the BSCW administrator can register new users.

The following description of the registration process assumes that your BSCW server does allow self-registration.

The key to your registration is your personal email address. A BSCW server will typically get it

- from you by means of the registration form -- or
- from somebody who is already a registered user and who invites you to cooperate with him/her in a shared workspace (more in section 4.1 and section 4.4).

When the registration procedure is initiated by specifying your email address, BSCW sends an email to that specified address. This email contains a special URL which you should open in your Web browser.

Opening this URL (which can be used only once!) brings up a form to fill in your user name and your initial password.

Note:

Before you choose a user name and password, you should read the recommendations for choosing your user name and defining your password in section 2.1.2 and section 2.1.3.

When you submit the form, BSCW combines the information in the form with the email address, registers a user with your user name and is ready for your first log-in using this user name and the password you have specified.

2.1.2 Choosing your user name

Your user name serves as your public **identity badge** for the BSCW server. Thus, the creativity and imagination often applied in choosing a 'user id' on a local Unix system is *not appropriate* here. We recommend that you use your **last name** as your user name.

This will enable the other users of the BSCW server to find you easily and to identify you successfully -- and this is exactly the purpose of having a user name.

The BSCW server requires user names to be unique. If your last name is already being used as a user name on the server, BSCW will report an error in the registration procedure. In this case we suggest that you

- append the initials of your first names or other additions **to the end** of your last name [i. e., Last-Name_XY].

BSCW presents the entries in address books in alphabetical order. Why should *your partners* have to remember that you, Alan Miller, are listed in their address books not under 'Miller', but under 'am'?);

- enter your full name, your nickname (if you like it and if it is well known) and the organization you are affiliated with in your personal info page (see section 2.4).

Note:

In the current version of BSCW, you **cannot** change your user name.

2.1.3 Defining your password

If you use GMD's public BSCW server, your **password** is sent over the Internet unencrypted.

For the security of **your local computer system**: don't use the same password for BSCW as on your local computer or for applications with confidential information.

To protect the **information on the BSCW server** accessible to you: choose a *sufficiently secure* password and change it regularly. (Your user name -- the other part of your key to the information in your workspaces -- is easy to find out.)

Section 2.6 describes how to change your password. It also tells you how to enter a new BSCW password if you have forgotten your old one and cannot access your BSCW workspaces and folders any more.


2.2 Logging into your BSCW workspaces

As a registered user you have to log into your BSCW server and identify yourself *to begin each session*.

2.2.1 Starting a BSCW session


You start a session on a BSCW server (if you are **not** currently logged into this BSCW server) when you access an information object by

- opening the URL
`http://<your.bscw.server>/bscw/bscw.cgi/`

BSCW will display your  folder, which contains your folders and the shared workspaces you are a member of, with all the BSCW objects they include.

- accessing an object in one of your folders or workspaces directly, using a URL, e.g. , from your list of *bookmarks* or *favorites*.

For login and identification, you have to submit your user name and your password.

After verification, BSCW lets you access the  folder of the user name you have specified. If you have accessed an object in a workspace directly by specifying a URL, BSCW will immediately take you to the content of this object. For instance, if somebody sends you the URL of a folder, you will see the contents of this folder immediately on logging in (provided you have suitable access rights).

2.2.2 Closing a BSCW session

A BSCW session is **closed** automatically when you **terminate** the browser program on your local computer.

Until then the access rights granted to you under your user name remain in effect.

Note:

If you share your computer with other people, you should **terminate** your browser program (and restart it if necessary) after you have *finished your work with BSCW*.

2.2.3 Parallel BSCW sessions

At any point in time, your Web browser can represent *only one user name* on any given BSCW server. Parallel sessions with different user names on one BSCW server are **not** possible.


However, most Web browsers will allow you to have active sessions on several different BSCW servers simultaneously.


Note:

A transfer of BSCW objects between different servers on which you have active sessions in parallel is possible **only** via your local computer as a physical relay station. Your bags on the different servers are not interconnected, although their icons look identical.

2.3 Choosing the user interface language

When you log into a BSCW server *for the first time*, BSCW will display the list of contents of your

 folder (see chapter 3). As a default, BSCW displays the interface in English. In many cases, however, BSCW will display a different language interface -- most likely deliberately chosen by the person who invited you. As a user-defined option, BSCW lets you select a different language for the user interface. Catalan, English, French, German or Italian are available at the moment -- though these may not all be installed on the server you use.

If you prefer **another language** over the one initially displayed by BSCW in your  folder, you should change the interface language from the start of your work on this BSCW server. (The interface language is a personal preference and only affects *your* view of the information presented.)

Click [Edit Prefs] in the *bottom line* of the folder overview. This will bring up a form for defining a number of preferences, including the user interface language. Select your preferred language from the pop up menu next to

Display all user interface messages in:

If you choose German as your language, the online help will also be in German. The online help of all other user interface languages is currently available in English only.

" ... while you're here:"

If your email program can interpret HTML (the email components of the leading browsers do so, for example), select

Receive email in HTML

below the language selection in the Preferences form. This will not only give you a nicer layout of the BSCW emails, but also easy-to-use links to the objects the emails refer to.

Then click

(Store these preferences)


BSCW will again display the folder overview -- now in the language just selected.

2.4 Filling in your personal info page

In BSCW, you can provide useful information about yourself on a *personal info page* and link it to additional information on the World-Wide Web, e.g. with a personal homepage and the Web site of your organization.

Other users can call up your info page to make sure that the person they invite to their workspace under your user name is actually the person they want to contact. Some information of your info page will automatically be displayed in address books on your BSCW server, in lists of workspace members etc.

2.4.1 Essential fields

To enter or update information in your personal info page, click [Edit Details] to the right of your user name in the footer of your  folder (or any other folder view). This will bring up a form with fields for:

- **Full name** -- we recommend the <first name> <initials / nick name> <last name> style, even if you have used your last name as your user name. The full name may contain accents.
- **Organization** -- enter the name of the company, organization, university etc. you are affiliated with (or its widely known acronym).

BSCW will convert the information given in these fields to

<user name> (<full name>, <organization>)

wherever appropriate. If you do not complete the field 'Full name', the entry reads:

<user name> <<email address>>

- **Primary email address** -- by default, BSCW enters the email address with which you registered. If you use additional email addresses or if your email address changes, please enter them as secondary addresses. For each of them, you will have to go through a process similar to your authentication.
Specify the address to be used by BSCW for sending email to you (your primary email address).


2.4.2 Useful information


- **Telephone numbers**
- **Postal address** -- in the format of a letter's address field to facilitate speedy delivery (don't forget to add your name in the correct place).
- **Face URL** -- the URL of your photo as GIF or JPEG (you may find the URL in your personal homepage on the Web).
- **Homepage URL** -- the URL of your personal homepage on the Web.
- **Directory information** -- specify whether and at which email address you are listed in the online directories ("*White Pages*") that BSCW supports.
- **Communication capabilities** -- BSCW identifies the IP address used by your computer automatically. However, the result can be false if you use a proxy server or a firewall. In this case, you can specify the IP address to be used by BSCW.
Depending on your computer, there are different ways to determine this address -- ask your system or network administrator if you do not know.
In addition, you can specify the conferencing programs which you can use on your computer. Correct specifications and the appropriate configuration of your browser enable BSCW to set up links to partners with the suitable equipment *automatically*.
- **Other information** -- The text you enter here will be shown in address books and member pages of your workspaces below the line containing your name. In order to keep these pages compact you should restrict 'other information' to *one* line.
BSCW will convert HTML in this field (between <P> </P>) so that browsers can interpret it. Thus, text in this field may include a link to Web pages of your organization or department -- which is **not** possible in the 'organization' field.


Submit the completed form by clicking

(Store these details)

This brings you back to where you clicked [Edit Details].

To check the result of your work, click  or your <user name> in the bottom line of the footer. In response, BSCW will display the content of your personal info page as other users will see it.

If you detect errors you want to correct, click  again. This will bring up the 'Details' form with the information entered so far. You can now complete or correct it.

Otherwise, click the  icon at the bottom of your personal info page to go to your home folder.

2.5 Configuring your browser

If your browser provides options for local *caching*, they should be set so that the browser **always** fetches the pages from the server and not from its cache.

If you want to use the JavaScript or ActiveX-enhanced user interface (see section 4.2), JavaScript and/or ActiveX have to be activated in your browser. To use the JavaScript enhancements, your browser has to accept cookies, too.

How to proceed varies between platforms and between browsers.
Consult your browser's manual for more information.

As long as the documents that you download from your workspaces can be displayed by your browser (with the help of any plug-ins you may have installed), you do not need to change your browser's configuration in order to use BSCW.

If, however, you want to exchange **documents in proprietary formats** (e.g. WordPerfect, Excel, Photoshop etc.) with other members of your workspaces, you should tailor the configuration of your browser accordingly:

All files that BSCW sends to your browser carry an explicit MIME type. Instruct your browser to link the MIME types relevant to you to an intended action, e.g. starting a program and letting it open and display the file just transferred.

How you do this differs from platform to platform and from browser to browser. You should consult your browser's manual for more information.

If you do not configure your browser adequately, files it cannot handle will produce a prompt asking you for the intended action. If you use one of the leading browsers, it will allow you to establish a link "on the fly" between the MIME type of the file and the program to be used on the next occurrence of this MIME type.

2.6 Changing your password -- registering with a new password

You can change your password whenever you want to do so. And you should change it **regularly** for the sake of security of the workspaces you are a member of.

Click [Change Pwd] in the footer of each folder view to bring up a form which lets you enter your old and your new password.

If you have forgotten your password, you cannot access your BSCW workspaces any more -- and, of course, you cannot change your password in the normal way.

For this emergency case, BSCW provides a specific procedure to assign a new password without having to provide the old one:

Use the registration form (on GMD's public BSCW server at: <http://bscw.gmd.de/Overview.html>) to register again. Use one of your email addresses which BSCW already associates with your user name. BSCW will send an email to that address. This email contains the URL of a form that allows you to change the password for your user name without having to provide the old password.

3 Basic concepts

The sections of this chapter provide basic information about BSCW, information that you need to start cooperating with other users in shared workspaces.

Please bear in mind that the details of what we describe here, e. g., the folder overview, the information objects and also the actions, may be different or may not be available to you in some of your workspaces, due to

- variations in access right,
- the level of proficiency with BSCW Version 3.2 that you have chosen for yourself (at the *Beginner* level -- the default when you start using BSCW 3.2 -- you will see fewer objects and actions than shown here),
- the configuration of the BSCW server you use.

More advanced functions for setting up and managing shared workspaces are described in chapter 4.

3.1 Folder views

Several types of BSCW pages list a selection of different types of object:

- shared workspaces
- members of workspaces
- meetings
- participants of meetings
- folders
- search results
- your bag
- your wastebasket
- your address book
- your meetings calendar.

These pages all have a similar three-part structure:

- header
- body
- footer.

The following sections describe the general structure and functionality of such pages displaying *container objects*, using the folder view as an example.

3.1.1 Header

The header consists of:



containing links to the BSCW homepage [ABOUT] and to the online [HELP]

Banner

empty in most cases; a **banner** (text and graphics) can be inserted -- individually for each folder, if desired (see section 4.4).



containing the buttons for creating new objects in the folder or workspace etc.

The objects which are created by clicking these buttons are described in section 3.2.

:<User-name>/active workspaces

specifies the location of the current object in your folder hierarchy as the directory path from your home folder.

The names are links to the respective folder views.

BSCW Demo


containing the name of the current object preceded by the information icon and an icon which represents its type. The current object's name may be followed by an icon which acts as a link to a corresponding object. "corresponding" is used here in the sense of workspace <--> membership page; meeting <--> participants page; bag (clipboard) <--> home folder etc. For instance, in a workspace view, the link will take you to the page displaying the members of this workspace:








buttons for selecting, changing or manipulating the objects contained in the current container object or for altering the presentation of these objects.

3.1.2 Body (contents of the container object)


Sort: [By type] [By name] [By date]

  ▼ **Folder** (Marock) 26 Jan 
 [Modify] [Contents]



  **URL (Link)** (Marock) 30 Jan 
 [Modify] [Verify] [Fetch]
 Link to the demo file 'Printers' for the InfoZoom Java Applet;
 will load the applet and the file

  **Document (.pdf file format)** (Marock) 26 Jan **NEW**  
 [Modify] [Replace] [Convert] [Version]

  **HTML Document** (Marock) 2 Feb
 [Modify] [Edit] [Replace] [Convert] [Archive] [Version]

  **HTML Document (version controlled) [1.2]** (Marock) Tue 12:18  
 [Modify] [Edit] [Revise] [Convert] [Archive]

  ► **WWW Search** (Marock) 13 Jan
 [Modify] [Contents]
 Search using Altavista for 'BSCW shared workspace'.
 The query returned 9377 hits. The top ten are stored here.

  ► **Article and replies ("Discussion")** (Marock) 26 Jan   
 [Reply] [Edit] [View all]



  **Meeting**  (Marock) 26 Jan 
 [Modify] [Archive] [Send Reminder] [Join]
 Wed January 14, 1998, 10:30 - 11:45, GMT, Enhanced CU-SeeMe.

Figure 3.1-1: Listing of folder contents

The list of objects in a folder view can be sorted by clicking the buttons of

Sort: [By type] [By name] [By date]

in the topmost line.

