BSCW Administrator Documentation

Release 7.6.1

OrbiTeam Software

Nov 07, 2024

CONTENTS

CHAPTER

ONE

HOW TO READ THIS MANUAL

Before installing your BSCW server you should read at least:

- the introduction to *Installation of the BSCW server* (in particular, section *Upgrading to BSCW 7.6.1* of chapter 2 if you are upgrading an BSCW instance),
- section *Installation procedure for Unix* of chapter 3

This should be sufficient to install the BSCW server and carry out the initial configuration of the server. If you have problems with the installation and initial configuration process, you should read the respective sub-section of

- *Installation procedure for Unix*

See also

Chapter 9: *Frequently Asked Questions (FAQ)*

In general, this should give you enough information to get your BSCW server up and running.

The BSCW server is initially equipped with a license which allows usage and testing of the BSCW server for a trial period of **90** (ninety) days. After 90 days, the BSCW server is no longer fully usable (except for a few fundamental operations such as the upgrade license operation). Therefore, if you decide to use the BSCW server for a longer period, you need to acquire a license. The acquisition of licenses is described in *BSCW license*. If you have problems when upgrading your BSCW license, you should also have a look at the respective entries in *Frequently Asked Questions (FAQ)* or contact OrbiTeam (support@orbiteam.de).

The BSCW server has a considerable number of configuration options. If you have gained some experience with usage of the BSCW system you should read chapter 4 *Configuration of BSCW Servers* to find out what configuration options are available and whether they could be used to satisfy the requirements of your users better than the default settings as specified in the code you downloaded. Additionally you may want to enable some extra packages.

See also

Chapter 5 *BSCW Packages* for a detailed description of the additional BSCW functionality provided in package extensions.

In general, the administrative overhead for running a BSCW server is very low. In fact, you may install and configure your BSCW server such that you practically never need to bother with administration. Most likely, however, sooner or later you may have questions such as “How many users are registered at my server?”, “How can I rename or delete a user?”, or “How can I restrict the creation of workspaces?” Answers to such administrative questions can be found in chapter 6 *Administration of BSCW Servers* and in chapter 9 *BSCW Server Administration*.

CHAPTER

TWO

INSTALLATION OF THE BSCW SERVER

As a prerequisite for installing a BSCW server you need either a server host running a Unix system - the BSCW server is supported on Linux and BSD.

2.1 General Requirements

The hardware requirements depend largely on the number of users that are expected to use the system. In general, the hardware requirements are not particularly high. For example, a Intel Core/Xeon or a AMD EPYC/Ryzen (>3,5 GHz) with at least 6 cores, 16 GB RAM and 500 GB disk space should provide an environment with satisfactory performance for about 200 users.

The BSCW server is an extension of a Web Server with the respective BSCW functionality. The BSCW software is written in Python (see the Python website at https://www.python.org/). Therefore, besides the BSCW software, the installation of the BSCW server requires

- the Apache HTTP server (>= 2.4.40 resp. >=2.4.37 for EL 8).
- the `Node.js` (v20 LTS) an event driven JavaScript runtime
- a Python 3.9, 3.10, 3.11, 3.12, or 3.13 interpreter
- Python `Jinja2` template engine
- (optional) extensions for Python (`pylucene`, `ldap3`)
- (optional) `memcached` to speed-up large folder handling (Unix)
- (optional) converter software for the BSCW preview feature, see sections 3.3 *Software for BSCW Preview* (Unix) for details

Additionally the `Node.js` runtime environment is required, which pushes occurring change notifications almost in real-time to active users, using a WebSocket-based events server. The Node.js runtime environment is freely available at the Node.js Foundation website (https://nodejs.org/en/download/). Best use the Node.js LTS release.

Finally a Python 3 interpreter and the Python Jinja2 template engine is required to run the BSCW software. The Python 3 interpreter is freely available on the Python Software Foundation website (https://www.python.org/downloads/). We currently support versions **3.9** to **3.13** of the Python interpreter only.

After installation the BSCW server needs to be configured. Only very few configuration efforts are required as a minimum since a few variables (e.g. the email address of the system administrator of the BSCW server) need always be set individually. The server offers a large number of configuration options but we recommend that initially a BSCW system administrator uses the default settings, except for those options which need to be configured as a minimum.

Note

Please also consult chapter 9 *Frequently Asked Questions (FAQ)* in this manual - or the online version at https://www.bscw.de/en/support/ - for common and platform-specific installation questions; if you have a problem not addressed there, send an email to support@orbiteam.de.

2.2 Security considerations

Newly installed BSCW instances do have the following possibly security relevant features enabled by default:

1. *Enabled user self-registration*

   A newly installed BSCW instance allows every registered user to create a new user account by registering a new email address. This is probably not in all situations the desired behavior. If you do not want to allow the self-registration of new user accounts by registered users, you have to disable this feature by setting in the instance configuration file `<bscw-runtime-path>/conf/config.py` the directive *MAY_REGISTER* to a non empty list. See the directive description in the instance configuration file for details.

2. *Enabled "public space"*

   By default BSCW allows users in the "manager" role to publish the contents of a folder in a "public space", which can be accessed by everyone over the World-Wide-Web without being a registered user of the server. Recently misuse of this feature was reported (users published inappropriate content). To disable the public space for all users see section 6.5 *Public space deactivation*.

3. *Environment with credential information (Unix)*

   Depending on the authentication method the user credentials are passed via an environment variable (Basic/Cookie authentication) in plain text to the **`bscw.cgi`** process. Even if the credential information is removed immediately from the environment this might impose a security problem on systems running other applications with the user-id of the Apache web server. In this case such an application may disclose user names and passwords from the environment of a running **`bscw.cgi`** process.

2.3 EU - General Data Protection Regulation

The General Data Protection Regulation (GDPR) (EU) 2016/679 is a regulation in EU law on data protection and privacy for all individuals within the European Union.

The GDPR aims primarily to give control to citizens and residents over their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU.

According to the GDPR BSCW has introduced the following measures:

- In order to simplify the information about processed personal data, the recording of events has been extended for user accounts accordingly.
- In addition to the user [i]nfo page on the web interface, for each user account an export of personal data is possible with the command line program **`bsadmin userdata`** in a machine-readable format (JSON).
- After the deletion of an user account, an audit log (history) of events is saved to an external file in the directory `<bscw-runtime-path>/var/data/rmuserarc` to document all processing operations (including deletion).

  This audit log file is automatically removed at the end of the following year (see § 76 BDSG-Protokollierung (4)) by the `/etc/cron.daily/bscw` Cron script (see *BSCW Startup* for details).

With the legal validity of the EU - General Data Protection Regulation (GDPR), it will be necessary to provide a data protection declaration which sets out what personal information is collected during the use of the BSCW system and how these data are used.

You can find a template of a data protection declaration for BSCW on our website

```
https://www.bscw.de/files/dataprotection/Dataprotectiondeclaration-BSCW.docx
https://www.bscw.de/files/dataprotection/Datenschutzerklaerung-BSCW.docx
```

or in the BSCW software distribution in the directory <$HOME>/lib/bscw-7.6.1-<rev>-py3*/doc/dataprotection/:

```
* Dataprotectiondeclaration-BSCW.docx
* Datenschutzerklaerung-BSCW.docx
```

Please edit the data protection declaration accordingly (e.g. adopt controller contact, organisation address and complete which data is required for BSCW registration) and create a PDF document which may be located in the BSCW runtime path <bscw-runtime-path>/var/www at:

```
$ cp Dataprotectiondeclaration-BSCW.pdf Datenschutzerklaerung-BSCW.pdf \
  <bscw-runtime-path>/var/www
```

Next define the runtime directives in the instance configuration file <bscw-runtime-path>/conf/config.py:

```
PRIVACY_POLICY = '/pub/Dataprotectiondeclaration-BSCW.pdf'
PRIVACY_POLICY_DE = '/pub/Datenschutzerklaerung-BSCW.pdf'
```

Note

/pub/ is the default "public" path, you can replace it by your SERVER_HOME (which is usually /).

If the *PRIVACY_POLICY* directives are defined the self-registration procedure requires new users to agree with this data protection declaration to complete the registration.

Afterwards recreate the BSCW instance index pages to reflect the changes with:

```
$ bin/bsadmin index_page
```

2.4 Upgrading to BSCW 7.6.1

If you are installing BSCW for the first time please refer to the installation section (*Installation procedure for Unix*). For upgrading, you essentially proceed the same way as shown in the installation section.

Note

- If you are using the Apache HTTP server you must **restart** the web server after each upgrade.
- It is possible to upgrade your Python version before a BSCW upgrade.
- To list all installed BSCW instances on the installation host run **bsadmin manage_servers -l**:

```
$ ./bin/bsadmin manage_servers -l
/opt/bscw/srv/bscw.domain.org:   BSCW 7.5.4
```

Substitute <bscw-runtime-path> by your actual BSCW instance installation path. However, please take note of one or more of the following points which might apply to your situation:

Warning

Please make a **backup** of your current BSCW data **before** you upgrade your BSCW server.

DO NOT UPGRADE

- If your current license is invalid (e.g. license expired, wrong host). Upgrading of BSCW with an invalid license will fail. Please obtain and install a new valid license first. Contact license@orbiteam.de for details **OR**
- If your license does not include free upgrades. (If you have a *time-unlimited* license, i.e. a license which does not expire, your license does NOT include free upgrades.) Upgrading of BSCW will invalidate your existing license key and will result in an inoperable BSCW system. Contact license@orbiteam.de for details.

See also

Upgrading on Unix to consider the following advices when upgrading:

When **upgrading from BSCW 7.6.0 or lower**

Support for Python 3.12 and 3.13 has been added, and support for 3.8 has been removed.

When **upgrading from BSCW 7.5.4 or lower**

It was necessary to adapt the BSCW configuration of the Apache proxy for newer versions, so that BSCW now requires at least Apache HTTP server 2.4.40 (resp. >=2.4.37 for EL 8).

The "ssl" module of the Python interpreter must support at least OpenSSL 1.1.1+.

The `<bscw-runtime-path>/conf/apache24/site.conf` has been updated, so it may be necessary to apply these changes to the Apache HTTP server configuration in `/etc`.

When **upgrading from BSCW 7.5.3 or lower**

Following penetration tests by the BSI and by T-Systems, further security improvements were made. In particular, the included jQuery javascript library has been updated.

Please update the Apache HTTP server definition for your BSCW service to define additional security header fields. For further details please refer to the *Security Header* section in `<bscw-runtime-path>/conf/apache24/server.conf`.

The the real-time conference service(s) support now JSON web token authentication (RFC 7519). See the *CONFERENCE_PROVIDER* directive for details.

When **upgrading from BSCW 7.4.4 or lower**

The configuration of the real-time conference has been unified. This requires the transfer of the previous `COMMUNICATION_SERVER` setting into the `CONFERENCE_HOST` variable (prefixed with 'https://'). Furthermore, the Apache modules `authn_core`, `authz_core`, `filter`, `proxy`, `proxy_http`, `proxy_wstunnel`, `ssl` and `substitute` must be activated.

After setting `CONFERENCE_HOST` run **`bsadmin conf_apache -T`** to create an access token file `conf/apache24/service_token.conf`.

When **upgrading from BSCW 7.4.3 or lower**

Further critical security vulnerabilities have been fixed during an intensive security audit. Please update your BSCW instance immediately to at least version 7.4.4 (many thanks to stuxxn@redshell.dev). Attention: The found security vulnerabilities will be published with CVE reference at https://www.bscw.de/security-fixes/ starting 2021-11-29.

When **upgrading from BSCW 7.4.2 or lower**

Please upgrade your BSCW instance to at least version 7.4.3.

(Security) A critical vulnerability has been discovered allowing remote code execution by authenticated users, see CVE-2021-36359.

(Security) A possible exploit of a security vulnerability in the external reportlab library has been fixed. The upgrade procedure may disable the BSCW package *exportpdf*. To re-enable it, install a reportlab version >= 3.5.55 and run **`bsadmin package -e exportpdf`**.

The resource consumption of quotas should be recalculated by running **`bsadmin dbcheck repair -f q`** because an error occurred that counted versioned documents twice.

When **upgrading from BSCW 7.4.1 or lower**

(Security) The registration token in a registration email has been strengthened. Note: previously sent registration tokens become invalid.

When **upgrading from BSCW 7.2.1 or lower**

(Security) The Apache HTTP configuration has been extended with the following HTTP security headers: *X-Content-Type-Options*, *Referrer-Policy*, *Strict-Transport-Security*. These headers are automatically enabled in the Apache HTTP server virtual host configuration `conf/apache24/site.conf`; please make sure to apply these changes to your current configuration.

For new BSCW instances the default values of `BADPASS` and `ALLOW_MAIL_UNLOCK` have been changed. For existing instances the values are not adopted, so it is recommended to manually set the values in `<bscw-runtime-path>/conf/config.py` to `BADPASS = 10` and `ALLOW_MAIL_UNLOCK = True`.

A new `AUTH_TOKEN_EXP` configuration directive has been introduced to limit the maximum validity period of a registration link, see `<bscw-runtime-path>/conf/config.py` for details.

The HTML/PDF converter PhantomJS has been replaced in favour to WeasyPrint. If possible, you should install WeasyPrint before updating BSCW, see *Software for BSCW Preview Unix*

When **upgrading from BSCW 7.1.0 or lower**

The BSCW 7.6 release requires the installation of a Node.js runtime environment. See *system requirements for Unix systems*.

A new "dark theme" has been introduced. To make it available to all users the `THEMES` list in the instance configuration file `<bscw-runtime-path>/conf/config.py` has to be extended with an `'default/default_dark'` entry as follows:

```
THEMES = [
   'default/default',
   'default/default_dark',
]
```

When **upgrading from BSCW 5.2.6 or lower**

BSCW 7.6 does not support all (500+) features from BSCW 5 (or earlier) versions. If you are upgrading from a BSCW 5 version, it is advisable to run the **`bsadmin migrationchecker`** to see if all objects can be migrated. Please contact support@orbiteam.de for further assistance.

Native Windows support has been discontinued for BSCW 7. It is possible to run BSCW 7 on a Windows operating system using virtualizations like VMware, Hyper-V, Docker container or WSL.

The upgrade procedure converts the BSCW persistent data store to the Python 3 object serialization format and reverses the order of the object event queues. This process may require a large amount of (additional) memory. Before starting the upgrade procedure it is advisable to perform the following steps:

- perform a garbage collection on the originating system and save the backup storage

```
$ cd <runtime>
$ bin/bsadmin garbage
...
$ mv var/data/Backup var/data/Backup52
```

- BSCW 7.6 requires Python 3.9, 3.10, 3.11, 3.12 or 3.13. To upgrade, one of the supported Python 3 versions must first be available on the BSCW target system. It is recommended to migrate your Python 2 based BSCW instance to a new distribution with native support for the selected Python 3 version. See *system requirements for Unix systems* for a detailed description of required software packages.

  If you use Berkeley DB to maintain BSCW database tables (`DBMOD_TAB = 'bsddb4'`) you have to install the Python bindings for Berkeley DB (`bsddb3`):

  – Debian based systems:

```
$ su -
# apt install python3-bsddb3
```

- EL 8/9 based systems:

```
$ su -
# dnf install libdb-devel
# pip-3.11 install bsddb3
```

- disable all user access to the BSCW server to avoid interference between users and the upgrade process by stopping the web service
- start the upgrade procedure

```
$ sudo su -
# cd bscw-|relmajor|.*-<hash>-py3*
# ./install.sh
```

Note

Depending on the size of the BSCW instance database, the upgrade process requires a lot of memory and may take a long time.

After the upgrade, it is necessary

1. to run a garbage collection:

```
$ bin/bsadmin garbage
```

2. to enable the *pre-forking BSCW HTTP server* for performance reasons
3. to revert all event queues (depending on the size and age of the BSCW database this may require a lot of memory):

```
$ bin/bsadmin fix_event_queue -F ALL
```

4. to check for/fix database inconsistencies:

```
$ bin/bsadmin dbcheck list   -ef ' b c e h m n q s t seeme undelete␣
↪mprofile timezone'
$ bin/bsadmin dbcheck repair -ef ' b c e h m n q s t seeme undelete␣
↪mprofile timezone'
```

5. to initialize all subtree caches for chats/tasks and (optionally) to mark all entries as seen:

```
$ bin/bsadmin subtreecache -mc
```

If the binary python package `setproctitle` is installed BSCW processes are displayed with more telling names. For BSCW 7.6 the `setprocfile` package is included for the supported Python versions.

When **upgrading from BSCW 5.2.5 or lower**

Following penetration tests by the BSI and by T-Systems, further security improvements were made. In particular, the included jQuery javascript library has been updated and a cross-site scripting (XSS) vulnerability in the `mobile` package has been fixed.

The `mobile` package will be disabled during the upgrade because it uses an incompatible prior jQuery version that contains unfixed vulnerabilities. This is purely a precaution, there are no known BSCW exploits.

In particular, all deprecated packages will be disabled during the upgrade: `airdesktop`, `case`, `easy`, `mobile`, `sync`, `moin`, `Secure`.

Please update the Apache HTTP server definition for your BSCW service to define additional security header fields. For further details please refer to the *Security Header* section in <bscw-runtime-path>/conf/apache24/server.conf.

When **upgrading from BSCW 5.2.4 or lower**

Further critical security vulnerabilities have been fixed during an intensive security audit. Please update your BSCW instance immediately to at least version 5.2.5 (many thanks to stuxxn@redshell.dev). Attention: The found security vulnerabilities will be published with CVE reference at https://www.bscw.de/security-fixes/ starting 2021-11-29.

When **upgrading from BSCW 5.2.3 or lower**

(Security) A critical vulnerability has been discovered allowing remote code execution by authenticated users, see CVE-2021-36359.

(Security) A possible exploit of a security vulnerability in the external reportlab library has been fixed. The upgrade procedure may disable the BSCW package *exportpdf*. To re-enable it, install a reportlab version >= 3.5.55 and run **bsadmin package -e exportpdf**.

The resource consumption of quotas should be recalculated by running **bsadmin dbcheck repair -f q** because an error occurred that counted versioned documents twice.

(Security) The Apache HTTP configuration has been extended with the following HTTP security headers: *X-Content-Type-Options*, *Referrer-Policy*, *Strict-Transport-Security*. These headers are automatically enabled in the Apache HTTP server configuration conf/apache24/server.conf; please make sure to apply these changes to your current configuration.

For new BSCW instances the default values of BADPASS and ALLOW_MAIL_UNLOCK have been changed. For existing instances the values are not adopted, so it is recommended to manually set the values in <bscw-runtime-path>/conf/config.py to BADPASS = 10 and ALLOW_MAIL_UNLOCK = True.

A new AUTH_TOKEN_EXP configuration directive has been introduced to limit the maximum validity period of a registration link, see <bscw-runtime-path>/conf/config.py for details.

The HTML/PDF converter PhantomJS has been replaced in favour to WeasyPrint. If possible, you should install WeasyPrint before updating BSCW, see *Software for BSCW Preview Unix*

When **upgrading from BSCW 5.2.2 or lower**

If the binary python package setproctitle is installed BSCW processes are displayed with more telling names (Linux).

Due to the exchange of document MIME icons, all style sheets for website folders must be adopted using *[→ New → Style Definition]*.

When **upgrading from BSCW 5.2.1 or lower**

The IP address parsing for the *SERVER_ADMINS_IP* directive has been extended to support IPv6, prefix or netmask notation; old entries must be updated accordingly. Syntactically incorrect entries are ignored.

A new version (1.4.0) of the "ZOPE External Editor, BSCW Edition" with TLS 1.3 support is available at <https://www.bscw.de/classic/#externalEditor>.

When **upgrading from BSCW 5.2.0 or lower**

With the legal validity of the EU - General Data Protection Regulation (GDPR), it will be necessary to provide a data protection declaration with the BSCW system (see section 2.3 *EU - General Data Protection Regulation* for details).

When **upgrading from BSCW 5.1.9 or lower**

Please note, the upgrade procedure for BSCW 5.2 overwrites the default system message for new users in the <bscw-runtime-path>/conf/msg/*/sys_msg0.html files and recreates the converter configuration <bscw-runtime-path>/conf/config_convert.py file. If you are using a customized

system message or an own converter configuration you may restore your old configuration from the most recent <bscw-runtime-path>/conf/conf-<date> directory after upgrading.

BSCW 5.2 introduces a new pre-forked HTTP server which greatly speeds up the processing of requests. Load tests have shown an average performance increase of 30% compared to the traditional Apache HTTP server CGI. To enable this feature, see the description in the *HTTP_LOCAL_PORT_START* directive section and the BSCW `http` package documentation.

BSCW 5.2 Classic introduces a new, modernized layout. To provide the old BSCW 5 layout of previous versions you may append the entry `'old'` to the themes definition in the instance configuration file <bscw-runtime-path>/conf/config.py, e.g.:

```
THEMES = (
    'bscw',
    'bw',
    'old',
)
```

Support for deprecated BSCW packages `moin` and `SMS` has been ended.

When **upgrading from BSCW 5.1.8 or lower**

The virus scan feature has been improved, virus scan is now performed asynchronously and additionally possible *before* download. After the upgrade virus scan must be re-enabled, please see *VIRUS_CHECK* for details.

Apache Tika server support has been added, please see for Unix systems section 3.3 (*Apache Tika*) for details.

When **upgrading from BSCW 5.1.7 or lower**

Due to an internal reorganisation of object deletion, it might be necessary to fix changed workspace roles. Run **`bsadmin dbcheck repair -f ' seeme undelete'`** to fix affected access rights.

When **upgrading from BSCW 5.1.4 or lower**

(Unix) On systems using a systemd service to start BSCW instances, the service configuration must be changed **before** upgrading. The following configuration directives must be added to each unit files' "[Service]" section, e.g.:

```
[Service]
GuessMainPID=no
RemainAfterExit=yes
```

After changing a unit file the systemd configuration must be reloaded with **`systemctl daemon-reload`** as root. The BSCW installer **`install.sh`** will check and notify you if these directives are missing in a BSCW unit file.

(Unix) Due to a text extraction bug not all uploaded documents are indexed properly by the BSCW "lucene" indexer (package *PyLucIndex*). To index affected documents run:

```
$ cd <bscw-runtime-path>
$ find var/data/Text -type f -size 0 | xargs rm
$ bin/bsadmin create_index -x
$ bin/bsadmin create_index -c
$ bin/start_servers
```

Additionally run to fix affected previews:

```
$ cd <bscw-runtime-path>
$ bin/bsadmin preview create -ff
```

When **upgrading from BSCW 5.1.3 or lower**

If you are using the BSCW "lucene" indexer (package *PyLucIndex*), a new sort order "by start" is enabled which requires to rebuild the index if users should be able to sort search results by this criteria. See section *Index creation and update* for a description how to create a new index.

When **upgrading from BSCW 5.0.10 or lower**

To support the new BSCW 5.1 preview feature additional converter software **must** be installed, please see section *Software for BSCW Preview* for details. To disable BSCW preview feature add a `CREATE_PREVIEWS = False` line to the instance configuration file <bscw-runtime-path>/conf/config.py.

The default path for authenticated access has been changed from `/bscw/` to `/sec/`. The new `/sec/` path is only applied for new installations, while upgraded instance keep the old path.

The *ldap* package configuration file <bscw-runtime-dir>/conf/ldap/config_ldap.py was (automatically) renamed to <bscw-runtime-dir>/conf/ldap/config.py during the upgrade.

The local instance package layout in <bscw-runtime-path>/bsext has been changed. If you created a local instance package please contact support@orbiteam.de before upgrading.

Python 2.6 support has been ended.

When **upgrading from BSCW 5.0.7 or lower**

A security vulnerability has been discovered, which may disclose the name of objects stored in BSCW. Thanks to RedTeam Pentesting (https://www.redteam-pentesting.de/) for identifying this problem. See `CVE-2014-2301` for details. Please upgrade all BSCW instances to at least version 5.0.8.

When **upgrading from BSCW 5.0.6 or lower**

Support for the Apache HTTP server version 2.4 has been added.

When **upgrading from BSCW 5.0.4 or lower**

The BSCW *ldap* package has been updated to map the BSCW user meta data to LDAP attributes. If you use the BSCW *ldap* package, please adapt your configuration file located in <$HOME>/srv/<bscw-runtime-dir>/conf/ldap/config_ldap.py according to the changes of the new default configuration file template <$HOME>/lib/bscw-7.6.1-<rev>-py3*/bscw/conf/ldap/config.py.

Note

The `update_bscw` directive has been converted from a tuple to a dictionary

When **upgrading from BSCW 4.5.9 or lower**

When upgrading to BSCW 5.0 the file system layout is automatically transformed to the new BSCW 5 layout (see installation section for details).

Note

The upgrade procedure checks all existing packages and disables outdated or non-working packages. The resulting enabled packages are sorted alphabetically into the *PACKAGES* list in the instance configuration file <bscw-runtime-path>/conf/config.py. If you defined an own package (e.g. to adapt the default role configuration) be aware the package might become disabled after an upgrade. If in doubt please ask support@orbiteam.de for advice on how to upgrade your customizations.

Due to the new BSCW 5 layout:

- Please update your Apache HTTP server configuration. Change the `VirtualHost` container definition according to the "site" configuration template <bscw-runtime-path>/conf/apache{2,24}/site.conf, see *Apache HTTP Server Configuration* for Unix.

- The former <bscw-runtime-path>/apache.conf file was renamed to <bscw-runtime-path>/conf/apache{2,24}/bscw.conf
- Existing entries for the *cron daemon* (Unix) have to be adapted to the new location of the **bsadmin** command line script. Most likely you have to exchange **<bscw-runtime-path>/bsadmin** by **<bscw-runtime-path>/bin/bsadmin**. If you configured *folder mail delivery* on Unix the path to the local mail delivery agent in /etc/aliases or .forward has to be adapted, too, e.g. replace <bscw-runtime-path>/cgi/bscw.cgi by <bscw-runtime-path>/var/www/bscw.cgi

Important

During the upgrade process to BSCW 5.0 database conversion(s) are necessary. A single database conversion requires beside the conversion process two garbage collection runs; so estimate a downtime of 3 - 4 times the duration of a single garbage collection run. Especially big BSCW database servers with more than 10.000 users should consider this.

For new BSCW instances the default authentication method has been changed to cookie authentication (since BSCW 4.5). It is recommended to manually change the authentication method for existing BSCW instances to cookie authentication within the instance configuration file <bscw-runtime-path>/conf/config.py using the *COOKIE_AUTHENTICATION* directive (see *web/proxy server settings* of chapter 5 for details). After altering the authentication method **bsadmin conf_apache -n**, **bsadmin index_page** must be run for (re)configuration of the Apache HTTP server and the index page.

The mobile package requires cookie authentication as authentication method.

If you are using the BSCW "lucene" indexer (package *PyLucIndex*), an upgrade of pylucene to version 3.6.2 is required before running the BSCW upgrade procedure. Remind to rebuild the "lucene" index after the upgrade.

If the *ldap* package is enabled, the old configuration from config_ldap.py must be inserted manually in the new configuration file <bscw-runtime-path>/conf/ldap/config_ldap.py after upgrading.

All *moderated* public workspaces are reset to *non-moderated*. To restore the previous *moderated* state run **bsadmin dbcheck repair -f m**

Note

The XML-RPC and JSON-RPC API has been extended to require additional authentication information per request if the user-agent is not whitelisted. This prevents potentially injected malicious javascript code in web browsers to utilize the BSCW API. To whitelist your RPC-client user-agent you may add an entry to <bscw-runtime-path>/conf/config_clientmap.py for trusted_json_rpc_client resp. trusted_xml_rpc_client.

Important

You may **never** add an entry for any available web browser!

Python 2.5 support has been ended.

When **upgrading from BSCW 4.4.6 or lower**

The converter tool configuration file <bscw-runtime-path>/conf/config_convert.py is automatically generated by using **bsadmin update_defaults -s**. This script will search the local system for archiver, encoder or converter commands.

See also

Section 4.7 *conf/config_convert.py*

The `Flow` has been replaced by the `Tasks` package and all `Flow` objects will be converted to new `Project`/`Phase` objects. During the conversion the `Process` folders role mapping to restrict inherited roles from the surrounding `Project` folder was reset. Thus it might be possible for **other** members of the project to **change** data in the `Process` folders after the conversion.

When upgrading on a Linux-based OS you must make sure that a working compiler (GCC/CC) is installed (Due to limitations of *set-group-id* execution for scripts on Linux the compilation of the CGI binary wrapper became mandatory).

Whenever the *SERVER_ROOT* is changed in the instance configuration file `<bscw-runtime-path>/conf/config.py` you must call **`bsadmin update_helper`** in order to update the `jnlp` deployment files with the correct code base URL. Otherwise users may not be able to launch or install the BSCW Desktop application anymore.

Python 2.4 support has been ended in BSCW 4.4.6.

When **upgrading from BSCW 4.4.5 or lower**

Due to a (fixed) bug in the file upload process obsolete files may be still in the `data/Files` area. To remove this superfluous files, please perform the following command (on the server console) after having upgraded:

```
$ cd <bscw-runtime-path>
$ bin/bsadmin fsck -r
```

When **upgrading from BSCW 4.4.4 or lower**

The `POST_AUTHENTICATION` directive in the instance configuration file `<bscw-runtime-path>/conf/config.py` was renamed in *POST_AUTH*, which is now enabled by default.

When **upgrading from BSCW 4.3.4 or lower**

Administrator users explicitly need to log in a second time with their password at *[Options → Admin]* to gain BSCW administrator rights. Without this additional administrator authentication no administrative rights are applied to their account. After successful login to the `Admin` page press *[OK]* to keep the administrator rights for your current session or *[Cancel]* to drop the administrator rights again. The administrator status is indicated by a `Admin` label at top of the BSCW user interface.

The syntax of the meta data configuration `<bscw-runtime-path>/conf/config_metadata.py` has been changed. While unmodified meta data definitions are automatically converted to the new syntax, custom meta data definitions will be disabled and need to be converted manually.

The syntax of the action configuration `<bscw-runtime-path>/conf/config_actions.py` has been changed. In particular the syntax of the `Action` class was altered. If the `Action(...)` definitions of your BSCW instance were changed, these changes must be adapted manually to the new format.

Users can now in addition to their user name log in with one of their allocated email addresses and their password. The *ldap* has been adapted to support automatic registration for email addresses.

Python 2.3 support has been ended in BSCW 4.3.4

When **upgrading from BSCW 4.3.1 or lower**

BSCW 4.3.2 provides a new module for maintaining BSCW database object tables in an external Berkeley DB `DBMOD_TAB = 'bsddb4'`. If you used `DBMOD_TAB = 'bsddb3'` in versions before BSCW 4.3.2 upgrade to this new module (by setting `DBMOD_TAB = 'bsddb4'` in the main configuration file `<bscw-runtime-path>/conf/config.py`). This configuration can also be used for upgrading from earlier BSCW releases.

When **upgrading from BSCW 4.2.3 or lower**

The SERV_UNO_ROOT directive has been deleted. BSCW services like the *User Notification Services (UNO)* or the alarm service expect now an additional (virtual) HTTP service running on localhost:<HTTP_LOCAL_PORT> (default: HTTP_LOCAL_PORT = 80).

Note

If you are running several BSCW instances in different virtual hosts you must configure for each BSCW instance a different *HTTP_LOCAL_PORT* number and you must extend the VirtualHost directives by these local IP addresses/port pairs.

The *SERVER_ADMINS_IP* directive no longer restricts the *User Notification Services (UNO)*. You should remove entries from SERVER_ADMINS_IP which were made in BSCW 4.2 for SERV_UNO_ROOT resp. SERVER_ROOT.

When **upgrading from BSCW 4.1.4 or lower**

Important

BSCW 4.2 introduces a new owner assignment. The owner of all newly created objects automatically becomes the owner of the workspace (the owner role is now inherited by the *ambient* folder). This is in opposite to the behavior of previous BSCW versions (< 4.2), where the creator of an object also was the owner of the object. This leads to the following effects:

- Users cannot lose the access path to owned objects by accidental deletion of their workspace membership.
- The quota system assigns utilized resources of all contained objects of a workspace to the owner (and not any longer to the different object creators)

Attention

After the upgrade you should run one of the following commands to initialize all quota counters:

1. EDU licensees may only run the command **bsadmin quota fix**.
2. PRO licensees may run alternatively the command **bsadmin quota report -vL**, which commits changes to the database after each user.

- The action delete changes the owner of an object: owner becomes the user who *deleted* the object (the object inherits the owner of the ambient folder (who is in this case the owner of the trash)).

Attention

caused by this owner change the action *destroy* **always** destroys objects contained in the trash. The behavior of previous BSCW versions (< 4.2) to distribute "destroyed" objects first into the trash of the owner is omitted.

Important

BSCW 4.2 implements a new *User Notification Services (UNO)* which replaces the workspace activity report and the awareness service of previous BSCW versions. In order not to interfere with the new user notification service, the workspace activity report configuration **must be** disabled by removing the crontab (Unix) entry for **bsadmin notify -a**. Additionally remove

the entry for `AWSERV (bs_servaw)` from the `SERVERS` list in the old instance configuration file `<bscw-runtime-path>/src/config.py` before upgrading. **After** upgrading you might add an entry for `bs_servuno` as described in the comments.

When **upgrading from BSCW 4.0.4 or lower**

The BSCW license server URI has been changed, be sure in `<bscw-runtime-path>/conf/config.py` the *BSCW_LICENSE* variable is set to:

```
BSCW_LICENSE = 'http://bscw.orbiteam.de/pub/'            (upgrade 3.x)
BSCW_LICENSE = 'https://bscw.orbiteam.de/pub/bscw.cgi/' (upgrade 4.x)
```

Important

Starting with BSCW 4.0.6 a new license mechanism was introduced. The new mechanism no longer binds the license to the BSCW servers' IP address and installation path. It is name based, which means you have to define in `<bscw-runtime-path>/conf/config.py` the *SERVER_ROOT* variable before applying for a license.

See also

Section 3.4.2 *BSCW instance configuration* for Unix

When **upgrading from BSCW 3.4.1 or lower**

Important

Since version 4.0 BSCW uses roles for access control. This new approach is incompatible with the older access control model. All special access control settings are reset to (hopefully reasonable) defaults during upgrade.

Starting with BSCW 4.0 the document tree layout of the BSCW server has been changed; if you use the Apache HTTP server, please adapt your configuration to the new layout as given in `<bscw-runtime-path>/apache24/bscw.conf`.

See also

Section 3.4.1 *Apache HTTP Server Configuration* for Unix

When **upgrading from BSCW 3.2 or 3.3**

Important

During upgrade from BSCW 3.2 or 3.3 your current BSCW license becomes invalid and a new evaluation license will be installed. It will be valid for 90 days and 200 users. This might be a problem, if you have already more than 199 registered BSCW users, because new users cannot (be) register(ed) any more. We recommend upgrading your license to the new release as soon as possible. If your old license includes support and upgrading, you will get the new license at no cost.

See also

Chapter 8 *BSCW license*

Note

New packages are not automatically enabled after upgrading. You have to add the package names to the *PACKAGES* list in the server settings of the *[Options → Admin]*-page or the file <bscw-runtime-path>/conf/config.py. Some of the packages also need installation of extra software and configuration.

When **upgrading from BSCW 2.2 or lower**

Execute the following commands in your existing BSCW2 instance directory <bscw-runtime-path> before installing the new version:

```
$ cd <bscw-runtime-path>
$ start_servers -k
$ mkdir data
$ mv src/.htpasswd data/htpasswd
$ mv src/BSCW_Store data/Store
$ mv src/BSCW_Files data/Files
$ echo > src/config.py
```

Then do the BSCW upgrade and reconfiguration of your HTTP server as described in chapter 3 *Installation procedure for Unix*.

Note

You **may not** replace the upgraded BSCW server instance configuration file <bscw-runtime-path>/conf/config.py by a config.py file of a previous BSCW version! Instead, the upgraded BSCW server instance configuration file must be edited manually.

Since the Apache HTTP server configuration <bscw-runtime-path>/apache2/bscw.conf is automatically generated all manual changes will be lost after an upgrade.

2.4.1 Upgrading on Unix

To upgrade an existing BSCW instance on Unix, first make sure that one of the supported Python 3 versions (3.9, 3.10, 3.11, 3.12, 3.13) is available on the host of the BSCW instance.

The installation program of the BSCW software **must** be run as superuser (root)

```
$ su -
# tar xf bscw-7.6.1-<rev>-py3*.tar.gz
# cd bscw-7.6.1-<rev>-py3*
# ./install.sh
```

The installation procedure looks for the BSCW system user bscw (resp. requests the user name of your BSCW user account) and locates all BSCW instances.

If you do not want to run the **install.sh** script as superuser or you encounter further problems, you may install BSCW completely manual as follows:

- login as bscw user

```
# su - bscw
$ id bscw
uid=1234(bscw) gid=1234(bscw) groups=1234(bscw)
```

- create a $HOME/lib directory in the bscw users' home directory

```
$ cd $HOME
$ mkdir lib
```

- download the BSCW distribution into a temporary directory, extract the archive and extract the BSCW distribution tar file into $HOME/lib, e.g.

```
$ cd /tmp
$ tar xf bscw-7.6.1-<rev>-py3*.tar.gz
$ cd $HOME/lib
$ tar xf /tmp/bscw-7.6.1-<rev>-py3*/bscw-7.6.1-<rev>-py3*.tar
```

- run the installation procedure **setup.py <bscw-runtime-path>** and follow the instructions

```
$ cd $HOME/lib/bscw-7.6.1-<rev>-py3*
$ python3 ./bin/setup.py <bscw-runtime-path>
```

In particular the installation procedure performs the following steps to upgrade a BSCW instance

```
# ./install.sh
Enter BSCW system user name: [bscw]
Enter BSCW base directory: [/opt/bscw]
Extracting BSCW 7.6.1 distribution in /opt/bscw/lib
Choose one of the following options:
 ( 0) update BSCW 5.2.6 [/opt/bscw/srv/bscw.domain.org]
 ( 1) update other BSCW instance
 ( 2) create new BSCW instance
Enter a number (0-2): 0

target '/opt/bscw/srv/bscw.domain.org' exists - checking...
stop pid=22823
2024-08-28 09:28:12 BSCW indexer (PyLucene 3.6.2) PID 22835 terminated
2024-08-28 09:28:12 Stopped bscw.adm.bs_servdb
2024-08-28 09:28:12 Stopped bscw.adm.bs_servuno
2024-08-28 09:28:12 Stopped bscw.adm.bs_servaccess
2024-08-28 09:28:12 Stopped bscw.adm.bs_servalarm
2024-08-28 09:28:12 Stopped bscw.cli.http.op_http: not running
Loading EXTENSIONS from conf-20240828-0928
old msg -> conf/msg (copied)
old config_run.py -> conf/config_run.py (copied)
old ldap/config.py -> conf/ldap/config.py (copied)
New package airdesktop enabled
config.py updated
'/opt/bscw/srv/bscw.domain.de/conf/__init__.py' updated
old apache24 -> conf/apache24 (copied)
Import core modules ...
Link 'libexec' already exists - updating link...
Link destination '/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/extensions' does not exist
Found "Programs" (located):
  [...]
config_convert.py created
bsadmin update_defaults -v
bsadmin manage_servers -u
2024-08-28 09:28:14 bsadmin chkconfig -check-access
2024-08-28 09:28:14 access checks...
```

```
cc -o var/run/run_bscw var/run/run_bscw.c
2024-08-28 09:28:14 Actual license: OK
2024-08-28 09:28:14 bsadmin start
2024-08-28 09:28:15 Database version >= 2.1
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert30 -t
2024-08-28 09:28:15 Database version >= 3.0
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert31 -t
2024-08-28 09:28:15 Database version >= 3.1
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert33 -t
2024-08-28 09:28:15 Database version >= 3.3
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert40 -t
2024-08-28 09:28:15 Database version >= 4.0
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert45 -t
2024-08-28 09:28:15 Database version >= 4.5
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert50 -t
2024-08-28 09:28:15 Database version >= 5.0
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert51 -t
2024-08-28 09:28:15 Database version >= 7.0
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert70 -t
2024-08-28 09:28:15 Database version >= 7.1
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert71 -t
2024-08-28 09:28:15 Database version >= 7.6
2024-08-28 09:28:15 bsadmin bscw.adm.bs_convert72 -t
2024-08-28 09:28:15 Converting to Version 7.6 ...
2024-08-28 09:28:15 bsadmin garbage -map bscw.adm.bs_classtable30
2024-08-28 09:28:16 GC actual license: OK.
2024-08-28 09:28:16 GC init
2024-08-28 09:28:16 GC init tables
2024-08-28 09:28:16 GC users: 1, roots: 4, old relatives: 0
2024-08-28 09:28:16 GC offsets: 113
                    GC start collection: size: 20792
2024-08-28 09:28:16 GC check relatives
2024-08-28 09:28:16 GC 1 relatives appended (0 on hold)
2024-08-28 09:28:16 GC check relatives
2024-08-28 09:28:16 GC 0 relatives deleted
                    GC done, size: 20821, objects: 114, roots: 4.
2024-08-28 09:28:16 GC Store: var/data/StoreB size: 20821, lastid: 130
2024-08-28 09:28:16 GC Backup: var/data/Backup
2024-08-28 09:28:16 bsadmin bscw.adm.bs_convert72 -x
2024-08-28 09:28:16 start conversion commit:True
Scan 1136729 objects for conversion
all done
2024-08-28 09:28:16 exit conversion commit:True converted:True
2024-08-28 09:28:16 Database version == 7.6
2024-08-28 09:28:16 bsadmin start
2024-08-28 09:28:16 bsadmin bscw.adm.bs_fix_anonymous
2024-08-28 09:28:16 bsadmin http restart
restart pid=13582
2024-08-28 09:28:16 VERSION:  BSCW 7.6.1
                    Released: 20241107-1142-be1c0b4
bsadmin convert -check-access
Configure 'gzip' compression ...
Configure 'static' resources '/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/bscw/resources'...
          'local' resources 'var/www/20241107-1142-be1c0b4'
 (Long time future expire dates)
Configure public prefix '/pub/' (Apache 24)...
 (No authentication)
Configure secure prefix '/bscw/' (Apache 24) ...
```

```
 (HTTP_AUTHORISATION passed to BSCW)
 (Cookie authentication enabled)

Creating Apache HTTP server configuration files in
/opt/bscw/srv/bscw.domain.de/conf/apache24
    mod.conf ... module configuration file
 server.conf ... server configuration
   site.conf ... virtual host site configuration file
   bscw.conf ... BSCW configuration file
bsadmin conf_apache
bsadmin index_page

BSCW server up and running in '/opt/bscw/srv/bscw.domain.de'

BSCW instance updated: '/opt/bscw/srv/bscw.domain.de'
you may need to restart your web-server

Installation succeeded. For next steps please check
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/README.txt

Since Linux environments do not execute forked processes
set-group-id it is advisable to recursively change the owner the
preview cache and ./var/data files and directories to the
web server user.
Fix file owner/modes for Apache HTTP daemon user? [Y/n]
```

By default, the installation procedure looks in the home directory of the given BSCW user `$HOME/` and `$HOME/srv/` to locate a BSCW instance. If you installed your BSCW instance in a non-standard location, the BSCW installation program may not be able to locate the BSCW instance directory. In this case you have two options to upgrade from a previous version to BSCW 7.6.1:

1. Provide the path to your BSCW instance to the BSCW installer
2. Adopt the new BSCW layout and move your BSCW instance (**recommended**)

How to proceed for each option:

1. Provide the path to your BSCW instance to the BSCW installer

   If you want to preserve the old non-standard location for your BSCW instance, it is possible to specify the path to your BSCW instance by choosing the option `update other BSCW instance`:

   ```
   # ./install.sh

   Enter BSCW system user name: [bscw]

   Enter BSCW base directory: [/opt/bscw]

   Extracting BSCW |release| distribution in '/opt/bscw/lib'

   Choose one of the following options:
    ( 0) update other BSCW instance
    ( 1) create new BSCW instance
   Enter a number (0-1): 0

   Enter path to BSCW instance: /usr/local/bscw/server
   target '/usr/local/bscw/server' exists - checking...
   ...
   ```

   Alternatively it is possible to specify the path to your BSCW instance as argument of the BSCW installer program:

```
# ./install.sh /usr/local/bscw/server

target '/usr/local/bscw/server' exists - checking...
...
```

This will upgrade your BSCW instance to BSCW 7.6.1 "in-place" and keep the BSCW instance in the old directory.

2. Adopt the new BSCW layout and move your BSCW instance (**recommended**)

   It is recommended to move the old BSCW instance first to the new standard location `./srv/<hostname>` in the BSCW users' home directory (e.g. `/opt/bscw/srv/<hostname>`). First stop the BSCW server and then move it:

```
$ su -
# cd /usr/local/bscw
# ./server/start_servers -k

# BSCW_HOME=`su - bscw -c 'echo $HOME'` # e.g. BSCW_HOME=/opt/bscw

# mkdir -p                      $BSCW_HOME/srv/bscw.domain.org
# chown bscw:                   $BSCW_HOME/srv/bscw.domain.org
# rsync -vaH -del ./server/*    $BSCW_HOME/srv/bscw.domain.org
...
```

   Next run the BSCW installer (as root) - with no argument it should find the instance and offer to upgrade it:

```
# ./install.sh
...
Choose one of the following options:
 ( 0) update BSCW 5.2.6 [/opt/bscw/srv/bscw.domain.org]
 ( 1) update other BSCW instance
 ( 2) create new BSCW instance
Enter a number (0-2): 0
...
```

   The BSCW installer will update your BSCW instance to BSCW 7.6.1. You finally need to adjust the HTTP server configuration. See configuration section above.

CHAPTER

THREE

INSTALLATION PROCEDURE FOR UNIX

These are the installation instructions for BSCW 7 on Unix machines. If you are upgrading an existing BSCW server instance please go through section 2.4 *Upgrading to BSCW 7.6.1*.

3.1 System requirements

For approximately 200 users the BSCW server requires the following server hardware:

- Intel Core/Xeon or AMD EPYC/Ryzen (>3,5 GHz) 64-bit server system with at least 6 cores (or comparable systems of other manufacturers).
- 16 GB RAM
- at least 500 GB hard disk space (the BSCW installation requires approx. 200 MB disk space)

Additionally the following software is required:

- Apache HTTP server (>= 2.4.40 resp. >=2.4.37 for EL 8)
- `Node.js` (v20 LTS) an event driven JavaScript runtime
- a Python 3.9, 3.10, 3.11, or 3.12 interpreter
- Python `Jinja2` template engine
- extensions for Python (optional)
  - `pylucene` - required for full text indexing support (package *PyLucIndex*)
  - `ldap3` - required for LDAP/Active Directory bindings (package *ldap*)
- (optional) `memcached` to speed-up large folder handling
- (optional) converter software for the BSCW preview feature

Before installing BSCW, first install the Apache HTTP server, the Node.js runtime environment, the Python 3 interpreter, the Python Jinja2 template engine and the desired Python extension packages or converter software:

- OrbiTeam supports supports Debian based distributions (e.g Debian, Mint, Ubuntu) and Enterprise Linux (EL)/Fedora based distributions (e.g. Fedora, RHEL, CentOS).
- Generally it is recommended to choose a Unix distribution which has *native support* for the required software as the desired optional Python extensions or converter software. For example the LibreOffice suite should be available as installable package.

Note

- On EL based systems it is recommended to use Python 3.11. You will also need to add the EPEL repository, see https://fedoraproject.org/wiki/EPEL for details.
  - CentOS 8:

```
$ su -
# dnf config-manager --set-enabled powertools
# dnf install epel-release epel-next-release
```

- CentOS 9:

```
$ su -
# dnf config-manager --set-enabled crb
# dnf install epel-release epel-next-release
```

- RHEL 8:

```
$ su -
# subscription-manager repos --enable codeready-builder-for-rhel-8-
↪$(arch)-rpms
# dnf install https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.
↪noarch.rpm
```

- RHEL 9:

```
$ su -
# subscription-manager repos --enable codeready-builder-for-rhel-9-
↪$(arch)-rpms
# dnf install https://dl.fedoraproject.org/pub/epel/epel-release-latest-9.
↪noarch.rpm
```

- On systems which do not allow execution of *set-group-id scripts*, e.g. Linux, a C compiler (gcc) with installed system (kernel) C headers is required to compile a binary wrapper.

To enable the real-time conferencing via webcam and/or microphone a Jitsi or BigBlueButton service must be available, see the *CONFERENCE_PROVIDER* directive in the instance configuration file `<bscw-runtime-path>/conf/config.py`.

In order to send registration and report emails, BSCW finally needs access (via SMTP) to a mail server (Unix or Windows based).

3.2 Installation

Before installing BSCW ensure the Web server, the Node.js runtime environment, the Python 3 interpreter, the Python Jinja2 template engine, the desired Python 3 extension packages and the converter software are installed.

On Linux systems, it is recommended to use a Debian or Enterprise Linux (EL)/Fedora based distribution.

In general, Python packages of the respective distribution should be preferred, which can be provided by **`dnf`** or **`apt-get`** in order to avoid possible system inconsistencies.

Only Python packages not included in the distribution can be installed using the Python package manager **`pip`**.

Note

Debian-based systems mark the distribution's system Python environment as "EXTERNALLY-MANAGED". This prevents Python-specific tools such as **`pip`** from installing or removing packages in the interpreter's default installation environment.

Since BSCW may require additional packages for the Python environment, **`pip install`** must be run as *root* user with the *–break-system-packages* option to override this restriction.

This will install additional packages separate from the system Python environment packages in the */usr/local* path.

The best way to install Nodes.js is using the package manager of your Linux distribution, see https://github.com/nodesource/distributions/blob/master/README.md for details:

- Debian based systems:

```
$ su -
# mkdir -p /etc/apt/keyrings
# curl -fsSL https://deb.nodesource.com/gpgkey/nodesource-repo.gpg.key | \
      gpg --dearmor -o /etc/apt/keyrings/nodesource.gpg
# echo "deb [signed-by=/etc/apt/keyrings/nodesource.gpg] https://deb.nodesource.
↪com/node_20.x nodistro main" | tee /etc/apt/sources.list.d/nodesource.list
# apt update
# apt install -y nodejs
```

- EL based systems:

```
$ su -
# dnf install https://rpm.nodesource.com/pub_20.x/nodistro/repo/nodesource-
↪release-nodistro-1.noarch.rpm -y
# dnf install nodejs -y
```

  See also https://developers.redhat.com/rhel8/hw/nodejs/ to install Node.js from the application stream repository:

```
$ su -
# dnf module install nodejs:20
```

Remind after the installation of the BSCW software to enable the BSCW event service in the instance configuration file <bscw-runtime-path>/conf/config.py, see Node.js *event server configuration*.

