

РОССИЙСКИЙ УНИВЕРСИТЕТ ДРУЖБЫ НАРОДОВ

Факультет физико-математических и естественных наук

Кафедра прикладной информатики и теории вероятностей

ПРЕЗЕНТАЦИЯ

ВЫПОЛНЕННОЙ ЛАБОРАТОРНОЙ РАБОТЫ № 6

дисциплина: Администрирование сетевых подсистем

**Установка и настройка системы управления базами
данных MariaDB**

Студент: Танрибергенов Эльдар

Группа: НПИбд-02-20

МОСКВА

2023 г.

Цель работы

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

Ход работы

Установка MariaDB

- Загрузка VM server и установка пакетов MariaDB

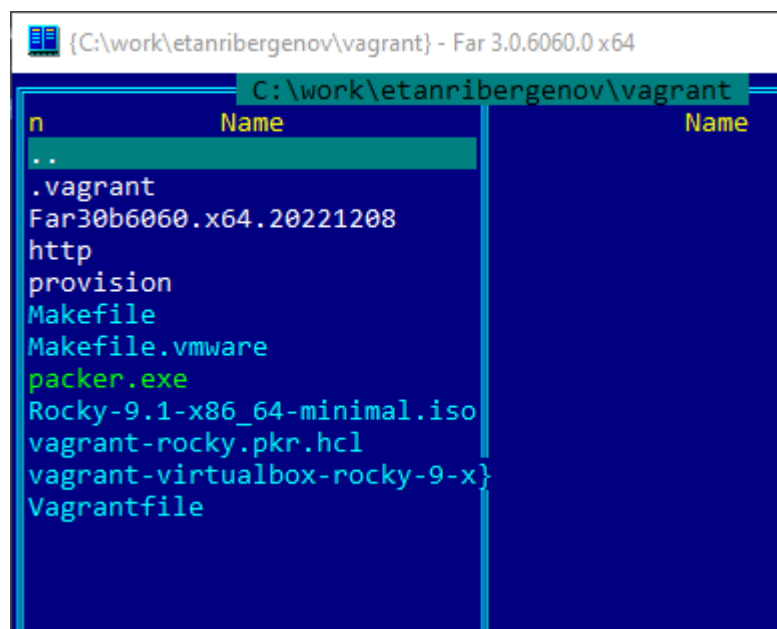


Рис. 1. Рабочий каталог

```
{C:\work\etanribergenov\vagrant} - Far 3.0.6060.0 x64  
C:\work\etanribergenov\vagrant>vagrant up server  
Bringing machine 'server' up with 'virtualbox' provider...  
==> server: You assigned a static IP ending in ".1" to this ma  
==> server: This is very often used by the router and can caus
```

