

1. mysql的安装方式

- 源码安装
 - 可以自定义mysql的各种参数
 - <https://zhuanlan.zhihu.com/p/38087381>
- rpm安装
- 二进制安装
- docker安装

```
### 源码安装步骤###

# 1. 安装依赖包
yum -y install gcc gcc-c++ ncurses-devel perl wget
yum -y groupinstall "Development tools" "Desktop Platform Development" "Server Platform Development"
yum -y install cmake
yum -y install openssl openssl-devel ncurses ncurses-devel

# 2. 卸载旧的mysql软件
rpm -qa | grep mariadb
yum -y remove mari*
rm -rf /var/lib/mysql/*
rpm -qa | grep mariadb

# 3. 设置mysql数据目录，并创建用户
mkdir -pv /mydata/data
useradd -s /sbin/nologin mysql
chown -R mysql:mysql /mydata/data/

# 4. 下载、解压
cd /usr/local/src
wget https://cdn.mysql.com/archives/mysql-5.6/mysql-5.6.37.tar.gz --no-check-certificate
tar -zxvf mysql-5.6.37.tar.gz -C /usr/local/

# 5. 编译安装
cd /usr/local/mysql-5.6.37
cmake -DMAKE_INSTALL_PREFIX=/usr/local/mysql -DMYSQL_DATADIR=/mydata/data/ -DSYSCONFDIR=/etc -DWITH_INNOBASE_STORAGE_ENGINE=1 -DWITH_ARCHIVE_STORAGE_ENGINE=1 -DWITH_BLACKHOLE_STORAGE_ENGINE=1 -DWITH_SSL=system -DWITH_ZLIB=system -DMYSQL_UNIX_ADDR=/tmp/mysql.sock -DDEFAULT_CHARSET=utf8 -DDEFAULT_COLLATION=utf8_general_ci
make
make install

# 6. 初始化mysql数据库
cd /usr/local/mysql/scripts/
./mysql_install_db --user=mysql --basedir=/usr/local/mysql/ --datadir=/mydata/data/

cd /usr/local/mysql/support-files/
cp mysql.server /etc/init.d/mysqld
chmod a+x /etc/init.d/mysqld

# 7. 配置mysql的环境变量
vi /etc/profile
export PATH=/usr/local/mysql/bin:/usr/local/mysql/lib:$PATH

source /etc/profile
cp /usr/local/mysql/support-files/my-default.cnf /etc/my.cnf

# 8. 修改mysql配置文件
[root@centos75 ~]# vi /etc/my.cnf
(innoDB.file_per_table = 1
datadir = /mydata/data
port = 3306
user = mysql
server_id = 1
socket = /tmp/mysql.sock

# 9. 启动
[root@centos75 ~]# service mysqld start
执行如下命令查看MySQL服务是否正常运行，显示is running...表示正在运行。
[root@centos75 ~]# service mysqld status
SUCCESS! MySQL running (1350)

# 10. 设置root密码
/usr/local/mysql/bin/mysql_secure_installation

# 11. 设置开机启动
添加MySQL到开机自启动服务
[root@localhost ~]# chkconfig --add mysqld
设置MySQL服务开机自启动
[root@localhost ~]# chkconfig mysqld on
查看是否设置成功，执行如下命令查询，如果显示结果与以下结果一致，表示已完成设置开机自启动MySQL
[root@localhost ~]# chkconfig --list | grep mysqld
mysqld          0:off    1:off    2:on     3:on     4:on     5:on     6:off
```

