

Chapter

9

SECTION II: SETTING UP THE L.A.M.P. ENVIRONMENT

Installing PHP

Downloading PHP

PHP is free and comes with the complete source code. Both the binaries and the source code can be found at the PHP website [www.php.net]. The latest development snapshot of PHP at the time of writing this book was PHP 6.0 which can be downloaded from <http://snaps.php.net>. *PHP 6 setup file is available on this book's CDROM.*

Scroll **half way** down the page till a heading **PHP 6.0** is reached. Click on the link **php-6.0-dev (tar.gz)**.

Downloading ICU For PHP 6

ICU [International Components for Unicode] is a mature, widely used set of C/C++ and Java libraries providing Unicode and Globalization support for software applications.

ICU is widely portable and gives applications the same results on all platforms and between C/C++ and Java software.

PHP 6 supports **Unicode** i.e. supports a boarder set of characters for international support.

Hence, ICU tarball needs to be installed prior installing PHP 6.

ICU can be downloaded from the website <http://site.icu-project.org/download>.

Download ICU4C tarball. ICU setup file is available on this book's CDROM.

At the time of writing this book the latest version of ICU was **icu4c-4_2_1-src.tgz**.

Installing ICU

Login as **root**. Make a directory **/downloads/icuforphp6**. Copy the downloaded file **icu4c-4_2_1-src.tgz** there.

Go to the directory **icuforphp6** as shown in diagram 9.1.1.



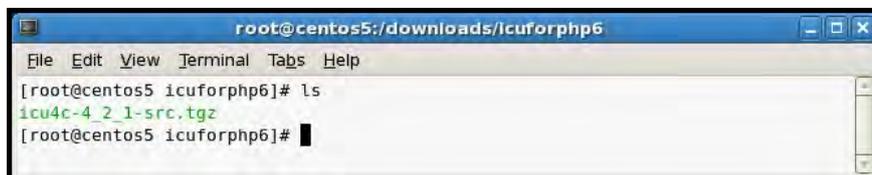
```

root@centos5:/downloads/icuforphp6
File Edit View Terminal Tabs Help
[root@centos5 ~]# cd /downloads/
[root@centos5 downloads]# ls
apache icuforphp6 mysql php
[root@centos5 downloads]# cd icuforphp6/
[root@centos5 icuforphp6]#

```

Diagram 9.1.1: Going to the icuforphp6 directory

Check for the **icu4c-4_2_1-src.tgz** file which was downloaded as shown in diagram 9.1.2.



```

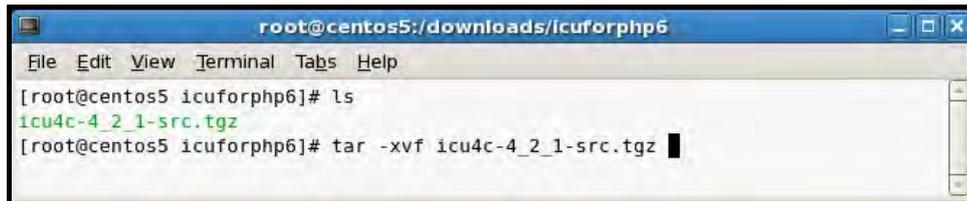
root@centos5:/downloads/icuforphp6
File Edit View Terminal Tabs Help
[root@centos5 icuforphp6]# ls
icu4c-4_2_1-src.tgz
[root@centos5 icuforphp6]#

```

Diagram 9.1.2: Checking for the downloaded ICU tarball

The contents of **icu4c-4_2_1-src.tgz** must be extracted after which the actual install process can begin. To extract the content of **icu4c-4_2_1-src.tgz** type the following command:

```
tar -xvf icu4c-4_2_1-src.tgz
```



```

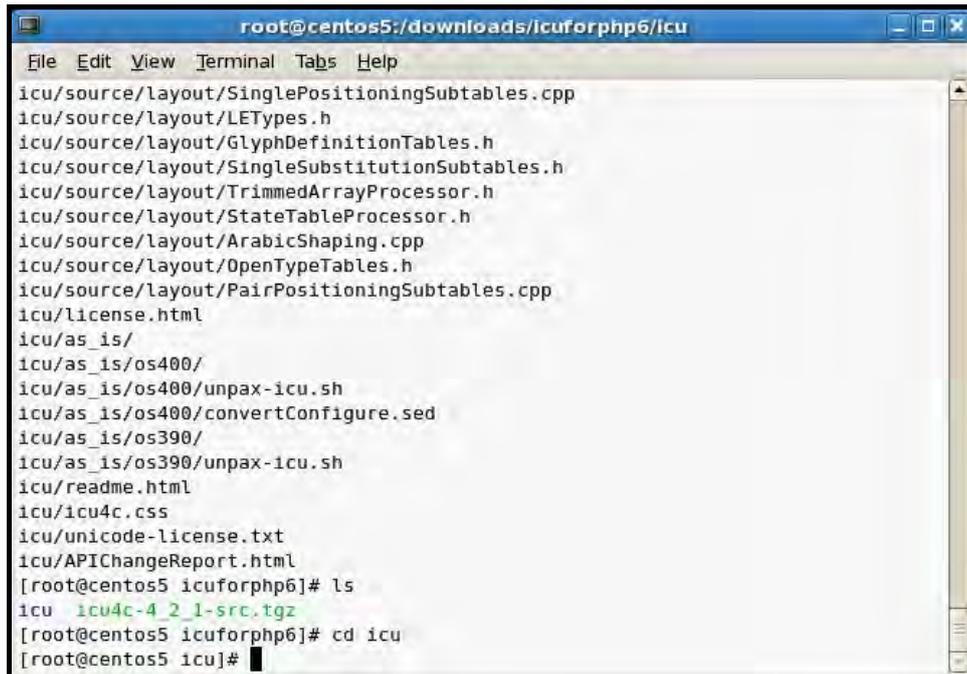
root@centos5:/downloads/icuforphp6
File Edit View Terminal Tabs Help
[root@centos5 icuforphp6]# ls
icu4c-4_2_1-src.tgz
[root@centos5 icuforphp6]# tar -xvf icu4c-4_2_1-src.tgz