If this line is not shown in your folder views, select

Show sort buttons

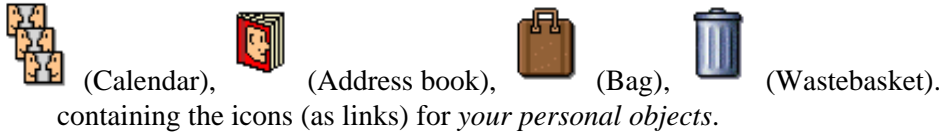
in your Preferences form (see section 4.2). To bring up this form, click [Edit Prefs] in the footer of your folder views.



3.1.3 Footer

The footer consists of:










like the identical button row in the header, these buttons are used for selecting, changing or manipulating the objects contained in the current container object or for altering the presentation of these objects.



You are:   **Marock Expert** [Edit Prefs] [Edit Details] [Change Pwd]
providing access to your personal info page and the forms to modify your Preferences, to update your info page and to change your password.

3.2 Shareable information objects

BSCW provides several classes of information objects that you can create, manage and share in a workspace.

-  Folder
-  Document (*this example in pdf file format*)
-  Document under version control (*this example in text/html file format*)
-  URL (link)
-  Article
-  Meeting
-  Search (*this example performed by Altavista*)

Click the name of an object in a folder view to display its contents or to download it. The icon to the left of the object name indicates the class of the object. For a document the icon identifies its MIME type.

3.2.1 Folder

A folder can contain any objects, even other folders, shared workspaces or meeting objects.

Click the folder name to bring up its folder view.

If you click the ► icon to the left of a folder name, BSCW will show the folder contents as an indented list below the folder name (similar to the lists presented in the Macintosh Finder or Windows Explorer). Click ▼ to collapse (hide) that list again.

The [Contents] action provides yet another view of the objects in a workspace or folder or meeting. In this view, the entire contents of a container object is expanded recursively. The listing is indented to indicate at what level of the hierarchy they are located. Each line shows a selection of information about the object, including the icon representing its type, the object name, its owner, last modification date and any relevant event icons. Clicking any object will take you directly to its location in the hierarchy of folders.

3.2.2 Document

BSCW handles any file uploaded from your local system as a *document*: text, spreadsheets, graphics, print files, pictures, sound, video etc. On the Internet, these file formats are represented as MIME types. Each document in BSCW has a MIME type explicitly assigned to it. In the folder view this MIME type is represented by the specific icon in front of the document name (or by a generic



icon for a MIME type that does not have an individual icon on your BSCW server).

If you click a document name, several things can happen, depending on the MIME type of the document and on the configuration of your browser:

- the browser may interpret the document and display it as a WWW page;
- a program on your local computer may be started to display or edit the document;
- a dialog box may be displayed to store the document as a local file;
- the browser may offer a set of options for handling the document.

3.2.3 Document under version control

Version control is a powerful tool which helps you to avoid erroneously changing or deleting a document which is, for example, going through a number of revisions that you want to document. Version control also guarantees that a user reads or copies the most recent (current) version of the document.

Version control imposes only a few very basic rules; for details see section 4.8.

3.2.4 URL (link)

BSCW object containing a *Universal Resource Locator*, i.e. the address of an object located somewhere on the Web, on an Ftp server, News server etc.

Links can be used to provide access to objects not contained in the current folder. Links can also be used for BSCW objects in other workspaces, on other servers (see section 4.7 and section 4.11).

3.2.5 Article/discussion

Articles (whose specific type of content can be signalled by different icons) are a convenient and effective tool to

- inform the workspace members on a specific subject,
- start and organize a discussion about a problem,
- question all members about their views on a topic and to get fast and detailed responses.


Articles on the same subject are automatically grouped in a threaded **discussion** with specific additional navigation functionality. While the basic idea is similar to the popular Usenet News, the most important difference is that, in a shared workspace, you address only the group of its members instead of the entire Internet community. Section 4.9 describes in detail how to use articles and discussions.

3.2.6 Meeting

A meeting may be regarded as a folder with a number of important additional functions. These functions support you in planning, preparing and documenting a meeting -- be it a traditional face-to-face meeting or a virtual meeting using a conferencing program or the "plain old telephone system" -- for a group of invited participants. Selection of participants is not limited to the members of the workspace in which you create the meeting object.

For details about the meeting object and the closely related BSCW meetings calendar, see section 5.1.

3.2.7 Search

This type of object does not just take the name of an action -- it actually performs a fairly complex function. When you click  , you start to create an object of the class 'search' by specifying a query and submitting it to one of the search engines that BSCW currently supports (more in section 4.10).

When you save it as an object, a 'search' is a folder created by BSCW and initially placed in your bag. The folder contains the results of a search on the World-Wide Web or a search over the objects of your BSCW folders and workspaces, with each hit transformed to a 'URL' object. The specific [Verify] and [Fetch] actions of 'URL' objects, and the general BSCW functions for managing objects, are efficient tools for reducing the volume of information produced by a query to a search engine to those results which you consider relevant for the members of your workspace.

3.3 Actions

In BSCW, an action is triggered by clicking the button representing the action. Buttons may take the form of icons or of text in []. Which actions are available to you depends on the level of proficiency that you set in your Preferences; it may also vary between workspaces, even between objects of the same type as a consequence of varying access rights.

3.3.1 Creating objects in a folder

In the layout of the folder view, the actions that create an object are clearly separated from the list of the folder contents. From the BSCW point of view, they affect the folder or workspace and do not alter "something" contained in it as the actions to manage objects do.

Click one of the buttons to create an object of the desired type. This will bring up a form in which to enter the information that BSCW needs to create the new object.

ADD FOLDER

creates a new folder in the current folder, thus extending and refining your folder hierarchy.

ADD MEETING

creates a folder with a variety of additional functions. For details, see section 5.1 and section 5.2.

SEARCH

lets you set the scope of a search and define a query. For searches on the web, the query is submitted to one of the search engines currently supported and the results are displayed as a list of URLs. When searching for objects or users on the current BSCW server, the results are returned as links to these objects. For details, see section 4.10.

ADD ARTICLE

using the simple text editing function that your browser provides, you can add short notes, questions and comments to the workspace. Longer pieces of text may be more conveniently written in your favorite text editor and then pasted or dropped into the text editing field of the 'ADD ARTICLE' form.

The page displaying the article has **REPLY** and **REPLY TO ORIG.** buttons which let you add articles to a threaded **discussion** in the style of Usenet News. For details see section 4.9.

ADD URL

adds the address of any WWW page (or ftp:// or gopher:// etc.) as a link to the current folder or workspace. Clicking this button brings up a form to enter the complete URL and the name under which it is to be listed in the folder view. The file identified by the URL is not copied, only the URL is stored.

The [Fetch] action will add the file to which the URL refers to the current folder or workspace, as a separate document with the same name as the 'URL' object.


Links to other BSCW objects can also be stored. Section 4.11 describes the details of URLs for objects in a BSCW workspace.

3.3.2 Adding a document

Uploading a document to a folder or workspace on the BSCW server is only a little more complicated than creating the objects mentioned above.

If you use a browser with integrated **file uploading** (Netscape Navigator, MS Internet Explorer 4.0 or better), you need no additional software.

If you work with a browser that does *not* support file uploading to the server, you need to install a specific **BSCW Helper program** for file uploading. Before doing so, read section 4.14.

Click  to display a form that lets you select a file from your local file system, using the usual 'Open file' window. The name of the file you select is loaded automatically into the form. It will be used in BSCW unless you enter a different name in the appropriate field in the lower part of the form.

In addition, the form lets you specify the MIME type for the file. Most of the BSCW Helper programs will detect and attach the correct MIME type to the file automatically. The file uploading function of your browser *on a PC* will also determine the MIME type correctly. If you use a Macintosh, it may on occasion be necessary to select the correct MIME type from the menu or to enter it manually into the form.

Similarly, any file compression applied to a particular file needs to be specified in the appropriate section of the form.

You may give the document a name which differs from your local file name:

- if you want the file name in BSCW to contain special characters, e. g., accents or blanks, type in the file name as you want it to be displayed in the folder view.
- if your colleagues use local computer systems with filenames restricted to 8 characters followed by a suffix of three, observe this convention when entering a file name -- the BSCW document name is used as a default file name when the file is downloaded.

Note:

If you upload a document to a folder that already contains a document with the same name and MIME type, that earlier document is overwritten (replaced). To prevent overwriting a document,

- define suitable *access rights* for the document (more in section 4.7) or
- put your document under *version control* (see section 4.8).

3.3.3 Adding a member

Click **ADD MEMBER** to

- invite a registered user of the BSCW server as a member to your workspace, or to
- invite somebody to register as a user of the BSCW server and to become a member of your workspace.

If this user is the **first one** that you invite, this action will turn a folder into a **shared workspace**. Before inviting others to your folder and thus turning your private folder into a shared workspace, you should read sections 4.4 to 4.7.

3.3.4 Actions on objects in a folder



Actions on objects in a folder are the file management operations familiar from your local operating system. BSCW distinguishes between:

- actions that can be applied to one or several selected objects in a folder in parallel -- initiated through the icon bars above and below the list of objects in the folder view (see section 3.1),
- actions to be applied to one specific object -- triggered by clicking one of the [Action] buttons below the object.

3.3.4.1 Actions on one or more checkmarked objects

For actions that can be applied to *several* objects, first select the objects by marking their checkboxes.

Note:

To select all objects in a folder, click  in the header or footer icon bar. Clicking  deselects all objects.

Unless you use the JavaScript-enhanced folder view (more in section 4.2), selecting or deselecting all objects is executed on the server, and the folder view has to be reloaded.

The action on the selected objects is triggered by clicking the respective icon (above or below the list of the objects in the folder view).

CATCH UP

indicates to BSCW that you have taken note of the current events (i.e., the actions on the selected objects) and that you do not want to be reminded of them any longer. The corresponding event icons in the folder view are removed.

Note:

CATCH UP on a folder is applied recursively to the complete contents of the folder, its subfolders and so on!

As a shortcut, **CATCH UP** affects **all** objects in a folder when **none** is selected!

COPY

puts a copy of the selected objects into your bag (more in section 3.5).

CUT

moves the selected objects to your bag (more in section 3.5).

DELETE

moves the selected objects to your wastebasket (more in section 3.5).

ARCHIVE

packs the selected objects into a tar- or zip file and compresses them. This is particularly useful if you want to download a large number of documents or just use up less storage space (more in section 4.13).

3.3.4.2 Actions on a single object



Actions on a *single* object are triggered by clicking the relevant [Action] in the [Action] line directly below the object name.

Many of the [Action] buttons are specific to a particular class of objects, e. g., the actions available for a folder, for a document or for an article will be different.

Depending on the choices you have made whilst configuring your BSCW server, you may see only a subset of the complete set of possible [Action] buttons for this class of object.

Also not shown are [Action] buttons that you cannot use because you don't have the necessary access rights for a specific object or a complete folder or workspace.

Note:

To achieve a more compact display of folder content, [Action] lines can be hidden by clicking  in the icon bar directly above and below the folder content. To reveal the [Action] lines after they have been hidden, click .

Typical actions on a document in text or HTML format are, for example:

[Modify]

lets you change the name and description of the object (more in section 4.6).

You can also change the MIME type of a **document**, e.g., if the uploading process did not determine it correctly.

The [Modify] action also enables you to create a banner for a folder or workspace (see section 4.4 for details).

For other classes of object, possible modifications to the object which do not fit neatly into another category of action are collected together under the [Modify] action.

[Edit]

enables you to edit a text or HTML document directly on the server.

This action is recommended for minor editing work only. For substantial editing work, use a more capable text or HTML editor on your local computer system. Unless your browser provides a comfortable 'edit and publish' feature, first make your browser display the document and store it on your local computer so that you can open it in your preferred editor. Use [Replace] or [Add Version] to upload the edited document.


[Replace]

uploads a document from your local computer and puts it in the place of this document. The 'replaced' document is overwritten and is no longer accessible. You should think twice before applying [Replace] to a document you are not the author of.

[Convert]

produces a new document by converting the document into another format. Select the target format from a menu of the converter programs installed on your BSCW server (more in section 4.12).

[Attach Note]

sets a "soft lock" on the document and lets you enter a brief text warning the other members of the workspace that you are currently editing this document. The text is attached to the information object, "hidden" behind the  icon.

3.4 Events

An important BSCW function for supporting cooperative work is to inform all members of a shared workspace that something has happened. For this purpose, BSCW turns actions on objects into *events*.

BSCW keeps track of the relevant and *recent* events for each user.

By means of the **CATCH UP** action (see section 3.3) you can indicate to BSCW that you have taken note of an event. This removes the 'recent' status *for you*; BSCW will no longer show this event *to you*.

3.4.1 Displaying events

BSCW displays the events that have occurred in several ways

- what has happened and where it has happened can be seen *at a glance* in the **folder view**:

Each object name may be followed by a maximum of 5 event icons:





They stand for different event categories. Click an event icon to obtain a list of the recent events of this category for the object.


- detailed lists of all recent events under **Changes since <date time of last Catch up>** for an object on the **info page** of the object (accessed via the **i** icon of the object).
- a detailed history of all events for an object, reaching as far back as the BSCW Administrator will allow (in order to save storage space). To see this history, click **HISTORY** on the **info page** of the object (accessed via the **i** icon of the object).


3.4.2 Event categories


The event icons represent the following categories of events:

 This object is new to you, you haven't seen it before (e. g., if you were just invited to a workspace).

 indicates changes to the object -- for example, to the contents (if it is a document), the URL (if it is a link), the description of the object etc.

