

Лаборатория работа 6

Установка и настройка системы управления базами
данных MariaDB

ПОДГОТОВИЛА: КИМ РЕАЧНА
ГРУППА: НПИБД-02-20

Цель работы:

Приобретение практических навыков по установке и конфигурированию системы управления базами данных на примере программного обеспечения MariaDB.

Задание:

- Установка MariaDB
- Конфигурация кодировки символов
- Создание базы данных
- Резервные копии
- Внесение изменений в настройки внутреннего окружения виртуальной машины

Установка MariaDB

```
root@server.kreachna.net ~]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.5.16-MariaDB MariaDB Server

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

r
5 kB/s | 3.6 kB      00:02
4.4 kB/s | 3.6 kB    00:00
4.0 kB/s | 2.9 kB    00:00          d end with ';'

=====
Repository                                Size
=====
_0 appstream                            1.6 M
_0 appstream                            9.4 M
_0 appstream                             31 k
   appstream                           195 k
   appstream                             9.8 k
_0 appstream                            215 k
   appstream                             35 k          results via PAGER.
status (\s) Get status information from the server.
system (!) Execute a system shell command.
tee (\T) Set outfile [to_outfile]. Append everything into given outfile.
use (\u) Use another database. Takes database name as argument.
charset (\C) Switch to another charset. Might be needed for processing binlog with multi-byte charsets.
warnings (\W) Show warnings after every statement.
nowarning (\w) Don't show warnings after every statement.

For server side help, type 'help contents'
```

Конфигурация кодировки символов

```
[root@server.kreachna.net ~]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 14
Server version: 10.5.16-MariaDB MariaDB Server

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> status
-----
mysql Ver 15.1 Distrib 10.5.16-MariaDB, for Linux (x86_64) using EditLine wrapper

Connection id:          14
Current database:
Current user:            root@localhost
SSL:                    Not in use
Current pager:           stdout
Using outfile:           ''
Using delimiter:         ;
Server:                  MariaDB
Server version:          10.5.16-MariaDB MariaDB Server
Protocol version:        10
Connection:              Localhost via UNIX socket
Server characterset:     latin1
Db      characterset:    latin1
Client characterset:     utf8
Conn.  characterset:     utf8
UNIX socket:             /var/lib/mysql/mysql.sock
Uptime:                  13 min 14 sec

Threads: 1  Questions: 27  Slow queries: 0  Opens: 20  Open tables: 13  Queries per second avg: 0.034
-----
```

root@server:/etc/my.cnf.d

```
[client]
default-character-set = utf8
[mysqld]
character-set-server = utf8
```

Создание базы данных

```
[root@server.kreachna.net my.cnf.d]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 4
Server version: 10.5.16-MariaDB MariaDB Server
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
MariaDB [(none)]> CREATE DATABASE addressbook CHARACTER SET utf8 COLLATE utf8_general_ci;
Query OK, 1 row affected (0.000 sec)
```

```
MariaDB [(none)]> USE addressbook;
Database changed
MariaDB [addressbook]> SHOW TABLES;
Empty set (0.000 sec)
```

```
MariaDB [addressbook]> CREATE TABLE city(name VARCHAR(40))
Query OK, 0 rows affected (0.014 sec)
```

```
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES
Query OK, 1 row affected (0.004 sec)
```

```
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES
Query OK, 1 row affected (0.001 sec)
```

```
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES
Query OK, 1 row affected (0.001 sec)
```

```
MariaDB [addressbook]> CREATE USER kreachna@'%' IDENTIFIED BY 'password';
Query OK, 0 rows affected (0.005 sec)
```

```
MariaDB [addressbook]> GRANT SELECT,INSERT,UPDATE,DELETE ON addressbook.* TO kreachna@'%';
Query OK, 0 rows affected (0.002 sec)
```

```
MariaDB [addressbook]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.001 sec)
```

```
MariaDB [addressbook]> DESCRIBE city;
```

Field	Type	Null	Key	Default	Extra
name	varchar(40)	YES		NULL	
city	varchar(40)	YES		NULL	

2 rows in set (0.001 sec)

```
MariaDB [addressbook]> quit
Bye
```

Резервные копии

```
[root@server.kreachna.net my.cnf.d]# mkdir -p /var/backup
[root@server.kreachna.net my.cnf.d]# mysqldump -u root -p addressbook > /var/backup/addressbook.sql
Enter password:
[root@server.kreachna.net my.cnf.d]# mysqldump -u root -p addressbook | gzip > /var/backup/addressbook.sql.gz
Enter password:
[root@server.kreachna.net my.cnf.d]# mysqldump -u root -p addressbook | gzip > $(date +/var/backup/addressbook.%Y%m%d.%H%M%S.sql.gz)
Enter password:
[root@server.kreachna.net my.cnf.d]# mysql -u root -p addressbook < /var/backup/addressbook.sql
Enter password:
[root@server.kreachna.net my.cnf.d]# zcat /var/backup/addressbook.sql.gz | mysql -u root -p addressbook
Enter password:
[root@server.kreachna.net my.cnf.d]#
```


Внесение изменений в настройки внутреннего окружения виртуальной машины

```
root@server:/vagrant/provision/server x mc [root@server ~]
#!/bin/bash
echo "Provisioning script $0"

systemctl restart named

echo "Install needed packages"
dnf -y install mariadb mariadb-server

echo "Copy configuration files"
cp -R /vagrant/provision/server/mysql/etc/* /etc
mkdir -p /var/backup
cp -R /vagrant/provision/server/mysql/var/backup/* /var/backup

echo "Start mysql service"
systemctl enable mariadb
systemctl start mariadb

if [[ ! -d /var/lib/mysql/mysql ]]
then
echo "Securing mariadb"
mysql_secure_installation <<EOF
y
123456
123456
y
y
y
y
EOF

echo "Create database"
mysql -u root -p123456 <<EOF
CREATE DATABASE addressbook CHARACTER SET utf8 COLLATE utf8_general_ci;
EOF
mysql -u root -p123456 addressbook < /var/backup/addressbook.sql

fi
```

```
dns.sh x Vagrantfile x 01-routing.sh x dhcp.sh x http.sh x
43 path: "provision/server/dns.sh"
44
45 server.vm.provision "server dhcp",
46 type: "shell",
47 preserve_order: true,
48 path: "provision/server/dhcp.sh"
49
50 server.vm.provision "server http",
51 type: "shell",
52 preserve_order: true,
53 path: "provision/server/http.sh"
54
55 server.vm.provision "server mysql",
56 type: "shell",
57 preserve_order: true,
58 path: "provision/server/mysql.sh"
```

Вывод

Получила приобретение практических навыков по установке и конфигурированию системы управления базами данных на примере программного обеспечения MariaDB.

Спасибо за внимание!