Packages name(s) for these Linux distributions:

- Debian based systems: `apache2 python3 python3-defusedxml python3-jinja2 python3-ldap3`
- EL8/9 based systems:

```
$ su -
# dnf install httpd mod_ssl python3.11
# pip-3.11 install defusedxml jinja2 ldap3
```

To increase the processing speed of large BSCW folders, you can optionally install the memory object caching system `memcached` in conjunction with the Python `memcache` client library. In this case, BSCW automatically detects the availability of the `memcached` daemon.

Packages name(s) for these Linux distributions:

- Debian based systems: `python3-memcache memcached`
- EL 8/9 based systems:

```
$ su -
# dnf install memcached
# pip-3.11 install python3-memcached
```

Additionally install the converter software required for BSCW preview, see *Software for BSCW Preview* for details.

The BSCW server software distribution is available as *tar* archive bscw-7.6.1-<rev>-py3*.tar.gz

The name of the download file contains BSCW and Python version numbers – e.g. bscw-7.6.1-<rev>-py3*.tar.gz contains BSCW version 7.6.1 for Python 3.*. Please make sure to install the latest version of BSCW and always provide your version number when contacting support staff.

There may be additional patch releases available **after** the latest release – check the BSCW product home page https://www.bscw.de for latest updates that have been released for download.

The BSCW directory **must not** be accessible via the `DocumentRoot` or any other alias directives of your HTTP server. The path to the BSCW directory needs only "search permission" for the user/group ID that the HTTP server uses.

The BSCW server CGI scripts are executed (*set-group-id*) with the group ID `bscw`, which is the primary group ID of the BSCW system user. Hence access rights for the group ID `bscw` will be inherited during execution of all BSCW CGI scripts. To ensure an error free operation of the BSCW server:

- the *set-group-id* bit of the BSCW CGI scripts has to be set (which is done automatically done by the BSCW setup procedure)
- the BSCW directory <`bscw-path`> (and all files and directories below) should belong the group ID `bscw`
- the file system of the BSCW directory <`bscw-path`> **must not** be mounted with the *nosuid* option

If the *set-group-id* execution of the BSCW CGI script fails you will get an `Error: Wrong group id` while BSCW operation. To fix this problem see the *note* of section 3.4.3 *Administrator account*.

Note

- When installing on a Linux-based OS you must make sure a working compiler (GCC/CC) is installed (due to limitations of *set-group-id* execution for scripts on Linux, the compilation of the CGI binary wrapper became mandatory).
- (Optional) if the binary python package `setproctitle` is installed BSCW processes are displayed with more telling names. For BSCW 7.6 the `setprocfile` package is included for Python 3.9, 3.10, 3.11, 3.12, 3.13 (Linux). Alternatively you may install
  - Debian based systems: `python3-setproctitle`
  - EL 8/9 based systems:

```
$ su -
# pip-3.11 install setproctitle
```

Ensure to disable the SELinux extension (which is enabled by default on Enterprise Linux (EL) based systems), e.g. usually set in `/etc/selinux/config`:

```
#SELINUX=enforcing
SELINUX=permissive
```

and reboot your system.

Generally the following file layout is proposed for BSCW instances

```
/opt/bscw/                                  # BSCW user home directory
                                            # (as defined in /etc/passwd!)

/opt/bscw/.bscw/                            # BSCW instance(s) information
/opt/bscw/.bscw/bscw.conf
/opt/bscw/.bscw/bscw_conf.py

/opt/bscw/lib/                              # BSCW distribution libraries
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/        # BSCW distribution 7.6.1
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/bin
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/bscw    # BSCW executable code
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/doc     # BSCW documentation
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/etc
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/lib     # BSCW third party modules

/opt/bscw/srv/                              # BSCW instances
/opt/bscw/srv/<hostname>/                   # BSCW instance runtime
```

```
/opt/bscw/srv/<hostname>/bin/               # BSCW instance executables
/opt/bscw/srv/<hostname>/bin/bsadmin
/opt/bscw/srv/<hostname>/conf/              # BSCW instance configuration
/opt/bscw/srv/<hostname>/conf/config.py
/opt/bscw/srv/<hostname>/etc/               # BSCW configuration hints
/opt/bscw/srv/<hostname>/libexec/           # BSCW instance programs
/opt/bscw/srv/<hostname>/var/
/opt/bscw/srv/<hostname>/var/cache/         # BSCW instance template cache
/opt/bscw/srv/<hostname>/var/data/          # BSCW instance data
/opt/bscw/srv/<hostname>/var/log/           # BSCW instance log files
/opt/bscw/srv/<hostname>/var/run/           # BSCW instance state
/opt/bscw/srv/<hostname>/var/www/           # BSCW instance web resources
```

The BSCW layout allows to install multiple BSCW instances in the runtime directory `/opt/bscw/srv`, which all share the same BSCW program code located in the library directory `/opt/bscw/lib`.

As a prerequisite a suitable Python interpreter version and the Apache HTTP server must be available on the system before installing BSCW. For best performance, the BSCW libraries and instances should be located on a file system local to the host where your HTTP server runs.

The installation program of the BSCW software **must** be run as superuser (root). The installation procedure will look for the BSCW system user `bscw` and uses the home directory of this user as installation base directory for BSCW (which might alter from `/opt/bscw`. If no BSCW user is found a new BSCW system user `bscw` with an own group `bscw` and a home directory `/opt/bscw` is proposed and then created.

Note

- `/opt/bscw` is the proposed location for the BSCW users home directory (resp. the BSCW installation base directory). Generally the installation procedure uses the BSCW users' home directory (as defined in `/etc/passwd`) as default installation base directory.
- If you want to install BSCW in another location different from the home directory of the BSCW user you may want to specify an alternate **base** directory. The base directory of a BSCW installation defines the directory where the installation program will create the `./lib` directory containing the BSCW distribution and the `./srv` directory to create BSCW runtime instances. Usually the base directory is equal to the BSCW users' home directory and does not need to be changed.
- During the installation procedure you may specify an alternate BSCW system user name or home directory.

After creating or locating the BSCW system user the installation procedure will extract the BSCW distribution archive in the library directory (usually `/opt/bscw/lib`) and the BSCW setup procedure is called and run as BSCW system user `bscw`.

The BSCW setup procedure will allow to update existing BSCW instances or to create new BSCW instances. All required BSCW instance parameters are identified via command line dialogs.

Finally the installation procedure tries to identify the user of the Apache HTTP server and changes the ownership of the upload directory for raw files to the Apache user.

To start the installation, extract the BSCW distribution archive and run the **`install.sh`** script as superuser

```
$ su -
# id
uid=0(root) gid=0(root) groups=0(root)
# tar xf bscw-7.6.1-<rev>-py3*.tar.gz
# cd bscw-7.6.1-<rev>-py3*
# ./install.sh
```

It is highly advisable to use only the distribution install script ./install.sh as superuser. The script automatically determines required owner/permission changes and performs configuration checks (systemd) which are not possible as BSCW system user "bscw".

Note

If you do not want to run the **install.sh** script as superuser you may install BSCW completely manual as follows (necessary permisson changes may not be performed then!):

- login as bscw user

```
# su - bscw
$ id bscw
uid=1234(bscw) gid=1234(bscw) groups=1234(bscw)
```

- create a $HOME/lib directory in the bscw users' home directory

```
$ cd $HOME
$ mkdir lib
```

- download the BSCW distribution into a temporary directory, extract the archive and extract the BSCW distribution tar file into $HOME/lib, e.g.,

```
$ cd /tmp
$ tar xf bscw-7.6.1-<rev>-py3*.tar.gz
$ cd $HOME/lib
$ tar xf /tmp/bscw-7.6.1-<rev>-py3*/bscw-7.6.1-<rev>-py3*.tar
```

- run the installation procedure setup.py <bscw-runtime-path> and follow the instructions

```
$ cd $HOME/lib/bscw-7.6.1-<rev>-py3*
$ python3 ./bin/setup.py <bscw-runtime-path>
```

In particular the installation procedure performs the following steps to create a new BSCW instance

```
# ./install.sh

Enter BSCW system user name: [bscw]

Enter BSCW user home directory: [/opt/bscw]

Enter BSCW base directory: [/opt/bscw]

Extracting BSCW 7.6.1 distribution in /opt/bscw/lib

Choose one of the following options:
 ( 0) update other BSCW instance
 ( 1) create new BSCW instance
Enter a number (0-1): 1

Please enter the BSCW server root
(use a fully qualified domain name - an IP address is not allowed).
The server root specifies the visible URL for this instance, e.g.
https://host.domain.org (may be left empty):

BSCW server root: https://bscw.domain.org

Please enter the name of your BSCW instance directory
(if left empty in directory
/opt/bscw/srv
the default [bscw.domain.org] is created):

BSCW instance name: [bscw.domain.org]
target '/opt/bscw/srv/bscw.domain.org' does not exist - creating...
```

```
Please enter the host name (FQDN) or the IP address
of your mail host (MTA) to relay BSCW emails
(may be left empty):

 Mail host name or IP address: mail.domain.org

Please enter email address and login name of the BSCW administrator:

 Email address: admin@domain.org
 BSCW login name: admin
 Enter Password:
 Re-type password:

Please enter the BSCW server Realm - used in Authentication dialog
and shown on the welcome page of the server.
(may be left empty and defaults to 'BSCW Shared Workspace Server')
Note: If you are running different BSCW servers on one host
      then you must use a different realm for each server.

 Realm:

Please enter the BSCW public URI prefix as used for public access URL, e.g.
https://my.bscw.de/pub/bscw.cgi
(may be left empty and defaults to 'pub')
Note: If you are running different BSCW servers on one host without using
virtual hosts then you must use a different URI prefix for each server.

 BSCW public prefix:

Please enter the BSCW secure URI prefix as used for secure access URL, e.g.
https://my.bscw.de/sec/bscw.cgi (requires authentication)
(may be left empty and defaults to 'sec')
Note: If you are running different BSCW servers on one host without using
virtual hosts then you must use a different URI prefix for each server.

 BSCW secure prefix:

Initial configuration:
SERVER_ROOT = "https://bscw.domain.org"
SMTP_HOST = "mail.domain.org"
SERVER_ADMIN = "admin@domain.org"
SERVER_ADMINS = [ "admin" ]

Are these settings correct (yes/no)? yes

conf/config.py updated
'/opt/bscw/srv/bscw.domain.org/conf/__init__.py' updated
Import core modules ...
Link destination '/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/extensions' does not exist
Found "Programs" (located):
  [...]
config_convert.py created
bsadmin update_defaults -v
bsadmin manage_servers -u
2024-08-28 09:28:46 bsadmin chkconfig -check-access
2024-08-28 09:28:46 access checks...
cc -o var/run/run_bscw var/run/run_bscw.c
2024-08-28 09:28:46 Actual license: OK (none)
```

```
2024-08-28 09:28:46 bsadmin start
2024-08-28 09:28:47 bsadmin garbage -license
2024-08-28 09:28:47 GC actual license: OK (none).
                      is invalid for BSCW 7.6
                    Try installing Evaluation licence
                    Your server: org.domain.bscw:443S.sec
                    Evaluation licence expires:   20241127
                    Evaluation licence max users: 200
[...]
bsadmin convert -check-access
Configure 'gzip' compression ...
Configure 'static' resources '/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/bscw/resources'...
 (Long time future expire dates)
Configure public prefix '/pub/' (Apache 24)...
 (No authentication)
Configure secure prefix '/sec/' (Apache 24) ...
 (HTTP_AUTHORISATION passed to BSCW)
 (Cookie authentication enabled)

Creating Apache HTTP server configuration files in
/opt/bscw/srv/bscw.domain.org/conf/apache24
    mod.conf ... module configuration file
 server.conf ... server configuration file
   site.conf ... virtual host site configuration file
   bscw.conf ... BSCW configuration file
bsadmin conf_apache
bsadmin index_page
register admin user
user admin registered, address:
    admin@domain.org: (is_owned_by_user)

BSCW server up and running in '/opt/bscw/srv/bscw.domain.org'

BSCW instance created: '/opt/bscw/srv/bscw.domain.org'
Make sure to include the BSCW Apache HTTP server configuration
(see above) in your local Apache HTTP configuration
you may need to restart your web-server

Installation succeeded. For next steps please check
/opt/bscw/lib/bscw-7.6.1-<rev>-py3*/README.txt

Since Linux environments do not execute forked processes
set-group-id it is advisable to recursively change the owner the
preview cache and ./var/data files and directories to the
web server user.
Fix file owner/modes for Apache HTTP daemon user? [Y/n]
```

Note

If the BSCW server does not start up properly, see the file `/tmp/bscw-setup.log` or `<bscw-runtime-path>/var/log/bscw.log` in the instance runtime directory for details and error messages. The frequently asked questions (FAQ) list (https://www.bscw.de/en/support/) might also be helpful.

3.3 Software for BSCW Preview

The BSCW preview component displays thumbnail images for uploaded documents. If the user moves the mouse pointer over an BSCW object icon in the type column, an image of the first page of an document is shown.

To enable the BSCW preview component the following additional software must be available on the hosting system:

1. Java Runtime Environment
2. HTML/PDF converters: WeasyPrint
3. Ghostscript
4. GraphicsMagick
5. LibreOffice
6. Text/HTML converters: markdown, html2text
7. Image converter: PIL
8. Metadata extraction: Tika-Server (optional)

In particular install this software components as follows:

1. OpenJDK Java Platform
   - The OpenJDK Java platform of the distribution should be installed.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `openjdk-17-jdk`
     - EL 8/9 based systems: `java-11-openjdk`
2. WeasyPrint HTML/PDF converter

   See https://doc.courtbouillon.org/weasyprint/stable/first_steps.html#linux for a detailed description.

   Packages name(s) for common Linux distributions:

   - Debian based systems: `weasyprint`

   If your distribution does not support a native version, use **`pip3`** to download and install `weasyprint`:

   - Debian based systems

     ```
     $ su -
     # apt install python3-pip python3-setuptools python3-wheel
     # apt install \
        python3-dev python3-cffi python3-brotli \
        libpango-1.0-0 libpangoft2-1.0-0 \
        shared-mime-info
     # pip3 install WeasyPrint
     ```

   - EL 8/9 based systems

     ```
     $ su -
     # dnf install \
        python3.11-devel python3.11-pip python3.11-setuptools python3.11-wheel
     # dnf install \
        libffi-devel cairo pango gdk-pixbuf2
     ```

   - EL 8 based systems

     ```
     $ su -
     # pip-3.11 install 'WeasyPrint<53.0'
     ```

   - EL 9 based systems

```
$ su -
# pip-3.11 install WeasyPrint
```

Note

WeasyPrint >= 53.0 requires pango > 1.44

3. Ghostscript 10 (https://ghostscript.com)

   Ghostscript is an interpreter for the PostScript language and for PDF

   - The Ghostscript interpreter version of the distribution should be installed. Additionally the standard Ghostscript fonts are required.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `ghostscript gsfonts`
     - EL 8/9 based systems: `ghostscript ghostscript-tools-fonts`

4. GraphicsMagick (http://www.graphicsmagick.org)

   GraphicsMagick is a library for image processing

   - The GraphicsMagick version of the distribution should be installed.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `graphicsmagick`
     - EL 8/9 based systems: `GraphicsMagick`

     After installation check if GraphicsMagick correctly finds Ghostscript:

     ```
     $ gm convert -list Delegates
     ...
        ps<=>pdf   "gs" -q -dBATCH -dSAFER -dMaxBitmap=500000000 -dNOPAUSE
                   -sDEVICE=pdfwrite "-sOutputFile=%o" -- "%i" -c quit
     ```

   - The user avatar generation requires the DejaVu Sans fonts:

     Packages name(s) for common Linux distributions:

     - Debian based systems: `fonts-dejavu`
     - EL 8/9 based systems: `dejavu-sans-fonts`

5. LibreOffice (https://www.libreoffice.org/)

   LibreOffice is a open source office suite. At least LibreOffice version 7 is required, best use the current release of LibreOffice.

   - The LibreOffice version of the distribution should be installed.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `libreoffice python3-uno`
     - EL 8/9 based systems: `libreoffice-calc libreoffice-draw libreoffice-emailmerge libreoffice-graphicfilter libreoffice-impress libreoffice-math libreoffice-writer libreoffice-pyuno`

   - For better conversion results install the Microsoft TrueType core fonts

     - Debian based systems: `ttf-mscorefonts-installer`
     - EL 8/9 based systems:

```
$ su -
# dnf install cabextract curl fontconfig xorg-x11-server-utils
# rpm -i --nodeps https://deac-ams.dl.sourceforge.net/project/
↪mscorefonts2/rpms/msttcore-fonts-installer-2.6-1.noarch.rpm
```

- Ensure the home directory of the Apache HTTP server user is writable for the Apache HTTP server user, because LibreOffice creates temporary files in the users' home directory.
  - Debian based systems:

```
$ su -
# chown www-data: /var/www
```

  - EL 8/9 based systems:

```
$ su -
# chown apache: /usr/share/httpd
```

Attention

Be sure the Python UNO bridge is installed!

6. Text/HTML converter

   Install the `markdown` and `html2text` converters as follows:

   - **`markdown`** converts text to HTML using the markdown markup.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `python3-markdown`
     - EL 8/9 based systems:

```
$ su -
# pip-3.11 install markdown2
```

   - **`html2text`** converts HTML to text using the markdown markup

     Packages name(s) for common Linux distributions:

     - Debian based systems: `python3-html2text`
     - EL 8/9 based systems:

```
$ su -
# pip-3.11 install html2text
```

Note

On Debian `python3-html2text` is installed as **`html2markdown`**.

7. Image converter

   For image conversion the Python Imaging Library is required

   Packages name(s) for common Linux distributions:

   - Debian based systems: `python3-pil`
   - EL 8/9 based systems:

```
$ su -
# pip-3.11 install pillow
```

8. Tesseract OCR (https://github.com/tesseract-ocr/tessdoc)

   Tesseract is an open source text recognition (OCR) engine available under the Apache 2.0 license. When installed, the Apache Tika toolkit uses tesseract to extract text from PDF or image files.

   Note

   Tesseract requires a significant amount of CPU and memory resources, which can exhaust the resources of your server host.

   Packages name(s) for common Linux distributions:

   - **Debian based systems:**
     `tesseract-ocr tesseract-ocr-deu tesseract-ocr-fra tesseract-ocr-spa`
   - EL 8/9 based systems: `tesseract`

9. Apache Tika

   BSCW utilizes the Apache Tika toolkit (https://tika.apache.org) to extract metadata and text from uploaded documents. To enable the Apache Tika a OpenJDK Java platform must be available on the server host.

   To accelerate metadata extraction it is possible to install an *optional* standalone tika-server. For installation download the tika-server JAR archive from

   https://www.apache.org/dyn/closer.lua/tika/2.?.?/tika-server-standard-2.?.?.jar

   and copy it into the BSCW distribution

   ```
   $ cd $HOME/lib/bscw-7.6.1-<rev>-py3*
   $ cp tika-server-2.?.?.jar bscw/libexec/tika
   $ chmod 644 bscw/libexec/tika/tika-server-2.?.?.jar
   ```

   Additionally the `tika` Python package is required, use **`pip3`** to download and install `tika`

   - Debian based systems:

     ```
     $ su -
     # pip3 install tika
     ```

   - EL 8/9 based systems:

     ```
     $ su -
     # pip-3.11 install tika
     ```

If the prerequisites 1-8 are met run

- **`bsadmin update_defaults`** to generate a new BSCW converter configuration (`<bscw-runtime-path>/conf/config_convert.py`). Use the verbose option (**`-v`**) to check if BSCW found the required converter programs to create the previews files:

```
$ cd <bscw-runtime-path>
$ ./bin/bsadmin update_defaults -v
...
Converter auto-configuration:
 Found Commands:
  'gm': '/usr/bin/gm'
  'java': '/usr/bin/java'
  'unoconv': '%(py)s %(cnv)s/unoconv/unoconv --pipe=%(pid)s'
```

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```
  ...
config_convert.py updated
```

Optionally you may create for all existing documents the required preview files using the **bsadmin preview** command:

```
$ ./bin/bsadmin preview
Usage:
 bsadmin preview list
 bsadmin preview create [-v|-q] [-f|-ff]  [<oid0> ... <oidn>]
 bsadmin preview delete [-v|-q]           [<oid0> ... <oidn>]
 bsadmin preview [-h]

    Generate Document preview documents

 positional arguments:
    list      print preview states and preview document file names
    create    created preview for documents in 'var/cache/preview'
    delete    deletes preview states and generated preview documents

 optional arguments:
    -f        force upgrade of all previews
    -ff       force upgrade of previews with state 'FAILURE'
    -v        verbose
    -q        quiet
    -h        show this help message and exit
```

Note

- On large BSCW installations **bsadmin preview create** may take a **very long** period (weeks!)
- The execution of **bsadmin preview create** is **not** mandatory, because preview files are automatically scheduled for background creation the first time an existing folder is read by an user.

In the case of problems with automatic preview file generation enable logging by adding the following entry to *BSCW_LOGGING* in <bscw-runtime-path>/conf/config.py. The BSCW preview component will then log into <bscw-runtime-path>/var/log/prev.log:

```
BSCW_LOGGING = {
    'sys': ('WARN', 'sys.log'),
    'prev': ('DEBUG', 'prev.log'),
    # ...
}
```

An preview log file entry:

```
2024-02-10 11:35:07 prev DEBUG pid 123 error: libexec/conv: Document#456
    ...gm convert: Unable to get type metrics...
```

indicates the ghostscript standard fonts are missing resp. are not properly installed or no DejaVu Sans fonts are installed on the system.

Note

To disable the BSCW preview feature add an entry CREATE_PREVIEWS in <bscw-runtime-path>/conf/config.py:

```
CREATE_PREVIEWS = False
```

3.4 Configuration

The configuration includes the configuration of your Web server and the configuration of the BSCW server.

3.4.1 Apache HTTP Server Configuration

BSCW requires in addition to a (virtual) web service for user access, a second web server running on `localhost` (`127.0.0.1`).

This second web server enables BSCW services (e.g. the *User Notification Services (UNO)* of section 6.4.1 or the alarm service) to access the BSCW database server via HTTP using the following URL:

```
http://localhost/pub/bscw.cgi/
```

For performance reasons, BSCW 7 **must** enable the pre-forking BSCW HTTP server (see package *http*).

Note

- When using the pre-forking BSCW HTTP server *all* configuration changes will only take effect after a **restart** of the BSCW HTTP server, which can be done from the CLI using:

  ```
  bin/bsadmin http restart
  ```

  or on the administration *BSCW status page* *[Options → Admin → Status]* by clicking the *[Restart integrated http service]* entry.
- The port, the script alias path and the script name may be changed by altering the configuration directives *HTTP_LOCAL_PORT*, *SCRIPTS* and *CREATE_SCRIPTS* in the instance configuration file `<bscw-runtime-path>/conf/config.py`.
- The `localhost` port to the HTTP server defined in *HTTP_LOCAL_PORT* **must** support HTTP; HTTPS is **not** supported!

The BSCW setup process automatically generates the following Apache HTTP server configuration files

```
<bscw-runtime-path>/conf/apache24/mod.conf
<bscw-runtime-path>/conf/apache24/server.conf
<bscw-runtime-path>/conf/apache24/site.conf
<bscw-runtime-path>/conf/apache24/bscw.conf
```

which contain all necessary configuration instructions.

The `mod.conf` file ensures the loading of additional modules required by BSCW and must be included in the main Apache HTTP server configuration file `httpd.conf`. Instead including this file you could enable the loading of the required modules

`cgid_module` (or `cgi_module`)

`deflate_module`

`expires_module`

`headers_module`

`rewrite_module`

`ssl_module`

`proxy_module` [1, 2]

`proxy_http_module` [1, 2]

`proxy_wstunnel_module` [2]

`filter_module` [3]

`setenvif_module` [3]

`substitute_module` [3]

Note

- The `suexec_module` must be disabled.

Anyway the preferred mechanism of your Unix distribution should be used to enable the required modules:

- Debian based systems:

```
$ su -
# a2enmod cgid deflate expires headers rewrite ssl
# a2enmod proxy proxy_http                        # [1, 2]
# a2enmod proxy_wstunnel                          # [2]
# a2enmod filter setenvif substitute              # [3]
# a2dismod suexec
# systemctl restart apache2
```

- EL 8/9 based systems:

```
$ su -
# vim /etc/httpd/conf.modules.d/00-base.conf
# vim /etc/httpd/conf.modules.d/00-proxy.conf    # [1, 2]
# vim /etc/httpd/conf.modules.d/00-ssl.conf
# systemctl restart httpd
```

[1] Required for the BSCW pre-forked HTTP server (see *`http`* for details).

[2] Required for Online Office or the *Node.js* event server (see *`office`* or *Node.js* installation for details).

[3] Required for URL rewriting of the conference or office providers.

The `site.conf` file contains several virtual host containers which can be used for Apache layouts which support site configuration file directories (e.g. Debian based systems `/etc/apache2/sites-available/`, EL based systems `/etc/httpd/conf.d/`).

Depending on your *SERVER_ROOT* definition in the instance configuration file `<bscw-runtime-path>/conf/config.py`, the `site.conf` file defines the following virtual hosts:

1. if a HTTP server root is defined (e.g. the *SERVER_ROOT* directive starts with `http://...`) the `site.conf` file defines two virtual host containers: a first virtual host container for `localhost:80` required by internal BSCW services and a second virtual host container for the server root host name `<hostname>:80` for requests.
2. if a HTTPS server root is defined (e.g. the *SERVER_ROOT* directive starts with `https://...`) the `site.conf` file defines three virtual host containers: a first virtual host container for `localhost:80` required by internal BSCW services, a second virtual host container for the server root host name `<hostname>:80` which redirects all requests to the third virtual host container `<hostname>:443` for SSL requests.

The file:*server.conf* file contains general HTTP security headers. If necessary, copy the `server.conf` file to your Apache HTTP server configuration.

Copy the `site.conf` file to your Apache HTTP server configuration. Please note it will most likely not work out of the box, but you have to adapt it to your local Apache HTTP server configuration. Especially you will need to install certificates for your SSL enabled server and adapt the configuration in `site.conf`.

The `bscw.conf` file contains the actual BSCW instance configuration for the Apache HTTP server. When using virtual web server container (`<VirtualHost> ... </VirtualHost>`) directives, it is possible to include the `<bscw-runtime-path>/conf/apache24/bscw.conf` configuration file in multiple virtual web server containers. An example for a virtual web server definition in the Apache HTTP server configuration file should look as follows

```
<VirtualHost bscw.domain.org:80>
    ServerName      bscw.domain.org
    ServerAdmin     hostmaster@domain.org

    ErrorLog        logs/bscw_domain_org_error_log
    CustomLog       logs/bscw_domain_org_access_log common
    ScriptLog       logs/bscw_domain_org_error_log

    DocumentRoot "<bscw-path>/var/www"
    <Directory "<bscw-path>/var/www">
        Options                     ExecCGI FollowSymLinks MultiViews
        AllowOverride               None
        DirectoryIndex              index.html default.htm
        LanguagePriority            en de es fr zh
        AddType                     text/html en de es fr zh
        ForceLanguagePriority       Prefer Fallback
        Require                     all granted
    </Directory>

    Include "<bscw-runtime-path>/conf/apache24/bscw.conf"
</VirtualHost>
```

To provide a SSL encrypted web site your virtual web server definition should look like

```
<VirtualHost bscw.domain.org:80>

    ServerName  bscw.domain.org
    ServerAdmin hostmaster@domain.org

    ErrorLog    logs/bscw_domain_org_error.log
    CustomLog   logs/bscw_domain_org_access_log common
    ScriptLog   logs/bscw_domain_org_script.log

    <IfModule alias_module>
        RedirectMatch permanent ^/(.*)$ https://bscw.domain.org/$1
    </IfModule>
</VirtualHost>

<VirtualHost bscw.domain.org:443>
    ServerName  bscw.domain.org
    ServerAdmin hostmaster@domain.org

    ErrorLog    logs/bscw_domain_org_error.log
    CustomLog   logs/bscw_domain_org_access_log common
    ScriptLog   logs/bscw_domain_org_script.log

    <IfModule headers_module>
        Header set Strict-Transport-Security: "max-age=31536000; includeSubDomains"
    </IfModule>

    DocumentRoot "<bscw-runtime-path>/var/www"
    <Directory "<bscw-runtime-path>/var/www">
```

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```
        Options                     ExecCGI FollowSymLinks MultiViews
        AllowOverride               None
        DirectoryIndex              index.html default.htm
        LanguagePriority            en de es fr zh
        AddType                     text/html en de es fr zh
        ForceLanguagePriority       Prefer Fallback
        Require                     all granted
    </Directory>

    SSLEngine on
    SSLVerifyDepth 5

    #SSLCACertificateFile           conf/ssl/ca-bundle.crt
    #SSLCertificateChainFile        conf/ssl/bscw_domain_org_root.crt
    SSLCertificateKeyFile           conf/ssl/bscw_domain_org.key
    SSLCertificateFile              conf/ssl/bscw_domain_org.crt

    Include        "<bscw-runtime-path>/conf/apache24/bscw.conf"
</VirtualHost>
```

You may change the BSCW Apache HTTP server configuration file by using the **bsadmin conf_apache** script. To adapt the generated Apache configuration file to your local web server settings use one of the following options:

- If no option is used **bsadmin conf_apache** tries to read the old option setting from `bscw.conf` (if exists). Use option **-n** or remove `bscw.conf` if you want to avoid this.
- If option **-s** is used the Apache HTTP server is configured for authentication via client certificates.
- If option **-o** is used client certificates authentication optional. This option requires a SSL enabled server.
- If option **-H** is used, the HTTP/2 protocol is enabled (which additionally requires the 'http2' module).
- If the **-D** option is used the Apache HTTP server is configured to compress (**gzip**) BSCW resources. This option requires the `deflate` module (and is enabled by default).
- Using **-d** (instead of **-D**) also enables compression for BSCW responses.

Warning

Compression and TLS encrypted connections may allow an information disclosure attack (for more information search for "breach" attacks).

Note

- If you are running several BSCW instances in different virtual hosts you must configure for each BSCW instance a different *HTTP_LOCAL_PORT* number and you must extend the `VirtualHost` directives by these local IP addresses/port pairs.
- It might be necessary to add an extra `Listen 127.0.0.1:<HTTP_LOCAL_PORT>` directive to the main Apache HTTP server configuration file.
- The port, the script alias path and the script name may be changed by altering the configuration directives *HTTP_LOCAL_PORT*, *SCRIPTS* and *CREATE_SCRIPTS* in the instance configuration file (`<bscw-runtime-path>/conf/config.py`). After altering these directives **bsadmin conf_apache** must be run again.

Remember to always **restart** your Apache HTTP server whenever the **bsadmin conf_apache** script was run. Please note the following relations between HTTP server directives and the BSCW server instance configuration

file <bscw-runtime-path>/conf/config.py variable settings:

- the BSCW server instance *SERVER_ROOT* definition must correspond at least with one (virtual) server name (as specified in the ServerName directive), e.g.:

```
SERVER_ROOT = 'https://bscw.domain.org/'
<=>
ServerName "bscw.domain.org"
Port 443
```

- the BSCW server instance value for the *BSCW_REALM* variable corresponds with the setting of the HTTP servers AuthType and AuthName directives, e.g.:

```
BSCW_REALM = 'BSCW Shared Workspace Server'
<=>
AuthType = Basic
AuthName = "BSCW Shared Workspace Server"
```

Otherwise problems with user authentication might occur: typically, users are asked twice for their passwords during registration or when switching user id.

3.4.2 BSCW instance configuration

You might skip the next parts of the configuration if you just upgraded your old BSCW server. The old configuration should be OK.

For BSCW 7 it is **mandatory** to enable the pre-forking BSCW HTTP server to speed up request processing. Refer to section *http* resp. *Apache HTTP Server Configuration* for a description how to enable the BSCW HTTP Server.

Local configuration details of your BSCW instance are held in the configuration file at <bscw-runtime-path>/conf/config.py (cf. section 4.2 *conf/config.py*). The minimum you need to do is to configure *Section 1: MANDATORY server settings* of this file:

- The "server root" - the host name (and port) part of your BSCW servers URL - is specified in the variable *SERVER_ROOT* contains the absolute URL of your BSCW server and an optional port. If no port is specified the standard ports 80 (for HTTP) or 443 (for HTTPS) are assumed:

```
SERVER_ROOT = 'http://bscw.domain.org/'
SERVER_ROOT = 'http://bscw.domain.org:123/'
SERVER_ROOT = 'https://bscw.domain.org/'
```

  A fully qualified host name is required as server name bscw.domain.org, in order to allow the BSCW server to resolve its name to an IP address *SERVER_ROOT* may **not** contain an IP address any more!). Ideally you define a host name/nickname (A/CNAME) in your DNS zone, which points to your BSCW server host, e.g.:

```
server1.domain.org        A        1.2.3.4
server2.domain.org        A        1.2.3.5
bscw.domain.org       CNAME        server1.domain.org
```

  Proceeding this way a future migration of your BSCW server from server1 to server2 will keep the well known URL https://bscw.domain.org/ and your license will not be invalidated by the migration.

- *SERVER_ADMIN* contains the **valid** email address of the server administrator, e.g.:

```
SERVER_ADMIN = 'bscw@domain.org'
```

- *SERVER_ADMINS* defines a list of BSCW users that have administrator rights, e.g.:

```
SERVER_ADMINS = ['bscw-admin', 'YourName']
```

You will most likely want to add your BSCW login name to *SERVER_ADMINS* to give yourself administrator rights (and maybe the login names of other BSCW users who should have administrator rights).

- *SMTP_HOST* contains a host name or an IP-address of a mail host, that accepts mail posting by SMTP, e.g.:

```
SMTP_HOST = 'mail.domain.org'
```

The BSCW system can use the local mail transfer agent (MTA), such as *sendmail* to send email (e.g. registration invitations), which should be fine for most installations. However, it may be better if BSCW directly uses your *smart mailhost* via SMTP. In general we recommend to use *SMTP_HOST* rather than *SENDMAIL*.

To do this, set the *SMTP_HOST* directive in `<bscw-runtime-path>/conf/config.py` to the IP address (or fully qualified domain name) of the machine that hosts your *smart mailhost*.

Note

If you you are using MS Exchange as MTA, you must explicitly allow the IP address of your BSCW server host to **relay** email.

BSCW refreshes its user interface constantly to reflect changes by other users, even if the current user does not interact with the system. To push changes almost real-time to active users, a WebSocket-based Node.js events server is required (see *Node.js*).

After the Node.js events server is installed, configure two endpoints for the events server in the BSCW runtime configuration `<bscw-runtime-path>/conf/config.py`:

```
EVENTS_SERVER_WS = 'ws://127.0.0.1:3836'
EVENTS_SERVER_HTTP = 'http://127.0.0.1:3837'
```

EVENTS_SERVER_WS defines the WebSocket endpoint meant to accept incoming user connections. It is typically located at localhost nonetheless because the Apache HTTP server is running as a reverse proxy in front of it. *EVENTS_SERVER_HTTP* is the *internal* RPC endpoint used by BSCW only, to exchange event and user login data with the events server.

None of these endpoints use SSL. However, for the external user connections, the Apache HTTP will provide encryption, if your BSCW server is set up for HTTPS.

After editing `<bscw-runtime-path>/conf/config.py` enable the Apache modules *proxy*, *proxy_http* and *proxy_wstunnel*. Next run **`bsadmin conf_apache`** to set up the reverse proxy configuration and **restart** the Apache server.

Afterwards, **restart** BSCW. There should be an events_server.log log file in the BSCW runtime's log folder. You might notice some log messages about missing dependencies on first startup; these dependencies are automatically installed (an active internet connection is required) and the events server restarts itself afterwards.

Note

If there is an Application Level Firewall installed at your site, be sure that it supports and allows WebSocket connections.

3.4.3 Administrator account

After your BSCW instance is running you can log in with the administrator account registered during the setup process (mind login name and password are case sensitive!) by opening the URL:

```
https://bscw.domain.org/sec/bscw.cgi
```

Actually to gain administrator rights you have to login a second time with your password by opening *[Options → Admin]*. If you open the URL `https://bscw.domain.org/pub/`, you get a BSCW overview which contains links to your BSCW instance.

Note

If you get an `Error: Wrong group id` during this steps the BSCW CGI scripts are not executed with the group ID `bscw`. This may happen because of the following reasons:

1. The set-group-id bit of the BSCW CGI script is not set. In this case, please execute the following command in your BSCW instance directory:

   ```
   $ cd <bscw-runtime-path>
   $ ./bin/bsadmin chkconfig
   ```

2. You have installed BSCW on a file system that is mounted with the `nosuid` option. In this case you have to remount the file system without the `nosuid` option.

3. Your operating system does not support the *set-group-id* bit for scripts (eg. Linux, BSD). In this case you have to compile a binary wrapper program and to reinstall the CGI scripts. Please ensure a C-compiler (**cc**, **gcc**) is available in the path and execute the following command in your BSCW instance directory again:

   ```
   $ cd <bscw-runtime-path>
   $ ./bin/bsadmin chkconfig
   ```

3.4.4 De-Installation

To de-install BSCW perform the following manual steps:

- Disable your BSCW startup procedure (see *BSCW Startup* for details).
- Disable all BSCW related entries in the crontab (see *Garbage Collection and repetitive tasks*) and disable the backup procedure (*Backup*).
- Stop your BSCW instance

  ```
  $ cd $HOME/srv/<bscw-runtime-dir>
  $ ./bin/bsadmin stop
  ```

- Next remove all instance data, e.g.

  ```
  $ cd $HOME/srv
  rm -rf <bscw-runtime-dir>
  ```

  Note

  This step irrevocably destroys all user data!

- Finally remove the related BSCW distribution library, e.g.

```
$ cd $HOME/lib
rm -rf bscw-7.6.1-<rev>-py3*
```

Note

You may only remove the BSCW distribution library if no existing other BSCW instance requires this particular BSCW revision!

3.5 Database Server Startup, Garbage Collection and Backup

All data of the BSCW server is held in the BSCW data store and handled through the BSCW database server. The BSCW database server is managed with the **start_servers** script, which is located in the BSCW instance <bscw-runtime-path>/bin directory:

- to start up BSCW database server, use

```
$ <bscw-runtime-path>/bin/start_servers
```

- to stop BSCW database server, use

```
$ <bscw-runtime-path>/bin/start_servers -k
```

- to run the garbage collector, use

```
$ <bscw-runtime-path>/bin/start_servers -gc
```

The state and errors of the BSCW database server are logged in the file <bscw-runtime-path>/var/log/bscw.log. We recommend that **start_servers** should be executed at system boot and **start_servers -k** at shutdown.

3.5.1 BSCW Startup

First install the static configuration scripts in the according directory for your system. E.g. for Debian copy the files

```
$ sudo su -
# id
uid=0(root) gid=0(root) groups=0(root)
# cd /opt/bscw/lib/bscw-7.6.1-<rev>-py3*/etc/posix/debian
# cp ./etc/default/bscw /etc/default
# cp ./etc/cron.daily/bscw /etc/cron.daily
# cp ./etc/cron.hourly/bscw_cleantmp /etc/cron.hourly
# cp ./etc/logrotate.d/bscw /etc/logrotate.d
# chmod 755 /etc/cron.daily/bscw /etc/cron.hourly/bscw_cleantmp
```

to the /etc directory. Afterwards edit the /etc/default/bscw (on Debian) resp. /etc/sysconfig/bscw (on EL) and /etc/logrotate.d/bscw files to adopt the BSCW user and the paths to your BSCW instances runtime directories.

To create a systemd service configuration run **bsadmin conf_systemd** and follow the given instructions:

```
$ bin/bsadmin conf_systemd

A systemd multiple instance service file ::

    bscw@.service
```

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```
has been created. Please check the contents and perform the following
commands as root user: ::

    $ sudo su -
    # id
    uid=0(root) gid=0(root) groups=0(root)
    # cd /opt/bscw/srv/<bscw-instance-name>
    # cp ./conf/systemd/system/bscw@.service \
         /etc/systemd/system
    # systemctl daemon-reload
    # systemctl enable bscw@<bscw-instance-name>.service
```

3.5.2 Garbage Collection and repetitive tasks

You will need to set up the system to **garbage collect every day**. The task of the garbage collector is to find unreferenced, e.g., obsolete objects in the data store and remove them. For performance reasons, a *delete* operation on an object may not remove the respective object physically from the store. If you do not run the garbage collector periodically, the BSCW data store will grow constantly although many of its objects are obsolete. This would waste disk space and may substantially reduce the performance of the BSCW server.

We recommend that you set up a *cron* job for running the **`start_servers -gc`** script, though you can do it manually. Do not stop the BSCW database server before garbage collection, the garbage collection **needs** a running server!

Other useful repetitive tasks that are daily executed by the *cron* daemon may be:

- `bsadmin du -u`: updates database disk usage
- `bsadmin listws -u`: updates the information about all shared workspaces
- `bsadmin licence -n`: notification before license expiration
- `bsadmin rmwaste`: emptying the users' wastebaskets
- `bsadmin conferences -g`: remove outdated Jitsi conferences

An example `crontab` for the `bscw` user could look like:

```
$ sudo su -
# id
uid=0(root) gid=0(root) groups=0(root)
# crontab -lu bscw
```

```
# update database usage
30 02  * * *  <bscw-runtime>/bin/bsadmin du -u
# update shared workspaces
30 02  * * *  <bscw-runtime>/bin/bsadmin listws -u
# notification mail 14 days before license expiry
35 02  * * *  <bscw-runtime>/bin/bsadmin licence -nd 14 -e <adm@domain.org>
# remove outdated Jitsi conferences
35 02  * * *  <bscw-runtime>/bin/bsadmin conferences -g >/dev/null
# remove users' wastes
40 02  * * *  <bscw-runtime>/bin/bsadmin rmwaste -w -os 30
# garbage collection
00 03  * * *  <bscw-runtime>/bin/start_servers -gc
```

3.5.3 Backup

Additionally it is **urgently** recommended to have regular **BACKUPS** (e.g. daily) of the configuration and the data store to avoid loss of data, e.g., because of a disk crash. The recommended time for backup is just after garbage collection.

The garbage collection creates alternating a garbage collected version of the BSCW database in the files `<bscw-runtime-path>/var/data/StoreA` or `StoreB`.

Note

These locations can be overridden by editing `<bscw-runtime-path>/conf/config.py`.

Generally you should consider the following files or directories of your BSCW instance (relative to your `<bscw-runtime-path>`) for backup:

- BSCW instance configuration files located in the `./conf/` directory
- BSCW instance data files and directories such as

```
./var/data/
./var/log/
./var/www/
```

Best you backup your complete BSCW instance directory `<bscw-runtime-path>`.

Note

- The `var/data/Text` and `var/data/Index` directories may be skipped while backup, because the contents may be reconstructed after restoration of a backup.
- You can use any incremental backup method to backup your BSCW instance

3.6 Folder Mail Delivery

Sending email to a BSCW folder is an alternative to the usual HTML/HTTP interface where users create content, e.g., via *[Add Document]* or *[Add Note]* actions using a Web browser. To enable folder mail delivery the following configuration steps have to take part:

- the BSCW mail delivery agent (MDA) has to be configured
- the local mail transfer agent (MTA) mail has to be configured to deliver incoming mails for the BSCW server mailbox to the BSCW MDA

Note

Your MTA must support VERP (variable envelope return paths) to allow the individual addressing of single folders; BSCW folder delivery is known to work with recent versions of Postfix or sendmail).

3.6.1 BSCW mail delivery agent (MDA)

The BSCW mail delivery agent (MDA) is configured by setting the following entries in the BSCW server instance configuration file <bscw-runtime-path>/conf/config.py:

```
#  MDA_MTA
#    Specifies the local mail transfer agent (MTA), currently
#    supported are:
#    MDA_MTA = 'postfix'
#    MDA_MTA = 'sendmail'
#    Setting MDA_MTA = '' or any unknown MTA will disable the
#    BSCW mail delivery feature (this is the default).
#  MDA_MBOX
#    Local mailbox name for BSCW mda (this is normally the BSCW
#    user id name)
#  MDA_DOMAIN
#    Domain name of the BSCW MDA (which is the delivery domain of
#    the local MTA for the local BSCW MDA mailbox)
#  MDA_HDRMETA
#    Defines which headers are shown in the RFC822 meta profile
#    of an uploaded email, e.g.
#    MDA_HDRMETA = ['RFC822:from', 'RFC822:to', 'RFC822:cc']
#  MDA_EXTRACTMAIL
#    if MDA_EXTRACTMAIL evaluates to True, in 'mailaccess' form
#    a preselcted option "[x] extract emails into a folder" is shown
#  MDA_DELIMITER = None (optional)
#    allows to override the MTA default recipient delimiter
#    MDA_DELIMITER = '+' (sendmail/postfix)
#  MDA_EXT = True (optional)
#    appends the extension for the MIME type 'message/rfc822' (as
#    defined in config_mime.py: .eml or .mht) to the email name.
MDA_MTA = 'postfix'
MDA_MBOX = 'lab'
MDA_DOMAIN = 'bscw.de'
MDA_HDRMETA = ['RFC822:from', 'RFC822:to', 'RFC822:cc']
MDA_EXTRACTMAIL = False
```

In the given example, the local BSCW mailbox is set to `lab` and the delivery domain name of the local MTA is `bscw.de`. Hence, a folder mail address has the form `lab+1234@bscw.de` (for sendmail and postfix).

To ensure consistent mail addresses, when local BSCW mail delivery is enabled, the BSCW server should only use the local mail server, therefore it is advisable to set

```
SMTP_HOST = ''
```

3.6.2 Local Mail Transfer Agent (MTA)

To deliver mail into a BSCW folder the localhost mail transfer agent has to deliver mail messages to a “program”, namely to the BSCW mail deliver agent. This is achieved by “piping” the message into the BSCW main CGI script:

```
"|<bscw-runtime-path>/var/www/bscw.cgi"
```

Postfix

To enable the BSCW MDA to deliver mails into folders for the Postfix MTA add the line

```
recipient_delimiter = +
```

to the Postfix configuration file `/etc/postfix/main.cf`.

After Postfix configuration, the program delivery to the BSCW MDA is enabled by choosing one of the following alternatives:

- enter the following line into BSCW users ID `$HOME/.forward` file:

  ```
  "|<bscw-runtime-path>/var/www/bscw.cgi"
  ```

  or

- add an alias for the *MDA_MBOX* (e.g. `bscw`) directive to the sendmail aliases database `/etc/aliases` file:

  ```
  bscw:       "|<bscw-runtime-path>/var/www/bscw.cgi"
  ```

  and run the **newaliases** program.

Finally to enable folder mail delivery in BSCW set in the BSCW server instance configuration file `<bscw-runtime-path>/conf/config.py` (beside the other settings described above)

```
MDA_MTA = 'postfix'
```

To test the folder mail delivery create a folder (within BSCW) and trigger the action "Open to Mail". Choose in the form the "enabled for anybody" option. After enabling the mail upload look at the folders info page to determine the folders email address. (If in the "Details" table a "Email address" row is missing, the BSCW MDA was not properly configured, check again your BSCW MDA configuration).

To debug the mail delivery enter the following entry into the *BSCW_LOGGING* directive in the BSCW server instance configuration file `<bscw-runtime-path>/conf/config.py`:

```
BSCW_LOGGING = {
    'mda': ('DEBUG', 'mda.log'),
}
```

Send a mail message to the prepared folder address and check in file:*/var/log/syslog* (or wherever your postfix MTA writes its log entries) if the local postfix MTA received the message and delivered it to the BSCW MDA. Typical log entries of a successful delivery look like:

```
Nov 15 15:29:18 hosting-b24d7f41 postfix/smtpd[27822]: 786AD18660BA:
    client=localhost[127.0.0.1]
Nov 15 15:29:18 hosting-b24d7f41 postfix/cleanup[27823]: 786AD18660BA:
    message-id=<2018111542916.GA10103@orbigate.orbiteam.de>
Nov 15 15:29:18 hosting-b24d7f41 postfix/smtpd[27822]:
    disconnect from localhost[127.0.0.1]
Nov 15 15:29:18 hosting-b24d7f41 postfix/qmgr[2714]: 786AD18660BA:
    from=<paulsen@orbiteam.de>, size=1791, nrcpt=1 (queue active)
...
Nov 15 15:29:18 hosting-b24d7f41 postfix/local[27841]: 786AD18660BA:
    to=<lab+1234@mail.orbiteam.de>, relay=local, delay=0.38,
    delays=0.01/0.01/0/0.36, dsn=2.0.0, status=sent (delivered to command:
    /opt/bscw/srv/lab.bscw.de/var/www/bscw.cgi)
Nov 15 15:29:18 hosting-b24d7f41 postfix/qmgr[2714]: 786AD18660BA: removed
```

Next check the log file (default: `<bscw-runtime-path>/var/log/mda.log`). A successful delivery log entry for a postfix MTA looks like:

```
2024-11-15 15:29:18 mda    INFO    invoked as 523/57
2024-11-15 15:29:18 mda    DEBUG
    MDA_MTA    = 'postfix'
    MDA_MBOX   = 'lab'
    MDA_DOMAIN = 'bscw.de'
2024-11-15 15:29:18 mda    INFO    start delivery
2024-11-15 15:29:18 mda    INFO    sender addr in 'from': header.
2024-11-15 15:29:18 mda    INFO    recipient in header: <lab+1234@bscw.de>
2024-11-15 15:29:18 mda    INFO    set domain to 'bscw.de'
2024-11-15 15:29:18 mda    INFO    store document
2024-11-15 15:29:18 mda    INFO    message loaded
2024-11-15 15:29:18 mda    INFO    message stored size=2028
2024-11-15 15:29:18 mda    INFO    virus check OK
2024-11-15 15:29:18 mda    INFO    msg for Folder#118433 (access 'anybody');
2024-11-15 15:29:18 mda    INFO    msg from info <info@orbiteam.de> delivered.
```

Sendmail

To enable the BSCW MDA to deliver mails into folder for sendmail the following `/etc/mail/sendmail.cf` configuration must be ensured:

- to allow sendmail program message delivery to the BSCW MDA the sendmail "prog" mailer has to be defined in `/etc/mail/sendmail.cf` as follows:

```
Mprog,    P=/bin/sh, F=lsDFMPoqeu9,
          S=EnvFromL/HdrFromL, R=EnvToL/HdrToL, D=$z:/,
          T=X-Unix/X-Unix/X-Unix,
          A=sh -c $u
```

  The `F` and `P` flags in the "prog" mailer flag list `F=` are required, to ensure the message contains a `From:` and `Return-Path:` header line.

  Note

  you may not use `smrsh` (restricted shell for sendmail) as "prog" mailer for sendmail, since it does not permit the delivery into the BSCW MDA script. Alternatively you might link the **`bscw.cgi`** script from `/etc/smrsh`.

- to enable the BSCW MDA to determine a well-defined recipient of a message you have to ensure the header definition `HReceived` in `/etc/mail/sendmail.cf` contains a