 The object has been moved from one location to another.


 The object has been read or downloaded or copied. BSCW lists only the first event per user.

 There are recent events in this folder. This icon is only displayed for folders; it provides a list of all events *somewhere within* the folder, including its subfolders and the objects contained in them.

3.5 Personal information objects

BSCW provides for each user four personal information objects, whose icons are displayed in each of the user's workspaces or folders or meetings.

The four personal information objects cannot be shared with other users of the BSCW server. "By way of compensation", they are


- immediately available anywhere in the hierarchy of workspaces or folders within your  folder,
- addressable by specific actions that copy or move information objects between the personal information objects and your workspaces, their lists of members etc.

While Bag and Wastebasket provide basic functions for any BSCW user, the Address Book and the Calendar are objects of highly specialized functionality. For this reason, Address Book and Calendar will be discussed in their specific contexts.


- The **Address Book** (see section 4.5) is used mainly in creating and managing workspaces and assigning access rights.
- The functionality of the **Calendar** (see section 5.2) is closely tied to the meeting object.


3.5.1 Bag


You can move objects -- or their copies -- from a folder or workspace to any other location in your hierarchy of folders or workspaces.

To do this, you use a BSCW object which is represented by the  icon in the footer of every folder overview. Its functionality seems akin to a clipboard only in the simplest style of usage:


The quick way

Select the objects you want to move or copy by clicking their checkboxes. Click  to transfer the objects to your bag.



If you want to move a *copy* of the objects, click  instead.

There is a visual feedback from the bag:  It is "full" now.

Open the folder to which the objects should be moved.

Click  to transfer the objects that you have *just* cut or copied into this folder.


Note:

To  a folder means to recursively copy all objects contained in it, including all folders, "sub-folders" etc. and their contents. In many cases a  could serve the same purpose and would need much less storage space.



If you need to have the folder accessible from the "old" and from the "new" location, you might consider creating in the "new" location a URL object with the address of the folder in the "old" location. On the one hand, this would avoid any future inconsistency between the copy and the original folder and its contents, which might be updated after all. On the other hand, if the "new" location is not in the same workspace, membership of the two workspaces -- and thus access rights to the original folder -- might diverge, possibly leaving some members without access to the folder and the objects contained in it.

The full functionality


To enjoy the full functionality of your bag, organize and use it as a special folder -- and open it like a



folder by clicking the  .


The bag holds all objects that have been cut or copied to it and have not yet been cut or dropped in a new location or deleted to the wastebasket.

The bag "remembers" the (group of) objects that were added by the *last*  or  as the **current selection**.

In the list of objects in the bag, the marked checkboxes indicate the current selection. By clicking the checkboxes, you may change the current selection manually.

As long as you haven't modified the current selection, all objects in it will be transferred to the folder where you next click  or [Drop] in the [Action] line.

To transfer a current selection that you have changed manually, you have to click , while you are in the bag. All marked objects will then be transferred to the folder where you next click  or [Drop] in the [Action] line.

You may even transfer the current selection to another folder within your bag; this is useful for collecting objects from different locations in a folder inside your bag to  them (more on this in section 4.13).

Back to the workspace

To close your bag and to return to the folder hierarchies of your workspaces, click a folder name in the footer of your bag overview.


3.5.2 Wastebasket

Your wastebasket icon is displayed in the footer of every folder view. Its form indicates whether or not there are objects in the wastebasket.

The wastebasket provides a controlled, undoable functionality to delete and to destroy objects.

Your wastebasket -- a folder with special functionality



Click the  icon to inspect the contents of your wastebasket. It lists its contents like any other folder and also provides the same actions on objects selected via checkbox. The additional function

UNDELETE returns selected objects to the locations from which they were deleted, i.e., moved to the wastebasket -- if these locations are still available. To place the selected objects in a different location, **CUT** and **DROP** them in a place of your choice.

Three steps to destroy a BSCW object

Objects in a shared workspace are destroyed in three steps. BSCW allows you to undo the first two steps. The third step can be performed **only** by the owner of the object (typically the member who created it). BSCW thus assigns a clear responsibility for actual destruction of an object:

- A member of the workspace applies **DELETE** to an object. BSCW moves the object to the wastebasket of this member. The other members of the workspace can no longer see and access the object, but the member who performed the **DELETE** can easily **UNDELETE** the object from his or her wastebasket.

Note:

If it is the *owner* who performs the **DELETE** step, this first step alone will suffice to transfer the object to the wastebasket of its owner. Thus there is no room for the recoverable second step mentioned below. Any object in your wastebasket, that lists your user name as its owner will be irreversibly lost if you apply **DESTROY** to it.

- The member of the workspace applies **DESTROY** to the object. This will transfer the object to the wastebasket of its owner.

Note:

Any object that lists your user name as its owner will be irreversibly lost if you apply **DESTROY** to it.

- The *owner* can **DESTROY** the object in their wastebasket **irreversibly** -- this action **cannot be undone!**

Special rules apply to deleting documents under version control (see section 4.8).

Back to the workspace

To close your wastebasket and to return to a folder view, click a folder name in the footer of your wastebasket view.

4 Complex functions

4.1 Registration and authentication

A BSCW server may -- or may not -- allow *self-registration* by prospective users. If a server has not been configured for self-registration, then only the BSCW administrator can register new users.

The following discussion in section 4.1 assumes that your BSCW server does allow self-registration.

4.1.1 Registering an additional email address

The email from a BSCW server asking you to register is intended for someone who actually wants to register as a *new user* on this BSCW server; Chapter 2 gives you detailed step-by-step guidance on registering. However, it may happen that you receive such an email although you already are a registered user of this BSCW server.

It may be that another user who only wanted to invite you to a workspace actually asks you to register again. This might be due to the fact that this user invites you with a valid email address which is not recognised by BSCW as belonging to *your* user name.

In this case, repeat the registration procedure and specify the same user name as already registered and your current password. BSCW will respond by sending another email with a special URL. Opening this URL in your Web browser will bring up a form. Confirm in this form, by re-entering your password, that you want to register an additional email address for your user name.

This additional email address will then be included in your Details form in the menu used for defining your primary email address -- see section 2.4. Remember to select the one that BSCW is to use when sending you an email, i. e., your *primary* email address.

If you use any further email addresses, please also enter them in your 'Details' form. This will enable BSCW to assign your user name correctly if one of these email addresses is used in a future invitation to a workspace. For each secondary email address BSCW will send you a registration email. This is to ensure that the association of your user name with this email address is in fact valid.

4.1.2 Re-registering with a new password

If you have *forgotten your password*, and cannot access BSCW anymore, read section 2.6 on how to get out of this emergency.

4.1.3 A note on authentication

For cooperative work over an insecure medium like the Internet, it is essential that everybody can be reasonably sure that a BSCW user is really a specific individual. This relationship between BSCW user and individual has to be ascertained by appropriate authentication.

Authentication of new users of a BSCW server needs a reliable basis. BSCW uses email addresses as a basis for authentication.

The registration procedure is based on two assumptions:

- A prospective BSCW user has at least one, possibly more, valid personal email address(es).
- Email to a personal email address cannot be read by third parties without the consent of the addressee; the danger that email is intercepted during transport over the Internet or on the user's computer system may be neglected.

Though not valid in general, the second assumption seems acceptable for public BSCW servers. It allows public BSCW servers to use a registration procedure with a good combination of flexibility (users may register without administrator intervention) and traceability (in the case of problems, the server administrator can identify the users via their email addresses and contact them).

4.2 User preferences

BSCW lets you adapt a number of system functions to

- the performance of your local computer system and of the Internet link to your BSCW server,
- specific requirements of the tasks at hand,
- your personal workstyle,
- your proficiency with using BSCW.

You can adapt BSCW **ad hoc** to a session in an unfavorable technical environment, e. g. while traveling, using telephone lines of low bandwidth or if you want to use the BSCW Helper or specific features of your browser to make BSCW even more comfortable and faster to work with.

Note:

Preferences are set for **a specific server**. If you want to work with several servers in the same way, you have to set identical Preferences on all servers.

Preferences are **not** automatically adapted to the local workstation you may be using. Thus, if you access your BSCW workspaces from a different machine than normally, some of your Preferences may not be appropriate because this machine lacks some functionality or resources that you rely on in your Preferences for your regular computer system.

4.2.1 Reducing the data transmission volume

4.2.1.1 Compact folder views

If you have to manage folder overviews with many items, you may want to have them displayed in a more compact style and to reduce the size of the HTML files that are transmitted each time a new or updated folder view is sent to you. You can achieve this by suppressing

- the [Action] line below each object and
- the descriptions of objects, which might be shown below their [Action] lines.

Click [Edit Prefs] in the bottom line of the folder overview to call up the Preferences form. Click the checkboxes of

Show actions by default

and

Show descriptions by default

to **de-select** them. To apply the changes, click

(Store these preferences)

Note:

Whenever you need the [Action] lines or the object descriptions in a particular folder view, click **A** or **D** to add [Action] lines and descriptions, respectively, to this specific folder overview. The BSCW server will then re-generate the page including the additional information and transmit it to your computer.

Note:

You can reduce the data transmission volume even more if you do **not** browse through the folder hierarchy but use the *Bookmarks* or *Favorites* or *Hotlist* function of your browser to directly access the objects you need -- or at least the folder overviews in which they are listed. The 'Daily Workspace Activity Report' to which you can subscribe from your Preferences form provides very useful additional support here (see section 4.2.5).

4.2.1.2 Using GIFs stored locally

Numerous icons which are transmitted from the BSCW server to your local computer system make the BSCW user interface attractive, but consume transmission bandwidth. To reduce your dependence on the communication infrastructure, you may download the many small .gif files **once** and, by specifying the path of the local icon directory in your Preferences form, tell BSCW to make the URLs of these .gif files point to your local file system. From there, your browser retrieves them faster and more cost-effectively than from the BSCW server.

If in your organization many colleagues on the same Local Area Network access a remote BSCW server, you may reduce cost and improve performance by making the BSCW icons available to all users on a server on your LAN -- consult your system administrator.

Whether your browser should find the .gif files on your local computer system or on your LAN -- make sure the files are actually there. You can download them in several compressed file formats from your BSCW server (or from <http://bscw.gmd.de/DownloadGoodies.html>). Extract and store the individual .gif files. Mark the checkbox to use local icons, specify the directory path in your Preferences form and click

(Store these preferences)

to make BSCW use locally stored icons and return to the folder overview where you clicked [Edit Prefs].

Note:

If your browser does not find the .gif files locally, BSCW becomes pretty cumbersome to work with. You will see that immediately when your browser displays the folder overview after you clicked (Store these preferences).

Click [Edit Prefs] in the bottom line of the folder overview to obtain the Preferences form again. Correct the error in the directory path or de-select the checkbox for using locally stored icons. Then click

(Store these preferences)

to restore a complete user interface and return to the folder overview where you clicked [Edit Prefs].

4.2.2 Enabling specific browser functions

4.2.2.1 JavaScript

If your browser can handle JavaScript, BSCW offers the options to

- switch between the compact and the full representations of folder overviews,
- select or de-select all objects in the folder overview

locally on your workstation.

The **advantage**: The two operations are performed faster, because there is no need to send updated pages from the BSCW server.

The **disadvantages**: You have to allow your browser to accept cookies. The HTML files of the folder overviews are bloated by the JavaScripts; this consumes additional bandwidth and may lead to longer load delays.

The longer your folder overviews and the smaller the screen window of your browser, the more interesting may this option be for you. If you move, copy or archive large groups of objects in managing your shared workspaces, this option may be suitable for you.

If you plan to use this option, make sure that your browser can process JavaScript, that this functionality is in fact activated and that you have allowed your browser to accept cookies (for detailed information consult the manual of your browser).

Click [Edit prefs] in the bottom line of a folder overview to obtain the Preferences form and mark the checkbox

Use Javascript-enhanced interface

Click

(Store these preferences)

to make BSCW send you the folder overviews with JavaScript-enhanced functionality. You will return to the folder overview where you clicked [Edit Prefs].

4.2.2.2 ActiveX

If you use an ActiveX-capable browser (e.g., MS Internet Explorer 4.0 or better), you can subscribe to an ActiveX extension that enables you to upload files by 'drag & drop'. A specific icon will be placed prominently in the headers of your folder overviews. Just drop a file on this icon to upload it. The extension also uploads groups of files -- a feature not provided by the standard file upload function of the browsers.

If you plan to use this option, make sure that your browser can process ActiveX and that this functionality is in fact activated (for detailed information consult the manual of your browser).

Click [Edit prefs] in the bottom line of a folder overview to obtain the Preferences form and mark the checkbox

Use ActiveX-enhanced interface

Click

(Store these preferences)

to make BSCW send you the folder overviews with ActiveX functionality.
You will return to the folder overview where you clicked [Edit Prefs].

4.2.3 Using the BSCW Helper

For browsers that do not support file upload to the server, the BSCW Helper program is vital. For users who upload large numbers of documents, the BSCW Helper is simply the more effective tool.

If you plan to use the Helper program, please refer to section 4.14 first.

Make sure that the Helper program is installed and your browser is configured correctly.

Click [Edit prefs] in the bottom line of a folder overview to bring up the Preferences form and mark the checkbox

Use BSCW Helper for file upload

Click

(Store these preferences)

to make BSCW use the Helper program for uploading files to your workspaces.
You will return to the folder overview where you clicked [Edit Prefs].