Рис. 2. Запуск VM server

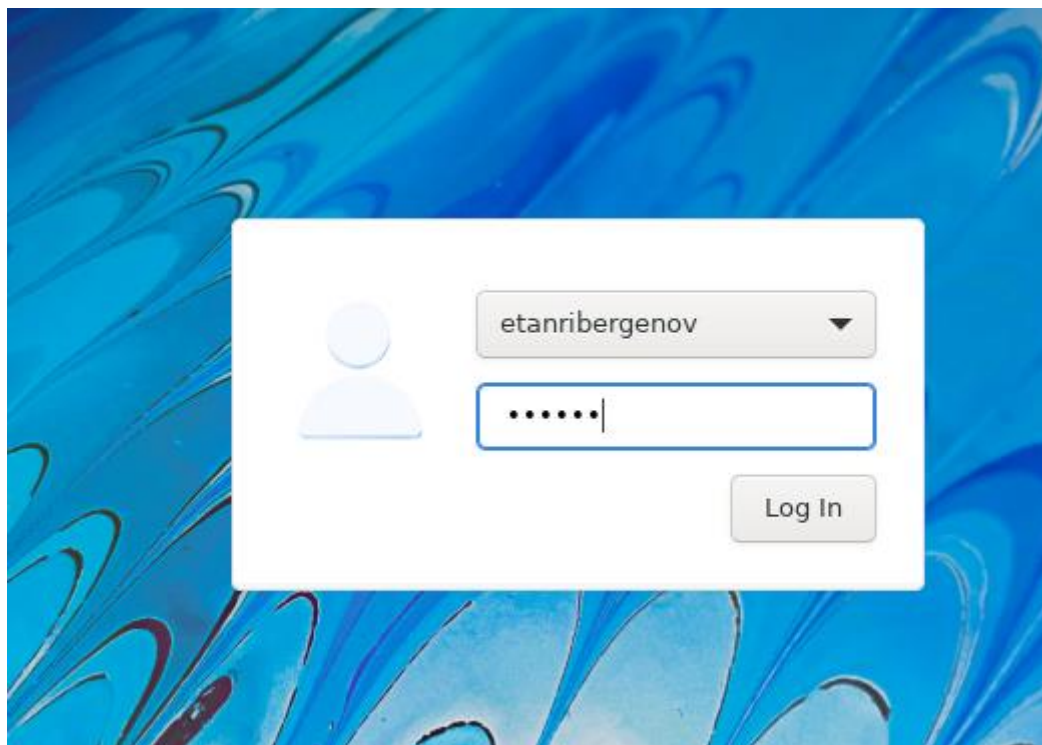


Рис. 3. Вход в систему

```
root@server:~  
etanribergenov@server.etanribergenov.net ~]$ sudo -i  
sudo] password for etanribergenov:  
root@server.etanribergenov.net ~]#
```

Рис. 4. Переход в режим суперпользователя

```
root@server:~  
[root@server.etanribergenov.net ~]# dnf -y install mariadb mariadb-server  
Last metadata expiration check: 0:39:23 ago on Wed 05 Apr 2023 01:27:39 PM UTC.  
Dependencies resolved.  
=====
```

Package	Arch	Version	Repository	Size
Installing:				
mariadb	x86_64	3:10.5.16-2.el9_0	appstream	1.6 M
mariadb-server	x86_64	3:10.5.16-2.el9_0	appstream	9.4 M
Installing dependencies:				
mariadb-common	x86_64	3:10.5.16-2.el9_0	appstream	31 k
mariadb-connector-c	x86_64	3.2.6-1.el9_0	appstream	195 k
mariadb-connector-c-config	noarch	3.2.6-1.el9_0	appstream	9.8 k
mariadb-errmsg	x86_64	3:10.5.16-2.el9_0	appstream	215 k
mysql-selinux	noarch	1.0.5-1.el9_0	appstream	35 k
perl-DBD-MariaDB	x86_64	1.21-16.el9_0	appstream	151 k
perl-Sys-Hostname	x86_64	1.23-479.el9	appstream	26 k
Installing weak dependencies:				
mariadb-backup	x86_64	3:10.5.16-2.el9_0	appstream	6.4 M
mariadb-gssapi-server	x86_64	3:10.5.16-2.el9_0	appstream	19 k
mariadb-server-utils	x86_64	3:10.5.16-2.el9_0	appstream	213 k

```
Transaction Summary  
=====
```

Рис. 5. Установка пакетов

– Просмотр конфигурационных файлов

Left	File	Command	Options	Right
<	/etc/my.cnf.d			.[^]>
.n	Name	Size	Modify	time
/..		UP--DIR	Apr 5	14:10
	auth_gssapi.cnf	42	Aug 9	2022
	client.cnf	295	May 27	2022
	enable_encr~ion.preset	763	May 18	2022
	mariadb-server.cnf	1458	Aug 9	2022
	mysql-clients.cnf	232	May 18	2022
	spider.cnf	120	May 18	2022

Рис. 6. Каталог /etc/my.cnf.d

```

/etc/my.cnf.d/auth_gssapi.cnf
[mariadb]
#plugin-load-add=auth_gssapi.so

```

Рис. 7. Конф. файл auth_gssapi.cnf

```

/etc/my.cnf.d/client.cnf
#
# These two groups are read by the client library
# Use it for options that affect all clients, but not the server
#
[client]
# This group is not read by mysql client library,
# If you use the same .cnf file for MySQL and MariaDB,
# use it for MariaDB-only client options
[client-mariadb]