```

Diagram 9.1.3: Extracting the files

The extraction process creates a directory called **icu** into which the contents of the tar file are extracted. This is just one level below the **icuforphp6** subdirectory. Change to this subdirectory:

```
cd icu
```



```

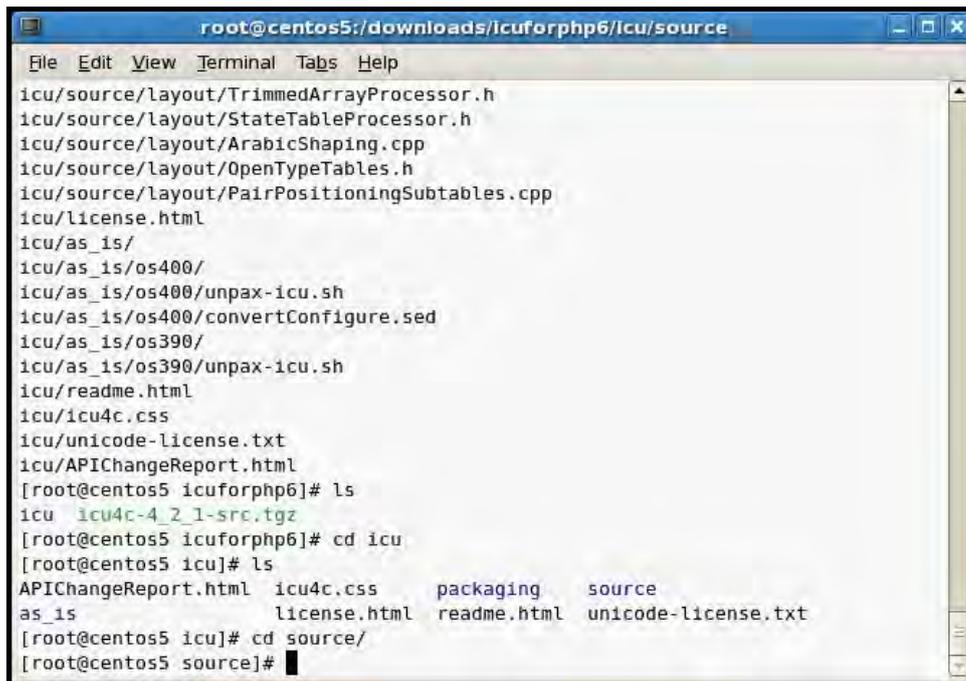
root@centos5:/downloads/icuforphp6/icu
File Edit View Terminal Tabs Help
icu/source/layout/SinglePositioningSubtables.cpp
icu/source/layout/LETypes.h
icu/source/layout/GlyphDefinitionTables.h
icu/source/layout/SingleSubstitutionSubtables.h
icu/source/layout/TrimmedArrayProcessor.h
icu/source/layout/StateTableProcessor.h
icu/source/layout/ArabicShaping.cpp
icu/source/layout/OpenTypeTables.h
icu/source/layout/PairPositioningSubtables.cpp
icu/license.html
icu/as_is/
icu/as_is/os400/
icu/as_is/os400/unpax-icu.sh
icu/as_is/os400/convertConfigure.sed
icu/as_is/os390/
icu/as_is/os390/unpax-icu.sh
icu/readme.html
icu/icu4c.css
icu/unicode-license.txt
icu/APIChangeReport.html
[root@centos5 icuforphp6]# ls
icu icu4c-4_2_1-src.tgz
[root@centos5 icuforphp6]# cd icu
[root@centos5 icu]#

```

Diagram 9.1.4: Changing to the sub-directory icu

Prior starting the configuration process go to the **source** directory, which is just one level below the **icu** subdirectory:

```
cd source
```

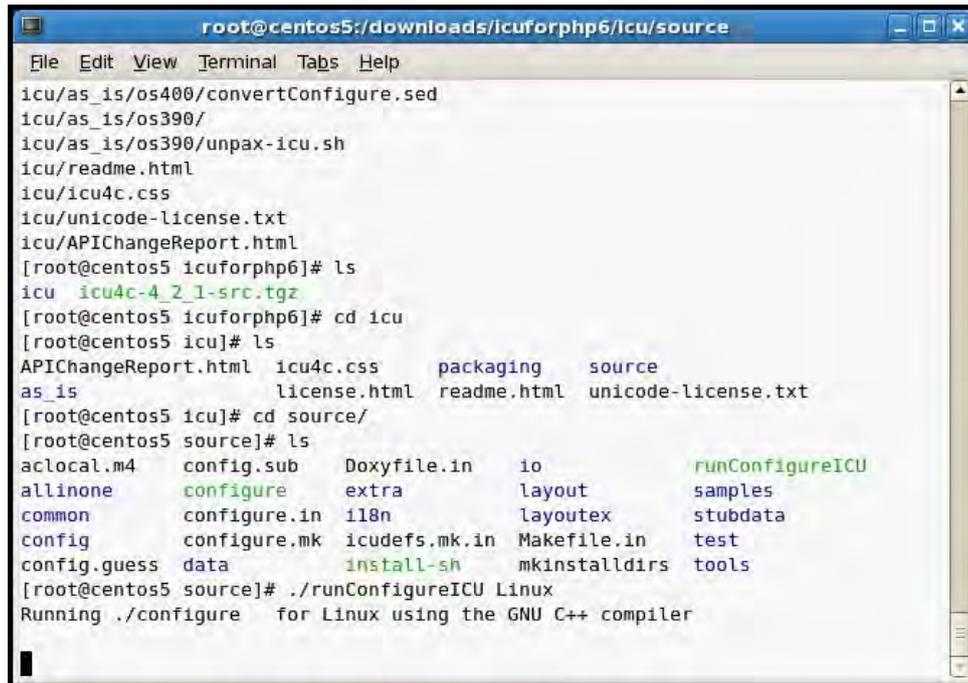
A terminal window titled 'root@centos5:/downloads/icu4c-4.2.1-src.tgz' with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a list of files in the 'icu/source' directory, including layout files, license.html, and various platform-specific directories like 'as_1s/os400/'. The user runs 'ls' in the 'icu' directory, showing sub-directories 'as_1s', 'icu4c', 'packaging', and 'source'. The user then runs 'cd source/' and the prompt changes to 'root@centos5 source]#'.

```
root@centos5:/downloads/icu4c-4.2.1-src.tgz
File Edit View Terminal Tabs Help
icu/source/layout/TrimmedArrayProcessor.h
icu/source/layout/StateTableProcessor.h
icu/source/layout/ArabicShaping.cpp
icu/source/layout/OpenTypeTables.h
icu/source/layout/PairPositioningSubtables.cpp
icu/license.html
icu/as_1s/
icu/as_1s/os400/
icu/as_1s/os400/unpax-icu.sh
icu/as_1s/os400/convertConfigure.sed
icu/as_1s/os390/
icu/as_1s/os390/unpax-icu.sh
icu/readme.html
icu/icu4c.css
icu/unicode-license.txt
icu/APIChangeReport.html
[root@centos5 icu4c-4.2.1-src.tgz]# ls
icu icu4c-4.2.1-src.tgz
[root@centos5 icu4c-4.2.1-src.tgz]# cd icu
[root@centos5 icu]# ls
APIChangeReport.html icu4c.css packaging source
as_1s license.html readme.html unicode-license.txt
[root@centos5 icu]# cd source/
[root@centos5 source]#
```