2. rpm安装

- <https://zhuanlan.zhihu.com/p/493475554>

```
# 卸载自带的mysql, mariadb其实就跟mysql一样

# rpm -qa 表示查询已安装的rpm包
[root@localhost ~]# rpm -qa | grep maria*
mariadb-libs-5.5.68-1.el7.x86_64

# 卸载，这里要用你查询出来的上面那个包，要一模一样
# 2. 卸载旧的mysql软件
rpm -qa | grep mariadb
yum -y remove mari*
rm -rf /var/lib/mysql/*
rpm -qa | grep mariadb

# 卸载
[root@localhost ~]# yum -y remove mari*
[root@localhost ~]#
[root@localhost ~]# rpm -qa | grep maria*

# 安装mysql需要的相关依赖包
[root@localhost ~]# yum install -y libaio net-tools autoconf

# 在/usr/local/src目录下创建mysql目录，并在此目录里下载MySQL5.6.37的rpm包
[root@zoljzaquyepqrmq6-1014045 ~]# cd /usr/local/src/
[root@zoljzaquyepqrmq6-1014045 ~]# mkdir mysql
[root@zoljzaquyepqrmq6-1014045 ~]# cd mysql
[root@zoljzaquyepqrmq6-1014045 src]# wget https://cdn.mysql.com/archives/mysql-5.6/MySQL-5.6.37-1.el7.x86_64.rpm-bundle.tar

# 如果报没有wget命令，就按如下先安装wget命令再下载
[root@zoljzaquyepqrmq6-1014045 src]# yum install -y wget

# 解压下载的rpm包
[root@zoljzaquyepqrmq6-1014045 src]# tar -xvf MySQL-5.6.37-1.el7.x86_64.rpm-bundle.tar

# 安装MySQL，注意顺序
# 安装MySQL Client
[root@zoljzaquyepqrmq6-1014045 src]# rpm -ivh MySQL-clients-5.6.37-1.el7.x86_64.rpm

# 安装MySQL Server
[root@zoljzaquyepqrmq6-1014045 src]# rpm -ivh MySQL-server-5.6.37-1.el7.x86_64.rpm

# 启动MySQL
[root@zoljzaquyepqrmq6-1014045 mysql]# service mysql start
Starting MySQL.Logging to '/var/lib/mysql/zoljzaquyepqrmq6-1014045.err'.
SUCCESS!

# 查询是否启动成功，如下显示SUCCESS表示启动成功
[root@zoljzaquyepqrmq6-1014045 mysql]# service mysql status
SUCCESS! MySQL running (5694)

# 查看默认密码
[root@zoljzaquyepqrmq6-1014045 hotent]# cat /root/.mysql_secret
WdGfLdW28dUq_55c

# 登录，-p后面的是上面的随机密码串
[root@zoljzaquyepqrmq6-1014045 mysql]# mysql -uroot -pWdGfLdW28dUq_55c
Warning: Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 1
Server version: 5.6.37
Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>

#知下表示把root用户的密码设置成123456，如果要改成其它的密码，替换引号中的内容即可
mysql> set password=password('123456');

#验证修改后的密码是否生效
mysql> exit

mysql> mysql -uroot -p123456
Warning: Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 1
Server version: 5.6.37
Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>

# 设置客户端远程连接mysql生效
mysql> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> grant all privileges on *.* to 'root'@'%'identified by '123456';
Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

mysql>

* 关闭防火墙
systemctl status firewalld
systemctl stop firewalld
systemctl disable firewalld

# 测试连接
```

- SQLyog | Navicat安装

3. 连接数据库

- 关闭防火墙
 - systemctl status firewalld
 - systemctl stop firewalld
 - systemctl disable firewalld
- 设置navicat连接客户端，第二种方式
 - 如果执行了上面的grant操作后，就不要执行下面的了！！！
 - 修改host列的用户，建议修改localhost用户
 - 执行命令如下：
 - update user set host = '%' where host = 'localhost';
 - select host,user,password from user;
 - flush privileges;