4.2.4 Customizing your user interface

BSCW is a highly tailorable system; there aren't many workspaces that have an identical "look and feel" for all members. One dimension of tailorability in BSCW is the proficiency of its user. This is based on the assumption that, as users get more involved with BSCW and more accustomed to using it, they can cope with -- and effectively utilize -- a wider range of functions.

BSCW servers may offer their users a series of predefined user interfaces with growing functionality and complexity. GMD's public BSCW server, as an example, offers user interfaces for three levels of proficiency:

- Beginner
- Advanced
- Expert

On other servers, the number of levels may vary, they may be labeled differently and may group functions differently.

It is always possible to change your level to see what functions are available if you switch to another interface mode and then change back again -- it is a completely reversible process.

Note:

To view all of the functions available, go to the Preferences form -- accessed from [Edit Prefs] in the footer of any folder view -- and proceed as described in section 4.3 for editing BSCW functionality.

As a new user of GMD's BSCW server you start at the *Beginner* level. As soon as you feel comfortable with this restricted set of functions, and need more functionality to do your job effectively, you may want to switch over to *Advanced* or to *Expert* mode.

Select your preferred user interface mode from the menu to the right of

Set user interface to:

Click

(Store these preferences)

to make BSCW display the user interface at the selected level of proficiency with BSCW. You will return to the folder overview where you clicked [Edit Prefs].

4.2.5 Subscribing to the Daily Workspace Activity Report

BSCW can provide a compact list of events in your workspaces on the day before -- the Daily Workspace Activity Report. It is generated automatically during the night and is sent to you by email.

Note:

This feature may be unavailable on your BSCW server if it has not been activated by the BSCW administrator.

With the list provided by the Daily Workspace Activity Report, you don't have to open all your workspaces to check whether important documents have been uploaded and urgent information about a meeting has been read by all participants. Above all, if you use BSCW via slow and expensive connections, *subscribing* to the Daily Workspace Activity Report may save not only time, but also some money.

To subscribe to the daily workspace activity report and to define the events to be reported, click

A rectangular button with a dark blue background and white text that reads "WS REPORT".

in the header of the Preferences form.

This will bring up another form. Mark the checkboxes of the event types you want to be informed about. The report will always cover **all** workspaces you are a member of.

Note:

If you mark **no event type**, then **no report** will be generated for you.

4.2.5.1 Types of events

In the Daily Workspace Activity Report BSCW distinguishes four event types:

Create events

includes all actions of adding **new** objects (members, folders, meetings, documents, URLs, articles etc.) to a BSCW object (workspace, folder, discussion, address book, meeting etc.).

Move events

copying, cutting and dropping, deleting and undeleting, archiving and converting already existing objects.

Change events

editing objects, adding document versions and modifying meta information on objects belong to this action type.

Read events

accesses to an object without changing it.

4.2.5.2 Report format

The daily workspace activity report is available in two formats:

- plain text email or
- HTML document.

If you use an email program that can interpret HTML (the email components of the widely-used browsers do so), you should subscribe to the report in **HTML format**. In this format the report is easier to read and provides links to the objects it refers to, thus enabling you to access them immediately. Select the email format in the Preferences form.

4.2.6 Setting your email format

If your email program can interpret and display HTML pages (the email components of the widely-used browsers do so, for example), select

Receive email in HTML

BSCW will then email the Daily Workspace Activity Report in HTML format, providing links to the workspaces and objects mentioned in the report. Click

(Store these preferences)

to make BSCW send email in HTML format.

You will return to the folder overview where you clicked [Edit Prefs].

4.3 Tailoring BSCW functionality

Offering different user interfaces for different levels of user proficiency is a baseline of user tailorability and is clearly better than a "one size fits all" approach. However, as interface modes and the functionality they provide are defined 'per server', they cannot cater for the different roles, tasks, work styles and aesthetic preferences of individual users.

BSCW takes you one significant step further: you can personalize essential aspects of the BSCW user interface, by specifying

- which functions you would like to have available in your user interface;
- where you would like the button for a particular function to appear.

There is no single best strategy for personalizing a user interface. It may be a good idea to start from the *Expert* mode, once you are comfortable with it. A significant number of functions could still be added.

Obviously, *personalizing* works both ways: you may also decide to exclude functions and their buttons from the user interface, if you do not seem to use them.

In your Preferences form

- select the button bar that you want to modify from the menu right of **Edit button bar at user interface:** (Edit button bar)
- click (Edit button bar).

BSCW will bring up a form that shows

- the functions that are possible for the particular location: *all* entries in the selection list,
- the functions that are currently offered there: *highlighted* entries in the selection list.

If there is an additional differentiation by type of object, the form will show a preview of the button bars for the different types of objects.

Change the selection in the selection list to suit your personal requirements.

Note:

To add items to the existing selection, hold down the `control` key -- or its equivalent on your platform -- while clicking additional items.

If there a preview is displayed, clicking (Preview) will update it to reflect your changes. Due to access rights and other constraints, the preview may occasionally show more or fewer buttons than are actually available in a particular workspace.

The form offers two "Undo" buttons for the button bar that you are currently changing:

(Clear changes)

will undo all changes back to the latest stored preferences, while

(Reset to default)

will return to the set of buttons that is defined by the proficiency level you have chosen.

The form also provides a global

(Reset all button bars)

which lets you select the proficiency level to return to.

Once you are satisfied with the current selection of buttons, click

(Store these preferences)


Caution:



If, instead, you select another button bar to modify, all changes you made for the first button bar will be lost.

4.4 Creating and managing a shared workspace


4.4.1 Creating a shared workspace

A workspace is a **folder** that can be accessed by other people beyond its owner, typically by a group of registered users, its **members**.


Any folder within your  folder can be turned into a shared workspace by granting someone else access rights to this folder (and all of its contents). Typically, you do that for one or several registered users of the BSCW server, but you may also allow anonymous access across the Internet.

Each folder which is a shared workspace shows this through the  icon. It indicates that this object -- and all objects contained in it -- is assigned to a *specific* group of members (the list of members can be obtained by clicking the  icon).

4.4.1.1 Its place in your folder hierarchy

You may  a shared workspace and  it anywhere in your folder hierarchy.

It is thus technically feasible to hide a shared workspace deep inside your folder hierarchy. We *do not* recommend doing so. You might later inadvertently turn a folder at a higher level into a shared workspace and run into interference of conflicting access rights.

You should place your workspaces either directly at the top level in your  folder -- that is where BSCW places the new workspaces to which you have been invited -- or only *one* level below. For example, in a folder

 :<your user name>/active workspaces

4.4.1.2 Embedding a workspace in another one

If necessary, you can embed a workspace inside another workspace provided that the member group of the embedded workspace *contains* the member group of the workspace it is integrated into.

Embedding a workspace in another one, or removing a workspace from another one, automatically changes the membership of the workspace.

Remember to check carefully whether these automatic changes are what you intended and correct the membership (see section 4.5) and the access rights if necessary (see section 4.7).

4.4.2 Membership administration

Inviting additional members to a workspace or excluding members from the use of the shared resources -- "membership administration" -- may be organized in a number of ways -- from complete decentralization (every member is allowed to add or remove members) to strict centralization (only the owner of the workspace is allowed to add or remove members). BSCW functionality for membership administration (see section 4.5) and for a differentiated assignment of access rights (see section 4.7) supports any type of organization of this task.

The organization that you might choose for a particular workspace depends on:

- the task to be fulfilled using the workspace,
- the degree of responsibility accepted by the members,
- the resources available for workspace moderation.

The ability of members of a workspace to invite additional members is governed by the access rights for that workspace. The owner may grant -- or deny -- this particular right ("Share") to groups or individual members of the workspace.

Note:

In a workspace with *default access rights*, members are allowed to invite or remove members.

4.4.3 Defining access rights

Defining access rights **on the level of the shared workspace** is essential for creating a workspace that is easy to use, effective and secure. The access rights defined at this level are applied (by default) to all folders, documents etc. in this workspace. As a rule, it should not be necessary to modify the access rights at the level of individual objects.

Section 4.7 describes how to assign differentiated access rights.

4.4.4 Creating a workspace banner

Every folder or workspace view has a header of several lines (see also section 3.1). As a default, the second line from the top is *empty*:



Figure 4.4-1: Header section of a folder view

As a second line, you may insert a workspace banner. The banner is "inherited" by the embedded folders unless you **turn it off** explicitly.

Click **EDIT BANNER** on the info page (see section 4.6) of your workspace or the folder in which you wish to insert a banner. This will bring up a form to specify the banner as HTML text (with links to pictures etc.).

With a workspace banner inserted, the header of your workspace and its folders might look like this:

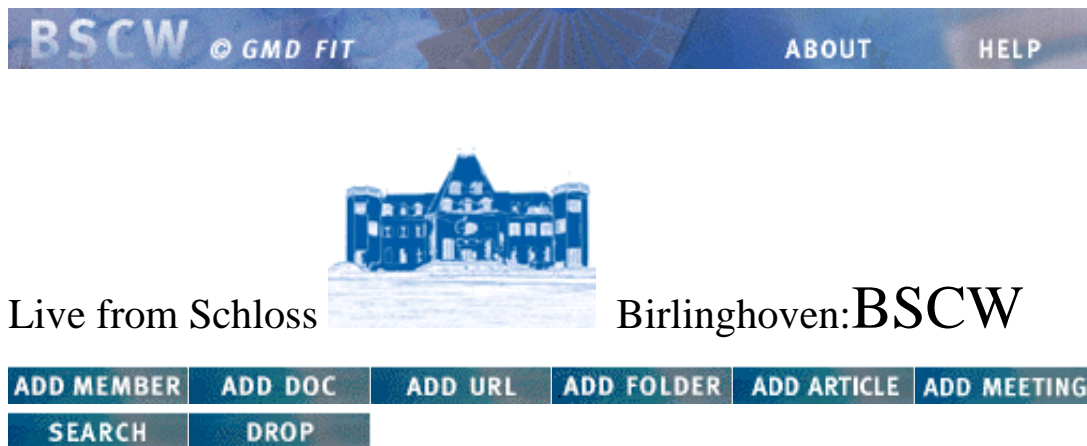





Figure 4.4-2: Header section of a folder view with banner


4.5 Workspace membership

Each workspace has its own group of members. You can become a member of a workspace **only** by being invited by its owner or by another member who is entitled to invite new members.

A user of a BSCW server who is invited to a workspace on that server will learn this only from the fact that this new workspace is listed in his or her  folder. There is no additional automatic notification.

BSCW does not provide a specific function to decline the invitation to a workspace. If you do not want to be associated with a particular workspace, you have to remove yourself from the list of members. Do this by clicking the  icon next to the workspace name to display the workspace's membership page. Mark the checkbox to the left of your user name and click  .

4.5.1 Membership page

Click the  icon next to the workspace name to display the membership page of this workspace.

The membership page lists the **invited** members of the workspace and includes the following information:

- persons with **pending** membership are listed as <email address>. A membership is **pending** if a person was invited but has not yet registered as a user of the BSCW server. This person **cannot** use the shared workspace at the moment. Persons whose membership is *pending* can again be invited to register. Click [Re-invite] to send another invitation to the email address.
- persons who are registered users of the BSCW server are listed by their user name and their
 - email address or
 - full name and organizational affiliation, if they have already completed the 'Details' form.
- BSCW groups are listed as 'Members of <workspace name>'.

The membership page of a shared workspace provides:

Access to information about members

Click a user name to display the associated 'info page' to view the information entered by this user in their 'Details' form.

Click the name of a BSCW group to bring up the membership page for this group.


Membership administration

To invite members to a workspace, click **ADD MEMBER** in the header of the membership page or of the workspace view.

Clicking **REMOVE** in the header of the membership page removes the selected members from the workspace. (Selection is done in the usual way by checking the boxes beside the members' names.)

All other workspaces, your address book and the address books of other registered users that may include the selected user names are not affected by this action.

4.5.2 Address book

Your **address book** is the main basis of inviting new members. To open it, click the  icon in the footer of every folder or workspace view.

The appearance of your address book resembles that of the membership page of a workspace. It shows the same structure and provides similar functions via identical buttons:

- in the address book, **REMOVE** means 'delete selected entries from the address book';
- **ADD MEMBER** in your address book means 'enter a new address'.

You may also add users to your address book by selecting users' names on the membership page of a workspace and then clicking **TO ADDRBOOK**. The same function is available on the pages that list the participants of your meetings and on the pages showing the result of user searches in BSCW.

In addition to individual user names -- and email addresses as placeholders -- you may also add the names of BSCW groups to your address book and invite a BSCW group **as a whole** into a workspace (see section 4.5.3).


4.5.3 BSCW groups as members

All members of a shared workspace are -- by definition -- a **BSCW group** called 'Members of <workspace name>'. Vice versa, any BSCW group has a shared workspace associated with it.


BSCW groups are a useful tool for the administration of workspace membership or shared mailing lists and for the management of access rights. As an example, a BSCW group lets you store and update the assignment of persons to a task in a *single* place and use this information in many places (for instance for assigning access rights) whilst *automatically* updating the members of the group.