```
for $u; $|;
```

  line (which is the default setting in newer sendmail versions).

- To make multiple recipients work with sendmail add a `Delivered-To:` header by enter the following configuration line to `/etc/mail/sendmail.cf`:

```
H?J?Delivered-To: $u
```

After editing `/etc/mail/sendmail.cf` your sendmail needs to be restarted before changes become effective.

After successful sendmail configuration, the program delivery to the BSCW MDA is enabled by choosing one of the following alternatives:

- enter the following line into BSCW users ID `$HOME/.forward` file:

```
"|<bscw-runtime-path>/var/www/bscw.cgi"
```

or

- add an alias to the sendmail aliases database `/etc/aliases` file

```
bscw:   "|<bscw-runtime-path>/var/www/bscw.cgi"
```

and run the **newaliases** program.

Finally to enable folder mail delivery in BSCW set in the BSCW server instance configuration file `<bscw-runtime-path>/conf/config.py` (beside the other settings described above)

```
MDA_MTA = 'sendmail'
```

To test the folder mail delivery create a folder (within BSCW) and trigger the action "Open to Mail". Choose in the form the "enabled for anybody" option. After enabling the mail upload look at the folders info page to determine the folders email address. (If in the "Details" table a "Email address" row is missing, the BSCW MDA was not properly configured, check again your BSCW MDA configuration).

To debug the mail delivery enter the following entry into the *BSCW_LOGGING* directive in the BSCW server instance configuration file `<bscw-runtime-path>/conf/config.py`:

```
BSCW_LOGGING = {
    'mda': ('DEBUG', 'mda.log'),
}
```

Send a mail message to the prepared folder address and check in `/var/log/syslog` (or wherever your **sendmail** writes its log entries) if the local **sendmail** program received the message and delivered it to the BSCW MDA. Typical log entries of a successful delivery look like:

```
Nov 15 15:29:17 maestral sendmail[5801]: g97G0Kp05801:
    from=<info@orbiteam.de>, size=551, class=0, nrcpts=1,
    msgid=<201811151600.g97G0DW08799@tormenta.orbiteam.de>,
    proto=ESMTP, daemon=MTA-IPv4, relay=mail [195.127.160.172]
Nov 15 15:29:17 maestral sendmail[5802]: g97G0Kp05801:
    to=|/opt/bscw/srv/lab.bscw.de/var/www/bscw.cgi,
    ctladdr=<lab+1234@bscw.de> (523/57), delay=00:00:01,
    xdelay=00:00:00, mailer=prog, pri=30015, dsn=2.0.0, stat=Sent
```

Next check the log file (default: `<bscw-runtime-path>/var/log/mda.log`). A successful delivery log entry for a sendmail MTA looks like:

```
2024-11-15 15:29:18 mda    INFO    invoked as 523/57
2024-11-15 15:29:18 mda    DEBUG
    MDA_MTA    = 'sendmail'
    MDA_MBOX   = 'lab'
    MDA_DOMAIN = 'bscw.de'
2024-11-15 15:29:18 mda    INFO    start delivery
2024-11-15 15:29:18 mda    INFO    sender addr in 'from': header.
2024-11-15 15:29:18 mda    INFO    recipient in header: <lab+1234@bscw.de>
2024-11-15 15:29:18 mda    INFO    set domain to 'bscw.de'
2024-11-15 15:29:18 mda    INFO    store document
2024-11-15 15:29:18 mda    INFO    message loaded
2024-11-15 15:29:18 mda    INFO    message stored size=2028
2024-11-15 15:29:18 mda    INFO    virus check OK
2024-11-15 15:29:18 mda    INFO    msg for Folder#118433 (access 'anybody');
2024-11-15 15:29:18 mda    INFO    msg from info <info@orbiteam.de> delivered.
```

CHAPTER

FOUR

CONFIGURATION OF BSCW SERVERS

The BSCW server can be configured by a set of configuration files which are stored in the instance configuration directory <bscw-runtime-path>/conf/. The standard configuration files in the instance configuration directory <bscw-runtime-path>/conf/ are:

- config.py General configuration of the BSCW server
- config_actions.py Customization to default action or role definitions
- config_cal.py Configuration of the calendar
- config_clientmap.py Configuration of web browser capabilities
- config_controls.py Customization to default operation control definitions
- config_convert.py Specification of encoders, converters, programs
- config_countries.py Specification of country codes
- config_grid.py Webbrowser grid layout
- config_guided_tours.py Guided tour definitions
- config_help.py Contains online help mappings
- config_html_ui.py HTML user interface
- config_icon.py Icon definitions
- config_meet.py Configuration of social network facilities
- config_menus.py Configuration of the menu layout
- config_metadata.py Configuration of meta data
- config_mimegroups.py Application MIME-type grouping
- config_mime_icons.py MIME-type icons
- config_mimemsg.py Additional translations for MIME-type specification
- config_mime.py MIME-type specifications
- config_mpick.py Define class substitutions for deactivated packages
- config_prio_categ.py Configuration of priorities and categories
- config_quicksearch.py Settings for quick search
- config_search.py Search configuration
- config_styles.py Settings for style sheet handling

Please note the editing instructions within these files carefully when making any modifications. It should be noted that all configuration files are Python modules and on thus subject to Python's programming language syntax. After an overview of different user authentication possibilities, the above configuration files are described in this section.

4.1 Authentication

BSCW provides for each user a personal view of accessible data. To access this personal view on the BSCW system every user needs to authenticate with an individual user name or an email address (allocated to an user name) and a password. In general BSCW offers two possibilities to perform this authentication

1. *BSCW Authentication*

   In general BSCW authentication is passing user credentials via an environment variable to BSCW (*cookie / basic / digest authentication*). Passing the users' credentials to BSCW gives the most flexibility to react on authentication challenges.

   See also

   Section 2.2 *Security considerations*

   Using BSCW authentication enables the usage of different (configured) methods, for example such as querying an LDAP service for users with an LDAP binding, or redirect to a single sign on service to perform an external user authentication.

   Additional features like

   - authentication with (registered) email address and password
   - BSCW logout
   - automatic fall-back to *basic / digest authentication* for WebDAV clients (since the WebDAV protocol does not support cookie authentication).

   are only available using BSCW authentication.

2. *Web Server Authentication*

   Web Server Authentication used to be the classical" way BSCW handled authentication. To utilize the Apache web serves' basic authentication module the (encrypted) user credentials are stored within a file `htpasswd` (see *PASSWD*) which was shared between the BSCW server and the Apache web server.

   While BSCW maintains this file, the Apache web server uses it to check the given user credentials before BSCW may be accessed via its **`bscw.cgi`** script.

   Using web server based authentication allows a "cascading" use of diverse Apache authentication modules. This enables for instance the implementation of an efficient authentication lookup against an organizational LDAP service (using the Apache `mod_ldap.so`). For failed LDAP authentication attempts then as second stage the standard basic authentication method is invoked using the shared `htpasswd` file.

   Nevertheless Apache web server authentication may not be flexible enough and has the following limitations:

   - authentication with email address and password is not possible, since at login time the web server cannot check the association between allocated email address and user name
   - the BSCW logout feature is not available
   - the usage of the ZOPE external editor is not possible (due to the used authentication mechanism).

   Note

   By default the creation of the *PASSWD* file is disabled, so no shared `htpasswd` file is generated.

BSCW instances enable *BSCW authentication* using Cookie Authentication as default setting. On older BSCW instances *BSCW authentication* may be explicitly enabled by running the command line script

```
$ bin/bsadmin conf_apache -n
```

See also

Section 3.4.1 *Apache HTTP Server Configuration* for more details

4.2 conf/config.py

This file defines the general server settings and server configuration of the BSCW server instance. Please note all relative file and directory names are resolved using instance runtime directory <bscw-runtime-path>.

Important

By using the pre-forking BSCW HTTP server (`http` package) *all* configuration changes only take effect after a **restart** of the BSCW HTTP server, which is performed from the CLI running:

```
bin/bsadmin http restart
```

or on the administration *BSCW status page [Options → Admin → Status]* by clicking the *[Restart integrated http service]* entry.

Below the names of the configuration variables, their meaning and their default settings are given. At least the variables mentioned in the *Section 1: MANDATORY server settings* the configuration file **must be set** since their default setting is not sufficient.

4.2.1 MANDATORY server settings

SERVER_ROOT

The Web servers' root address. This should be an absolute URL specifying

- the protocol (`http` or `https`)
- the fully qualified domain name of the server (a numeric IP address is not allowed here)
- and (optionally) the port number

See section 3.4.2 *BSCW instance configuration* for configuration hints of *SERVER_ROOT*. For example

```
SERVER_ROOT = 'http://bscw.domain.org'
SERVER_ROOT = 'http://bscw.domain.org:8000
SERVER_ROOT = 'https://bscw.domain.org'
```

Note

- You have to set SERVER_ROOT before you apply for a BSCW license.
- A granted BSCW license (not the evaluation license) will become invalid if you change SERVER_ROOT or the *SCRIPTS* prefix (see below). In this case BSCW will complain with a "license error" message after the BSCW database server is restarted or the garbage collector has run. Hence, you need to apply for a new (royalty-free) "change server"- license after changing the values of SERVER_ROOT or the standard *SCRIPTS* prefix. Of course, you might also reset SERVER_ROOT and *SCRIPTS* to the old values and restart (stop and start) the BSCW database server.

```
SERVER_ROOT = 'https://bscw.domain.org'
```

SERVER_ADMIN

The mail address of the BSCW administrator. It **must** be set to a valid and complete mail address.

```
SERVER_ADMIN = 'admin@domain.org'
```

SERVER_ADMINS

USER_ADMINS

Define lists of users with different administrative rights:

SERVER_ADMINS is a list of BSCW users that have full administrator rights (including user administration), e.g.:

```
SERVER_ADMINS = ['admin', 'alice', 'bob']
```

USER_ADMINS defines a list of BSCW users that have restricted administrator rights to manipulate (create, remove, change etc.) users and mail addresses only, e.g.:

```
USER_ADMINS = ['carol', 'dave']
```

Note

The users listed here **must** be registered BSCW users and the names must match exactly.

See also

SERVER_ADMINS_IP for domain restrictions

```
SERVER_ADMINS = ['admin']
USER_ADMINS = []
```

SERVER_ADMIN_CONTACT

The mail contact address of the BSCW administrator. This is used to reference SERVER_ADMIN_CONTACT in the index page and the help menu for end users to contact their BSCW administrator by e-mail.

If left empty, the *SERVER_ADMIN* e-mail address is used.

```
SERVER_ADMIN_CONTACT = ''
```

HTTP_LOCAL_PORT

HTTP_LOCAL_PORT_START

HTTP_LOCAL_HOST_CHECK

HTTP_LOCAL_PORT defines the `localhost` port to HTTP server. BSCW needs local access to the standard `bscw.cgi` script. The HTTP server must listen to `localhost:`<HTTP_LOCAL_PORT> and must provide access to the BSCW Server via this port.

Note

- the `localhost` port to the HTTP server **must** support HTTP; HTTPS is **not** supported.
- If you use the Apache <VirtualHost> container to accommodate the BSCW script path it may be necessary define an extra virtual host for `localhost:<HTTP_LOCAL_PORT>` where the Apache configuration file `<bscw-runtime-path>/conf/apache24/bscw.conf` also is included.
- See also the virtual host container template file `<bscw-instance-path>/conf/apache24/site.conf` for examples.

If `HTTP_LOCAL_PORT_START` is not None and the package *http* is enabled then **bsadmin start** automatically starts a HTTP server listening on `HTTP_LOCAL_PORT`. For example, with `HTTP_LOCAL_PORT_START = "-p 100 -r 128"` the command **bsadmin start** automatically executes **bsadmin http -p 100 -r 128 local** (spawning maximal=100 processes with maxlisten=128, this is the default).

Use **bsadmin conf_apache** in order reconfigure the Apache server to forward requests to this server instead of executing bscw.cgi scripts. You *must* reconfigure and restart Apache again if you reset `HTTP_LOCAL_PORT_START = None`, change `HTTP_LOCAL_PORT` or disable the *http* package!

Note

Currently **bsadmin http** and hence `HTTP_LOCAL_PORT_START` works only on Unix systems!

If `HTTP_LOCAL_PORT_START` is not None, then check for special authentication (used by op_alarm, op_mailnotify etc.) that `REMOTE_ADDR` is one of the given *local* host addresses, e.g: `HTTP_LOCAL_HOST_CHECK = ('::1', '127.0.0.1')`

```
HTTP_LOCAL_PORT = 80
HTTP_LOCAL_PORT_START = None
HTTP_LOCAL_HOST_CHECK = ('::1', '127.0.0.1')
```

`EVENTS_SERVER_WS`

`EVENTS_SERVER_HTTP`

Define local endpoints for the real-time events server. Requires a node runtime environment and additional setup steps. Please refer to the admin manual for details.

`EVENTS_SERVER_WS` defines the URL of events server websocket, e.g. 'ws://127.0.0.1:3836'. User browsers connect to this endpoint through a reverse proxy, offered by the HTTP server.

`EVENTS_SERVER_HTTP` defines the URL of events server http, e.g. 'http://127.0.0.1:3837'. Internal endpoint for event and login data exchange.

```
EVENTS_SERVER_WS = None
EVENTS_SERVER_HTTP = None
```

`CONFERENCE_PROVIDER`

`CONFERENCE_VERSION`

`CONFERENCE_HOST`

`CONFERENCE_PORT`

`CONFERENCE_SECRET`

Define an endpoint for real-time conferences via webcam and/or microphone. Requires a ready configured conference service.

Currently the following conference services are supported:

- Jitsi (https://github.com/jitsi/jitsi-meet) A installation guide can be found at https://jitsi.github.io/handbook/docs/devops-guide/devops-guide-quickstart
- BigBlueButton (https://bigbluebutton.org) A installation guide can be found at https://docs.bigbluebutton.org/3.0/install.html

BSCW utilizes two deployment methods dependent on `CONFERENCE_SECRET` setting (see below):

1. JSON web token authentication (RFC 7519) connection to the conference server. It is utilized if `CONFERENCE_SECRET` is defined. In this case a proxy configuration of BSCW (as described below) is not used.
2. Reverse proxy connection through BSCW to the conference server. After each change to one of the following `CONFERENCE_*` directives, **`bsadmin conf_apache -T`** must be run again and the web server must be restarted. This creates an additional Apache HTTP server configuration file `service_token.conf` with a unique URL token for accessing the conference server. It is recommended to recreate this token regularly (e.g. once a day) by running **`bsadmin conf_services`** via cron and restarting the Apache HTTP server, e.g.

```
10 01  * * * /opt/bscw/srv/<bscw-instance>/bin/bsadmin conf_services
```

`CONFERENCE_PROVIDER` defines the conference provider, either `"JITSI"` for Jitsi or `"BBB"` for BigBlueButton

`CONFERENCE_VERSION` allows to set the configuration for a specific version of the conference provider. The value `default` uses the preconfigured settings. For details see the configuration file `conf/config_<provider>.py` (e.g. `config_jitsi.py` for Jitsi) or the administrator manual office package description.

`CONFERENCE_HOST` defines for the "JITSI" provider the URL to the conference server, (e.g. https://jitsi.org). All provider definitions assume a scheme (`http://` or `https://` before the domain or IP address).

`CONFERENCE_PORT` defines the port of the conference server. With `CONFERENCE_PORT = None` (default) the default value for the provider is used (which is for "JITSI" and "BBB" `443`).

`CONFERENCE_SECRET` defines a shared secret key between BSCW and the conference server.

Warning

In order not to compromise the security of the conference server, this key must never be shared.

- for the "JITSI" provider additionally the installation of
  - the Python PyJWT package for the BSCW server Python version is required, e.g

    ```
    $ pip3 install pyjwt
    ```

  - the `jitsi-meet-tokens` plugin for prosody on the Jitsi server is required. Follow then the instructions for jwt support in Jitsi: https://github.com/jitsi/lib-jitsi-meet/blob/master/doc/tokens.md
- **for the "BBB" provider use the command `bbb-conf --secret`**
  on the conference server to get the secret key.

```
CONFERENCE_PROVIDER = 'JITSI'
CONFERENCE_VERSION = 'default'
CONFERENCE_HOST = None
```

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```
CONFERENCE_PORT = None
CONFERENCE_SECRET = None
```

INHERIT_BANNER_IMAGE

Defines whether a background image in the area of the banner should be passed over the content display or not.

Set INHERIT_BANNER_IMAGE to True if the background image inside the banner should be passed over and False else

```
INHERIT_BANNER_IMAGE = True
```

ENABLE_LIVE_COMMUNITY

SHOW_CURRENT_CONTEXT_INDICATION

SHOW_UPCOMING_PERSONAL_TASKS

Enables or disables the live realtime information sharing of BSCW members relating to current context and next upcoming tasks

ENABLE_LIVE_COMMUNITY: Enables/Disables everything related to the live community. Set True if the live community should be activated and False else.

SHOW_CURRENT_CONTEXT_INDICATION: Enables/Disables the flying avatars which indicates the current context of the corresponding user. Set True if the live community should be activated and False else.

SHOW_UPCOMING_PERSONAL_TASKS: Enables/Disables the sharing of tasks in the personal task list of each member of the BSCW server who is a participant of the live community. Set True to activate and False else.

```
ENABLE_LIVE_COMMUNITY = True
SHOW_CURRENT_CONTEXT_INDICATION = True
SHOW_UPCOMING_PERSONAL_TASKS = True
```

OFFICE_PROVIDER

OFFICE_VERSION

OFFICE_HOST

OFFICE_PORT

OFFICE_SERVER_ROOT

OFFICE_JWT_SECRET

OFFICE_JWT_HEADER

OFFICE_FORCE_SAVE

define the endpoints for Online Office providers. After each change of one of the following OFFICE_* directives, **bsadmin conf_apache** must be executed again and the web server restarted.

OFFICE_PROVIDER defines the office provider, either "OO" for ONLYOFFICE or "MS" for Microsoft 365 or "C" for Collabora Office (deprecated)

OFFICE_VERSION allows to set the configuration for a specific version of the Online Office provider. The value 'default' uses the preconfigured settings. For details see the configuration file

conf/config_<provider>.py (e.g. config_oo.py for ONLYOFFICE) or the administrator manual office package description.

All provider definitions assume a scheme (http:// or https:// before the domain or IP address). OFFICE_HOST defines

for the "OO" provider

the URL to the ONLYOFFICE documentserver (e.g. http://localhost).

for the "MS" provider

the full WOPI discovery URL, as provided by a Microsoft 365 provider. To enable Microsoft 365 with your BSCW instance a DNS entry into the domain wopi.bscw.de is required, ask support@orbiteam.de for details.

for the "C" provider

the IP address of the Collabora Online Office service (deprecated). By default, the IP address of Collabora Online Office is set to '127.0.0.1'. (Note: Due to lack of customer demand, only versions up to 4.0.9 are supported).

OFFICE_PORT defines the port of the Online Office service. By default, Collabora uses port 9980, and MS Office and ONLYOFFICE use port 443. With OFFICE_PORT = None (default) these values are used.

OFFICE_SERVER_ROOT defines an alternative (second) URL of the BSCW instance for use in local DMZ environments where the ONLYOFFICE service is not publicly accessible.

If defined, all requests are redirected via BSCW so that the URL of the ONLYOFFICE service is not exposed. By default, OFFICE_SERVER_ROOT is undefined (None) and the ONLYOFFICE service is connected directly via its publicly accessible URL.

OFFICE_JWT_SECRET defines a JSON web token shared between BSCW and ONLYOFFICE. Set OFFICE_JWT_SECRET to the ONLYOFFICE token definition (see /etc/onlyoffice/documentserver/local.json: services.secret.{inbox|outbox|session}.string). If defined, the Python package PyJWT must also be installed. Furthermore, OFFICE_JWT_HEADER must be set to the name of the HTTP header field used by ONLYOFFICE (as defined in /etc/onlyoffice/documentserver/local.json: services.token.{inbox|outbox}.header, usually 'Authorization')

Note

- BSCW will redirect (proxy) all requests to the ONLYOFFICE service via the BSCW apache HTTP server if one of the following conditions is met:
  - OFFICE_SERVER_ROOT is defined
  - OFFICE_JWT_SECRET or OFFICE_JWT_HEADER are undefined
- If the ONLYOFFICE service is exposed directly to the internet, it must support an SSL URL and OFFICE_HOST must start with https://.

OFFICE_FORCE_SAVE (for "OO" provider only) If set to True, the edited document will be saved before another user may take over the document lock (default: OFFICE_FORCE_SAVE = True).

```
OFFICE_PROVIDER = 'OO'
OFFICE_VERSION = 'default'
OFFICE_HOST = 'http://127.0.0.1'
OFFICE_PORT = None
OFFICE_SERVER_ROOT = None
OFFICE_JWT_SECRET = None
OFFICE_JWT_HEADER = 'Authorization'
OFFICE_FORCE_SAVE = True
```

SMTP_HOST

SMTP_AUTH

A host name or an IP-address of a mail host that accepts mail posting by SMTP.

Using the SMTP_HOST option is recommended, because it allows to set sender addresses correctly. If empty, the local mail delivery command as defined in *SENDMAIL* is used (see also local BSCW mail delivery *MDA_MTA*). A non-default port may be specified by appending :<port>, SMTP_HOST = 'mail.bscw.de:225'

Finally @TLS or @SSL may be appended to SMTP_HOST, in order to switch over to TLS (see smtplib starttls) or to start right away with SSL (see smtplib SMTP_SSL, not supported by non-SSL builds). Invalid SMTP_HOST setting and BSCW mail transport in general can be debugged with:

```
bsadmin sendmail -vv
```

If SMTP_AUTH is set to a non-empty string login:passwd the RFC 2554 SMTP authentication mechanism is used after connecting the mail host. This string contains a pair of login name and clear text password separated by :, e.g. SMTP_AUTH = 'bscw:secret'

```
SMTP_HOST = 'mail.domain.org@TLS'
SMTP_AUTH = ''
```

4.2.2 Mail handling

SENDMAIL

A command line accepting mail (header+body) for posting via standard input. The patterns %(from)s and %(to)s in the SENDMAIL string are substituted by the sender and the recipients of the mail respectively (the recipients are separated by spaces).

```
SENDMAIL = ['/usr/lib/sendmail', '-f', '%(from)s', '%(to)s']
```

MDA_MTA

MDA_MBOX

MDA_DOMAIN

MDA_HDRMETA

MDA_EXTRACTMAIL

MDA_DELIMITER

MDA_EXT

Settings for the local BSCW mail delivery agent, which delivers mail directly into folders.

Note

When local BSCW mail delivery is enabled, the BSCW server should only use the local mail server, therefore it is advisable to set SMTP_HOST = ''

MDA_MTA specifies the local Mail Transfer Agent (MTA), currently supported are:

```
MDA_MTA = 'qmail'
MDA_MTA = 'postfix'
MDA_MTA = 'sendmail'
```

Setting `MDA_MTA = ''` or any unknown MTA will disable the BSCW mail delivery feature (this is the default).

`MDA_MBOX` defines the local mailbox name for BSCW mda (this is normally the BSCW user ID name)

`MDA_DOMAIN` defines the domain name of the BSCW MDA (which is the delivery domain of the local MTA for the local BSCW MDA mailbox)

`MDA_HDRMETA` defines which headers are shown in the RFC822 meta profile of an uploaded email, e.g.:

```
MDA_HDRMETA = ['RFC822:from', 'RFC822:to', 'RFC822:cc']
```

if `MDA_EXTRACTMAIL` evaluates to `True`, the 'mailaccess' form shows a preselected option "[x] extract emails into a folder"

`MDA_DELIMITER = None` (optional) allows to override the MTA default recipient delimiter:

```
MDA_DELIMITER = '+' (sendmail/postfix)
MDA_DELIMITER = '-' (qmail)
```

`MDA_EXT = True` (optional) appends the extension for the MIME type `message/rfc822` (as defined in `config_mime.py`: .eml or .mht) to the email name.

```
MDA_MTA = ''
MDA_MBOX = 'bscw'
MDA_DOMAIN = 'domain.org'
MDA_HDRMETA = ['RFC822:from', 'RFC822:to', 'RFC822:cc']
MDA_EXTRACTMAIL = False
```

`SEND_LIMIT`

`SEND_LIMIT` is a tuple of `(soft_limit, hard_limit)`. If an email should be send by the send operation and the message becomes larger than the `soft_limit` , the user gets an hint that, he will send a large email. If the message is larger then the `hard_limit`, the sending of the message will be rejected. If one or both of the limits are `0`, the test or both tests will be suppressed.

Possible values for the sizes are strings which may be specified in bytes or kilo- (mega-, giga-, tera-) bytes with an additional `k` (K), `M`, `G` or `T` suffix. E.g. valid values for ten mega-bytes are `10485760` or :`'10M'`.

```
SEND_LIMIT = ('10M', '20M')
```

`TOKEN_EXP`

`AUTH_TOKEN_EXP`

`API_TOKEN_EXP`

`TOKEN_EXP` defines the life span of access tokens for documents sent in emails. When sending documents as links (send operation), email recipients will be sent the link including a temporary token. This token grants "get" access to the document for anonymous users, until the token expires. Setting `TOKEN_EXP = None` will entirely disable option to send tokens; links can then only be sent to registered users with "get" right.

`AUTH_TOKEN_EXP` defines the maximum validity period of a registration link (sent in user registration email notifications). By default these links do not expire (`AUTH_TOKEN_EXP = None`)

API_TOKEN_EXP defines the validity period of an API token used to authenticate an API request.

- possible values for the interval may be specified in seconds or minutes (hours, days, weeks) with an additional 'm' ('h', 'd', 'w') suffix. E.g. valid values which specify one week are 604800 (or '604800'), '7d' or '1w'.
- TOKEN_EXP < 600 sec (10 min) will entirely disable this option.
- AUTH_TOKEN_EXP must be set >= 600 sec (10 min)

```
TOKEN_EXP = '4w'
AUTH_TOKEN_EXP = None
API_TOKEN_EXP = '2w'
```

SEND_ADMIN

If set it specifies an *email address* which will be used as sender instead of the *SERVER_ADMIN*, when an user sends an email via the send operation.

```
SEND_ADMIN = ''
```

SEND_RETURN_PATH

SEND_HDR

SEND_ONBEHALF

define headers of outgoing BSCW user email messages

If SEND_RETURN_PATH is set it specifies an *email address*, which will be used as Return-path in the envelope when mails are sent. Otherwise the email address from the From field is used (which is considered to be a valid email address, because it has been verified by BSCW).

If SEND_HDR is True (default) BSCW appends a Sender: <SEND_ADMIN> and a Reply-To: <user-mailaddr> header to honor RFC 822/4021 agent submission. If additionally SEND_ONBEHALF is True (default: False) the From: header is rewritten as From: "BSCW on behalf of <user>" <SEND_ADMIN>.

```
SEND_RETURN_PATH = ''
SEND_HDR = True
SEND_ONBEHALF = False
```

4.2.3 Server access

SERVER_ADMINS_IP

List (or tuple) of IPv4 or IPv6 addresses or networks. Networks may be specified in prefix (CIDR) or netmask notation. If not empty the remote address must match one of the given domains for a user in *SERVER_ADMINS* or *USER_ADMINS* to become BSCW Administrator (see below).

```
SERVER_ADMINS_IP = [
    '1.2.3.4',                  # administrator IP address
    '1.2.3.0/24',               # administrator IP net (prefix)
    '1.2.3.0/255.255.255.0',    # administrator IP net (netmask)
]
```

```
SERVER_ADMINS_IP = []
```

MAY_REGISTER

ALLOW_MAIL_AUTH

ALLOW_MAIL_UNLOCK

MAY_REGISTER defines a list of BSCW users names or pattern tuples of email addresses assigned to users who have the right to register mail addresses - i.e. to invite new users to the system or to a workspace. This is in addition to *SERVER_ADMINS* or *USER_ADMINS* who have this right anyway. Please see *RESTRICT_MAIL* for a description how to define pattern tuples, example

```
MAY_REGISTER = [
    'username',
    ('[^@]*@orbiteam.de', 1),
]
```

There are three special cases: if MAY_REGISTER is :

- [] - registration of new email addresses is allowed for all users. This allows all registered users to invite new users to the system. Also self-registration is possible.
- None - registration is allowed for all registered users, but self-registration is forbidden.

Note

Only MAY_REGISTER = [] allows self-registration by URL: https://bscw.domain.org/pub/bscw.cgi?op=rmail

If ALLOW_MAIL_AUTH is set True (default) users may reset their password via mail token authentication. If set False mail token authentication is disallowed (and only the administrator may reset forgotten passwords).

If ALLOW_MAIL_UNLOCK is set True users may unlock their account after being locked by the system (e.g. after multiple wrong login attempts (as defined in *BADPASS*)) via mail token authentication. If set False users may only be unlocked by a BSCW administrator.

```
MAY_REGISTER = None
ALLOW_MAIL_AUTH = True
ALLOW_MAIL_UNLOCK = True
```

MAY_CREATE_MAILADDRESS

MAY_CREATE_MAILADDRESS defines a list of BSCW user names or pattern tuples of email addresses that have the right to create external mail addresses - e.g. suggest participants for an appointment scheduling. This is in addition to users from MAY_REGISTER, who have this right anyway. Please see MAY_REGISTER and RESTRICT_MAIL for a description of special values and how to define pattern tuples, example:

```
MAY_CREATE_MAILADDRESS = [
    'username',
    ('[^@]*@forbidden.com', 0),
    ('[^@]*@allowed.com', 1),
]
```

There is another special case, which will restrict creation of new email addresses exactly to users from MAY_REGISTER:

```
MAY_CREATE_MAILADDRESS = False
```

Note

This right also enables a user to find and disclose all email addresses that are known to the system!

```
MAY_CREATE_MAILADDRESS = []
```

REGISTER_DETAILS

TERMS_AND_CONDITIONS

PRIVACY_POLICY

ACCESSIBILITY_POLICY

A list of user details that must be filled in at registration time by new users. Select a subset of the following user attributes:

fullname (users' full name), *org* (Organization), *phone* (work phone). *fax* (work fax), *homephone* (private phone), *mobile* (mobile phone), *post* (postal address). In order to inquire the user for his full name and phone number at registration you would configure:

```
REGISTER_DETAILS = [
    'fullname','org', 'phone', 'fax',
    #'homephone', 'mobile', 'post'
]
```

or allow registration without additional details, simply set:

```
REGISTER_DETAILS = None
```

If TERMS_AND_CONDITIONS, PRIVACY_POLICY or ACCESSIBILITY_POLICY are defined and point to a link (URL), the registration form will be extended by check-boxes which the user has to confirm before finishing the registration process.

The page referenced by TERMS_AND_CONDITIONS should describe the server's terms of use (which the users agree to accept). The pages referenced by PRIVACY_POLICY should contain rules that apply to data protection declaration (resp. "Datenschutzerklärung" [DE]) and ACCESSIBILITY_POLICY should contain a accessibility declaration (resp. "Erklärung zur Barrierefreiheit" [DE]). All links will be shown in the menu of the index page and in the footer of all (container) pages.

To support language dependent links, add the language shortcut (uppercase) to the variable name, e.g. use TERMS_AND_CONDITIONS_DE for a German page.

Note

- English is the default language which is displayed for all languages without language dependent link.
- With the legal validiy of the EU - General Data Protection Regulation (GDPR), it will be necessary to provide a data protection declaration for BSCW instances operated in the European Union. See the BSCW admininstration manual section 2.3 *EU - General Data Protection Regulation* for further details.

```
REGISTER _DETAILS = None
TERMS_AND_CONDITIONS = ''
PRIVACY_POLICY = ''
ACCESSIBILITY_POLICY = ''
```

DEFAULT_TELL_LASTLOG

Users' default value for "Show my presence and last login date to other users"

```
DEFAULT_TELL_LASTLOG = True
```

ABOUT_SITE

If ABOUT_SITE is defined it should point to a link (URL) that contains legal notice of the server's website (aka 'Publisher' [EN] or 'Impressum' [DE]). The link will be shown on the index page's menu and as visible link in the footer of all (container) pages.

To support language dependent links, add the language shortcut (uppercase) to the variable name, e.g. use ABOUT_SITE_DE for a German page.

> **Note**
>
> English is the default language which is displayed for all languages without language dependent link.

```
ABOUT_SITE = ''
```

MAY_UNREGISTER

Defines if BSCW users have the right to unregister (i.e. self-destroy their account).

MAY_UNREGISTER may not be configured for individual accounts but only be set to True or False, i.e. enabled or disabled for all users (except for administrators).

```
MAY_UNREGISTER = False
```

DEFAULT_USER_LANG

The default user language is taken as default language for new users (or email addresses) in case no language is assigned explicitly.

> **Note**
>
> upon (self-)registration, the browser language is assigned to the new user.

```
DEFAULT_USER_LANG = 'en'
```

RESTRICT_MAIL

RESTRICT_EXT_MAIL

RESTRICT_SEND

A list (or tuple) of pairs (pattern, boolean) to restrict email addresses:

- RESTRICT_MAIL restricts the set of email addresses that are accepted by BSCW for e.g. registration or invitation.
- RESTRICT_EXT_MAIL restricts the set of external email addresses that are accepted by BSCW functions, such as appointment scheduling.

> **Note**
>
> RESTRICT_EXT_MAIL extends RESTRICT_MAIL patterns, i.o.w. RESTRICT_MAIL patterns are applied before patterns defined in RESTRICT_EXT_MAIL.

- RESTRICT_SEND restricts the set of user email addresses that are allowed to send email via BSCW.

If the list is not empty, then a new mail address is translated to lower case and matched against the patterns (see Python module `re`). The boolean of the first matching pattern decides, if the mail address is accepted by BSCW. For example:

```
RESTRICT_MAIL = [('[^@]*@orbiteam.de', 1),]
```

restricts accepted email addresses to the single domain `orbiteam.de`.

> **Note**
>
> RESTRICT_* do not apply, if the inviting user is in the list of *SERVER_ADMINS* or *USER_ADMINS*.

```
RESTRICT_MAIL = ()
RESTRICT_EXT_MAIL = ()
RESTRICT_SEND = ()
```

MINPASSLEN

EXPPASS

EXPACCT

EXPACCT_ALERT

LOG_EXPIRED_USERS

BADPASS

CRYPT_HASH

User password quality and user account expiry settings

MINPASSLEN defines the minimal length of a users local password.

> **Note**
>
> - A dictionary search to avoid the selection of weak passwords is available if the
>   - cracklib (https://sourceforge.net/projects/cracklib/)
>   - python3-cracklib package (https://www.nongnu.org/python-crack/)
>
>   are installed. To enable this feature set
>
>   ```
>   MINPASSLEN = 'libcrack'
>   ```

- If `MINPASSLEN == 'libcrack'` cracklib may be configured using the `PYTHONCRACK` dictionary as follows:

```
PYTHONCRACK = {
    'MIN_LENGTH': 8,    # minimal password length
    'UP_CREDIT': -1,    # at least 1 upper case character
    'LOW_CREDIT': -1,   # at least 1 lower case character
    'DIG_CREDIT': -1,   # at least 1 digit character
    'OTH_CREDIT': -1,   # at least 1 other character
    'DIFF_OK': 3,       # min. difference old and new passwd
}
```

(see https://www.nongnu.org/python-crack/doc/crack-api.html)

`EXPPASS` defines the time interval users are required to change their passwords.

`EXPACCT` defines the time interval after which users are expired, if they did not login previously.

`EXPACCT_ALERT` specifies the time before a user is additionally notified by email about the upcoming expiration of the user account (requires activated *expire* package).

Possible values for the `EXPPASS`, `EXPACCT` or``EXPACCT_ALERT`` intervals may be specified in seconds or minutes (hours, days, weeks) with an additional `'m'` (`'h'` , `'d'` , `'w'`) suffix. E.g. valid values which specify one week are `604800` (or `'604800'`), `'7d'` or `'1w'`. A value of `0` disables enforced password changing resp. general user expiration or alert.

`LOG_EXPIRED_USERS` specifies the log file where all expired (and re-enabled) user accounts are logged.

`BADPASS` defines the number of failed authentication attempts after an user is locked. A value of 0 disables user password mismatch locking.

Note

The use is not advised, enabling this feature allows easy denial of service attacks.

`CRYPT_HASH` specifies the hash algorithm used when storing password hashes. Possible values for `CRYPT_HASH` are:

- `'sha512_crypt'` to use SHA512 (default)
- `'sha256_crypt'` to use SHA256

The following hash algorithms are for legacy support:

- `'md5_crypt'` to use the Linux MD5 Modular Format (deprecated)
- `'des_crypt'` to use DES (deprecated)

```
MINPASSLEN = 8
EXPPASS = 0
EXPACCT = 0
EXPACCT_ALERT = 0
LOG_EXPIRED_USERS = 'expired_users'
BADPASS = 10
CRYPT_HASH = 'sha512_crypt'
```

`VIRUS_CHECK`

`SCANFILE`

`NO_VIRUSES_FOUND`

VIRUS_FOUND

VIRUS_WAIT

VIRUS_DB_VERS

VIRUS_DB_CHECK

VIRUS_PASSWD

Settings for a virus scanner to scan files after upload or before download:

- To enable a virus scan on download allows potential undetected viruses at upload time to be detected later with ongoing newer virus definitions of the virus scanner.
- If a virus is found, the file will be quarantined in an encrypted ZIP archive with a predefined password (*VIRUS_PASSWD*).
- The download virus scan is repeated every *VIRUS_DB_CHECK* seconds, if a new virus database version is detected (*VIRUS_DB_VERS*).
- When enabling the virus scan feature the 7-Zip file archiver must be installed (Debian: `p7zip-full`, EL: `p7zip`)

`VIRUS_CHECK` defines in which situation files are scanned. Valid values are 0 (never), 1 (on upload) or 3 (on upload and download)

`SCANFILE` specifies the command string to scan a file. Use the pattern `'%(file)s'` for the file name. Consider in the parameters of the scan command to scan archive files (like ZIP) or emails. An empty value will deactivate the scanning.

`NO_VIRUS_FOUND` gives a list of result codes which the scan command will return if no virus is found.

`VIRUS_FOUND` gives a list of result codes which the scan command will return if a virus is found.

`VIRUS_WAIT` is the time (in seconds) the server will wait for a scan or quarantine process to complete before responding to a download request.

`VIRUS_DB_VERS` specifies the command string to get the version of virus database. If it is defined, a repetitive scan will not be done before the database has been updated.

`VIRUS_DB_CHECK` gives the interval (in seconds) between repetitive virus scans for a document (default: 86400 (1 day)). Within this interval, a document will not be re-scanned even if new virus definitions are available. The interval must be at least one hour.

`VIRUS_PASSWD` specifies the password that is used to protect access to a document that has been quarantined.

Example for Avast command line scan utility

```
SCANFILE = "/bin/scan -b '%(file)s'"
NO_VIRUS_FOUND = [0,]
VIRUS_FOUND = [1,]      # virus found
VIRUS_FOUND = [1, 2]    # virus found, avast error
VIRUS_DB_VERS = '/bin/scan -V'
```

To grant access to BSCW files add the `avast` system user to the `bscw` group, e.g:

```
$ su
# vigr
bscw:x:500:avast
```

Example for NAI McAffee VirusScan:

```
SCANFILE = "uvscan --mime --unzip '%(file)s'"
NO_VIRUS_FOUND = [0,]
VIRUS_FOUND = [13,]
```

Example for ClamAV:

```
SCANFILE = "/usr/bin/clamdscan --fdpass --no-summary '%(file)s'"
NO_VIRUS_FOUND = [0,]
VIRUS_FOUND = [1,]
VIRUS_FOUND = [1, 2]    # virus found, clamd error
VIRUS_DB_VERS = '/usr/bin/clamdscan -V'
```

```
VIRUS_CHECK = 0
SCANFILE = ''
NO_VIRUS_FOUND = []
VIRUS_FOUND = []
VIRUS_WAIT = 8
VIRUS_DB_VERS = ''
VIRUS_DB_CHECK = 86400
VIRUS_PASSWD = 'VIRUS'
```

4.2.4 web/proxy server settings

BSCW_REALM

HTTP Authentication parameter - as set in the Web server configuration.

Note

If you are running different BSCW servers on one host then you must use a different realm for each server.

```
BSCW_REALM = 'BSCW Social Workspace Server'
```

USE_HTTP_HOST

If not zero and the `Host:` header is sent by the client, then the BSCW server will use this header for generation of absolute server URLs.

Otherwise the URL will be taken from the *SERVER_ROOT* or from the environment variable SERVER_NAME or from the `socket.gethostname()` method (in this order).

```
USE_HTTP_HOST = 1
```

COOKIE_AUTHENTICATION

AUTH_MODE

OPEN_ID_DEFAULT

FEDERATIONS

By default BSCW authenticates user via HTTP cookies. This overrides the user authentication (perhaps already) done by the HTTP server. In order to avoid confusion, the HTTP server should not be configured to do authentication when COOKIE_AUTHENTICATION is enabled.

COOKIE_AUTHENTICATION is a triple `(tagname, location, timeout)`

with the following settings:

```
timeout = None      do not verify authentication tag (low security!)
timeout = 0         authentication tag does not expire
timeout = n         authentication tag expires after n minutes
location = None     use op_login for BSCW authentication
location = URL      jump to URL for authentication
```

e.g.:

```
COOKIE_AUTHENTICATION = ('bscw_auth', None, 120)
```

Cookie authentication is diabled with:

```
COOKIE_AUTHENTICATION = None
```

AUTH_MODE (authorization mode) specifies the authentication method BSCW uses when user credentials are passed to BSCW. AUTH_MODE must be

'Basic' for basic access authentication or

'Digest' for digest access authentication.

Warning

digest authentication is considered to be insecure. Better use https only with basic authentication.

Note

digest authentication is not possible in combination with *ldap* or with email address login. If you use one of these features AUTH_MODE must be 'Basic'

OPEN_ID_DEFAULT is set in order to enable OpenID registration and authentication (see https://openid.net/). For example, set:

```
OPEN_ID_DEFAULT = (
    "openid.net",
    "https://openid.net/get-an-openid/")
```

This will show a link to the "default provider" *openid.net* in the login page. This enables a user to get an OpenID URL if he does not have one. If you do not want to give a link to a default provider set:

```
OPEN_ID_DEFAULT = ("", "")
```

Note

COOKIE_AUTHENTICATION must be set and location (see above) must be None when OpenIDs are used.

Also the python3-openid package must be installed (https://github.com/openid/python-openid)

OpenID registration and authentication is disabled with:

```
OPEN_ID_DEFAULT = None
```

FEDERATIONS enables support for federation access and single-sign-on. This Feature works in conjunction with path prefixes for anonymous users defined in *SCRIPTS* (see below) and authentication modules provided for the Apache HTTP server (only mod_shib is currently supported).

FEDERATIONS must be the empty tuple () or a dictionary {}.

```
anonymous_user_name: (login_module, icon, restrict_mail)
```

For example, if you have defined a path prefix for the (anonymous) SnakeOilProviders '/pub/snakeoil/': ('SnakeOilProviders', ...) in the *SCRIPTS* dictionary, you can enforce Shibboleth authentication for accessing '/pub/snakeoil/' with the following entry in FEDERATIONS:

```
'SnakeOilProviders': ('login_shib', '<icon-url>', ()),
```

Parameters:

- 'login_shib' refers to the BSCW Shibboleth authentication module (the only one that is currently supported in this context).
- BSCW uses the '<icon-url>' for a login-button button which is displayed in the login page. A user might click on it in order to authenticate via the federation.
- the third parameter is a list of pairs (see *RESTRICT_MAIL*) that restrict the trusted email addresses for user identification and automatic registration via the federation. You might use () if you trust all authenticated email addresses.
- the third parameter may also be set to *RESTRICT_MAIL*. In this case the normal *RESTRICT_MAIL* and *MAY_REGISTER* settings apply. Especially if no self-registration is allowed (MAY_REGISTER != []) then only invited users may auto-register via Shibboleth

Note

- use **bsadmin conf_apache** and **bsadmin index_page** for (re-)configuration of the Apache HTTP server and the index page if you have changed COOKIE_AUTHENTICATION, *SCRIPTS* or FEDERATIONS.
- test if authentication is correctly enforced by accessing <SERVER_ROOT>/pub/snakeoil/bscw.cgi/
- COOKIE_AUTHENTICATION must be enabled to display the the login page in the first place.
- this kind of login requires that the authentication process provides an authenticated email address of the user. For mod_shib this means that it must set the environment variable mail resp. HTTP_SHIB_INETORGPERSON_MAIL after successful authentication. To test open: <SERVER_ROOT>/pub/snakeoil/bscw.cgi/?op=env

See also

Section 5.13.3 *Shibboleth Authentication* for further configuration hints.

```
AUTH_MODE = 'Basic'
COOKIE_AUTHENTICATION = None
OPEN_ID_DEFAULT = None
FEDERATIONS = ()
```

COOKIE_AUTH_FORCE_LOGOUT

If *COOKIE_AUTHENTICATION* is enabled the authentication tag expires after the specified timeout. Certain operations (like presence bar, portal widgets and editor auto-save) will send automated requests in short intervals which keeps the user's session alive.

If COOKIE_AUTH_FORCE_LOGOUT is enabled however, a session timeout is forced if no 'real' user interaction happens within the specified time.

```
COOKIE_AUTH_FORCE_LOGOUT = False
```

POST_AUTH

When enabled all POST requests must be authenticated by a hidden variable. To avoid cross-side attacks this must be enabled.

```
POST_AUTH = 1
```

POST_CHECK_REFERER

For POST requests the Referer header should start with the server root (of the BSCW web server). If this is not the case and when POST_CHECK_REFERER is True an error is raised.

Note

some proxies and browser might suppress the Referer header (they should not if the Referer URL is on the target host, since there is no privacy compromise in that case).

```
POST_CHECK_REFERER = 1
```

LOG_REG_USERS

LOG_REMOVED_USERS

If LOG_REG_USERS is not empty, all newly registered users at the system are logged in the file LOG_REG_USERS.

If not empty then all users that are removed from the system are logged in the file LOG_REMOVED_USERS. An entry is a line of the form:

```
user_name:user_id[:?]mail_address
```

An email address proceeded by '?' denotes an email address that was not owned by the user at the time of removal (hence the user has not received an email notification).

```
LOG_REG_USERS = 'registered_users'
LOG_REMOVED_USERS = 'removed_users'
```

PASSWD

PASSWD - Web server password file

If PASSWD is not empty the password file PASSWD is automatically managed by BSCW:

```
PASSWD = 'htpasswd'
```

Note

- the web server password file is not used by BSCW any longer, but might be of interest for other web applications.
- If you change the PASSWD file, you must also point your HTTP server to the new file.

See also

Section 3.4.1 *Apache HTTP Server Configuration* for Unix

```
PASSWD = ''
```

SCRIPTS

SECURE_SCRIPTS

CREATE_SCRIPTS

Define the CGI scripts that may be called the HTTP server. Given the URL `https://bscw.domain.org/testing/sec/bscw.cgi/25`, the HTTP server will split this URL into:

the `SCRIPT_NAME` `"/testing/sec/bscw.cgi"` and

the `PATH_INFO` `"/25"`

The BSCW server splits the script name further into :

the prefix `"/testing/sec/"` and

the script `"bscw.cgi"`

Note

the prefix always starts and ends with a `/`.

The BSCW accepts a `SCRIPT_NAME`, if the prefix is found in the `SCRIPTS` dictionary:

```
prefix: (username, '', create_scripts, extra_scripts)
```

The script is found in one of the two lists `create_scripts` or `extra_scripts`. If username is None, the user must authenticate. Otherwise the BSCW server assumes that the client may use the script without authentication (e.g. for anonymous access or access controlled by the client's host domain). In the latter case the user will get access according to username.

Important

You have to apply for a new ("move server") license if you have a granted BSCW license (not an evaluation license) and change the prefix for the entry with username None (the standard `SCRIPTS` prefix). See also *SERVER_ROOT* above.

Note

- The usernames must be different in all tuples `(username, ...)` and there must exist at least a tuple with username `None` and a tuple with username `anonymous`.
- The command **`bsadmin chkconfig`** needs the dictionary entry (which might be the same for all prefixes) in order to automatically create the scripts listed in create_scripts. For special purposes you might also create your own CGI scripts that eventually call the BSCW service. These scripts must be listed in `extra_scripts`.
- The user objects for all `usernames != None` are automatically created and registered as anonymous users when the path prefix is accessed. If a non-anonymous user is found by username then the a `"Bad script name"` error will be raised.

- The `extra_script` and `SECURE_SCRIPTS` feature is intended for experts only. `CREATE_SCRIPTS` is not used elsewhere. It is only defined for convenience.

```
SECURE_SCRIPTS = []
CREATE_SCRIPTS = ['bscw.cgi']
SECURE_PREFIX = '/sec/'
PUBLIC_PREFIX = '/pub/'
SCRIPTS = {
    SECURE_PREFIX: (None, '', CREATE_SCRIPTS, SECURE_SCRIPTS),
    PUBLIC_PREFIX: ('anonymous', '', CREATE_SCRIPTS, SECURE_SCRIPTS),
    # '/pub/snakeoil/':
    #     ('SnakeOilProviders', '', CREATE_SCRIPTS, SECURE_SCRIPTS),
}
```

`SILENT_ERROR_FOR`

If a script prefix is listed in `SILENT_ERROR_FOR`, any error message will be replaced by `SILENT_ERROR.html` which then must reside in the directory `bscw/templates` of the server. For example:

```
SILENT_ERROR_FOR = (PUBLIC_PREFIX,)
```

will prevent error related information from being collected by misuse of public access.

```
SILENT_ERROR_FOR = (PUBLIC_PREFIX,)
```

`SCRIPTS_OTHER_ROOTS`

If you have more than one BSCW server instance on a single host, you must select one of them to handle all document root `/` WebDAV `PROPFIND` requests for all BSCW server instances on this host. E.g. if you have another BSCW server that handles requests on `/bscw1` and `/pub1` (see *SCRIPTS* above), you might set

```
SCRIPTS_OTHER_ROOTS = ('/bscw1', '/pub1')       on this server and
SCRIPTS_OTHER_ROOTS = None                      on the other server.
```

Note

You have to re-generate the Apache configuration with with **`bsadmin conf_apache`** when you make changes to *SCRIPTS* or *SCRIPTS_OTHER_ROOTS* and restart the web server.

```
SCRIPTS_OTHER_ROOTS = ()
```

`SSO_PREFIX`

`SSO_SCRIPT`

`CAS_URI`

`SCRIPTS_ALIASES`

To enable Single Sign On support for the Central Authentication System (CAS; https://www.apereo.org/programs/software/cas/) an alternate secure path prefix `SSO_PREFIX`, an CAS service URL `CAS_URI` and an alternate secure script path (`SCRIPTS_ALIASES`) must be defined.

SSO_PREFIX defines a path prefix which is redirected to the SSO authentication service. If undefined or empty SSO support is disabled (default).