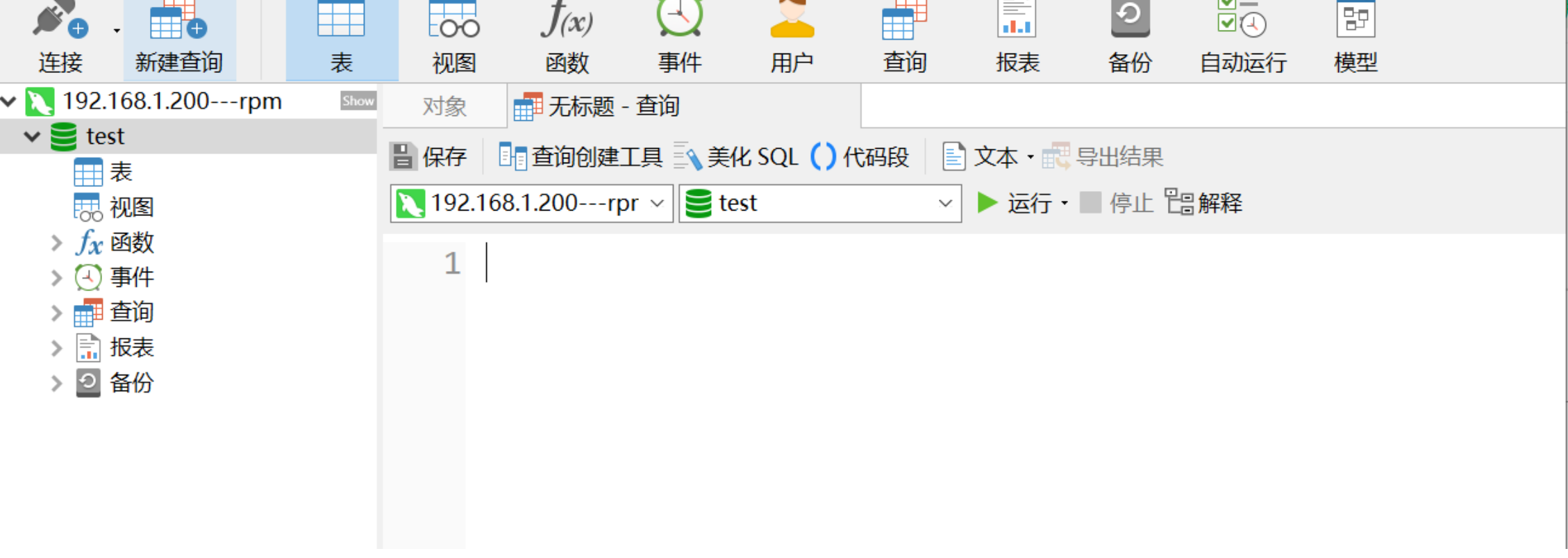
```
mysql> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql>

mysql> update user set host='%' where host='localhost';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select user,host,password;
ERROR 1054 (42522): Unknown column 'user' in 'field list'
mysql> select user,host,password from user;
+-----+-----+-----+
| user | host | password |
+-----+-----+-----+
| root | % | *4B584C3B40B74476B53B0BF001C5E541D131B4D |
| root | lanhai.edu.com | |
| root | 127.0.0.1 | |
| root | ::1 | |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)
```



4. 数据库设计

- 学生表、课程表、教师表、排课表、成绩表

学生表				课程表		教师表			
学号	姓名	性别	年龄	课程编号	课程名称	学号	姓名	性别	年龄
1	张三	男	20	101	大学英语	1001	李强	男	20
2	李四	男	18	102	高数	1002	齐静东	男	18
3	王五	女	18	103	马列主义	1003	位孝静	女	18

排课表				成绩表			
课程编号	课程编号	学号	成绩	学号	课程编号	分数	
101	1003	1	101	80			
102	1001	1	102	86			
103	1002	1	101	59			

5. Mysql的一些特点：

- 关键字不区分大小写
- 数据库名和表名要区分大小写
 - 关键字一般不区分大小写
- sql语句一般要以;结束

```
mysql> show tables;
+-----+
| Tables_in_test |
+-----+
| table001 |
+-----+
1 row in set (0.00 sec)

mysql> select * from table001;
Empty set (0.01 sec)

mysql> select * from TABLE001;
ERROR 1146 (42502): Table 'test.TABLE001' doesn't exist
mysql>
```

6. 数据库操作

- 创建数据库操作
 - create database 数据库名;
 - 创建数据库的同时，设置字符集
 - create database if not exists testdb default character set utf8 collate utf8_general_ci;
 - create database if not exists 数据库名;
 - 数据库名用中文?
- 查看创建数据库的语句
 - show create database 数据库名;
- 删除数据库
 - drop database if exists 数据库名;

7. 查询mysql的系统变量

- show variables;
- show variables like 'autocommit';
- show variables like 'auto%';
- show variables like '%auto%';
- select @@autocommit;

```
mysql> show variables like 'autocommit';
+-----+-----+
| Variable_name | Value |
+-----+-----+
| autocommit | ON |
+-----+-----+
1 row in set (0.00 sec)
```