Diagram 9.1.5: Changing to the sub-directory source

Configure ICU with the following command:

```
./runConfigureICU Linux
```

A terminal window titled 'root@centos5:/downloads/icuforphp6/icu/source' showing the process of configuring ICU. The user lists files in the current directory, navigates to the 'icu' subdirectory, lists files there, navigates to the 'source' subdirectory, lists files, and finally runs the './runConfigureICU Linux' command. The output of the command is 'Running ./configure for Linux using the GNU C++ compiler'.

```
root@centos5:/downloads/icuforphp6/icu/source
File Edit View Terminal Tabs Help
icu/as_is/os400/convertConfigure.sed
icu/as_is/os390/
icu/as_is/os390/unpax-icu.sh
icu/readme.html
icu/icu4c.css
icu/unicode-license.txt
icu/APIChangeReport.html
[root@centos5 icuforphp6]# ls
icu icu4c-4_2_1-src.tgz
[root@centos5 icuforphp6]# cd icu
[root@centos5 icu]# ls
APIChangeReport.html icu4c.css packaging source
as_is license.html readme.html unicode-license.txt
[root@centos5 icu]# cd source/
[root@centos5 source]# ls
aclocal.m4 config.sub Doxyfile.in io runConfigureICU
allinone configure extra layout samples
common configure.in i18n layoutex stubdata
config configure.mk icudefs.mk.in Makefile.in test
config.guess data install-sh mkinstalldirs tools
[root@centos5 source]# ./runConfigureICU Linux
Running ./configure for Linux using the GNU C++ compiler
```

Diagram 9.1.6: Configuring ICU

After the configuration runs successfully:

```
make
```

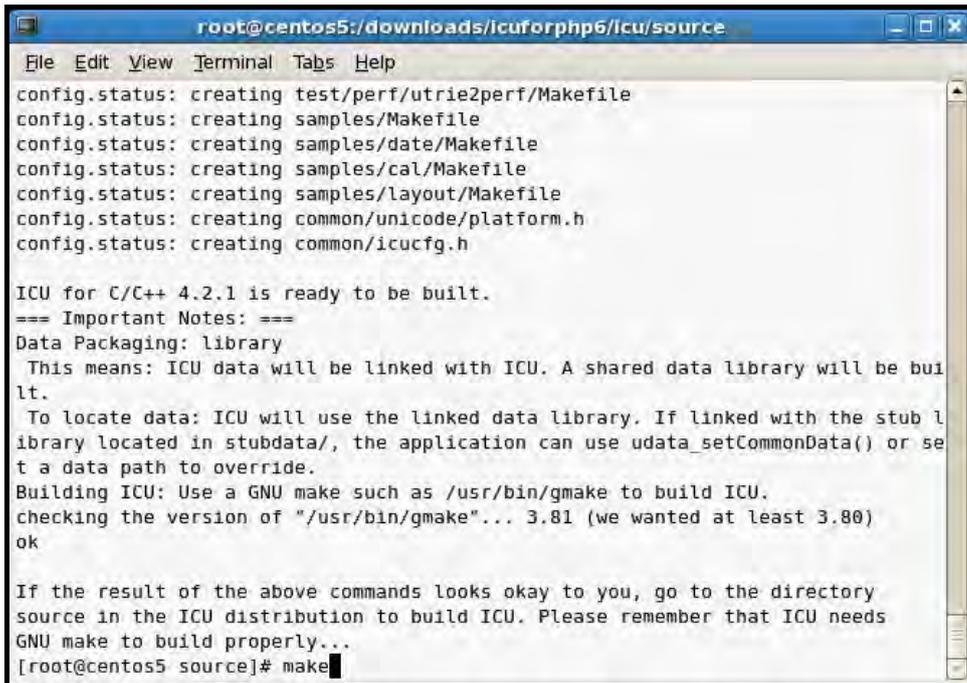


Diagram 9.1.7: The make command



Diagram 9.1.8: Installing gcc-c++ package

Installing ICU requires g++ and gcc-c++ compilers which [if not available] can be installed using the Add Remove Software → Search option as shown in diagram 9.1.8.

Finally run:

make install

```

root@centos5:/downloads/icuforphp6/icu/source
File Edit View Terminal Tabs Help
make[2]: Leaving directory `/downloads/icuforphp6/icu/source/samples/cal'
make[2]: Entering directory `/downloads/icuforphp6/icu/source/samples/cal'
gcc -D_REENTRANT -I../common -I../common -I../i18n -O3 -Wall -ansi -pedantic -Wshadow -Wpointer-arith -Wmissing-prototypes -Wwrite-strings -Wno-long-long -c -o uprint.o uprint.c
gcc -D_REENTRANT -I../common -I../common -I../i18n -O3 -Wall -ansi -pedantic -Wshadow -Wpointer-arith -Wmissing-prototypes -Wwrite-strings -Wno-long-long -c -o cal.o cal.c
g++ -O -W -Wall -ansi -pedantic -Wpointer-arith -Wwrite-strings -Wno-long-long -o icucal uprint.o cal.o -L../lib -licui18n -L../lib -licuuc -L../lib -L../stbdata -licudata -lpthread -lm
make[2]: Leaving directory `/downloads/icuforphp6/icu/source/samples/cal'
make[2]: Entering directory `/downloads/icuforphp6/icu/source/samples'
make[2]: Nothing to be done for `all-local'.
make[2]: Leaving directory `/downloads/icuforphp6/icu/source/samples'
make[1]: Leaving directory `/downloads/icuforphp6/icu/source/samples'
make[0]: Making `all' in `test'
make[1]: Entering directory `/downloads/icuforphp6/icu/source/test'
make[1]: Nothing to be done for `all'.
make[1]: Leaving directory `/downloads/icuforphp6/icu/source/test'
make[1]: Entering directory `/downloads/icuforphp6/icu/source'
make[1]: Nothing to be done for `all-local'.
make[1]: Leaving directory `/downloads/icuforphp6/icu/source'
[root@centos5 source]# make install

```

Diagram 9.1.9: The make install command

This concludes the actual ICU installation process.