SSO_SCRIPT (optional) defines an additional alternate script name of the CGI script which is redirected to the SSO authentication service. If undefined or empty CREATE_SCRIPTS[0] is used (default).

CAS_URI defines the URL of the CAS Single Sign On service, e.g.:

```
CAS_URI = 'https://sso.domain.org:8080/cas'
```

SCRIPTS_ALIASES define alternate script alias prefix paths for the secure prefix:

```
SCRIPTS_ALIASES = {
    SECURE_PREFIX: [
        (SSO_PREFIX, {
            'mode': AUTH_MODE,
            'cookie': ('bscw_cas', None, 120) }), ],
}
```

A script alias prefix path definition is a list of tuples [('path_alias', auth_dict)]. For every script alias prefix path the authentication dictionary auth_dict defines the authentication mode and (if needed) cookie authentication, e.g.:

```
auth_dict = {'mode': 'Digest', 'cookie': None}
auth_dict = {'mode': 'Basic',
    'cookie': ('bscw_cas', None, 120)}
```

For available mode values see the AUTH_MODE and for available cookie values see the *COOKIE_AUTHENTICATION* configuration directives above

```
CAS_URI = ''
SSO_PREFIX = ''
SSO_COOKIE = ('bscw_cas', None, 120)
SCRIPTS_ALIASES = {
    SECURE_PREFIX: [
    (SSO_PREFIX, { 'mode': AUTH_MODE, 'cookie': SSO_COOKIE }), ],
}
```

PATH_INFO_SLASH

Must have the values '' or '%2f' or '%2F'. This should only be set not empty if the Apache HTTP server is used and AllowEncodedSlashes On is set. It must be equal to the encoding that the Apache HTTP server uses for URI path segments ('%2f').

Warning

This is an experimental feature. Many DAV clients do not work with encoded slashes in URI path segments. Better leave it empty by now.

```
PATH_INFO_SLASH = ''
```

SERV_DOWNLOADS

allows the BSCW server to download resources from external sites (e.g. to generate thumbnails for links). By default SERV_DOWNLOADS is set to True. Disable this feature if the BSCW server is located in a DMZ.

```
SERV_DOWNLOADS = True
```

HTTP_PROXY

HTTPS_PROXY

FTP_PROXY

Specify proxies for various server types (i.e. http, https, ftp) by defining a variable named <TYPE>_PROXY. This variable denotes the proxy server for this type by the form <scheme>:// <name>:<port>. For example

```
HTTP_PROXY = 'http://proxy.orbiteam.de:3128'
HTTPS_PROXY = 'https://sslproxy.orbiteam.de:3128'
FTP_PROXY = 'proxy.orbiteam.de:3128'
```

The proxies are used by the BSCW server if it fetches or verifies an URL.

```
HTTP_PROXY = ''
HTTPS_PROXY = ''
FTP_PROXY = ''
```

BYPASS_PROXY

Gives a list for domains, where the proxy should be bypassed, i. e., a host whose end of its name matches one of the domains, will be connected directly. Normally it should be set to the local domain. For example:

```
BYPASS_PROXY = ['fit.fraunhofer.de', 'orbiteam.de']
```

```
BYPASS_PROXY = []
```

FTP_GATEWAY

Sets a FTP firewall gateway IP address (or hostname) for the export operation.

```
FTP_GATEWAY = ''
```

EDITOR_SETTINGS

EDITOR_SETTINGS defines the settings for the built-in HTML (TinyMCE) editor:

- 'code_sample' toggles source code formatting

```
EDITOR_SETTINGS = {
    'code_sample': True,    # enable formatting of source code
}
```

GET_MIME_TYPES_AS_ATTACHMENT

You may want to configure the system to get/open certain document types (i.e. MIME Types) as attachments and not directly within the browser (which is the default behaviour when users click on a link). Especially for newer versions of Microsoft Office, attachments can avoid strange effects and frustrating user experience: Links to MS-Office documents (Word, Excel, Powerpoint...) will usually let MS-Office open the document directly from the BSCW server and so ask for username / password,

even though the document is opened read-only (i.e. for reading or printing only) and the 'save to server' feature is not available. As a workaround, MS suggests to explicitly mark the content as a read-only download (i.e., as an "attachment"). In that case, the browser will download the document with the known login information and afterward open MS-Office on the downloaded file.

See also

https://support.microsoft.com/kb/899927/en-us

For all document types configured below, BSCW will add the `Content-Disposition: Attachment` header to the response whenever the user clicks a link to the document in a container page.

```
GET_MIME_TYPES_AS_ATTACHMENT = (
 'application/vnd.ms-excel',
 'application/vnd.ms-project',
 'application/vnd.ms-powerpoint',
 'application/vnd.ms-word',
 'application/vnd.visio',
 'application/rtf',
 'application/vnd.openxmlformats-officedocument.spreadsheetml.sheet',
 'application/vnd.ms-excel.sheet.macroenabled.12',
 'application/vnd.openxmlformats-officedocument.presentationml.presentation',
 'application/vnd.ms-powerpoint.presentation.macroenabled.12',
 'application/vnd.openxmlformats-officedocument.wordprocessingml.document',
 'application/vnd.ms-word.document.macroenabled.12',
)
```

4.2.5 BSCW appearance settings

`USER_SEARCH_LIMIT`

Maximum number of matching hits by a User Search

```
USER_SEARCH_LIMIT = 100
```

`MEMBER_SEARCH`

Defines, if the search for BSCW users, is allowed on the add member form

```
MEMBER_SEARCH = 1
```

`MAX_VERSIONS`

`MAX_VERSIONS_KEEP`

`MAX_VERSIONS_LIMIT`

Controls the autoversion behavior for newly created documents:

If `MAX_VERSIONS` is

- 1 (default), new created documents are not set under version control.
- `0`, new created documents are automatically set under version control and all revised versions will be stored.

- <n>, new created documents are automatically set under version control, but only the latest <n> revised versions will be stored.

  Revising version <n>+1 will automatically remove the oldest revision.

If the MAX_VERSIONS_KEEP list is not empty, all version ids of a document are matched against the RE patterns. The boolean of the first matching pattern decides if a version id gets removed when MAX_VERSIONS is set to store the latest <n> revised versions.

For example:

```
MAX_VERSIONS_KEEP = [
    ('.*\.0$', True),
]
```

will avoid the removal of all version ids ending with ".0"

If MAX_VERSIONS_LIMIT is set to a value > 1, the maximum number of user configurable version revisions (cf. [> Change > Properties] form) is limited to MAX_VERSIONS_LIMIT.

Note

- This does not affect the global setting (cf. MAX_VERSIONS)
- When defining MAX_VERSIONS_LIMIT, MAX_VERSIONS must be equal or less MAX_VERSIONS_LIMIT and unequal 0.

```
MAX_VERSIONS = 1
MAX_VERSIONS_KEEP = []
MAX_VERSIONS_LIMIT = 0
```

GRID_BROWSER_LIMIT

When all entries of a folders' contents grid are loaded at once, the grid can do certain things locally without additional server requests, like fast scrolling or sorting entries. In large folders, however, it is not advisable to load all entries at once to avoid exceptional memory consumption of client browsers.

```
GRID_BROWSER_LIMIT = 450
```

GRID_PAGE_SIZE

The number of entries that folder's contents grids fetch at once. A larger number means less server requests, but longer load times per server request. Should never exceed GRID_BROWSER_LIMIT

```
GRID_PAGE_SIZE = 150
```

SCRIPT_POLL_INTERVAL

This is the time interval in which the JavaScript components will reload their contents. The value is set in seconds. So by default e.g. the contacts view will reload its contents every 60 seconds, and new microblog posts will pop up each 60 seconds.

```
SCRIPT_POLL_INTERVAL = 60
```

EDITOR

Mime type for BSCW uploading and edit helper. On client side, this Mime type should be configured to one of our BSCW uploader and generic editor programs:

```
EDITOR = 'application/x-bscw-edit'
```

The user must have an application (i.e. script) bound to this mime type and should have selected "external editors" (in the *[Menu → Preferences] [File Handling]* menu). Upon "edit" action, BSCW serves a file that contains four lines:

- the URL, where the file can be downloaded (GET) or uploaded (PUT)
- the mime type of the file
- the encoding of the file
- the name of the file

```
EDITOR = 'application/x-zope-edit'
```

The Zope External Editor is used for editing cycle, i.e. upon "edit" action, BSCW serves a file with according mime type and content (as expected by Zope External Editor). The user must have the Zope External Editor installed and should have selected some "external editors" (in the *[Menu → Preferences] [General] [File Handling]* menu).

```
EDITOR = 'application/x-zope-edit'
```

`ConversionMethode`

Parameter for file conversion: all possible conversions for a file should be shown (`0`) or only the best one (`1`).

```
ConversionMethode = 1
```

`THEMES`

Available themes to be chosen by users. Every theme is based on a `config_theme.py`, which contains values for placeholders. The final `.css` files are then generated using **`bsadmin themes`**. Names for own themes can be defined in language files with the key `theme_<MY THEME>`, e.g. `theme_default`, `theme_default_dark`

```
THEMES = (
    'default/default',
    'default/default_dark',
)
```

`SOUND_THEMES`

Available sound themes to be chosen by users. Every theme added over here should contain the same audio files as defined in file:*sounds/bscwSounds*. Names for own themes can be defined in language files with the key `audio_theme_<MY THEME>`, e.g. `audio_theme_bscwSounds`

```
SOUND_THEMES = [
   'bscwSounds',
]
```

`RATE_COLORS`

Colors for URL ratings: `[ 'none', 'poor', 'passable', 'fair', 'good', 'excellent']`

```
RATE_COLORS = [
    '#000000', '#404878', '#6068a0',
    '#7680d0', '#ff8000', '#ff0000']
```

AVATAR_COLORS

A list of colors with tuples of (background_color, font_color) for auto-generated user avatars (if user doesn't provide a photo) Note: this feature requires GraphicsMagick: https://www.graphicsmagick.org

Both color names or hex values (e.g. 'white' or '#ffffff') can be used - as supported by GraphicsMagick: https://www.graphicsmagick.org/color.html

```
AVATAR_COLORS = [
    ('#004F80', '#FFFFFF'),  # dark blue 100%
    ('#00B8F2', '#000000'),  # light blue 100%
    ('#74B917', '#000000'),  # light green 100%
    ('#0778A5', '#FFFFFF'),  # blue 100%
    ('#FFC819', '#000000'),  # yellow 100%
    ('#F28502', '#000000'),  # orange 100%
    ('#C40046', '#FFFFFF'),  # red 100%
    ('#6B7581', '#FFFFFF'),  # gray 100%
    ('#890D48', '#FFFFFF'),  # dark red 100%
    ('#23614E', '#FFFFFF'),  # dark green 100%
]
```

REFTYPES

DOTDIR

REFTYPES is a list of MIME Types of documents that may contain URLs with relative anchors, especially `../`-references. If a web browser resolves such `../`-references it removes elements at the end of the documents URL path. Hence a sufficient number of (dummy DOTDIR) directories must be inserted into the document's URL.

> **Note**
>
> DOTDIR must contain exactly one / and it must be the last character.

```
REFTYPES = ['text/html']
DOTDIR = '*/'
```

HIDE_PUBLIC_SPACE

HIDE_PUBLIC_SPACE defines the visibility of the public space. By default, the content of the public folder is hidden (`HIDE_PUBLIC_SPACE = True`). If HIDE_PUBLIC_SPACE is set to `False`, the public folder content is generally visible.

```
HIDE_PUBLIC_SPACE = True
```

ANONYMOUS_SEARCH

allow searching for anonymous user.

```
ANONYMOUS_SEARCH = True
```

LOCAL_URL_PREFIX

It is possible (for administrators only) to make URL links into the local file system. If LOCAL_URL_PREFIX is 1 and the URL has the form local:<local file path> then the file or directory on the local file system is accessed by the GET operation on the URL (a relative local file path is interpreted relative to the runtime directory). If the directory contains a file named index.html (recommended!) the contents of index.html are returned instead of a directory listing.

Example: set LOCAL_URL_PREFIX = 1 and add (as admin) a URL named local:var/log/sys.log to a workspace to provide access to your <bscw-runtime-path>/var/log/sys.log.

Note

- A user, not being administrator, cannot create a local:... URL, even if LOCAL_URL_PREFIX is not (yet) enabled. A leading slash will be interpreted as an absolute file path. I.e. the URL local:/etc/passwd will result in access to the file /etc/passwd on the server.
- this feature is experimental, and has obvious security implications! It is disabled by default.

```
LOCAL_URL_PREFIX = 0
```

SYS_MSG

Display system messages. SYS_MSG denotes the number of last system message. If SYS_MSG > 0, you must have files

```
sys_msg1.html, sys_msg2.html ... sys_msg<SYS_MSG>.html
```

in conf/msg/en/ (and optional the corresponding translated files in other language dependant directories conf/msg/<lang>/). All files must be encoded in UTF-8. See conf/msg/en/sys_msg1.html as an example. The files are displayed to users as system messages and must be confirmed.

Note

Newly registered users will see sys_msg0.html (if provided).

```
SYS_MSG = 0
```

SYS_BUSY

Set, if the server is unavailable for processing requests. The message in file conf/msg/en/<SYS_BUSY>.html will be returned. (See conf/msg/en/sys_busy.html as an example)

Note

the path and the filename ending .html is appended to SYS_BUSY.

```
SYS_BUSY = ''
```

INDEX_MSG

Display a custom welcome message on the index page. Here important messages (e.g. terms of use of the server) can be linked/announced. The string may include HTML code, e.g.:

```
INDEX_MSG = '<h3>Efficient collaboration service.</h3>'
```

Note

- you need to run **bsadmin index_page** in order to update the index page
- you may also define language dependant welcome messages for DE, FR etc. by defining INDEX_MSG_DE, INDEX_MSG_FR etc. (INDEX_MSG should be default/EN)

```
INDEX_MSG = ''
```

INDEX_PAGE_EXTRA_CONTENTS

Define some folder id in here, where some extra contents for your index page are defined. Inside this folder you can add the following stuff.

- Define sub folders with files like (de.html, en.html, ...) that will be added as sub sites in your index page navigation bar.
- By default the folder name is used as page title in navigation bar. You can change the displayed name by setting some description for each individual html file.
- By adding some html file (de.html, en.html, ...) into your folder you can define some extra html message that is placed below the displayed login field.

Note

CSS from HTML file headers will be ignored. Just use the theme's style.less file to add styles. Then rebuild your CSS and your index page. Besides, you can use inline styles.

So add some ID in here:

```
INDEX_PAGE_EXTRA_CONTENTS = 1234
```

The folder with the id 1234 could look like this:

```
My Folder (with ID 1234) has the following contents:
|1_Subpage
|- de.html
|- en.html
|
|2_Subpage              (also note: links will be sorted by
|- de.html               name. To add some order just add some
|- en.html               leading 1_, 2_, 3_, ... to your filename)
|
|de.html
|en.html
```

> **Note**
>
> Everytime after you have made changes inside your folder, you have to run "bsadmin index_page" once again.

```
INDEX_PAGE_EXTRA_CONTENTS = 0
```

SERVER_HOME

SERVER_HELP

SERVER_INFO

SERVER_CANCEL

SERVER_LOGOUT

Locations of various resources for the URLs in the BSCW Banner.

- SERVER_HOME - BSCW server home page
- SERVER_HELP - BSCW Help files (English)

  SERVER_HELP_DE - BSCW Help files (German)

  SERVER_HELP_FR - BSCW Help files (French)

  by default the help is served from local BSCW server, alternatively you may use the publicly available help:

  ```
  SERVER_HELP = 'https://www.bscw.de/en/social/help'
  SERVER_HELP_DE = 'https://www.bscw.de/social/help'
  ```

- SERVER_INFO - BSCW server info page - by default it shows the index page in the scripts directory for anonymous (see SCRIPTS).
- SERVER_CANCEL - Defines an URL, to which will be redirected if cancel is pressed (currently chpwd and rmail). Default is SERVER_INFO.
- SERVER_LOGOUT - Defines an URL, to which will be redirected after logout (currently for *COOKIE_AUTHENTICATION* only). Default is SERVER_INFO.

```
SERVER_HOME = '/'
SERVER_HELP = ''    # local help
SERVER_HELP_DE = '' # local help
SERVER_HELP_FR = '' # local help
SERVER_INFO = SERVER_HOME
SERVER_CANCEL = SERVER_HOME
SERVER_LOGOUT = SERVER_HOME
```

SERVER_TIMEZONE

Should be set to the time zone that corresponds to `time.localtime` and should be given in the form "Continent/City". If you are not sure, use the special value "localtime".

```
SERVER_TIMEZONE = 'localtime'
```

BSCW_LICENSE

URL used for requesting BSCW license upgrades. This should not be changed.

```
BSCW_LICENSE = 'https://license.bscw.de/pub/bscw.cgi/'
```

FMT_DISTINCT_NAME

A pattern format to build a distinct name from the favoured name, an extension and a number. The format must take name and extension as positional arguments and the number as keyword 'number'.

Examples:

```
'{}~{number}{}'.format('Manual', '.pdf', number=2)   => Manual~2.pdf
'{} ({number}){}'.format('README', '.txt', number=2) => README (2).txt
'{} ({number}){}'.format('folder', '', number=2)     => folder (2)
```

The special value None will disable the feature:

```
FMT_DISTINCT_NAME = None
```

```
FMT_DISTINCT_NAME = None
```

BSCW_UI_NAME

Which name should be displayed at HTML user interface.

```
0: favoured name
1: favoured name, add extension
2: favoured name, strip extension
3: distinct name
4: distinct name, add extension
5: distinct name, strip extension
```

```
BSCW_UI_NAME = 0
```

4.2.6 Optional BSCW packages

PACKAGES

A list of directories containing BSCW extension packages. List of available packages:

```
'approval',             # Document Approval
'chat',                 # Chat
'expire',               # User account expiration
'exportpdf',            # Export views to PDF (requires reportlab)
'FlowFolder',           # Flow Folder
'http',                 # pre-forking BSCW HTTP server
'incognito',            # support anonymised read access
'ldap',                 # LDAP interface
'metaprofiles',         # User-defined metadata profiles
'office',               # Online Office
'poll',                 # Opinion polls and schedules
'PyLucIndex',           # Pylucene Indexer
'task',                 # Task Management
'WebFolder',            # Web Folder
```

Attention

The PACKAGES list is maintained by the **bsadmin package** command. Do not manually edit the PACKAGES list.

To enable a package run

bsadmin package -e <pkg-name>

bsadmin package -e ldap

To disable a package run

bsadmin package -d <pkg-name>

bsadmin package -d ldap

```
PACKAGES = [
    'approval',         # Document Approval
    'chat',             # Chat
    'FlowFolder',       # Flow Folder
    'poll',             # Poll, Schedule, Appointment Scheduling
    'task',             # Task Management
    'WebFolder',        # Web Folder
]
```

SERV_UNO_STATE

SERV_UNO_TIMES

WSREPORT

WSREPORT_DIRECT

AUTOSUBSCRIBE_REPORT

AUTOSUBSCRIBE_REPORT_DIRECT

DEFAULT_EVENTMASK

DEFAULT_EVENTMASK_DIRECT

WSREPORT_EVENT_LIMIT

REPORTLOG

The user notification services (UNO) perform the following tasks:

- sending periodical workspace activity reports via email to give the users an overview about recent activities in a specific time period (e.g. daily)
- sending direct email notifications to inform the users instantly about recent events (optional)

Using the user notification services a BSCW user does not need to contact its BSCW server(s) so often to check for new events. If the user notification services are activated, the users' event preference page provides a column for subscription of the "Periodic Report" or the "Direct Email" notification (depending on the UNO service configuration).

By default a daily report is sent to new users, but each user may decide to unsubscribe from the workspace report by himself. The server administrator can change this behavior using the AUTOSUBSCRIBE_REPORT = 1 flag. If this is enabled new users will automatically be subscribed to the user notification service.

Accordingly the direct email notification is enabled by default for each user so each user may decide to disable the direct email. The server administrator can change this behavior using the

AUTOSUBSCRIBE_REPORT_DIRECT = 1 flag. (Again this affects all new users and those users who have not yet changed their event preferences.)

To activate the user notification service the BSCW administrator has to start an additional UNO server (bscw.adm.bs_servuno). See section *SERVERS* for details on how to start bscw.adm.bs_servuno.

Note

UNO accesses the BSCW database server via an extra (virtual) HTTP server running on http://localhost:<HTTP_LOCAL_PORT>. See *HTTP_LOCAL_PORT* for details.

Also, the following variables have to be set for configuration of bscw.adm.bs_servuno:

SERV_UNO_STATE: A file name for saving the state of the bscw.adm.bs_servuno service must be given here. The file is written, when the bscw.adm.bs_servuno is stopped and read when the server is started again.

SERV_UNO_TIMES: A dictionary containing fine tuning parameters for bscw.adm.bs_servuno; if is set to SERV_UNO_TIMES = None the default settings are used (as shown below). To overwrite the default settings for fine tuning parameters use e.g.:

```
SERV_UNO_TIMES = {
    'TdelayDirect': 60.,
    'MaxRetry': 20,
}
```

The defaults are:

'TdelayDirect': 60.: Delay direct notification one minute for the first affected user. This is to accumulate more events in the direct notification mail.

'TdelayNextProc': 3.: Add a delay of 3 seconds for the next affected user. This is to avoid an overload of the mail server if a lot of users are affected,

'TdelayNextDirect': 300.: Delay the next direct notification for the same user five minutes. This is to avoid an overload of the user.

'TdelayDaily': 5.: Add a delay of five seconds between daily notification mails. This is to avoid an overload of the mail server if the service has to send the notification to a lot of users.

'TdelayRetry': 600.: Add a delay of 10 minutes after the notification has failed and retry then.

'MaxRetry': 2: 2 retries that are delayed with TdelayRetry.

'TdelayFailed': 21600.: After MaxRetry the notification is delayed 6 hours (0 may be assigned here, then there will be no retry upto next midnight).

'FailMessagesAt': 10: Log an error message every 10th failure (first, 11th, 21st ...) Note: No error messages are logged after MaxRetry (special values 1: each message 0: never)

'MaxJobs': 4: Maximum number of parallel running mail processes. This will also determine the load of the BSCW server and the mailer. Note: For more throughput on big server machines this value might be increased.

'QueueInfo': 20: Show job queue status after 20 jobs are queued (use values: 2^n * MaxJobs)

'ReportTime': 01:31: Start daily/weekly reports at 01:31 (must be >= 00:00 and < 07:00)

'WeekReportDay': '7': Weekly reports on Sunday (must be >=1 [Monday] and <=7 [Sunday])

`WSREPORT = 1` (`0`) enable (disable) the periodic (daily/weekly) report.

`WSREPORT_DIRECT = 1` (`0`) enable (disable) the direct email report.

> **Note**
>
> When `bscw.adm.bs_servuno` does not run the periodic report and the direct email report are disabled. Whenever the values of `WSREPORT` or `WSREPORT_DIRECT` are altered `bscw.adm.bs_servuno` must be restarted to take these changes into effect.

`AUTOSUBSCRIBE_REPORT` defines the periodic report default subscription for all users `AUTOSUBSCRIBE_REPORT_DIRECT` defines the direct email report default subscription for all users.

> **Note**
>
> Once a user has changed its subscription preferences this flag will have no further effect - but the administrator may use the **`bsadmin report`** command to change a user's report subscription later).

`DEFAULT_EVENTMASK` defines the event type subscription mask for most of the awareness services (like periodic report or external services), with the values

```
read = 1; create = 2; move = 4; change = 8
```

By default all event types are subscribed, except of read events. (`create + move + change = 14`)

`DEFAULT_EVENTMASK_DIRECT` defines the default event type subscription mask for the direct email notification. By default **no** event types are preselected, so users won't be notified about any events immediately, but may select some event types for certain folders of interest only.

`DEFAULT_EVENT_REPORT_DAILY` defines the default frequency for periodic email report which may either be *daily* (`1`) or *weekly* (`0`)

For example, set

```
WSREPORT_DIRECT = 1
AUTOSUBSCRIBE_REPORT_DIRECT = 1
DEFAULT_EVENTMASK_DIRECT = 2
```

to enable the direct email notification service for all users by default, so each user will receive an email for each newly created object! (We do **not** recommend this setting though.)

`WSREPORT_EVENT_LIMIT` defines a size limit of the periodic workspace report: in order to prevent too long notification emails the number of events can be limited (use `WSREPORT_EVENT_LIMIT = 0` for unlimited size)

`REPORTLOG` points to a file in which a protocol about the reports is logged. For example:

```
REPORTLOG = 'report.log'
```

```
SERV_UNO_STATE = 'ServUnoState'
SERV_UNO_TIMES = None
WSREPORT = 1
WSREPORT_DIRECT = 1
AUTOSUBSCRIBE_REPORT = 1
AUTOSUBSCRIBE_REPORT_DIRECT = 1
```

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```
DEFAULT_EVENTMASK = 14
DEFAULT_EVENTMASK_DIRECT = 0
DEFAULT_EVENT_REPORT_DAILY = 1
WSREPORT_EVENT_LIMIT = 500
REPORTLOG = ''
```

ALWAYS_CREATE_READEVENTS

CREATE_READEVENTS_OPTION

BSCW Awareness Service configuration

Setting ALWAYS_CREATE_READEVENTS > 0 enables the creation of read events, even if a user has already read the document and the document was not modified in between. This is sometimes needed for enhanced awareness.

Setting ALWAYS_CREATE_READEVENTS = 0 creates read events, after the first time a user reads a (unchanged) document. For successive reads no further read event is created (default).

Setting ALWAYS_CREATE_READEVENTS < 0 suppresses generation of read events.

Setting CREATE_READEVENTS_OPTION = 1 enables the manager of a workspace (respectively folder) to define (for this context) if read events should be tracked or not. If no option is defined, the setting is inherited from the parent folder. If no option is defined on any parent folder, the default option (i.e. ALWAYS_CREATE_READEVENTS) is used.

```
ALWAYS_CREATE_READEVENT = 0
CREATE_READEVENTS_OPTION = 0
```

SERVERS

The SERVERS list is used for starting (and stopping) BSCW servers. Only **extra** server addresses and implementation modules should be specified here (*GSERV*, *SERV_ALARM*, *SERV_ACCESS* are defined below). The extra servers are specified by a pair `(address, module)` or a triple `(address, service_module, protocol_module)`. The default protocol_module is `'bscw.core.cl_servublk'`. The following RPC protocol modules are available:

`bscw.core.cl_servublk`

- standard rpc module, can be used with either a file path (recommended) or a (host, port) TCP/IP address. In the first case the module uses a unix socket if possible or selects a free port for a local IP connection and stores it in the given file.

`bscw.core.cl_servinet_ext`

- for non Python services, (host, port) addresses only.

Example for starting the user notification server:

```
SERVERS = [
    ('UnoSocket','bscw.adm.bs_servuno'),
]
```

```
SERVERS = []
```

4.2.7 BSCW database server settings

STORE

STORE_PAIR

TABLES

CLEAN

SAVE

Persistent object store and garbage collection. Relative paths are relative to the BSCW database directory (<bscw-runtime-path>/var/data)

STORE

Normally contains actual sizes of files in STORE_PAIR and a garbage collection (GC) counter. **Only** for disaster recovery, put a backup into this file and start the server.

STORE_PAIR

The BSCW database server uses one of the files in this pair as the current StoreFile. The other one is free for garbage collection (called the GcFile). These files contain data of all persistent objects and will grow **big**. The database server only appends data to the the current store file. So it must be garbage collected from time to time (every day is recommended!). The garbage collector copies actual data from store file to GC file and then swaps the files.

TABLES

BSCW database table information used for fast database server restart.

CLEAN

Prefix for some temporary files during garbage collection. The database server moves STORE to CLEAN during initialization.

SAVE

For the purpose of backup, the garbage collector copies the new current StoreFile to this file just before it finishes.

Note

bsadmin getconfig STORE shows the current store file from STORE_PAIR

It is strongly recommended that STORE, TABLES and CLEAN are in the same directory and the (base) file names are not changed. For increased reliability, put SAVE and the files in STORE_PAIR on different devices. **Never** put STORE, TABLES, CLEAN and the files in STORE_PAIR on a shared file system.

On Unix systems, STORE_PAIR may also point to (properly configured) block devices e.g. STORE_PAIR = ('/dev/sdb3', '/dev/sdb4').

```
STORE = 'Store'
STORE_PAIR = ('StoreA', 'StoreB')
TABLES = 'Tables'
CLEAN = 'Garbage'
SAVE = 'Backup'
```

ALARM_DIR

FILES

TEMP

Persistent alarm store, file store and temporary files. Relative paths are relative to the BSCW database directory (<bscw-runtimepath>/var/data)

ALARM_DIR: Directory for scheduled alarms

FILES: Root directory of document file tree

TEMP: Directory for temporary files

We recommend that the directories TEMP and FILES are **on the same file system**. In this case only a link (instead of a copy) is necessary to put a temporary file in the right place, e.g. after document upload.

Note

You can find the file for a BSCW Document with id 12345 at <FILES>/01/23/45F, probably with some extension .xxx depending on the file type.

```
ALARM_DIR = 'Alarm'
FILES = 'Files'
TEMP = 'Temp'
```

FILES_SWITCH

Simulates "soft links" in the BSCW file store. A list (or tuple) of pairs (path-pattern, substitute) determines the actual location of a BSCW file. E.g. if

```
FILES = '/media/nas/Files'
```

(see below), then

```
FILES_SWITCH = (('/media/nas/Files/01', '/media/nas2/Files/01'))
```

will substitute all BSCW file paths starting with /media/nas/Files/01 by file paths starting with /media/nas2/Files/01. This may be used for distributing the BSCW file store on different disks etc.

Note

Some **bsadmin** tools like **bsadmin fsck** do not support this feature and may give wrong results.

```
FILES_SWITCH = ()
```

RMUSER_DIR

RMUSR_ARC

RMUSR_VER

RMUSR_ENC

Archive configuration for (optional) archiving of removed user artifacts:

RMUSR_DIR - directory for archives of removed users

RMUSR_ARC - format for removed users archives: 'zip' (default) or 'tar'

RMUSR_VER - archive all versions of a document: True (default) or False

RMUSR_ENC - pathname encoding: 'UTF-8' (default)

```
RMUSR_DIR = 'rmuserarc'
```

SERV_ACCESS

SERV_ACCESS_STATE

SERV_ACCESS specifies the address of the access server bscw.adm.bs_servaccess. The bscw.adm.bs_servaccess service is an optional accelerator for searches. It implements fast access filtering. Disabled if empty.

In order to enable this service use SERV_ACCESS = 'AccessSocket'

Note

If you enable this service on an upgraded Server you might get an error (e.g. in bscw.log) like:

```
mm-dd hh:mm:ss ACCESS watch died:
RuntimeError: Old pickle not supported
```

In this case

```
$ bin/bsadmin garbage bs_classtabe0
$ rm var/data/ServAccessState
$ bin/bsadmin start
```

will solve the problem. In the case of

```
mm-dd hh:mm:ss ACCESS position nnnnn:
ValueError: bad marshal data
```

a clean restart without reading the saved state might help:

```
$ rm var/data/ServAccessState
$ bin/bsadmin start
```

SERV_ACCESS_STATE - File to save state of bscw.adm.bs_servaccess when the access server is shut down. This file is only used when bscw.adm.bs_servaccess is enabled.

```
SERV_ACCESS = ''
SERV_ACCESS_STATE = 'ServAccessState'
```

SERVER_LOG

BSCW_LOG

All requests to BSCW are logged in this file. Should be set for analyzing purposes only. A log entry contains the following information (divided by blanks):

- request date (local time)
- remote host
- remote user
- request method
- BSCW operation
- response code
- request duration (CPU time)

- request duration (real time)
- request path

Server activities (e.g. start, stop, gc) and errors will logged in BSCW_LOG.

```
SERVER_LOG = 'server.log'
BSCW_LOG = 'bscw.log'
```

BSCW_UMASK

BSCW_UMASK restricts access to owner and group by default (i.e. mask out read, write and execute bits for "other" users). This mask is used only on UNIX systems.

```
BSCW_UMASK = 7
```

DBMOD_TAB

DBMOD_CACHESIZE

DBMOD_PAGESIZE

DBMOD_HASH

DBMOD_MINKEY

DBMOD_TAB: definition of the BSCW database table type:

- the default value 'dict' uses Python dictionaries and should be used for small BSCW databases only, because the key and offset tables are hold in memory of the bs_servdb process and must be loaded to memory and stored to disk on server start and shutdown respectively.
- the value 'bsddb4' uses an external Berkeley DB to store the BSCW database tables and requires an installed Berkeley DB (https://www.oracle.com/database/berkeley-db) and the additional bsddb module. Python 3 requires the installation of the bsddb3 module (python3-bsddb3)

The following configuration parameters DBMOD_CACHESIZE, DBMOD_PAGESIZE, DBMOD_HASH, DBMOD_MINKEY are only used with DBMOD_TAB = 'bsddb4':

DBMOD_CACHESIZE: defines the cache size of the Berkeley DB. The recommended cache size is about 10-15% of the actual *STORE* size.

> **Note**
>
> DBMOD_CACHESIZE < 100 defines cache size in giga bytes (GB) DBMOD_CACHESIZE >= 100 define cache size in bytes (B)

DBMOD_PAGESIZE: specifies the size of a single cache page. Do not choose too big values to avoid high I/O load (default: 8192)

DBMOD_HASH: uses Berkley DB HASH access method (instead of the default BTREE access method).

> **Note**
>
> This option is **not** recommended!

DBMOD_MINKEY: is a pair of two values which are only used with the BTREE access method (the default). The values depend on the maximum key + data size of the offset table (StoreOff) and the key table (StoreKey) respectively. The values should be less than:

```
DBMOD_PAGEZIZE / 2*<max key+data size>
```

A good working heuristic value pair seems to be:

```
DBMOD_MINKEY = (9*(DBMOD_PAGEZIZE/1024), 5*(DBMOD_PAGEZIZE/1024))
```

```
DBMOD_TAB = 'dict'              # Python dictionary (default)
DBMOD_CACHESIZE = 2097152       # cache size in bytes
DBMOD_PAGESIZE = 8192           # page size in bytes
DBMOD_MINKEY = 72, 40           # heuristic values for page size 8192
```

GSERV

SERV_ALARM

GSERV - address of database server socket DBMOD

SERV_ALARM - address of alarm server socket (`bscw.adm.bs_servalarm`)

Filenames are recommended here. Fixed local port addresses like `('localhost', 12966)` should only be used if there are problems with UNIX sockets or the automatic TCP/IP port selection does not work.

The `bscw.adm.bs_servalarm` service schedules alarms for persistent objects.

```
GSERV = 'DbSocket'
SERV_ALARM = 'AlarmSocket'
```

XDPROXY_ENABLED

XDPROXY_TRANSFORMATIONS

XDPROXY_URLS

BSCW can act as a proxy for "cross-domain requests", required for some AJAX features like used in the `portal`. This proxy requires authentication and is thus only open to your BSCW users. You can turn the proxy on and off using `XDPROXY_ENABLED`. The proxy will refuse to download any URL that does not match any regular expression in `XDPROXY_URLS`.

If you have the `libxml2` and `libxslt` Python packages installed, the proxy can also apply some data transformations, which are given in `XDPROXY_TRANSFORMATIONS`. Each transformation specifies the source mimetype (a regular expression that has to match the mimetype currently downloaded), the XSLT transformation to apply to it and the resulting target mimetype. Example:

```
XDPROXY_TRANSFORMATIONS = {
  'somedata': (
     r'(?i)^text/xml;\s*?charset=UTF-8$',
     '/opt/bscw/xslt/somedata.xsl',
     'application/json; charset=UTF-8')
}
```

```
XDPROXY_ENABLED = False
XDPROXY_TRANSFORMATIONS = {}
XDPROXY_URLS = []
```

BSCW_LOGGING

BSCW offers detailed logging information on various components of the system. The purpose of logging is mainly for debugging and problem identification. It should be noted that system logs may contain personal detail and sensitive information.

Logging is enabled by default to log `error` conditions:

```
BSCW_LOGGING = {
    'sys': ('ERROR', 'sys.log'),
}
```

This creates the log file `sys.log` where records from all loggers with the log level `ERROR` will be logged. To create log files for specific loggers with more detailed log levels add the following entries, for example:

```
BSCW_LOGGING = {
    'sys': ('INFO', 'sys.log'),
    'ldap': ('DEBUG', 'ldap.log'),
    'mda': ('DEBUG', 'mda.log')
}
```

Where `'ldap'` specifies the logger for the BSCW *ldap* package, and `'mda'` the logger for the BSCW Mail Delivery Agent.

```
# BSCW_LOGGING = {
#    'sys': ('WARN', 'sys.log'),
#    'arc': ('ERROR', 'arc.log'),
# }
```

`BSCW_DEBUG`

BSCW provides the possibility to debug database objects live. To make this operation available to administrators, `BSCW_DEBUG` must be set to one of the following values:

```
0 - disabled
1 - read access to the database for administrators
2 - read/write access to the database for administrators
```

```
BSCW_DEBUG = 1
```

`WAIT_ARCHIVING`

`ARCHIVE_LIMIT`

BSCW allows archiving of large workspaces by starting a background process for the archive task (and likewise for extraction of archives). For smaller archives the task is coupled with the CGI process so that the user will see immediate feedback.

`WAIT_ARCHIVING` defines the time in seconds that a CGI process will wait for the archive or extract task to complete before it returns with an adhoc response to the user. The time must be less than the http server's timeout (typically 300 sec.).

`ARCHIVE_LIMIT` defines the maximum size of downloadable archives. You may use this to prevent denial-of-service attacks caused by users creating archive-bombs. By default `ARCHIVE_LIMIT` is set to `2G`. Possible values for the sizes are strings which may be specified in bytes or kilo- (mega-, giga-, tera-) bytes with an additional `k` (`K`), `M`, `G` or `T` suffix. E.g. valid values for ten mega-bytes are `10485760` or `'10M'`.

`DOWNLOADBUTTON_CONFIRM` defines the size limit from where quick downloads will be started only after some confirm request. The download button is placed inside the toolbar. By default everything smaller `100M` will be downloaded directly. Possible values for the sizes are strings which may be specified in bytes or kilo- (mega-, giga-, tera-) bytes with an additional `k` (`K`), `M`, `G` or `T` suffix. E.g. valid values for ten mega-bytes are `10485760` or `'10M'`.

```
WAIT_ARCHIVING = 10
ARCHIVE_LIMIT = '2G'
DOWNLOADBUTTON_CONFIRM = '100M'
```

`packages_state`

Please do not change `packages_state`. It controls automatic enabling/disabling of new/obsolete *PACKAGES* in **`bsadmin update_defaults`**.

```
packages_state = 6
```

4.3 conf/config_actions.py

The `config_action.py` configuration file allows to redefine roles.

4.4 conf/config_cal.py

This is the configuration file for the calendar. Please note that not all entries are meant to be configured by the administrator here. Especially the settings of `flags`, `categories` and `appoint_status` should **not** be changed.

BSCW administrators may change the default preferences for each user's calendar here – the `calendar_flags` contains the sum of all enabled calendar flags (cf. list of flags). The file also contains defaults for the display of appointments in different views. For each view (`y` = year, `m` = month, `w` = week, `d` = day) a list of potential (`'allowed_x'`) and displayed (`'view_x'`) style items is specified.

4.5 conf/config_clientmap.py

The `config_clientmap.py` configuration file defines the mapping between web browsers and their supported options.

See also

The comments in this file for further descriptions.

4.6 conf/config_controls.py

The `config_controls.py` configuration file defines access right independent parameters for BSCW operations. Generally it is not advised to make changes without consulting our support staff.

4.7 conf/config_convert.py

The conversion tool configuration is automatically performed by the **bsadmin update_defaults** script. This script will search the local system for archiver, encoder or converter commands and generate a <bscw-runtime-path>/conf/config_convert.py converter configuration file. To locate a converter command the script uses some internal heuristics and evaluates the users' environment search path variable (PATH (Unix) resp. Path (Windows)).

In the following paragraph the syntax of the converter configuration file is explained. The system commands for archiver, encoder or converter tools are given in the following three lists respectively:

1. The Encoders list contains triples (type, encoder, decoder) with

```
type            the encoding-type for the encoding tool
encoder         the shell command to encode a file
decoder         the shell command to decode a files

Example:
    Encoders = [
        ('compress',
            '/usr/bin/compress -f -c %(src)s > %(dest)s',
            '/usr/bin/uncompress -c < %(src)s > %(dest)s',
        ),
        ('gzip',
            '/usr/bin/gzip < %(src)s > %(dest)s',
            '/usr/bin/gzip -d < %(src)s > %(dest)s',
        ),
        ('x-bzip2',
            '/usr/bin/bzip2 < %(src)s > %(dest)s',
            '/usr/bin/bzip2 -d <
            %(src)s > %(dest)s',
        ),
        ('x-uuencode',
            '/usr/bin/uuencode %(src)s dummy > %(dest)s',
            '/usr/bin/uudecode -p %(src)s > %(dest)s',
        ),
    ]
```

2. The Converters list contains 5-tuples (src_type, dest_type, quality_factor, command, info) with

```
src_type        the mime-type from the source file
dest_type       the mime-type from the destination file
quality_factor  a number between 0 and 1 to estimate the quality
                of the conversion. If you have more than one
                tool for the same conversion, the one with the
                best quality is chosen.
command         the shell command to convert a file
info            information about what is lost during the conversion

Example::

    Converters = [
        ('application/pdf', 'text/plain', '0.5',
            '/usr/bin/pdftotext -enc UTF-8 %(src)s %(dest)s',
            'layout/images',
        ),
        ('application/postscript', 'text/plain', '0.5',
```

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```
            '/usr/bin/ps2ascii -sOutputFile=%(dest)s -q -dBATCH %(src)s',
            'layout/images',
        ),
        #...
    ]
```

3. The Programs list contains 5-tuples `(name, path)` with

```
name            the external converter program name
path            the system path to the external program name
```

The shell commands have to be specified with an absolute pathname and are normally executed in a temporary directory in BSCW Temp. In a shell command the following patterns can be used:

```
%(py)s              absolute path of the python executable
%(cnv)s             absolute path of the BSCW converters directory
%(src)s             the absolute path of the source file
%(dest)s            the base name of destination file
%(pid)s             process id of the converter process
```

For the Converters list additionally the following pattern can be used:

```
%(charset)s         character set encoding for documents with a
                    "text/*" content-type.
```

In squared bracket some additional parameters can be set:

```
[S_EXT=.xxx]            specifies the extension of the source file
[D_EXT=.xxx]            specifies the extension of the destination file
[D_NAME=%(dest)s.xxx]   or
[D_NAME=%(src)s.xxx]    specifies the name of the destination file
[E_DIR=xxx]             specifies a directory, where the tool should be executed
```

Multiple parameters can be separated in the squared bracket with a semicolon.

To avoid automatic manipulation of the following lists by **bsadmin update_defaults** enable the following line below (use at own risk, future updates may fail):

```
__keep__ = ['Encoders', 'Converters']
```

To regenerate the converter file, e.g. after you installed new converters or adapted your environment search path, run the script with the options **-s** (to skip a Python import check) and **-v** (to print some information about found converter commands):

```
$ bin/bsadmin update_defaults -h
Usage:
 bsadmin update_defaults [-s|-e] [-i] [-v|-vv|...] [-w|-ww|...]
 bsadmin update_defaults -h

    Update conf/__init__.py and conf/config.py

optional arguments:
 -s             skip import check
 -e             exit on package error
 -i             reinitialize conf/__init__.py
 -v -vv ...     verbosity
 -w -ww ...     warning level
 -h             show this help message and exit
```

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```
$ bin/bsadmin update_defaults -s -v
...
Found "Programs" (located):
 '7z': '/usr/bin/7za'
 'bzip2': '/usr/bin/bzip2'
 'cjpeg': None
 'compress': '/usr/bin/compress'
 'convert': '/usr/bin/convert'
 'djpeg': None
 'gif2tiff': None
 'gm': '/usr/bin/gm'
 'gzip': '/usr/bin/gzip'
 'html2text': '/usr/bin/html2markdown'
 'java': '/usr/bin/java'
 'lynx': '/usr/bin/lynx'
 'markdown': '/usr/bin/markdown_py'
 'pdftotext': '/usr/bin/pdftotext'
 'perl': '/usr/bin/perl'
 'pildriver': None
 'ps2ascii': '/usr/bin/ps2ascii'
 'tar': '/usr/bin/tar'
 'tesseract': '/usr/bin/tesseract'
 'uncompress': '/usr/bin/uncompress'
 'unoconv': '%(py)s %(cnv)s/unoconv/unoconv --pipe=%(pid)s'
 'unzip': '/usr/bin/unzip'
 'uudecode': '/usr/bin/uudecode'
 'uuencode': '/usr/bin/uuencode'
 'w3m': '/usr/bin/w3m'
 'weasyprint': '/usr/bin/weasyprint'
 'wkhtmltopdf': None
 'zip': '/usr/bin/zip'
conf/config_convert.py : updated...
```

4.8 conf/config_countries.py

The `config_countries.py` file defines country codes (based in ISO 3166 standard) for selections lists.

4.9 conf/config_grid.py

The `config_grid.py` file defines the appearance and column layout of the Web interface grid.

4.10 conf/config_guided_tours.py

The `config_guided_tours.py` configures the available user guided tours.

4.11 conf/config_help.py

The `config_help.py` file defines mappings from the BSCW context sensitive help to online help HTML pages.

4.12 conf/config_html_ui.py

It is possible to configure the folder views for every folder type by altering the corresponding entries in `config_html_ui.py`. Additionally single columns can be hidden in specific users levels. To achieve this the following entries of the folder type list must be changed:

```
V_ANY = -1
V_ADM = V_ALL | V_DEF | V_MIN
V_AD  = V_ALL | V_DEF
V_A   = V_ALL

UI_VIEWS = {
    'Folder': {
        #...
        'columns': [
            # (colbit, position, presets, ui_profiles)
            (col_icon, 100, V_ANY, ui_yes, ),
            (col_name, 200, V_ANY, ui_yes, ),
            # ...
        ]
    }
}
```

4.13 conf/config_icon.py

The `config_icon.py` file allows to define mappings of names to a icon resources - i.e. a CSS class names.

4.14 conf/config_icons.py

The `config_icons.py` file maps BSCW objects to image files.

4.15 conf/config_meet.py

This is the configuration file for synchronous collaboration tools, i.e. social networks.

4.16 conf/config_menus.py

The `config_menu.py` file specifies the BSCW 7 menu configuration.

4.17 conf/config_metadata.py

The `config_metadata.py` file specifies the meta data for BSCW objects.

4.18 conf/config_mimegroups.py

The `config_mimegroups.py` file maps MIME-types of different applications in groups, eg. Microsoft Office.

4.19 conf/config_mime_icons.py

The `config_mime_icons.py` file configures for the MIME-types icons in BSCW 7.

4.20 conf/config_mimemsg.py

While the translations in different languages of all built-in MIME-type messages are stored in `lg_msgconfig.py`, the file `config_mimemsg.py` keeps all user-defined MIME-type messages defined by an BSCW administrator.

4.21 conf/config_mime.py

This is the configuration file for the MIME-types. Default MIME-type information for BSCW details can be extended or modified directly for system-wide effect. To add MIME-types, add an entry to the list below. Also consider adding an entry to `bs_iconconfig.py` if the type should have its own icon (otherwise the *Unknown* icon will be used) and adding an entry to `config_mimemsg.py` for the description of the MIME-type. The format for entries is:

```
name = (MIME-Type, suffix0, suffix1, ...)
```

where

- `name` is the name of type's icon (in `config_icon.py`) and description (in `config_mimemsg.py`). The name must be unique and conform to Python naming conventions;
- `MIME-Type` consists of a type and a subtype divided by a slash (use lower case letters);
- `suffix0 ... suffixn` are used by document conversion assistant and to determine the document type by extracting a file archive (<= 3 characters recommended).

Note

Only a subset of the IANA (and common, non-standard) media-types are specified here.

See also

https://www.iana.org/assignments/media-types/ for more information on MIME-types

Examples of entries in the list are:

```
access  =   ('application/vnd.ms-access',   'mdb')
aiff    =   ('audio/x-aiff',  aif', 'aiff')
...
zip     =   ('application/zip', 'zip')
```

4.22 conf/config_mpick.py

The `config_mpick.py` file allows to overload non-existing BSCW database object classes with replacement classes at runtime. BSCW uses this mechanism to replace database objects for BSCW extension package classes which have been disabled.

4.23 conf/config_portlets.py

The `config_portlets.py` file provides configuration custom portlets.

4.24 conf/config_prio_categ.py

The `config_prio_categ.py` file configures settings for priorities and categories.

4.25 conf/config_quicksearch.py

The `config_quicksearch.py` file provides configuration for the BSCW quick search.

4.26 conf/config_search.py

The `config_search.py` file allows to configure the BSCW main search keys. Configured search keys are indicated with *MainSearchKey()* entries in this file. All defined main search keys are immediately available in the "+" menu of a search operation, e.g.

