

1. ?

1. 1NF , ()

2. 2NF 1NF
2NF 1NF

3. 3NF 2NF
3NF
>>2. > >>1.
>>3.

2. ?

1. PreparedStatement Statement sql

2.

3.

4. UNION ALL UNION

ALL >>UNION UNION ALL UNION

UNION >1.
Union All

>2. Union
UNION ALL

3. ?

1. :
2. : MySQL

3. :

4. : MySQL

4. mysql

B B+

5. MySQL :

1. MySQL : Debian service mysql status
RedHat service mysqld status
2. MySQL : service mysqld start
service mysqld stop
3. Shell MySQL: mysql -u root -p
4. : show databases;
5. : use databasename;
databasename
6. : show tables;
7. Field : describe table_name;

6.mysql

Mysql

Mysql Mysql
slaves *

1.

2.

replay log

3.

7.mysql

?

1. SQL
MySQL
- 2.
3. mysql5.0
:

8.mysql myisam innodb

1. > MyISAM
InnoDB > InnoDB
(rollback) (crash recovery capabilities)
(transaction-safe (ACID compliant))
2. InnoDB MyISAM . >>
myisam select update delete insert
insert

3. InnoDB MVCC, MyISAM
 4. InnoDB MyISAM
 5. > MyISAM
 > InnoDB
 6 ()

6. InnoDB MyISAM
 7. > MyISAM

> InnoDB
 binlog mysqldump G

8. > MyISAM MyISAM
 .frm
 .MYD (MYData)
 .MYI (MYIndex) > InnoDB
 InnoDB
 2GB

9.mysql varchar char varchar(50) 50

1. varchar char : char varchar

2. varchar(50) 50 : 50

3. int 20 20 : int(M) M indicates the maximum display width ()for integer types. The maximum legal display width is 255.

10.MySQL InnoDB

1. Read Uncommitted >>

Dirty Read
 2. Read Committed >>
 MySQL

Nonrepeatable Read
 commit select

3. Repeatable Read >> MySQL

Phantom

Read

$\frac{1}{2}$ $\frac{1}{2}$ InnoDB Falcon
MVCC Multiversion Concurrency Control

4. Serializable >>

```
<table> <thead> <tr> <th align="left"> </th>
<th align="left"> Dirty Read </th> <th align="left">
NonRepeatable Read </th> <th align="left">
Phantom Read </th> </tr> </thead> <tbody><tr> <td
align="left"> Read uncommitted </td> <td
align="left"> </td> <td align="left"> </td> <td
align="left"> </td> </tr> <tr> <td align="left">
Read committed </td> <td align="left"> </td> <td
align="left"> </td> <td align="left"> </td> </tr>
<tr> <td align="left"> Repeatable read </td> <td
align="left"> </td> <td align="left"> </td> <td
align="left"> </td> </tr> <tr> <td align="left">
SERIALIZABLE </td> <td align="left"> </td> <td
align="left"> </td> <td align="left"> </td> </tr>
</tbody></table>
```

11. X text X

text, blob)
MYSQL
16K

UPDAE UPDATE

12. MySQL InnoDB

InnoDB
Oracle

MySQL
InnoDB
InnoDB

InnoDB

13. MySQL

1. *Keybuffersize* > * *keybuffersize*

```

Keyreadrequests  Keyreads  keybuffersize
keyreads /keyreadrequests
1:100  1:1000  SHOW STATUS LIKE
key read%' > * keybuffersize  MyISAM
MyISAM
createdtmpdisktables
1G  MyISAM  16M  8-
64M  > * keybuffersize  >>>1.  keybuffer
4G  4G  3
bug: >>>> http://bugs.mysql.com/bug.php?id=29446 <br
/> >>>> http://bugs.mysql.com/bug.php?id=29419 <br
/> >>>> http://bugs.mysql.com/bug.php?id=5731 <br
/> >>>2.  keybuffer  1/4(  MyISAM
)  30%~40%  keybuffersize
MySQL

>>>3.
keybuffer,  keybuffer

2.  innodbbufferpool_size >  InnoDB
mysql  128M
CPU  32  4294967295
(2^32-1)  64
18446744073709551615 (2^64-1)  >  32
CPU

1G  innodbbufferpoolinstances  1. > *
, innodbbufferpoolsize

pool  3/4  4/5  , buffer
, buffer pool
innodbbufferpool_instances ,

3.  querycachesize >  mysql  select  query
mysql  query  hash  hash
hash  query cache
hash  hash  query
cache  hash  hash  query
cache  query  table
query  hash  query  cache
query  mysql
query cache  table
query  cache  > query cache
>> 1. query  hash  hash

```

mysql query cache select query hash
 query cache query hash
 >> 2. query cache
 query cache
 >> 3. sql sql
 query sql
 hash >> 4.

4. readbuffer size > MySQL
 MySQL
 readbuffer size

14. VARCHAR(N) utf8 N
 ()?
 utf8 3 MySQL
 65535 N (65535-1-2)/3 1
 2
 3 utf8 3

15. [SELECT *] [SELECT] 2 ?

- 1.
- 2.
- 3.
- 4.
- 5.

16. HAVING WHERE ?

1. where having select
2. where having
3. where having
4. where having

17. MySQL insert, update

INSERT INTO table (a,b,c) VALUES (1,2,3) ON DUPLICATE KEY
 UPDATE c=c+1;

18.MySQL insert update select

```
` SQL insert into student (stuid,stuname,deptid) select 10,'xzm',3  
from student where stuid > 8;
```

```
update student a inner join student b on b.stuID=10 set  
a.stuname=concat(b.stuname, b.stuID) where a.stuID=10 ; `
```