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How To Compile And Install PHP Extensions From Source

Mattias Geniar, Sunday, September 14, 2008 - *last modified: Saturday, January 24, 2015*

It's not as difficult as it might sound, so here's the quick-n-dirty way of installing and compiling your very own PHP extensions/libraries, from the PHP source code. With a normal install, not every library is compiled and installed -- so it might leave you with several functions that aren't working.

This guide is building a module for PHP 5.2, but the steps are identical for PHP 5.3, 5.4, 5.5, or 5.6.

In this case, I'll assume you're trying to compile the dBase-extension (<http://be.php.net/dbase>). It'll probably start with the following error, shown on screen:

```
Fatal error: Call to undefined function dbase_create() in ... on line ...
```

It means the extension wasn't loaded -- and in most cases isn't present on the server at all. So we'll have to create it ourselves.

Install the PHP development package

On Ubuntu/debian, you can use apt-get, it's a piece of cake.

```
$ apt-get install php5-dev
```

On CentOS / Red Hat, use yum for your PHP packages.

```
$ yum install php-devel
```

(alternatively: check which repositories you're using and which PHP package you have installed, the package may also be named `php55-devel`, or similar).

Download & unzip the PHP5 source code

Go to the [PHP-download \(http://be.php.net/downloads.php\)](http://be.php.net/downloads.php) page, and select the complete PHP5 source code.

```
$ cd /usr/local/src
$ mkdir php_source
$ cd php_source
$ wget http://be.php.net/distributions/php-5.2.6.tar.gz
```

Next, unzip the file you just downloaded (the ".gz"-file extensions means it has been gzipped).

```
$ gunzip php-5.2.6.tar.gz
```

And untar it.

```
$ tar xvf php-5.2.6.tar
```

Prepare the extension (phpize)

Go to the proper directory. You just untarred the files, so we'll browse to that specific subdirectory (note; directory-names may vary, depending on the version you just downloaded). In this case, we go to the "dbase" subfolder, but it could be any of the extensions you want to configure.

```
$ cd php-5.2.6/ext/dbase/
```

And use `phpize` in that directory.

```
$ cd /usr/local/src/php_source/php-5.2.6/ext/dbase/  
$ phpize
```

```
Configuring for:  
PHP Api Version:      20041225  
Zend Module Api No:   20060613  
Zend Extension Api No: 220060519
```

Configure & Make the extension

Configure it

```
$ ./configure
```

And make it

```
$ make
```

The `make` command, will render a lot of text (compilation-info), and most likely end with the following snippet.

```
...  
-----  
  
Build complete.  
(It is safe to ignore warnings about tempnam and tmpnam).  
  
Extension is now created in ../libs/dbase.so  
  
Move it to the extensions directory
```

Woohoo, we compiled our dbase-extension! Now all we need to do, is activate it.

Move the extension

If you already have an extensions-directory on your server, use that one -- if not, you can create a new directory to place the extensions. To find out, check the `extension_dir` directive.

```
$ php -i | grep extension_dir  
extension_dir => /usr/lib/php/extensions/no-debug-non-zts-20121212
```

Copy the extension to that directory.

```
$ cp libs/dbase.so /usr/lib/php/extensions/no-debug-non-zts-20121212/
```

Edit your PHP.INI

The extension is ready to be included -- now we need to change the php.ini file to load that particular extension. First, find out which php.ini your system is using (note: the CLI may load a different config than the php-fpm or the Apache module one, a `phpinfo()` in your application would tell you for certain).

```
$ php -i | grep 'Configuration File'
Configuration File (php.ini) Path => /etc
Loaded Configuration File => /etc/php.ini
```

In the example above, we use `/etc/php.ini` as our base php.ini file.

```
$ vi /etc/php.ini
```

Add the module you want to load. I usually add these at the very bottom, where my changes are. This is relative to the `extension_dir` directive you found above.

```
extension=dbase.so
```

Restart your php

In case of Apache

```
$ /etc/init.d/httpd restart
$ /etc/init.d/apache2 restart
```

or php-fpm:

```
$ /etc/init.d/php-fpm restart
```





And it's as easy as that!