- Create workspaces for small groups of people who are related by their function or the tasks they perform -- defining function or task as appropriate to your application area.
- Add the members of each workspace as the BSCW group 'Members of <workspace name>' to your address book by clicking **TO ADDRBOOK** on the membership page of each workspace.
- When creating shared workspaces that have a larger number of members with different task assignments, invite each BSCW group to the workspace as a member. This not only reduces the number of members who need to be invited to the new workspace but also reflects the structure which will probably be used when assigning access rights.

As a shortcut for the *expert* user, BSCW lets you define **new groups** on the membership page of a workspace, on the participants page of a meeting and in your address book. Select (checkmark) the names that you want to include and click **MAKE GROUP**. BSCW lets you specify the name of the new group and will then create a regular shared workspace by that name. All the users or participants you had selected are members of this workspace.

This workspace will show up on the top level in the  folders of all its members. You should take the time to modify its access rights (for details see section 4.7) and to *deny* the members the right to add or remove members. (If you leave the default access right in effect, some other member might inadvertently edit what you see as your private address list, though it is, in reality, a shared address list.)

Note:




As a side-effect of creating this BSCW group and new workspace with a subset of the members of the original workspace, the original workspace will no longer appear in its usual location in *these members'* folder hierarchies. It will now be embedded within the newly created workspace that is located in the  folder of these members.

As you have modified other people's  folder, you may want to contact them and advise them to move the new workspace to some unobtrusive location, but not to delete it.

4.5.4 Some useful functions


4.5.4.1 Mailing list

BSCW helps you to send an email to all members of a shared workspace -- or to a larger group of them:

- Click  to bring up the membership page of the workspace.
- Click  or the individual checkboxes to select the members to be included in your ad hoc mailing list.
- Click  to bring up a form for writing and sending an email to the selected members.


4.5.4.2 User search

Use this function if you want to include someone in your address book and invite him to a shared workspace, but do not know the user name under which the person is registered on the BSCW server. The **user search** is very useful in this case.

Click  to bring up the form to specify your query (more in section 4.10).

4.5.4.3 vCard interchange format

If you use a browser (in particular Netscape Communicator) or a Helper program that can import the **vCard** interchange format, you may download information from the info pages of other users in this format and include it in your *local* address book (for the vCalendar format, see section 5.2).

Click  on the info page that you want to extract in vCard format. BSCW supplies the extracted information with the MIME type `application/x-vcard`. If your browser has been configured correctly, they go directly into your local address book.

4.5.4.4 Personal info pages

While address books and membership pages show only a part of the information you entered in the 'Details' form, your personal info page presents all the information you provided about yourself. This also applies to other users.


You can see from the entries following the user name if there is a personal info page with detailed information about a user:

- An email address icon indicates that there is no personal info page with detailed information about this user.
- Text in () indicates that at least the name of the registered user is included in the personal info page.

To get to the information page of the user, click the user name -- you can do that in your address book, in the membership page of a workspace, in the participants page of a meeting or in the information page of an object in a workspace.


If the user has indicated that s/he is listed in any of the online directories, the personal info page provides links to the user's entries there -- in addition to the link to the personal homepage on the Web and possible links specified in '**Other information**'.

If the user has specified conferencing programs which they can use, these programs are listed on their personal info page. For those programs on this list that you have also selected in your 'Details' form,

BSCW displays the  symbol.

Click this button to start the corresponding program on your computer and to set up a connection to the other user.

4.6 The info page

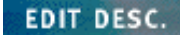


Click the  button to the left of an object name in the folder overview to obtain the info page of the object. This page supplies some technical information about the object, shows the version history of versioned documents, current access rights and the object's history. Information in some of these categories may be edited. The header of the info page provides buttons that bring up the required forms.

Note:

Some of the information is also displayed in the folder view. Click [Modify] in the [Action] line below the object name to bring up a form that lets you change the object's name, description or MIME type.


The contents of the info page may vary depending on the type of object. The most complex info page is that for documents under version control, which is described below. Once the layout of this page has been understood, working with the info pages of other object types should pose no problem.


4.6.1 Object details

Click ,  or  to bring up a form that lets you change the name, description or the MIME type of the object, respectively. (A concatenation of the three forms is brought up by clicking the [Modify] action of the object in the folder view.)

4.6.2 Version information


For documents under version control (for more details, see section 4.8), the info page presents a table of the version history. Click the version number [**Id**] in the left column to download older versions of the document.

Click  to bring up a form which lets you edit the version number, state and change description of the **current** version (see section 4.6.3 and section 4.7).

Click  to bring up a form that lets you create a new version branch.

The button bar may include the  button. Click it to bring up the form that lets you indicate the version(s) to be deleted.

Caution:

 is **irreversible**.

Deleted versions **cannot** be restored from the wastebasket.

4.6.3 Access rights

Under the heading **Access details**, the info page presents a table of the current access rights. The interpretation of this table and the modification of access rights are discussed in section 4.7.

If you are the owner of the object whose info page is being displayed -- indicated by (*) next to your user name in the **Access details** table -- the page header may include the **ACCESS** button. Click it to bring up the form for changing the access rights for this object.

4.6.4 Object history

BSCW can keep a log of every action on the object. How far back in time this log extends is determined by the BSCW administrators; they might delete anything older than six months, e. g., to save storage space.

The info page shows your individual time window on this log: the part that is more recent than your last **CATCH UP** referring to the current object.

Under **Changes since <Date Time>** the info page shows

- the names of the users who made a 'Get' access to the object, and
- a list of modifications plus the names of the users who initiated the modifications.

Click the **CATCH UP** button in the header of the information page to update (= move forward in time) your individual time window on the log for this object. The actions currently listed will no longer be shown.

The same effect is achieved by clicking **CATCH UP** the folder view in which this object is marked and/or (for the entire folder and its contents) in a folder view at a higher level in your folder hierarchy.

Click **HISTORY** to bring up a list of the complete log of actions on the object -- as far back as available on the BSCW server.

Note:

This may take quite a while, especially if the log extends far back in time.

4.7 Access rights

In BSCW an access right permits a user to perform a cluster of actions on an object.

BSCW provides powerful functionality to set differentiated access rights for groups or individual users with respect to workspaces, folders, individual documents etc. Specific access rights for an object can be assigned to individual users or groups of members of a shared workspace. On the other hand, objects can also be made accessible for anonymous access across the Internet.

This chapter gives a comprehensive description of all the possible changes to access rights which might ever be required.

Recommendation:

We recommend that groups using a shared workspace should agree on a few basic rules for the organization of access rights, which are then set for the workspace as a whole and are automatically applied to all objects in that workspace.

4.7.1 Default access rights

By default BSCW sets access rights according to two rules:

- All members of a shared workspace have **all** access rights to all objects in this workspace -- with two exceptions:
 - the right to definitively and irreversibly destroy an object on the BSCW server is held exclusively by the owner of the object -- see section 3.5;
 - the right to modify the access rights for an object is held exclusively by the owner of the object..
- Non-members have **no** access rights for the shared workspace and the objects in it.



The basic mechanism of assigning access rights is **inheritance**: the access rights set for a folder or workspace are the default access rights for all objects in this folder or workspace.

The **owner** of an object can change the default access rights for this object. Therefore, it is within the responsibility of the person who creates a workspace (the owner in BSCW terminology) to define the access rights to be applied as default access rights to all objects in this workspace.

Starting from this default, the access rights for the objects in this workspace can be modified individually by their owner. For example, a folder with appropriately defined access rights may contain objects to be accessed by some members (groups) only in 'Get' mode while the right to modify is exclusively granted to a team of editors. See section 4.5 on how to create such groups. For information on how to assign access rights, see section 4.7.4 et seq.

4.7.2 Visibility of access rights

BSCW provides

- some indicators about the level of access you have to an object:
 - If you have been denied specific rights for certain objects, the corresponding actions are not available to you, i.e., specific buttons or [Actions] in the [Action] line are missing for this object
 - If non-members have access rights to objects in a workspace, its  button changes to  .
- a table of **Access details** on the info page of the object (see section 4.6).

4.7.3 Standard "access rights holders"

There are three standard groups for the assignment of access rights. You can assign access rights to one of these groups as a whole or to BSCW groups or individual users *within* one of the groups. For information on creating user-defined groups (= BSCW groups), see section 4.5. The standard groups are:

- **'Owner' of the object**

Initially the author (the user who creates or uploads an object) is the one and only owner.

In BSCW, 'owner' is a group. Thus, the author may add other members of the shared workspace to the owner group (and remove them again). At all times, the owner group must have at least one member. As long as this rule is not violated, the author can also remove himself/herself from the owner group, thus transferring ownership privileges to the other members in the owner group.

- **Members of the workspace**

that the object currently belongs to. If the object is transferred to another workspace, the 'member' access rights are automatically assigned to the members of that workspace.

Note:

In the **Access rights table** all members of the workspace are listed as the group 'Members of <object name>', while in the **Access details** table in the info page they are listed individually to allow inspection of access rights on an individual basis.

- **Other users**

who may be registered on the BSCW server where the object is located or who may access the object anonymously from the Internet.

As long as BSCW's default access rights are in effect, 'Other users' have **no** access rights. You have to explicitly assign access rights to this group.

Warning:

If you assign access rights to the group '**Other users**', you implicitly allow the user **anonymous** access with the very same rights *by default*.

To avoid that,

- explicitly include the user *anonymous* in the **Access rights table** and
- explicitly withdraw all access rights from the user *anonymous* by marking the checkbox **Override** and then **de-selecting** all other checkboxes in the row for *anonymous* (see section 4.7.5).



'Other users' can make use of their access rights only if they access the object via a URL for this specific object. You have to inform them about this URL, e. g. as a link on a Web page or by email. (For information on anonymous access see section 4.7.7)

4.7.4 Extending the list of "access rights holders"

As the owner of an object, you may want to assign access rights in a more customized way than the three default groups permit. This may be desirable, for example, when

- some members of a workspace who are acting as administrators should be assigned some, though not all, owner rights while the other members are not allowed to invite new members or to rename, cut or delete objects;
- a team of editors should be allowed to modify a document while all other members of the workspace are only allowed to read it;
- a specific folder in a workspace should also be used by the members of another workspace while anonymous access from the Internet should not be possible.

To perform such a customized assignment of access rights, the owner of an object can select the user *anonymous* -- see section 4.7.7 -- as well as registered users and BSCW groups -- see section 4.5.3 -- from his address book and add them as "access rights holders":

- Click  to bring up the info page of the object.
- Click  to bring up the form for changing the access rights.

The **Access rights table** shows

in the first column

the name of this object above the names of the groups and individuals who have access to it

in the second column

the *Override* checkboxes which indicate priority of access rights assigned to individuals or BSCW groups

in the next columns

clusters of actions above checkboxes which indicate whether or not the user or group in that row can perform these actions -- see section 4.7.5.

Directly below the **Access rights table**, you will see a list of the user names and group names from your address book. (Names of groups are at the bottom of the list, in the form 'Members of <workspace name>'.) To add a selection from this list as a separate entry in the **Access rights table**, select the names to be added and click

(Add selected users/groups)

If the selected users or groups are members of the workspace to which the object belongs, they are added to the **Access rights table** in separate rows below 'Members of <object name>'. Non-members are added in rows below 'Other users'.

Note:

If a "rights holder" row in the **Access rights table** is no longer needed, you can remove it. Withdraw all rights from the "rights holder" explicitly (by ensuring that **no** checkboxes are checked) and click

(Update access rights)

The updated table will no longer contain the row(s) without access rights.

4.7.5 Assigning access rights

As the owner of an object, you can assign specific combinations of access rights to the groups and users mentioned in section 4.7.3 and section 4.7.4. Use the **Access rights table** to do that.

- Click  to bring up the info page of the object.
- On the information page, click  to bring up the form for editing access rights.

BSCW objects can be accessed by a wide variety of actions and the actions possible will often depend on the class of the object. These actions can be combined into clusters of similar actions. By default, BSCW uses the following clusters:

- Get
- Get ext(*ended*)
- Change
- Change ext(*ended*)
- Share (only for folders or workspaces)

Each cluster is a group of actions for which the right to execute may be assigned separately.

Note:

Override in the second column is **not** an access right. The significance of checkmarks in this column is explained below.

The headings of columns 3 and up of the **Access rights table** show the actions that are included in the clusters by default.

If this assignment of actions to clusters is compatible with your intentions as owner, and with the conventions of your workspace, use the checkboxes in the lower part of the table to specify that the user or group in a particular row has the right to access the object via the actions listed in a particular column.

4.7.5.1 Precedence of access rights among 'Members'

If you add workspace members to the left column of the **Access rights table**, the user names or group names will appear in the rows immediately below the one headed 'Members of <object name>'. You can assign rights to them which are different from those assigned to the 'Members of <object name>'.

- **Additional** rights specifically checked in a row have priority.
- **Withdrawal** of access rights in a row has priority **only** if the checkbox in the **Override** column is marked in that row, i.e. if the specific assignment *overrides* the general assignment. Otherwise, the (more extensive) access rights for the group 'Members of <object name>' apply.

Workspace members who belong to several BSCW groups that have been granted specific rights will have the maximum of the access rights of each of these groups (indirect rights assignment).

Note:

When assigning rights indirectly, always check in the **Access details** table on the info page of the object whether all users have actually got the rights you wanted to assign to them. If the indirect rights assignment does not conform to your intentions, include these users individually into the **Access rights table**, set the intended rights and mark their checkboxes in the *Override* column.

4.7.5.2 Precedence of access rights among 'Other users'

Users and groups who are named specifically and who are not members of the workspace (possibly including the user *anonymous*) are listed in rows below 'Other users'. You can assign rights specifically to them which differ from those assigned to the group 'Other users'.