```
MainSearchKey('org:theme')
MainSearchKey('org:region')
MainSearchKey('org:location')
MainSearchKey('org:status')
```

4.27 conf/config_service.py

The `config_service.py` file provides configuration the Windows service.

4.28 conf/config_styles.py

The `config_styles.py` file provides configuration for style sheet handling.

4.29 msg/<lang>/lg_msgconfig.py

The `lg_msgconfig.py` file specifies numerous text strings which are used in the interface of the BSCW server. Since these text strings are obviously language dependent, they are stored in the respective language directories, i.e., there exists a file `lg_msgconfig.py` in `msg/en` as well as in `msg/de` and possibly in other language directories.

While the default language files are located in the distribution library directory <bscw-path>/lib/bscw-7.6.1-<rev>-py3*/bscw/msg/* changes should be located in the corresponding BSCW instance runtime directory <bscw-runtime-path>/bsext/msg/*.

For example to change translations from `msg/en/lg_msgconfig.py` for your instance create a <bscw-runtime-path>/bsext/msg/en directory and copy the distribution <bscw-path>/lib/bscw-7.6.1-<rev>-py3*/bscw/msg/en/lg_msgconfig.py file to this location. Now you can edit <bscw-runtime-path>/bsext/msg/en/lg_msgconfig.py and adapt it for your BCSW instance.

The file consists of a set of entries where each entry has the form:

```
InternalName = 'Interface text string'
```

where `InternalName` is the name of an entity in the BSCW server source code and `Interface text string` is the external representation of the entity in the user interface. Obviously, `InternalName` is the same character string for all languages whereas `Interface text string` is, in general, specific for each language. For example, the `lg_msgconfig.py` file for English contains the following two lines

```
Folder = 'Folder'
ChangeEvent = 'changed'
```

whereas the `lg_msgconfig.py` file for German contains

```
Folder = 'Ordner'
ChangeEvent = 'geändert'
```

Note the internal name and its external representation may be the same as for "Folder" (usually only in English) or it may be different as for "ChangeEvent" and "changed" (and, in general, for other languages than English).

A BSCW system administrator may modify the user interface of his or her BSCW server by replacing interface text strings, e.g., if the `ChangeEvent entry` is modified to

```
ChangeEvent = 'modified'
```

the change event would appear with the name "modified" in the user interface.

Whereas `InternalName` must always be one word conforming to Python naming conventions, `Interface text string` may consists of several words and may include HTML mark-up and also parameters for variable parts and must therefore be enclosed in quotes (single ', double " or triple """). For example:

```
ChAccessEvent     =     'access rights changed'
no_objects        =     '<P><STRONG>No objects, currently.</STRONG></P>'
CreateEventMsg    =     'created by %(name)s, %(date)s'
```

The entries are not listed in detail here.

The `lg_msgconfig.py` file for English is the "default" language file, i.e., if a `lg_msgconfig.py` file for a language different from English is lacking a translation, the entry is taken from the English file. In order to facilitate comparison of the `lg_msgconfig.py` files for different languages, the order of the entries in the files should not be modified, nor should entries be removed completely. Entries which should not or cannot be translated, should

be commented out for performance reasons. Commenting out entries from a `lg_msgconfig.py` file for languages other than English may be sensible, e.g., if a translation is not desired which is normally the case for system messages.

CHAPTER

FIVE

BSCW PACKAGES

This section contains instructions on how to configure the additional packages provided for the BSCW shared workspace system. Each package has to be enabled or disabled using the **bsadmin package** command, which creates the corresponding BSCW configuration directory (e.g. <bscw-runtime-path>/conf/<package>/) with the necessary package configuration files and changes the *PACKAGES* list in the <bscw-runtime-path>/conf/config.py file.

Generally all BSCW packages are maintained by the **bsadmin package** command line script for

1. management of *distributed* BSCW packages (as described in the sections below)
   - to enable a distributed BSCW package run:

     ```
     bin/bsadmin package -e <pkg-name>
     bin/bsadmin package -e ldap
     ```

   - to disable distributed a BSCW package run:

     ```
     bin/bsadmin package -d <pkg-name>
     bin/bsadmin package -d ldap
     ```

   - to re-enable a distributed a BSCW package (and update installed resources) run:

     ```
     bin/bsadmin package -r <pkg-name>
     bin/bsadmin package -r ldap
     ```

2. management of *external* BSCW packages (e.g. customer developments). An external BSCW package is usually provided as a ZIP archive and enabled as follows
   - to enable an external BSCW package run:

     ```
     bin/bsadmin package -e <pkg-name> <path>
     bin/bsadmin package -e fhg_fit bsext/fhg_fit
     ```

   - to disable an external BSCW package run:

     ```
     bin/bsadmin package -d <pkg-name>
     bin/bsadmin package -d fhg_fit
     ```

   - to re-enable an external BSCW package (and update installed resources) run:

     ```
     bin/bsadmin package -r <pkg-name>
     bin/bsadmin package -r ldap
     ```

Finally the command **bsadmin package -l** provides an overview about enabled/disabled BSCW packages.

Depending on the particular BSCW package further configuration has to be done either in the BSCW instance configuration file (<bscw-runtime-path>/conf/config.py) or within the BSCW package configuration files (located in <bscw-runtime-path>/conf/<package>/). Please refer the following description for each BSCW package.

5.1 Content Search PyLucIndex

Preferably BSCW uses a full text search for BSCW meta data and document contents based on the Lucene Java indexing and search framework. The provided *PyLucIndex* package is the preferred way to enable search for Unix based BSCW instances.

The package *PyLucIndex* uses pylucene, a "JCC" compiled python extension for Lucene Java. You need to download and install pylucene before you activate this package.

Pylucene is maintained under the Apache Lucene project at the Apache Software Foundation. For more information on Pylucene, please visit https://lucene.apache.org/pylucene/.

A source distribution can be downloaded from https://www.apache.org/dyn/closer.cgi/lucene/pylucene/

Some pre-build binaries are provided by the pylucene-extra project at https://code.google.com/a/apache-extras.org/p/pylucene-extra/

Please ask for pre-compiled Python wheel (.whl) packages our support team (support@orbiteam.de).

BSCW 7.6.1 supports pylucene `3.6.2`

Important

- Additionally pylucene requires an installed Java Runtime Environment (JRE) 11

We gratefully acknowledge the work of the Lucene group (especially Doug Cutting) and the pylucene group (especially Andi Vajda) who did an excellent job in making Lucene available to the Python developers.

5.1.1 Configuration

This package is not enabled by default and requires some software installation (i.e. pylucene - see above) and allows optional configuration.

The main configuration required is for content search, i.e. indexing document contents. You will need to define converters for all document types that should be indexed. BSCW already provides a framework for document conversion which is used by this indexing package.

Please install needed converter programs as described in section *Software for BSCW Preview*.

After the installation of pylucene enable the BSCW *PyLucIndex* package with:

```
bin/bsadmin package -e PyLucIndex
```

If you installed additional converter programs update the configuration by using:

```
bin/bsadmin update_defaults -s -v
```

(as described in section 5.8 *conf/config_convert.py*) to update the `<bscw-runtime-path>/conf/config_convert.py` converter file.)

Furthermore the index configuration allows some fine tuning of the pylucene indexer:

- `FILES_TXT`

  Directory to store text file representation

- `INDEX_DIR`

  Directory to store the index files

- `INDEX_LOG`

  Log file for indexing process (set None for no logging)

- INDEX_USE_BSDDB

  Optionally use Berkeley DB library (bsddb) for storage of lastmod

- CREATE_INDEX_ARGS

  Arguments for automatic restart of **bsadmin create_index**

- INDEX_QUERY_HELP

  link to the query syntax documentation

  Note

  this actually depends on the installed version of pylucene! (see *INDEX_QUERY_OPERATOR_AND* below for possible changes in BSCW)

- INDEX_QUERY_OPERATOR_AND

  default query operator: in pylucene, the OR operator is the default conjunction operator. i.e. a search for "brown sugar" yields all documents that contain any of the words "brown" OR "sugar" - to use this query type set:

  ```
  INDEX_QUERY_OPERATOR_AND = False
  ```

  in BSCW we change the default query operator to AND: that way the "Search in Documents" behaves like a search in Google

- INDEX_FUZZY_FACTOR

  additionally to wildcard search Lucene Fuzzy search is used in text search items, if 0 < INDEX_FUZZY_FACTOR < 1. Fuzzy search is by default turned off:

  ```
  INDEX_FUZZY_FACTOR = 0
  ```

- INDEX_NO_FUZZY_KEYS

  specifies a list of metadata keys to which fuzzy search should not be applied:

  ```
  INDEX_NO_FUZZY_KEYS = ['bscw:classname']
  ```

- INDEX_QUERY_LEADING_WILDCARD

  allow leading wildcards (e.g. *ook)

  Note

  In pylucene leading wildcards are not supported by the QueryParser by default. However they can be enabled. Note that this can be an expensive operation: it requires scanning the list of tokens in the index in its entirety to look for those that match the pattern.

- INDEX_OBJECT_MAXLOAD

  number of objects to load from DB while indexing (chunk size)

- INDEX_OBJECT_MAXBUF

  size of internal object buffer (for incremental index update)

- INDEX_QUERY_MAXHITS

  number of hits to return in one query to indexer during search

  The following directives allow fine tuning of Lucene indexer: (see https://lucene.apache.org for details)

- `INDEX_RAM_BUFFER`

  Buffer Size in MB (default: 16 MB)

  For the added documents, flushing is now triggered either by RAM usage of the documents or the number of added documents. Lucene developers recommend for faster indexing performance to flush by RAM usage instead of document count and use as large a RAM buffer as you can.

  Note

  - setting `INDEX_RAM_BUFFER` to a negative value will set `DISABLE_AUTO_FLUSH` which prevents triggering a flush due to RAM usage (and uses document count instead - see *MaxBufferedDocs* below)
  - if flushing by document count is also enabled (via *MaxBufferedDocs*), then the flush will be triggered by whichever comes first.

- `INDEX_MERGE_FACTOR`

  MergeFactor - must never be less than 2. The default value is 10. Determines how often segment indices are merged by `addDocument()`. With smaller values, less RAM is used while indexing, and searches on unoptimized indices are faster, but indexing speed is slower. With larger values, more RAM is used during indexing, and while searches on unoptimized indices are slower, indexing is faster. Thus larger values (> 10) are best for batch index creation, and smaller values (< 10) for indices that are interactively maintained.

- `INDEX_MAX_BUFFEREDDOCS`

  MaxBufferedDocs - must never be less than 2. The default value is 10.

  Determines the minimal number of documents required before the buffered in-memory documents are merged and a new Segment is created. Since Documents are merged in a *RAMDirectory*, large value gives faster indexing. At the same time, *mergeFactor* limits the number of files open in a *FSDirectory*.

- `INDEX_MAX_MERGEDOCS`

  MaxMergeDocs - default value is *Integer.MAX_VALUE*.

  Determines the largest number of documents ever merged by *addDocument()*. Small values (e.g., less than 10,000) are best for interactive indexing, as this limits the length of pauses while indexing to a few seconds. Larger values are best for batched indexing and speedier searches.

- `INDEX_MAX_FIELD_LENGTH`

  MaxFieldLength - limits number of terms to store per field

  By default Lucene stores first 10.000 terms ("words") this may restrict search results on document content (especially for longer documents)

  Note

  `INDEX_MAX_FIELD_LENGTH = None` will allow unlimited number of terms per field

- `INDEX_MAX_CLAUSE_COUNT`

  MaxClauseCount - set the maximum number of clauses permitted per *BooleanQuery*.

  Default value is 1024.

- `INDEX_LANGUAGE_DEPENDANT_FIELDS`

  define a list of fields to be indexed with a special language dependent analyzer.

> **Warning**
>
> This is currently still experimental (and only supported for English and German)

If you want to alter one of this configuration directives append the directive to the end of the instance configuration file (<bscw-runtime-path>/conf/config.py).

The following configuration directive is configured in the BSCW package configuration file <bscw-runtime-path>/conf/PyLucIndex/config.py

- INDEX_JVM_MAXHEAP

  Max heap for Java VM (lucene only) (default: '512m'). Increase this value if you experience OutOfMemoryError exceptions while index creation, e.g.:

  ```
  INDEX_JVM_MAXHEAP = '2048m'
  ```

- LUCENE_JVM_ARGS

  additional arguments passed to lucene's JVM via lucene.initVM(vmargs) should be list of string arguments or empty list:

  ```
  INDEX_JVM_ARGS = ['-Djava.awt.headless=true',]
  ```

- INDEX_MAX_TXTSIZE

  Max document size for text documents to be indexed. Lucenes Java VM may fail with OutOfMemoryError on very large documents that are typically binary files with wrong MIME-Type. BSCW uses some heuristics to detect binary files, but will also skip files with certain size anyway. Default limit is 50 MB text file size (= 52428800 bytes):

  ```
  INDEX_MAX_TXTSIZE = 52428800
  ```

There you may also change the directories to contain the text file representations and the Lucene index itself. You may want to adjust some of the index parameter (such as merge factors) - see https://lucene.apache.org for details on how this affects indexing.

5.1.2 Command line tools

You may run the indexer using the provided command line tool:

```
$ bin/bsadmin create_index
```

You may query the indexer using the command line tool:

```
$ bin/bsadmin search
```

1. **bsadmin create_index** - generates the pylucene index

   First make sure that no other indexing process is running. You may check the status of the indexer using

   $ bin/bsadmin create_index -v

   and stop a running indexer process using

   $ bin/bsadmin create_index -x

   To start the indexing process on Unix systems you may use for example:

   ```
   $ nohup bin/bsadmin create_index -cqt >/dev/null 2>&1 &
   ```

   The commandline usage is as follows:

```
$ bin/bsadmin create_index
Usage:
 bsadmin create_index -c [-u] [-otU] [-{v|q}] [-r <min>] [-R <hour>]
 bsadmin create_index -{i|s}  [-otU] [-{v|q}] [-r <min>] [-R <hour>]
 bsadmin create_index -x [-u] [-z]
 bsadmin create_index -v
 bsadmin create_index [-h]

options:
 -c        create new index (forced if no index exists)
 -cu       create new index & force update of document
           text representations
 -i        incremental index update
 -s        scan database continuously
 -o        suppress periodic optimization (optimize only on start)
 -t        display timer info at exit
 -U        unlock at first (dangerous)
 -v        verbose mode (or status report if used as single option)
 -q        quiet
 -r <min>  report interval (default 30 min, 0: no report)
 -R <hour> automatic restart in '+<hour>' or at 0 < <hour> < 24
 -x        stop indexer
 -xu       stop indexer and cleanup document text representations
 -xz       stop indexer and cleanup index files
 -xuz      stop indexer and cleanup all indexer files
 -h        show this help message and exit
```

Note

option **-u** is only possible in conjunction with option **-c** (i.e. all text files will be removed before new Index is created) or in conjunction with option **-x** (i.e. all text files will be removed after indexer is stopped - allows fresh restart).

The **bsadmin create_index** script will create / update the pylucene index. If no index exists yet it will be newly created. By default the script will update an existing index when it is invoked (use option **-c** to force creation of a new index).

Option **-i** will perform an incremental index update (default), i.e. only documents that have been modified or added (since last index run) will be (re-)indexed. Outdated (i.e. deleted) documents will be removed from the index.

Option **-v** can be used (as single option) to check the indexer status. The indexer is typically running as a background process and automatically started with the BSCW server. More details may also be found in the indexer logfile (in <bscw-runtime-path>/var/log/index.log)

The indexing process will automatically create/update text representations of documents during indexing. This requires configuration of according converters (to text/plain format - see above).

A document conversion will be performed when necessary, i.e. documents that have been modified will be updated; text representation of outdated (i.e. deleted) documents will be removed (use option **-u** to force removal of all text representations initially).

2. **bsadmin search** - performs a query on the pylucene index:

```
$ bin/bsadmin search
usage: bsadmin search [-h] [-s] [-a] [-i] [-c] [-v] [-l lang] [query]

query pylucene index
```

(continues on next page)

(continued from previous page)

```
positional arguments:
query       query

optional arguments:
-h, --help  show this help message and exit
-s          show index statistics
-a          search all fields (default: content search)
-i          search by ID only
-c          show hit count only
-v          verbose
-l lang     language
```

This script passes a query to the pylucene index and returns a list of results as BSCW object IDs. It may be used for testing. Here verbose mode delivers extra document info on the results.

Note

- option **-i** allows to check if an object (BSCW ID) is contained in the index.
- option **-a** allows to search in multiple fields (e.g. name, description etc.)

You may use any valid Lucene query, e.g.:

```
$ bin/bsadmin search -v "contents:bscw AND class:Document"
```

The command line search does not check any access rights, i.e. you will receive all results that match the query. When using the search in the web front-end, of course access rights are checked and only filtered results show up.

5.1.3 Index creation and update

If the package is enabled and an index is already created (and not locked) BSCW attempts to automatically start the indexer when the BSCW server process is started (via **start_servers**).

The **bsadmin create_index** tool provides an option (**-s**) to continuously scan the database and thereby update the index (while BSCW server is running). This option is used when BSCW starts the indexer itself (actually option **-sqr60** is used).

Thus recommended usage of the indexer is to initially create the index manually by invoking the following commands:

```
$ bin/bsadmin package -e PyLucIndex
$ bin/bsadmin create_index -cqt
```

and then let BSCW update the index continuously.

For this purpose you only need to (re)start your BSCW server after the **bsadmin create_index** finished to create the initial index e.g.:

```
$ bin/start_servers -k          # UNIX
$ bin/start_servers
```

Note

The indexer logs progress and errors to the configured log file (in <bscw-runtime-path>/var/log/index.log). Startup (or failure to start the indexer) during start/stop of the BSCW server is also logged in the main BSCW log file (in <bscw-runtime-path>/var/log/bscw.log).

If the indexer was not started upon BSCW start due to a failure (e.g. a missing `IndexPos` file) run:

```
$ bin/bsadmin create_index -iU
```

manually to incrementally index all missing objects. Again, after **bsadmin create_index** finished updating the index restart your BSCW server, e.g.:

```
$ bin/start_servers -k          # UNIX
$ bin/start_servers
```

Note

If (for some reason) you ever want to completely re-build the index there are two options:

- option **-xz** will stop the indexer and remove the index files. This allows a quick rebuild without updating text representations (which is time consuming).
- option **-xuz** will stop the indexer and remove the index files and all document text representations. This is the ultimate "from-scratch" solution as all index-related data is cleaned up before rebuilding the index (you may also want to **rm var/log/index.log**).

In both cases you may then re-create the index using **bsadmin create_index -cqt**.

Finally restart the BSCW server again as described above, to let BSCW update the index continuously (see *create_index* above). This method will result in a 'fresh' (and up-to-date) index and newly created text representation of all indexable documents (if option **-u** is given).

To re-create the index simply use the following command sequence:

```
$ nohup /bin/sh -c "bin/bsadmin create_index -xz; bin/bsadmin create_index -cq; bin/
↪start_servers" > /dev/null 2>&1 &
```

5.2 LDAP

The Lightweight Directory Access Protocol (LDAP) is a protocol for accessing online directory services. It runs directly over TCP, and can be used to access a standalone LDAP directory service or to access a directory service that is back-ended by X.500. The BSCW system implements an interface to LDAP servers based on the ldap3 package. Ldap3 natively implements an RFC 1823 API (see OpenLDAP https://www.openldap.org).

5.2.1 Installation

To install the BSCW LDAP module

1. The BSCW LDAP module needs the `ldap3` Python package. `ldap3` implements a native Python LDAP client library.
   - On Linux systems the `ldap3` package of the distribution should be installed.

     Packages name(s) for common Linux distributions:

     - Debian based systems: `python3-ldap3`
     - EL 8/9 based systems:

```
$ su -
# pip-3.11 install ldap3
```

2. To enable the BSCW *ldap* copy the default template file to the instance configuration directory as follows

```
# su - bscw
$ cd $HOME
$ mkdir -p srv/<bscw-instance>/conf/ldap
$ cp lib/bscw-7.6.1-<rev>-py3*/bscw/conf/ldap/config.py    srv/<bscw-instance>/
↪conf/ldap
```

and run:

```
$ cd srv/<bscw-instance>
$ bin/bsadmin package -e ldap
```

3. Adapt the configuration file <bscw-runtime-path>/conf/ldap/config.py to your needs, especially the "hosts" map and the "auto_registration" list:

   - hosts is a dictionary mapping distinguished names (DNs) to hostname[:portnumber] when an LDAP object is searched (referred by a DN), this table is looked up for a corresponding LDAP server address. The DNs should be in a 'canonical' form (lower case, no spaces before or after ',' and '=').
   - certificate_files is an dictionary containing for each LDAPS URI hostname[:portnumber] value from the hosts dictionary a path name to a file containing the CA certificates needed to validate server certificates.
   - may_register_ldap is a list of BSCW users that have the right to register LDAP users - i.e. invite new users to the system or to a workspace. This is in addition to SERVER_ADMINS, who have this right anyway.

     There are two special cases: if may_register_ldap is

     []: then registration of new LDAP users is allowed for all users. This allows all users and anonymous to invite new users to the system.

     None: then registration of new LDAP users is allowed for all but anonymous.

     Note

     - only may_register_ldap = [], allows self-registration by LDAP user login
     - may_register_ldap behaves equal to *MAY_REGISTER* for found LDAP user objects. By default self-registration of found LDAP user objects is allowed (which is the behaviour of previous BSCW versions)
     - alternatively may want to use the setting of *MAY_REGISTER* also for may_register_ldap. In this case define:

       ```
       from conf.config import MAY_REGISTER
       may_register_ldap = MAY_REGISTER
       ```

   - auto_registration defines DN patterns and search patterns for auto_registration during login. If a user is not registered at BSCW but her DN can be found on a LDAP server with one of the patterns listed in auto_registration, then BSCW makes an attempt to register the user automatically and assigns (binds) the DN to the user object if the registration process succeeds. three patterns are possible here (%s is substituted by the login name):
     - a pattern that expands to the DN directly:

       ```
       'cn=%s,o=snakeoil,c=de'
       ```

  - a 2-tuple that specifies the LDAP server default binding (base DN) and a search expression for user name search:

```
('o=snakeoil2,c=de', '(uid=%s)')
```

  - a 3-tuple that specifies the LDAP server default binding (base DN) and a search expression for user name search and a search expression for email address search:

```
('o=snakeoil2,c=de', '(uid=%s)', '(mail=%s)')
```

The latter two patterns result in a 2-step process for the required binding: At first the DN is looked up on the LDAP-server using the default binding. Then a bind is tried with the resulting DN (must be unique) and the given password. In case a 3-tuple is given the search pattern is determined by the given login name. If the login name contains a `'@'` character the mail address search pattern (`'mail=%s'`), otherwise the user name search pattern is used.

- `auto_registration_email` allows to send a registration mail. Use `auto_registration_email = 'reg_done'` if you want the standard registration mail sent to an automatically registered user. You might set the registration mail language using: `auto_registration_email_lang = 'de'`
- `auto_registration_roles` defines initial roles, quota limit class or auto-invitation to communities for automatically registered users. The list consists of tuples:

```
('attribute=value', 'R[012]rolename'),
('attribute=value', 'R[012]rolename', 'limitclass'),
('attribute=value', 'R[012]rolename', 'limitclass', 'community-id').
```

Note

  - the role `'R[012]rolename'` must be assignable for user objects i.e. it must appear in the list cl_action.user_roles.
  - the quota limit class `'limitclass'` must be defined with **`bsadmin quota limit`** in advance.
  - the community with the object-id `'community-id'` must be created in advance.
  - at the moment the `'attribute=value'` string is only looked up in the DN (`user.ldap_bind`) of the user. The LDAP attributes of the user are ignored. This might be changed in the future.

Possible patterns:

```
('ou=pupil', 'R2restricted'),
('ou=development', 'R2manager', '@manager'),
('ou=development', '', '@manager'), # No user role is assigned
('ou=development', 'R2manager', '@manager', '12345'),
```

- `auto_may_register` defines DN patterns and search patterns to determine if an user has the right to register mail addresses (see `<bscw-runtime-path>/conf/config.py`: *MAY_REGISTER*). If an user matches a given DN or search pattern in `auto_may_register` and the configuration directive *MAY_REGISTER* restricts the registration of mail addresses, this user is additionally allowed to register mail. Three patterns as described above at `auto_registration` are possible here.
- `use_ldap_passwords` defines how BSCW handles users with LDAP binding and local BSCW users (without LDAP binding):
  - If `use_ldap_passwords` is **1**, then **for all users** passwords are verified against the LDAP-server. Hence an existing user who is not found on an LDAP server cannot login to the system any more.
  - If `use_ldap_passwords` is **2**, then the user password is verified against the LDAP-server only for users with a LDAP binding or users found on a LDAP server. Note the following implications:

        * a local BSCW user who is not found on a LDAP server and who does not have a LDAP binding can still login to the system.
        * a local BSCW user who is found on a LDAP server and provided the correct LDAP credentials will take over the local user (by adding a LDAP binding).
    - If `use_ldap_passwords` is **3**, then the user password is verified against the LDAP-server only for users that have a LDAP binding.

> **Note**
>
> - BSCW does password checking by LDAP only if the BSCW server and not the HTTP server does authentication, e.g. when cookie authentication is enabled or BSCW gets the `HTTP_AUTHORIZATION` value). Because this is not a very fast way to do authentication, it might be an alternative to configure the HTTP server to do LDAP authentication (e.g. via the Apache HTTP server `auth_ldap module`) instead of setting `use_ldap_passwords = 1` which requires all users to pass LDAP authentication.
> - If the Apache HTTP Server `auth_ldap module` is used `use_ldap_passwords` must be set to 3, otherwise the BSCW change password action interferes with the `auth_ldap` modules internal password cache.
> - When using BSCW authentication, digest authentication is not possible in combination with LDAP, because BSCW requires the plain (textual) password to authenticate the credential against LDAP.

- `ldap_searches` defines a list of member search options `(qid, pattern)` for the workspace invite member action (`op_addmb`):
    - `qid` is an unique identifier for the search and must be translated in `<bscw-runtime-path>/conf/msg/*/ldap/lg_msgconfig.py`.
    - `pattern` is a LDAP query where `'%(query)s'` is replaced by the user input of the addmb search form
    - search subtree of defined base DN(s) for the given query:

```
('mb_search_ldap_uid', 'cn=*%(query)s*'),
('mb_search_ldap_uid', '(|(cn=*%(query)s*)(uid=*%(query)s*))'),
('mb_search_ldap_uid', '(sAMAccountName=*%(query)s*)'),
```

5.2.2 LDAP Browser

After installation of the *ldap* package, a small "organisational browser" is enabled. When opening a user info window (e.g. by clicking on a user name in the web interface) the users' LDAP binding (if defined) is shown. By selecting the link of the LDAP binding field the user information (as retrieved from the LDAP server) is displayed.

If the *ldap* package is installed and activated, the *[Goto]*-Menu contains an entry *[Organisation Info]* that invokes the organisational browser. The browser connects to the LDAP servers in the hosts map and allows operation on LDAP objects. The operations search, view and attribute editing are supported.

> **Note**
>
> - `ORG_INFO_URL` must **not be set** in `<bscw-runtime-path>/conf/config.py`, because this will override the handler invoked by the *[Organisation Info]* menu entry.
> - You need basic knowledge of directory services in general and especially need to know some details about LDAP in order to configure BSCW for LDAP. Besides the more technical IETF RFCs and Drafts about LDAP – which can be found at https://www.ietf.org – we suggest to read the IBM Redbook: *Understanding LDAP* (SG-244986, June 1998), available at https://www.redbooks.ibm.com.

5.3 Document Approval

The *approval* package supports a standardized quality approval process while document production. After document creation the document may be checked by one more persons and is finally released. The state of documents running through this approval process is displayed at the user interface.

You may want to provide different global defaults for your users in the by creating the configuration file `<bscw-runtime-path>/conf/approval/config.py`. The possible configuration directives and their defaults are as follows:

- `MAY_RESET_APPROVAL`

  controls if the approval process is reset after an approved document is edited or replaced. (Default: `True`)

- `APPROVAL_UNIQUE_REVIEWER`

  enforce if reviewers must be unique in an approval, i.e. when enabled any reviewer may participate only once in a review process. (Default: `False`)

This package is enabled by default in a new BSCW server instance. No additional software installation or configuration is required on server-side. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e approval
```

5.4 Chat

The *chat* package allows you to send multimedia messages to other BSCW users in real time, creating a feeling similar to a spoken conversation. No further configuration is required.

5.5 Expire

The *expire* package sends an email notification to the user when the account was expired with additional informations. The notification email may be customized by creating the configuration file `<bscw-runtime-path>/conf/expire/config.py` with the following configuration directives:

- `EXPIRE_DELETE_DAYS`

  defines the number of days after expiration when the account will be deleted:

  ```
  EXPIRE_DELETE_DAYS = 30
  ```

  Note

  This defines just a hint for the email notification, account deletion must be done manually by the administrator.

- `EXPIRE_CONTACT_MAIL`

  defines an email address for questions (defaults to *SERVER_ADMIN_CONTACT* resp. *SERVER_ADMIN*):

```
EXPIRE_CONTACT_MAIL = None
```

How to enable automatic account expiry see *user account expiry*.

This package is *not* enabled by default in a new BSCW server instance. No additional software installation or configuration is required on server-side. The package may be enabled by running:

```
bin/bsadmin package -e expire
```

5.6 Export PDF

The *exportpdf* package provides an optional feature for BSCW that allows users to export container views to PDF format. With PDF export enabled the listings of many container objects, i.e. objects that can contain other objects, may be exported in PDF format for printing. Examples are folders, blogs and contact lists. You may want to enable this package if you want to offer this additional functionality to your end users.

For installation and configuration of the package proceed as follows:

1. Make sure the required third-party software is available on your system (server). The package requires the following python extensions:
   - Python Imaging Library (PIL/Pillow):

     https://pypi.python.org/pypi/Pillow
   - The ReportLab PDF Library:

     https://pypi.python.org/pypi/reportlab

     Attention

     Due to a critical vulnerability in the ReportLab library a version >= 3.5.55 ist required.
   - On Linux systems use preferred the packages of your distribution:
     - Debian based systems: `python3-pil python3-reportlab`
     - EL 8/9 based systems:

       ```
       $ su -
       # pip-3.11 install pillow reportlab
       ```
2. To enable the BSCW *exportpdf* package run:

   ```
   bin/bsadmin package -e exportpdf
   ```

Note

This feature is only available in the professional edition of BSCW.

5.7 Flow-Folder

Flow folders allow you to manage work flows where documents follow a certain work process and are forwarded from one user to another for subsequent processing. Each flow folder has a number of tasks which are to be carried out by the users responsible in the order specified. Flow folders - like normal folders - may contain objects of all types, e.g. documents, other folders or discussion forums.

This package is enabled by default in a new BSCW server instance. No additional software installation or configuration is required on server-side. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e FlowFolder
```

5.8 Http

The *http* package implements a pre-forking BSCW HTTP server. This means a master process pre-loads the BSCW code library, spawns a pool of separate worker HTTP processes and routes requests to spare worker processes.

Using this technique greatly speeds up request processing. Incoming requests are immediately served on arrival without the overhead of creating new processes or loading BSCW code modules. Load tests have shown an average performance increase of 30% compared to the traditional Apache HTTP server CGI.

This package is **not** enabled by default in a new BSCW server instance and is **only** available on Unix based BSCW systems. No additional software installation is required on server-side.

To enable the pre-forking BSCW HTTP server the *HTTP_LOCAL_PORT_START* directive must be defined and the *http* package must be enabled as follows:

Important

By using the pre-forking BSCW HTTP server *all* configuration changes become only take effect after a **restart** of the BSCW HTTP server, which is performed from the CLI running:

```
bin/bsadmin http restart
```

or on the administration *BSCW status page* *[Options → Admin → Status]* by clicking the *[Restart integrated http service]* entry.

5.8.1 Enabling the BSCW HTTP server

1. Stop the BSCW instance services:

   ```
   bin/bsadmin stop
   ```

2. Enable the *http* package:

   ```
   bin/bsadmin package -e http
   ```

3. Edit the instance configuration file `<bscw-runtime-path>/conf/config.py` and define a unused `localhost` port for the pre-forking BSCW HTTP server, e.g.:

   ```
   HTTP_LOCAL_PORT = 8080
   ```

Note

The `localhost` port must be free and may not be occupied by another service (such as the Apache HTTP server).

Next define a BSCW HTTP server start command, e.g.:

```
HTTP_LOCAL_PORT_START = "-p 100 -r 128"
```

4. Start the BSCW instance services:

```
bin/bsadmin start
```

Beside the usual BSCW services additionally this starts a pre-forking BSCW HTTP server with a maximum of 100 worker processes and a maximum listen queue length of 128 requests.

5. Update your Apache HTTP server configuration:

```
bin/bsadmin conf_apache
```

Ensure your Apache HTTP server enabled the `proxy` and `proxy_http` modules and restart the HTTP server as root user:

- Debian based systems:

```
$ su -
# a2enmod proxy proxy_http
# systemctl restart apache2
```

- EL 8/9 based systems:

```
$ su -
# vim /etc/httpd/conf.modules.d/00-base.conf
# vim /etc/httpd/conf.modules.d/00-proxy.conf
# systemctl restart httpd
```

5.8.2 Disabling the BSCW HTTP server

1. Stop the BSCW instance services:

```
bin/bsadmin stop
```

2. Disable the *http* package:

```
bin/bsadmin package -d http
```

3. Restore in the instance configuration file `<bscw-runtime-path>/conf/config.py` the `HTTP_LOCAL_PORT` to a Apache HTTP server controlled `localhost` port, e.g.:

```
HTTP_LOCAL_PORT = 80
```

and set a BSCW HTTP server start command to `None`:

```
HTTP_LOCAL_PORT_START = None
```

4. Start the BSCW instance services:

```
bin/bsadmin start
```

This starts the BSCW services without the pre-forking BSCW HTTP server again.

5. Update your Apache HTTP server configuration:

```
bin/bsadmin conf_apache
```

Disable the Apache HTTP server `proxy` and `proxy_http` modules (if not longer required) and restart the HTTP server:

- Debian based systems:

```
$ su -
# a2dismod proxy proxy_http
# systemctl restart apache2
```

- EL 8/9 based systems:

```
$ su -
# vim /etc/httpd/conf.modules.d/00-base.conf
# vim /etc/httpd/conf.modules.d/00-proxy.conf
# systemctl restart httpd
```

5.9 Incognito

The *incognito* package provides an optional feature for BSCW to anonymize read events in a certain workspace. When enabled each role shows an additional access right "Get (Incognito)". When activated all read event in this workspace are anonymized.

This package is **not** enabled by default in a new BSCW server instance. No additional software installation or configuration is required on server-side. The package may be enabled again by running:

```
bin/bsadmin package -e incognito
```

5.10 Metaprofiles

The *metaprofiles* package allow to provide user-defined metadata profiles for BSCW objects.

This package is enabled by default in a new BSCW server instance. No additional software installation or configuration is required on server-side. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e metaprofiles
```

5.11 Online Office

The *office* package provides integration with online office applications. Currently ONLYOFFICE, Microsoft 365 or Collabora Online (deprecated) are supported.

Note

The free versions of ONLYOFFICE or Collabora Online allow editing of 10 documents with 20 concurrents users. For more users a commercial license is required.

5.11.1 ONLYOFFICE configuration

To run a **ONLYOFFICE Docs Community Edition** service a server host with a Debian or Enterprise Linux (EL) based Linux is required. Basically the installation requires the following steps:

- Installation of dependencies
  - NGINX
  - PostgreSQL with database initialization/creation
  - RabbitMQ and Erlang
  - mscorefonts
- Installation of ONLYOFFICE
- Configuration of ONLYOFFICE
  - PostgreSQL and RabbitMQ user credential definition
  - ONLYOFFICE SQL table generation
  - open firewall ports

For more details, see the ONLYOFFICE documentation. The requirements are described at:

https://helpcenter.onlyoffice.com/de/installation/docs-community-sys-reqs-linux.aspx

To install ONLYOFFICE follow the installation guide for

- Debian based systems:

  https://helpcenter.onlyoffice.com/installation/docs-community-install-ubuntu.aspx
- EL based systems:

  https://helpcenter.onlyoffice.com/installation/docs-community-install-centos.aspx

5.11.2 Collabora Online configuration

The easiest way to run a Collabora Online instance is to use the pre-configured Docker container image, see https://www.collaboraoffice.com/code/ for details. The container image is deployed using the commands:

```
$ docker pull collabora/code:4.0.9.4
$ docker run -t -d -p 127.0.0.1:9980:9980 \
    -e 'domain=<dot-escaped-domainname>' \
    -e 'username=admin' \
    -e 'password=<password>' \
    --name "collabora" \
    --restart always --cap-add MKNOD collabora/code:4.0.9.4
```

The <dot-escaped-domainname> requires "dot-escaping" of the BSCW instance name *SERVER_ROOT*, e.g.:

```
bscw.domain.org
=>
bscw\\.domain\\.org
```

Generally (escaped) regular expressions are allowed as <dot-escaped-domainname>, such as:

```
.*\.domain\.org
=>
\.*\\.domain\\.org
```

The Collabora Online instance operates in *read only* mode and does not allow writing documents. To allow editing (including *writing*) of documents the host IP address of each BSCW instance must be whitelisted in a configuration file **within** the container image.

For this purpose, the host IP address of the BSCW instance must be inserted in the file `/etc/loolwsd/loolwsd.xml` (note you have to escape dot characters (`. -> \.`)).

For example, suppose the IP address of your BSCW instance is `10.11.12.13`. In this case the following entries:

```
<host desc="BSCW instance (IPv4-mapped IPv6)">::ffff:10\.11\.12\.13</host>
<host desc="BSCW instance (IPv4)">10\.11\.12\.13</host>
```

must be added in the `<post_allow>...</post_allow>` section of the `loolwsd.xml` file as follows:

```
<net desc="Network settings">
  <proto type="string" default="all" desc="Protocol to use IPv4, IPv6 or all for both
↪">all</proto>
  <listen type="string" default="any" desc="Listen address that loolwsd binds to. Can␣
↪be 'any' or 'loopback'.">any</listen>
  <service_root type="path" default="" desc="Prefix all the pages, websockets, etc.␣
↪with this path."></service_root>
  <post_allow desc="Allow/deny client IP address for POST(REST)." allow="true">
    <host desc="The IPv4 private 192.168 block as plain IPv4 dotted decimal addresses.
↪">192\.168\.[0-9]{1,3}\.[0-9]{1,3}</host>
    <host desc="Ditto, but as IPv4-mapped IPv6 addresses">::ffff:192\.168\.[0-9]{1,3}\
↪.[0-9]{1,3}</host>
    <host desc="The IPv4 loopback (localhost) address.">127\.0\.0\.1</host>
    <host desc="Ditto, but as IPv4-mapped IPv6 address">::ffff:127\.0\.0\.1</host>
    <host desc="The IPv6 loopback (localhost) address.">::1</host>
    <host desc="BSCW instance (IPv4-mapped IPv6)">::ffff:10\.11\.12\.13</host>
    <host desc="BSCW instance (IPv4)">10\.11\.12\.13</host>
  </post_allow>
</net>
```

You may also want to disable the signing server endpoint URL by removing the URL `https://app.vereign.com` from the `<document_signing_url></document_signing_url>` entry as follows:

```
<document_signing_url desc="The endpoint URL of signing server, if empty the document␣
↪signing is disabled" type="string" default=""></document_signing_url>
```

Edit the `/etc/loolwsd/loolwsd.xml` file within the Collabora Online container as follows:

1. Copy the `loolwsd.xml` file from the Collabora container to your local host and enter the above mentioned entries for the BSCW instance host IP address:

   ```
   $ docker ps -a
   CONTAINER ID        IMAGE                  ...     NAMES
   ea5740114e13        collabora/code:latest  ...     <containername>

   $ docker cp <containername>:/etc/loolwsd/loolwsd.xml .
   ```

2. Edit the `loolwsd.xml` file and add the additional IP entries as described above.:

   ```
   $ vi loolwsd.xml
   ```

   Be aware the **`docker run`** from above altered the following entries in the `loolwsd.xml` file:

   - the `domain=` definition edits the `<wopi></wopi>` and the `<webdav></webdav>` entries.
   - the `admin=` definition edits the `<admin_console></admin_console>` entries.

3. Copy the `loolwsd.xml` file back to the Collabora Online container:

```
$ docker cp loolwsd.xml <containername>:/etc/loolwsd/loolwsd.xml~
$ docker exec -u 0 <containername> chown lool:lool /etc/loolwsd/loolwsd.xml~
$ docker exec <containername> mv /etc/loolwsd/loolwsd.xml~ /etc/loolwsd/loolwsd.
↪xml
```

4. Restart the Collabora Online container:

```
$ docker stop <containername>
<containername>
$ docker start <containername>
<containername>
```

To update the Collabora Online image proceed as follows:

```
$ docker stop <containername>
$ docker rm <containername>
```

and repeat all steps from above.

5.11.3 BSCW office package configuration

The *office* package is not enabled by default on new BSCW servers and requires external components. Before enabling the *office* the following additional packages `pyjwt` and `pycryptodome` are required.

Packages name(s) for these Linux distributions:

- Debian based systems: `python3-pycryptodome python3-jwt`
- EL 8/9 based systems:

```
$ su -
# pip-3.11 install pycryptodome pyjwt
```

If disabled, the package may be enabled by running:

```
bin/bsadmin package -e office
```

After the package is activated, the package must be configured using the following directives in the instance configuration (`<bscw-runtime-path>/conf/config.py`):

- `OFFICE_PROVIDER`

  defines the office provider, either "**OO**" for ONLYOFFICE or "**MS**" for Microsoft 365 or "**C**" for Collabora Office (deprecated).

- `OFFICE_VERSION`

  allows to set the configuration for a specific version of the Online Office provider. The value `default` uses the preconfigured settings. For details see the configuration file `<bscw-runtime-path>/conf/config_<provider>.py` (e.g. `config_oo.py` for ONLYOFFICE)

- `OFFICE_HOST`

  All provider definitions assume a scheme (http:// or https:// before the domain or IP address). `OFFICE_HOST` defines

  - for the "**OO**" provider

    the URL to the ONLYOFFICE documentserver (e.g. http://localhost).

  - for the "**MS**" provider

the full WOPI discovery URL, as provided by a Microsoft 365 provider. To enable Microsoft 365 with your BSCW instance a DNS entry into the domain wopi.bscw.de is required, ask support@orbiteam.de for details.

– for the "**C**" provider

the IP address of Collabora Online Office service (deprecated). By default, the IP address of Collabora Online Office is set to '127.0.0.1'.

Note

Due to lack of customer demand, only versions up to 4.0.9 are supported.

- `OFFICE_PORT`

  defines the port of the Online Office service. By default, Collabora uses port 9980, and MS Office and ONLYOFFICE use port 443. With `OFFICE_PORT = None` (default) these values are used.

- `OFFICE_SERVER_ROOT`

  defines an alternative URL to the BSCW instance for use in DMZ environments. If `OFFICE_SERVER_ROOT = None` (default), `SERVER_ROOT` is used.

- `OFFICE_JWT_SECRET`

  defines a shared secret between BSCW and ONLYOFFICE for secure data exchange. Compare the ONLYOFFICE definitions (see `/etc/onlyoffice/documentserver/local.json: services.secret.{inbox|outbox|session}.string`). Additionally requires PyJWT (default: `OFFICE_JWT_SECRET = None`).

- `OFFICE_JWT_HEADER`

  defines the name of the HTTP header where the JSON web token (JWT) is stored. Compare the ONLYOFFICE definitions (see `/etc/onlyoffice/documentserver/local.json: services.token.{inbox|outbox}.header`) (default: `OFFICE_JWT_HEADER = None`).

- `OFFICE_FORCE_SAVE`

  (for "OO" provider only) If set to True, the edited document will be saved before another user may take over the document lock (default: `OFFICE_FORCE_SAVE = True`).

Ensure your Apache HTTP server modules `authn_core`, `authz_core`, `filter`, `proxy`, `proxy_wstunnel`, `proxy_http`, `ssl`, and `substitute` are enabled and restart the HTTP server as root user:

- Debian based systems:

```
$ su -
# a2enmod authn_core authz_core filter
# a2enmod proxy proxy_http proxy_wstunnel ssl substitute
# systemctl restart apache2
```

- EL based systems:

```
$ su -
# vim /etc/httpd/conf.modules.d/00-base.conf
# vim /etc/httpd/conf.modules.d/00-proxy.conf
# vim /etc/httpd/conf.modules.d/00-ssl.conf
# systemctl restart httpd
```

Note

If you use HTTPS, both BSCW and the online office services must be able to *validate* each other's SSL certificates. In particular, the required intermediate certificates (chain) to the certificate issuer certification authority must be provided.

After each change of one of a *OFFICE_* ` directive the Apache HTTP server configuration must be recreated with:

```
bin/bsadmin conf_apache
```

This updates the Apache HTTP server configuration file (<bscw-runtime-path>/conf/apache24/site.conf) with a online office configuration block (resp. includes a file <bscw-runtime-path>/conf/apache24/service_token.conf) for the selected provider which must be integrated into the virtual host configuration of the BSCW instance.

5.12 Poll

The `poll` package provides several types of opinion surveys in BSCW. These surveys can be left open to the public (*Poll*) or limited to a closed participant group (*Voting*).

Appointment Schedulings provide a convenient way to agree on meeting dates with a larger group of participants. While Polls are available in all editions of BSCW, Votings and Appointment Schedulings require a professional license.

The `poll` package is enabled by default on new BSCW servers and requires no external components. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e poll
```

When the package is activated a new object 'Poll' is enabled at the user interface (in *[File → New]* menu).

There is no special configuration required for this package. However you may change some defaults and system behaviour in the instance configuration file (<bscw-runtime-path>/conf/poll/config.py) by appending configuration directives. The possible configuration directives and their defaults are as follows:

- `VOTING_TOKEN_EXP`

  Voting participants receive email notifications with links to access the Voting. Each link includes an individual security token with temporary validity. After the token has expired, the access to the Voting is denied. The token's lifetime usually depends on the specified end date of the Voting to allow access (and voting) at least until the end of the Voting. If no Voting end is specified, the token's lifetime is calculated from the start date (or the current time, if no start date is specified). `VOTING_TOKEN_EXP` allows to specify the lifetime of tokens in case no clear end date can be calculated.

  Possible values are strings which may be specified in seconds or minutes (hours, days, weeks) by using an additional `s`, `m` (`h`, `d`, `w`) suffix.

  Example: `VOTING_TOKEN_EXP = '1w'` would specify one week

- `SCHEDULE_SUGGESTIONS_ENABLED`

  defines if the option 'New participants may suggest others for voting' should be available for Appointment Schedulings. (Otherwise, `SCHEDULE_SUGGESTIONS_DEFAULT` will apply)

- `SCHEDULE_SUGGESTIONS_DEFAULT`

  defines the default value for the option 'New participants may suggest others for voting'.

- `SCHEDULE_CONFIRMATION_ENABLED`

  defines if the option '*Suggested participants need to be confirmed by me*' should be available at all. (Otherwise, `SCHEDULE_CONFIRMATION_DEFAULT` will apply)

- `SCHEDULE_CONFIRMATION_DEFAULT`

defines the default value for the option 'Suggested participants need to be confirmed by me'

- SCHEDULE_CONDITIONALVOTE_ENABLED

  defines if the option 'Participants may vote with Maybe' should be available at all. (Otherwise, SCHEDULE_CONDITIONALVOTE_DEFAULT will apply)

- SCHEDULE_CONDITIONALVOTE_DEFAULT

  defines the default value for the option 'Participants may vote with Maybe'

5.13 SSO – Single Sign On

BSCW supports different mechanisms for integration with an existing Single Sign On (SSO) infrastructure. By using SSO a BSCW server may be integrated into an IT infrastructure where different applications share the same user base and provide a central login mechanism the end users (e.g. in a web portal).

BSCW now supports CAS (Central Authentication Server), an open source SSO server developed by Yale University (see https://www.apereo.org/products/cas), Shibboleth, a standards-based, open source middleware software which provides SSO even across organizational boundaries (see https://www.shibboleth.net/) and OpenID (see https://openid.net).

5.13.1 CAS Authentication

CAS authentication allows users to authenticate at a central authentication server. In combination with a LDAP service first time CAS users are automatically registered at their first login at the BSCW server. To configure CAS

1. Edit the main server configuration file <bscw-runtime-path>/conf/config.py as follows:

   - Define the URL of the CAS Single Sign On service, e.g.:

   ```
   CAS_URI = 'https://sso.domain.org:8080/cas'
   ```

   - Define a Single Sign On prefix and enable cookie authentication for this prefix:

   ```
   SSO_PREFIX = '/cas/'
   SSO_COOKIE = ('bscw_cas', None, 120)
   ```

   - To define an alternate secure authentication path for CAS enter the tuple:

   ```
   (SSO_PREFIX, { 'mode': AUTH_MODE, 'cookie': SSO_COOKIE })
   ```

   in *SCRIPTS_ALIASES*, e.g.:

   ```
   SCRIPTS_ALIASES = {
       '/sec/': [
           (SSO_PREFIX,
               {'mode': AUTH_MODE, 'cookie': SSO_COOKIE }),
       ]
   }
   ```

2. Create a new Apache HTTP server configuration with

   ```
   $ ./bin/bsadmin conf_apache -n
   Configure 'gzip' compression ...
   Configure 'static' resources 'var/www/20241107-1142-be1c0b4'...
    (Long time future expire dates)
   Configure public prefix '/pub/' (Apache 24)...
    (No authentication)
   Configure secure prefix '/sec/' (Apache 24) ...
   ```

```
 (HTTP_AUTHORISATION passed to BSCW)
 (Cookie authentication enabled)
Configure secure prefix '/cas/' (Apache 24) ...
 (HTTP_AUTHORISATION passed to BSCW)
 (Cookie authentication enabled)

Creating Apache HTTP server configuration files in
<bscw-runtime-path>/conf/apache24
 mod.conf ... module configuration file
site.conf ... virtual host site configuration file
bscw.conf ... BSCW configuration file
```

and restart your web server to reload its configuration, e.g.:

```
> su -
# systemctl restart apache2
# systemctl restart httpd
```

5.13.2 OpenID

In order to activate OpenID single-sign-on registration and authentication see https://openid.net.

The BSCW OpenID module needs the `python3-openid` Python package.

- On Linux systems the `python3-openid` package of the distribution should be installed.

  Packages name(s) for common Linux distributions:

  - Debian based systems: `python3-openid`
  - EL 8/9 based systems:

    ```
    $ su -
    # pip-3.11 install python3-openid
    ```

Afterwards edit the main server configuration file `<bscw-runtime-path>/conf/config.py` and define:

```
OPEN_ID_DEFAULT = ("openid.net", "https://openid.net/get-an-openid")
```

This will show a link to the "default provider" `openid.net` in the login page. This enables a user to get an OpenID URL if he does not have one. If you do not want to give a link to a default provider set:

```
OPEN_ID_DEFAULT = ("", "")
```

Note

COOKIE_AUTHENTICATION must be set and location (see above) must be `None` when OpenIDs are used.

OpenID registration and authentication is disabled with:

```
OPEN_ID_DEFAULT = None
```

5.13.3 Shibboleth Authentication

Shibboleth allows users to log in via Single Sign-On as well as normal users to log in via user name and password. First time Shibboleth users can be automatically registered and their profile can be updated on every login, so that their user details always up-to-date.

Shibboleth Service Provider configuration

In order to use BSCW with Shibboleth a Shibboleth Service Provider (e.g. Apache `mod_shib`) has to be installed on the same host like BSCW. Please refer to the deployment guides of your federation or to the official Shibboleth Wiki https://wiki.shibboleth.net/confluence/display/SHIB2/ on how to install and configure a Shibboleth Service Provider in your environment. Another good source of information with configuration examples are the "guides for SWITCHaai" at https://www.switch.ch/aai/guides/.

BSCW needs at least the following values for an authenticated Shibboleth user:

- Application ID (`Shib_Application_ID`)
- Identity Provider (`Shib_Identity_Provider`)
- Email address (mail)

The environment variables `Shib_Application_ID` and `shib_Identity_Provider` should be automatically set by *mod_shib* (BSCW automatically switches back to `HTTP_SHIB_APPLICATION_ID` and `HTTP_SHIB_IDENTITY_PROVIDER` for old (not recommended) Shibboleth 1.3 installations, see below).

Please make sure that the mail attribute is available for all Shibboleth users once they are authenticated. Also ensure that the Shibboleth 2.x `attribute-map.xml` maps the above attributes to a web server environment variable with the name given between parentheses.

BSCW configuration

You must add an entry for your federations at two places within the instance configuration file (`<bscw-runtime-path>/conf/config.py`). In the example we show it for the federation `'SnakeOilProviders'` and also as a commented entry for `'BscwTest'`:

```
FEDERATIONS = {
    'SnakeOilProviders': ('login_shib', '/snakeoil-login.gif', (
        (r'[^@]*@snake-oil\.com', 1),
        (r'[^@]*@snake-oil\.de', 1),
    )),
    # Another federation
    #'BscwTest': ('login_shib', '/bscwtest-login.gif', ()),
}

SCRIPTS = {
    ...
    '/pub/snakeoil/':
        ('SnakeOilProviders', '', CREATE_SCRIPTS, SECURE_SCRIPTS),
    # Another federation
    #'/pub/bscwtest/':
    #    ('BscwTest', '', CREATE_SCRIPTS, SECURE_SCRIPTS),
}
```

Note

- If you need more than one federation you must configure them with different Application Ids in the Shibboleth configuration. The Application Ids must be 'default' or match the name given in *FEDERATIONS* and *SCRIPTS*.

- If you make changes like this to the instance configuration file (<bscw-runtime-path>/conf/config.py) you have to regenerate the Apache configuration and index pages with **bsadmin conf_apache** and **bsadmin index_page** respectively. This also requires a restart of the Apache server.
- If Shibboleth is the only/primary authentication system for BSCW, we also recommend setting:

```
SERVER_LOGOUT = '/Shibboleth.sso/Logout?return=/pub/'
```

(it depends on your Shibboleth configuration and we have not a good idea yet how to do it with more than one federation).

This then destroys not only the BSCW but also the Shibboleth session and sends the user back to the BSCW start page. This should work even if a user does not have a Shibboleth session.

The following CGI environment variables are interpreted by BSCW:

Shibboleth 2.x	Shibboleth 1.3	BSCW key
Shib_Application_ID	HTTP_SHIB_APPLICATION_ID	shib_app_id
Shib_Identity_Provider	HTTP_SHIB_IDENTITY_PROVIDER	shib_idp
mail	HTTP_SHIB_INETORGPERSON_MAIL	email
givenName	HTTP_SHIB_INETORGPERSON_GIVENNAME	givenname
sn	HTTP_SHIB_PERSON_SURNAME	surname
org-dn	HTTP_SHIB_SWISSEP_HOMEORGANIZATION	org
telephoneNumber	HTTP_SHIB_PERSON_TELEPHONENUMBER	phone
homePhone	HTTP_SHIB_INETORGPERSON_HOMEPHONE	homephone
mobile	HTTP_SHIB_INETORGPERSON_MOBILE	mobile
preferredLanguage	HTTP_SHIB_INETORGPERSON_PREFERREDLANGUAGE	language

BSCW needs only values for `shib_app_id`, `shib_idp`, and `email`. The others are optional. If your Shibboleth installation sets other CGI environment variables, e.g. `Shib-IDP` instead of `Shib_Identity_Provider` and `Mail` instead of `mail` (i.e. you don't want to use an Attribute alias) then you can redefine the environment keys in the instance configuration file (<bscw-runtime-path>/conf/config.py) by adding:

```
HTTP_SHIB_ENVIRONMENT = [
    #(bscw_key, evironment_key)
    ('shib_idp', 'Shib-IDP'),
    ('email', 'Mail'),
]
```

5.14 Task

This package provides an optional feature for BSCW that allows users to create tasks that may be combined to ad-hoc (mini-)workflows.

The *task* package is enabled by default on new BSCW servers and requires no external components. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e task
```

Note

This feature is only available in the professional edition o BSCW.

