## Contents

1. Setup:Installation Guide ................................................................. 6
2. Setup:Installation Guide/Advanced/Backup ........................................ 9
5. Setup:Installation Guide/Advanced/Performance Optimization ..................... 12
7. Setup:Installation Guide/Advanced/Performance Optimization/MySQL ........... 13
8. Setup:Installation Guide/Advanced/Performance Optimization/PHP ............... 14
9. Setup:Installation Guide/Advanced/Rebuilding the Search Index .................... 15
10. Setup:Installation Guide/Advanced/VisualEditor Configuration ................... 16
15. Setup:Installation Guide/Installation BlueSpice WikiFarm/Upgrade ............... 26
16. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Apache and PHP 30
17. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Elasticsearch 32
18. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Introduction 34
20. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/MariaDB ........ 36
21. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Memcached .... 38
22. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Node.js ....... 39
23. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Parsoid .......... 40
24. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/PhantomJS ..... 42
25. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Python .......... 43
26. Setup:Installation Guide/Installation BlueSpice WikiFarm/Linux/Texvc ........... 44
27. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/Apache Tomcat 45
30. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/IIS Web Server 64
32. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/MariaDB .... 71
33. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/Node.js ....... 80
34. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/OpenJDK ..... 87
35. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/PHP 7.3 .......... 91
36. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/PHP Manager 106
37. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/Parsoid ....... 109
38. Setup:Installation Guide/Installation BlueSpice WikiFarm/Windows/PhantomJS .... 117
41. Setup:Installation Guide/Upgrade .................................................. 128
42. Setup:Installation Guide/Upgrade free to pro ..................................... 131
43. Setup:Installation Guide/Webservices/LatexRenderer .............................. 131
44. Setup:Installation Guide/Webservices/PDF-Export ................................... 132
| 45. | Setup:Installation Guide/Webservices/VisualDiff | ................................................................. | 135 |
| 46. | Setup:Installation Guide/With Installer | ........................................................................... | 136 |
| 47. | Setup:Installation Manual/Optimization/Caching | ........................................................................ | 140 |
| 49. | Setup:Installation Manual/Optimization/Time Zone | .......................................................................... | 146 |
| 52. | Setup:System requirements | ................................................................................................. | 149 |
Setup:Installation Guide

Contents

1 Introduction ....................................................................................................................................... 7
2 Prerequisites .................................................................................................................................... 7
3 Installing BlueSpice 3 ..................................................................................................................... 7
4 Upgrade and patch updates ............................................................................................................... 7
5 Quick reference: Configuration, services, and optimization ............................................................. 7
5.1 Services and system configuration ............................................................................................... 8
5.2 Webservices for Apache Tomcat .................................................................................................... 8
5.3 Additional settings and optimizations ........................................................................................... 8
5.4 Security settings ............................................................................................................................ 9
5.5 Compendium .................................................................................................................................. 9
Introduction

We are happy that you decided to install the latest version of BlueSpice, our innovative and feature-packed wiki system. Carefully follow our step-by-step instructions, and BlueSpice will be up and running in no time!

After checking your system requirements and preparing your server environment, you will install the BlueSpice application and optionally tweak your configuration to improve your system performance so that your users can enjoy working with their new wiki.

Prerequisites

Before installing BlueSpice 3, review that you meet all system requirements and that your server environment is ready. If you need to set up a server environment first, we provide detailed instructions here:

1. Check the system requirements
2. Prepare your system for the BlueSpice installation.
   - To set up your server environment, follow the step-by-step instructions or read our quick reference:
     - Linux
     - Windows

Installing BlueSpice 3

Please select which installation type you need:

- Full BlueSpice 3 installation with Installer
  - Extended Functions: VisualEditor, ExtendedSearch
- BlueSpice 3 WikiFarm installation
- Docker image

Upgrade and patch updates

- BlueSpice 3 upgrade from version 2.27.x to the current version of BlueSpice
- Patch Update from version 3.1.x to a higher version 3.1.x
- Upgrade from BlueSpice free 3.1.x to BlueSpice pro 3.1.x

Quick reference: Configuration, services, and optimization

**Warning:** Pages in the namespaces SocialEntity and User are indexed by search engines by default until version 3.1.13. If you run a public wiki with an earlier version, you should exclude these namespaces from being searchable unless you want these pages to be indexed by public search engines.
If you don't need to set up a server environment "from scratch", you can directly refer to the setup instructions for individual system components. Just make sure that you really have everything configured as needed:

**Services and system configuration**

- **Linux**
  - Introduction
  - Apache und PHP
  - MariaDB
  - Jetty
  - Elasticsearch
  - Node.js
  - Parsoid
  - Python
  - Memcached
  - Texvc *(BlueSpice pro only)*
  - PhantomJS

- **Windows**
  - Introduction
  - IIS Web Server
  - Visual C++ Redistributable for Visual Studio 2015
  - PHP Manager
  - PHP 7.3
  - MariaDB
  - OpenJDK
  - Apache Tomcat
  - Elasticsearch
  - Git
  - Node.js
  - Parsoid
  - Python
  - PhantomJS *(BlueSpice pro only)*

**Webservices for Apache Tomcat**

- PDF-Export
- VisualDiff *(BlueSpice pro only)*
- LatexRenderer *(BlueSpice pro only)*

**Additional settings and optimizations**

- Caching
- Cronjobs
- Time Zone
Security settings

- File System Permissions
- Deactivating installcheck file
- Save Directories

Compendium

- Backup
- Configuration Folder settings.d
- ExtendedSearch Configuration
- Performance Optimization
- Performance Optimization/ManualRecache
- Performance Optimization/MySQL
- Performance Optimization/PHP
- Rebuilding the Search Index
- VisualEditor Configuration
- Windows Folder Structure

Installation guide

Contents

1 Introduction ................................................................. 7
2 Prerequisites ............................................................ 7
3 Installing BlueSpice 3 ..................................................... 7
4 Upgrade and patch updates ............................................ 7
5 Quick reference: Configuration, services, and optimization ........................................... 7
  5.1 Services and system configuration ........................................... 8
  5.2 Webservices for Apache Tomcat ........................................... 8
  5.3 Additional settings and optimizations ........................................... 8
  5.4 Security settings ........................................................... 9
  5.5 Compendium ............................................................. 9
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  - PHP 7.3
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- Caching
- Cronjobs
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- File System Permissions
- Deactivating installcheck file
- Save Directories

Compendium

- Backup
- Configuration Folder settings.d
- ExtendedSearch Configuration
- Performance Optimization
- Performance Optimization/ManualRecache
- Performance Optimization/MySQL
- Performance Optimization/PHP
- Rebuilding the Search Index
- VisualEditor Configuration
- Windows Folder Structure

Setup:Installation Guide/Advanced/Backup

Backup of the database

To back up your database, use the native program "mysqldump" of MySQL/MariaDB: Open a console, switch to the directory `<installpath-bluespice>` and backup your database with the following command:

```
mysqldump -u <username> -p --lock-tables <datenbank> > database.sql
```

For `<username>`, use the administrative database user (usually "root"), and for `<datenbank>`, use the database of your MediaWiki/BlueSpice installation.

**Note:** In Windows, make sure that your environment variables are set correctly, so that you can access the command "mysqldump".

Backup of the file system

Back up the complete directory `<installpath-bluespice>`, which now also includes the database image, to a different location on your server.
For security reasons, immediately delete the file `<installpath-bluespice>/database.sql` since it can be accessed from the browser.

For Advanced Users: Configuration Folder settings.d

Contents

1. Tip for the Document ................................................................. 11
2. Explanation For the Folder settings.d ........................................ 11
3. Update-safe changing of default configuration files .................... 11
Tip for the Document

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. `C:\inetpub\wwwroot\bluespice` (Windows) or `/var/www/bluespice` (Linux).

This document provides background information for advanced users. We recommend not to make any changes on BlueSpice, if you are not familiar with the following information.

Explanation For the Folder settings.d

Starting with BlueSpice version 2.27.1, all default settings as well as the modules of BlueSpice are outsourced. All configurations can now be found in separate files in the `/settings.d` folder.

The files in this folder integrate the standard MediaWiki extensions required for BlueSpice, perform recommended default configurations, and also integrate all BlueSpice-related extensions (free or pro).

The files in the `/settings.d` folder are automatically integrated in alphabetical order and are therefore prefixed with numbers.

If you want to add additional configurations yourself, you can save your own files here. For this, it is recommended to use the prefix 001-.

Additional configurations, which are not packed per default but can be used, can be found at auf github.com.

Update-safe changing of default configuration files

If you want to change the files delivered by default in the settings.d folder, we strongly recommend that you choose the following method so as not to lose this configuration after an update:

- Create a copy of the respective configuration file with the extension `.local.php` - e.g. `020-VisualEditor.local.php`
- Only edit this file

Files with this file extension are generally preferred in the loading process.
ExtendedSearch configuration

If the ElasticSearch service is up and running, you can enable BlueSpice Extended Search.

- Go to your BlueSpice install path. For example:

  cd /var/www/bluespice

- Go to the folder settings.d:

  cd settings.d

- Create a file in this folder and name it 020-BlueSpiceExtendedSearch.local.php.
- Put the following content in the newly created file.

  ```php
  <?php
  wfLoadExtension('BlueSpiceExtendedSearch');
  $GLOBALS['wgSearchType'] = 'BS\ExtendedSearch\MediaWiki\Backend\BlueSpiceSearch';
  ```

- Go to your BlueSpice install path again. For example:

  cd /var/www/bluespice

- Run the following scripts to build the search index.

  ```
  php extensions/BlueSpiceExtendedSearch/maintenance/initBackends.php --quick
  php extensions/BlueSpiceExtendedSearch/maintenance/rebuildIndex.php --quick
  php maintenance/runJobs.php
  ```

Done! The extended search functionality is now active.

Setup:Installation Guide/Advanced/Performance Optimization

- PHP
- MySQL (MariaDB)
- ManualRecache of the LanguageCache
Performance Optimization: ManualRecache of LanguageCache

To prevent Rebuilding LocalizationCache with every page call, apply the following configuration:

When following these instructions, make sure that the $wgCacheDirectory variable is set in advance. This is already the case in the BlueSpice standard delivery in the file settings.d/005-Directories.php.

This performance optimization achieves the best performance by enabling and configuring opcach in PHP.

In the settings.d folder of your codebase, create the file 006-ManualRecache.php with the following contents:

```php
<?php
$wgLocalisationCacheConf = [
    'class' => LocalisationCache::class,
    'store' => 'array',
    'storeClass' => false,
    'storeDirectory' => $wgCacheDirectory,
    'manualRecache' => true,
];
```

Then delete all existing files in the cache folder of your codebase. Then manually re-create the LocalizationCache by entering the following on your console:

```
php /pfad/zur/installation/maintenance/rebuildLocalisationCache.php --force
```

Finally, make sure that this is done regularly in the background via cronjob ("Task Scheduler" under Windows). We recommend this twice a day, for example at 6am and 6pm.

