

Basic installation of APACHE in Windows

This chapter deals with the installation of Apache to be used for ABCD in a Windows environment. At least Windows NT, Windows 2000 or later versions are supposed to be installed on the computer. ABCD works with version 2.2 of Apache.

Getting the software

The Apache webserver can be downloaded free from the Apache website : <http://www.apache.org/>.

Installation of APACHE

The installation of APACHE under Windows runs with an 'installer' which simply needs to be executed. If you are not experienced with this type of software, it is recommended to accept the defaults of the installer. Double-click on the APACHE installer and follow the instructions. These should result in the following configuration on your PC (but names of folders can be slightly different) :

The APACHE program will be installed in

`C:\PROGRAM FILES\Apache Software Foundation\Apache2.2`

If not indicated otherwise, APACHE will be installed as an automatic Windows service, but the service can also be activated or configured manually :

`Start > Programs > Apache HTTP Server 2.2 >`

The relevant folders of the installation are the following :

- a) `C:\PROGRAM FILES\ Apache Software Foundation\Apache2.2\htdocs`, where all the pages to avail to visitors of the website will be stored
- b) `C:\PROGRAM FILES\ Apache Software Foundation\Apache2.2\conf`, where the file `httpd.conf` is located, which defines all the configuration settings of the server
- c) `C:\PROGRAM FILES\ Apache Software Foundation\Apache2.2\cgi-bin`, where specific executable programs are stored which can access other programs or data. Basically, the configuration procedure consists of editing the file `httpd.conf`, deleting/adding/editing some lines.

Before to undertake any configuration activity, verify if the Webserver is working correctly. If the APACHE installation was installed indeed, the URL <http://localhost/> should show a page proving that the server is working with a message like 'IT WORKS!'.

Basic installation of PHP in Windows

This chapter deals with the installation of PHP to be used with ABCD in Windows versions NT, 2000 or later.

Getting the software

The most recent version of PHP is available at <http://www.php.net/>.

! Beware : there are two versions of PHP for Windows, one which only works as a CGI-application and one which can be installed as a module. We recommend to use this last option when the application will run with a high load.

Installation of PHP

In Windows, the PHP installation is quite simple. One needs only to decompress (unzip) the archive in a folder and to copy to (sub-)folders which the system will use.

We will now present the steps of the installation of PHP adjusted to ABCD.

- a) create a folder "php" in the root directory of the harddisk : `c:\php`;
- b) extract the archive with the PHP components into the directory created in (a);
- c) copy the DLL files into the directory `c:\php\dlls*.dll`, in the extensions folder of the system (generally `WINDOWS\SYSTEM32` or `WINNT\SYSTEM32`). Actually, only the DLL's which manipulate XML documents are necessary, but it is clearly more simple to prepare the installation for future changes. Anyhow, the unused files do not affect the system and are controlled through the PHP configuration (`php.ini`);
- d) use the file `php.ini-dist` as the starting point for the PHP configuration. See the section "PHP Configuration";
- e) Save the file created in (d) under the name "`php.ini`" in the Windows folder (`C:\WINNT` or `C:\WINDOWS`);
- f) Configure Apache to work with pages written with PHP.

PHP Configuration

Basically the procedure consists of editing the file `php.ini-dist`, adjust some parameters and save the file as `php.ini` in the Windows folder.

Take a copy of the file `c:\php\php.ini-dist` saving it as `c:\windows\php.ini`;

Edit this file `c:\windows\php.ini` (e.g using NOTEPAD) and adjust the following parameters (identify the correct lines with the search function in the document):

- `extension_dir = "c:\php\ext"`
- `extension=php_gd2.dll`
- `extension=php_mysql.dll`
- `extension=php_xmldrpc.dll`
- `extension=php_xsl.dll`
- `extension=php_yaz.dll`

Observations:

- 1- The extensions `mysql` and `gd` are only necessary for EMPWEB;
- 2- The extension `yaz` could not be present in the package, see the specific instructions for its installation.

Apache with PHP

Before to start the configuration verify if the Webserver is working correctly. Just use your browser and go to your website.

If the APACHE installation was fully done, the URL `http://localhost/` should show a page indicating that the server is working ('IT WORKS!').

The configuration of APACHE is done by editing the file `httpd.conf` which is to be found in the folder `<path_to_apache>\conf\`, e.g.: `C:\APACHE\conf\`.

Edit this file with a text-editor (e.g. NOTEPAD) and add some lines which will allow APACHE to manage the PHP programs.

The configuration file is structured in sections. Verify if the added lines are in the correct section. As already mentioned, PHP can run as CGI or as an APACHE module (but not both at the same time). The main difference is that the second option has a better approach for high loads of processes.