- **Additional** rights assigned specifically in a row below 'Other user' are *filtered* by the rights of the group 'Other users'; they remain ineffective.
- **Withdrawal** of access rights in a row below 'Other users' has priority **only** if the checkbox in the *Override* column is marked in that row, i. e. if the specific assignment *overrides* the general assignment. Otherwise, the (more extensive) access rights for the group 'Other users' apply.

4.7.5.3 Precedence of access rights between 'Other users' and 'Members'

The 'Members of <object name>' and the members (and member groups) specifically included in the **Access rights table** automatically have all the access rights which you grant to 'Other users'.

Explicitly extended rights of the group 'Members of <object name>' or of individual members (member groups) apply in **addition** to those of 'Other users'.

Modified access rights are put into effect by clicking

(Update access rights)

Clicking

(Set default access rights)

resets the table to the BSCW standard groups and default rights assignment.

4.7.6 Restructuring access rights

If you need a different assignment of access rights than that provided by the BSCW standard action clusters, you can change the **structure** of the **Access rights table** and define new action clusters in additional columns. Click

(Change columns ...)

below the **Access rights table**. This brings up the **Action table for <Object name>** which allows you to

- disable actions for this particular object
- move individual actions from one action cluster to a different one
- create additional action clusters in new columns
add these by clicking (Add column ...) below the table. Use the radio buttons to indicate which actions should belong to which cluster

For your changes to take effect, click

(Update table).

To undo any modifications to the table before an update, click

(Clear changes).

Warning:

Access rights in user-defined clusters are **not** inherited. If you change the clusters of actions on a folder or workspace and then create new objects within it, the embedded objects will have the BSCW default action clusters.

4.7.7 Anonymous access

Assigning access rights to a user *anonymous* lets you publish objects on the Internet.

Anonymous access must bypass the normal BSCW log in procedure. This is achieved by using an address which differs systematically from the "normal" URL of a BSCW object. Thus, the URL for anonymous access to a BSCW information object is determined in two steps:

- find the URL used by the workspace members to access the object
- modify it so that it bypasses the log in procedure and accesses the object directly

Let us illustrate it by the following example:

A document `text.html` is located somewhere in a workspace. Access rights are set to allow 'Other users' -- this includes the user *anonymous* -- to 'Get' (i. e. to download and to copy) this document. (see section 4.7.3 and section 4.7.4) .

To a member of the workspace, the address of `text.html` might be shown in the 'Location:' window of their browser as

```
http://bscw.gmd.de/bscw/bscw.cgi/f18147/text.html
      _____
```

The underscored part is the one which you must *replace* -- by the text underscored in the following address:

```
http://bscw.gmd.de/pub/english.cgi/f18147/text.html
      _____
```

The inserted text has two components:

`pub`

This path specification bypasses the log in procedure that is normally started when a user accesses the server. Access control, however, will not be bypassed: BSCW returns an error message if *anonymous* is not allowed to access the requested object.

`english.cgi`

specifies the language which BSCW uses for communicating with the anonymous user. This might be irrelevant for a single document, but if you allow anonymous access to a folder, the anonymous users will see the folder overview with language-specific TEXT icons and [Action] lines.

If you think that the anonymous users will prefer another language for handling BSCW, replace `english` by another language available on your BSCW server. You can see what options are available by looking at the menu next to

Display all user interface messages in
in your Preferences form.

4.8 Documents under version control

Cooperation in a shared workspace may mean that documents are:

- edited by several authors and
- revised repeatedly.

If the authors used standard documents, they would have to take care of a lot of administrative chores to manage the succession of documents and to maintain a history of the changes from one document to the next. As a safer and more comfortable alternative, the authors might put their BSCW documents under 'version control'.

The contents of a document under version control are not simply overwritten, but each time modifications are made, a new version is created as the **current version**.

The earlier versions are preserved; their sequence identified by version numbers (e.g. 0.1, 0.2, 0.3 etc.). You may access them via the document's info page (see section 4.6) or directly via a URL with a version number (see section 4.8.4).

4.8.1 Putting a document under version control

Click [Version] in the [Action] line below the document name to put the document under version control. This changes

- the line showing the document name - a version number is inserted here
- the [Action] line of the document - instead of [Replace] and [Version], it will show [Revise] and -- possibly -- [Delete Versions]:

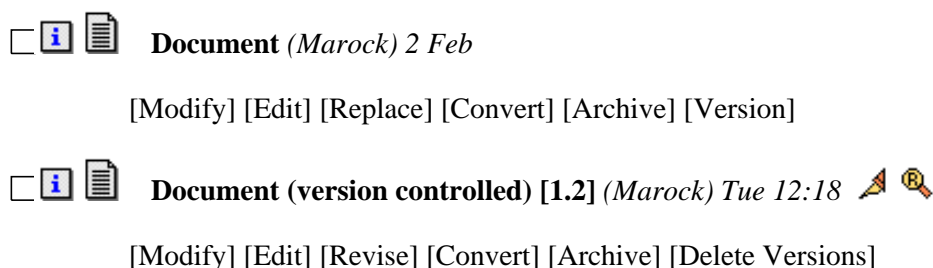


Figure 4.8-1: [Action] line of a document under version control vs. that of a standard document

Note:

Clicking the document name or the document icon will always bring up the **current version**.

[Convert], **ARCHIVE** and **COPY** refer to the **current version** only.

CUT or **DELETE** refer to **all versions** of a document under version control.

4.8.2 Creating a new version



If you [Edit] a text document under version control directly on the server, a new version is created automatically. Its version information can be completed or modified subsequently by means of [Modify] or via the info page.


The [Replace] action is called [Revise] for documents under version control, indicating the changed functionality. The form used for uploading a file as a new version provides default values for the new **version number** and the **version state**. These can be modified, for example, if you want to indicate a significant change from the earlier version to the current version by an out-of-sequence version number.

If you want to change the default value for the version number, please observe the rules described in section 4.8.7. Essentially, the version **number** of a new version has to be higher than that of any earlier version. For the version **state**, BSCW provides the values 'experimental', 'stable' and 'released' -- you may enter your own descriptors manually. The version state could, for instance, be used to indicate to those accessing the document whether the document is a draft, the latest revision of a document, if it has been reviewed or whether it is now obsolete -- more in section 4.8.8.

4.8.3 Branching versions


If a document is edited simultaneously by several authors or if different variants are to be managed in parallel, you may *branch out* the document into two or more parallel 'current versions'. Branching might also be useful where a general document is to be customised by different groups within an organization.

Click  next to the document in the folder view to bring up the info page. Clicking  in the button bar presents the form for a new branch.

Use the form to determine the version from which the branch is to originate and to name the new document. The new document is a copy of the root version in the same folder. BSCW provides default values for version number and state. All version information can be modified by clicking [Modify] in the document's [Action] line or  on the info page -- see section 4.8.5.

BSCW provides no specific support to consolidate ("re-unite") several version branches that have been modified in parallel. Use version number and change description to describe the consolidation informally.

4.8.4 Accessing earlier versions

Click  to the left of the document icon in the folder view to bring up its info page. For a document under version control, it contains a table captioned **Version history** and, for a document in a version branch, another table called **Related branches**. The tables contain one row per version showing the version information.

BSCW provides two methods to access an earlier version:

- click the version number -- in the **[Id]** column -- to download this version.
- obtain the earlier version directly via a URL.

General information on the URL of a BSCW object is in section 4.11. For documents under version control, you have to add the version number to access a specific older version:

```
:version=<version number>
```

is appended to the address of an unversioned document.

Note:

You cannot make any changes to older versions of a document under version control, unless you *branch out* from the version that you want to work from (see section 4.8.3).

4.8.5 Updating version information

It is only for the **current version** that version number, change description and version state can be changed -- for earlier versions this information cannot be edited any more. To change some aspect of a document's version information:

- click **VERSION INFO** on the document's info page to bring up a small '**Change version info for <Document name>**' form. Use this form to edit the change description, version status and version number, or
- click [Modify] below the document name followed by [Version Info] to get to the '**Change version info for <Document name>**' section of this large form.

Note:

This form enables you to make **only the single modification** that you click explicitly. Any additional modification already entered elsewhere in the form will be ignored by BSCW.

4.8.6 Deleting versions

To delete a version of a document under version control, click **FORGET** in the info page of the document. This will bring up a form that lets you delete the versions of a document you are the author of.

It will not be possible to delete a version if it is the root of a version branch.

Use the form to select the versions you actually want to delete from among the versions which may be deleted.

4.8.7 Version numbers and version states

Versions of a document can be assigned a version number and a version state.

Version numbers

Versions are identified by unambiguous version numbers. They consist of (positive) integers in decimal notation separated by points. Both numbers must be between 0 and 32767.

Version numbers come in one of two formats:

- main version number
- branch version number.

The **main version number** includes a position for (more significant) version **jumps** -- before the point -- and a position for (less significant) version **steps** -- after the point:

```
<jump number>.<step number>
```

Examples are **0.1**, **3.11**, **4.5**, **8.1**

A **branch version number** is formed by appending a combination of the form

```
<branch number>.<step number>
```

to the main version number of the (root) version from which the branch originates.

```
<main version number>.<branch number>.<step number>
```

The 'branch number' identifies the specific branch that originates from this root version and the 'step number' indicates the version within this branch.

The version number **0.1.2.3**, for example, identifies version **3** in branch **2** which originates from the main version **0.1**.

Version states

The version state of a document identifies the pertinent state (e.g. degree of maturity) of a work process. For example, a document can first be identified as a 'draft'. After an inspection, the state might be set to 'accepted' or later to 'published'.

You and your colleagues may agree on suitable states for the work processes and input them into the fields for the version state. To facilitate work, BSCW provides a menu with three possible values of version state which you may *interpret* according to your particular requirements:

- **experimental**
- **stable**
- **released**

4.9 Articles and discussions


Short pieces of text addressed to all members of a workspace can be created and "pinned to the bulletin board" using **ADD ARTICLE** . Articles may refer to another article, as:


- answers ---> a question
- counterarguments ---> an argument
- additional pieces of information ---> a piece of information

This creates a tree-like hierarchical structure with an arbitrary number of levels. This structure is called a **discussion** in BSCW.


Articles may contribute different types of content to a discussion, possibly reflecting the author's attitude. BSCW lets you characterize the tone of an article by assigning icons to be displayed to the left of the article name in the folder view. Different icons to indicate different types of contribution may be available on different BSCW servers. GMD's public BSCW server offers the following icons:


 **"unspecific"** article

 **pro** -- approval

 **con** -- disapproval

 **cross** -- strong disapproval

 **important** -- significant contribution to the discussion

 **bright idea** -- sudden inspiration

4.9.1 Writing an article

Writing an article is a simple procedure:

- click **ADD ARTICLE** in the button bar of the workspace or folder to bring up the form that lets you write an article in this particular workspace or folder.
- enter the name of the article in the 'Subject' field.
- write or paste (drop) the text of the article into the 'message' field. HTML tags following a <P> tag in the text of an article will be interpreted by browsers displaying the article.
- The author can modify an article, even after replies have been submitted. Click **EDIT** in the button bar or [Edit] below the name of the article in the folder view.

4.9.2 Replying to an article

You can reply to any article written by another member of the workspace.

To reply to an article from the folder view it is contained in:

click [Reply] below the name of the article.

If an article is currently displayed on your screen:

click **REPLY** to reply to this article,

click **REPLY TO ORIG.** to reply to the article that initiated the discussion.

BSCW will bring up a reply form. The text of the article you wish to reply to has been copied to the 'Text' field, so that you can concentrate on your reply.

There is a default entry in the 'Subject' field. You should, however, enter the gist of your reply in this field, as "Re: Article" is somewhat uninformative, as it is obvious from the context that your article refers to Article.

4.9.3 Browsing through a discussion

Articles in a discussion may form a hierarchical structure. There may be several replies to an article. Each reply can itself have several articles as replies, but each article can only reply to *one* preceding article.

BSCW provides two ways to browse the hierarchy of articles in a discussion:

Jumping from article to article

If the article that is currently displayed on your screen:

- refers to an earlier article, then the name of this article (its 'subject' line) is in the page **header** as a link.
- has already triggered replies, their names ('subject' lines) are in the page **footer** as links.
- is one of several replies to the same article, **PREVIOUS** and **NEXT** buttons allow to move between these parallel replies.

Displaying the article hierarchy

In the folder overview, a ► symbol precedes an article with replies. Click it to obtain the names of the replies. Click the ▼ symbol before the article to fold up (collapse) the list of replies again.

4.9.4 Moving or deleting articles

Remove an article -- and all articles referring directly or indirectly to it -- from a discussion by clicking **CUT** or **DELETE**.

If you **undo** **DELETE** from the wastebasket, the article and all articles replying to it are returned to their original place in the discussion.

If you **CUT** an article, you can only **DROP** it as the start of a new discussion, not as a reply to another article.

4.10 Search

BSCW helps you to

- submit a query to one of the popular Web search services and to store selected results of a query in a folder or workspace -- **WWW SEARCH**
- find objects (folders, documents etc.) in your folders or workspaces -- **BSCW SEARCH**
- check if someone that you have some information about is a user of your BSCW server or is listed in your address book -- **USER SEARCH** .