Performance Optimization: MySQL (MariaDB)

Match MySQL or MariaDB directly to your memory and CPU cores. To do this, apply the following configuration in your my.ini:
Performance Optimization: PHP

Contents

1 opcachexx
2 zlib

[mysqld]

; with 16GB RAM
innodb_buffer_pool_size=4096M
tmp_table-size=1024M
max-heap-table-size=1024M
query_cache_size=1024M

; with 12 CPU cores
innodb-buffer-pool-instances=12
max_connections=12000

; Only use "127.0.0.1", not "localhost" when accessing MySQL
; Remember to also make these changes in the $wgDBserver variable in LocalSettings.php.
skip-name-resolve
**opcache**

Enable the Zend extension opcache in PHP. In the php.ini, we recommend the following configuration:

```ini
opcache.enable=1
opcache.memory_consumption=512
opcache.max_accelerated_files=100000
opcache.validate_timestamps=1
opcache.revalidate_freq=2
opcache.optimization_level=0x7FFF9FFF
```

In addition, you should include the BlueSpice configuration files (`/extensions/BlueSpiceFoundation/config/*`) in the Opcache blacklist (opcache.blacklist_filename). You can find more information in the official PHP documentation for configuration.php.

**zlib**

Activate the extension zlib. In the php.ini we recommend the following configuration:

```ini
zlib.output_compression = On
zlib.output_compression_level = 9
```

You can find more information in the official PHP documentation for zlib.

**Rebuilding the search index**

### Contents

1. Tips for this Document ................................................................. 16
2. Rebuilding the search index .......................................................... 16
In some cases it is needed to rebuild the search index. This document will show you the steps to do this.

**Tips for this Document**

- Please, read this manual completely and work through the single installation steps one after another.
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).

**Rebuilding the search index**

Please open a command line on your system and change to `<installpath-bluespice>`. Execute the following command:

```bash
php extensions/BlueSpiceExtensions/ExtendedSearch/maintenance/searchUpdate.php (Linux)
php extensions\BlueSpiceExtensions\ExtendedSearch\maintenance\searchUpdate.php (Windows)
```

With Windows, please take care that the **environment variables** are set correctly to access the php command.

Depending on the size of your contents and uploads this can take a while.

**VisualEditor configuration**

Parsoid is the rendering service for VisualEditor. Make sure to install and configure Parsoid before configuring VisualEditor. See the instructions for [Windows](#) and [Linux](#).

**Contents**

- 1 Server settings ................................................................. 17
- 2 Checking the Configuration manager ........................................... 17
- 3 Activating VisualEditor for a namespace .................................. 18
- 4 Customizing the link to the help pages ...................................... 19
Server settings

Before you can use VisualEditor in BlueSpice, you have to activate it in your installation:

In the BlueSpice installation directory, locate the following files inside the folder „var\www\settings.d“:

020-VisualEditor.php:

```php
<?php
return;

// Config description can be found at https://www.mediawiki.org/wiki/Extension:VisualEditor
wfLoadExtension('VisualEditor');
```

020-BlueSpiceVisualEditorConnector.php:

```php
<?php
return;
wfLoadExtension('BlueSpiceVisualEditorConnector');
$GLOBALS['bsgVisualEditorConnectorUploadDialogType'] = 'simple';
$GLOBALS['wqUploadDialog']['fields']['categories'] = true;
$GLOBALS['wqUploadDialog']['format']['filepage'] = '$DESCRIPTION $CATEGORIES';
```

1. Remove the line containing the „return;“ command in both files and save them.
2. Restart your web server (recommended).

Checking the Configuration manager

In case the VisualEditor is still not appearing, check if VisualEditor is shown as activated in the configuration manager of your wiki:

1. Go to Global actions > Config manager
2. Make sure the checkbox "Enable VisualEditor for BlueSpice extensions" is activated:
By default, VisualEditor is only activated in the main (Pages) and the User namespaces.

**Activating VisualEditor for a namespace**

1. Go to Global actions > Namespace manager In the column "VisualEditor", you can see which namespaces have VisualEditor activated. They have a green check mark.
2. Click the wrench icon in the "Actions" column. The wrench appears, when you hover over the row of the namespace:

1. Activate the checkbox for VisualEditor in the dialog window and click "Done":
1. Refresh the Namespace manager page (F5) to confirm the change.

VisualEditor should now be working correctly in all namespaces that actively use it.

Customizing the link to the help pages

By default, the help link for VisualEditor links to the help page for VisualEditor on the BlueSpice helpdesk.

The link can be changed to go to a custom URL:

To configure the url, add:
\$GLOBALS['bsgVisualEditorConnectorHelpUrl'] = 'https://your_url';

to 'LocalSettings.php' or the appropriate config file.

**Setup:Installation Guide/Advanced/Windows Folder Structure**

## Contents

1. Preface ................................................................................................................................. 21  
2. Folder structure ...................................................................................................................... 21  
3. File names for installing programs .......................................................................................... 21
Preface

Microsoft Windows distributes program installations and configurations, the web root under IIS, etc., to various folders in the file system. Since BlueSpice is a PHP-based web application, it is not always easy to use the Windows default system paths in the application. For this reason, we recommend creating your own folder structure for BlueSpice, for all related data and for additional program installations.

In the following we describe and recommend a proven folder structure.

Folder structure

As root directory for the installation, "\bluespice\" is specified in the root directory of the drive (for example, C:\bluespice or D:\bluespice).

The folder structure based on Unix operating systems is:

```
bluespice/
  ├── backup/  # for backups
  │    ├── cache/  # BlueSpice-specific cache
  │    └── images/  # file uploads
  │         └── widgets/  # rendered widgets
  └── bin/    # for additional programs and custom scripts
  └── etc/    # for configuration files
  └── opt/
  │    └── bluespice/
  │           └── cache/  # BlueSpice-specific cache
  │                 └── images/  # file uploads
  │                         └── widgets/  # rendered widgets
  └── tmp/    # temporary files
  └── var/
  │    └── log/  # log files of the web server
  │    └── www/  # The actual BlueSpice application
```

File names for installing programs

When installing programs in \bluespice\ bin, please be sure to install these programs in subfolders that contain no special characters and/or spaces.

Installing BlueSpice free with Docker

The easiest way to run BlueSpice free is to install it with an all-in-one Docker image. All required services are preconfigured.

You can find all necessary information directly on Docker Hub.
How to use the Docker Hub image

Basic usage

Example for quick start. BlueSpice will be accessible only in localhost.

```
docker run -d -p 80:80 bluespice/bluespice-free
```

Keep your data outside of the docker

```
docker run -d -p 80:80 -v {/my/data/folder}:/data bluespice/bluespice-free
```

Setting BlueSpice language and URL

```
docker run -d -p 80:80 -v {/my/data/folder}:/data -e "bs_lang=en" -e "bs_url=http://www.domain.com" bluespice/bluespice-free
```

Activating SSL

Using SSL inside the BlueSpice docker image, the data directory should be outside of the docker. Create a folder named cert inside your data folder. Inside this folder, certificates must be named like:

- **ssl.cert** (SSL certificate. **mandatory**)
- **ssl.key** (Private key of ssl.cert. **mandatory**)
- **ssl.ca** (3rd party CA certs for ssl.cert. **optional**)

If everything is ready for the first run, just run the following command:

```
docker run -d -p 80:80 -p 443:443 -v {/my/data/folder}:/data -e "bs_lang=en" -e "bs_url=https://www.domain.com" bluespice/bluespice-free
```

*Note: Port 443 includes the command and also $bs_url schema changed to https*

Login to BlueSpice

username: WikiSysop
password: hallowelt

Which services are running?

- Apache
Setup: Installation Guide

**Manually updating the Docker image**

BlueSpice 3.1.2 has no automatic upgrade feature.

See: Manual upgrade process and how to fix some known issues.

**Setup: Installation Guide/Installation BlueSpice WikiFarm**

<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  PHP prerequisites</td>
<td>24</td>
</tr>
<tr>
<td>2  Ensuring the correct path in the file system</td>
<td>24</td>
</tr>
<tr>
<td>3  Creating the necessary folders for BlueSpiceWikiFarm</td>
<td>24</td>
</tr>
<tr>
<td>4  Creating the LocalSettingsAppend.php</td>
<td>24</td>
</tr>
<tr>
<td>5  Configuring the web server</td>
<td>25</td>
</tr>
<tr>
<td>6  Completion</td>
<td>25</td>
</tr>
</tbody>
</table>
An existing BlueSpice pro installation can easily be extended with BlueSpiceWikiFarm. The existing installation assumes the role of the main wiki (=farm management). The contents remain there and can be maintained as usually.

**Note:** WikiFarm is not a standard feature of BlueSpice pro and needs to be acquired separately.

## PHP prerequisites

Please ensure that the PHP extension ZIP is archived, which is required for BlueSpiceWikiFarm.

### Ensuring the correct path in the file system

Important for the operation of BlueSpiceWikiFarm is that BlueSpice is located in the directory `/w` of the DocumentRoot of your web server or VirtualHost.

If this is not the case, you have to move the entire codebase there.

After that, the variable `$wgScriptPath` in the `LocalSettings.php` contains the path `/w`.

```php
$wgScriptPath = "/w";
```

### Creating the necessary folders for BlueSpiceWikiFarm

BlueSpiceWikiFarm needs two additional folders in the folder `/w` at the same level as the `LocalSettings.php`. You have to create these two folders:

- `_sf_instances` - all data and configurations for the respective instances are stored here
- `_sf_archive` - deleted farm instances including your database dump are stored here as ZIP archive

Make sure that these folders are writable by the web server. See also our ([Manual/Security Settings/File_System_Permissions notes in the helpdesk](#)) for this purpose.

### Creating the LocalSettingsAppend.php

Including the extension "BlueSpiceWikiFarm" first requires an additional configuration file with the name `LocalSettingsAppend.php`. Create this file on the same level as the `LocalSettings.php` and eadd the following content:

```php
<?php
require_once "$IP/LocalSettings.BlueSpice.php";
```
== Including the extension "BlueSpiceWikiFarm" ==

In the `LocalSettings.php` replace the line

```
require_once "$IP/LocalSettings.BlueSpice.php";
```

with

```
require_once "$IP/extensions/BlueSpiceWikiFarm/BlueSpiceWikiFarm.php";
```

---

**Configuring the web server**

In the folder `extensions/BlueSpiceWikiFarm/SimpleFarmer/doc` you will find example files for RewriteRules, which are necessary for BlueSpiceWikiFarm:

- `htaccess.template` - RewriteRules for Apache
- `web.config.template` - RewriteRules for IIS

Configure these RewriteRules for the DocumentRoot level of your Web server or VirtualHost.

---

**Completion**

The installation of BlueSpiceWikiFarm is now complete. From now on, you can reach the farm administration in the main wiki under the special page "Special:SimpleFarmer".

---

**Setup:Installation Guide/Patch Update**

For large version jumps (e.g., BlueSpice 2.27.3 to 3.1.10), a new installation is generally recommended.

For a patch update (for example, version 3.1.x to a higher version 3.1.x) you can simply follow these steps:

1. **Create a backup:** Pull a dump of the database and save it together with the complete codebase to a backup location of your choice.
2. **Renew the codebase:** Overwrite the codebase of the current version with the new codebase of the higher version.
3. **Compare:** After the overwrite, please compare the following files and folder. Copy from your backup location if necessary
   1. If you have a custom skin, please check the `skins/` folder.
   2. `LocalSettings.php`
   3. `extensions/BlueSpiceFoundation/config`
4. **Run the update:**
   1. Open a console and go to the installation folder (on the `LocalSettings.php` level)
   2. Then enter the following command: `php maintenance/update.php`
If you use Linux as the basis of your BlueSpice installation, please note that file system permissions may be lost when overwriting the codebase. More information can be found under File System Permissions.