PHP as an APACHE module

For this option edit the file `httpd.conf` :

1- Add the PHP-module in the list of modules of Apache :

```
LoadModule php5_module "c:\php\php5apache2_2.dll"  
LoadModule proxy_module modules/mod_proxy.so  
LoadModule proxy_http_module modules/mod_proxy_http.so
```

Obs.: The Proxy modules only are necessary for EMPWEB.

2- a line which includes the php file-type in the MIME-tables :

```
AddType application/x-httpd-php .php
```

3- a line which indicates the path to php.ini:

```
PHPIniDir "\php"
```

Verification of the installation

The last step for the configuration of PHP is to verify if APACHE is correctly processing the PHP scripts. For this we create a new text-file "info.php".

Make sure that this file really has the extension .php and no other one (Windows by default hides the extensions of 'known' file types).

This file info.php should only contain one single line :

```
<? phpinfo(); ?>
```

Save this file in the document folder configured for you webserver. In a typical APACHE configuration this would be "htdocs".

Reinitialize the Webserver :

```
Start > Programs > Apache Software Foundation > Restart Apache
```

Use your Internet browser to visit the URL:

```
http://localhost/info.php
```

This page should show (a lot of) information about your PHP installation.

Configuration of Apache and PHP in Linux environments

This chapter deals with the APACHE and PHP installation for use with ABCD in Linux environments. It is assumed that the computer runs a typical Linux operating system installation, without graphical (optimized) interface, without webserver and without the option SELinux. This is necessary to guarantee that PHP could include a dynamic library of Apache and to load it without restrictions.

In order to allow compiling and installation of all the necessary software, it is suggested that the administrator makes sure all software libraries and tools described here are available.

PHP - ANSI C Compiler and iconv

Apache - ANSI C Compiler and Perl5 Interpreter

Examples of tested versions

Apache 2.2.x

PHP 5.2.x

Before initiate the installation of PHP is necessary to install some libraries that can be installed by the commands:

```
# apt-get install libxml2-dev
# apt-get install libjpeg62-dev
# apt-get install libpng12-dev
# apt-get install libxslt1-dev
# apt-get install zlib1g-dev
# apt-get install libtidy-dev
# apt-get install curl
```

Otherwise the PHP and Apache need to be compiled. They should not be installed using automatic installation tools such as RPM, etc. The commended lines for the compilation are the following :

Extracting the source code in the basic folder

```
cd /usr/local/src
tar xvfzp httpd-2.2.13.tar.gz
tar xvfzp php-5.2.11.tar.gz
```

Updating the paths for the libraries

```
vi /etc/ld.so.conf
```

Include the path for the libraries `/usr/local/lib`.

In some Linux versions the file `ld.so.conf` contains a line :

```
include ld.so.conf.d/*.conf
```

In this case it is suggested to create a file to include the line described above, e.g. :

```
/etc/ld.so.conf.d/bvs.conf
containing
/usr/local/lib
```

Configuration and installation of Apache

```
cd httpd-2.2.13
```

Note: the command line presented below consists of three parameter lines.

```
./configure '--prefix=/usr/local/apache' '--enable-rule=SHARED_CORE' '--enable-  
module=so' '--enable-proxy' '--enable-proxy-http'  
  
make  
make install  
cd ..
```

Start the Apache service

Test the configuration

```
/usr/local/apache/bin/apachectl configtest
```

Start the service

```
/usr/local/apache/bin/apachectl start
```

Verification of the status of the installation

Open a window in the Internet browser of your choice and test the URL with the server's IP.

E.g. `http://200.100.1.100/` or `http://127.0.0.1`

The result should be a window with a message of correct functioning.

Configuration and installation of PHP

```
cd php-5.2.11
```

Start the PHP configuration

Note: the following command line consists of several parameter lines.

```
./configure --prefix=/usr/local/php -with-apxs2=/usr/local/apache/bin/apxs -with-zlib-dir=/usr -with-xsl=/usr  
-with-xmlrpc -with-gd -with-jpeg-dir=/usr -with-png-dir=/usr  
make
```

```
make install
```

Editing the file httpd.conf

```
vi /usr/local/apache/conf/httpd.conf
```

Verify if the module was added to the list of modules (APIs) of Apache based on the following example :

```
LoadModule php5_module modules/libphp5.so  
LoadModule proxy_module modules/mod_proxy.so  
LoadModule proxy_http_module modules/mod_proxy_http.so
```

Add a line to make the MIME-type for PHP known :

```
AddType application/x-httpd-php .php
```

Editing the configuration file of PHP

Some versions of PHP create the file `php.ini` in a subdirectory `/usr/local/php/lib` or `/usr/local/php/lib/php`. If the version used does not create such file, copy the file `php.ini-dist` of the installation directory (`php-5.2.11`) to `/usr/local/php/lib` with the name `php.ini`.