```

Рис. 8. Конф. файл client.cnf

```

/etc/my.cnf.d/enable_encryption.preset 763/763 100%
#
# !include this file into your my.cnf (or any of *.cnf files in /etc/my.cnf.d)
# and it will enable data at rest encryption. This is a simple way to
# ensure that everything that can be encrypted will be and your
# data will not leak unencrypted.
#
# DO NOT EDIT THIS FILE! On MariaDB upgrades it might be replaced with a
# newer version and your edits will be lost. Instead, add your edits
# to the .cnf file after the !include directive.
#
# NOTE that you also need to install an encryption plugin for the encryption
# to work. See https://mariadb.com/kb/en/mariadb/data-at-rest-encryption/#encryption-key-management
#
[mariadb]
aria-encrypt-tables
encrypt-binlog
encrypt-tmp-disk-tables
encrypt-tmp-files
loose-innodb-encrypt-log
loose-innodb-encrypt-tables

```

Рис. 9. Конф. файл enable_encryption.preset

```

/etc/my.cnf.d/mariadb-server.cnf 723/1458
#
# These groups are read by MariaDB server.
# Use it for options that only the server (but not clients) should see
#
# See the examples of server my.cnf files in /usr/share/mysql/
#
# this is read by the standalone daemon and embedded servers
[server]

# this is only for the mysqld standalone daemon
# Settings user and group are ignored when systemd is used.
# If you need to run mysqld under a different user or group,
# customize your systemd unit file for mysqld/mariadb according to the
# instructions in http://fedoraproject.org/wiki/Systemd
[mysqld]
datadir=/var/lib/mysql
socket=/var/lib/mysql/mysql.sock
log-error=/var/log/mariadb/mariadb.log
pid-file=/run/mariadb/mariadb.pid

#
# * Galera-related settings
#

```

Рис. 10. Конф. файл mariadb-server.cnf

```

/etc/my.cnf.d/mariadb-server.cnf
#
# * Galera-related settings
#
[galera]
# Mandatory settings
#wsrep_on=ON
#wsrep_provider=
#wsrep_cluster_address=
#binlog_format=row
#default_storage_engine=InnoDB
#innodb_autoinc_lock_mode=2
#
# Allow server to accept connections on all interfaces.
#
#bind-address=0.0.0.0
#
# Optional setting
#wsrep_slave_threads=1
#innodb_flush_log_at_trx_commit=0

# this is only for embedded server
[embedded]

# This group is only read by MariaDB servers, not by MySQL.
# If you use the same .cnf file for MySQL and MariaDB,

```

Рис. 11. Конф. файл mariadb-server.cnf

```
/etc/my.cnf.d/mysql-clients.cnf
#
# These groups are read by MariaDB command-line tools
# Use it for options that affect only one utility
#

[mysql]

[mysql_upgrade]

[mysqladmin]

[mysqlbinlog]

[mysqlcheck]

[mysqldump]

[mysqlimport]

[mysqlshow]

[mysqslap]
```

Рис. 12. Конф. файл mysql-clients.cnf

```
/etc/my.cnf.d/spider.cnf
[mariadb]
#
# Uncomment line to enable
#
#plugin-load-add = ha_spider
# Read more at https://mariadb.com/kb/en/spider/
```

Рис. 13. Конф. файл spider.cnf

```
/etc/my.cnf
#
# This group is read both both by the client and the server
# use it for options that affect everything
#
[client-server]
#
# include all files from the config directory
#
!includedir /etc/my.cnf.d
```

Рис. 14. Конф. файл /etc/my.cnf

– Запуск MariaDB

```
[root@server.etanribergenov.net ~]# systemctl start mariadb
[root@server.etanribergenov.net ~]# systemctl enable mariadb
Created symlink /etc/systemd/system/mysql.service → /usr/lib/systemd/system/mariadb.service.
Created symlink /etc/systemd/system/mysqld.service → /usr/lib/systemd/system/mariadb.service.
Created symlink /etc/systemd/system/multi-user.target.wants/mariadb.service → /usr/lib/systemd/system/mariadb.service.
[root@server.etanribergenov.net ~]#
```