Installing PHP

It is always advisable to install PHP using its source [tarball]. This provides access to quicker releases updates instead of waiting for some entity to release an rpm for a particular flavor of Linux.

Login as root. Make a directory `/downloads/php`. Copy the downloaded file `php6.0-200909060630.tar.gz` here

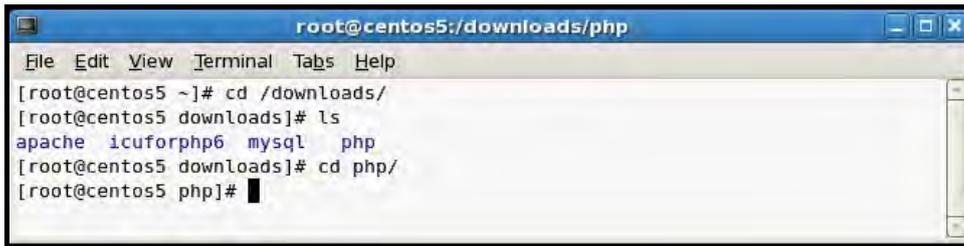
REMINDER



At the time of writing this book, the latest development snapshot was picked up on **2009-09-06** which is also provided in this book's CDROM.

PHP snapshots are packaged and released for download every two hours, hence it is **recommended** to download the latest snapshot prior installing PHP 6.

Go to the directory **php** as shown in diagram 9.2.1.



```

root@centos5:/downloads/php
File Edit View Terminal Tabs Help
[root@centos5 ~]# cd /downloads/
[root@centos5 downloads]# ls
apache icuforphp6 mysql php
[root@centos5 downloads]# cd php/
[root@centos5 php]#

```

Diagram 9.2.1: Going to the php directory

Check for the **php6.0-200909060630.tar.gz** file which was downloaded as shown in diagram 9.2.2.



```

root@centos5:/downloads/php
File Edit View Terminal Tabs Help
[root@centos5 php]# ls
php6.0-200909060630.tar.gz
[root@centos5 php]#
[root@centos5 downloads]# cd php/

```

Diagram 9.2.2: Checking for the downloaded PHP bunzip

The contents of **php6.0-200909060630.tar.gz** must be extracted after which the actual install process can begin. To extract the content of **php6.0-200909060630.tar.gz**:

```
tar -xvf php6.0-200909060630.tar.gz
```



```

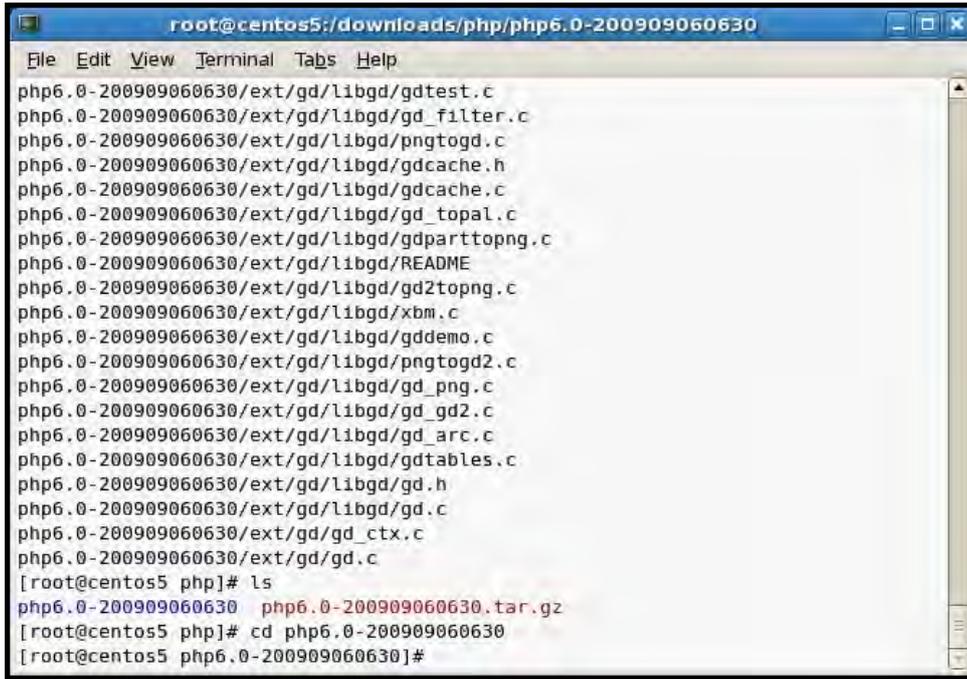
root@centos5:/downloads/php
File Edit View Terminal Tabs Help
[root@centos5 php]# ls
php6.0-200909060630.tar.gz
[root@centos5 php]# tar -xvf php6.0-200909060630.tar.gz

```

Diagram 9.2.3: Extracting the files

The extraction process creates a directory called **php-6.0-200909060630** into which the contents of the tar file are extracted. This is just one level below the **php** subdirectory. Change to this sub-directory:

```
cd php-6.0-200909060630
```



```

root@centos5:/downloads/php/php6.0-200909060630
File Edit View Terminal Tabs Help
php6.0-200909060630/ext/gd/libgd/gdtest.c
php6.0-200909060630/ext/gd/libgd/gd_filter.c
php6.0-200909060630/ext/gd/libgd/pngtogd.c
php6.0-200909060630/ext/gd/libgd/gdcache.h
php6.0-200909060630/ext/gd/libgd/gdcache.c
php6.0-200909060630/ext/gd/libgd/gd_topal.c
php6.0-200909060630/ext/gd/libgd/gdparttopng.c
php6.0-200909060630/ext/gd/libgd/README
php6.0-200909060630/ext/gd/libgd/gd2topng.c
php6.0-200909060630/ext/gd/libgd/xbm.c
php6.0-200909060630/ext/gd/libgd/gddemo.c
php6.0-200909060630/ext/gd/libgd/pngtogd2.c
php6.0-200909060630/ext/gd/libgd/gd_png.c
php6.0-200909060630/ext/gd/libgd/gd_gd2.c
php6.0-200909060630/ext/gd/libgd/gd_arc.c
php6.0-200909060630/ext/gd/libgd/gdtables.c
php6.0-200909060630/ext/gd/libgd/gd.h
php6.0-200909060630/ext/gd/libgd/gd.c
php6.0-200909060630/ext/gd/gd_ctx.c
php6.0-200909060630/ext/gd/gd.c
[root@centos5 php]# ls
php6.0-200909060630  php6.0-200909060630.tar.gz
[root@centos5 php]# cd php6.0-200909060630
[root@centos5 php6.0-200909060630]#

```

Diagram 9.2.4: Changing the directory

The Configure Command

Make sure that apache is stopped before proceeding with PHP Installation.