**Note:** In a patch update, usually no database schemas have changed. It may not be necessary to run update.php.

# File System Permissions

## Contents

1. Tips for this Document ................................................................. 27
2. Affected Folders ........................................................................ 27
3. Assignment of Permissions with Windows .................................. 27
4. Assignment of Permissions with Linux ....................................... 28
For trouble-free usage of your BlueSpice installation, the web server requires write permissions to several folders of the file system. However, it is recommended to keep the rights for all other files and folders to a minimum. This document shows you the relevant folders and the correct permissions setting.

**Tips for this Document**

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder \<installpath-bluespice> stands for the path to your BlueSpice installation, e.g C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).

**Affected Folders**

The folders, which require write permissions, are:

- \<installpath-bluespice> /cache
- \<installpath-bluespice> /images
- \<installpath-bluespice> /extensions/BlueSpiceFoundation/config
- \<installpath-bluespice> /extensions/BlueSpiceFoundation/data
- \<installpath-bluespice> /extensions/Widgets/compiled_templates (only BlueSpice pro)

**Assignment of Permissions with Windows**

Assign "change" rights for this folder for the local user "Everyone".
Assignment of Permissions with Linux

Here you can assign rights much more strictly, which is also recommended. Transfer the directory `<installpath-bluespice>` recursively to the user root (CHMOD for Files 644, CHMOD for Directories 755) and after this, transfer the mentioned directory recursively to the user and the group, under which the Apache Web Server runs (Debian/Ubuntu e.g. "www-data").

In the following, we provide a bash script, which works through this tasks for you with only one command.

To do so, create the file `/usr/local/bin/setWikiPerm` and copy the following code into this file:

```bash
#!/bin/bash
WWW_USER="www-data"
WWW_GROUP="www-data"
WWW_HOME=`eval echo ~$WWW_USER`
```
WWW_CFG=$WWW_HOME/.config

if [ $# -eq 0 ]; then
  echo "You must enter the path of your MediaWiki installation."
  exit
elif [ ! -d $1 ]; then
  echo "$1 does not exist or is no path."
  exit
fi

if [ ! -f $1/LocalSettings.php ]; then
  echo "$1 contains no Localsettings.php"
  exit
fi

PATH=`echo "$1" | sed -e 's#/$##'`
/usr/bin/find $PATH -type d -exec /bin/chmod 755 {} \;
/usr/bin/find $PATH -type f -exec /bin/chmod 644 {} \;
/bin/chown -R root:root $PATH

pathes=(
  "$PATH/cache"
  "$PATH/images"
  "$PATH/_sf_archive"
  "$PATH/_sf_instances"
  "$PATH/extensions/BlueSpiceFoundation/data"
  "$PATH/extensions/BlueSpiceFoundation/config"
  "$PATH/extensions/Widgets/compiled_templates"
)

for i in "${pathes[@]}"; do
  if [ -d $i ]; then
    /bin/chown -R $WWW_USER:$WWW_GROUP $i
  fi
done

if [ ! -d $WWW_CFG ]; then
  /bin/mkdir $WWW_CFG
fi

/bin/chown -R $WWW_USER:$WWW_GROUP $WWW_CFG
/usr/bin/find $PATH/extensions -iname 'create_pygmentize_bundle' -exec /bin/chmod +x {} \;
/usr/bin/find $PATH/extensions -iname 'pygmentize' -exec /bin/chmod +x {} \;
/usr/bin/find $PATH/extensions -name 'lua' -type f -exec /bin/chmod 755 {} \;

If needed, replace the content of the variables

WWW_USER="www-data"
WWW_GROUP="www-data"

with the appropriate user and group of your distribution.

After this, assign CHMOD 755 to this file. Now you can run the script and let it do the complete permission setting automatically with the following command:

setWikiPerm <installpath-bluespice>
Note that when the update.php is executed on the console, the rights can be partially discarded. For this reason, set the rights to "update.php" again.

Installing Apache and PHP on Linux

Contents

1 Introduction ........................................................................................................................................ 31
2 Installation ....................................................................................................................................... 31
3 Configuring PHP ............................................................................................................................ 31
4 Configuring Apache ........................................................................................................................ 32
5 Next step ........................................................................................................................................ 32
The web server delivers your BlueSpice installation to the user's browser. Without a web server, BlueSpice cannot be used. The source code of BlueSpice is based on the scripting language "PHP". This must also be installed on your server in order to operate BlueSpice. The steps listed here are required.

**Introduction**

Apache or Nginx are available as web servers under Linux. BlueSpice can theoretically also be operated with Nginx, but in this documentation only Apache is treated in detail. Of course, you can also install Nginx with the appropriate expertise and operate it according to the here documented Virtualhost configuration of Apache.

**Installation**

Install Apache and PHP using the Aptitude package manager with the following steps:

```
apt update; 
apt install apache2 
   libapache2-mod-php7.3 
   php7.3 
   php7.3-cli 
   php7.3-common 
   php7.3-curl 
   php7.3-gd 
   php7.3-intl 
   php7.3-json 
   php7.3-mbstring 
   php7.3-mysql 
   php7.3-opcache 
   php7.3-tidy 
   php7.3-xml 
   php7.3-zip; 
apt clean
```

**Configuring PHP**

After installation, configure PHP. Open `php.ini` with a text editor of your choice (nano, vi), which, in our Debian version, is located in the directory `/etc/php/7.3/apache2`.

Find the following settings and change the values accordingly. If a setting is commented out with a semicolon in front of it, please remove it.

```
date.timezone = Europe/Berlin
max_execution_time = 600
post_max_size = 128M
upload_max_filesize = 128M
```

Set the value for 'date.timezone' according to your own time zone.
Save and exit the php.ini again. File:Setup:apache vhost bluespice free.txt

Configuring Apache

In this documentation, we assume the recommended installation with ShortURL. In this case, the root directory of the web server is in /var/www/bluespice, but the actual source code of BlueSpice is in /var/www/bluespice/w. This configuration is designed accordingly.

To configure a VirtualHost for BlueSpice, please proceed as follows:

1. Change to the directory /etc/apache2/sites-available.
2. In a text editor of your choice, open the file bluespice.conf, which does not yet exist, and create it.
   1. For BlueSpice free: apache_vhost_bluespice_free.txt
   2. For BlueSpice pro: apache_vhost_bluespice_pro.txt
3. In rows 3 and 4, replace "SERVERNAME" and "SERVERALIAS" according to your server name and domain. If the server is explicitly operated with only one VirtualHost for BlueSpice, you can also completely remove these two lines.
4. Save the file and close it.

Delete the VirtualHost created by default during the Apache installation with the command a2dissite 000-default. Then activate the just created VirtualHost with the command a2ensite bluespice.

Next, activate the Module Rewrite, which we configured in the bluespice.conf, by entering the following command: a2enmod rewrite

Next, create the directory /var/www/bluespice (mkdir/var/www/bluespice) and restart Apache with the command service apache2 restart.

Next, call up the URL of your BlueSpice server. If configured correctly, Apache should respond to the request with the error message "Not found", which is completely correct at the time of installation.

File:Setup:apache not found.png

Next step

If you have successfully completed all these steps, you can proceed to the next step "MariaDB".

Elasticsearch on Linux

Contents

1  Adding the package sources ................................................................. 34
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Installing Elasticsearch</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>Installing ingest-attachment</td>
<td>34</td>
</tr>
<tr>
<td>4</td>
<td>Start Elasticsearch and add it to startup</td>
<td>34</td>
</tr>
<tr>
<td>5</td>
<td>Next step</td>
<td>34</td>
</tr>
</tbody>
</table>
Elasticsearch is a prerequisite for the operation of Advanced Search. The steps listed here are optional and only required if you plan to use them in your BlueSpice installation.

Adding the package sources

Elasticsearch is not included in the package manager on Debian. However, the manufacturer provides a repository for the software. Add it with the following commands to your Debian installation. Prerequisite is that you have installed the program "gnupg" ( `apt install gnupg` ).

```bash
wget -qO - https://artifacts.elastic.co/GPG-KEY-elasticsearch | apt-key add -; 
echo "deb https://artifacts.elastic.co/packages/6.x/apt stable main" > /etc/apt/sources.list.d/elastic-6.x.list
```

Installing Elasticsearch

The subsequent installation of Elasticsearch will guide you through these commands.

```bash
apt update; 
apt install elasticsearch; 
apt clean
```

Installing ingest-attachment

For the advanced search in BlueSpice you need the plugin "ingest-attachment" for Elasticsearch. Install it with the following command:

```bash
/usr/share/elasticsearch/bin/elasticsearch-plugin install -b ingest-attachment
```

Start Elasticsearch and add it to startup

Add the Elasticsearch to startup and then start the service:

```bash
systemctl enable elasticsearch; 
service elasticsearch start
```

Next step

If you have completed all steps successfully, you can proceed to the next step "Node.js".
Introduction to the Bluespice installation guide for Linux

This chapter discusses how to prepare a complete Linux Server environment before running BlueSpice on it.

Due to the variety of Linux distributions on the market, this documentation has to choose one distribution. Therefore, we use Debian version 10 (buster).

Furthermore, Apache is used as a web server and Jetty as an application server. Alternatives are briefly discussed in the respective articles.

First, start with installing Apache and PHP.

Jetty on Linux

Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>Installing Jetty</td>
</tr>
<tr>
<td>3</td>
<td>Configuration</td>
</tr>
<tr>
<td>4</td>
<td>Installing the web apps</td>
</tr>
<tr>
<td>5</td>
<td>Next step</td>
</tr>
</tbody>
</table>
Jetty is a prerequisite for using PDF export and VisualDiff (BlueSpice pro only). The steps listed here are optional and only required if you plan to use one or more of these services in your BlueSpice installation.

**Introduction**

An alternative to Jetty is Apache Tomcat, which you can also find in the package manager of Debian. However, since Jetty works better, this is preferred in this documentation.

**Installing Jetty**

Install Jetty via Aptitude:

```
apt update; apt install jetty9; apt clean
```

**Configuration**

To configure, open the file `/etc/default/jetty9` in a text editor of your choice (vi, nano). Put the following line at the very end of the file:

```
JAVA_OPTIONS="-Xms512m -Xmx1024m -Djetty.host=127.0.0.1"
```

Restart Jetty with the command `service jetty9 restart`.

**Installing the web apps**

After successful installation of BlueSpice, follow the next steps to install the web services and activate the respective BlueSpice extension:

- PDF Export
- VisualDiff (BlueSpice pro only)

**Next step**

If you have successfully completed all steps, you can proceed to the next step "Elasticsearch".

**MariaDB on Linux**
Contents

1 Installing MariaDB ................................................................. 38
2 Create database user for BlueSpice ........................................ 38
3 Next Step ............................................................................ 38
BlueSpice stores your content in a database for which you need to install a corresponding server. The steps listed here are required.