Рис. 15. Запуск ПО mariadb

```
[root@server.etanribergenov.net ~]# ss -tulpen | grep mysql
[root@server.etanribergenov.net ~]#
[root@server.etanribergenov.net ~]# ss -tulpen | grep mariadb
tcp    LISTEN 0      80          *:3306      *:*        users:((("mariabdb",pid=9767,fd=19)) uid:27 ino:49527 sk:1b cgroup:/system.slice/mariadb.service v6only:0 <->
[root@server.etanribergenov.net ~]#
```

Рис. 16. Проверка прослушивания порта 3306 mariadb


```
[root@server.etanribergenov.net ~]# mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] n
... skipping.

You already have your root account protected, so you can safely answer 'n'.

Change the root password? [Y/n] n
...skipping.
```

Рис. 17. Запуск скрипта конфигурации безопасности mariadb (1)

```
By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them. This is intended only for testing, and to make the installation
go a bit smoother. You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] y
... Success!

Normally, root should only be allowed to connect from 'localhost'. This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y
... Success!

By default, MariaDB comes with a database named 'test' that anyone can
access. This is also intended only for testing, and should be removed
before moving into a production environment.
```

Рис. 18. Запуск скрипта конфигурации безопасности mariadb (2)

```
Remove test database and access to it? [Y/n] y
- Dropping test database...
... Success!
- Removing privileges on test database...
... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y
... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB
installation should now be secure.

Thanks for using MariaDB!
[root@server.etanribergenov.net ~]#
```

Рис. 19. Запуск скрипта конфигурации безопасности mariadb (3)

– Работа с MariaDB

```
[root@server.etanribergenov.net ~]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 9
Server version: 10.5.16-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]>
```

Рис. 20. Вход в базу данных с правами администратора

```
MariaDB [(none)]> \h
```

General information about MariaDB can be found at
<http://mariadb.org>

List of all client commands:

Note that all text commands must be first on line and end with ';'.

?	(\?)	Synonym for 'help'.
clear	(\c)	Clear the current input statement.
connect	(\r)	Reconnect to the server. Optional arguments are db and host.
delimiter	(\d)	Set statement delimiter.
edit	(\e)	Edit command with \$EDITOR.
ego	(\G)	Send command to MariaDB server, display result vertically.
exit	(\q)	Exit mysql. Same as quit.
go	(\g)	Send command to MariaDB server.
help	(\h)	Display this help.
nopager	(\n)	Disable pager, print to stdout.
notee	(\t)	Don't write into outfile.
pager	(\P)	Set PAGER [to_pager]. Print the query results via PAGER.
print	(\p)	Print current command.
prompt	(\R)	Change your mysql prompt.
quit	(\q)	Quit mysql.
rehash	(\#)	Rebuild completion hash.
source	(\.)	Execute an SQL script file. Takes a file name as an argument.
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.

Рис. 21. Список команд MySQL (1)

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'

```
MariaDB [(none)]> 
```

Рис. 22. Список команд MySQL (2)

```
MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
+-----+
3 rows in set (0.010 sec)

MariaDB [(none)]> 
```

Рис. 23. MySQL-запрос отображения доступных БД

```
MariaDB [(none)]> exit
Bye
[root@server.etanribergenov.net ~]# 
```

Рис. 24. Выход из интерфейса интерактивной оболочки MariaDB

Конфигурация кодировки символов

```
[root@server.etanribergenov.net ~]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 10
Server version: 10.5.16-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> status
```

Рис. 25. Вход в БД с правами администратора

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

Connection id:          10
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:                  30 min 15 sec