First stop the Apache2 `httpd` service as:

```
/usr/local/apache2/bin/apachectl stop
```

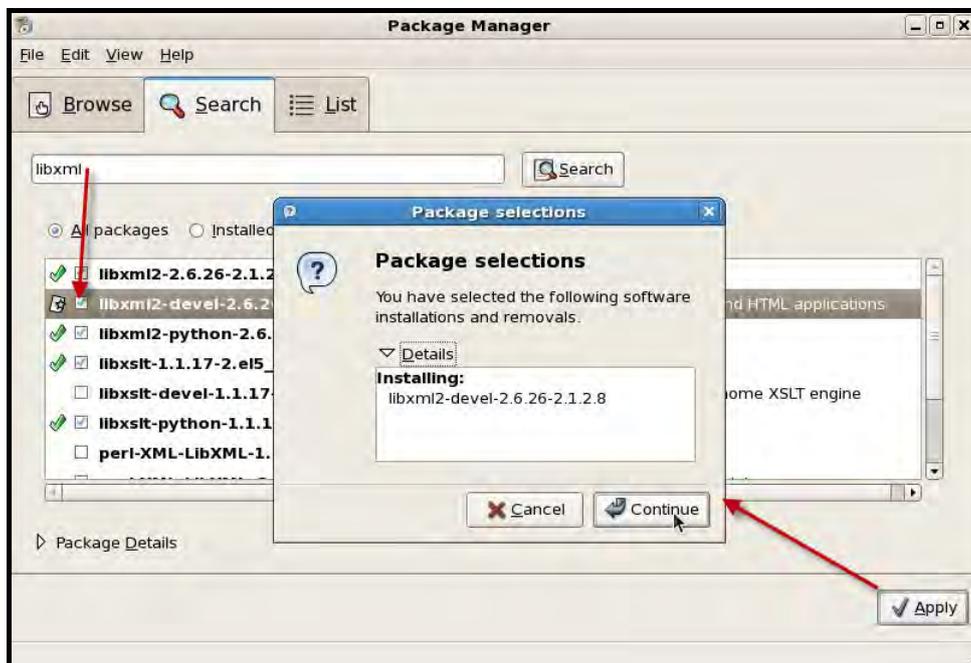
Configure the PHP setup as:

```
./configure --prefix=/usr/local/php6
--with-mysql=mysqlnd
--with-mysqli=mysqlnd
--with-pdo-mysql=mysqlnd
--with-zlib
--with-xmlrpc
--enable-mbstring
--enable-soap
--with-apxs2=/usr/local/apache2/bin/apxs
```

In the above command:

1. **--prefix** argument sets the installation path for the PHP 6.0 binaries
2. **--with-mysql** argument activates the regular MySQL extension. In PHP 6.0, this is not active by default [as it is in PHP 4.0] and must be explicitly named in **configure**
3. **--with-mysqli** argument activates the new MySQL Improved extension [for MySQL 4.1.2+ only]
4. **--with-pdo-mysql** argument activates the PDO [PHP Data Object] extension, which provides a data access abstraction layer for MySQL Db engine
5. **--with-zlib** argument enables to transparently read and write gzip .gz compressed files
6. **--with-xmlrpc** argument activates the PEAR [for MySQL 4.1.2+ only]. If PEAR is not needed while installing PHP then **--without-pear** argument has to be given while configuring

Ensure that *libxml2-devel* package is available if not then install it using *Add Remove Software* → *Search option* as shown below:



7. **--enable-mbstring** enables the mbstring module required by phpMyAdmin [*Appendix A: phpMyAdmin*]
8. **--enable-soap** enables the SOAP extension required by Web services [*Chapter 41: Web Services Using SOAP*]

9. `--with-apxs2` argument informs PHP where to find Apache 2.2 and its `apxs` script [used to handle extensions]. This is pointed to `/usr/local/apache2/bin/apxs` assuming Apache Web server's `apxs` script rests here

The MySQL Native Driver [mysqlnd]

In order to communicate with the MySQL database server from a PHP application, the `ext/mysql`, `ext/mysqli` and the PDO extensions rely on the [MySQL client library] `libmysql`, which has the required implementation for the client-server protocol.

The **MySQL native driver** for PHP [mysqlnd], is an additional, **alternative** way to connect from PHP 5 and PHP 6 to the MySQL Server 4.1 or later versions.

mysqlnd is a **replacement** for `libmysql` and it is tightly integrated into PHP starting with the release of PHP 5.3 [i.e. from PHP 5.3 onwards the developers can choose between `libmysql` and `mysqlnd` when using `mysql`, `mysqli` or `PDO_MySQL` extensions to connect to the MySQL server 4.1 or newer].

This book uses **mysqlnd**.

Due to the tight integration into PHP 5.3 and later, `mysqlnd` eliminates the dependency on the MySQL client programming support when the database extension(s) and the database driver are built with the support for `mysqlnd`.

`mysqlnd` is not another PHP extension like `mysqli` nor it has an exposed API to the userland. It is a library that provides almost similar functionality as that of the `libmysql`.

`mysqlnd` and `libmysql` libraries implement the MySQL communication protocol, hence, both of those libraries can be used to connect to the MySQL Server.

Since `mysqlnd` is neither a new extension nor a programming API, but just an alternative to `libmysql` to connect from PHP to the MySQL Server, there is no need to make changes to the existing PHP scripts. The existing scripts which were running properly with the `mysql`, `mysqli` and `PDO_MySQL` extensions built with `libmysql` support, continue to run with the exact same behavior even when the `mysql`, `mysqli` and `PDO_MySQL` extensions are built with the `mysqlnd` support.