## Installing MariaDB

Install MariaDB via Aptitude:

```
apt update;
apt install mariadb-server mariadb-client;
apt clean
```

Create database user for BlueSpice

After installation, immediately create a database user for MariaDB directly with the following command:

```
mysql -e "GRANT ALL ON bluespice.* TO 'bluespice'@'127.0.0.1' IDENTIFIED BY '<ein Passwort Ihrer Wahl>';"
```

## Next Step

If you have completed all steps successfully, you can proceed to the next step "Jetty".

## Memcached on Linux

### Contents

1. Installation .......................................................................................................................... 39
2. Configuration ...................................................................................................................... 39
3. Next step ................................................................................................................................ 39
Memcached is a cache server to improve the performance of your BlueSpice installation. It is not required for the actual operation of BlueSpice. The steps listed here are therefore optional.

**Installation**

Install Memcached with Aptitude:

```bash
apt-get update; 
apt-get -y install memcached; 
apt-get clean
```

**Configuration**

Open the file containing the memcached configuration (for example, /etc/memcached.con on Debian / Ubuntu). Find the `-m` argument there and increase the available memory according to your server's capabilities:

```
-m 512
```

Save and close the file and restart memcached with `service memcached restart`.

**Next step**

If you have completed all steps successfully and want to install BlueSpice pro, proceed to the next step "Texvc". If you want to install BlueSpice free, you can now continue with Installing BlueSpice.

**Node.js on Linux**

---

## Contents

1. Installation ................................................................. 40
2. Next step ................................................................. 40
Node.js is required for the operation of the rendering service "Parsoid" for the Visual Editor. The steps are optional and only required if you plan to use them in your BlueSpice installation.

**Installation**

Install Node.js via Aptitude:

```
apt update; \
apt install nodejs npm; \
apt clean
```

**Next step**

If you have completed all steps successfully, you can proceed to the next step "Parsoid".

**Installing Parsoid on Linux**
Parsoid is the rendering service for the Visual Editor. The steps listed here are optional and only required if you plan to use them in your BlueSpice installation. After your BlueSpice Installation, you still have to activate VisualEditor.

Installation

The installation from package sources of the distribution will be omitted. Parsoid is installed under /opt. Go there with the following command:

```
cd /opt
```

To download Parsoid, the software "git" must be installed(`apt install git`). Start the download with:

```
git clone --depth 1 --branch v0.10.0 https://gerrit.wikimedia.org/r/p/mediawiki/services/parsoid parsoid
```

Install Parsoid with the following commands:

```
cd parsoid; 
npm install
```

Create the configuration file

In the BlueSpice codebase, you can find two files in the folder `/BlueSpiceVisualEditorConnector/docs/parsoid`:

- config.yaml
- localsettings.js

Copy them to the folder `/opt/parsoid`

Parsoid is already fully configured and should work in standard setup without further changes.

Installing Parsoid and checking the configuration

To test the installation and the configuration, run the command `node bin/server.js` in the `/opt/parsoid` folder.

Parsoid should now start without an error message.

Quit Parsoid by pressing "Ctrl+C". Keep the command prompt open and go to the next step.
Installing Parsoid as a service

To run Parsoid in the background in the future, you must additionally install pm2 via Node.js:

```
npm install -g pm2
```

Then start Parsoid via pm2:

```
pm2 start /opt/parsoid/bin/server.js
```

Now save the pm2 process list — this adds parsoid to the pm2 services:

```
pm2 save
```

Finally, add pm2 to the system startup:

```
# Render startup-script for a specific platform, the [platform] could be one of:
#   ubuntu|centos|redhat|gentoo|systemd|darwin|amazon
pm2 startup [platform]
```

Next Step

If you have completed all steps successfully, you can proceed to the next step "Python".

Installing PhantomJS

Contents

1. Download ........................................................................................................................................ 43
2. Installation ....................................................................................................................................... 43
3. Completing the system preparation .................................................................................................. 43
PhantomJS is a so-called headless browser that can render screenshots of web pages. This is required for the web page preview in Advanced Search and the Recent Changes Overview in your BlueSpice installation. These are functionalities of BlueSpice pro. For this purpose, the steps listed here are required.

In this documentation, we use PhantomJS version 2.1.1. This is just an example of the latest version that you can download at the time of installation.

Download

Go to the download page of PhantomJS and download the 64-bit version for Linux. Transfer the file to your server.

Installation

Unpack the downloaded bz2 archive on the server with the command `tar xjf phantomjs-2.1.1-linux-x86_64.tar.bz2`. In the unpacked folder `phantomjs-2.1.1-linux-x86_64`, you will find another folder with the name `bin`. Within this folder is the file `phantomjs`. Copy this file into the `/usr/local/bin` folder. Then adjust the rights of the file:

```
chown root.staff /usr/local/bin/phantomjs; 
chmod +x /usr/local/bin/phantomjs
```

Completing the system preparation

If you have completed all steps successfully, you can now continue with installing BlueSpice.

Installing Python on Linux

Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Installation</td>
</tr>
<tr>
<td>2</td>
<td>Next step</td>
</tr>
</tbody>
</table>
Python is required to render the MediaWiki extension "SyntaxHighlight", which is part of BlueSpice. The steps listed here are required.

Installation

Install Python via Aptitude:

```
apt-get update; \
apt-get -y install python3; \
apt-get clean
```

Next step

If you have successfully completed all steps, you can proceed to the next step "Memcached".

Installing Texvc
Texvc is a program that reads in mathematical expressions. It is needed for the correct operation of the MediaWiki extension "Math". These are functionalities of BlueSpice pro. For this purpose, the steps listed here are required for BlueSpice pro.

**Prerequesite**

A prerequisite for installing Texvc is the installation of some external packages in your Linux distribution with the following commands:

```
apt update; \
apt install dvipng \ 
g++ \ 
gcc \ 
make \ 
ocaml-nox \ 
texlive-latex-base \ 
texlive-latex-extra; \ 
apt clean
```

**Installation**

To install Texvc, go to the codebase of your BlueSpice sources in the folder `extensions/Math/math`. Here, execute the command `make`. Texvc will now be compiled.

After finishing the process, move the `texvc` file that was just created in the same folder to `/usr/local/bin` and make it executable by the following commands.

```
chown root.staff /usr/local/bin/math; 
chmod +x /usr/local/bin/math
```

**Next Step**

If you have completed all steps successfully, you can proceed to the next step "PhantomJS".

**Apache Tomcat on Windows**

### Contents

1. Download .......................................................................................................................... 47
2. Installing Apache Tomcat ................................................................................................... 48
3. Configuring Apache Tomcat ............................................................................................... 52
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Reviewing the installation</td>
<td>55</td>
</tr>
<tr>
<td>5 Installing the web apps</td>
<td>56</td>
</tr>
<tr>
<td>6 Next step</td>
<td>56</td>
</tr>
</tbody>
</table>
Apache Tomcat is required for the PDF export, VisualDiff (BlueSpice pro only) and the LaTeX renderer (BlueSpice pro only). The following steps are optional and only required if you want to use one or more of these services in your BlueSpice installation.

Operation of Apache Tomcat requires OpenJDK. If you have not installed it, follow the link above.

Download

Open the official download page (1) in your browser and go to the version 9 (2) download page.

Download the "32-bit/64-bit Windows Service Installer"
Please note that the download on your Windows server with Internet Explorer only works if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

This guide uses version 9.0.16 of Apache Tomcat and is just an example of the latest version that you can download at the time of installation.

Installing Apache Tomcat

Open the downloaded file "apache-tomcat-9.0.16.exe".

Start the installation by clicking "Next >":
Confirm the license agreement by clicking "I Agree":

Click "Next >":

Click "Next >" again:

Select (1) the home directory of your OpenJDK Installation (2) and click "Next >" (3):
Start the Tomcat Installation:

At the end of the installation, leave both preselected checkboxes (1) and finish the setup (2)
Configuring Apache Tomcat

Change to the installation directory of Tomcat. By default, you can find it at \Program Files\Apache Software Foundation\Tomcat 9.0\conf.

Open the context.xml file in a text editor and replace the one-time line

```
<Context>
```

with

```
<Context mapperContextRootRedirectEnabled="true">
```
Save and close the file.

In the same directory, open the file server.xml in a text editor and make sure that the complete block looks like this:

```
<Connector port="8080" protocol="HTTP/1.1"
    connectionTimeout="20000"
    URIEncoding="UTF-8"
    redirectPort="8443"
    address="127.0.0.1" />
```
Save and close the file.

Find the entry "Configure Tomcat" in the start menu and open it:

![Start menu with Configure Tomcat highlighted]

Set "Startup type" to "Automatic" (1) and start Tomcat (2). Then exit the configuration console (3):
**Reviewing the installation**

To check if Tomcat is working correctly, open the address http://localhost:8080/ in a browser on the server. You should now see the homepage of the Tomcat server:
Installing the web apps

After successful installation of BlueSpice, please follow the next steps to install the web services and activate the respective BlueSpice extension:

- PDF-Export
- VisualDiff (BlueSpice pro only)
- LatexRenderer (nurBlueSpice pro only)

Next step

If you have completed all steps successfully, you can delete the previously downloaded "apache-tomcat-9.0.16.exe" file from your hard drive and continue to the next step "Elasticsearch".

Elasticsearch on Windows

Contents

1 Download Elasticsearch ................................................................. 57
2 Unpacking Elasticsearch ............................................................. 57
3 Installing the plugin ingest-attachment ...................................... 58
4 Installing the Elasticsearch service .......................................... 59
5 Configuring and starting the Elasticsearch service .................. 59
6 Next step .................................................................................. 61
Elasticsearch is a prerequisite for running Advanced Search. The steps listed here are optional and only required if you plan to use them in your BlueSpice installation.

To run Elasticsearch, OpenJDK is required. If you have not installed it, install it now.

Download Elasticsearch

BlueSpice is currently compatible with Elasticsearch 6.x as of version 6.3.1. Elasticsearch > 6.x is currently NOT supported!

The latest version can be found at this list. This results in the following direct download link: https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-<version number>.zip. For example, https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-6.3.1.zip.

Follow the download instructions of your browser.

Please note that the download on your Windows Server with Internet Explorer will only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

In the following, Elasticsearch version 6.3.1 is used and is only an example of the latest version of the 6.x version, which you can download at the time of your installation.

Unpacking Elasticsearch

Unpack the contents of the ZIP archive (2) just downloaded into the folder "C:\bluespice\bin\elasticsearch-6.3.1" (1):
Installing the plugin ingest-attachment

Change to the directory "C:\bluespice\bin\elasticsearch-6.3.1\bin" (1) and right-click on a free area of the Explorer window with the Shift key pressed. Then click "Open Command Prompt Here" (2):

Execute the command "elasticsearch-plugin.bat install ingest-attachment" (1) and after downloading the plugin, confirm the installation request with "y" (2):
If your server does not have an active internet connection, then download the plug-in ingest-attachment as zip archive and install it, as documented directly by the manufacturer.

Installing the Elasticsearch service

Next, run the elasticsearch-service.bat install command and wait for the process to complete:

Configuring and starting the Elasticsearch service

Press the key combination Windows+R.

In the following dialog box, enter "services.msc" (1) and confirm with "OK" (2):
Search for the service "Elasticsearch 6.3.1" and open it with a double-click:

Select the startup type "Automatic" (1) and start the service (2). After the service is started, close the window with "OK" (3):
Next step

If you have completed all steps successfully, you can delete the previously downloaded file "elasticsearch-6.3.1.zip" from your hard disk and continue to the next step "Git".