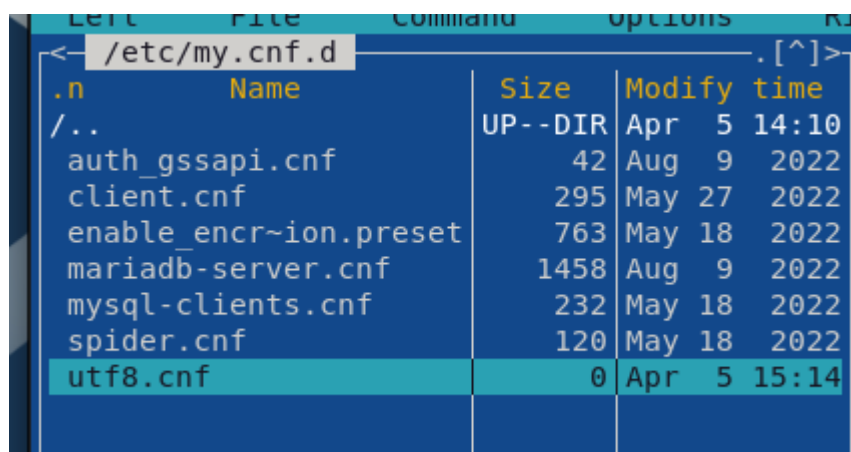
Threads: 1  Questions: 19  Slow queries: 0  Opens: 20  Open tables: 13  Queries per second avg: 0.010
-----

MariaDB [(none)]> 
```

Рис. 26. Статус MariaDB

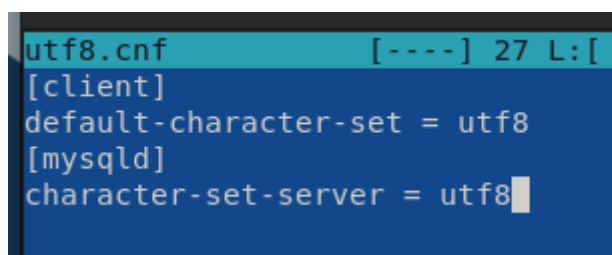
```
[root@server.etanribergenov.net my.cnf.d]# touch utf8.cnf
[root@server.etanribergenov.net my.cnf.d]#
```

Рис. 27. Создание файла конфигурации



Left	File	Command	Options	RL
<	/etc/my.cnf.d			.[^]>
.n	Name	Size	Modify	time
/..		UP--DIR	Apr 5	14:10
	auth_gssapi.cnf	42	Aug 9	2022
	client.cnf	295	May 27	2022
	enable_encr~ion.preset	763	May 18	2022
	mariadb-server.cnf	1458	Aug 9	2022
	mysql-clients.cnf	232	May 18	2022
	spider.cnf	120	May 18	2022
	utf8.cnf	0	Apr 5	15:14

Рис. 28. Проверка появления файла



```
utf8.cnf [----] 27 L:[
[client]
default-character-set = utf8
[mysqld]
character-set-server = utf8
```

Рис. 29. Конфигурация в созданном файле

– Проверка результата

```
[root@server.etanribergenov.net ~]# systemctl restart mariadb  
[root@server.etanribergenov.net ~]#
```

Рис. 30. Перезапуск MariaDB

```
MariaDB [(none)]> status  
-----  
mysql Ver 15.1 Distrib 10.5.16-MariaDB, for Linux (x86_64) using EditLine wrapper  
  
Connection id:          3  
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:     utf8  
Db characterset:         utf8  
Client characterset:     utf8  
Conn. characterset:      utf8  
UNIX socket:            /var/lib/mysql/mysql.sock  
Uptime:                 47 sec  
  
Threads: 1 Questions: 4 Slow queries: 0 Opens: 17 Open tables: 10 Queries per second avg  
: 0.085  
-----  
MariaDB [(none)]> 
```

Рис. 31. Проверка статуса после перезапуска

Создание базы данных

```
[root@server.etanribergenov.net ~]# 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

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> 
```

Рис. 32. Вход в БД с правами администратора

```
MariaDB [(none)]> CREATE DATABASE addressbook CHARACTER SET utf8 COLLATE utf8_general_ci;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]>
MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| addressbook |
| information_schema |
| mysql |
| performance_schema |
+-----+
4 rows in set (0.001 sec)

MariaDB [(none)]> 
```

Рис. 33. Создание БД addressbook

```
MariaDB [(none)]> USE addressbook;
Database changed
MariaDB [addressbook]> 
```

Рис. 34. Переход к БД addressbook