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Hi! My name is Mattias Geniar. I'm a Support Manager at [Nucleus Hosting \(https://www.nucleus.be/en/?utm_source=ma.ttias.be\)](https://www.nucleus.be/en/?utm_source=ma.ttias.be) in Belgium, a general web geek & public speaker (/public-speaking/). Currently working on [DNS Spy \(https://dnsspy.io/?utm_source=ma.ttias.be\)](https://dnsspy.io/?utm_source=ma.ttias.be) & [Oh Dear! \(https://ohdearapp.com/?utm_source=ma.ttias.be\)](https://ohdearapp.com/?utm_source=ma.ttias.be). Follow me on Twitter as [@mattiasgeniar](https://twitter.com/mattiasgeniar) (https://twitter.com/mattiasgeniar).


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Comments



tayfun (<http://blog.tayfunsen.com>) Monday, December 29, 2008 at 17:40 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-1811>) - [Reply](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=1811#respond) ↓ (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=1811#respond>)

Hi Mattias,

I've used this great article as a guide in adding another module to PHP. Thanks for the step

by step guide, I think there are not many guides to dealing with this without compiling whole PHP from scratch. I've written a Turkish version detailing this process for my blog site. Gotta spread the word.

Thanks again.



Matti (<https://ma.ttias.be/>) Monday, December 29, 2008 at 18:25 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-1812>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=1812#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=1812#respond>)

Hi Tayfun,

Glad you liked it, and found it useful. I only wrote it because I couldn't find a decent solution myself, so I felt it was needed. :-)

Cheers,
Mattias



Brian Thursday, June 3, 2010 at 05:54 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-2738>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=2738#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=2738#respond>)

Great tutorial!

Still best on the web two years later.



Muhammad Adnan (<http://www.imblog.info>) Sunday, August 1, 2010 at 13:04 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-2770>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=2770#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=2770#respond>)

hey folk,

I just came to this blog via Google. I was searching about "compiling extension from source php"

I have to install php extension pslib because there is no DLL for windows environment.



Pranav Tuesday, February 22, 2011 at 13:57 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-3879>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=3879#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=3879#respond)

How I can do this process on windows?

for <http://pecl.php.net/package/pecl> [http \(http://pecl.php.net/package/pecl http\)](http://pecl.php.net/package/pecl)

thanks



Reem H. Wednesday, June 1, 2011 at 09:54 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-4603>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4603#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4603#respond)

Hi,

I tried this to enable xsl and everything went well BUT the xsl was NOT enabled!! in phpinfo()
nothing changed :(

I need help is there something missing or something that I should have done?

Thanks in advance



Matti (<https://ma.ttias.be/>) Wednesday, June 1, 2011 at 09:58 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-4604>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4604#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4604#respond)

At the command line, do:

```
# php -i | grep -i xsl
```

Do you see anything appear there? If not, check your php.ini file and make sure the path to your extension is correct so PHP can load it. Also check for any errors when executing the “php -i” statement like “module cannot be found” or similar.

If it works at the CLI, restart your Apache so the new config is loaded.



Reem H. Saturday, June 4, 2011 at 11:59 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-4640>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4640#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=4640#respond)

I solved the problem.

The problem was that XSL extension depends on DOM, so I had to do the process for DOM and enable it at first then do the same for XSL otherwise it won't work.

Thanks :)



THANK YOU Thursday, September 15, 2011 at 08:21 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-6836>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=6836#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=6836#respond)

I just wanted to say Thank you for this blog post , Detailed and informative :)

Thank you so much again , finally I found the right way to do it !



pradeep kumar (<http://www.ihorsetechnologies.com>) Monday, March 26, 2012 at 06:48 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-8745>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=8745#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=8745#respond)

Dear Mattias,

thank you for this wonderful blog. iam a windows user and i need to compile dbase module in php for my project. is it possible for me to do it in windows? or can i do it in linux environment and make an installer and move it to windows, install and use it. Please let me know. It would be of great help to me.