**Git on Windows**

| Contents |
|-------------------|-------------------|
| 1 Download | 62 |
| 2 Installing Git | 62 |
| 3 Next step | 64 |
Git is an application for software version management. It is required for the installation of Node.js, which in turn is required for the operation of the rendering service "Parsoid" for the Visual Editor. The steps listed here are optional and only required if you want to use them in your BlueSpice installation.

Download

In Internet Explorer, open the official download page on git-scm.com (1). If the optimal download for your operating system does not start automatically, click on "64-bit Git for Windows Setup" (2):

Follow the further download instructions and download the installation package to your hard disk.

Please note that the download on your Windows Server with Internet Explorer only works if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

Git version 2.19.1 will be used below as an example. You can download the latest version of Git at the time of installation.

Installing Git

Open the downloaded Git-2.19.1-64-bit.exe file.
Start the installation by clicking "Next >":

Click, as pictured here, through the further installation steps:

You can close the setup program now:
Next step

If you have completed all steps successfully, you can delete the previously downloaded file "Git-2.19.1-64-bit.exe" from your hard disk and go to the next step" Node.js".

Setup:Installation Guide/System Preparation/Windows/IIS
Web Server

Contents

1 Introduction .......................................................................................................................... 65
2 The Server Manager and managing roles ................................................................. 65
3 Installing IIS in the Role Manager ............................................................................... 66
4 Next step .......................................................................................................................... 70
The web server delivers your BlueSpice installation to the users' browsers. Without a web server, BlueSpice cannot be used. The steps listed here are required.

---

**Introduction**

We recommend to use the most system-optimized software possible for a live operation of BlueSpice both under Linux and under Windows. For this reason, the documentation of an installation of Apache (XAMP) under Windows is omitted. This chapter lists the steps that are necessary to install the Microsoft IIS Web Server service on Windows Server >= 2012.

**The Server Manager and managing roles**

First, open the Server Manager. Unless otherwise configured, it starts automatically as soon as you log in to the server. Otherwise, you will find it in the start menu under the search term "Server Manager". You are now in the following view:

![Server Manager Dashboard](image)

Click "Manage" (1) und then "Add Roles and Features" (2):
Installing IIS in the Role Manager

You are now in the Role Manager.

Click "Next >" until you reach the "Server Roles" area (1). There, you activate the role "Web Server (IIS)" (2):

Confirm the pop-up that shows the selection of the role with "Add Features":

---
Click "Next >":

You are now in the "Features" area(1). Activate ".NET Framework 3.5 Features" (2) und click "Next >" (3):
The .NET Framework 3.5 is not directly required for running IIS. However, tools that will be installed later, which are also partially connected with IIS, definitely require it. For this reason, we install it now.

Confirm the following dialog with "Next >":

Under "Role Services" (1) select "Application Development" (2) with the option "CGI" (3) and confirm with "Next >" (4):
Click "Install" to start the installation:

As soon as the installation has finished, click "Close" to exit the dialog box.
If the installation terminates with a problem, this is usually caused by the .NET Framework 3.5 in combination with a WSUS server in your domain. The easiest solution for this is to remove the server from the domain, repeat all of the above steps, and then re-adding the server to the domain.

With the successful completion of all these steps, the IIS web server is now installed. Check the functionality by starting Internet Explorer on the server and calling the URL http://localhost/. If installed correctly, you will see the welcome page of the IIS Web server:

---

**Next step**

When you have successfully completed all the above steps, go to the next step "Visual C++ Redistributable for Visual Studio 2015".
Introduction to the Bluespice installation guide for Windows

To make sure your BlueSpice installation is successful, we show you how to prepare a complete Windows Server environment before running BlueSpice on it.

The documentation is as detailed as possible and illustrated with screenshots.

Nevertheless, we assume that you already have some previous experience in the installation and operation of Windows Server systems.

Prerequisite is an already installed Windows Server from version 2012 without already additionally installed software.

First start with Installing the IIS Web Server.

MariaDB on Windows

Contents

1 Introduction .......................................................................................................................... 72
2 Download ............................................................................................................................ 72
3 Installing MariaDB .............................................................................................................. 73
4 Setting the environment variable ....................................................................................... 77
5 Next step ............................................................................................................................ 80
BlueSpice stores your content in a database for which you need to install a corresponding server. The steps listed here are required.

Introduction

Alternatively, you can use MySQL at this point, but we recommend the database server MariaDB described in the following document.

Download

In Internet Explorer, open the official download page (1). Click on the corresponding download link (2).

Select the MSI package in the 64bit version:
Follow the further download instructions and download the installation package to your hard disk.

Please note that the download on your Windows Server with Internet Explorer only works if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

In the following the MariaDB version 10.3.13 is used and serves as an example only for the latest version, which you can download at the time of your installation.

**Installing MariaDB**

Open the file just downloaded "mariadb-10.3.13-winx64.msi".

Start the installation by clicking "Next":  

---

15.06.2021  This document was created with BlueSpice  Page 73 of 150
Confirm the license agreement (1) and click "Next" (2):

Den nächsten Schritt bestätigen Sie durch Klick auf "Next":

Vergeben Sie ein Kennwort für den administrativen User ("root") des Datenbankservers (1) und klicken Sie auf "Next" (2):

Den nächsten Schritt bestätigen Sie durch Klick auf "Next":

Confirm the next step by clicking "Next":

Now start the installation:
When the installation is complete, exit the installer:

**Setting the environment variable**

To use MariaDB easily on the command line of Windows, it is necessary to configure an environment variable in Windows accordingly. To do this, perform the following steps:

Enter the key combination Windows + R.

In the following dialog enter "SystemPropertiesAdvanced.exe" (1) and confirm with OK (2):
Click "Environment variables":

In the bottom pane of the now opened window double-click on the line "Path":

15.06.2021
Click "New":

- Click on the "New" button under the "Edit environment variable" window.
Add the path to your installation of MariaDB, which contains i.a. the file mysql.exe is located. By default, this is the path `C:\Program Files\MariaDB 10.3\bin`.

Close all previously opened windows one after the other by clicking "OK".

Next step

If you have completed all steps successfully, you can delete the previously downloaded "mariadb-10.3.13-winx64.msi" file from your hard disk and continue to the next step "OpenJDK".

Node.js on Windows

Contents

1 Download .......................................................... 81
2 Installing Node.js ................................................. 81
3 Adjusting the installation path of the Node.js packages .................................................... 84
4 Installing the Windows Build Tools ................................................................. 85
5 Next step ................................................................. 87
Node.js is required for the operation of the rendering service "Parsoid" for the Visual Editor. The steps listed here are optional and only required if you plan to use them in your BlueSpice installation.

Download

This guide uses the Node.js version 10.13.0 as an example. You can download any 10.x version of Node.js.

BlueSpice is NOT compatible with a Node.js version greater than 10.x!

In Internet Explorer, open the official website of Node.js (1). Download the latest LTS version 10.x.

Follow the further download instructions and download the installation package to your hard drive.

Please note that the download on your Windows Server with Internet Explorer only works if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

Installing Node.js

Open the downloaded file "node-v10.13.0-x64.msi".

Start the installation by clicking "Next>":
Confirm the license (1) and click "Next >" (2):
Confirm the further installation steps by clicking "Next >":

Start the installation by clicking "Install":

You can close the setup program after finishing the installation:
Adjusting the Installation path of the Node.js packages

By default, Node.js installs its packages in the profile directory of the logged-in user. Since Node.js is intended solely to operate as a user-independent server application under BlueSpice, it is strongly recommended that you change the default path for these packages:

In the Node.js installation folder, open the file node_modules\npm\npmrc in a text editor:

Edit this file and enter the new default path for your Node.js packages:
Save the file and close the editor.

This documentation is based on the folder structure recommended by us. For this reason, the default path for the Node.js packages is set to the folder C:\bluespice\bin\npm. If you have different requirements, you must adapt these paths accordingly.

Installing the Windows Build Tools

The Node.js package windows-build-tools is required for installing the relevant BlueSpice applications.

To install, first open the Windows command prompt as administrator. To do this, right-click "Start" (1) and select "Command Prompt (Administrator)" (2):
Execute the command "npm install --global --production windows-build-tools":

This command may take a long time and not show any activity for a long time. However, it is still active and must not be canceled! Additionally, Windows Server may restart during the process without warning. In this case, restart the installation as described above.
After successful installation, you can close the command prompt:

![Command Prompt](image)

**Next step**

If you have completed all steps successfully, you can delete the previously downloaded file "node-v10.13.0-x64.msi" from your hard disk and continue to the next step "Parsoid".

**OpenJDK on Windows**

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduction</td>
</tr>
<tr>
<td>2 Download</td>
</tr>
<tr>
<td>3 Unpacking the ZIP archive</td>
</tr>
<tr>
<td>4 Setting the environment variable</td>
</tr>
<tr>
<td>5 Next step</td>
</tr>
</tbody>
</table>
Java is a prerequisite for the operation of Advanced Search, PDF export, VisualDiff (BlueSpice pro only) and the LaTeX renderer (BlueSpice pro only). The steps listed here are optional and only required if you plan to use one or more of these services in your BlueSpice installation.

**Introduction**

For licensing reasons, we decided to use the alternative OpenJDK published under the GPL instead of the Java Runtime Environment. Of course, you are free to use the JRE of https://java.com/, but here we only document OpenJDK.

**Download**

Open the official download page (1) in your browser and select the version marked "Ready for use" (2).

Select the ZIP archive in the 64bit version for Microsoft Windows.
Follow the further download instructions and download the ZIP archive to your hard disk.

Please note that the download on your Windows Server with Internet Explorer will only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

In this guide, version 11.0.2 of OpenJDK is used and serves only as an example for the latest version, which you can download at the time of your installation.

Unpacking the ZIP archive

Unzip the ZIP archive that you just downloaded into a suitable system path on your hard drive.

Setting the environment variable

Press the key combination Windows+R.

In the following dialog, enter "SystemPropertiesAdvanced.exe" (1) and confirm with OK (2):
Click "environment variables":

Click "New...":
Set the name of the variable "JAVA_HOME" (1). As the value of the variable, specify the directory of your OpenJDK installation that you have just copied to C:\ bluespice\bin (2). Here you can use the "browse directory" button (3). Then click "OK" (4):

Close all newly opened windows one after the other by clicking on "OK".

**Next step**

If you have completed all steps successfully, you can delete the previously downloaded "openjdk-11.0.2_windows-x64_bin.zip" file from your hard disk and go to the next step "Apache Tomcat".

**PHP 7.3 on Windows**
<table>
<thead>
<tr>
<th></th>
<th>Setup:Installation Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Downloading PHP</td>
</tr>
<tr>
<td>3</td>
<td>Unzipping the ZIP archive</td>
</tr>
<tr>
<td>4</td>
<td>Setting the environment variable</td>
</tr>
<tr>
<td>5</td>
<td>Checking the environment variable</td>
</tr>
<tr>
<td>6</td>
<td>Configuring IIS for PHP</td>
</tr>
<tr>
<td>7</td>
<td>Next step</td>
</tr>
</tbody>
</table>
The source code of BlueSpice is based on the scripting language "PHP". It must be installed on your server in order to operate BlueSpice. The steps listed here are required.

