**MySQL optimization**

Important Variables to be checked are:

1. query\_cache\_size #can be 32MB for every 1GB of RAM.

-query\_cache\_limit

-query\_cache\_type

2. key\_buffer\_size #can be 128MB for every 1GB of RAM.

3. Log

-log\_error

-log\_slow

4. table\_cache #Defaults to 64M

5. sort\_buffer\_size # 1MB for every 1GB of RAM

6. read\_rnd\_buffer\_size # 1MB for every 1GB of RAM

7. thread\_cache\_size

8. tmp\_table\_size

9. innodb\_buffer\_pool\_size

10. innodb\_additional\_mem\_pool\_size

11. max\_connections

12. wait\_timeout

13. max\_allowed\_packet

14. read\_buffer\_size # 1MB for every 1GB of RAM

15. thread\_concurrency # Number of CPUs x 2

16. max\_allowed\_packet #16m will be sufficient

First thing we can do is just run,

mysql> SHOW STATUS;

or

mysql>SHOW GLOBAL STATUS;

we can see the informations regarding all the variables.

\* Increasing **query\_cache\_size** and **key\_buffer\_size** will increase speed.

**\* key\_buffer\_size:** The maximum allowable setting for **key\_buffer\_size** is 4GB on 32-bit platforms. As of MySQL 5.0.52, values larger than 4GB are allowed for 64-bit platforms. Using a value that is 25% of total memory on a machine that mainly runs MySQL is quite common.

\*Slow queries can be identified either by log or tuning tools.

\*we can increase **max\_connections** when we are having long running queries.

\*In databases where ORDER BY and GROUP BY operations are more, we can increase **sort\_buffer\_size**, **read,rnd,buffer,size** and **read\_buffer\_size**.

\* MySQL, being multi-threaded, may be running many queries on the table at the same time. By Examining the value of **open\_tables** and **opened\_tables** at peak times, we can decide whether the **table\_cache** has to be increased or not.

\* in busy servers, **thread\_cache\_size** has to be increased by analysing the results from **SHOW STATUS;**

\* **innodb\_buffer\_pool\_size** is like **key\_buffer\_size**. while **key\_buffer\_size** is a variable to target MyISAM. **innodb\_buffer\_pool\_size** is for InnoDB tables. In servers running InnoDB tables, we can set up to 80% of the total memmory available for this variable.

--**Innodb\_buffer\_pool\_pages\_free:**

– number of free pages.

– **Innodb\_buffer\_pool\_pages\_total:**

– The total size of the buffer pool, in pages.

--**innodb\_log\_file\_size:**

--larger the value, the less checkpoint flush activity

is needed in the buffer pool, saving disk I/O.

\* uptime information can be used to calculate load of the server.

\* **com\_XXX** --> indicates the number of times the statements executed.

eg: **com\_create\_table**, **com\_insert**, **com\_select**, etc.

\***Qcache\_\***

qcache variables can be used to determine if we r getting benefits from using **query\_cache**.

**Qcache\_inserts** << **Com\_select** , the bigger the differnece, the better.

**--> mysqlcheck -o –all-databases** can be used to check, analyze and repair all or selected databeses.

**--> mysqltuner.pl** is a nice tool to analyze MySQL.

**--> mysqlreport** for optimization.