```
MariaDB [addressbook]>
MariaDB [addressbook]> SHOW TABLES;
Empty set (0.000 sec)
```

Рис. 35. Имеющиеся таблицы в БД addressbook

– Заполнение созданной базы данных

```
MariaDB [addressbook]> CREATE TABLE city(name VARCHAR(40), city VARCHAR(40));  
Query OK, 0 rows affected (0.087 sec)
```

Рис. 36. Создание таблицы с полями «name» и «city» в БД addressbook

```
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES ('Ivanov','Moscow');  
Query OK, 1 row affected (0.004 sec)  
  
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES ('Petrov','Sochi');  
Query OK, 1 row affected (0.003 sec)  
  
MariaDB [addressbook]> INSERT INTO city(name,city) VALUES ('Sidorov','Dubna');  
Query OK, 1 row affected (0.002 sec)
```

Рис. 37. Заполнение строк

```
MariaDB [addressbook]> SELECT * FROM city;  
+-----+-----+  
| name   | city   |  
+-----+-----+  
| Ivanov | Moscow |  
| Petrov | Sochi  |  
| Sidorov | Dubna  |  
+-----+-----+  
3 rows in set (0.000 sec)
```

Рис. 38. Вывод всех строк таблицы

– Создание пользователя для работы с базой данных

```
MariaDB [addressbook]> CREATE USER etanribergenov@'%' IDENTIFIED BY 'password';  
Query OK, 0 rows affected (0.050 sec)
```

Рис. 39. Создание пользователя для работы с БД addressbook

```
MariaDB [addressbook]> GRANT SELECT,INSERT,UPDATE,DELETE ON addressbook.* TO etanribergenov@'  
%';  
Query OK, 0 rows affected (0.003 sec)  
MariaDB [addressbook]> █
```

Рис. 40. Предоставление прав доступа созданному пользователю

```
MariaDB [addressbook]> FLUSH PRIVILEGES;  
Query OK, 0 rows affected (0.005 sec)
```

Рис. 41. Обновление прав доступа БД addressbook

– Проверка результатов создания базы данных

```
MariaDB [addressbook]> DESCRIBE city;  
+-----+-----+-----+-----+-----+-----+  
| Field | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| name  | varchar(40)   | YES  |     | NULL    |       |  
| city  | varchar(40)   | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.002 sec)
```

Рис. 42. Общая информация о таблице city БД addressbook

```
MariaDB [addressbook]> quit
Bye
[root@server.etanribergenov.net ~]#
```

Рис. 43. Выход из окружения MariaDB

```
[root@server.etanribergenov.net ~]# mysqlshow -u root -p
Enter password:
+-----+
| Databases |
+-----+
| addressbook |
| information_schema |
| mysql |
| performance_schema |
+-----+
[root@server.etanribergenov.net ~]#
```

Рис. 44. Просмотр списка баз данных

```
[root@server.etanribergenov.net ~]# mysqlshow -u root -p addressbook
Enter password:
Database: addressbook
+-----+
| Tables |
+-----+
| city |
+-----+
[root@server.etanribergenov.net ~]#
```

Рис. 45. Просмотр списка таблиц БД addressbook

Резервные копии

– Создание резервных копий БД

```
[root@server.etanribergenov.net ~]# mkdir -p /var/backup  
[root@server.etanribergenov.net ~]#
```

Рис. 46. Создание каталога для резервных копий

```
[root@server.etanribergenov.net ~]#  
[root@server.etanribergenov.net ~]# mysqldump -u root -p addressbook > /var/backup/addressbook.sql  
Enter password:  
[root@server.etanribergenov.net ~]#
```

Рис. 47. Создание резервной копии БД

```
[root@server.etanribergenov.net ~]# mysqldump -u root -p addressbook | gzip > /var/backup/addressbook.sql.gz  
Enter password:  
[root@server.etanribergenov.net ~]#
```

Рис. 48. Создание сжатой резервной копии