Introduction

PHP is not installed with a "classic installation package", but the sources are downloaded and integrated in IIS via the previously installed PHP Manager.

Downloading PHP

In your browser, open the official download page for Windows on php.net (1). Find the latest version 7.3.x (2) 64-bit (3) Thread-Safe (4) and download it here (5):

Follow the download instructions.

Please note that the download on your Windows Server with Internet Explorer will only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

The following is PHP version 7.3.3 and is only an example of the latest version 7.3.x that you can download at the time of your installation.
Unzipping the ZIP archive

Unzip the ZIP archive just downloaded into a useful system path on your hard drive.

This documentation assumes the recommended folder structure.

For this reason PHP will be unpacked into the folder C:\bluespice\bin\php-7.3.3. If you have a different folder structure, you must adapt these paths accordingly.

Setting the environment variable

In order to use PHP easily on the command line of Windows, it is necessary to configure an environment variable in Windows accordingly. To do this, perform the following steps:

Enter the key combination Windows+R.

In the following dialog enter "SystemPropertiesAdvanced.exe" (1) and confirm with OK (2):

Click "Environment variables":

In the lower part of the now opened window double-click on the line "Path":
Click "New":

Add the path to your unpacked PHP version, which contains the php.exe file:
Close all newly opened windows one after the other by clicking on "OK".

**Checking the environment variable**

To make sure the environment variable is set correctly, perform the following steps:

Enter the key combination Windows+R.

In the following dialog, enter "cmd" (1) and confirm with OK (2):

At the command prompt, type "php -v" (1) and press the Enter key. The found PHP version will be displayed (2).
If this is not the case, then the path to the php.exe file in the environment variables was incorrectly specified.

**Configuring IIS for PHP**

In the following steps, PHP will be included in IIS and IIS will be configured to provide a working basic setup:

First, call IIS Manager. To do this, enter the key combination Windows+R.

In the following dialog, enter "inetmgr" (1) and confirm with "OK" (2):

In the left pane, select your server name (1) and then double-click "PHP Manager" (2):
Click "Register new PHP version":

In the following window select the browse "(...)" button:

To manage the PHP settings in the next window:
Change to the path to which you previously unzipped PHP (1), mark the "php-cgi.exe" (2) and confirm the dialog with "Open" (3):

Confirm again with "OK":

Click on "Configure error reporting":

Activate the item "Production machine" (1) and select a path and a file of your choice where PHP should save its log (2). Confirm with "Apply" (3):
This documentation assumes the **recommended folder structure**. If the path you specify here does not yet exist, please create it before clicking "Apply".

Click "Manage all settings":

Adjust the following settings:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>date.timezone</td>
<td>&quot;Europe/Berlin&quot; oder entsprechend Ihrer Zeitzone</td>
<td>Date</td>
</tr>
<tr>
<td>max_execution_time</td>
<td>600</td>
<td>PHP</td>
</tr>
<tr>
<td>post_max_size</td>
<td>128M</td>
<td>PHP</td>
</tr>
<tr>
<td>upload_max_filesize</td>
<td>128M</td>
<td>PHP</td>
</tr>
</tbody>
</table>
To find these options faster, you can also use the filter (1). Go back afterwards (2):

In the main window, click "Enable or disable an extension":

Make sure that the following extensions are enabled:
To activate an extension, select it in the "Disabled" section (1) and activate it by clicking on "Enable" (2):

In the next step, expand the tree on the left until the "Default Web Site" becomes visible:
Right-click (1) and then click "Remove" (2):

Confirm the following dialog with “Yes”:

Right-click on "Sites" (1) and click on "Add Website" (2):
Enter the site name "BlueSpice" (1) and select the path on your server where your BlueSpice installation will be located later (2). Confirm with "OK" (3):

This documentation assumes the **recommended folder structure**. If the path you specify here does not yet exist, please create it before clicking "OK".
The new page is now listed in the IIS overview page:

Next step

If you have successfully completed all these steps, you can proceed to the next step "MariaDB".

PHP Manager on Windows

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Download .................................................................................................................. 107</td>
</tr>
<tr>
<td>2  Installing PHP Manager ............................................................................................... 108</td>
</tr>
<tr>
<td>3  Next step ................................................................................................................... 109</td>
</tr>
</tbody>
</table>
PHP Manager conveniently integrates PHP into your IIS installation. The steps listed here are required.

Download

In Internet Explorer, open the official download page on iis.com (1). Click "Download this extension" (2).

Confirm the following dialog with "OK":

Follow the further download instructions and download the installation package to your hard disk.
Please note that the download on your Windows server with Internet Explorer only works if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please note the technical documentation from Microsoft.

Installing PHP Manager

Open the downloaded PHPManagerForIIS_V1.5.0.msi file.

Start the installation by clicking "Next >":

Confirm the license (1) and click on "Next >" (2):
The installation is now executed and completed without further confirmation. You can close the setup program when finished:

Next step

If you have completed all steps successfully, you can delete the previously downloaded "PHPManagerForIIS_V1.5.0.msi" file from your hard disk and continue to the next step "PHP 7.3".
Installing Parsoid on Windows

Contents

1 Installing Parsoid .............................................................. 111
2 Creating the configuration file .................................................. 112
3 Parsoid installation and configuration check .............................. 113
4 Installation as a service .......................................................... 113
5 Next step ................................................................................. 117
Parsoid is the rendering service for the Visual Editor. The steps listed here are optional and only required if you want to use Visual Editor in your BlueSpice installation. After your BlueSpice Installation, you still have to activate VisualEditor.

For the installation and operation of Parsoid, Git and Node.js are required. If you have not installed them yet, follow the links that are provided here.

### Installing Parsoid

First, open the Windows Command Prompt as administrator. To do this, right-click "Start" (1) and select "Command Prompt (Administrator)" (2):

Change into the directory C:\bluespice\bin\npm (1) execute the command "npm install parsoid" (2):
Keep the command prompt open and complete the following step

**Creating the configuration file**

In the BlueSpice codebase you will find two files in the folder `/extensions/BlueSpiceVisualEditorConnector/docs/parsoid`:

- `config.yaml`
- `localsettings.js`

Copy them into the folder `C:\bluespice\bin\npm\node_modules\parsoid`

This provides an already finished configuration of Parsoid, which should work in the standard setup without further adjustments.
**Parsoid installation and configuration check**

To test the installation and configuration, go back to the command prompt.

Change into the directory C:\bluespice\bin\npm\node_modules\parsoid (1) and start the service with the command "node bin\server.js" (2):

![Command Prompt screenshot](image)

The service should now start without an error message. For further review, call the URL "http://localhost: 8000" in Internet Explorer. You should see the following page:

![Parsoid web service](image)

Change back to the command prompt and quit Parsoid by pressing "Ctrl+C". Keep the command prompt open and go to the next step.

**Installation as a service**

To run Parsoid in the background in the future, you need to install Parsoid in a Windows service. To do this, proceed as follows:
In the command prompt, change to the directory "C:\bluespice\bin\npm" (1) and execute the command "npm install node-windows" (2):

Using a text editor, create the file "C:\bluespice\bin\npm\node_modules\parsoid\parsoid.service" with the help of this linked content:

In the command prompt, change into the directory "C:\bluespice\bin\npm\node_modules\parsoid" (1) and execute the command "node parsoid.service" (2):
You can now close the command prompt.

Then enter the key combination Windows+R.

In the following dialog box, enter "services.msc" (1) and confirm with "OK" (2):

Find the service "Parsoid Web Service" and open it with a double-click:
Select the startup type "Automatic" (1) and start the service (2). After the service is started, close the window with "OK" (3):
In Internet Explorer, check the URL "http://localhost:8000", as already explained in the previous step, whether the Parsoid service started successfully.

**Next step**

If you have completed all steps successfully, you can proceed to the next step "Python".

## Installing and configuring PhantomJS on Windows

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 DownloadS</td>
</tr>
<tr>
<td>2 Installing PhantomJS</td>
</tr>
<tr>
<td>3 Configuring BlueSpice</td>
</tr>
<tr>
<td>4 Finishing the system preparation</td>
</tr>
</tbody>
</table>
PhantomJS is a so-called headless browser that can render screenshots of web pages. This is required for the web page preview in Advanced Search and the Recent Changes Overview in your BlueSpice installation. These are functionalities of BlueSpice pro. For this purpose, the steps listed here are required for BlueSpice pro.

**DownloadS**

In Internet Explorer, open the [official website of the project](http://phantomjs.org) (1). Click "Install" (2).

Download the appropriate ZIP archive for Windows.

Please note that the download on your Windows Server with Internet Explorer will only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.
In this guide, we use PhantomJS version 2.1.1 as an example. You can download the latest version at the time of installation.

## Installing PhantomJS

PhantomJS does not need to go through a setup process. Unpack the downloaded ZIP archive. In the folder `phantomjs-3.1.1-windows\bin` you will find the executable file `phantomjs.exe`. Simply move it to `C:\bluespice\bin`.

{{Template:Hint|text=This guide is based on the folder structure recommended by us [[Setup: Installation Guide/Advanced/Windows Folder Structure|recommended by us]. For this reason, the default path to the folder `C:\bluespice\bin` is set here. If you have other requirements, you must adapt these paths accordingly.}}

## Configuring BlueSpice

BlueSpice must have knowledge of the location of `phantomjs.exe`. After the BlueSpice installation, proceed as follows:

1. Open the folder of your BlueSpice installation
2. Switch to the subfolder `settings.d`
3. In this subfolder, create a new file named `090-PhantomJS.php`
4. Fill this file with the following content:

```php
<?php
$bsgArticlePreviewCapturePhantomJSExecutable = "C:\bluespice\bin\phantomjs.exe";
```

## Finishing the system preparation

If you have completed all steps successfully, you can now continue with installing BlueSpice.

## Installing Python on Windows

### Contents

1. Downloading Python
2. Installing Python
Python with the extension Pygmentize is needed for the rendering of the MediaWiki extension "SyntaxHighlight", which is part of BlueSpice. The steps listed here are required.

**Downloading Python**

In Internet Explorer, open the [official download page](#) (1). Switch to the download page for Windows (2).

Select the "executable installer" (64-bit):

Follow the further download instructions and download the installation package to your hard drive.
Please note that the download on your Windows Server with Internet Explorer will only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

In this guide, Python is used in version 3.7.4 as an example. You can download the latest version at the time of installation.

Installing Python

Open the just-downloaded python-3.7.4-amd64.exe file.

Start the installation by clicking "Next".

Confirm both checkboxes (1) and then click "Customize installation" (2):

![Python installation screenshot](image)

Confirm the next step with "Next":

![Optional features screenshot](image)

Make sure to install Python for all users (1). Choose an appropriate path, if possible without spaces and special characters (2), and start the installation by clicking "Install" (3).
This documentation is based on the folder structure **recommended by us**. For this reason, the default path for Python installation is set to the folder C:\bluespice\bin\python-3.7.4. If you have different requirements, you must adapt these paths accordingly.

After installation, please disable the limitation of the path length (260 characters).