Clicking **SEARCH** will bring up the query form for the type of search that you used most recently. If you want to perform a different type of search, click **WWW SEARCH** or **BSCW SEARCH** or **USER SEARCH** to switch to the appropriate kind of search.

4.10.1 Using a WWW search service

At the moment, BSCW can access the search services AltaVista, Excite, Infoseek and Lycos. AltaVista additionally lets you choose to perform a 'simple' or an 'advanced' search.

To use the correct form to specify your query and to link to the appropriate 'Query Help', you should first pick the search service you want to use from the menu in the lower section of the form.

Then fill in the fields to specify the query, limit the scope of the search and limit the number of hits returned in the upper section of the form. If you are uncertain about the most effective specification of your query, clicking [Query Help] will take you to the Help function for the search service.

When you click [Do Search], BSCW sends your query to the selected search service and collects the results. Search results will be presented as a list of BSCW URL objects. As a default, the order of this list reflects the relevance ranking of the search service. If you prefer, BSCW will sort the results alphabetically by document name or domain.

In the header of the results page, directly below the logo of the search service, BSCW repeats your query as a link to the original results page generated by the search service, which lets you work directly with the search service very easily.

Special buttons of the results page

COPY

saves the selected URLs to your bag. For an individual URL object in the list, [Copy] in the [Action] line does the same.

VERIFY

checks whether the selected URLs are still valid. For an individual URL object in the list, [Verify] in the [Action] line does the same.

SAVE AS

saves the entire result of search as a 'Search' object (folder) in your bag.

MORE HITS

collects and displays additional hits.

REDO SEARCH

repeats the query as originally specified.

SEARCH

brings up the search form again and lets you modify your last query, e. g., to narrow the scope of the search.

Note:

The Web search engines occasionally modify the format of their lists of 'hits'. As a consequence, the BSCW server software may have to be modified to handle the new format.

If you notice that a search engine does no longer produce the expected results, please inform your BSCW administrator. She or he should contact OrbiTeam about a software patch.

If you are using GMD's public BSCW server at <http://bscw.gmd.de>, please send an email to bscw@gmd.de.

4.10.2 Finding BSCW objects

The BSCW search function helps you find objects on the BSCW server. The search form makes it easy to

- set the scope of the search -- just select your  folder, all your meeting objects, your bag, or your wastebasket.

Note:

Avoid searching 'the entire system'. It may take a long time even on small servers. Due to 'time-out' of your browser, your BSCW session might be aborted.

- specify a complex search term which may combine various items of "meta information" and terms in the content of the object.

Content-based search is limited to plain text and html documents.

You can narrow down your query by specifying

- Type of object
- A search pattern
- Fields to search and search terms
- Boolean combinations of search terms.

You may exclude fields and search terms by marking their checkboxes and clicking

(Delete Selected)

For the search proper, these checkmarks have no significance.

BSCW presents search results as a list of URL objects. The order of the list reflects a relevance ranking. BSCW can also sort the list alphabetically by name of the information object and by location.

Special buttons of the results page

COPY

saves the selected URLs to your bag. For an individual URL object in the list, [Copy] in the [Action] line does the same.

VERIFY

checks whether the selected URLs are still valid. For an individual URL object in the list, [Verify] in the [Action] line does the same.

SAVE AS

saves the entire result of search as a 'Search' object (folder) in your bag.

MORE HITS

collects and displays additional hits.

REDO SEARCH

repeats the query as originally specified.

SEARCH

brings up the search form again and lets you modify your last query, e. g., to narrow the scope of the search.

4.10.3 Searching for a user or email address

BSCW lets you search for users -- either in your own address book or among all registered users of the server ("the whole system"). The second option can be particularly helpful if you want to invite someone into a workspace who is a user but whose user name you do not know.

As search criteria you can specify fields of the 'Details' form, which every registered user should have filled in. On many BSCW servers, however, the only information that is likely to be known for each user is 'user name' und 'email address'.

If you have found the user that you are looking for, click **TO ADDRBOOK** to add the user's entry to your address address book.

4.11 URL for objects in workspaces

BSCW lets you create and manage sets of interlinked documents (HTML files, GIF or JPEG files, audio or video files etc.). You can share them with the other members of the workspace and even publish them for anonymous access on the Web (in section 4.7 there is more on setting access rights for anonymous access and on adjusting URLs accordingly).

Links can also be included in articles (see section 4.9), in the 'description' attached to objects in workspaces and in various other text fields.

- If you want to create a link to an object in another workspace on the same server, make sure that registered users of the server have 'Get' access for this object.
- If you want to create a link to an object in a workspace on another BSCW server, make sure that the user *anonymous* has 'Get' access for this object (see section 4.7.6).

To create a link, you need to know the URL of the object on the BSCW server. This URL may have two different forms:

- BSCW's internal address
- the path in a folder (directory) tree

each with its specific advantages. BSCW's internal addresses are short, they do not change when the object is moved to another folder, when a folder is renamed etc., and they can be used as entry points into a hyperlinked structure from outside the BSCW server.

On the other hand, by using the familiar 'relative' directory path URLs, you keep a hyperlinked structure portable, i.e. you could archive it, take it to a different server, move it to an arbitrary place in the folder hierarchy and have the links intact and working. Restrict access rights (see section 4.7) to prevent your co-workers from inadvertently renaming objects or moving them around.

4.11.1 BSCW's internal address

BSCW generates an internal address for every object. You can see this URL in the 'Location:' window while your browser displays the object. When it displays a .html file named *article*, the 'Location:' window might show:

```
http://bscw.gmd.de/bscw/bscw.cgi/f3014/article.html
```

You can use this internal address in a link tag in any HTML document:

```
<A  
  HREF="http://bscw.gmd.de/bscw/bscw.cgi/f3014/article.html">Article</A>
```

It can be abbreviated as

```
<A HREF="/bscw/bscw.cgi/f3014/article.html">Article</A>
```


if both documents reside on the same server.

Note:

If you want to allow anonymous access to *article.html*, the address has to be modified to
Article
(For details, see section 4.7.7.)

4.11.2 Folder path URLs

For objects inside your home folder, BSCW can convert the pathnames that are shown to the right of the

 :<your user name>/

in the header section of the folder views, to the corresponding internal addresses.

Objects in the same folder

Take as an example a document `article.html` that contains a picture named `pic.gif` and refers to a second document `doc2.html`. The text of `article.html` might then contain the links

```
<IMG SRC="pic.gif">
...
<A HREF="doc2.html">this document</A>
```

If the three files `article.html`, `pic.gif` and `doc2.html` are in the same folder, BSCW will convert the links correctly.

Traversing the folder tree

Files in subfolders, in folders higher up the directory tree or in a different branch of the tree of workspaces and folders can be addressed in the same way, following standard UNIX notation. If the image file `pic.gif` is in the subdirectory `pictures` and the second document is in the folder `documents` in a folder `more`, then BSCW will convert the links

```
<IMG SRC="pictures/pic.gif">
...
<A HREF="more/documents/doc2.html">this document</A>
```

correctly.

Similarly, if the document `doc2.html` contains a link

```
<A HREF="../../article.html">previous document</A>
```

this is again converted correctly, if `doc2.html` has an address path with at least two directories before the name of the object -- as in the example above.

4.12 Convert and compress documents

Conversion ...

... helps you share documents when not all members of your workspace can use the same programs. Conversion translates a document from one (typically program-specific) file format into another one that you and your colleagues may be able to read and edit more easily than the original format.

Nobody is perfect:

Like conversion programs on your local computer system, the conversion routines in BSCW cannot translate all features of program-specific file formats into other formats *without losses*. As far as possible, BSCW will advise you of changes or losses to be expected from a specific conversion.

Compression ...

... reduces the file size of a document, i.e., the storage space requirements and the time to download a document. You typically need a matching program on your local system to de-compress a compressed file in order to make it usable again.

Click [Convert] in the [Action] line of the document to bring up a form showing the formats into which BSCW can convert your document. Select a destination format and/or the compression and encoding to be applied.

BSCW will write the converted or compressed file to your bag (see section 3.5) and then display a form which lets you immediately download the document.

Note:

Conversion and compression programs are *not* part of the BSCW server software. They have to be installed separately by the server administrator. Thus, the selection of conversion and compression programs available on a BSCW server is determined by its administrator.

4.13 Archive objects

BSCW can transform copies of a set of objects (folders, documents etc.) into one compact file -- an archive -- that saves storage space and download time. This function is especially useful for downloading numerous or big files as fast and cost-effectively as possible.


Note:

Archiving does not affect the original objects in any way. To actually save storage space on the BSCW server, you have to *destroy* the original objects.

Note:

The archive formats cannot incorporate the meta information (owner of a document, history, description, access rights etc.) that BSCW manages for each object. The meta-information is omitted in the archive.

In particular, information about members of workspaces and participants of meeting objects is lost in the archiving process, i.e., workspaces and meetings are archived as **folders**.

To create an archive, select all objects which you want to include by clicking their checkboxes. If you want to combine objects from different folders or workspaces in an archive, copy them to your bag. There, you should expand the 'current selection' so that all objects you want to archive are selected. Then click  .

BSCW brings up a form that lets you select the archive format (*tar* or *zip*), compression (*Gzip* or *Compress*) and encoding (*UUE*) that you and/or the recipients of the archive can process on their local systems.

BSCW stores the archive in your bag (see section 3.5) and offers to immediately download it.

4.14 The BSCW Helper program

As an alternative to the file upload function of Netscape Navigator and of MS Internet Explorer (version 4.0 or better) -- or possibly as a necessary supplement to other browsers -- you may use a **BSCW Helper** program to upload documents to your workspaces.

You may download the Helper programs from GMD's public BSCW server (<http://bscw.gmd.de/Download.html>) -- possibly also from your BSCW server -- and use them **free of charge**.

The Helper programs can transmit **several files** "in one operation" and in general they correctly recognize the MIME types of the documents. In addition, they display a progress bar to show how much longer it will take to upload the files.

Note:

BSCW recognizes if your browser supports file upload and sets the use of this function as a default. If you want to use a Helper program instead of your browser, you must open your Preferences form (see section 4.2) and select **Use BSCW Helper for file upload**.

4.14.1 Helpers for UNIX

Unix Transmitter

Functionality:

- Rich feature set

Requirements:

- The BSCW native Unix transmitter requires the **X windows Motif widget set** to be compiled
- Statically built versions on the transmitter exist for SunOS and Solaris machines without X-Motif

'Command line' Uploader

Functionality:

- Primarily for developers, allows upload to a BSCW server from the Unix command line (or other programs ...).

Requirements:

- Runs on numerous Unix variants, including Irix and HP. It was tested only on machines under SunOS 4.1.x, Solaris 2.x. or NextStep.

Please, keep us informed about your experience with porting the uploader to other systems!

4.14.2 Helpers for Windows

Drag & drop Uploader

The Helper program available from here can be used to add functionality for users of Windows 95 or NT 4.0. It is only essential to run the 'platform specific helper' if you still run Windows 3.1x.

Functionality:

- Drag and drop uploading of multiple files. In combination with Netscape Navigator, 'drag and drop' from the desktop to Navigator is supported. Users of MS Internet Explorer can drag files to a special 'upload' icon on the desktop.
- Automatic document type detection using the Windows Registry.
- Support for command-line execution for calling from other applications.

Requirements:

Windows 95 or Windows NT, about 400k disk space

Basic Windows Helper

Functionality:

- Fewer features than the Drag & drop uploader, but progress reporting and automatic document type detection are provided
- support for Windows 3.11/NT 3.5.1.

Requirements:

- Windows 3.1x - about 160k disk space
- Windows 95, Windows NT - about 50k disk space

4.14.3 Helper for MacOS

Functionality:


- Multiple file upload
- Drag and drop
- Full progress reporting

Requirements:

- PowerPC or 680x0 Macintosh
- MacOS 7 or higher; MacOS 7.5 or higher for 'Drag and drop'

5 Support for synchronous cooperation

5.1 Meeting

BSCW offers a meeting object, represented by  , which lets you organize, prepare and support events of *synchronous* cooperation.

- The meeting object manages information about the details of a specific *synchronous* cooperation event -- date, time, place, participants, type of meeting etc.
- The meeting object can be used as a folder for preparatory documents, presentations, proceedings etc. of the actual meeting.
- The meeting can initiate virtual synchronous cooperation (e.g. via a conferencing application over the Internet) by starting the respective programs and establishing connections.

You can access a BSCW meeting from

- the workspace or folder where the meeting was created,
- your Meetings Calendar, which manages all your BSCW meeting objects for you (see section 5.2).


In the folder view, all members of the workspace see the meeting -- even if they have not been invited to participate. For the invited participants, the meeting also shows up in their personal Meetings Calendar.

5.1.1 Creating a meeting

Click **ADD MEETING** in the header of your workspace or folder. This brings up a form where you can enter for your meeting:


- **Date & time**
- **Location** -- for a face-to-face meeting, you can specify a location. For a virtual meeting, enter the network and the application in which you plan to meet your colleagues. For some conferencing programs, you must also specify an IP address for BSCW to be able to start the application.
- **Participants** -- can be selected from the list of the workspace members. Additional participants can be entered as email addresses.
- **Notes** -- miscellaneous information about the meeting.

