

## How to deb upgrade PHP 5.3.3-7 / MySQL Server 5.1 to PHP 5.4.37 MySQL 5.5 Server on Debian 6.0 / 7.0 Squeeze / Wheezy GNU / Linux

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I've been still running **Debian Squeeze 6.0 GNU / Linux** on few of the **Linux / Apache / MySQL servers**, I'm administrating and those servers are running few Wordpress / Joomla websites which lately face severe MySQL performance issues. I tried to optimize using [various mysql performance](#)

[optimization scripts such as mysql-tuner.pl](#), Tuning-primer.sh and [Percona Toolkit](#) - *a collection of advanced command-line tools for system administrators and tech / support staff to perform a variety of MySQL and system tasks that are too difficult or complex to perform manually*. Though with above tools and some *my.cnf* tunizations I managed to **achieve positive performance improvement results with above optimizations**, still I didn't like how *MySQL* served queries and since the SQL server is already about 5 years old (running version 5.1) and the PHP on sever is still at 5.3 branch, I was advised by my dear colleague Anatoliy to try version **update as a mean to improve SQLserver performance**. I took seriously the suggestion to **try upgrade as a mean to resolve performance issues** in this article I will explain in short what I had to do to make MySQL upgrade a success

Of course to **try keep deb installed software versions as fresh as possible possible deb package, I'm already using [Debian Back Ports](#)** (for those who hear it a first time *Debian Backports* is a special

**repository for Stable versioned Debian Desktop and Servers** - *supporting stable releases of Debian*

) which allows you to **keep install packages versions less outdated** (than default installable software which usually are way behind latest stable package versions with **2-5 years**).

*Linux*

If you happen to administer **Stable Debian servers and you never used BackPorts I warmly recommend it as it often includes security patches of packages part of *Debian stable releases that reached End Of Support (EOS)*** and already *too old even for security updates to be issued by respective Debian Long Term Support (LTS)* repositories.

If you're like me and still in situation to *manage remotely Debian 6.0 Squeeze* and its the **first time you hear about BackPorts and Debian LTS**<https://wiki.debian.org/LTS/> to start using those two add to your `/etc/apt/sources.list` below **3 lines**

Open with vim editor and press shift+G to go to last line of file and then press **I** to enter **INSERT mode**, once you're done to save, *press (ESC) then press : and type x!* - in short key combination for exit and save setting in vim is

**Esc + :x!**

```
debian-server:~# vim /etc/apt/sources.list
deb http://http.debian.net/debian squeeze-lts main contrib non-free
deb-src http://http.debian.net/debian squeeze-lts main contrib non-free
deb http://http.debian.net/debian-backports squeeze-backports main
```

If you haven't been added a security updates line in `/etc/apt/sources.list` make sure you add also:

```
deb http://security.debian.org/ squeeze/updates main contrib non-free
deb-src http://security.debian.org/ squeeze/updates main contrib non-free
```

Then to **apply latest security updates and packages from LTS / Backports repository** run the usual:

```
debian-server:~# apt-get update && apt-get --yes upgrade
....
```

If you need to search a package or install something from just added backports repository use:

```
debian-server:~# apt-cache -t squeeze-backports search "mysql-server"
auth2db - Powerful and eye-candy IDS logger, log viewer and alert generator
torrentflux - web based, feature-rich BitTorrent download manager
cacti - Frontend to rrdtool for monitoring systems and services
mysql-server-5.1 - MySQL database server binaries and system database setup
mysql-server-core-5.1 - MySQL database server binaries
mysql-server - MySQL database server (metapackage depending on the latest version)
```

**To install specific packages only with all their dependencies from Backports while keeping rest of packages from Debian Stable:**

```
debian-server:~# apt-get install -t squeeze-backports "package_name"
```

...

**In same way you can also search or install specific packages from LTS repo:**

```
debian-server:~# apt-get search -t squeeze-lts "package_name"
```

...

```
debian-server:~# apt-get install -t squeeze-lts "package_name"
```

...

**Latest mysql available from Debian BackPorts and LTS is still quite old 5.1.73-1+deb6u1 therefore I made an extensive research online on how can I easily update MySQL 5.1 to MySQL 5.5 / 5.6 on Debian Stable Linux.**

Luckily there were already [DotDeb deb repositories for Debian LAMP \(Linux / Apache / MySQL / PHP / Nginx \) running servers](#) prepared in order to **keep the essential Webserver services up2date even long after distro official support is over**. I learned about existence of this repo thanks to a [Ryan Tate's post](#) who updates his LAMP stack on [TurnKey Linux](#) which by the way is *based on slightly modified official stable Debian Linux releases packages*.