See also

Chapter 7 *BSCW Help* for further details.

5.15 WebFolder

The *WebFolder* package provides an optional feature for BSCW that allows users to create so-called Website Folders, special folders containing a website, rather similar to a Wiki system.

The *WebFolder* package is enabled by default on new BSCW servers and requires no external components. If disabled, the package may be enabled again by running:

```
bin/bsadmin package -e WebFolder
```

There is no required configuration, the configuration defaults should work on all systems. You may define additional configuration details by creating the configuration file <bscw-runtime-path>/conf/WebFolder/config.py and appending one of the following variables:

- WF_DEFAULT_SAMPLE

  Number (beginning with 0) of default WebFolder sample content, which is offered in "New Website Folder". A usual BSCW server comes with four sample contents: "basic" (0), "project" (1), "faq" (2) and "demo" (3). It is also possible to extend the offered sample contents. Please contact the BSCW support for detailed information.

- WF_DEFAULT_DESIGN

  Number (beginning with 0) of the default WebFolder design, which is selectable in "New Website Folder". An off-shelve BSCW server has four designs built-in: Tree navigation (0), Query navigation (1), Tree in orange color (2) and Query in orange color (3). If you wish to add more designs, please contact the BSCW support.

- WF_MAX_VERSIONS

  Specifies the predefined setting for auto-versioning in Website Folders. Possible values:

  1: New documents are not set under version control.

  0: New documents are automatically set under version control and all revised versions will be stored.

  -1: Use global (server-wide) *MAX_VERSIONS* setting.

  >1: New documents are automatically set under version control, but only the given number of latest versions will be kept. Saving a new version will remove the oldest version if the limit has been reached. The default setting is to keep 10 versions.

- WF_DEFAULT_TEMPLATE_DOC

  Name of the default layout page, as offered in "New Layout Page". The layout pages newTreetemplate and newQuerytemplate are part of any standard BSCW server and implement different navigation types.

- WF_DEFAULT_TEMPLATE_DOC_NAME

  Default name for new layout pages inside of BSCW. Note that the page itself might contain information about a different name, which is used at higher priority.

- WF_DEFAULT_STYLE_DOC

  Name of the default style definition, as offered in "New Style Definition". Pre-defined style definition is newDdefaultstyle.

- WF_DEFAULT_STYLE_DOC_NAME

Default name of new style definitions inside of BSCW.

- `WF_DEFAULT_TEMPLATE_FOLDER_NAME`

  Default name of the template folder inside of Website Folders. Template folders are optional, but useful to hold templates for empty pages or other often-used page types.

See also

Chapter 7 *BSCW Help* for end-user help concerning Website Folders.

CHAPTER

SIX

ADMINISTRATION OF BSCW SERVERS

There are three methods to administer the BSCW server:

- through a HTML interface available to those users who have been registered as server administrators in the variable *SERVER_ADMINS* of the BSCW server instance configuration file `<bscw-runtime-path>/conf/config.py` (see section 4.2 *conf/config.py*),
- by direct editing the configuration files described in section with a text editor of your choice,
- through the **`bsadmin`** scripts which are available in the instance directory of the BSCW server (the **`bsadmin`** script may only be invoked by the user who installed the BSCW instance, e.g. the BSCW administrator user ID).

It may depend on the particular task which methods can or has to be used. For instance, the initial set-up of the BSCW server requires editing the BSCW instance configuration file `<bscw-runtime-path>/conf/config.py` with a text editor. If the server is running, further modifications of the configuration file may either be done by direct editing or through the HTML interface. Administration tasks such as removing or adding users require a running server and can only be done through the HTML interface or with the **`bsadmin`** scripts. Starting or stopping the server can only be done with the **`bsadmin`** script.

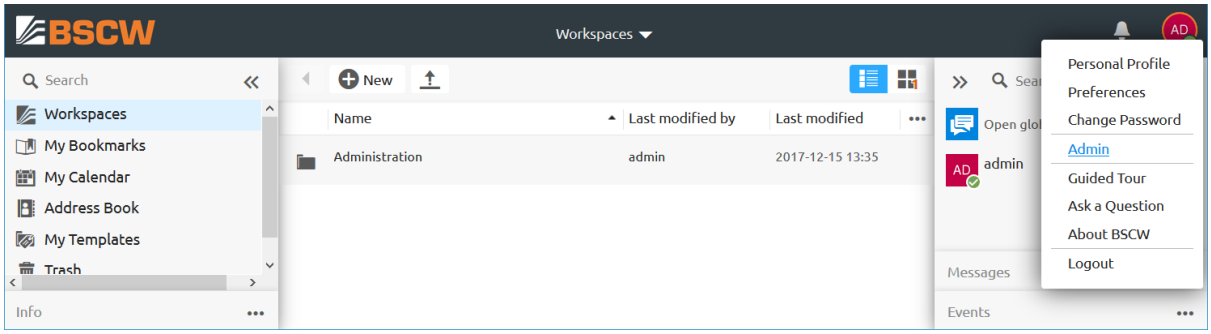
In general, it is recommended to use the HTML interface after the BSCW server has been installed successfully and started with the **`bsadmin`** script since it provides all the functionality which is needed for a system administrator.

Please note that **a server administrator needs to understand what s/he is doing**. Any actions carried out by the server administrator may destroy data or may even damage the BSCW server instance.

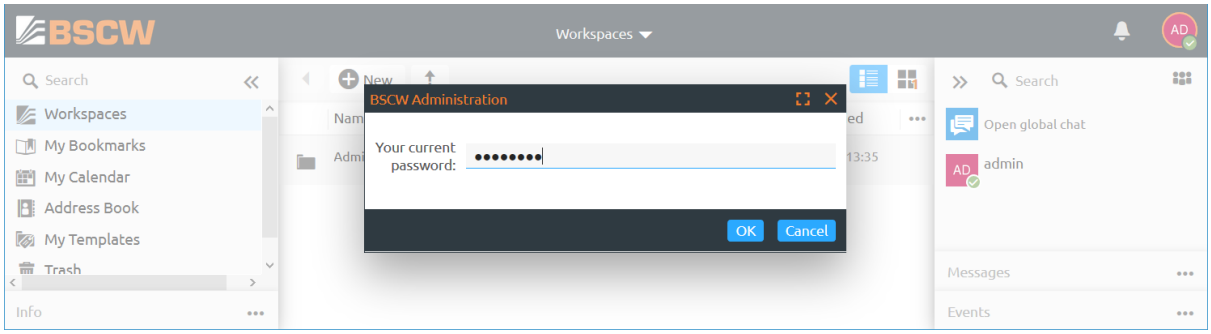
As a server administrator you are also responsible for other measures against loss of data. Please remind to set up the BSCW **daily garbage collection**. It is urgently recommended to **install a regular back-up procedure** for the data of the BSCW server, e.g., to recover in case of hardware or software crashes. In particular, it is highly recommended to make a back-up of the system, including the configuration files, if you want to make modifications to the system through the administrator tools described in the following sections.

6.1 Administration using the Web Interface

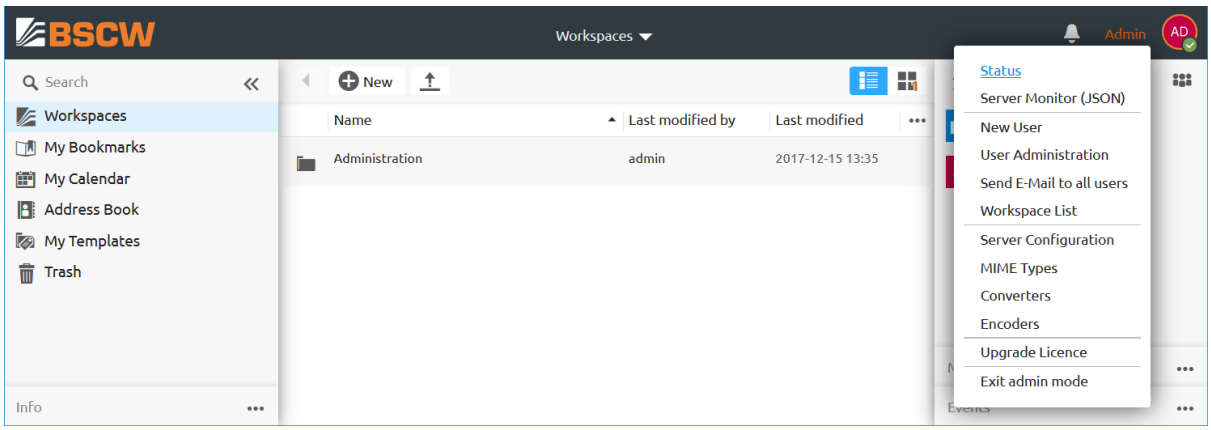
A running server can be administered using the web interface. (Note most administration tasks do not need to shut down the server; some even require a running server.) If you are registered as a BSCW administrator in the variable *SERVER_ADMINS* of the BSCW instance configuration file `<bscw-runtime-path>/conf/config.py`, you will find the action *[Admin]* in the user menu in the right upper corner of the interface.



Administrator users explicitly need to log in a second time with their password to gain BSCW administrator rights. Without this additional administrator authentication no administrative rights are applied to their account.



After successful login the administrator status is indicated by an additional *[Admin]* menu in the right upper corner of the interface:

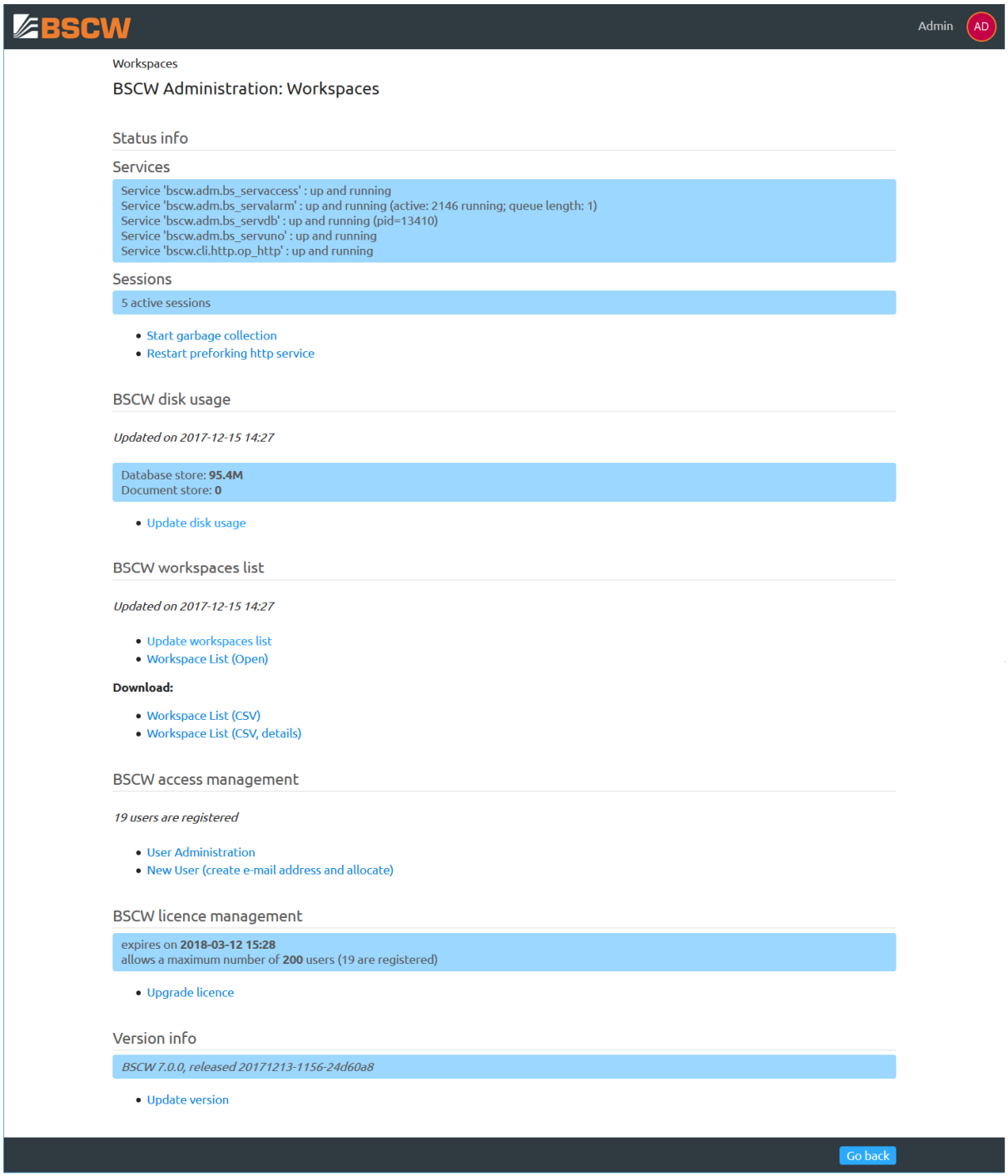


Using the administrative menu allows to perform different administrative tasks. The *[Admin]* menu contains the following entries

- the *[Status]* entry displays the BSCW status page,
- the *[Server Monitor (JSON)]* entry creates an access token to get statistics data for monitoring in JSON format,
- the *[New User]* and *[User administration]* the entries provide BSCW user access management functionality to search, modify, create or delete new users,
- the *[Send E-Mail to all users]* entry allows to send administrative email to all users,
- the *[Workspace List]* entry displays a table of all existing shared workspaces,
- the *[Server Configuration]* allows to display the BSCW server configuration via the web interface,
- the *[Upgrade licence]* entry summarizes the BSCW licence management and provides functionality to apply for a new licence by contacting the OrbiTeam licence service,
- the *[Exit admin mode]* entry disables the administrative rights of the current user again.

6.1.1 BSCW status page

The BSCW status pages provides an overview about the BSCW management functions and lets you perform all major administrative tasks.



The **Services** section shows all running BSCW services: the database server (*bs_servdb*), the user notification service (*bs_servuno*), the access service (*bs_servaccess*), the pre-forked BSCW HTTP server (*op_http*) and the alarm service (*bs_servalarm*). The alarm service additionally displays the actual queue length of pending alarms or jobs which are scheduled for execution.

Note

- If the alarm service (*bs_servaccess*) in the service section shows the status **not running** there is a problem

with the web server `localhost` configuration. Please refer to the system log file `<runtime>/var/log/sys.log` to get a a more detailed error description and fix the webserver configuration, see *Apache HTTP Server Configuration* for details.

- The queue length may increase quickly due to schedules preview calculation jobs which will be executed sequentially one by one.

If you click on *[Start garbage collection]* the garbage collector is started, which will become necessary if you have downloaded a new licence and want to install it.

The *[Restart integrated http service]* option is only available if the pre-forking BSCW HTTP server is enabled (see `http`). Using the BSCW HTTP server requires a restart after *each* configuration change.

The *[Update disk usage]* calculates the used disk resources of the BSCW database server.

[Update workspace list] allows to update an overview of all existing workspaces. You can immediately browse this workspace list by clicking on *[Workspaces (Open)]* or download it as comma separated list file by choosing *[Workspaces (CSV)]* resp. *[Workspaces (CSV, details)]*.

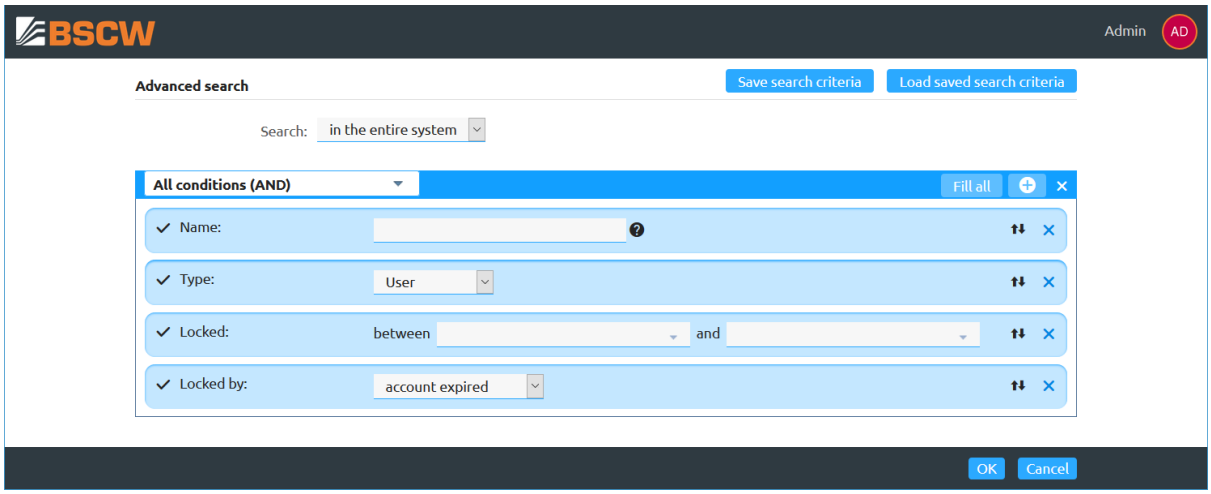
[User administration] or *[New User]* allows to search, modify, create or delete user accounts.

Using *[Upgrade licence]* form allows to perform licence upgrades.

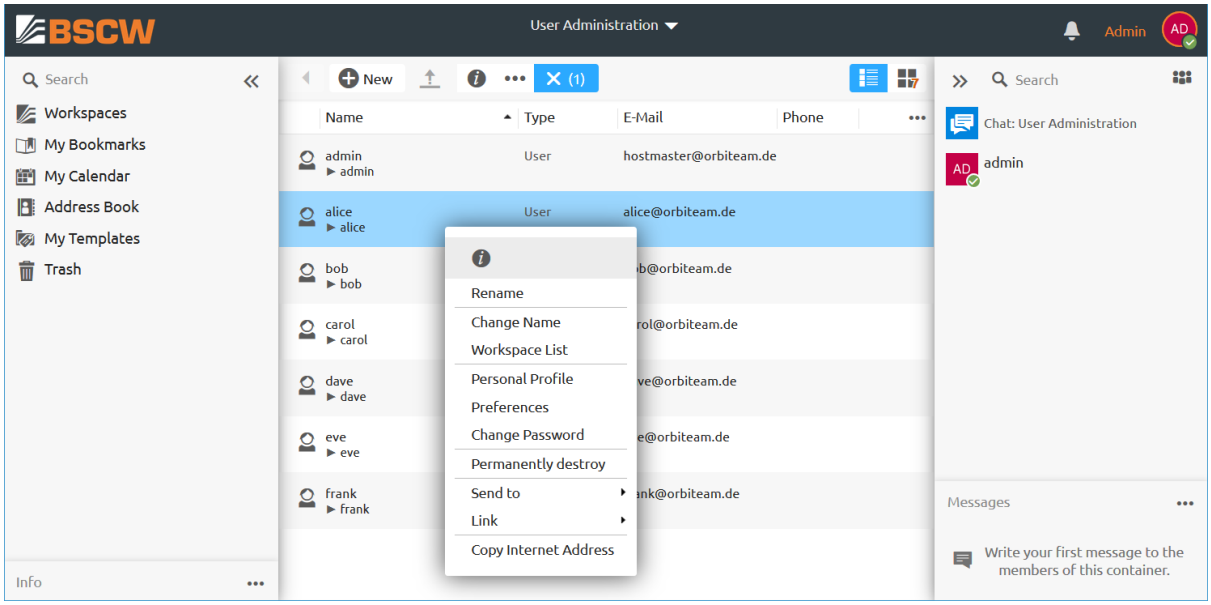
Finally *[Update version]* will open a link to the BSCW download web site.

6.1.2 BSCW Access Management

The *[User administration]* and the *[New User]* menu entries provide BSCW user access management functionality to search, modify, create or delete users. Clicking on *[User administration]* shows the following form to search for registered users of the system:



After specifying a query and submitting it, the system will present a list of one or more users (in case the query matched registered users). Note the search can be restricted to particular attributes, e.g. as shown above to user *name*, *last login before* or *locked since* dates. The result of a query may look as follows:



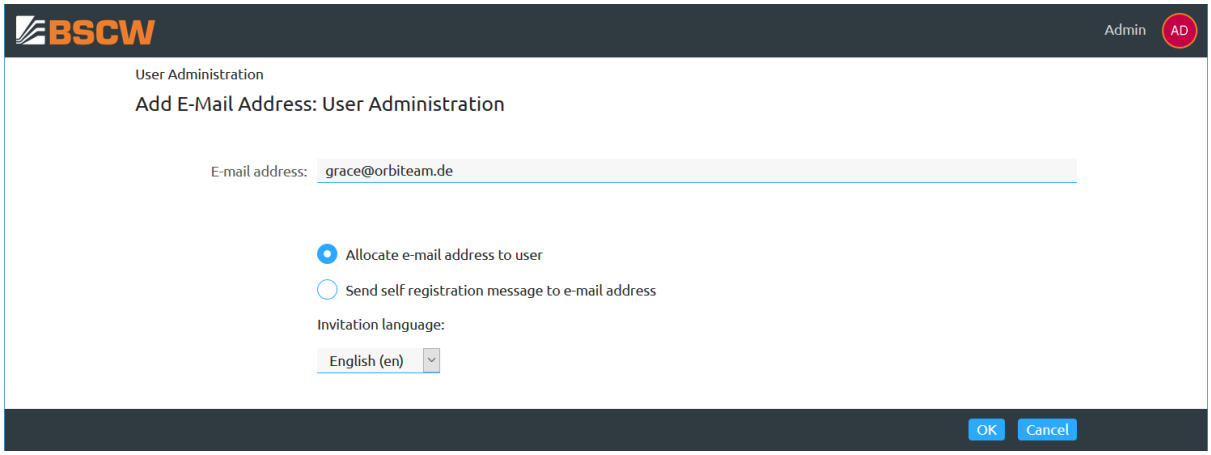
Using the action menu provided on each result entry, the BSCW administrator may remove users from the system, rename users, edit user properties such as language preferences, change the users' password or access rights.

The creation of a new user is performed in two steps. In a first step the BSCW administrator creates a new email address which is afterward allocated to a (new) user.

See also

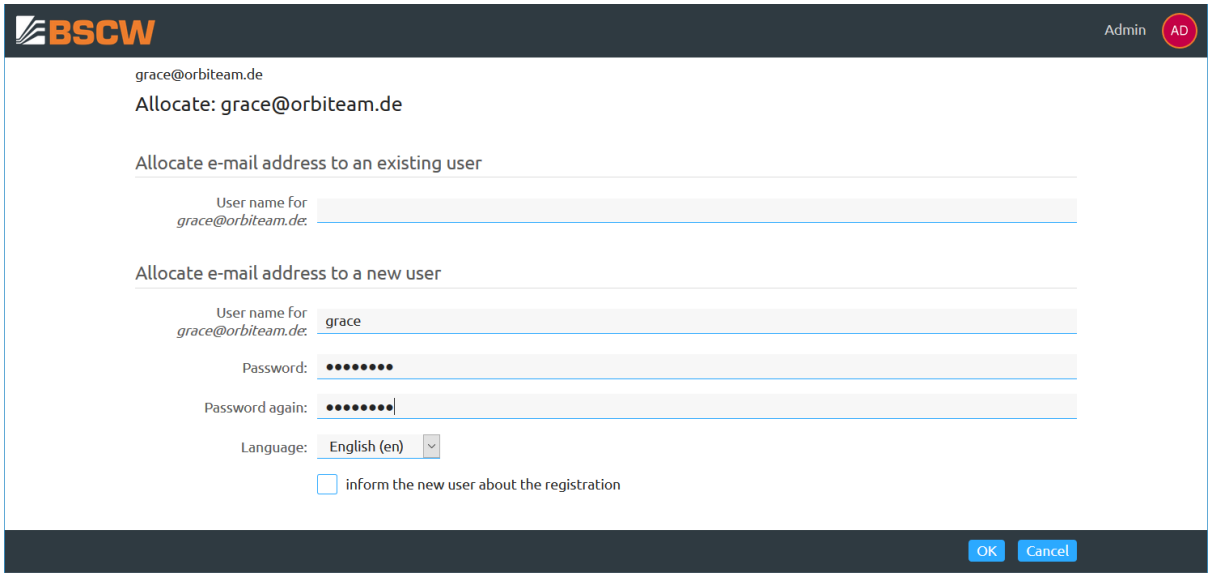
Section 6.3 *User administration*.

Clicking on *[New User]* shows the following form, which is used to add a new email address to the system

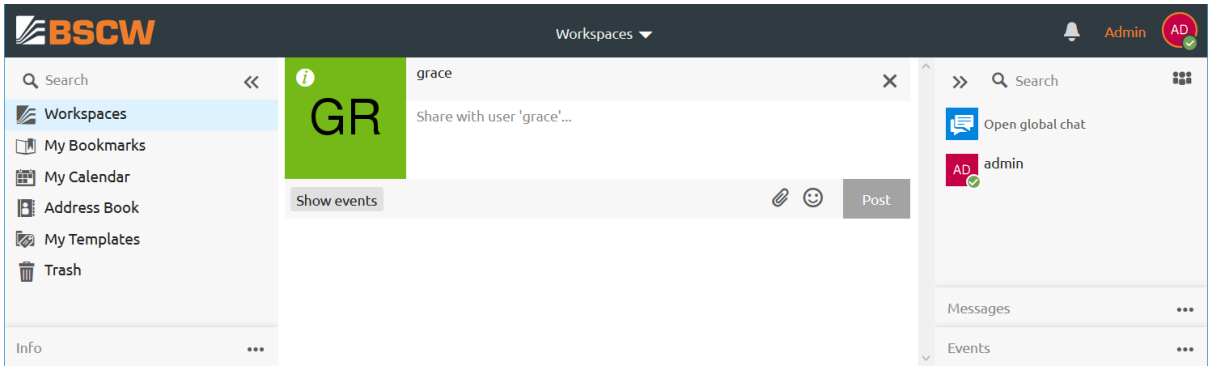


After entering an email address and clicking on *[OK]* the new email address must be allocated to a (new) user. When selecting the option `[x] Send self registration message to e-mail address` a self-registration notification is sent to email address.

Alternatively when selecting the default option `[x] Allocate e-mail address to user` an user is allocated to the new email address within the next form:

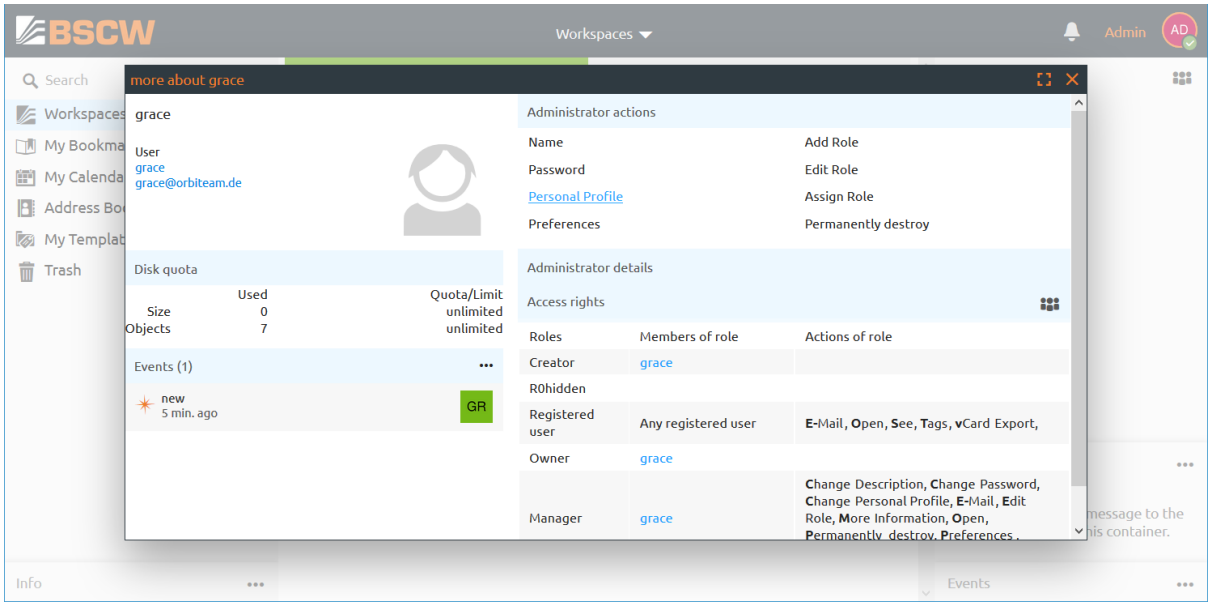


The allocation of an e-mail address opens the chat view of the new user. To change settings of the new user, open the info page by clicking the white *(i)* overlay in the users' icon:



The info page allows to apply *Administrator actions* such as

- renaming the user (`Name`)
- changing the password or user locking (`Password`)
- altering the profile settings of the user (`Personal Profile`)
- changing the users' preferences (`Preferences`)
- editing the users' roles (`Add Role`, `Edit Role`, `Assign Role`)
- destroying the user (`Permanently destroy`)



The administrator may repeat the allocation of the email address to another registered user, or set the email address to "bounced" status (see section 6.3 *User administration*).

6.1.3 Configuration

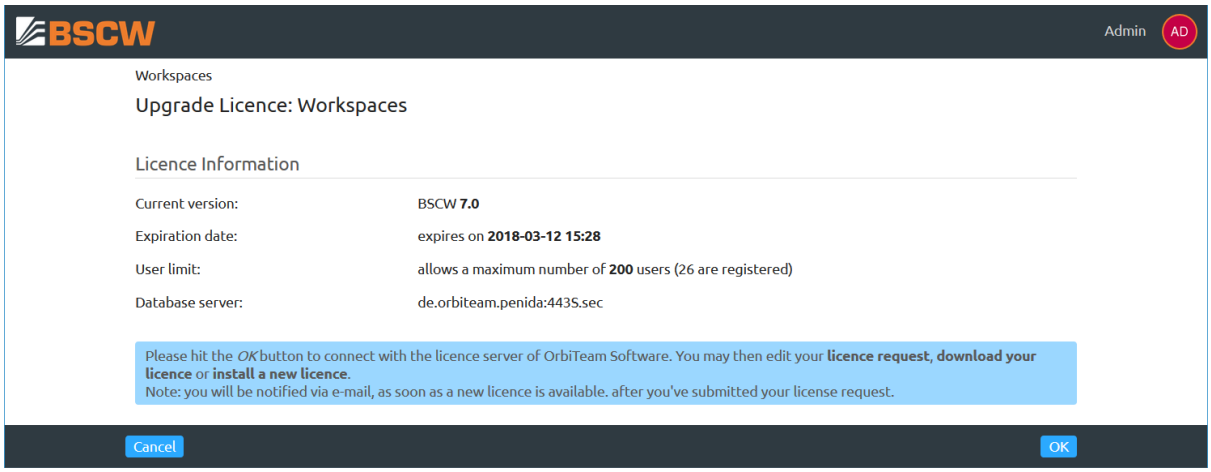
The configuration section of the administrative menu allows to view the BSCW configuration via the web interface by using the entry

- Server Configuration

All shown configuration directives are related to the configuration files described in chapter 4 *Configuration of BSCW Servers*.

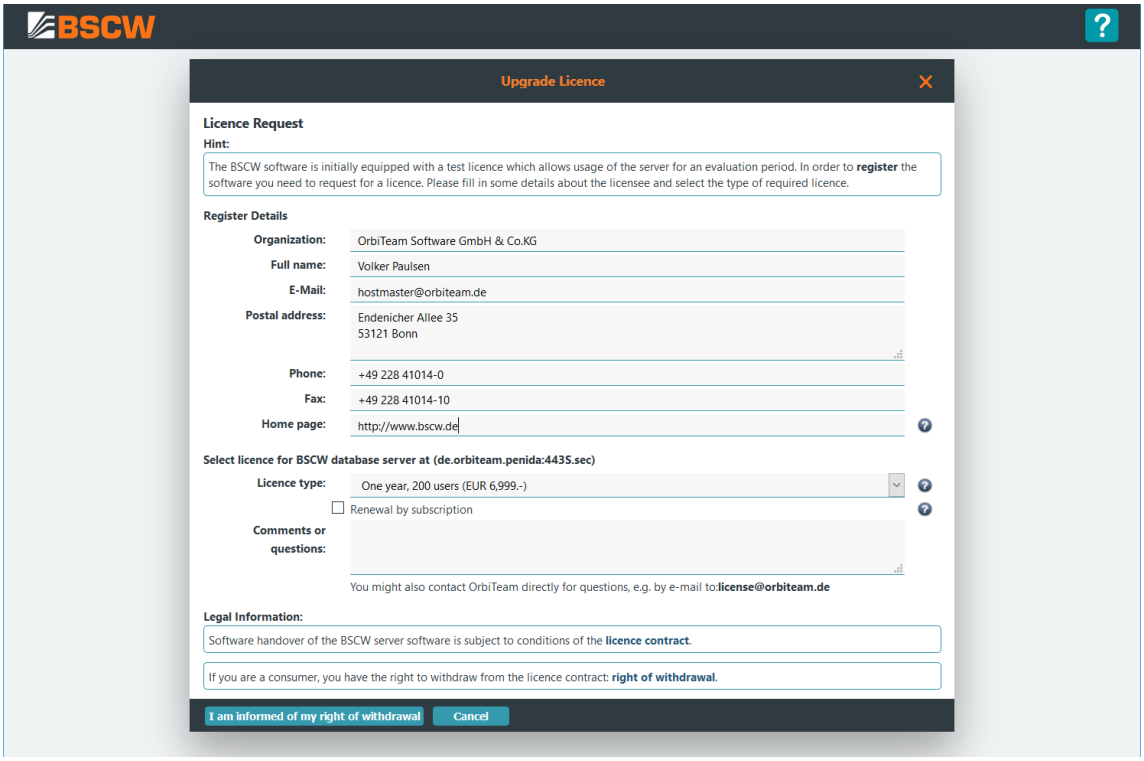
6.1.4 BSCW licence management

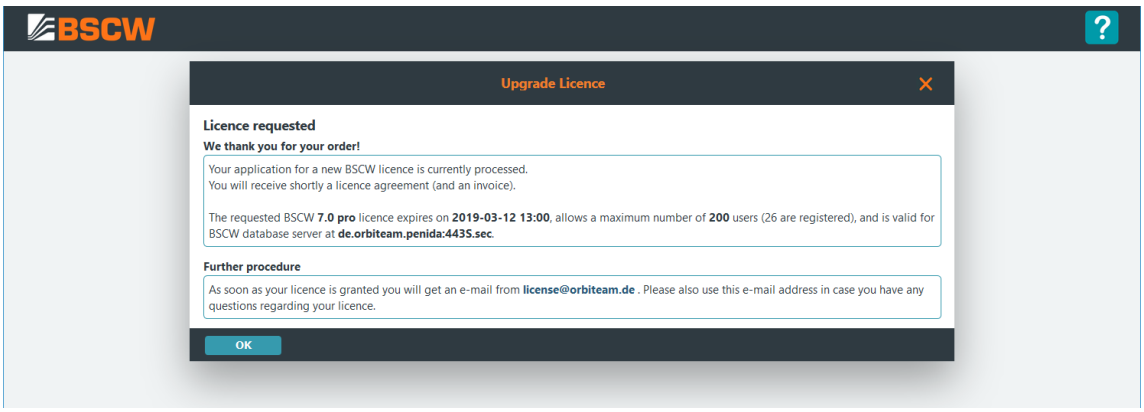
The BSCW licence management allows to apply for a licence resp. to prolong an expired licence and to install a granted licence To apply for a licence open the *Upgrade Licence* form by clicking the *[Upgrade Licence]* button:



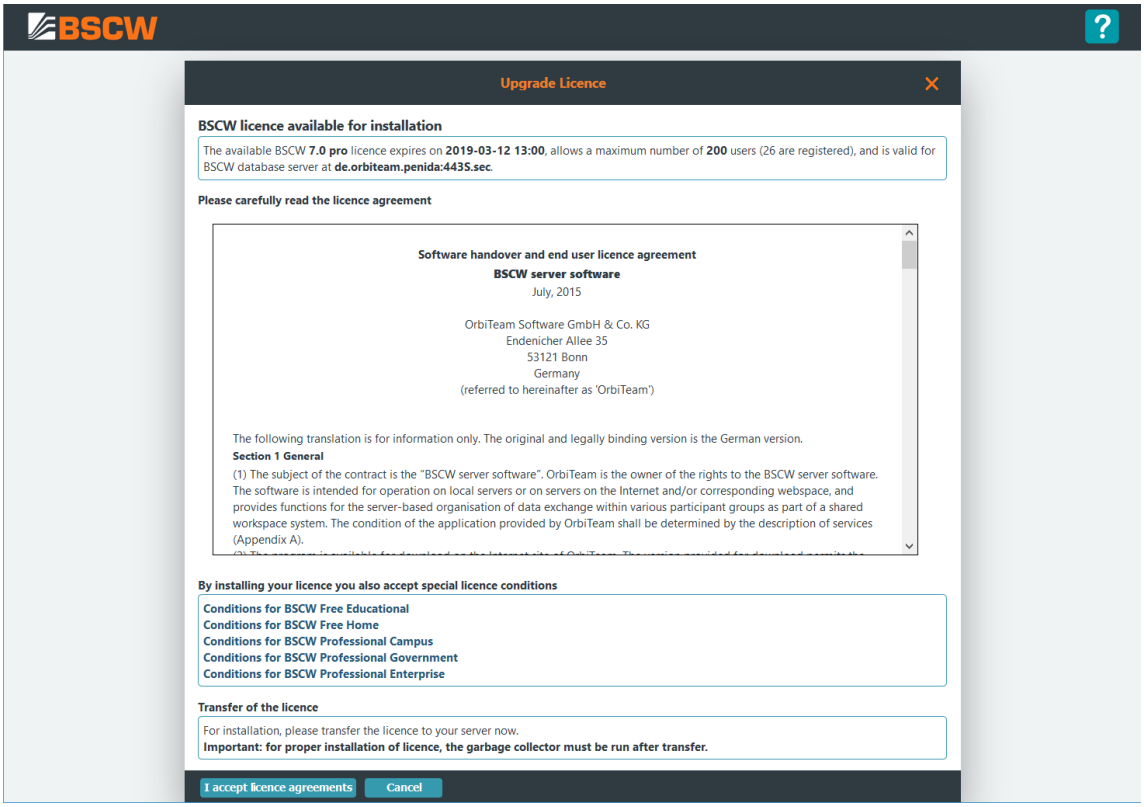
Next press *[OK]* which allows to edit a licence request, to download or to install a licence:

- When applying for a licence please fill in the licence request form and press *[OK]* to submit the licence request to OrbiTeam. Further details about the licence acquisition process are given in chapter 8 *BSCW license*.

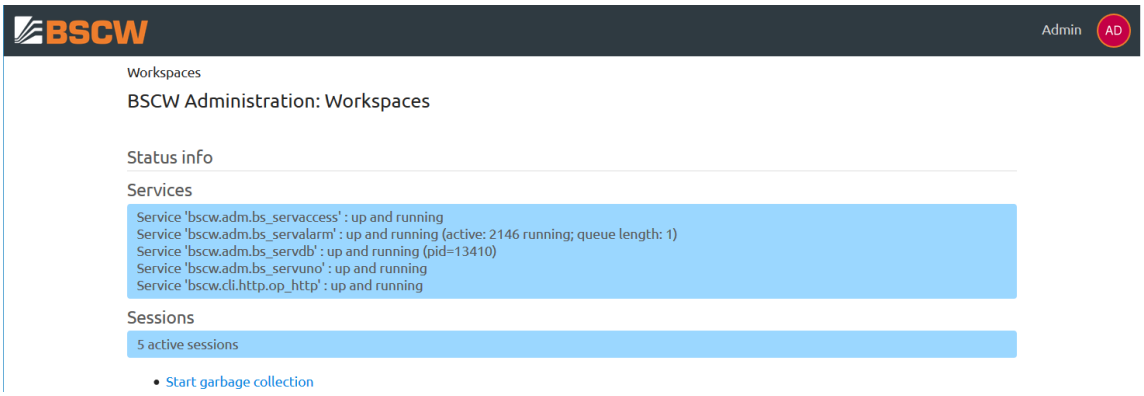




- When downloading a granted licence you have to accept the licence agreement



and run a garbage collection by pressing `[Start garbage collection]` on the BSCW status page:



6.2 Administration using the bsadmin script

The **bsadmin** script constitutes the central access point to the BSCW instance from the command line. It is located in the bin directory of each BSCW instance: **<bscw-runtime-path>/bin/bsadmin**.

The primary purpose of the **bsadmin** script is starting and stopping the BSCW server, starting the garbage collector and executing the workspace report function. The garbage collector is normally triggered on a regular basis, e.g., by a cron job on Unix systems. Therefore the normal usage of the **bsadmin** script is only as:

```
bin/bsadmin start
bin/bsadmin stop
bin/bsadmin garbage
```

In addition, the script can be used for a number of administration functions.

For historical reasons the **bsadmin** script contains also a number of functions which can (and should!) be carried out through the HTML interface. Furthermore, it provides features which are used during software development

of the BSCW server software, e.g., for debugging purposes. Since these functions are only useful for the BSCW software developers but not for the normal BSCW server administrators, they are not explained below.

The commands marked with (I) are normally used during installation only and are invoked automatically. The commands marked with (D) provide debugging information (do not use without advice from support@orbiteam.de, otherwise you may damage your database).