When choosing `mysqlnd`, use **mysqlnd** as path to the `mysql` client library. If `mysqlnd` is not specified as library location, by default, PHP tries to use `libmysql`.

The configure option shown above builds all the three extensions with `mysqlnd` support.



```

root@centos5:/downloads/php/php6.0-200911180530
File Edit View Terminal Tabs Help
[root@centos5 php6.0-200911180530]# ./configure --prefix=/usr/local/php6 --with-
mysql=mysqlnd --with-mysqli=mysqlnd --with-pdo-mysql=mysqlnd --with-zlib --with-
xmlrpc --enable-mbstring --enable-soap --with-apxs2=/usr/local/apache2/bin/apxs
loading cache ./config.cache
checking for Cygwin environment... (cached) no
checking for mingw32 environment... (cached) no
checking for egrep... (cached) grep -E
checking for a sed that does not truncate output... (cached) /bin/sed
checking host system type... i686-pc-linux-gnu
checking target system type... i686-pc-linux-gnu
checking for gcc... (cached) gcc

```

Diagram 9.2.5: The ./configure command

REMINDER

If an error is generated which indicates that the apxs script cannot be found, look for it on the system [i.e. use **Find Files**] and if found, note down the path to the file. Then provide the full path such as: **--with-apxs2=/path-to-apxs**

Make sure to specify the **version of apxs** that is actually installed on the system and **NOT** the one that is in the apache source tarball.

If an error appears about **apxs** and the help screen from apxs is displayed, then **recompile** Apache and **ensure** that **--enable-module=so** is specified to the **configure** command.

The Make Command

The configuration routine commences. The time taken depends upon the amount of free memory available and the processor speed. After the configuration runs successfully execute the command **make**:

```
make
```

```

root@centos5:/downloads/php/php6.0-200909060630
File Edit View Terminal Tabs Help
creating main/internal_functions_cli.c
+-----+
| License:
| This software is subject to the PHP License, available in this
| distribution in the file LICENSE. By continuing this installation
| process, you are bound by the terms of this license agreement.
| If you do not agree with the terms of this license, you must abort
| the installation process at this point.
+-----+

Thank you for using PHP.

[root@centos5 php6.0-200909060630]# make
/bin/sh /downloads/php/php6.0-200909060630/libtool --silent --preserve-dup-deps
--mode=compile gcc -Iext/date/lib -Iext/date/ -I/downloads/php/php6.0-2009090606
30/ext/date/ -DPHP_ATOM_INC -I/downloads/php/php6.0-200909060630/include -I/down
loads/php/php6.0-200909060630/main -I/downloads/php/php6.0-200909060630 -I/usr/l
ocal/include -I/downloads/php/php6.0-200909060630/ext/date/lib -I/downloads/php/
php6.0-200909060630/ext/ereg/regex -I/usr/include/libxml2 -I/downloads/php/php6.
0-200909060630/ext/sqlite3/libsqlite -I/downloads/php/php6.0-200909060630/TSRM -
I/downloads/php/php6.0-200909060630/Zend -I/usr/include -g -O2 -fvisibility=h
idden -prefer-non-pic -c /downloads/php/php6.0-200909060630/ext/date/php_date.c
-o ext/date/php_date.lo

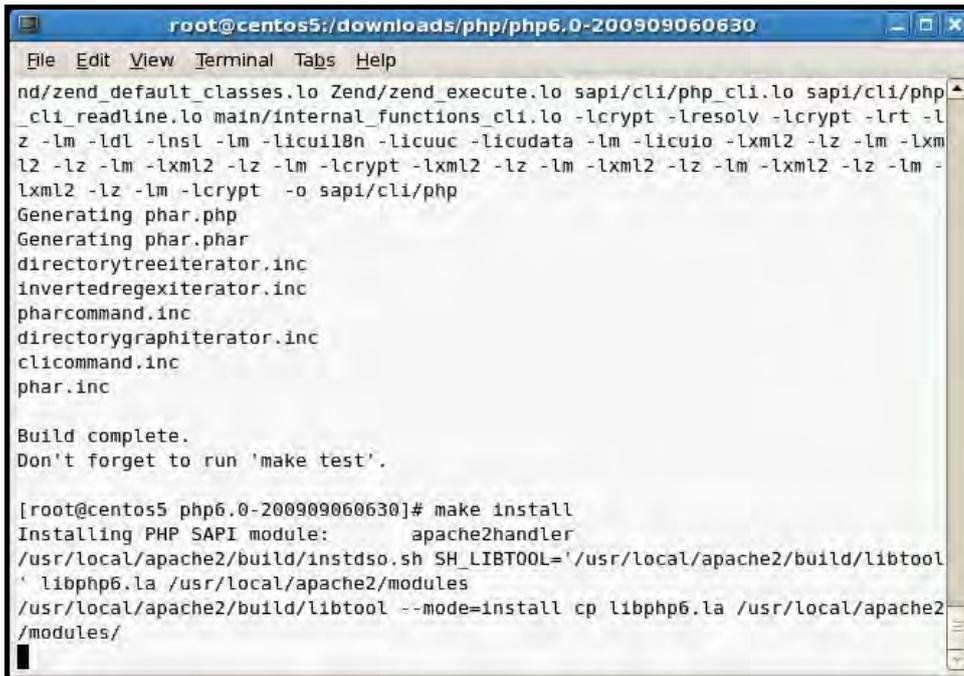
```

Diagram 9.2.6: The make command

The Make Install Command

Next run the command **make install**:

```
make install
```



```

root@centos5:/downloads/php/php6.0-200909060630
File Edit View Terminal Tabs Help
nd/zend_default_classes.lo Zend/zend_execute.lo sapi/cli/php_cli.lo sapi/cli/php
_cli_readline.lo main/internal_functions_cli.lo -lcrypt -lresolv -lcrypt -lrt -l
z -lm -ldl -lnsl -lm -licu18n -licuuc -licudata -lm -licuio -lxml2 -lz -lm -lxml
l2 -lz -lm -lxml2 -lz -lm -lcrypt -lxml2 -lz -lm -lxml2 -lz -lm -lxml2 -lz -lm -
lxml2 -lz -lm -lcrypt -o sapi/cli/php
Generating phar.php
Generating phar.phar
directorytreeiterator.inc
invertedregexiterator.inc
pharcommand.inc
directorygraphiterator.inc
clicommand.inc
phar.inc

Build complete.
Don't forget to run 'make test'.

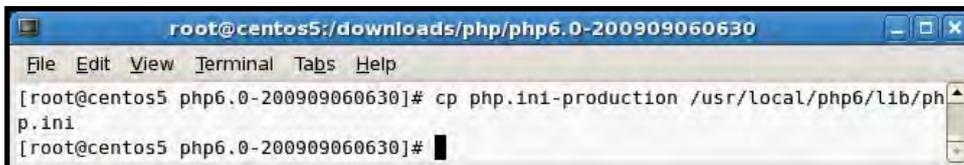
[root@centos5 php6.0-200909060630]# make install
Installing PHP SAPI module:      apache2handler
/usr/local/apache2/build/instdso.sh SH_LIBTOOL='/usr/local/apache2/build/libtool
^ libphp6.la /usr/local/apache2/modules
/usr/local/apache2/build/libtool --mode=install cp libphp6.la /usr/local/apache2
/modules/