**To start using DotDeb repos add in */etc/apt/sources.list* (depending whereh you're on Squeeze or Wheeze Debian):**

```
deb http://packages.dotdeb.org squeeze all
deb-src http://packages.dotdeb.org squeeze all
```

or for Debian Wheezy add repos:

```
deb http://packages.dotdeb.org wheezy all
deb-src http://packages.dotdeb.org wheezy all
```

I was **updating my DebianLatest MySQL / PHP / Apache release to Latest ones on (6.0.4) Squeeze** so added above squeeze repos:

*Before refreshing list of package repositories, to authenticate repos issue:*

```
debian-server:~# wget -q http://www.dotdeb.org/dotdeb.gpg
debian-server:~# apt-key add dotdeb.gpg
...
```

Once again to **update my packages from newly added DodDeb repository**

```
debian-server:~# apt-get update
...
```

Before running the SQL upgrade to insure myself, I dumped all databases with:

```
debian-server:~# mysqldump -u root -p -A > /root/dump.sql
```

Finally I was brave enough to run **apt-get dist-upgrade** to update with latest LAMP packages

```
debian-server:~# apt-get dist-upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages will be REMOVED:
  mysql-client-5.1 mysql-server mysql-server-5.1
The following NEW packages will be installed:
  libaio1 libmysqlclient18 mysql-client-5.5 mysql-client-core-5.5 python-chardet python-debian
The following packages will be upgraded:
  curl krb5-multidev libapache2-mod-php5 libc-bin libc-dev-bin libc6 libc6-dev libc6-i386
  libcurl3 libcurl3-gnutls libcurl4-openssl-dev libevent-1.4-2
  libgssapi-krb5-2 libgssrpc4 libjasper1 libk5crypto3 libkadm5clnt-mit7 libkadm5srv-mit7
  libkdb5-4 libkrb5-3 libkrb5-dev libkrb53 libkrb5support0 libmysqlclient-dev
  libxml2 libxml2-dev locales mysql-client mysql-common ntp ntpdate php-pear php5 php5-cgi
  php5-cli php5-common php5-curl php5-dev php5-gd php5-imagick php5-mcrypt
  php5-mysql php5-odbc php5-recode php5-sybase php5-xmldrpc php5-xsl python-reportbug
  reportbug unzip
50 upgraded, 6 newly installed, 3 to remove and 0 not upgraded.
Need to get 51.7 MB of archives.
After this operation, 1,926 kB of additional disk space will be used.
Do you want to continue [Y/n]? Y
...
```

As you see from above output **above command updates Apache webserver / PHP and PHP related modules**, however it doesn't update MySQL installed version, to update also MySQL server 5.1 to MySQL server 5.5

```
debian-server:~# apt-get install --yes mysql-server mysql-server-5.5
```

You will be prompted with the usual Debian ncurses text blue interface to set a root password to **mysql server**, just set it the *same as it used to be on old upgraded MySQL 5.1 server*.

Well now see whether mysql has properly restarted with *ps auxwwf*

```
debian-server:~# ps auxwwf|grep -i sql
root    22971  0.0  0.0 112360  884 pts/11  S+   15:50   0:00  |                \_ grep -i sql
root    19436  0.0  0.0 115464 1556 pts/1    S    12:53   0:00  /bin/sh /usr/bin/mysqld_safe
mysql   19837  4.0  2.3 728192 194552 pts/1    Sl   12:53   7:12  \_ /usr/sbin/mysqld --basedir=/usr
--datadir=/var/lib/mysql --plugin-dir=/usr/lib/mysql/plugin --user=mysql --pid-
file=/var/run/mysqld/mysqld.pid --socket=/var/run/mysqld/mysqld.sock --port=3306
root    19838  0.0  0.0 110112  700 pts/1    S    12:53   0:00  \_ logger -t mysqld -p daemon.error
```

In my case it was running, however if it fails to run try to debug what is going wrong on initialization by manually executing init script **/etc/init.d/mysql stop; /etc/init.d/mysql start** and look for errors. You can also manually try to run `mysqld_safe` from console if it is not running run:

```
debian-server:~# /usr/bin/mysqld_safe &
...
```

This should give you a good hint on why it is failing to run

One more thing left is to check whether php modules load correctly to do so issue:

```
debian-server:~# php -v
```

*Failed loading /usr/lib/php5/20090626/xcache.so: /usr/lib/php5/20090626/xcache.so: cannot*

*open shared object file: No such file or directory*

*Failed loading /usr/lib/php5/20090626/xdebug.so: /usr/lib/php5/20090626/xdebug.so: cannot*

*open shared object file: No such file or directory*

You will likely get an exception (error) like above.

To solve the error, reinstall **xcache** and **xcache-debug** debs

```
debian-server:~# apt-get purge php5-xcache php5-xdebug
```

Now PHP + MySQL + Apache environment should be running much smoothly.



Package configuration

### Configuring mysql-server-5.5

While not mandatory, it is highly recommended that you set a password for the MySQL administrative "root" user.

If this field is left blank, the password will not be changed.

New password for the MySQL "root" user:

\_\_\_\_\_

<Ok>

**Upgrading the MySQL server / PHP library to MySQL server 5.6 / PHP 5.5 on Wheeze Linux** is done in very much analogous ways all you have to do is change the repositories with above *wheeze* 7.0 ones and to follow the process as described in this article. I haven't tested update on Wheezy yet, so if you happen to try my article with wheezy reports and got a positive upgrade result please drop a comment.