Finish the installation by clicking "Close":

Installing Pygmentize

Open the command prompt with admin permissions. To do this, right-click "Start" (1) and select "Command Prompt (Administrator)" (2):

Enter the command "pip install pygments" and wait for the process to finish:
Next step

If you have completed all steps successfully, you can delete the previously downloaded file "python-3.7.4-amd64.exe" from your hard drive. If you install BlueSpice pro, go to the next step "PhantomJS". If you install BlueSpice free, you can now continue with Installing BlueSpice.


Contents

1 Download at Microsoft ................................................................. 126
2 Installing Visual C++ Redistributable for Visual Studio 2015 ......................... 127
3 Next step .................................................................................. 128
The installation of Visual C++ Redistributable for Visual Studio 2015 is required to run PHP in version 7.x on Windows. The steps listed here are required.

**Download at Microsoft**

In Internet Explorer open the Microsoft download page (1). Select your language (2) and click "Download" (3).

On the following page, select the 64-bit version (1) and click "Next" (2):

Follow the additional download instructions and download the installation package to your hard drive.

Please note that the download on your Windows Server with Internet Explorer will
only work if you have configured the Internet Explorer Advanced Security Settings in the Server Manager. Please refer to the technical documentation from Microsoft.

Installing Visual C++ Redistributable for Visual Studio 2015

Open the downloaded file "vc_redist.x64.exe".

Start the installation by confirming the license (1) and by clicking on "Install" (2):

![Installation interface](image)

The installation is now executed and completed without further confirmation. You can close the setup program when finished:

![Installation success](image)
**Next step**

If you have completed all steps successfully, you can delete the previously downloaded file "vc_redist.x64.exe" from your hard drive and proceed to the next step "PHP Manager".

**Upgrade to BlueSpice 3**

This document describes the upgrade of BlueSpice from version 2.27.x to the current version BlueSpice 3.

Infos for patch updates and for switching from BlueSpice free to pro are documented separately.

---

**Contents**

1. Notes ........................................................................................................................................... 129
2. Approach ....................................................................................................................................... 129
3. Setup LocalSettings.php .............................................................................................................. 129
4. Upgrading BlueSpice .................................................................................................................... 130
5. Checking the installation ............................................................................................................... 130
Notes

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows regarding the documentation "Folder structure under Windows") or /var/www/bluespice (Linux).
- The placeholder `<tomcat-webapps>` stands for the path to the webapps directory of your Tomcat server, e.g. C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps (Windows) or /var/lib/tomcat8/webapps (Linux).

Approach

Make sure that your BlueSpice 2 version is up to date.

It is recommended to first create a complete new installation of BlueSpice 3 in parallel with BlueSpice 2 and then transfer the data to the new system.

First of all, make a complete backup of your installation.

First of all, rename your current installation directory. For example, from /var/www/bluespice to /var/www/bluespice227.

Then, copy the new program files to the original installation location. Now you should have two directories, for example /var/www/bluespice227 with the program files of BlueSpice 2.27 and /var/www/bluespice with the program files of BlueSpice 3.

Next, uploaded files and configuration files managed by BlueSpice must be transferred to the new installation. Just move the directories extensions/BlueSpiceFoundation/config from the old installation location to the new one.

Next, the main configuration file must be transferred and adapted. Copy the LocalSettings.php file from the old installation location to the new one.

Setup LocalSettings.php

Open the file `<installpath-bluespice>/LocalSettings.php`. Look for the following lines:

```
# End of automatically generated settings.
# Add more configuration options below.
```
Delete all following lines. If you have made additional configurations - apart from steps outlined in the old installation manual - below these lines, make sure to keep these additional configurations.

Insert the following line at the end of LocalSettings.php:

```php
require_once "$IP/LocalSettings.BlueSpice.php";
```

Close and save the file.

**Starting with BlueSpice 2.27.1, all default settings as well as the individual modules of BlueSpice are stored. Thus BlueSpice is only integrated with this one line in MediaWiki. For technical information, visit the documentation for advanced users.**

### Upgrading BlueSpice

**Under Windows, make sure that the environment variables are set correctly to access the php command.**

**Under Linux, please note that you have to adjust the file system permissions after running the update.php.**

Open your command line or terminal and change to the directory `<installpath-bluespice>`. Run the following command there:

```bash
php maintenance/update.php (Linux)
php maintenance\update.php (Windows)
```

### Checking the installation

Open `<bluespice-url>` in your browser. Your BlueSpice upgrade should now be completed.
Logging in with your access data should be possible.

**Upgrade 3.x free to 3.x pro**

To upgrade from **BlueSpice free 3.x to BlueSpice pro 3.x** (under Linux), follow these instructions:

1. **Create backup**: Make a database dump and save it together with the complete codebase to another storage location.
2. **Patch-update BlueSpice free (optional)**: Check your current version on the Special: Version page. Compare your version with the current version of BlueSpice free. If you have not installed a relatively current version, apply a **patch update**.
3. **Replace the codebase**: Overwrite the codebase of your current version with the new codebase of BlueSpice pro.
4. **Start the update**:
   1. Open a console and switch to the installation directory (the level of LocalSettings.php)
   2. Execute: `php maintenance/update.php`
5. **Re-index the search**:
   1. Delete search index: `php extensions/BlueSpiceExtendedSearch/maintenance/initbackends.php`
   2. Create new search index: `php extensions/BlueSpiceExtendedSearch/maintenance/rebuildIndex.php --quick`
This document describes the installation of LatexRenderer for BlueSpice. **LatexRenderer is an exclusive component of BlueSpice pro!** Please note that Apache Tomcat server must be installed and configured on the BlueSpice server.

**Tip for this Document**

- Please, read this manual completely and work through the single installtion steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).
- The placeholder `<tomcat-webapps>` stands for the path to the Webapps directory of your Tomcat server, e.g. C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps (Windows) or /var/lib/tomcat8/webapps (Linux).

**Installation of the LatexRenderer application**

Move the file "BSLaTeX2PNG.war" from the directory `<installpath-bluespice>/extensions /BlueSpiceLatexRenderer/LatexRenderer/webservices` to `<tomcat-webapps>`

**Restart Tomcat**

Restart the Tomcat Webserver like described [here](#).

This completes the installation of LatexRenderer.

**Troubleshooting**

If there is a problem with LatexRenderer in BlueSpice, first check the file system permissions.

**Webservice: PDF-Export**

**Contents**

1 Moving the BShtml2PDF Application .......................................................... 133
2 Checking the functionality ................................................................. 133
3 Enable PDF Export in BlueSpice .......................................................... 133
4 Troubleshooting ................................................................. 134
5 Download Web services .......................................................... 135
Make sure that the Apache Tomcat server is completely installed and configured on the BlueSpice server before setting up PDF-Export.

**Moving the BShtml2PDF Application**

Download the file "BShtml2PDF.war" from https://sourceforge.net/projects/bluespice/files/webservices/BShtml2PDF.war/download and copy it to `<tomcat-webapps>`.

The default paths are as follows:

- C:\Program Files\Apache Software Foundation\Tomcat 9.0\webapps (Apache Tomcat on Windows)
- /var/lib/jetty9/webapps (Jetty on Debian)

The application usually starts automatically without the need for rebooting the application server.

**Checking the functionality**

The correct functionality of the BShtml2PDF service can be checked as follows:

On Windows, open Internet Explorer using the URL http://localhost:8080/BShtml2PDF. With correct functionality, you should see the following website:

![BShtml2PDF Service Status](image)

**Enable PDF Export in BlueSpice**

Go to the directory `<installpath-bluespice>/settings.d`. Open the file `020-BlueSpiceUEModulePDF.php` in a text editor.

In the second line is the code to activate the extension:

```php
return; // Disabled. Needs Tomcat
```

You can either add a comment character (#) to the beginning of this line or delete the line completely, save the file and exit it.

Open a command line and change into the folder `<installpath-bluespice>`. Execute the following command:

```bash
php maintenance/update.php (Linux)
php maintenance\update.php (Windows)
```
In Windows, make sure that the environment variables are set correctly to access the "php" command.

Note that you must update the file system permissions after running update.php.

When the script is finished with the "Done" message, you have successfully installed the web service.

Troubleshooting

If there is a problem with the PDF export in BlueSpice, first check the file system permissions.
Download Web services

If the required war-file is missing in your installation package, you can download it here: Webservices.

**Webservice: VisualDiff**

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tips for this Document .................................................................</td>
</tr>
<tr>
<td>2 Copy of BShtmlDiff .................................................................</td>
</tr>
<tr>
<td>3 Restart Tomcat ........................................................................</td>
</tr>
<tr>
<td>4 Troubleshooting ........................................................................</td>
</tr>
</tbody>
</table>
This document describes the installation of VisualDiff from BlueSpice. **VisualDiff is an exclusive component of BlueSpice pro!** Please note that the Apache Tomcat server must be installed and configured on the BlueSpice server.

**Tips for this Document**

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).
- The placeholder `<tomcat-webapps>` stands for the path to the Webapps directory of your Tomcat server, e.g. C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps (Windows) or /var/lib/tomcat8/webapps (Linux).

**Copy of BShtmlDiff**

Move the file "BShtmlDiff.war" from the directory `<installpath-bluespice>/extensions/BlueSpiceVisualDiff/VisualDiff/webservices` to `<tomcat-webapps>`

**Restart Tomcat**

Restart the Tomcat Webserver.

This completes the installation of VisualDiff.

**Troubleshooting**

If there is a problem with VisualDiff in BlueSpice, first check the file system permissions.

**Installing BlueSpice 3 with installer**

## Contents

1 Introduction ...................................................................................................................................... 137
2 Step-by-step installation ......................................................................................................... 137
**Introduction**

With BlueSpice 3, we offer the installation as a complete package with MediaWiki and BlueSpice. This installation guide gives you step-by-step instructions to install BlueSpice.

**Important!** If you do a fresh install of BlueSpice 3.2 it might be necessary to run update.php afterwards if you get an error.

**Note:** This document only describes the steps for installing the web application itself. For the installation of extended functions such as VisualEditor and Extendedsearch, please refer to the corresponding documentation.

We will not go into details about your operating system installation here, but assume that you have already configured your system and stored the installation package in a web root of your choice, where you can access it via your browser. You can find more details in our detailed installation guide.

Further help on optimizing the operating system can be found in our compendium.

**Step-by-step installation**

If you also install the paid extension "BlueSpiceWikiFarm", make sure that the codebase is not located directly in the DocumentRoot of your web server or VirtualHost - it must be located in the /w subfolder!

<table>
<thead>
<tr>
<th>Step 1 - Start the installation setup</th>
<th>First, open the URL of your web application in your browser. Then click on &quot;set up the wiki&quot; to start the installation.</th>
</tr>
</thead>
</table>

| Note: If you don't meet all necessary requirements for PHP yet, you won't be able to view this setup page yet. Please make the |
necessary corrections to your PHP installation first.

Otherwise, you are now on the page shown in the screenshot (click on the thumbnail to see the full screenshot).

**Step 2 - Select your language:** You are now in the language selection.

"Your language" defines the language that guides you through the installer,

"Wiki language" the later language settings of your wiki.

**Step 3 - MediaWiki Installation Check:** This step takes you to the MediaWiki installation check.

Please read this check carefully, as possible hints may not block the installation itself, but may lead to restrictions of the wiki functionality in practice.

Make the necessary corrections to your system and reload the page in your browser before proceeding with the setup.