```

Diagram 9.2.7: The make install command

The next step is to set up a valid configuration file for PHP i.e. **php.ini**. There are two **ini** files distributed in the source file [.tar.gz] i.e. **php.ini-development** and **php.ini-production**. Use the file **php.ini-production**

```
cp php.ini-production /usr/local/php6/lib/php.ini
```



```

root@centos5:/downloads/php/php6.0-200909060630
File Edit View Terminal Tabs Help
[root@centos5 php6.0-200909060630]# cp php.ini-production /usr/local/php6/lib/ph
p.ini
[root@centos5 php6.0-200909060630]#

```

Diagram 9.3: Copying php.ini file

This will create a local copy of the PHP configuration file.

The **php.ini-production** file has a simpler layout, contains fewer settings and allows PHP to run faster. This completes the installation of PHP on Linux.

Binding PHP With Apache 2.2

Apache does not know that PHP is just installed. Therefore, Apache needs to be informed about PHP especially where to find it.

This is done via Apache's `httpd.conf` file. Apache reads this file and understands what modules need to be loaded and where these modules are located.

REMINDER



It is not mandatory to have Apache Web server installed in order to test `.php` scripts. These scripts can simply be run using the interpreter **`php.exe`**. This can be accomplished by appending the `.php` script file as a command line argument to **`php.exe`** interpreter.

There are **two ways** to configure Apache to use PHP 6.

One is to configure it to load the PHP interpreter as an Apache module.

The other is to configure it to run the PHP interpreter as a CGI binary.

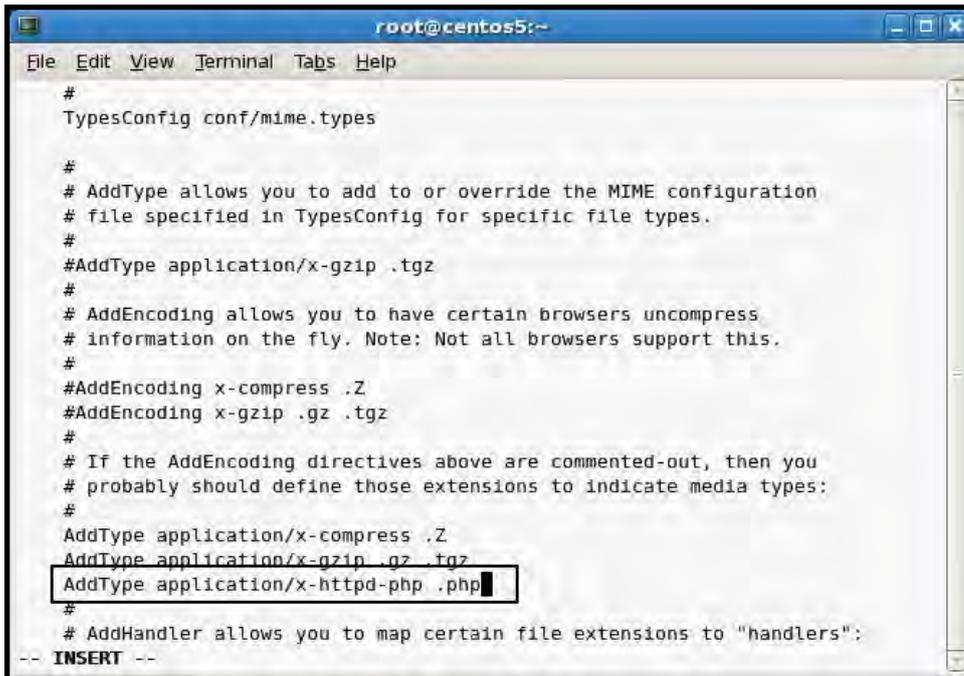
HINT



It is recommended that PHP is loaded as a module in Apache, since it runs more efficiently that way, unless there is a specific reason for running PHP as a CGI binary.

Edit Apache's `httpd.conf` file and include the **PHP mime type** as:

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



```

root@centos5:~
File Edit View Terminal Tabs Help
#
TypesConfig conf/mime.types

#
# AddType allows you to add to or override the MIME configuration
# file specified in TypesConfig for specific file types.
#
#AddType application/x-gzip .tgz
#
# AddEncoding allows you to have certain browsers uncompress
# information on the fly. Note: Not all browsers support this.
#
#AddEncoding x-compress .Z
#AddEncoding x-gzip .gz .tgz
#
# If the AddEncoding directives above are commented-out, then you
# probably should define those extensions to indicate media types:
#
AddType application/x-compress .Z
AddType application/x-gzip .gz .tgz
AddType application/x-httpd-php .php
#
# AddHandler allows you to map certain file extensions to "handlers":
-- INSERT --

```

Diagram 9.4.1: PHP mime type added

This line means that every file that ends with .php will be processed as a PHP file.