When using the **bsadmin** command without any arguments, it displays the list of possible arguments as follows:

```
bsadmin archive          archive an artifact via command line
bsadmin chkconfig        check configuration make directories and cgi scripts    (I)
bsadmin chkfiles         check for missing document files
bsadmin chkjobs          check for blocked jobs
bsadmin chksearchbag     checks SearchBag for superfluous entries
bsadmin chkurl           change URL object locations
bsadmin chkworkspaces    rebuild workspace list
bsadmin chpwd            change user password and lock/unlock user
bsadmin chtype           change content type of given document
bsadmin clean_anon       remove objects in "anonymous" top level folders
bsadmin clstab           Print classtable of database serve
bsadmin conf_apache      BSCW Apache web server configuration
bsadmin conf_crontab     BSCW crontab configuration                             (1)
bsadmin conf_services    generate service token for external services
bsadmin conf_systemd     BSCW systemd configuration                             (1)
bsadmin conf_tzdata      configure timezone data
bsadmin conferences      maintain stored conferences
bsadmin create_index     generate search index                                  (2)
bsadmin db2to3           Convert python2 database to python3 database
bsadmin dbcheck          database check/repair
bsadmin dbcopy           Copy database                                          (D)
bsadmin dbeditac         Edit (re)defined roles on artifacts in the database.
bsadmin dbfindaddr       Find addresses accepted for maildelivery into folders  (D)
bsadmin dbfindid         Find all database offsets for object with given id     (D)
bsadmin dbfindmodules    Find (all) modules in which classes are looked up      (D)
bsadmin dbfindobj        Find (all) objectids for given classes                 (D)
bsadmin dbfindref        Find (all) references of given objects (i.e. ids)      (D)
bsadmin dblist           List, dump or debug database records                   (D)
bsadmin dbresetac       Reset role assignments and (re)defined roles.
bsadmin dbscan           scan database; print position, key, class and id       (D)
bsadmin dbsizes          Print record sizes in database file (Store)            (D)
bsadmin dbsummary        print a summary of all classes in the database
bsadmin dbtable          Check (or print) database tables                       (D)
bsadmin dbtruncate       Truncate database at offset                            (D)
bsadmin du               show/update BSCW database disk usage
bsadmin extract          extract an artifact from commandline
bsadmin find             find (recursively) documents, e.g.:user/folder/.../doc
bsadmin fix_event_queue Fix Event Queue
bsadmin fix_keys         remap mail address and user keys
bsadmin fsck             check file tree for obsolete files and directories
bsadmin garbage          BSCW garbage collector
bsadmin getconfig        get configuration info from config.py
bsadmin http             Control built-in http server
bsadmin index_page       generates an index page for the script directories
bsadmin info             prints basic info about BSCW server configuration
bsadmin ldapbind         change user LDAP binding(s)
bsadmin ldapupdate       synchronize BSCW users with LDAP
bsadmin ldif             export users to LDIF format
bsadmin level            manage level of proficiency
bsadmin license          request a new licence, check licence details or warn
```

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```
                        about licence expiry
bsadmin listmeta        export metadata as CSV list
bsadmin listmetakeys    list standard meta elements
bsadmin listws          list (shared) workspaces, update workspace list
bsadmin ls              list documents given by file path
bsadmin lstevents       list events
bsadmin mail2chat       move existing mail documents in folders to chat         (3)
bsadmin mailaccess      list all folders w/ enabled mail access
bsadmin mailaslink      list all documents w/ mail access token
bsadmin manage_servers  manage BSCW servers machine-wide
bsadmin members         add or remove users from workspaces
bsadmin mkfolder        creates folders
bsadmin namespaces      List obsolete namespace objects
bsadmin oauth           list oauth consumers
bsadmin openid          list openids
bsadmin package         (un)install a BSCW package
bsadmin poll            list poll data
bsadmin preview         generate Document preview documents
bsadmin prtactions      print all defined actions
bsadmin quota           user disk quotas commands
bsadmin register        registration of email addresses and new users
bsadmin relocate        relocate document files from BSCW database to external␣
↪directory
bsadmin rename          rename an user
bsadmin renameaddr      rename mail addresses using regular expressions
bsadmin report          modify report configuration
bsadmin rmevents        remove (dequeue) all events older than n days
bsadmin rmobj           remove BSCW folders/documents given by ID or filepath
bsadmin rmuser          remove an user
bsadmin rmwaste         remove objects from waste baskets (resp. clipboards)
bsadmin roles           add, edit or assign roles
bsadmin search          query pylucene index                                    (2)
bsadmin sendmail        BSCW mailer                                             (D)
bsadmin servaccess      BSCW access control service debugging                   (D)
bsadmin servuno         BSCW user notification service debugging                (D)
bsadmin start           start BSCW instance servers
bsadmin statistics      statistics from BSCW database
bsadmin stop            stop BSCW instance servers
bsadmin subtreecache    init cache objects for subsumption of tasks/chats
bsadmin syncf           synchronizes BSCW folder with file system directories
bsadmin sysmsg          modify user sys_msg counter
bsadmin themes          generate the CSS files needed for the BSCW themes
bsadmin update_defaults update configuration files with new defaults            (I)
bsadmin userdata        export user(s) personal data
bsadmin users           list users and mail addresses
bsadmin versions        list/remove versions from document version stores
bsadmin virusfound      list document scan information
bsadmin wstat           print workspace statistic

(1) only on POSIX systems
(2) only if a content search package 'PyLucIndex' is enabled
(3) only if the 'chat' package is enabled
(I) required during installation
(D) for debugging only
```

6.3 User administration

The BSCW server can be configured to allow

- self-registration by users
- registration of new users only by the system administrator and possibly other authorized persons.

The variable *MAY_REGISTER* in the BSCW instance configuration file (`<bscw-runtime-path>/conf/config.py`) specifies which of the registration modes shall apply. When self-registration is enabled, the name space of legal email addresses may be restricted by using the variable *RESTRICT_MAIL* .

Note that there are two forms of self-registration:

- a user may enter his own email address to become a newly registered user of a BSCW server.
- an already registered user may invite another person by using his or her email address.

In principle, a registered BSCW user is identified by his email address, i.e., a particular email address specifies exactly one BSCW user. Therefore, the "creation" of a new BSCW user starts with the specification of an email address, either through self-registration or by the system administrator through the administrator interface described in the preceding sections.

The specification of an email address for a user is the first step of the registration process. The second step is the allocation of a user name and password to this email address. After the first step and before the execution of the second step an email address is called *pending*.

For self-registration the BSCW server sends an email message with a "token" (the registration URL) to the specified email address that allows the execution of the second step (or the resetting of a password, see below). If the email message cannot be delivered (e.g., because the email address was wrong), the intended recipient will never receive this email and therefore cannot carry out the second step of the registration process, i.e., the email address remains pending forever. This two-step procedure ensures that email addresses of registered users are always correct, unless a user looses his or her email account later without providing a new email address. In this case the system administrator may correct wrong email addresses through the administration interface.

If an email address remains pending because email messages cannot be delivered to the given address (this may be annoying for the system administrator since he has to take care of the bounced emails) the system administrator can set such an email address to *bounced*. This has two effects: firstly, the respective address(es) will not produce any bounced emails any more since the BSCW server filters all outgoing email messages against the bounced addresses list. Secondly, the BSCW server does not allow the first step of the registration process for this email address any more.

This second effect can also be used to exclude particular persons from using a BSCW server: If the system administrator sets a particular email address to bounced, the user associated with this email address cannot re-register with the server any more using this bounced email address.

In the case of user registration through system administrators (see section 6.1 *Administration using the Web Interface* or section 6.2 *Administration using the bsadmin script*), they should be careful when entering the email address of new users since the verification process for the email addresses as in the case of self-registration is not carried out. Erroneous addresses would only be detected when the BSCW server sends an email message to such an address, assuming that someone takes care of bounced email messages. In the case that bounced email addresses are deleted automatically (some mail servers are configured that way), such erroneous addresses may not be detected at all. If, in the case of self-registration, a user enters an email message that is already associated with a registered user, the BSCW server acts as follows:

- If the user wants to register as a new user from the registration page, the system assumes that the respective user has forgotten his or her password. It therefore sends an email message to the email address, which allows the selection of a new password.
- If the user wants to invite another user to this server, the system assumes that the user was not aware that the other user was already registered. The system therefore replaces the invited user's email address by the invited user's login name.

6.3.1 User status with bsadmin users

To create reports about existing users the **bsadmin users** script provides the following options:

```
$ ./bin/bsadmin users
Usage:
 bsadmin users -{m|a|p|n [-T|-E|-I]} [{-o|-O} <ndays>] [-L<f>] [<u1> ... <un>]
 bsadmin users [-h]

     List users and mail addresses

 positional arguments:
     -m    print username(s) and primary mailaddress
     -a    print username(s) and all mailaddresses
     -p    print username(s) and passwords (htpasswd format)
        of all or given users <u1> ... <un>;
     -n    print username(s)
         sub-options:
         -T  append creation, last-access time stamps
         -E  append account-expiry, passwd-expiry, passwd-change time stamps
             ('=' marks user individual account/password expiry date)
         -I  append last ip address

 optional arguments:
     -L    consider locked users with lockflags <f> ::= {'a'|'l'|'s'|'e'}
         (locked by 'a' - admin, 'l' - LDAP, 's' - system, 'e' - expired)
     -o    consider users with last access before <ndays> days
     -O    consider users with creation before <ndays> days
     -h    show this help message and exit
```

6.3.2 User registration with bsadmin register

For the administration of users and their email addresses the **bsadmin register** script offers the following functionality:

```
$ ./bin/bsadmin register
Usage:
 bsadmin register <addr>                     show info about email address
 bsadmin register -a [-o<n>]                 print email addresses
 bsadmin register -b [-f<f>] [-o<n> [-d]]    print bounced email addresses
 bsadmin register -b [-m]  <addr>            set bounced
 bsadmin register -c <addr> [<lang>]         create pending email address
 bsadmin register -d <addr>                  delete email address
 bsadmin register -e [-o<n> [-d]]            print external email addresses
 bsadmin register -e <addr> [<lang>]         set external
 bsadmin register -i <addr>                  print user/<unknown>/<pending>
 bsadmin register -n <addr> <newaddr>        rename (change email address)
 bsadmin register -p [-f<f>] [-o<n> [-d]]    print pending email addresses
 bsadmin register -p <addr> [<lang>]         set pending
 bsadmin register -r <addr> <user> [<pwd> [<lang>]]  register new user
 bsadmin register -u [-o<n>]                 print allocated email addresses
 bsadmin register -u <addr> <user> [<lang>]  allocate secondary email address
 bsadmin register -U <addr> <user> [<lang>]  allocate primary email address
 bsadmin register [-h]                       show this help message and exit

 Registration of email addresses (and new users)
```

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```
 Optional arguments:
 -f<f>      consider email addresses with flags <f> ::= {n|f|a}+
                 n - address w/o invitation
                 f - address w/  invitation to a folder (workspace)
                 a - address w/  invitation to an appointment
            (if option '-f<f>' is omitted, the default '-fnfa' is assumed,
            i.e. all <pending> email addresses are listed)

 -m         do not send email notification to user, who invited the address

 -o<n>      list email addresses with modification date before <n> days
 -o<n> -d   delete email addresses with modification date before <n> days
```

For instance to create a new user use the following command:

```
$ ./bin/bsadmin register -r name@domain.org name passwd
```

6.3.3 User management with bsadmin (rename | chpwd | rmuser)

The administration scripts **bsadmin rename**, **bsadmin chpwd** and **bsadmin rmuser** are allow to manage BSCW user accounts via command line. The **bsadmin rename** script renames user account names an provides the following options:

```
$ ./bin/bsadmin rename -h
usage: bsadmin rename [-h] [-n] oldname newname

rename a user

positional arguments:
oldname     existing name
newname     name to change to

optional arguments:
-h, --help  show this help message and exit
-n          don't send an email notification
```

The **bsadmin chpwd** script allows beside user account password changes to lock and to unlock user accounts or to maintain user account and password expiry settings as follows:

```
$./bin/bsadmin chpwd
Usage:
 bsadmin chpwd [-v]                                    <user> [<pwd>]
 bsadmin chpwd [-v] {-l|-u|-e} {-n <email>|--notify} [-a | <user>]
 bsadmin chpwd [-v] {-E <date>|-p}                     [-a | <user>]
 bsadmin chpwd [-v] [-r] {-e|-p}                       [-a | <user>]
 bsadmin chpwd [-h]

 Change user password and lock/unlock user

positional arguments :
 <user>           username
 <user> [<pwd>]   set new password for user

optional arguments :
```

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```
 -l               lock user
 -u               unlock user
 -e               expire user (alert user or lock account)
 --notify         send alert or lock notifications to user only
 -n <email>       send email BCC to email address
 -a               all users
 -E <date/period> expire user at the time of 'date' or at the end of 'period'
                  ('yyyy-mm-dd[ hh:mm]' or '3d' or '5w')
 -r               reset password (-p) / account (-e) expiry
 -p               expire password (force password renewal at next login)
 -v               verbose (shows account details if no other option is given)
 -h               Show this help message and exit
```

Note

User accounts with administrative rights do not expire.

The **bsadmin rmuser** script removes user accounts from the BSCW system. When removing user accounts only private (non-shared) user data will be removed permanently, while data in shared workspaces is preserved. If the owner of a shared workspace is removed BSCW will determine a new owner among the remaining workspace members. In particular **bsadmin rmuser** provides the following options:

```
$ ./bin/bsadmin rmuser
Usage:
 bsadmin rmuser [-n|b|v] -a [-e <charset>] [-o <nowner>] [--dry-run] <user>
 bsadmin rmuser [-n|b|v] -m <nowner>                     [--dry-run] <user>
 bsadmin rmuser [-n|b|v] [-f]                                        <user>
 bsadmin rmuser [-h]

    Remove a user

options:
    -n            do not send an email notification
    -b            set user email address(es) invalid ("bounced")
    -m <nowner>   merge workspaces to <nowner>.
                Without option -b also merge email addresses.
    -a            archive users' artifacts in "var/data/rmuserarc" (zip)
    -o <nowner>   set owner of owned workspaces to <nowner> when archiving
    -e <charset>  encode pathnames as <charset> (default: UTF-8)
    --dry-run     verbose output and no changes are committed
    -f            force destruction of all owned workspaces
    -h            show this help message and exit
    -v ... -vv    verbose output
```

6.3.4 Additional anonymous users

Additionally to user anonymous, more anonymous users can be registered. Access to these anonymous accounts are also not controlled by authentication, but may be restricted by means of HTTP server configuration, just as in the case of user anonymous. This way different levels of access control can be implemented, from unrestricted public access to anonymous intranet or even anonymous subnet access. Adding an additional anonymous user requires (in this order):

1. Configuration of an access control file (e.g. u_intranet.txt),
2. Specification of an associated CGI path (i.e. /intra/ in <bscw-runtime-path>/conf/config.py SCRIPTS)
3. Configuration of the Web server (via **bsadmin conf_apache** (and restart of the Web server))
4. Access to the newly created server CGI path (to create the new anonymous user)

Note

Additional anonymous users may be removed in contrast to the system user anonymous.

The required steps in detail are as follows:

1. First you have to configure your Web server to handle restricted access to the anonymous prefix. For the Apache Web server, you would have to add:

```
Alias   /intra .../var/www
<Location "/intra">
    # use CGI scripts
    Options ExecCGI
    AddHandler cgi-script .cgi
    # set index file
    DirectoryIndex index.html default.htm
    Require all denied
    #some dedicated hosts (fqdn) or IP addresses may access
    Require host bscw.server.org
    Require ip 10.23.45.67
    # ...
</Location>
```

   To automatically generate this configuration within your <bscw-runtime-path>/conf/apache24/bscw.conf file you have to create a <bscw-runtime-path>/conf/apache24/u_<username>.txt file which contains the Require directives (Apache 2.4) for the allowed IP address ranges which may access the additional anonymous user prefix. Following the above example, create the file <bscw-runtime-path>/conf/apache24/u_intranet.txt and enter the following Require directives:

```
Require host bscw.server.org
Require ip 121.23.45.89
```

2. Next the creation of a new anonymous user must be accompanied by a adding a new entry in the SCRITPS dictionary in the central configuration specification (<bscw-runtime-path>/conf/config.py). Select as key a new prefix for a directory mapping in the Web server and specify a tuple of the username, the directory (not used anymore, set to ‘’), the standard scripts and further scripts. For example:

```
SCRIPTS = {
    '/sec/':        (None,        '', CREATE_SCRIPTS, SECURE_SCRIPTS),
    '/pub/':        ('anonymous', '', CREATE_SCRIPTS, SECURE_SCRIPTS),
    '/intra/':      ('intranet',  '', CREATE_SCRIPTS, SECURE_SCRIPTS),
}
```

> **Note**
>
> When the newly entered path is accessed for the first time via the Web server URI `/intra/bscw.cgi` the specified username (e.g. `intranet`) is automatically created as anonymous user. If the username already exists and is a (non-anonymous) standard user a `"Bad script name"` error will be raised.

3. Now execute the **`bsadmin conf_apache`** command to generate a new `<bscw-runtime-path>/conf/apache24/bscw.conf` file and restart your Apache HTTP server.
4. After these steps have been carried out, create the workspaces of the newly created anonymous user by accessing the the URL: `https://<server>/intra/bscw.cgi`

6.4 Asynchronous Services

6.4.1 User Notification Services (UNO)

The user notification services (UNO) perform the following tasks (depending on the configuration settings in the BSCW instance configuration file `<bscw-runtime-path>/conf/config.py`):

- sending periodical workspace activity reports via email to give the users an overview about recent activities in a specific time period (e.g. daily)
- sending direct email notifications to inform the users about recent events

Using the user notification services a BSCW user does not need to contact its BSCW server(s) so often to check for new events. If the user notification services are activated, the users' event preference page provides a column for subscription of the "*Daily Report*" or the "*Direct Email*" notification (depending on the UNO service configuration). To activate the user notification services the BSCW administrator has to start the additional UNO server (`bscw.adm.bs_servuno`) in the *SERVERS* list in `<bscw-runtime-path>/conf/config.py`

```
SERVERS = [
    ('UnoSocket', 'bscw.adm.bs_servuno'),
]
```

The UNO server sends HTTP requests to the BSCW server using a (virtual) web server on `localhost:HTTP_LOCAL_PORT` (default `localhost:80`, see *HTTP_LOCAL_PORT*). If your web server is not listening to `localhost` you may need to define an additional (virtual) web server running on `localhost:HTTP_LOCAL_PORT` (for Apache HTTP server configuration hints see section 3.4.1 *Apache HTTP Server Configuration* (unix).

> **Note**
>
> This setting will start and stop the UNO server automatically with the BSCW database server.

The following variables have to be set for the configuration of the user notification services:

- **`SERV_UNO_STATE`**
  defines a file name for saving the state of the UNO service. The file is written, when the UNO is stopped and read when the server is started again.
- **`SERV_UNO_TIMES`**
  contains a dictionary of fine tuning parameters for the UNO service; for details see the server instance configuration file `<bscw-runtime-path>/conf/config.py`.
- **`WSREPORT = 1`**
  enables the daily workspace report

- **WSREPORT_DIRECT = 1**
  enables the direct email notification
- **AUTOSUBSCRIBE_REPORT and AUTOSUBSCRIBE_REPORT_DIRECT**
  define the default subscription for all users. By default no report is sent to new users, each user may Decide to subscribe to the workspace report by her/himself. The server administrator can change this behavior by setting the flag:

  ```
  AUTOSUBSCRIBE_REPORT = 1
  AUTOSUBSCRIBE_REPORT_DIRECT = 1
  ```

  If this is enabled new users will automatically subscribed to the report service (each user may then unsubscribe from the service).
- **DEFAULT_EVENTMASK**
  defines the event type subscription mask, with the values:

  ```
  read = 1; create = 2; move = 4; change = 8
  ```

  By default all event types with excetion of read events are subscribed (`create + move + change = 14`).
- **DEFAULT_EVENTMASK_DIRECT**
  defines the default event type subscription mask for the direct email notification. By default *no* event types are preselected, so user won't be notified about any events immediately, but may select some event types for certain folders of interest only.
- **DEFAULT_EVENT_REPORT_DAILY**
  defines the default frequency for periodic email report which may either be *daily* (1) or *weekly* (0)

  For example, set `WSREPORT_DIRECT = 1`, `AUTOSUBSCRIBE_REPORT_DIRECT = 1` and `DEFAULT_EVENTMASK_DIRECT = 2` to enable the direct email notification service for all users by default, so each user will receive an email for each newly created object! (We do **not** recommend this setting though.)
- **WSREPORT_EVENT_LIMIT**
  defines a size limit of the periodic workspace report: in order to prevent too long notification emails the number of events can be limited (use `WSREPORT_EVENT_LIMIT = 0` for unlimited size)
- **REPORTLOG**
  points to a file in which a protocol about the reports is logged, for example:

  ```
  REPORTLOG = 'report.log'
  ```

6.4.2 User account expiry

To configure an inactivity time interval after which users are expired, the administrator has to define in the BSCW instance main configuration files `<bscw-runtime-path>/conf/config.py` the *EXPACCT* directive. E.g configure the following value:

```
EXPACCT = '360d'
```

In this case user accounts are expired, after 360 days without login.

Additionally, if the *expire* package is enabled, it is possible to remind users about the upcoming expiration of their account with a notification email sent *EXPACCT_ALERT* days before the account actually expires. For example:

```
EXPACCT_ALERT = '30d'
```

sends a notification email 30 days before the account actually expires, giving the user the option to log in again before expiration.

To automatically check user account expires, the `expire.sh` shell script must be *daily* executed:

- copy the script from the BSCW distribution directory `<bscw-dir>/lib/bscw-|rel|-py3*/etc/bin/expire.sh` to the `<bscw-runtime-path>/bin` directory, e.g.

```
$ cd /opt/bscw/lib/bscw-7.6.1-<rev>-py3*
$ cp ./etc/bin/expire.sh <bscw-runtime-path>/bin
$ cd <bscw-runtime-path>
$ chmod 700 bin/expire.sh
```

- create a "crontab" entry as follows:

```
$ crontab -e
10 1 * * * <bscw-runtime-path>/bin/expire.sh >> <bscw-runtime-path>/var/log/
↪expired.log
```

- to notify the user about account expiration enable the package *expire* with:

```
$ bin/bsadmin package -e expire
```

Note

- Notification emails are sent correctly only if the `expire.sh` shell script is executed *exactly once* a day.
- If no automatic expiration checking (and locking of user accounts) is performed via the `expire.sh` shell script on a daily basis, user accounts will only expire (and be locked) if the user explicitly logs in after the account has expired. This may result in an incomplete listing of inactive (and locked) accounts in user management.

6.4.3 Automatic disk usage update

To provide an automated update of the storage usage of the BSCW database and uploaded documents displayed on the administrator BSCW status page (see section 6.1.1 *BSCW status page*) the **`bsadmin du`** script (disk usage) is available:

```
$ bin/bsadmin du -h
usage: bsadmin du [-h] [-v] [-u]

show/update BSCW database disk usage

optional arguments:
  -h, --help  show this help message and exit
  -v          verbose
  -u          update (re-calculate) BSCW database disk usage
```

To periodically re-calculate the storage usage configure the following "crontab" entry:

```
$ crontab -e
15 2 * * * <bscw-runtime-path>/bin/bsadmin du -u
```

6.5 Public space deactivation

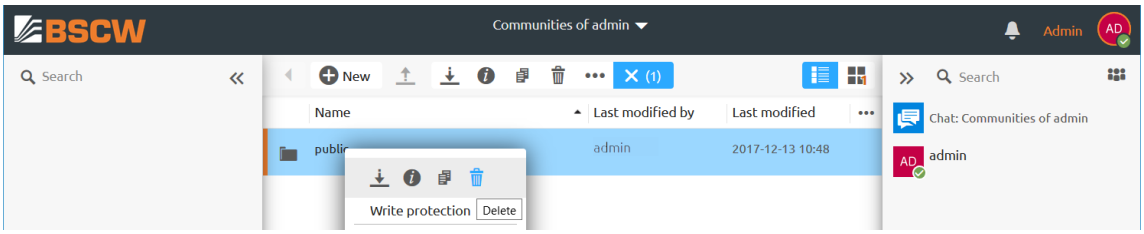
By default BSCW allows users in the "manager" role to publish the contents of a folder in a "public space", which can be accessed by everyone over the World-Wide Web without being a registered user of the server.

To disable the "public space" for all users a BSCW administrator may delete the `public` folder contained in the `Communities` folder as follows:

1. Open the action *[Admin]* in the user menu in the right upper corner of the interface and login a second time with your password to gain administration rights. The administrator status is indicated by an additional *[Admin]* menu in the right upper corner of the interface.
2. Enter the `Communities` folder of the `anonymous` user by opening the URL:

   https://bscw.domain.org/sec/bscw.cgi/:anonymous

3. Delete the `public` folder as shown:



> **Note**
>
> Using the *[delete]* action will move the `public` folder to your trash.

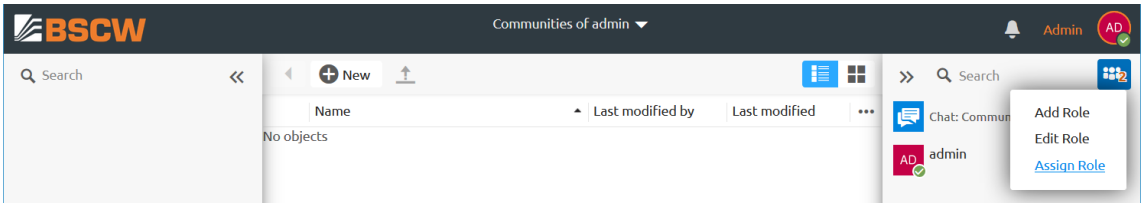
To disable the "public space" it is sufficient to keep the `public` folder in your trash. If you *[destroy]* the `public` folder within your trash all "public spaces" are removed by uninviting the `anonymous` (pseudo-) user.

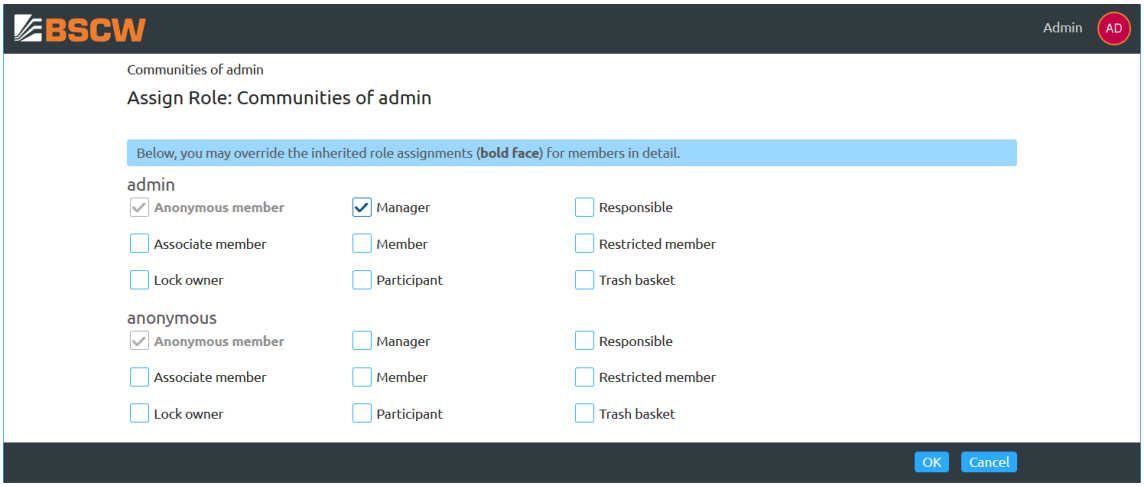
To enable the "public space" again, you can create a new folder with the name `public` in the `Communities` folder. In particular follow this procedure:

1. Open the action *[Admin]* in the user menu in the right upper corner of the interface and login a second time with your password to gain administration rights. The administrator status is indicated by an additional *[Admin]* menu in the right upper corner of the interface.
2. Enter the `Communities` folder of the `anonymous` user by opening the URL:

```
https://bscw.domain.org/sec/bscw.cgi/:anonymous
```

3. Open the *[Assign role]* form in the members menu and assign the manager role to your account by the selection of `[x] Manager`. Afterwards click *[OK]*:





4. Create a new folder with *[(+) New → Folder]*. Enter the name `public` and click *[OK]*.
5. Open the *[Assign role]* form in the members menu again and click *[Remove specific role assignments]* and afterwards *[OK]*
6. Finally run from the command line

```
$ cd <bscw-runtime-path>
$ ./bin/bsadmin fix_anonymous
```

6.6 WebDAV

WebDAV is an acronym for "Web-based Distributed Authoring and Versioning". It is a set of extensions to the HTTP protocol (IETF RFC 2538) which allows users to collaboratively edit and manage files on remote Web servers, i.e., some of the BSCW features (e.g., document upload to a BSCW server or renaming of a document on a BSCW server) are also supported by the WebDAV protocol.

BSCW supports (a subset of) the WebDAV protocol. This means that some of the BSCW operations which are available via a Web browser and through the HTML interface of BSCW, are now also available via WebDAV clients (https://www.webdav.org) for software supporting the WebDAV standard).

Note

There are many WebDAV clients available and we could only test a small subset of them with BSCW WebDAV support. From our tests we assume that not all WebDAV clients fully conform with the WebDAV specifications, i.e., you may have problems when using a particular WebDAV client with BSCW.

The BSCW WebDAV interface mandatory requires the Apache HTTP server. After the installation of the Apache HTTP server run **`bsadmin conf_apache`** (with BSCW user ID):

```
$ cd <bscw-runtime-path>
$ ./bin/bsadmin conf_apache
```

This creates new `<bscw-runtime-path>/conf/apache24/` files (cf. section 3.4.1 *Apache HTTP Server Configuration* (unix).

6.6.1 Microsoft Support for WebDAV

More recent Microsoft Windows and MS Office versions (Office 2016, 2019) provide WebDAV support. This allows the following applications:

1. Opening of BSCW workspaces within Windows Explorer. Proceed as follows:
   - Select "My Network Places" (either from your desktop or within Windows Explorer).
   - Select "Add Network Place"
   - Enter the URL of your BSCW home folder (or a sub-folder). This has the form

     ```
     https://bscw.domain.org/sec/bscw.cgi/9620
     https://bscw.domain.org/sec/bscw.cgi/home
     ```

   - Click "Finish".

   You may then browse with Windows Explorer through your BSCW workspaces in the same way in which you browse through the file system on your local computer. You may also "drag and drop" files from your local file system to BSCW folders or vice versa. When clicking the right mouse button, you may carry out several actions such as deleting or renaming an object.
2. Editing of MS Office files in BSCW workspaces. Proceed as follows:
   - From within Windows Explorer (see previous example) select, e.g., a MS Word document within a BSCW folder.
   - Open the document by double-clicking it.
   - Edit the Word document as usual.
   - After editing *[Save]* the document. The document will be saved back into the BSCW folder.

6.6.2 Known Problems

The Microsoft implementation of WebDAV is not fully compliant with the WebDAV RFC which may cause some problems. The following problems are already known:

- The RFC requests a special encoding of spaces and non-alphanumeric characters. MS Internet Explorer and Windows Explorer do not process such characters correctly. (Recommendation: Use only alphanumeric names (without spaces) for BSCW objects when MS Internet Explorer or Windows Explorer shall be used as WebDAV clients).
- Dialog boxes and error messages are sometimes misleading.
- Drag and Drop within the same directory results in a copy operation.
- Windows requires a SSL encrypted connections via HTTPS (`https://...`) to allow WebDAV access.

See also

Section 9.1.6 *How do I connect to BSCW using WebDAV?*. Please inform us if you observe additional problems.

6.7 Quota - Disk Usage Limitation

BSCW quota individually allows to restrict the amount of disk usage for users. In order to enable the BSCW quota system, the administrator has to define in a first step *limit classes*. Afterwards quota can be turned on for all or individual users by assigning a limit class to this users.

The BSCW disk space allocated to each user (quota) is computed as follows:

- When a user creates an object, the disk space used by the object is added to the quota of the owner of the folder wherein the object is created.
- In particular, when user A creates an object in a folder that is owned by user B, the quota of user B is affected, not the quota of user A.
- If the owner of a folder is removed from its members' list (either by others or by himself or herself), the ownership of the folder and of the objects therein is transferred to another person who still has access to this folder.
- This new procedure for computing the quota of users has the effect that users can always access all objects that contribute to their quota.

Note

By default quota is now enabled for the anonymous user to avoid the assignment of any resources to the anonymous user. To explicitly disable quota limitation for the anonymous user run the command **`bsadmin quota off anonymous`**. Alternatively you may assign a new limit class to the anonymous user with the command **`bsadmin quota on -c <classname> anonymous`**

Quota is accessed by the BSCW administrator via the **`bsadmin quota`** command line interface. In general the **`bsadmin quota`** command supports the following four options

```
bsadmin quota limit              defines and lists all limit classes;
bsadmin quota { on | off }       enables/disables quotas for all or individual users;
bsadmin quota { check |fix }     checks or fixes disk and object usage for all users;
bsadmin quota { report | class } report quota for users or limit classes
```

The **`bsadmin quota`** command executed without any argument displays the usage information:

```
$ ./bin/bsadmin quota
Usage:
 bsadmin quota
 bsadmin quota { check | fix }                          [<u1> ... <un>]
 bsadmin quota class                                    [<c1> ... <cn>]
 bsadmin quota report [-b][-t]   [-L][-v]               [<u1> ... <un>]
 bsadmin quota on                    [-v]               [<u1> ... <un>]
 bsadmin quota on            -c <c>  [-v]               [<u1> ... <un>]
 bsadmin quota on            -R      [-v]               [<u1> ... <un>]
 bsadmin quota off                   [-v]               [<u1> ... <un>]
 bsadmin quota limit                 [-v]
 bsadmin quota limit            <c> { disk | objects } <soft> <hard> <time>
 bsadmin quota limit         -d <c> [ disk | objects ]
 bsadmin quota [-h]

    User disk quota commands

options:
    check|fix        checks/fixes current disks and objects usage for all users
    class            report users for all specified classes
    report           report quota for all or specified users
```

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```
    report -a          usage accumulation of specified users
    report -l          only quotas exceeding soft limits are shown
    report -L          only quotas exceeding limits are shown
    on                 (re-)enable quota for all or specified users
    on    -c <c>       set and enable quota class <c> and for all or specified users
    on    -R           reset quota timer for all or specified users
    off                disable quota for all or specified users
    limit              report quota limit classes
    limit -d <c>       delete quota class <c>
    limit -d <c> <l>   delete quota limit <l> ::= { disk | objects } for class <c>
    limit    <c> <l>   add/replace quota limit class <c> for limit <l>
    -v                 verbose output
    -h                 show this help message and exit
```

With the following option parameters:

```
<u1> ... <un>     string             list of registered BSCW user names
<c>               string             limit class name

<soft>            integer [char]     limit value in bytes or in kilo (mega,
<hard>                               giga, tera) bytes with unit token 'K'
                                     ('M', 'G', 'T').

<time>            integer [char]     limit value in seconds or in minutes
                                     (hours, days, weeks) with time token 'm'
                                     ('h', 'd', 'w').
```

6.7.1 Limit Classes

A limit class specifies the amount of disk resources an user may use. Limit classes are manipulated with the **bsadmin quota limit** option, which allows the following parameters:

```
bsadmin quota limit [-v]
bsadmin quota limit         <c> { disk | objects } <soft> <hard> <time>
bsadmin quota limit      -d <c> [ disk | objects ]
```

Listing of Limit Classes

The command **bsadmin quota limit** prints a list of all defined limit classes.

```
$ ./bin/bsadmin quota limit
                        Disk                    Objects
                 soft    hard   time     soft    hard    time
default             0       0      0s        0       0       0s
develop          40M     80M     2w       400     800     2w
```

The *soft* value actually defines the amount of resource usage a user may allocate. The *hard* value defines the maximum amount of resource usage at a time. The *time* value defines the maximum time period a user may exceed the soft limit.

If an user exceeds her/his hard limit or does not reduce her/his resource usage below the soft limit after expiration of the *time* limit, the user account gets **locked**. If an user account is locked only delete actions may be performed. The account automatically becomes unlocked if the user lowers her/his resource usage below the soft limit.

Definition of Limit Classes

A limit class is defined by the amount of disk space (disk limit) and the number of objects (object limit). In order to activate the BSCW quota system the administrator has to define at least one limit class and assign limits to this class.

- *Disk/Objects Limits*

  In the following example the `develop` class disk limit is set to 40 Mbyte soft and 80 Mbyte hard limitation with a time period of 2 weeks. In the second step the objects limit is set to a value of 400 objects soft and 800 objects hard limit and with a time period of 2 weeks:

```
$ ./bin/bsadmin quota limit develop disk 40M 80M 2w
$ ./bin/bsadmin quota limit develop objects 400 800 2w
```

- *Limit Class ``default``*

  To enable quota immediately for new registered users the BSCW quota system supports a special limit class `default`. If a disk or a objects resource limit is defined for this class, quota is automatically enabled for all new users. In this case new users are assigned to this `default` limit class. Example:

```
$ ./bin/bsadmin quota limit default disk 10M 15M 1w
$ ./bin/bsadmin quota limit default objects 200 300 1w
```

  To disable this feature the `default` limit class must be removed with the command:

```
$ ./bin/bsadmin quota limit -d default
```

6.7.2 Quota Activation

The administrator may enable (disable) quota for users with the **`bsadmin quota on`** (**`bsadmin quota off`**) command.

Enable Quota

If no limit class is specified with the **-c <c>** switch, the **`bsadmin quota on`** command enables quota for the specified user(s) and assigns them to the `default` limit class. Examples:

- Enable quota for all users with assigned default limit class:

```
$ ./bin/bsadmin quota on
```

- Enable quota for the individual users *bob* and *claire* and assign them to the `develop` limit class:

```
$ ./bin/bsadmin quota on -c develop bob claire
```

- Change quota limit class for user *alice* to class `default`:

```
$ ./bin/bsadmin quota on -c default alice
```

Disable Quota

Quota may be disabled for all or individual user(s) with the **bsadmin quota off** command. Examples:

- Disable quota for user *dave*

```
$ ./bin/bsadmin quota off dave
```

- Reset the quota limit timer for soft quotas

```
$ ./bin/bsadmin quota off -R dave
```

- Disable quota for all users

```
$ ./bin/bsadmin quota off
```

Note

To disable automatic quota activation for new users the `default` limit class has to be removed (see above).

6.7.3 Calculation of current disk usage

If quota is enabled for an existing user, the users' usage counters should be fixed to take the users current resource usage into account. For this purpose the BSCW quota system provides the commands

```
$ ./bin/bsadmin quota check
$ ./bin/bsadmin quota fix
```

The `check` command only proofs if the users' usage counters match the current (real) resource usage, while the `fix` command sets the users' usage counters to the current (real) resource usage.

Caution

- To determine the current resource usage of an user, the **bsadmin quota fix** command has to examine all stored documents of the BSCW server. Depending on the number of stored documents this may take a *long* time.
- **Never** run **bsadmin quota fix** while garbage collection is executed.

6.7.4 Report disk usage

The **bsadmin quota report** command prints a summary of the disk usage and quotas for all users:

```
$ ./bin/bsadmin quota report

                        Disk                          Objects
User            usage   soft    hard  time        usage   soft    hard  time
alice   +-      11.1M    10M     15M  3.3d          150    200     300
bob     --      39.9M    40M     80M                345    400     800
claire  --        12M    40M     80M                 94    400     800
```

For each user (with quota enabled) the current amount of disk space and number of objects is printed, along with any quotas of the users limit class.

If you additionally specify user names(s), a report is only generated for the given user(s):

```
$ ./bin/bsadmin quota report claire alice

                        Disk                          Objects
User            usage   soft    hard  time        usage   soft    hard  time
alice   +-      11.1M    10M     15M  3.3d          150    200     300
claire  --        12M    40M     80M                 94    400     800
```

The additional switches **-t** or **-L** restrict the output of the quota report command to these users who are exceeding their soft limits (**-t**) or their limits (**-L**).

6.8 Definition of Roles

In the following section first a brief introduction in the BSCW role concept is presented. Then the definition of BSCW system defined roles is explained in detail and finally a simple mechanism to configure site-specific roles is given.

6.8.1 The BSCW role concept

In BSCW access rights are determined by the role or roles that a user holds. Roles are sets of actions that are allowed for the holder of a role. Users can be assigned one or more roles for an object at the same time. When a user holds a role, she may execute an action on the object if and only if the role includes that action. If a user holds multiple roles for an object, she is granted permission to the union of actions of all roles.

The scope of a role is the object for which a user holds that role and everything inside the object, unless and until the user is re-assigned another role. The role is thus valid for the object's scope: the object itself and its contents recursively. Roles are said to be *inherited* from a container object to its contents. Though this is also true for special containers like user's *Home*, the user's role in those special containers are not inherited to shared folders which are contained therein.

> Example:
>
> A user is by default the *Manager* of her *Home* space and of all objects and all sub-folders she perceives therein the default role *Manager* is inherited to the *Home* folder's scope.
>
> Assume that the user is now invited to a shared folder called *Project Documentation*, the inviting user assigns a role to her, say guest. The new member then holds the guest role for the entire *Project Documentation* and its contents. On the other hand, the shared folder *Project Documentation* appears top-level in the Home space of the new member. What roles will she play in the *Project Documentation* folder? If the role *Manager*, which she holds in her *Home* space, were inherited to *Project Documentation*, the user would hold *Manager* rights on the shared folder as well as *guest* rights which were assigned to her. To prevent this, special containers like *Home*, *Waste* do not inherit their roles to shared folders below. Instead, for shared folders inherit role assignments only from other shared folders.

In general roles in BSCW are either predefined by the system or defined by end-user (action "add role"). In the former case, the role can be applied to all BSCW objects. In the latter case, the role can only be assignment within the object's scope.

All roles (normal roles and special roles, see below) can be re-defined ("edit role") for any object, thereby changing the set of actions which are allowed for an object. In this case the changed role definition is valid for that object and its content recursively, but not for any other object. This means that there can be more than one role with the same name which have different scopes and different access rights definitions. There are different types of roles in BSCW:

Normal Roles

Normal roles in BSCW are roles which may be assigned to users without restrictions. Internally, these roles are prefixed by `R2` for predefined roles and by `r` for user-defined roles. End-users can only define ("Add role") normal roles.

Examples: `R2member`, `R2user`, `R2manager`, user-defined roles in workspaces like "Teacher" or "Student".

Special Roles

Special roles are roles which are restricted in the way in which they can be assigned to users or special in the way in which they are inherited. Their internal prefix is either `R0` or `R1`. Only system administrators can define special roles; this is done in an extra `local_roles` package (see section 6.8.3 *Site-specific Roles*).

End-users cannot define (via "Add role") special roles, but they may re-define ("Edit role") `R0` or `R1` roles. As with normal roles, the changes which an end-user applies to a special role are limited to the object's scope.

System-defined roles: ``R0`` roles

System-defined roles are special roles which the system needs and which only the system can assign to users. In particular, users cannot be invited to workspaces in `R0` roles. By default, there are 2 system-defined `R0` roles in BSCW: `R0creator` and `R0owner`.

- **`R0creator`**
  is assigned to the creator of an object and is never re-assigned to another user.
- **`R0owner`**
  is by default assigned to the creator of an object, if created top-level (e.g., in the users' home). Ownership is inherited to the object's scope: this means that the special role `R0owner` is assigned to all objects within the object's scope recursively.

Restricted roles: ``R1`` roles

Restricted `R1` roles behave differently from normal roles when the role holder is invited to a workspace. If a user holds a `R1` role and is invited to a workspace in another role, the invited role is simply ignored by the system. Instead, for that workspace the system assigns the special restricted role `"R1anonymous"` to the user.

The reason for this seemingly strange behavior lies in the past: recent BSCW systems allowed to invite the special user "anonymous" to workspaces, but restricted the anonymous user in its access rights. Younger BSCW systems must ensure the restricted access of anonymous users also for older BSCW databases. If, for instance, a group of users which contains the anonymous user is invited to a workspace holding the role `R2manager`, the anonymous user would automatically inherit the enhanced access rights of `R2manager`. This would be in contradiction to older BSCW systems and might grant the anonymous user access rights which were not intended in older BSCW databases.

Examples: `R1anonymous` (defined in all BSCW systems), `R1observer`

Assignment of roles

Normal roles and restricted roles are assigned in two ways:

- when inviting users to the members group of a workspace or other object
- explicitly for a user using the action "Assign role"

The former case allows to assign roles not only to users, but also to groups of users. This may lead to multiple roles a user holds: invite two groups of users which both contain a certain user.

The latter case is only possible for individual users, not for groups of users. It may be used to re-assign a role to a particular user who was invited as member of another group (the group being invited in another role).

When inviting users to a members group, any role which is defined globally or in that object's scope may be assigned to individual users or to groups of users. This includes restricted roles (`R1` roles), but not system-defined roles (`R0` roles).

Special roles can either not be assigned at all (R0 roles) or they behave differently when being invited (R1 roles). Cf. above for details.

What are user roles?

User roles are roles which are not assigned to a user in the scope of an object, but which are mapped to a user herself. User roles are valid for that user throughout the system and determine access rights to private data spaces of a user.

Only system administrators can assign a user role to a user (with "Assign Role" to an user object). The system administrator keeps a list of user roles available in `user_roles`. User roles can either be normal roles (R2 roles) or restricted roles (R1 roles).

The user role in which a user is registered or which a system administrator assigns to her determines the access rights to her private data spaces: her home space, etc. By default, all private objects inside the private data spaces are subject to the user role which a user holds. Only when a user is invited to shared spaces, different roles are assigned to her and overrule her user role.

If a user is registered holding a restricted (R1) user role, she is restricted to the special `"R1anonymous"` role in all workspaces to which she is invited. This is regardless of the definition of her actual R1 user role. Therefore, user roles should in general be normal roles.

By default, BSCW user roles are set to "Manager" (`R2manager`, see `default_user_role` below). You may define your own role (e.g. `R2user`) and redefine the default role for registered users in your local `<bscw-runtime-path>/conf/config_action.py`.

Extended access rights for the BSCW administrator

BSCW administrators may always execute the actions "Change role", "Assign role" and "Owner" on all folders, independent of their membership. Besides they may execute the action "More information" for all artifacts, and have the right to open all folders.

Because of the extensive rights that a BSCW administrator has (and must have), the administrator is not a role in the sense of the BSCW role concept for security reasons. It must be avoided under all circumstances that the property of being a BSCW administrator can be manipulated from the user interface.

6.8.2 Role definition and default roles

In general roles are defined as a union of action *views*. Action views are sets of actions specified for easier action handling. Action views are bit encoded, i.e. are defined as powers of 2. Currently there are the following different views (all views have language dependent names defined in <bscw-pkg-dir>/bscw-7.6.1-<rev>-py3*/bscw/msg/<lang>/lg_msgconfig.py)

```
action view          value description

view('get')              1 actions involve 'read' access to an object,
                           e.g. the get operation itself, copy , or convert
view('get_ext')          2 actions involve 'read' access to
                           meta data (description, info page), e.g. info.
view('add')              4 actions create a new object
view('add_ext')          8 actions create a new object
view('change')          16 actions involve 'write' access to an object,
                           e.g. actions that modify an object
view('change_ext')      32 actions move an object, i.e. change both the
                           source and the target container
view('owner')           64 actions exclusively for the owner of an object,
                           i.e the destroy action.
view('share')          128 actions affect the access rights of an artifact
```

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```
                          (excluding role management), e.g. adding
                          a member.
view('share_ext')     256 actions for role management, e.g. assigning
                          a role.
view('edit')          512 actions for editing articles, attachments or
                          appointments.
view('user')         1024 actions concern user information,
                          e.g. editing user details, sending e-mail.
view('waste')        2048 actions possible in the waste, e.g. destroy
                          and undelete.
view('lock')         4096 actions for lock/unlock objects.
view('attend')       8192 actions allowed for attendees of an appointment.
view('creator')     16384 actions for the creator of an artifact, eg.
                          edit and cut actions.
view('responsible') 32768 actions for the responsible of a task.
view('specialtags') 65536 actions to tag roles/artifacts.
```

A view comprises all actions that have this view assigned. The definition of a new view is done with the `view()` function.

Next we come to the definition of roles. The names of the predefined standard roles have the form `Ri<name>`, where `i` is a digit indicating the role type: `0`, `1` or `2` standing for *system-defined*, *restricted* and *normal*, respectively. All standard roles are defined in the dictionary `default_roles` as follows

```
standard_views = (
    view_get | view_get_ext |
    view_add | view_add_ext |
    view_change | view_change_ext |
    view_waste)

complete_views = (
    standard_views | view_user | view_share | view_edit)

default_roles = {
    'R0creator': view_edit | view_creator,
    'R0hidden': 0,
    'R0other': 0,
    'R0owner': view_owner,
    'R1anonymous': view_get,
    'R1restricted': view_get | view_get_ext,
    'R2lockbag': view_lock,
    'R2associate': standard_views,
    'R2attendee': 0,
    'R2manager': complete_views | view_share_ext,
    'R2member': standard_views | view_user | view_share,
    'R2responsible': complete_views | view_responsible,
    'R2waste': view_waste,
}
```

The names of these predefined roles at the user interface are those that we introduced above. Internally, the standard predefined roles also have aliases that are used in BSCW kernel code.

```
other_role = 'R0other'              special role "is a registered user"
owner_role = 'R0owner'              special owner role
creator_role = 'R0creator'          special creator role
anonymous_role = 'R1anonymous'      default role for anonymous users
default_user_role = 'R2manager'     default role for registered users
```

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```
attendee_role = 'R2attendee'        default role for attendees (appoint.)
default_role = 'R2member'           default role for invitations
responsible_role = 'R2responsible'  responsibles for tasks etc.
```

BSCW defines the following roles:

1. "Restricted" Roles (BSCW core)
   - **Anonymous member**

     "read-only" role for the pseudo member "anonymous" (to publish sub folders) without info-right
   - **Restricted member** (*)

     "read-only" role for the usual members with info-right (descriptions are shown)
2. "Normal" Roles (BSCW core)
   - **Member (*)**

     default role when inviting members with all read/write rights.

     > **Note**
     >
     > The default "Member" role allows members to invite/uninvite other member ("share view"), which is probably not desired.

   - **Associate member (*)**

     default role for Communities (like Member role without "share view")
   - **Manager (*)**
     - workspace manager with the right to alter and assign roles (plus member rights)
     - default role for user top level objects: home, waste.
   - **Participant**

     special calendar role for the participants of an appointment
3. Additional "normal" roles (BSCW packages):
   - **Requestor**

     role the requestor of a task holds (when started) (task package)
   - **Contractor**

     role the contractor of a task holds (when started) (task package)
   - **Responsible**

     role of the member who holds currently a flow folder (FlowFolder package)
4. System roles:
   - **Creator**

     assigned by the system whenever a user creates a new object; normally allow cut/delete (If you withdraw the cut/delete right from the "Member" role, the "Creator" role will still allow creators of an object to delete it).
   - **Registered User**

     this are all users of the system, like the Unix 'other' rights

- **Owner**

  The Owner role is assigned to each users top-level objects (home, waste etc.) and inherited along the folder hierarchy. It is used to assign resource usage for the quota limitation.

(*) only these roles are shown in the "Invite Member" resp. "Assign Role" form.

All other roles are assigned automatically by the system and should therefore not assigned manually.

6.8.3 Site-specific Roles

In order to customize the default BSCW system roles settings it is possible to redefine roles using the BSCW instance action configuration file (<bscw-runtime-path>/conf/config_action.py). The action configuration file allows to adapt BSCW kernel (*core*) actions and roles:

```
<bscw-runtime-path>/conf/config_actions.py      # "core"
```

BSCW package actions and roles may be redefined in a package action configuration file <bscw-runtime-path>/conf/<package-name>/config_actions.py for each available package.

If you want to adapt the BSCW system roles setting use the

```
$ ./bin/bsadmin prtactions --print-conf
```

command line script to create a template action configuration file for each package. For convenience, each action configuration file template contains the action names for a package.

In the following, we give an example for extending BSCW system defined roles (as described above) by adapting the action configuration file <bscw-runtime-path>/extensions/customroles/conf/config_actions.py in an new package customroles.

We will define five new roles, "*Learner*", "*Author*", "*Domain manager*", "*Field manager*", and "*Educational advisor*".

To define language dependent translations for the roles name we create the following language dependent messages files for our BSCW instance.