**Step 4 - Establish the database connection:** In this step, you configure the database connection.

Here you can either specify the root user of your MySQL server and in the following step have the installer create an additional user who only has access to the BlueSpice database. The database will also be created automatically if it does not yet exist.

Or, alternatively, you can create a user and a database in advance and directly enter this information here. You can find information on the manual creation of users and databases in the official Mediawiki documentation.
### Step 5 - Create the BlueSpice database user:
Depending on the procedure you followed in the previous step, you can now define an exclusive user for your BlueSpice database.

If you have already created the user explicitly for the database in advance, leave the check mark at "Use the same database account as during the installation process".

### Step 6 - Create your wiki name and administrator account:
Enter the name for your wiki. This name is displayed in the title bar of your browser and in various other places such as in notification mails.

Pay extra attention to the correct spelling, because this name can afterwards only be changed with a certain effort and certain risks.

Next, enter the username, password and e-mail address of the first wiki administrator. The administrator account is then created by the wiki during setup.

### Step 7 - Options:
In this step, you specify the e-mail address for notification e-mails.

### Step 8 - Installation:
This step announces the installation of the wiki. If you don't need to make any changes to the previous steps, click "Next" to start the installation process.
Step 9 - Installation status: After the successful installation of BlueSpice, you see a confirmation page that you confirm with "Next".

Step 10 - Download LocalSettings.php: In the last step of the installation, you will be asked to download the configuration file "LocalSettings.php" of your installation. Download it and place it in the root directory of your BlueSpice codebase.

Step 11 - Rename the template folders: Open the folder ..\extensions\BluesSpiceFoundation and rename the subfolder config.template to config and create the new folder data. These folders should have read and write access, see File System Permissions.

Run the script ..\maintenance\update.php from the console.

Step 12 - Load the BlueSpice welcome page: If you now access the URL you specified for BlueSpice, you now see the BlueSpice welcome page. You can start using BlueSpice immediately.

Important! As next step, you can configure VisualEditor and Extendedsearch.

Caching

Contents

1 Tips for the Document .................................................................................................................. 142
2 Linux vs. Windows ................................................................................................................... 142
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Indicate Cache-Directory</td>
<td>142</td>
</tr>
<tr>
<td>4</td>
<td>Name Resolution of the Database</td>
<td>142</td>
</tr>
<tr>
<td>5</td>
<td>Activate Memcached</td>
<td>143</td>
</tr>
<tr>
<td>6</td>
<td>Increase PHP Memory Limit</td>
<td>143</td>
</tr>
<tr>
<td>7</td>
<td>Activate Bytecode Cache in PHP</td>
<td>143</td>
</tr>
<tr>
<td>8</td>
<td>Deactivate JobQueue</td>
<td>144</td>
</tr>
</tbody>
</table>
This document describes different caching options to enhance the performance of your BlueSpice installation.

**Tips for the Document**

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).

**Linux vs. Windows**

Please note that with equal hardware conditions, BlueSpice empirically runs more performantly on Linux than on Windows servers.

**Indicate Cache-Directory**

This forces BlueSpice to use the filesystem instead of the database for some internal caches. To do this, create the file `<installpath-bluespice>/settings.d/001-Directories.php` and add the following content:

```php
<?php
$wgCacheDirectory = "$IP/cache";
```

Save and close the file.

*Note that the directory "cache" in `<installpath-bluespice>` must be writable by the web server. For more information, read the file system permissions.*

**Name Resolution of the Database**

If this hasn't already been done while setting up MediaWiki, please make sure that the database server will be addressed via IP if it runs on the same server than BlueSpice. Especially Windows has problems with the resolution of "localhost".

To do this, open `<installpath-bluespice>/LocalSettings.php` and locate the variable `$wgDBserver`. The line should ideally be:

```php
$wgDBserver = "127.0.0.1";
```
**Activate Memcached**

Create the file `<installpath-bluespice>/settings.d/001-Memcached.php` and add the following content:

```php
<?php
$wgMainCacheType = CACHE_MEMCACHED;
$wgSessionCacheType = CACHE_DB;
$wgMemCachedServers = [ "127.0.0.1:11211" ];
```

Save and close the file.

The prerequisite is an installed and configured memcached server on the BlueSpice server. Read the memcached article for more information.

**Increase PHP Memory Limit**

A higher memory limit of PHP results in a faster execution. This can be changed in php.ini. Locate and adjust the following option:

```
memory_limit = 512M (means 512 MB - varies from the available memory)
```

After saving and closing php.ini, the web server must be restarted.

**Activate Bytecode Cache in PHP**

Since PHP 5.5 the bytecode cache "opcache" is included.

This needs to be activated in the php.ini first. Check if the module is integrated there. This is done via the line:

```
zend_extension=opcache.dll (Windows)
zend_extension=opcache.so (Linux)
```

Please also note the specification of the distributor for activating PHP modules under Linux.
Please, do the following configuration of the opcache in php.ini. Normally, all options should already exist, but are commented out by semicolon (;) at the beginning of the line. Locate the respective option in php.ini, remove the semicolon at the beginning of the line and adjust the settings as follows:

```plaintext
opcache.enable=1
opcache.memory_consumption=512 (means 512 MB - varies from the available memory)
opcache.max_accelerated_files=5000
opcache.validate_timestamps=1
opcache.revalidate_freq=2
```

After saving and closing php.ini, the web server must be restarted.

**Deactivate JobQueue**

For this, read the paragraph "runJobs.php" in the "Cronjobs" article.

**Cronjobs**

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Tips for this Document</td>
</tr>
<tr>
<td>2  runjobs.php</td>
</tr>
<tr>
<td>3  processBsEmailBatch.php</td>
</tr>
</tbody>
</table>
This document describes cronjobs and related configurations, which should be set for your BlueSpice (depending on the used version).

**Tips for this Document**

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows regarding the documentation “Folder structure under Windows”) or /var/www/bluespice (Linux).
- The placeholder `<tomcat-webapps>` stands for the path to the webapps directory of your Tomcat server, e.g. C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps (Windows) or /var/lib/tomcat8/webapps (Linux).

**runJobs.php**

Time-consuming processes will be moved to a processing queue in the background of BlueSpice. With every page impression, a part of these will be processed. For the case that there are lots of processes in the queue and there are relatively little page impressions, the tasks will not be processed promptly.

For this reason, the queue should be processed regularly by cronjob.

Now create a cronjob (Windows: "Scheduled task") depending on your operating system. The command to execute is:

```bash
php <installpath-bluespice> /maintenance/runJobs.php (Linux)
php.exe <installpath-bluespice> \maintenance\runJobs.php (Windows)
```

It is recommended to specify the complete path to php.exe under Windows. For more information, see the environment variables document.

Execute the cronjob every **10 minutes**.

**processBsEmailBatch.php**

For reports via email sent from MediaWiki, please create a cronjob and run it daily. The command for this is:

```bash
php <installpath-bluespice> /maintenance/processBsEmailBatch.php
```
It is recommended to specify the complete path to php.exe under Windows. For more information, see the environment variables document.

Time Zone

Contents

1 Tips for this Document ................................................................. 147
2 Changing the Time Zone .............................................................. 147
Even if every user can change his time zone himself in the user settings, BlueSpice sets the default time zone "Europe/Berlin" when the user first logs in. This document describes how to change this if necessary.

Tips for this Document

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. `C:\inetpub\wwwroot\bluespice` (Windows regarding the documentation "Folder structure under Windows") or `/var/www/bluespice` (Linux).
- The placeholder `<tomcat-webapps>` stands for the path to the webapps directory of your Tomcat server, e.g. `C:\Program Files\Apache Software Foundation\Tomcat 8.5\webapps` (Windows) or `/var/lib/tomcat8/webapps` (Linux).

Changing the Time Zone

Copy the file `<installpath-bluespice>/settings.d/001-DefaultSettings.php` to `<installpath-bluespice>/settings.d/001-DefaultSettings.local.php` and open it. In delivery stat, you can find these two lines there:

```php
$wgLocaltimezone = 'Europe/Berlin';
$wgDefaultUserOptions['timecorrection'] = 'ZoneInfo' . (date("I") ? 120 : 60) . '|Europe/Berlin';
```

Replace "Europe / Berlin" with your time zone. An overview of all possible time zones can be found in the official PHP documentation.

Save and close the file.

Deactivating `installcheck.php`

Contents

1. Tips for this Document ................................................................. 148
2. Deactivating `installcheck.php` .................................................. 148
As soon as the setup of BlueSpice is completed, you should prevent the execution of the installcheck.php while using the wiki productively. A short instruction can be found in this document.

**Tips for this Document**

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).

**Deactivating installcheck.php**

Switch to the directory `<installpath-bluespice>` and open the `installcheck.php` file in a text editor. Insert a new line after the first line and insert

```php
    die( 'Deactivated.' );
```

Save and exit the file. The installcheck.php is no longer accessible now. If you need to restore this file at a later time, it is sufficient to temporarily disable inserted line by placing the `#` character at the beginning of the line.

**Save Directories**

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tips for this Document</td>
</tr>
<tr>
<td>2 Explanation for Saving Directories</td>
</tr>
</tbody>
</table>
Tips for this Document

- Please, read this manual completely and work through the single installation steps one after another.
- For editing the configuration files with a text editor, the files must be saved in UTF-8 coding without BOM (Byte Order Mark).
- The placeholder `<installpath-bluespice>` stands for the path to your BlueSpice installation, e.g. C:\inetpub\wwwroot\bluespice (Windows) or /var/www/bluespice (Linux).

Explanation for Saving Directories

It is highly recommended, to lock several directories to save them from access from external browsers, so that calling up the directory or the content delivers the HTTP status code (Forbidden).

To find out how this works with the webserver you are using, please read the documentation of your webserver software.

The following directories should be saved:

- `<bluespice-url>/cache`
- `<bluespice-url>/images`
  
  Please keep in mind that you need to unblock the subfolder `<bluespice-url>/images/bluespice/flexiskin` afterwards, because this subfolder must be accessable.
- `<bluespice-url>/mw-config`

System Requirements 3.2

For a trouble-free installation of the current version BlueSpice 3.2, we recommend the following system requirements. The application BlueSpice is tested by Hallo Welt! for Windows and Linux.

MediaWiki

- Version 1.31.x (LTS -Long Term Support)

Browser

- Internet Explorer 11 or higher (without compatibility view)
- Microsoft Edge
- Google Chrome
- Firefox

Server Environment

- Operating System: Microsoft Windows Server 2012+ or Linux (established distributions)
- Webserver: Apache 2, nginx 1+(*) or IIS 8, 9, 10 (*)  

  nginx not possible in WikiFarm
- PHP 7.2.x, 7.3.x
- MySQL 5.6+ or MariaDB 10.x
- Main memory: 16GB (minimal 8GB)
- Available hard drive space: > 20GB (depends on the planned storage of data)
- CPU: 8 (minimal 4) cores
- Apache Tomcat 8 or Jetty 9 (for PDF export, version comparison, and LaTeXRenderer)
- Elasticsearch 6.x with plugin "ingest-attachment"
- Java 8.x or OpenJDK 10.x
- NodeJS 8.x, 9.x, 10.x

**Database access**

- Host/IP adress and port
- User name and password for root user (Create/Drop statements) and wiki user (has possibly been created during the MediaWiki installation)
- Name of the database
- The table prefix of the database