```
[root@server.etanribergenov.net ~]#  
[root@server.etanribergenov.net ~]# mysqldump -u root -p addressbook | gzip > $(date +%Y%m%d.%H%M%S.sql.gz)  
Enter password:  
[root@server.etanribergenov.net ~]#
```

Рис. 49. Создание сжатой резерв. копии с указанием даты создания копии

Name	Size	Modify time
UP--DIR		Apr 5 16:03
addressbook~0721.sql.gz	702	Apr 5 16:07
addressbook.sql	1896	Apr 5 16:04
addressbook.sql.gz	701	Apr 5 16:05

Рис. 50. Проверка

– Применение созданных резервных копий

```
[root@server.etanribergenov.net ~]# mysql -u root -p addressbook < /var/backup/addressbook.sql
Enter password:
```

Рис. 51. Восстановление БД addressbook из резервной копии

```
[root@server.etanribergenov.net ~]# zcat /var/backup/addressbook.sql.gz | mysql -u root -p addressbook
Enter password:
[root@server.etanribergenov.net ~]#
```

Рис. 52. Восстановление БД addressbook из сжатой резервной копии

Внесение изменений в настройки внутреннего окружения виртуальной машины

– Копирование файлов

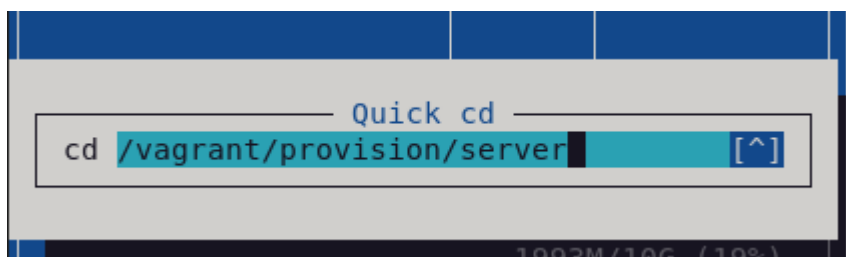


Рис. 53. Переход в каталог внесения изменений в настройки VM server