Now this file needs some editing to change or activate some parameters :

```
vi php.ini
```

- `extension_dir = "c:\php\ext"`
- `extension=php_gd2.dll`
- `extension=php_mysql.dll`
- `extension=php_xmlrpc.dll`
- `extension=php_xsl.dll`

° `extension=php_yaz.dll`

Restart the Apache service

```
/usr/local/apache/bin/apachectl start
```

Basic installation of ABCD

STEPS:

1. In the case of installation, extract the ZIP-package of ABCD in the root.
The following structure of folders will be created :

```
ABCD
htdocs
cgi-bin
bases
temp
```

2. Configure your Webserver according to the folder structure created above.
Use the VirtualHost settings for your configuration.

Example of VirtualHost for Apache webserver :

```
<VirtualHost *>
  ServerAdmin serveradmin@bvs.br
  DocumentRoot "/home/ABCD/htdocs"
  <Directory "/home/ABCD/htdocs">
    Options Indexes FollowSymLinks MultiViews
  </Directory>
  ServerName abcd.test
  DirectoryIndex index.htm index.php homepage.htm
  ScriptAlias /cgi-bin/ "/home/ABCD/cgi-bin/"

  <Directory "/home/ABCD/cgi-bin/">
    AllowOverride None
    Options None
    Order allow,deny
    Allow from all
  </Directory>
</VirtualHost>
```

2.1. Directories to consider in the Web Server configuration :

```
htdocs --> directory for the data (document root)
cgi-bin --> directory for the CGI-scripts execution
```

3. Modify the configuration files

3.1 Modify the ABCD-Site configuration file

```
htdocs/site/bvs-site-conf.php
```

The path of the `SITE_PATH` and `DATABASE_PATH` should contain the path to where the package was extracted. The `SERVERNAME` should indicate to the URL configured in the Web Server.

```
SITE_PATH=/ABCD/www/htdocs/site/
DATABASE_PATH=/ABCD/www/bases/site/
SERVERNAME=localhost
```

In the case of a Linux installation the parameter `LETTER_UNIT` should be commented out with ";" (to de-activate it), but in a Windows installation, this line should be active to indicate the drive unit (mostly harddisk partition).

```
;LETTER_UNIT=D:
```

3.2 Modify the configuration file of iAH

```
htdocs/iah/scripts/iah.def.php
```

The path for the parameters PATH_CGI-BIN, PATH_DATABASE and PATH_DEF should be adjusted towards the path where the extraction of the installation package has gone.

```
PATH_CGI-BIN=/ABCD/www/htdocs/iah/scripts/  
PATH_DATABASE=/ABCD/www/bases/  
PATH_DEF=/ABCD/www/bases/par/
```

3.3 Modify the configuration file of ABCD-Central

```
htdocs/central/config.php
```

The paths for the variables \$db_path, \$Wxis and \$xWxis should refer to the path where the extraction of the installation package has gone.

```
$db_path="/ABCD/www/bases/";  
$Wxis="/ABCD/www/cgi-bin/wxis.exe";  
$xWxis="/ABCD/www/htdocs/$app_path/dataentry/wxis/";
```

In order to use the protocol of CGI-BIN instead of direct 'exec' in the use of wxis ISIS-server, it is necessary to also configure the parameter \$wxisUrl, where the URL of this executable needs to be identified.

```
$wxisUrl="http://localhost:9090/cgi-bin/wxis.exe";
```

In the case of introducing a problem when changing these configuration files, it is possible to restore the original files from the files .template, which reside in the folders corresponding to each configuration file.

4. Change the access rights (very important in Linux) according to the following instructions :

```
775 Recursive for cgi-bin and htdocs  
777 Recursive for bases and temp
```

5. Open the URL of ABCD Central directly from the link, e.g.:

```
http://abcd.test/
```

6. Open the URL of the ABCD-Site, adding /site, e.g.:

```
http://abcd.test/site/
```

7. Open the URL of ABCD SeCS-Web, adding /secs-web, e.g.:

```
http://abcd.test/secs-web/
```

Additional information

When installing **yaz** (responsible for Z39.50 functionality) it is possible that some problems occur. It is recommended to check the instructions on this available in dedicated files of the BVS-Modelo website. At this moment such instructions however are not yet available for Linux. For the installation of EmpWeb a dedicated manual is also available.