Thanks again,

Pradeep



Matti (<https://ma.ttias.be/>) Monday, March 26, 2012 at 08:54 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-8747>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=8747#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=8747#respond)

Hi,

You can't compile the Windows DLL extensions on Linux, it has to happen on Windows. By default it is indeed missing, but I'm afraid I don't have the experience on

compiling it on Windows.



Harish Pareek Monday, January 28, 2013 at 21:23 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-9155>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=9155#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=9155#respond)

Hi,

I need php_perl.dll file for integration of php 5.3.4 with perl 5.14.3

If someone have this extension plzzz send me a copy to harishpareek11@gmail.com
(<mailto:harishpareek11@gmail.com>)

Thanks in advance :)



peacengell Sunday, July 28, 2013 at 15:17 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-9388>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=9388#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=9388#respond)

Hi great tut I could not get gd and Zlib to work ..

I don't know why

`extension_dir="/usr/local/lib/php/extensions/"`

`extension=gd.so`

`extension=zlib.so`

please need help thanks..

if there any tutorials how to compile php with most

php extension send it to me



Rosa Thursday, May 7, 2015 at 20:02 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-12111>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=12111#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=12111#respond)

Hi!

I'm trying to configure the dbase extension. When I untared the tar and searched the ext/dbase I found that it was no folder named like that. Should I just create it? I'm quite new to linux.

BTW I used this path in the wget command <http://be.php.net/distributions/php-5.5.24.tar.gz>
(<http://be.php.net/distributions/php-5.5.24.tar.gz>)

I really appreciate the information.

Thanks :)



Guntars (http://guntars.github.io/tech/2015/08/12/how-to-install-the-experimental-pdo_oci-module/) Wednesday, August 12, 2015 at 15:05 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-13958>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=13958#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=13958#respond>)

Thanks, a really great post!

I used it as a starting point for writing a how-to about installation of the experimental pdo_oci module. Of course all credits added!



mrfadh Monday, June 20, 2016 at 08:07 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-34798>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=34798#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=34798#respond>)

Thanks... its really helpful



ilgar Jafarov Thursday, August 25, 2016 at 19:16 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-37038>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=37038#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=37038#respond>)

thanks, helps me t much



Freddy Saturday, September 3, 2016 at 17:28 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-37223>) - [Reply ↓](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=37223#respond) (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=37223#respond>)

I am trying to build my own PHP extension on Windows. but during the compilation i got the error below:

error LNK2019: simbolo externo __imp_QMCallx sin resolver

And this same error for the rest of the functions i'm using. I'm trying to build this lib using the VS2012 x86 Native Tools Command Prompt, doing nmake over the PHP source directory, which should build the whole PHP solution (including it's libs).

This extension is needed to handle QM Database (www.openqm-zumasys.com) with PHP over Windows. This library is working fine on linux (CentOS).

The source code to build this lib was downloaded from QM Client Downloads (<http://www.openqm-zumasys.com/downloads/> (<http://www.openqm-zumasys.com/downloads/>)).

I already have installed QM on my pc, so i guess all needed libraries are installed too.

Those functions as QMCallx belong to qmclient library. I know the path and i have access to all these external libs.

I'm just stuck at this point.

If is needed posting the source code, please, let me know it and i'll do it.

Any comment? Thanks in advance.



Doug (<http://N/A>) Wednesday, February 22, 2017 at 19:46 (<https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/#comment-44094>) - [Reply ↓ \(https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=44094#respond\)](https://ma.ttias.be/how-to-compile-and-install-php-extensions-from-source/?replytocom=44094#respond)

Thank you this read was a very enlightening read on PHP extension the compilation requirements online are frequently muddled by people that say you must compile php first to write or compile custom extensions for use.

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