```
[root@server.etanribergenov.net server]# mkdir -p mysql/etc/my.cnf.d
[root@server.etanribergenov.net server]# mkdir -p mysql/var/backup
[root@server.etanribergenov.net server]#
```

Рис. 54. Создание подкаталогов

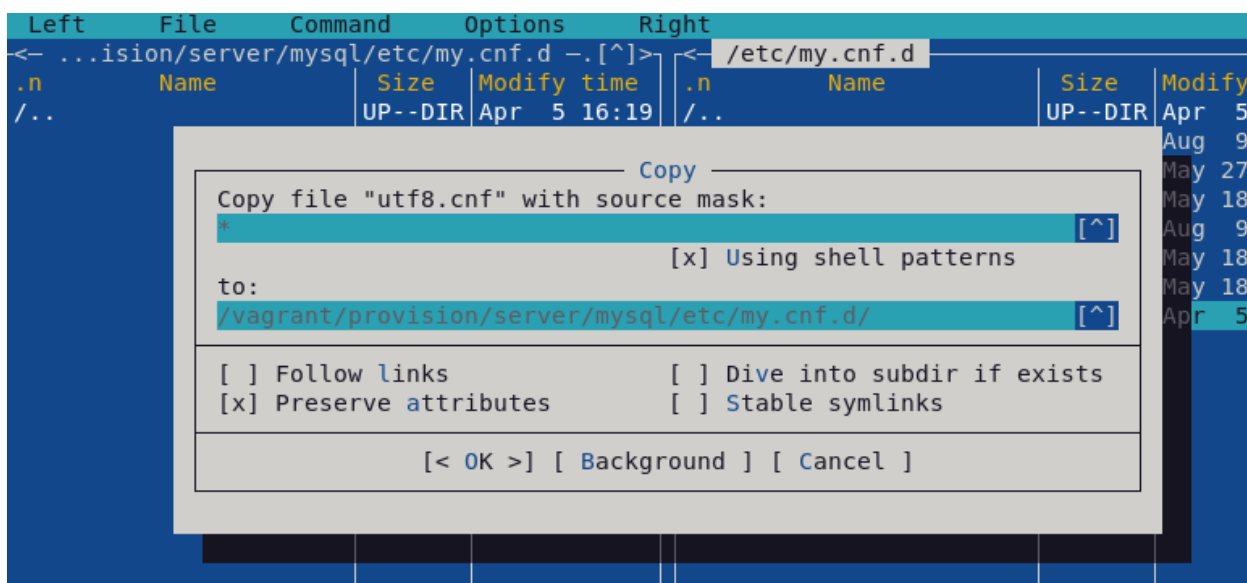


Рис. 55. Копирование конф. файла *utf8.cnf*

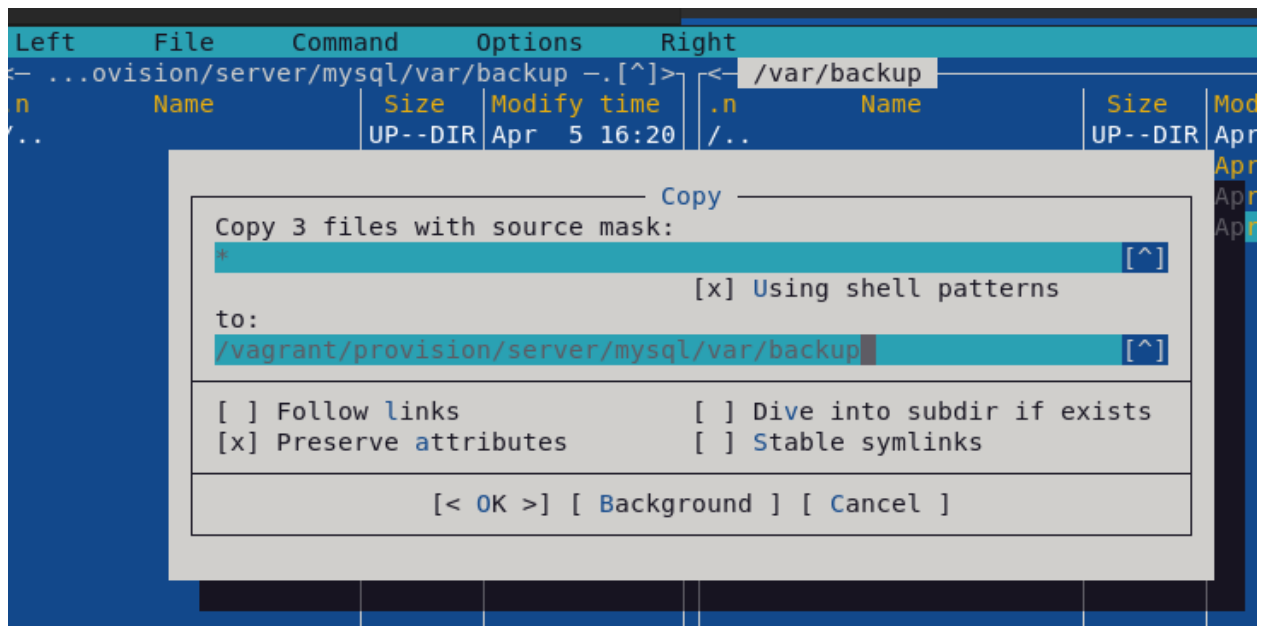


Рис. 56. Копирование резервных копий БД

- Создание скрипта, повторяющего произведённые действия и его включение в конфигурационный файл Vagrantfile

```
[root@server.etanribergenov.net server]# touch mysql.sh
[root@server.etanribergenov.net server]# chmod +x mysql.sh
[root@server.etanribergenov.net server]#
```

Рис. 57. Создание исполняемого файла

```
mysql.sh [----] 0 L: [ 1+ 0 1/ 39] *(0 / 704b) 0
#!/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
```

Рис. 58. Скриншот в файле mysql.sh (1)

```
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
```

Рис. 59. Скриншот в файле mysql.sh (2)


```
server.vm.provision "server http",  
  type: "shell",  
  preserve_order: true,  
  path: "provision/server/http.sh"  
  
server.vm.provision "server mysql",  
  type: "shell",  
  preserve_order: true,  
  path: "provision/server/mysql.sh"
```

Рис. 60. Запись в конф. файле Vagrantfile