HINT



If need arises to support other file types such as .php3, .html, .asp and .phtml, simply add them to the list, like this:

```

AddType application/x-httpd-php .php3
AddType application/x-httpd-php .phtml
AddType application/x-httpd-php .html
AddType application/x-httpd-php .asp

```

REMINDER



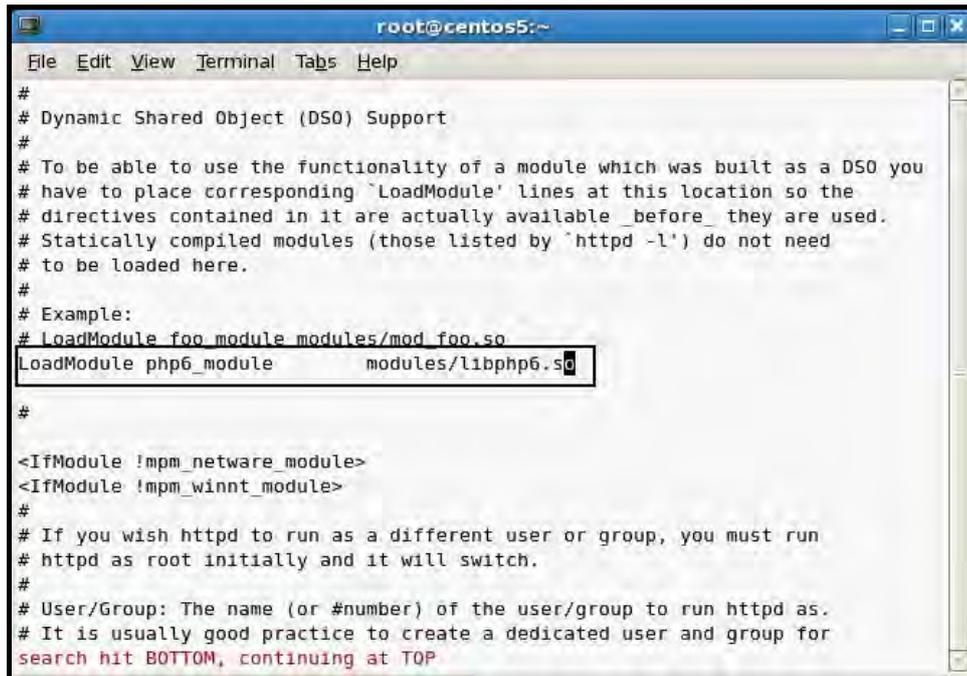
The `httpd.conf` file is usually available under `/usr/local/apache2/conf`.

Ensure that the PHP module is loaded by searching for the following line in the `httpd.conf` file. This is automatically added by the PHP source installer.

```

LoadModule php6_module modules/libphp6.so

```



```

root@centos5:~
File Edit View Terminal Tabs Help
#
# Dynamic Shared Object (DSO) Support
#
# To be able to use the functionality of a module which was built as a DSO you
# have to place corresponding 'LoadModule' lines at this location so the
# directives contained in it are actually available _before_ they are used.
# Statically compiled modules (those listed by 'httpd -l') do not need
# to be loaded here.
#
# Example:
# LoadModule foo_module modules/mod_foo.so
LoadModule php6_module modules/libphp6.so
#
<IfModule !mpm_netware_module>
<IfModule !mpm_winnt_module>
#
# If you wish httpd to run as a different user or group, you must run
# httpd as root initially and it will switch.
#
# User/Group: The name (or #number) of the user/group to run httpd as.
# It is usually good practice to create a dedicated user and group for
search hit BOTTOM, continuing at TOP

```

Diagram 9.4.2: Load PHP module

This line informs Apache from where to load the `.so` file which is required to execute PHP. This line enables loading the PHP module **dynamically** into Apache.

Usually in Linux the PHP source installer automatically inserts this line. If this line does not exist then insert it manually in the `httpd.conf` file.

Testing PHP / Apache

Registering Changes Made In The `httpd.conf` of Apache 2.2

Restart the Apache 2.2 `httpd` [`apachectl`] service **or** simply stop and start it using the parameter **stop** and **start**. [Check for restart of Apache *Chapter 07: Installing Apache*]

To test whether PHP has been successfully setup and integrated with Apache 2.2 create a simple script named `phpinfo.php` that contains the following code:

```

<?php
    phpinfo();
?>

```



Diagram 9.5: The phpinfo.php file in kate

Place this file in Apache's default document root directory i.e. `/usr/local/apache2/htdocs` directory. Examine the output of this script in a Web browser by pointing to `http://127.0.0.1/phpinfo.php`. If PHP setup is successful then a screen similar to that shown in diagram 9.6 appears.

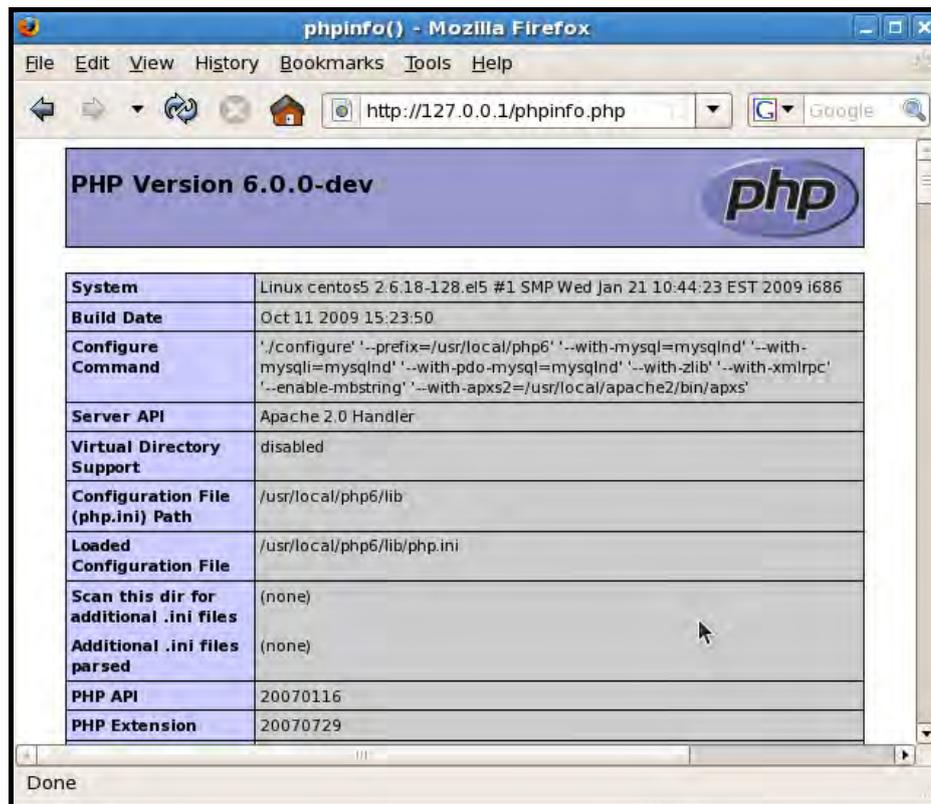


Diagram 9.6: PHP version info displayed in Web browser