See also

Section 4.29 *msg/<lang>/lg_msgconfig.py*

```
<bscw-runtime-path>/extensions/customroles/msg/de/lg_msgconfig.py
<bscw-runtime-path>/extensions/customroles/msg/en/lg_msgconfig.py
```

Here are the file contents:

```
##############################################################################
# File
#   <bscw-runtime-path>/extensions/customroles/conf/config_action.py
# The actions that are initially allowed for the new roles are
# given by 'or'-ing some bit_masks ("views")

# Note: The names of standard system defined roles must start with
# 'R2'. User friendly translations are defined in
# <bscw-runtime-path>/extensions/customroles/msg/*/lg_msgconfig.py

default_roles['R2learner'] = (
    view_get | view_get_ext | view_change | view_share)
```

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```
# We might also use the default action set of other roles that are already
# defined (e.g. 'R2member'):

default_roles['R2author'] =\
    default_roles['R2dommanager'] = \
    default_roles['R2fldmanager'] = \
    default_roles['R2eduadvisor'] = \
    default_roles['R2member']

# Note: Obviously it makes some sense to define different Roles that have
# the same actions allowed *initially*

##############################################################################
# File
#   <bscw-runtime-path>/extensions/customroles/msg/en/lg_msgconfig.py
# User friendly names for new roles defined in
#   <bscw-runtime-path>/extensions/customroles/conf/config_action.py

R2learner = 'Learner'
R2author = 'Author'
R2dommanager = 'Domain manager'
R2fldmanager = 'Field manager'
R2eduadvisor = 'Educational advisor'

##############################################################################
# File
#   <bscw-runtime-path>/extensions/customroles/msg/de/lg_msgconfig.py
# User friendly names for new roles defined in
#   <bscw-runtime-path>/extensions/customroles/conf/config_action.py

R2learner = 'Lerner'
R2author = 'Autor'
R2dommanager = 'Domänenmanager'
R2fldmanager = 'Branchenmanager'
R2eduadvisor = 'Aus- und Weiterbildungsberater'
```

After defining te custom roles the package `customroles` must be enabled with:

```
bin/bsadmin package -e customroles
```

6.9 Server-wide template folders

By using the action *[(+) New → from Template]* BSCW users may create new objects by copying it from an existing template. Any BSCW object can serve as a template, e.g. documents of any kind, polls, flow folders and tasks or even folders including their entire contents.

All templates to be copied either come from special template folders which are placed into the BSCW repository or from files which are placed in a special directory within <bscw-runtime-path> (see item 4 below). Template folders are special folders which you create by invoking *[File → New → Template Folder]* and which you then fill with template objects. They are indicated by a special "template folder" icon.

The templates that are being offered for copying in the Template selection list come from template folders in the following places:

1. The users' `Personal Templates` folder
2. Template folders in the current folder or template folders in folders on the current path

- BSCW will also consider template folders which are contained in folders on the path upwards from the current folder to the top level folder.
- Only template folders directly contained in folders on the current path are considered.

3. System-wide template folders/documents

   These are template folders which are accessible to all registered users. System-wide template folders are created and managed by the BSCW administrator only.

   Additionally the BSCW administrator can provide document templates in a dedicated directory. The default document template directory is located at `<bscw-runtime-path>/etc/doc_templates/`

   The administrator might copy default documents into this directory. See also in the BSCW distribution directory <bscw-path>/lib/bscw-7.6.1-<rev>-py3*/etc/doc_templates/ for some basic template documents

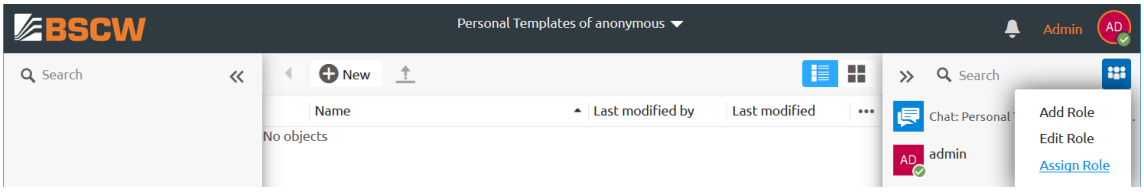
To create a system-wide template folder:

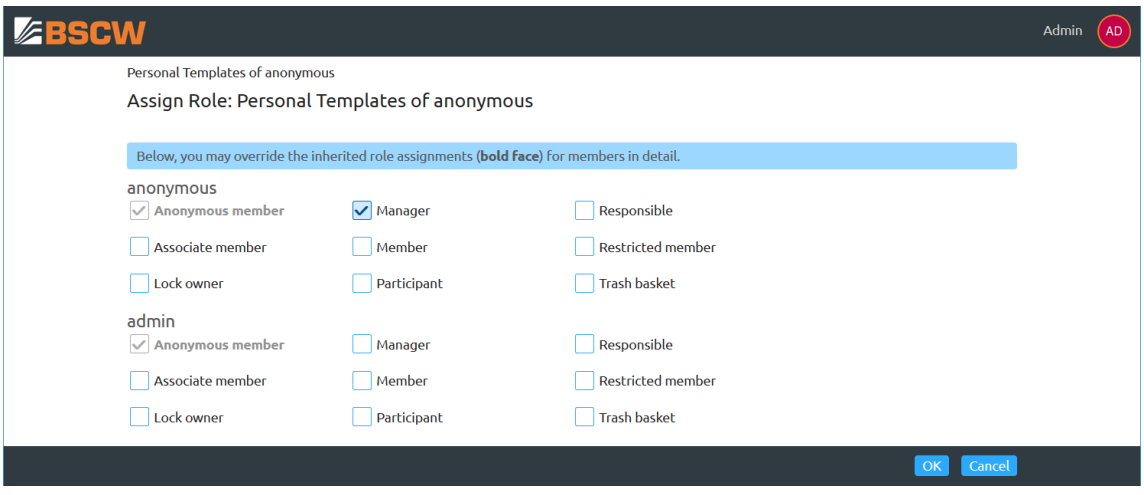
1. Open the action *[Admin]* in the user menu in the right upper corner of the interface and login a second time with your password to gain administration rights. The administrator status is indicated by an additional *[Admin]* menu in the right upper corner of the interface.
2. Enter the `Personal Templates` folder of the `anonymous` user by entering the URL:

```
https://bscw.domain.org/sec/bscw.cgi/ranonymous
```

> **Note**
>
> The leading lowercase "r" is a shortcut to address the template folder of anonymous user.

3. Open the *[Assign role]* form in the members menu and assign the manager role to your account by the selection of `[x] Manager`. Afterwards click *[OK]*.





4. Create a new template folder with *[(+) New → Template Folder]*. Enter a name and click *[OK]*.
5. Open the *[Assign role]* form in the members menu again and click *[Remove specific role assignments]* and afterwards *[OK]*

Place whatever BSCW objects you want into the template folder to appear as templates for all (registered) users.

6.10 Web Service API

BSCW offers a range of services via different web service protocols: XML-RPC, JSON, SOAP

Basically most of the actions available on the user interface (like "add folder") are accessible via a web service API. Of course access to API is restricted via access control as in the regular user interface (i.e. authentication and BSCW internal roles and rights are respected).

Please note that BSCW is distributed with API documentation in HTML format and some API examples as Python scripts:

- the API documentation in HTML format is located in

  `<bscw-path>/lib/bscw-7.6.1-<rev>-py3*/doc/devel/BSCW|relmaj|-API.zip`

- the API examples as Python scripts are located in

  `<bscw-path>/lib/bscw-7.6.1-<rev>-py3*/etc/src-aux/remote_client`

6.11 Some useful hints

There exist a number of naming conventions for user objects which may be useful to know for system administrators. These conventions can be used to address the respective objects directly by entering a corresponding URL into the address field of the browser. The URL patterns for these URLs are:

```
https://bscw.domain.org/sec/bscw.cgi/<shortname><username>
```

or:

```
https://bscw.domain.org/sec/bscw.cgi/<shortname><emailaddress>
```

where <shortname> is a single character of the following list:

```
<shortname> ::= {
    @ #addrBook |
    _ #waste |
    $ #lockbag |
    + #calendar |
    * #bookmarks |
    r #resources |
    : #home |
    ~ #tasklist |
    u #user |
    m #email address
}
```

and <username> is the name of a registered user and <emailaddress> is an email address for which a registration process has been initiated. For example, for a user with BSCW user name "alice" and the email address "alice@orbiteam.de" the URL .

- https://bscw.domain.org/sec/bscw.cgi/malice@orbiteam.de will return the info page of the email address, in particular status information about the email address (pending, allocated, bounced) and a link to the BSCW user if allocated;
- https://bscw.domain.org/sec/bscw.cgi/ualice returns the info page for user alice with additional information available only to system administrators such as icons leading to the user's home page, bag, waste basket and the list of locks that the user has currently set on documents;

The following short names may be used to immediately access the users' personal objects:

- https://bscw.domain.org/sec/bscw.cgi/@alice shows the users' address book;

- https://bscw.domain.org/sec/bscw.cgi/_alice shows the users' waste basket;
- https://bscw.domain.org/sec/bscw.cgi/$alice shows the locks that the user currently holds on documents;
- https://bscw.domain.org/sec/bscw.cgi/+alice shows the users' calendar;
- https://bscw.domain.org/sec/bscw.cgi/*alice shows the users' bookmarks;
- https://bscw.domain.org/sec/bscw.cgi/ralice shows the users' personal template folder;
- https://bscw.domain.org/sec/bscw.cgi/:alice shows the users' home page;
- https://bscw.domain.org/sec/bscw.cgi/~alice shows the users' task list.

CHAPTER

SEVEN

BSCW HELP

The BSCW help is available for from your BSCW server instance:

- https://<server>/pub/static/help/english/
- https://<server>/pub/static/help/german/

Alternatively you may access the help on our web page:

- https://www.bscw.de/en/social/help/ (English version)
- https://www.bscw.de/social/help/ (German version)

The BSCW help files are provided as HTML pages for on-line browsing as well as PDF files for printing.

Note

To view PDF files you need the Acrobat Reader. You can download the Acrobat Reader for different platforms directly from the Adobe Web site at https://www.adobe.com free of charge.

7.1 Languages

7.1.1 Existing translations

English, French, German and Spanish interface languages are included in the standard distribution of BSCW. A number of people have already prepared translations into additional languages and made them publicly available. Please check the BSCW homepage at https://www.bscw.de/en/social/#languages for available languages.

Note

To select a specific language version you've got to instruct your browser to set your default language to the respective language. Alternatively you may define your language in your BSCW personal preferences settings *[Options → Preferences][General][Basic Preferences]*.

7.1.2 Translation instructions

You can add support for new languages by creating a sub directory in your BSCW instance <bscw-runtime-path>/conf/msg folder with the ISO language code of the language, these codes are the lower-case two-letter codes as defined by ISO-639 (you can find a full list of these codes at a number of sites, such as: https://www.ics.uci.edu/pub/ietf/http/related/iso639.txt).

Beside your instance specific modifications in <bscw-runtime-path>/conf/msg/* the distributed translations are located in the <bscw-path>/lib/bscw-7.6.1-<rev>-py3*/bscw/msg/* directories. The distributed directories bscw/msg/en/* contain all relevant language dependent strings for the English version (default).

Relevant for translation are *.py, *_help.html, *.txt, *.mail, *.mail.txt and *.mail.html files:

- *.py: Python source code, containing variables which in turn contain natural language strings. Each *.py, except lg_msgconfig.py, corresponds to a *.xhtml file stored in bscw/templates which contains content and layout information, but is language independent. At runtime both files are merged to produce a language dependent HTML output file.
- *_help.html: Help files for context sensitive help
- *.txt: Text templates, usually containing system messages
- *.mail: Mail templates
- *.mail.txt: Mail templates, containing mail messages, text only
- *.mail.html: Mail templates, containing mail messages, HTML formatted

Other files *need not*, *cannot* and *must not* be translated!

Please contact support@orbiteam.de if you want to translate BSCW to a certain language or if you update an existing language. We can provide you with an Excel data sheet where you can enter your translations.

Alternatively you can provide a new translation BSCW as follows:

First create a new directory <bscw-runtime-path>/conf/msg/<your-language-two-letter-code> and copy each relevant file from <bscw-path>/lib/bscw-7.6.1-<rev>-py3*/bscw/msg/en/* into this directory. Next translate the English strings, but make sure to leave HTML/Python syntax intact. Files which do not contain language dependent strings must not be copied.

Special attention should be paid to the central language dependent file lg_msgconfig.py. Please read the instructions in the file; it contains a large set of Python variables used all over the code. Make sure to leave the Python syntax structure intact.

It makes upgrading to later versions a lot easier, if for each line in msg/en/lg_msgconfig.py there is a corresponding line in msg/<your-language>/lg_msgconfig.py, even if it is commented out. Also, the variables should appear in *exactly the same order* in all languages. It is recommended that you start your translation with lg_msgconfig.py.

Next translate the additional BSCW packages are stored under msg/<your-language>/<package-name>. Follow the translation procedure outlined above.

Please send us an email support@orbiteam.de and include either the translation or a link to it. Also, please send us the names and institutions of the people who should be credited with the translation. We would like to include them in our hall of translators. Thank you very much for your work!

Note

- Some strings should not be translated at all, e.g., server error messages determined for system administrators - this is up to your discretion. A variable in lg_msgconfig.py that is not translated into <your-message> should be commented out, but left in that file to preserve the order of variables.
- Make sure that you do not add white space to HTML templates – just replace the English strings. Also make sure that you do not remove quotes from Python variables. This will result in syntactically incorrect Python code. Use simple quotes (' / ") for single-line strings, and triple quotes (""") for multiple-line strings.

- Please do not translate the mail headers (`To:`, `From:`, `Subject:`, etc.) in `*.mail*` template files.
- Certain resources (e.g. AIR Widgets, Java Applets) are not included in the above mentioned files – contact OrbiTeam support@orbiteam.de to translate these resources.

7.2 BSCW Updates

New BSCW versions will be announced on the BSCW mailing lists. The versions can be found on the download page (https://www.bscw.de/en/social/#download). Before upgrading to a new version please see section 2.4 *Upgrading to BSCW 7.6.1*.

CHAPTER

EIGHT

BSCW LICENSE

Initially the server software is equipped with a test license, which allows usage of the server for a period of 90 days. The maximum number of users who may register with the server is limited to 200 (see also file `BSCW_COPYRIGHT`).

Note

Since parts of your BSCW server URL (scheme, server name and partial path) are included in the license code it is **not** possible to change the BSCW server URL (as specified in the *SERVER_ROOT* variable setting in the BSCW instance configuration file `<bscw-runtime-path>/conf/config.py`) **without** changing the license via the license upgrade process or reinstalling the test license.

8.1 License application

A BSCW administrator may commence a license upgrade process by clicking the "Upgrade licence" link, which is provided in the administrator interface of the BSCW server:

- Make sure you are BSCW administrator (if needed, insert your user name in `<bscw-runtime-path>/conf/config.py`: *SERVER_ADMINS*) and open:

  ```
  [Menu > Admin]
  ```

  Log in a second time with your password to gain BSCW administrator rights for the current session and press *[OK]*. Now apply for a new license with:

  ```
  [Admin > Upgrade license]
  [OK]
  ```

- The next *[OK]* action will connect you to the license server configured in the variable *BSCW_LICENSE* (see `<bscw-runtime-path>/conf/config.py`). Fill in/update the form (be sure to enter a *valid* email-address!) and choose your desired license type.

Generally when choosing a license type one of the following alternatives applies:

Application for a royalty free license:

After the request for a royalty free license, a license agreement is displayed. The licensee has to print, sign, and send this license agreement to licenser. After reception of the signed license agreement, licenser will decide if licensee qualifies for a royalty free license. As a rule, licenser will grant such a license to schools and universities for educational purposes but reserves the right to deny such a license without further notice.

Application for a commercial license:

After the request for a commercial license, licensee will receive (by fax, if licensee has provided a fax number or otherwise by postal mail, normally within less than three days) a license agreement and an invoice for the requested license. After payment the license is granted; payment implies acceptance of the license agreement.

When the license is granted, licensee is notified by email. A BSCW administrator is now able to upload the license to his server by means of the "get license" option in the "Upgrade License" action:

- As soon your license is granted you will receive an email notification. Follow the mentioned URL, resp. open:

```
[Admin > Upgrade Licence]
[OK]
```

  and accept the licence agreement with:

```
[I accept licence agreement]
```

- Finally perform a garbage collection and restart the BSCW database server to install the new license.

Generally a license (as shown in the "Upgrade License" action) has the following format:

```
<reversed hostname>:<port><scheme>.<path>

<reversed hostname>     reversed FQDN components of the hostname
<port>                  port of the HTTP server
<scheme>                'H' for HTTP or 'S' for HTTPS
<path>                  local path to the bscw.cgi script
```

For example a license for a BSCW server on host `https://bscw.domain.org` with the script path `/sec/bscw.cgi` using `HTTPS` looks like:

```
org.domain.bscw:443S.sec
```

8.2 License changes

The BSCW license will become invalid whenever the *SERVER_ROOT* or the secure prefix path within the *SCRIPTS* dictionary is changed! This applies for example when the *SERVER_ROOT* is changed from HTTP to HTTPS.

To change your license without service interruption proceed as follows:

1. Change your *SERVER_ROOT* variable and apply for a *"Change licence for new server (royalty free)"* license (see *License application* above). Please print and sign the shown license agreement and fax or send document (scanned) by email to us.

   Note

   This change has no impact on the running BSCW database server, since the new *SERVER_ROOT* is only (re)loaded after a BSCW database server restart.

2. Change your *SERVER_ROOT* variable back to the original (valid) server root definition and wait until your license is granted (you will receive an email notification).
3. After you received the email notification change the *SERVER_ROOT* again to the new definition.
4. To activate the new license run a garbage collection (or wait for the nightly automatic garbage collection run) and restart your BSCW database server after the garbage collection has been completed.

CHAPTER

NINE

FREQUENTLY ASKED QUESTIONS (FAQ)

9.1 BSCW Server Usage

9.1.1 What do I need to use BSCW?

- You need a personal email address to register.
- You need need a Web browser to access shared workspaces and to download documents to your local computer. Most Web browsers (e.g. Firefox, Chrome, Safari and Edge) are compatible. We recommend using latest versions of Firefox.

On most computers everything is already available. You need no special software installation to start with BSCW.

Keywords: Prerequisites, usage of BSCW

9.1.2 Do I need a special application for uploading documents?

No, you only need your browser application. Today's browsers include support for uploading based on a standard protocol and BSCW users may upload documents using these browsers with no problems.

Keywords: upload documents

9.1.3 How is BSCW intended to be used

BSCW is a groupware application. Users share workspace folders which contain objects. These objects can be files, discussions, notes, calenders etc.

- To start with BSCW a user has to **create a workspace**. Then he invites users to this workspace. These users can be already registered or unregistered. Invitation is possible with the users user name if he already has one or with the new users email address.
- After invitation the shared workspace folder appears in the home folder of the invited user. The invited user may now access the shared workspace.
- If a user leaves a group he may simply be removed from the list of workspace members.

It's also possible to define special access rights for invited members by using the built-in role based access control system. Please read the documentation for more details.

Keywords: Usage of BSCW

9.1.4 I cannot log in. The server rejects me - what shall I do?

Please mind that the BSCW server distinguishes between uppercase and lowercase characters in username and password.

If you forget your password, you can't 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:

- Open the URL `https://<your-server>/pub/bscw.cgi?op=chpwd` (e.g. `https://public.bscw.de/pub/bscw.cgi?op=chpwd` on the public BSCW server)
- Fill in the form with your primary email address
- An email with further instructions to reset your password will be sent to you - follow instructions in the email.

Keywords: login failed, forgotten password, forgotten user name

9.1.5 How do I change my password?

You may change your password using the user menu *[Change Password]* item in the right upper corner of the interface.

Keywords: password, change password

9.1.6 How do I connect to BSCW using WebDAV?

WebDAV (*Web-based Distributed Authoring and Versioning*, see www.webdav.org) is a standard protocol which allows users to access files on remote web servers. BSCW implements WebDAV so that it is possible to browse, upload and download files on a BSCW server using a WebDAV compliant client tool.

WebDAV protocol support is integrated in most operating systems such as MacOS, Windows and Linux (using GNOME, for example). Alternatively, special WebDAV client applications may be used which are available for different platforms and at different licensing models (for example: cadaver, DAV Explorer).

Connecting to a WebDAV enabled server typically only requires provision of the network URL and user credentials (user name and password), however, the process may vary depending on the WebDAV application used. In the following we shortly describe how to connect to a WebDAV enabled BSCW server using Windows 11.

Note

Not every BSCW server is WebDAV enabled. This depends on the BSCW version and the server configuration. If in doubt ask your BSCW administrator for help.

How to connect to BSCW using WebDAV on Windows 11

In order to connect to the BSCW server using WebDAV, it is recommended to open the "Computer" (icon on your desktop) then right-click (in an open space of the Window) and to select "Add a Network Location" from the context menu. In the "Add Network Location Wizard" click [Next]., choose a "custom network location" and enter the URL of the BSCW server when prompted for the "location of the website". Enter the full BSCW server URL (including `/sec/bscw.cgi` resp. `/bscw/bscw.cgi`) in the "Internet or network address field".

For example, enter `https://bscw.domain.org/sec/bscw.cgi` (resp. `https://bscw.domain.org/sec/bscw.cgi`) and click *[Next]*. You will then be prompted for your BSCW user name and password. If everything works fine you will finally be prompted for a name for this location - enter a label of your choosing (e.g. "My BSCW Server"). A new item in your "Computer" with that name should then appear " (note that this operation may take some time for the first time). The item provides access to the BSCW server: your home folder (':username') is accessible via the alias folder 'home'. You may now browse your workspaces using the Windows File Explorer, and upload or download files (using copy & paste or drag & drop).

Note

In order to reuse WebDAV resources stored on Windows 11 you have to enable the "WebClient service" by setting the service Startup type to "Automatic".

Troubleshooting

In case the above described method does not work (e.g. password dialog keeps popping up) the following tips have proven to help in most cases on Windows:

1. Try to connect using **https** i.e. enter the full URL `https://bscw.domain.org/sec/bscw.cgi/` (resp. `https://bscw.domain.org/bscw/bscw.cgi/`)
2. If your server doesn't support HTTPS, ask your BSCW administrator to enable HTTPS on the server. If that is not possible follow the hints given by Microsoft on how to enable basic authentication for WebDAV on the client computer (see below).
3. If the password dialog pops up again and contains a hostname in front of your username (e.g. "serversmith"), correct the username (i.e. remove "server"), enter your password and click [OK] (this step may need to be performed several times when connecting for the first time).
4. If establishing a network connection to your BSCW server is still not possible, try to add the network location and enter the 'share' URL: `\\bscw.domain.org\sec\bscw.cgi` (resp. `\\bscw.domain.org\bscw\bscw.cgi`)
5. Make sure you have installed all recent updates and service packs.
6. Make sure your BSCW server is running the most recent version of the BSCW software. If in doubt ask your BSCW administrator for help.

Hints for Windows 11

On Windows 11 you may not connect to your BSCW server as a network drive using WebDAV if the server does not support SSL. You may want to ask your BSCW administrator to enable HTTPS on the server. If that is not possible, you may want to follow the hints given by Microsoft on how to enable basic authentication for WebDAV on the client computer:

1. Click Start , type **regedit** in the Start Search box, and then click **`regedit`** in the Programs list.
2. Locate and then click the following registry key:

   ```
   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WebClient\Parameters
   ```

3. On the Edit menu, point to New, and then click DWORD Value.
4. Type `BasicAuthLevel`, and then press Enter.
5. On the Edit menu, click Modify. In the Value data box, type 2, and then click OK.
6. Close the registry editor. Finally, you should restart you computer.

Note

For security purposes, Windows disables basic authentication in the Web Distributed Authoring and Versioning (WebDAV) Redirector. Therefore either use of HTTPS (SSL connection) is required or a special configuration (on the client) has to be done as described in the MS Knowledgebase: https://support.microsoft.com/kb/841215/en-us

Hints for BSCW administrators

In case your users encounter problems with WebDAV connections, the following tips have proven to help in most cases:

1. Make sure you're BSCW server is running the most recent version of the BSCW software. (Check the website www.bscw.de for updates.)
2. You may change the authentication method BSCW uses when user credentials are passed to BSCW. The configuration variable *AUTH_MODE* may be set to `Basic` (for basic access authentication) or `Digest` (for digest access authentication). Basic authentication may limit WebDAV access if SSL is not enabled (see above).

   Attention

   Digest authentication is not possible in combination with LDAP or with email address login.

3. If you operate more than one BSCW-Server instance on one host, you should make sure that all BSCW-Server instances are running the same (most recent) version of the BSCW software. You must then select one of the servers in order to handle WebDAV `PROPFIND` - Requests for the root resource (`'/'`). This is achieved by setting the *SCRIPTS_OTHER_ROOTS* variable in the server configuration file `<bscw-runtime-path>/conf/config.py` (see comments there).
4. When changing your server configuration (i.e. `<bscw-runtime-path>/conf/config.py`) regarding WebDAV, make sure you update the HTTP server configuration via **`bsadmin conf_apache -n`** and do not forget to restart your Apache Web Server.

Please refer to the following table to see if the WebDAV edit feature works:

Windows	IE	Office	Protocol	BSCW >=	Edit
*	*	*	HTTP	*	no
10 64bit	Edge	Office 2016	HTTPS	7.1.0	yes
10 64bit	Edge	Office 2016	HTTPS	7.1.0	yes

1. enable WebClient-Service (set to "automatic") (Windows 11)
2. deactivate proxy timeout for WebDAV requests

Description: https://support.microsoft.com/kb/2445570

Keywords: WebDAV

9.1.7 How do I destroy a workspace?

You may destroy a workspace by first removing all members of this workspace except yourself. Then the workspace can be deleted and moved into your trash. Afterward you can remove the workspace from the trash.

If you are not owner of the workspace and you remove the workspace without removing all members first, the workspace is only removed from your home folder. Other workspace members still have access to it.

If you are owner of the workspace and you remove the workspace from the trash, the system will automatically remove *all members of this workspace* so *no one* may further access it. The system will provide a warning message in this case.

Keywords: destroy workspace, remove members

9.1.8 How do I delete my account?

Only if enabled, it is possible to delete your own user account with *[Destroy Account]* in the user menu in the right upper corner of the interface. If this menu entry is missing you cannot delete your account. If you do not want to receive daily email reports any more you may simply disable this in *[Preferences] [Notifications] [Active Event Services]*. If you really want to be deleted please contact your local BSCW administrator.

Contact our Support team only if you are using a BSCW server that is operated by OrbiTeam. Don't forget to provide your username and server address (URL).

Keywords: delete account

9.1.9 How do I handle a BSCW error?

If you encounter a BSCW error message *System error* you may have found a bug in the software or a problem in the system configuration. Please first contact your local BSCW server administrator.

If the problem may not be solved, please contact the Support team at support@orbiteam.de and include the following information in your report:

- the URL of the BSCW server you use,
- the time the error occured and the complete error message you get,
- describe exactly what you did before you got this error message,
- if you think more information about the computer system you are using is needed, include it.

Thank you very much for help.

Keywords: BSCW error, bug report

9.1.10 I reached the limit of my disk space - what shall I do?

The disk space an object occupies is subtracted from the quota of the owner of the workspace the object is in(and not to the quota of the creator of the object!). This is the reason why

- your quota does not decrease when you upload files to a shared workspace you are not the owner of,
- you are sometimes asked that another user has to delete files. He is the owner of the workspace you want to upload files to and his quota is exhausted.

There is a soft and a hard quota. You can exceed the soft quota temporarily for some days. After that it is not possible to upload files in the workspaces any more. You can never exceed your hard quota.

To upload files the owner of the workspace must have enough free space. Ask the owner of the workspace for help. He should delete some files. Normally there are files in the waste. To empty the garbage

- please enter your *[Trash]*
- press *[Clear waste]*

If this doesn't resolve your disk space problem you may ask your system administrator to provide you with more disk space. This is not possible on the public BSCW server at https://public.bscw.de/.

Note

- Disk space limiting is set per user.
- Disk space accounting concerns all workspaces you are the owner of.
- You can control your quota the following way:
  - Open the chat view your user by clicking on your username and open the info page by clicking the white *(i)* overlay in the users' icon

- On the info-page you'll find all necessary information about used disk space and quota.
- You may check your quota limit and the amount of currently used space.

Keywords: quota, disk space limit

9.1.11 Why does MS-Word mark a document as read-only?

This depends on the used version of MS-Office as well as on the configuration of your BSCW server. Recent versions of BSCW allow direct editing of documents using MS-Office. Please contact your local BSCW administrator if this feature is available on your BSCW server.

In case the direct editing of documents using MS-Office is not available on your BSCW server, a Word document that is downloaded from a BSCW server and opened with the MS-Word application may be marked as Read-Only (because Word realized that this document came from a web resource and MS-Word can not save it back to this web resource). If you want to edit the document, you have to save it locally on your PC (*[Save as]*) and replace or revise the corresponding BSCW document on the BSCW server when you have finished editing.

Keywords: MS-Office, editing documents, Word-documents, Read-Only

9.1.12 Is there a restriction for the size of documents I upload?

No, there is no general restriction. If you run into problems while trying to upload large documents

- Please check your local network configuration (firewall, proxy etc.) Some networks restrict the size of files that may be uploaded through the network to a remote server. Contact your local system administrator for details.
- Please check your browser. Some browsers have problems with uploading large files.
- You may switch to a WebDAV client

Keywords: restriction, size, upload

9.2 BSCW Server Software

9.2.1 How do I get the BSCW software?

The latest version of the software is always available for download from our download pages at https://www.bscw.de/en/social/#download

Usage of the BSCW server software is limited to a testing and evaluation period of 90 days and restricted to 200 users. After that period you have to acquire a license to continue usage. The distribution of BSCW licenses is handled by OrbiTeam Software GmbH & Co. KG, a spin-off company of FIT Fraunhofer Institute.

Schools and universities may apply for royalty free licenses for educational use only. In this case, BSCW must not be used commercially or in the context of funded projects. Any other use of the software requires the payment of a license fee.

For more information on licensing conditions and license fees, please contact our sales department at license@orbiteam.de.

Keywords: BSCW software, download, licensing

9.2.2 Can I try the BSCW software?

You may evaluate the BSCW software for 90 days free of charge.

For this purpose you may either use a demo server for the BSCW social or BSCW classic product provided by OrbiTeam and test the software online - or download the software and test it on your own server.

Please note that for the on-line trial all data you upload will be deleted after 90 days.

Keywords: BSCW software, online trial, evaluation

9.2.3 How do I keep up to date with BSCW developments and new releases?

The best way to keep up to date is to subscribe to our announcement mailing list. You may **subscribe** to this mailing list on the website - and of course **unsubscribe** at any time.

You will find the archive of this list at

- BSCW Announce (EN)
- BSCW Announce (DE)

Customers will also be notified about new releases automatically (i.e. they are automatically subscribed to this list).

You may also want to follow us on Twitter or Facebook for more instant updates.

Finally you may want to check our website BSCW frequently to check for news and updates.

Keywords: new releases, update, developments, announcement mailing list

9.3 BSCW Server Administration

9.3.1 What facilities are available for server administrators?

BSCW provides a HTML and a command line interface for server administration.

To be able to access the HTML administration interface with *[Admin]* in the user menu in the right upper corner of the interface, you must have an account on the BSCW server and your account name must appear in the *SERVER_ADMINS* list in the main server configuration file (`<bscw-runtime-path>/conf/config.py`).

Administrator users explicitly need to log in a second time with their password at *[Admin]* to gain BSCW administrator rights. Without this additional administrator authentication no administrative rights are applied to their account.

The administrative command line interface is accessed via the **`bsadmin`** script which is located in the BSCW server instance path `bin` directory **`<bscw-runtime-path>/bin/bsadmin`**. Enter **`bsadmin`** to get a list of all installed administrative modules or **`bsadmin <command>`** for instructions about the usage of a specific tool.

See also

Section 6.2 *Administration using the bsadmin script*

Keywords: admin tools, administrator interface, bsadmin scripts

9.3.2 How do I delete a user from the BSCW server?

Open the *[User administration]* page of the HTML administration interface *[Admin]*. Find the respective user and select *[Permanently destroy]*.

Using the command line interface **`bsadmin rmuser`** destroys a given user name.

Keywords: User administration, delete a user from server

9.3.3 How do I rename a user?

Open the *[User administration]* page of the HTML administration interface *[Admin]*. Find the respective user and select *[Change Name]*.

Using the command line interface **`bsadmin rename`** renames a given user name.

Keywords: User administration, rename a user

9.3.4 How do I register a new user (i.e. without sending email)?

This is possible through the *[New User]* action of the HTML administration interface. Enter the email address and then allocate the address to a new user name with a password.

The command line interface provides the **`bsadmin register`** script, use the following syntax to register a new user:

```
$ bin/bsadmin register -r <email> <login_name> <password>
```

Keywords: User administration, register new users

9.3.5 How do I restrict the creation of workspaces?

Workspaces are "created" by adding members to a folder. To disallow an user the creation of new workspaces her/his role may not contain actions from the "share view" so s/he is not able to invite members. Hence to effectively deny the creation of new workspaces requires a change of the "user role", which is by default the "Manager" role.

An BSCW administrator may enforce such a restriction in two ways:

1. To restrict single users edit the "user role" of or assign a new "user role" to her/his user object. The user role is inherited by the users' top level folders (home, etc.) along the folder hierarchy:
   - First open the chat view of the user:

     ```
     https://<your server>/sec/bscw.cgi/u<username>
     ```

     resp.

     ```
     https://<your server>/bscw/bscw.cgi/u<username>
     ```

     and then open the users' info page by clicking the white *(i)* overlay in the users' icon.
   - Edit the (default) user role "Manager" and select the actions you want to restrict/allow using *[Edit role]* ` from the *Administrator actions*.
   - Alternatively you may assign a more restrictive role to the user with *[Assign role]* from the *Administrator actions*.
2. If you want to generally disallow users to create workspaces it is advisable to define a server-wide more restrictive user role, see section 6.8.2 *Role definition and default roles* for details.

Keywords: restrict user actions, restrict creation of new workspaces

9.3.6 How do I restrict the creation of new user accounts?

By default the BSCW server allows generally self-registration of email addresses and the creation of BSCW user accounts.

The *MAY_REGISTER* list in the main server configuration file <bscw-runtime-path>/conf/config.py restricts the ability to register new email addresses to the listed BSCW users. If the *MAY_REGISTER* list is not empty, only the listed users (beside BSCW administrators) are allowed to create new email addresses using the *[Invite Member]* action in the member menu (see also the *RESTRICT_MAIL* in <bscw-runtime-path>/conf/config.py for further methods to restrict registration.)

Keywords: restrict user account creation

9.3.7 How do I find the corresponding file for a BSCW document?

While the meta data of a BSCW document is kept in the database, the raw document itself is stored within the file system in a directory tree below the directory defined by *FILES* (in the main server configuration file <bscw-runtime-path>/conf/config.py) which points by default to <bscw-runtime-path>/var/data/Files/.

In general documents are named with an unique identifier assigned by the BSCW system at creation time. To store the raw document this unique identifier is split into number pairs (from the right to the left; if necessary padded with a leading zero) and copied in the corresponding <FILES> sub directory. The file name of the raw document is constructed by the left most number pair with the character F and the document type extension appended. For example, the content of a Word document with unique identifier 12345 is stored in a file named <FILES>/01/23/45F.docx.

You may retrieve meta-information on a document using the **bsadmin ls** utility. To get information on the above document use:

```
$ bin/bsadmin ls <FILES>/01/23/45F.docx
```

Keywords: BSCW document, document raw file

9.3.8 May I remove the contents of the BSCW "Temp" directory?

The BSCW "Temp" directory (<bscw-runtime-path>/var/data/Temp by default) holds temporary files and directories created during database updates and document uploads. **Before removing any files from Temp, shut-down the BSCW database server**. After shut-down, all files or directories beginning with a @ in "Temp" may be removed.

Keywords: temp directory, remove files from temp-directory

9.3.9 How do I upgrade my BSCW server instance to a new version?

1. **Important**: Read **attentively** the upgrade hints in section 2.4 *Upgrading to BSCW 7.6.1*. To perform an upgrade you need a **valid** BSCW license! Do not upgrade if your license has become invalid!
2. Download and extract the BSCW distribution archive bscw-7.6.1-<rev>-py3*.tar.gz

   ```
   # tar xzf bscw-7.6.1-<rev>-py3*.tar.gz
   ```

   - Enter the distribution directory bscw-7.6.1-<rev>-py3* and perform the usual installation steps (see *Installation*) **on top** of your old BSCW instance in <bscw-runtime-path>. To start the installation extract the BSCW distribution archive and run the **install.sh** script as superuser

     ```
     # id
     uid=0(root) gid=0(root) groups=0(root)
     # tar xf bscw-7.6.1-<rev>-py3*.tar.gz
     # cd bscw-7.6.1-<rev>-py3*
     ```

```
# ./install.sh

Enter BSCW system user name: [bscw]
Enter BSCW base directory: [/opt/bscw]

Extracting BSCW 7.6.1 distribution in /opt/bscw/lib

Choose one of the following options:
 ( 0) update BSCW 5.2.6 [/opt/bscw/srv/bscw.domain.org]
 ( 1) create new BSCW instance
Enter a number (0-2): 0
...
```

- Adopt your Apache HTTP server settings (see section 3.4.1 *Apache HTTP Server Configuration*);
- Edit the BSCW main server configuration file <bscw-runtime-path>/conf/config.py and adapt it to your needs, e.g. enable new features (be sure to configure the mandatory settings section (see section 3.4.2 *BSCW instance configuration*)).

3. If your license got invalid apply for a "change license":
   - Make sure you are BSCW administrator (if needed, insert your user name in <bscw-runtime-path>/conf/config.py:SERVER_ADMINS) and open *[Admin]* in the users' menu in the right upper corner of the interface.

     Log in a second time with your password to gain BSCW administrator rights for the current session and apply with

     ```
     [Admin > Upgrade license]
     [OK]
     ```

   - Fill in the form (be sure to enter a **valid** email-address!)
     - Choose the license type:

       ```
       Change license for new server (royalty free)
       ```

     - Please print and fax the shown license agreement to us.

Keywords: server upgrade, new version

9.3.10 How do I migrate a BSCW database to another host?

Note

BSCW servers version 3.2 or later must have a valid license before the migration (resp. upgrade). **If the license is not valid or is an evaluation license, you need to upgrade your license** before migrating.

The procedure is as follows:

1. Install the same BSCW server version in <bscw-runtime-new> on your destination host
   - edit <bscw-runtime-new>/conf/config.py :
     - adapt the import configuration settings of your old server (e.g. <bscw-runtime-old>/conf/config.py: *SERVER_ADMIN*, *SERVER_ADMINS*, *SMTP_HOST*)
     - set SERVER_ROOT = 'https://<bscw.domain.org>/' (see *SERVER_ROOT*)
   - check if your newly installed BSCW server is fully operational
   - stop your new BSCW server.

2. Copy the old BSCW server (in <bscw-runtime-old>) data to you new BSCW server (in <bscw-runtime-new>)
   - stop your old BSCW server (in <bscw-runtime-old>)
   - copy the content of the <bscw-runtime-old>/var/data directory into the <bscw-runtime-new>/var directory of your new BSCW server.
   - start your new BSCW server (in <bscw-runtime-new>)
3. Make sure you are BSCW administrator (if needed, insert your user name in <bscw-runtime-new>/conf/config.py: *SERVER_ADMINS*) and open *[Admin]* in the users' menu in the right upper corner of the interface.

   Log in a second time with your password to gain BSCW administrator rights for the current session and press *[OK]*. Now apply for a new license with

   ```
   [Admin > Upgrade license]
   [OK]
   ```

   Fill in the form (be sure to enter a **valid** email-address!) and choose the license type *Change license for new server (royalty free)*. Please print and sign the shown license agreement and fax or send document (scanned) by email to us.
4. As soon your license is granted you will receive an email notification:
   - follow the mentioned URL
   - perform a garbage collection and
   - restart the BSCW database server.

Keywords: migrate database

9.3.11 Why do I get a "license expired" error?

You may get one of the following types of errors:

- The BSCW server responds with

```
Error: license expired
Cannot commit changes to database because the BSCW license has expired
Error code: unauthorized
```

In this case your BSCW database does not contain a valid BSCW license (e.g., you upgraded a BSCW server before version 3.2). To install a BSCW test license (90 days for 200 users) run the garbage collector.

- The BSCW server responds with

```
Error: license expired
Cannot commit changes to database because the BSCW license has expired
Error code: ... <some message different from 'unauthorized'>
```

Your BSCW license is invalid (a more descriptive reason is shown in the error code message). In this case you have apply for a new license. Use the "Upgrade license" operation in the administrator interface.

Keywords: BSCW-license, license expired

9.3.12 Changing the "SERVER_ROOT" without service interruption

The BSCW license will become invalid whenever the *SERVER_ROOT* or the secure prefix path within the *SCRIPTS* dictionary is changed! This applies for example when the *SERVER_ROOT* is changed from HTTP to HTTPS.

To change your license without service interruption see the BSCW Admin Manual 7.6 (https://www.bscw.de/files/Download/AdminManual76.pdf) chapter 8 *BSCW license*.

Keywords: BSCW-license, license change

9.3.13 The BSCW server does not work, the database seems to be corrupted

Your database seems to be corrupted! This may only happen, if there is a (disk) hardware failure or your BSCW disk partition is overflown. A corrupted BSCW database is typically indicated by one (or all) of the following Messages (see in `<bscw-runtime-path>/var/log` the log files `bscw.log` and `sys.log`):

1. The BSCW server reports the a *System error* to a client and the `<bscw-runtime-path>/var/log/sys.log` file contains a traceback like:

```
Traceback (innermost last):
    [...]
TypeError: unsubscriptable object
```

2. The garbage collector reports the following traceback:

```
GC init:
GC started: objects: 1767 size: 1485369
Bad object 1663 at 1468966
Traceback (innermost last):
    [...]
RuntimeError: Bad objects in database
```

3. The BSCW database server reports the following traceback:

```
Traceback (innermost last):
    [...]
EOFError: EOF read where object expected
```

4. The BSCW database server reports the following error:

```
$ bin/bsadmin start
Service start bs_servdb at ('localhost', 12964)
FATAL ERROR. Server stopped
exceptions.ValueError at 1368966 (size 1485369): bad marshal data
```

5. The BSCW database server reports some other strange things in the `<bscw-runtime-path>/var/log/bscw.log` file.

   The recommended fix is replacing the BSCW database (the file `<bscw-runtime-path>/var/data/Store`) by some backup file. Use the following commands with extreme care to avoid any data loss. **Back up your database storage files!** If in doubt ask support@orbiteam.de for further advice!

```
$ bin/start_servers -k
$ bin/bsadmin getconfig RESTORE
<bscw-runtime-path>/var/data/Store        # database store
$ cp var/data/StoreA        var/data/StoreA.bak
$ cp var/data/StoreB        var/data/StoreB.bak
$ rm var/data/StoreA        var/data/StoreB
$ rm -f var/data/Tables
```

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```
$ cp var/data/Backup        var/data/Store
$ bin/start_servers
```

If your backup is outdated, or the backup files are corrupted either, you may fix the database by truncating corrupted objects using the command:

```
bin/bsadmin dbscan
```

This command will print the offsets and class names of the last objects in the database. A good choice for truncation will be the offset of the last `AccessCount` or `Preference` object. Transactions in BSCW are normally finished by writing a bunch of `AccessCount` or `Preference` objects. The database will not become inconsistent if some of these objects are missing. However you **may not** truncate at an offset lower than the file size after the last garbage collection (see `<bscw-runtime-path>/var/data/bscw.log`).

For database truncation use

```
$ bin/start_servers -k
$ bin/bsadmin getconfig STORE               # get active database store
<bscw-runtime-path>/var/data/StoreA
$ cp var/data/StoreA           var/data/StoreA.bak
$ bin/bsadmin dbscan -f offset
$ bin/start_servers
```

The parameter offset needs not to be given, if the last object in the database is an `AccessCount` or a `Preference`. Otherwise, the best value for offset is the number shown before the last `AccessCount` or `Preference` object.

Keywords: BSCW database corruption

9.3.14 Why do I get connect problems during "Upgrade License"?

You are probably sitting behind a firewall which does not let you connect to our license server. Here is what to do:

1. Use the *[Upgrade license]* button, but now store the returned page on your locally using *[Save as]* in your browsers file menu. For example, store the page in file `license.html`.

   Alternatively you may use the command line script **`bsadmin license -r`** which creates a file `<bscw-runtime-dir>/var/data/Temp/license.html`.

   The next 2 steps must be performed on systems which can connect to our server https://bscw.orbiteam.de.

2. Open the previously stored `"license.html"` page on a system with internet access, select *[New license]*, choose the required license and submit the form.

3. If necessary print, sign, scan and send the resulting license agreement to OrbiTeam (license@orbiteam.de).

4. After your license is granted you will be notified by email. Open again the stored `license.html` page again on a system with internet access and select *[Get license]*. Then save the returned page on your local system (e.g. in file `granted.html`).

5. The last step again needs connection to your BSCW server (the one behind the firewall):

6. Open the stored license (URL `file:granted.html`) on a system with access to your BSCW server and select *[Upload license]*.

Keywords: Upgrade license, connect problems, firewall

9.3.15 My BSCW database seems to be corrupt, what can I do?

If your BSCW database is corrupt, e.g. due to hardware failure, your BSCW database server can be enabled to do an "auto-repair" - version 3.4 onwards only!

1. Stop the database server:

```
$ bin/bsadmin stop
```

2. **Important**: Backup your database storage files!

```
$ bin/bsadmin getconfig STORE
<bscw-runtime-path>/var/data/StoreA
# active database store
$ mkdir var/data/backup
$ cp var/data/Backup var/data/backup
$ cp var/data/StoreA var/data/backup
$ cp var/data/StoreB var/data/backup
```

> **Note**
>
> The command **bsadmin getconfig STORE** will return the active database store (StoreA` or StoreB) while **bsadmin getconfig RESTORE** will return the current value of variable STORE in your configuration file

- Set error condition (remove the table file if existing and create a file with "Error" appended instead)

```
$ tables=$(bin/bsadmin getconfig TABLES)
$ rm -f "$tables"
$ echo > "$tables"Error
```

- Start the database server (auto-repair is enabled) **after you made a backup copy of your database storage files**

```
$ bin/start_servers
```

You might also use **bsadmin start** here.

- Check for inconsistencies
- To avoid user interferences set in <bscw-runtime-path>/conf/config.py SYS_BUSY = 'sys_busy' and repeat the following two steps until no errors are reported (there should be only a **few** repairable errors):

```
$ bin/bsadmin dbcheck list
$ bin/bsadmin dbcheck repair
```

- Finally, if everything seems ok, set again in <bscw-runtime-path>/conf/config.py SYS_BUSY = '' and start the garbage collection

```
$ bin/bsadmin garbage
```

Keywords: BSCW database corrupt, database problems

9.4 BSCW Installation

9.4.1 What do I need to install the BSCW server software?

Generally you require a standard Web server (we recommend the Apache HTTP server 2.4 for Unix (https://httpd.apache.org). You also require the interpreter and standard libraries for the Python 3 programming language. The Python implementation is copyrighted, but is freely usable and can be downloaded from https://www.python.org.

See also

Section 3.4.1 *Apache HTTP Server Configuration* on Unix

Keywords: Prerequisites, BSCW server software, BSCW server installation

9.4.2 Where should I install the BSCW server software (Unix)?

The installation program of the BSCW software **must** be run as superuser (root). The BSCW install procedure will create a special BSCW system user `bscw` with an **own** group `bscw`. Usually the BSCW software is installed in the home directory of the BSCW system user at `/opt/bscw`.

It is necessary that your Web server have access to the file system where BSCW is installed. For best performance use a local file system of the host where your Web server runs.

Keywords: BSCW server installation, operating system

9.4.3 Why do I get a "500 Server Error" when I try to register myself?

When you try to register, i.e., when you go to location

```
https://<server>/pub/bscw.cgi?op=rmail
```

and you receive `"500 Server Error"` your Web server failed to start the BSCW **`bscw.cgi`** CGI script. Check that your Web server runs on the same host as the BSCW database server - both servers **must** run on the same host.

Also check that the paths to the BSCW CGI script **`bscw.cgi`**, the Python interpreter (usually **`/usr/bin/python3`**) and the Python libraries (usually `/usr/lib/python3.*/`) are accessible from the server host machine for the user (group) ID that the Web server uses to execute CGI scripts.

Keywords: BSCW-registration, register, 500 Server Error

9.4.4 Can I put the data files for the server on a separate disk?

On Unix systems you can change in `<bscw-runtime-path>/conf/config.py` the location of various data files by appending the directory definition for *ALARM_DIR*, `DATA_DIR`, `LOG_DIR`, `RUN_DIR`, `WWW_DIR`.

Note

If you provide relative paths directories are relative to `<bscw-runtime-path>`.

Keywords: data files, separate disk, operating system

9.4.5 What can I do if I get a `ServiceException: getState, ()` error

- In <bscw-runtime-path>/conf/config.py change (or add a line):

```
GSMOD_CAN_FLUSH = 0
```

- Stop the running database server:

```
$ bin/start_servers -k
```

- Check if stopping the database server was successful:

```
$ ps -ef | grep bsadmin
```

- There should be no process **bsadmin start ...** running. Otherwise manually kill this process:

```
$ kill <pid of bsadmin process>
```

  (Be careful if you have other BSCW servers running on your machine that you don't want to kill.)

- Start database server:

```
$ bin/start_servers
```

Keywords: ServiceException, start_servers

9.4.6 How can I provide a BSCW user interface in different languages?

BSCW was designed to allow installation of different language interfaces. Therefore server code and language dependent message files have been separated. All message files reside in a sub directory of the BSCW distribution bscw-7.6.1-<rev>-py3*/bscw/msg (e.g. msg/(de|en|es|fr) come with the server distribution).

To add support for additional languages see section 7.1.2 *Translation instructions* of this manual.

If you translated the BSCW user interface to your language, please send an email to support@orbiteam.de - we would like to provide it to all users of the BSCW system.

Keywords: user interface, languages, message files

9.4.7 Why do I get a "`Permission denied`" error? (Unix)

The path to your BSCW instance directory, the <bscw-runtime-path>/var/www directory and all directories below these directories must be readable and executable (searchable) for all users (e.g. mode `drwxr-xr-x`). The scripts **var/www/*.cgi** additionally must have the set-group bit set (e.g. mode `-rwxr-sr-x`). All other files below these directories must be readable for all. This is, because the HTTP server must have the right to find and execute the CGI scripts and to return icons and other public objects.

The scripts (or a wrapper program) will then set the effective group for further access to BSCW operations. All data below the BSCW installation directory should be readable by this group. This group needs also write access to the `var/data/` directory and all files and directories below that.

Access right problems like

```
Traceback (innermost last):
    [...]
OSError: [Errno 13] Permission denied: 'var/data/Files/01/23'
```

are caused by an erroneous installation of the **bscw.cgi** CGI script (no binary wrapper is installed, the script is not executed set-group-id of the BSCW users' group; the BSCW instance-path file system is mounted no-suid) or by incorrect manual manipulation of the BSCW instance-path access rights.

BSCW requires group-write permissions (therefore it requires an own exclusive group. Please check the section 3.2 *Installation* of this manual for correct BSCW user and group setup.

Execute as BSCW user `bscw` with the group `bscw` the **`bsadmin chkconfig`** script:

```
# su bscw
$ id
uid=1234(bscw) gid=1234(bscw)
$ cd <bscw-runtime-path>
$ ./bin/bsadmin chkconfig
```

This should compile (if a compiler is found) and install a binary wrapper. If no compiler is found compile the wrapper manually and repeat **`bsadmin chkconfig`**. The **`bscw.cgi`** CGI script **must** run set-group-id and the complete BSCW `./var/data` directory needs `rws`-group access.

To fix erroneous file permission stop your BSCW server and perform the following commands (as root)

```
$ su -
$ id
uid=0(root) gid=0(root)

# cd <bscw-runtime-path>

# ./bin/start_servers -k

# chown -Rh bscw:bscw .

# find ./var/[^w]* -type d | xargs chmod 2770
# find ./var/[^w]* -type f | xargs chmod 660

# find ./var/www -type d | xargs chmod 2775
# find ./var/www -type f | xargs chmod 664

# chmod 2755 .

# chmod 2755 ./var/run/run_bscw
# chmod 2755 ./var/www/bscw.cgi
# chmod 2755 ./var/www/nj_bscw.cgi

# chmod 2771 ./var/data
```

To avoid world read-access on `./var/data/htpasswd` (or `./var/data/Temp`) the file (or directory) alternatively must be owned by the webserver user (see the `User` directive in the main HTTP server configuration file). On Debian Linux ensure the following ownership/permissions

```
$ su -
$ id
uid=0(root) gid=0(root)

# cd <bscw-runtime-path>

# chown www-data        ./var/data/expired_users
# chmod 660             ./var/data/expired_users

# chown www-data        ./var/data/htpasswd
# chmod 660             ./var/data/htpasswd

# chown www-data        ./var/data/registered_users
# chmod 660             ./var/data/registered_users
```

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```
# chown www-data        ./var/data/removed_users
# chmod 660             ./var/data/removed_users

# chown -Rh www-data    ./var/cache/preview
# find ./var/cache/preview -type d | xargs chmod 2770

# chown -Rh www-data    ./var/data/Temp
# find ./var/data/Temp -type d | xargs chmod 2770

# chown -Rh www-data    ./var/log
# chmod 2770            ./var/log
```

Since Linux environments do not execute forked processes set-group-id, archiving may not work anymore. To create archives it is necessary to recursively change the owner the `./var/data/Files` directory to the web server user.

```
$ su -
$ id
uid=0(root) gid=0(root)

# chown -Rh www-data ./var/data/Files

# ./bin/start_servers
```

Keywords: Permission denied, HTTP server, OSError, Unix

9.4.8 Why do I get a "RuntimeError: var/www/bscw.cgi: No setgid"?

If your operating system does not support *set-group-id scripts* (such as Linux) a binary wrapper program is used to allow *set-group-id* operation of the **bscw.cgi** script. If your operating system supports *set-group-id scripts*, this problem is caused by a file mode/ownership problem.

Usually the BSCW CGI script (**<bscw-runtime-path>/var/www/bscw.cgi**) is executed with group ID set to the BSCW user:

```
$ cd <bscw-runtime-path>/var/www
$ ls -l bscw.cgi
-rwxr-sr-x 3 bscw bscw 771 Feb 21 13:12 bscw.cgi
```

Using this technique enables the BSCW CGI script (independently of the user and group ID setting of the executing HTTP server) to modify its database located in directory `<bscw-runtime-path>/var/data`:

```
$ cd <bscw-runtime-path>/var
$ ls -ld data
drwxrws--- 4 bscw bscw 512 Feb 21 14:05 data
```

The problem should be solved by changing file ownership and modes (using user and group ID of the BSCW user) as described in FAQ question 9.4.7 *Why do I get a "Permission denied" error? (Unix)*.

Keywords: Python traceback, RuntimeError, CGI scripts, operating system

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