The invitation to a meeting is **not** also an invitation to the shared workspace. The email address that you enter to specify an external participant is used only within the meeting object. Therefore external participants (i. e., participants who are not members of the workspace that the meeting object belongs to) do not automatically have access to the information contained in the meeting object. If you wish to make access possible for them, you should


- create the meeting object *without* letting BSCW send an invitation email to the participants automatically
- modify the access rights to permit anonymous access to the meeting object and its contents (see section 4.7)
- from the meetings  page and using the list of participants as recipients, send an email to the participants to inform them about the anonymous access allowed and about the URL to use for accessing the meeting object (see section 4.7.7).

5.1.2 Modifying details

Click [Modify] in the [Action] line of the meeting object to bring up the form with the current details of the meeting. You can modify these as required. BSCW can help you to inform all invited participants by email about important modifications and to ask them again to confirm or decline participation.

Click  to the left of the <Name of the meeting> to bring up its info page. Under '**Details of <Name of the meeting>**' you will be able to see who is invited and who has already confirmed or declined to participate.



5.1.3 List of participants

Just as a workspace has its list of members, a meeting object has its own list of participants. Click the  icon to the right of <Name of the meeting> to call up the participants page. Similar to the membership page of a workspace, the participants page lists the user names or email addresses that have been entered as participants of the meeting. As a reminder that all members of the workspace can access the meeting object and its contents, BSCW has automatically added the BSCW group 'Members of <Name of the workspace where the meeting object is located>'.

Warning:

You should avoid to  this BSCW group from the list of participants.

BSCW offers two ways to add participants to an existing meeting:

- Click  in the header of the meeting overview or the participants page to bring up a form that lets you invite additional participants
 - who are registered users of the BSCW server and whom you want to invite to the *shared workspace* and to the meeting,
 - who are to become members of the shared workspace and participants of the meeting **when** they register as users of the BSCW server.
- Click  in the info page of the meeting object -- or [Modify] in the [Action] line below the name of the meeting object -- to bring up a form that lets you invite to the meeting
 - members of the workspace and
 - persons represented by their email address -- irrespective of their membership in the workspace or their 'registered user'-status.


You can also use




to remove selected participants from the list;



to send an email to selected participants;

 in the upper button bar

to add **all** current participants of the meeting to your address book as the BSCW group 'Members of <Name of the meeting>';


 in the xyz button bar

to add selected participants as individual entries to your address book;




to create a new **BSCW group** that takes the place of the individual entries in the participants list and is added to your address book.

Note:

When you create this new BSCW group, BSCW creates a new workspace with the name of that group and adds it to the top level in your  folder. The meeting object from whose list of participants you created the new group is transferred into this new workspace (see section 4.5.3 for details).

5.1.4 Participate in virtual meeting

To set up a virtual (electronic) meeting at the agreed time, click  in the meeting overview or [Join] in the [Action] line of the meeting object in the folder view where it resides.

BSCW then sends a file to your system with the MIME type that will

- start the conferencing application specified in the meeting object and
- connect it automatically to the correct addresses,

if your computer system, and in particular the browser, are configured appropriately. (Consult the manual or the electronic help of your browser and of the conferencing application.)

5.1.5 Conferencing programs supported

Most of the conferencing programs currently supported by BSCW can be used free of charge or for a small licence fee.

You can download the software -- in part licensed for test and evaluation only -- from:


- Connectix Videophone (<http://www.connectix.com>)
- WhitePine Enhanced CU-SeeMe (<http://www.cu-seeme.com>)
- Intel Internet Video Phone (<http://connectedpc.com>)
- Intel Proshare (<http://www.intel.com/proshare/conferencing/>)
- Microsoft Netmeeting (<http://www.microsoft.com/netmeeting>)
- Netscape Conference (<http://www.netscape.com>)
- Netscape Cooltalk (<http://www.netscape.com>)
- VDOnet VDOPhone (<http://www.vdo.net>)

Note:

Supplementary audio or video hardware may be required to use these programs.
Interoperability may be limited to specific hardware platforms.

5.2 Calendar of your BSCW meetings



Click the  icon in the footer of any folder view to bring up your calendar of BSCW meetings. The calendar is a **personal** object (like your bag and your wastebasket). In the form of a folder view it shows you *all* meetings to which you have been invited, not only those in the current workspace.

5.2.1 Time window

BSCW can show you one of four time windows on your meetings calendar:

- all BSCW meetings
- all *future* BSCW meetings
- BSCW meetings in the current *month*
- BSCW meetings in the current *year*.

Click the respective button to display the required time window.

5.2.2 Confirming your participation or declining an invitation

The icons to the left of each meeting in your calendar show whether you have:





confirmed your participation



not yet replied




declined the invitation.

Mark the checkbox of a meeting and click  to confirm your participation or  to decline the invitation. Your calendar and the details of the respective meeting object are updated accordingly.

5.2.3 vCalendar export

vCalendar is a transfer format for calendar information (supported by Netscape Calendar, amongst others). Using this format, you can download the information about BSCW meetings into your local calendar program easily (see section 4.5.4 for the transfer format **vCard**).

Click the  icon next to <Name of meeting> to download the information about the meeting in vCalendar format with the MIME type `application/x-vcalendar`.

5.2.4 Special functions

The calendar offers the [Join] action for virtual (electronic) meetings. It will start the conferencing program which is specified for the meeting.

Mark unwanted entries in your calendar and click  to delete them from your calendar. This action affects *only* your calendar; the meeting object itself remains unchanged.

Note:

This operation **cannot** be undone.

5.3 Monitor

The kind of virtual meetings that the BSCW meeting object supports typically are a rather formal way of synchronous cooperation. The Monitor provides support for more informal, spontaneous communication and cooperation among the members of a group, using BSCW as the infrastructure.

Note:

The BSCW Monitor may not be available on your BSCW server if the BSCW administrator has not yet activated this functionality in the server software.

At the moment the user interface of the Monitor is in English only.

5.3.1 User perspective

The BSCW Monitor applet collects and displays information about

- Presence and availability of a subset of users of a BSCW server

This subset is defined by two criteria

- the users have the BSCW Monitor applet running and connected to that server
- the users are listed in your address book.

Presence means that the user has opened a session on that server and the Monitor applet is connected to that server.

Availability may be set to 'available' or 'away/busy' by the user to indicate that you may or should not try to start a direct interaction.

- activities (events) in your workspaces

The events that are reported are identical in scope (i. e., *all* your workspaces on the server) and organization (types of events) to the Daily Workspace Activity Report (see section 4.2.5). The main advantage of using the BSCW Monitor applet is the near real-time alert to relevant events.

Note:

The BSCW Monitor is based on the principle of **reciprocity**: When you start the Monitor, all the users that you see as being 'online' can see that you are connected to the same BSCW server. Just as you can be informed about their activities, they can observe what you are doing.

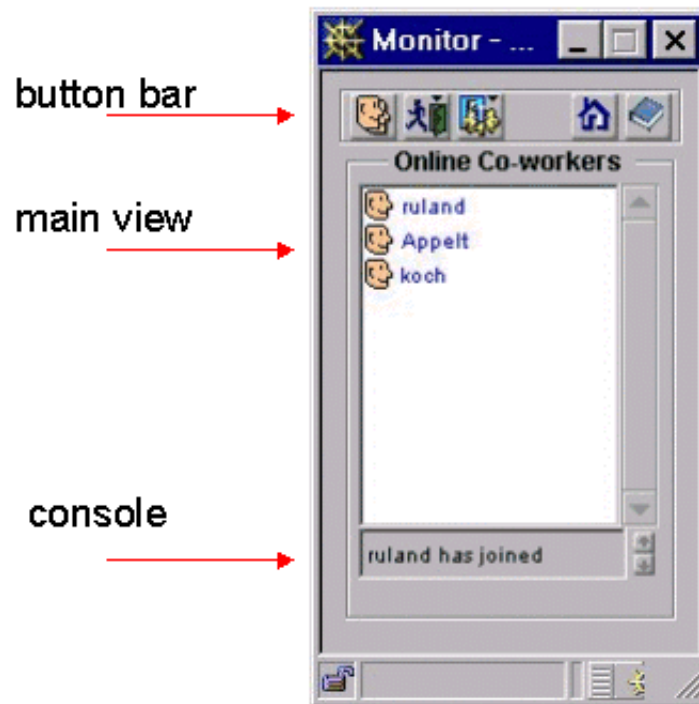


Figure 5.3-1: Main window of the Monitor applet, showing Online Co-workers

You can have just one Monitor window that displays either 'Online Co-workers' or 'Activity Tracker', or you can allocate a second window to the Activity Tracker and have both kinds of information immediately available on screen. Click the leftmost icon in the Monitor button bar for a drop-down menu that lets you switch among these alternatives.

5.3.1.1 Activity Tracker

If it is important for you to be aware immediately that, for example, a particular document has been edited or uploaded, the Activity Tracker is the most convenient and cost effective tool to get that information as quickly as possible, and to access that document.



Figure 5.3-2: Preferences window of the Monitor applet

The Preferences menu lets you focus the Activity Tracker on reporting only selected types of events. The narrower the focus of reporting, the greater the benefits of being **alerted** to events. Choose to be alerted by a visual and/or auditory signal in the Preferences menu.



Figure 5.3-3: Section of main window of the Monitor applet, showing Activity Tracker

Double-click an event in the Activity Tracker window for a pop-up menu that lets you

- open the 'Event Details' window that provides information about the activity,

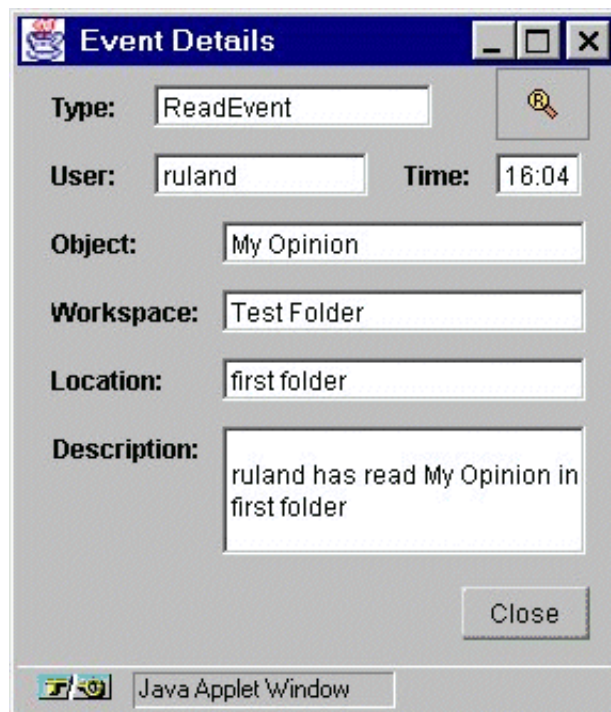


Figure 5.3-4: Event Details window of the Monitor applet

- display the personal info page of the user associated with the event (in a new browser window),
- open or download the object acted upon in the event (in a new browser window),
- open the folder or workspace or meeting that contains the object (in a new browser window),
- remove the event from the list or
- clear the list , i. e., remove all events from the list.

5.3.1.2 Online Co-workers

The information provided in the Online Co-workers window of the BSCW Monitor is more difficult to use, because there may be some room for mis-interpretation:

- you may *not* be visible as being online though you are actually working with the server -- because your Monitor applet has not been started or is connected to a different server;
- you may be visible as being online -- because your BSCW session on that server is open all day, though inactive, and you have failed to set your availability to 'away/busy'.

To fully benefit from the Online co-workers Monitor, the members of your workspaces should follow four simple rules:

- Include all member of the workspace in your address book;
- In the Preferences menu select 'Auto-launch Monitor applet at login'
(For this function to work, you have to let your browser accept cookies, enable JavaScript in your browser and in your Preferences for the BSCW server -- see section 4.2.2);
- Update the availability status whenever it changes;
- Indicate in the 'away/busy' message, at what time you will be available again.

Click the user name in the Online Co-workers window for a pop-up menu that lets you

- display the personal info page of that user (in a new browser window),
- send an email to that user,
- send a short message to that user,
- start a chat application with that user,
- invite that user into a chat
- select a conferencing application to contact that user.

5.3.2 Technical perspective

From a technical point of view, the Monitor is a Java applet that you download once from the BSCW server and install on your local machine.

5.3.2.1 Requirements

To install and run the applet, you need Netscape Navigator 4.0 (or better) or Microsoft Internet Explorer 4.0 (or better). The applet takes up about 200 KB disk space when used with Navigator or about 1.2 MB when used with Internet Explorer.



5.3.2.2 Safety

During installation your browser may inform you that there is a moderate risk involved in downloading and installing the software; when the applet is invoked from a BSCW server, you are even warned of a high risk involved when your machine communicates with another over the network.

The BSCW project team has done everything in their power to make it safe for your system to install and run the BSCW Monitor applet!

5.3.2.3 Installing and starting the Monitor applet

If you install the applet with Netscape Navigator, you must quit and restart your **browser** after the installation of the applet, before you can use the Monitor.

To start the Monitor applet, click  in the folder overview of your  folder. Starting the applet will take a moment or two. In the process you will be asked to provide your password for that server.

Once the Monitor applet has been started by from a BSCW server, communication between server and applet can be initiated by either party -- provided there are no technical obstacles such as firewalls.

5.3.2.4 Monitoring a different BSCW server

The Monitor applet can be connected to just *one* server at a time. To monitor a different BSCW server, you have to switch over manually. Focusing the Monitor applet on a new BSCW server is done by that server. You have to initiate this "re-focusing" in the same way as starting the applet: click

 in the folder overview of your  folder on the new BSCW server. You will have to provide your password for the new server.