



МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РФ
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ
«ЛИПЕЦКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ»

Факультет автоматизации и информатики
Кафедра автоматизированных систем управления

Лабораторная работа № 7
по дисциплине “Linux”

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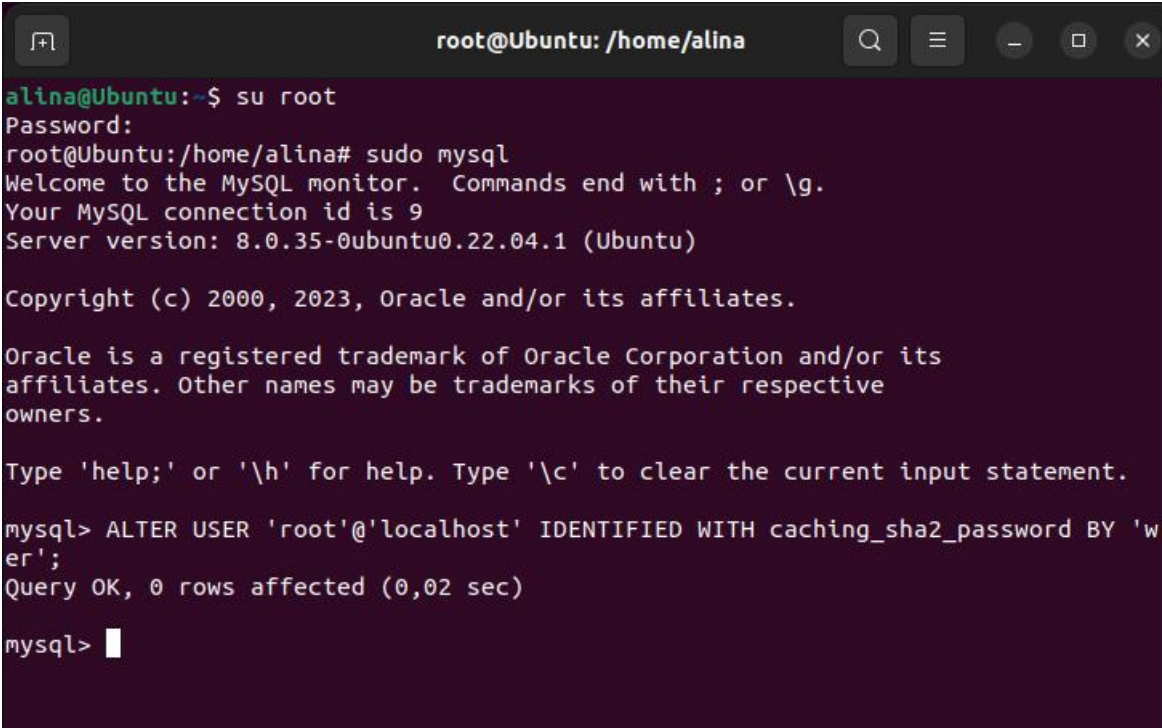
Липецк 2023

А. Создание дампа с нуля

1. Установка mysql server

```
sudo apt install mysql-server
```

Изменение пароля для root



```
root@Ubuntu: /home/alina
alina@Ubuntu:~$ su root
Password:
root@Ubuntu:/home/alina# sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH caching_sha2_password BY 'wer';
Query OK, 0 rows affected (0,02 sec)

mysql> 
```

2. Установка mysql-client

```
root@Ubuntu:/home/alina# sudo apt-install mysql-client
sudo: apt-install: command not found
root@Ubuntu:/home/alina# sudo apt install mysql-client
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  mysql-client
0 upgraded, 1 newly installed, 0 to remove and 176 not upgraded.
Need to get 9 354 B of archives.
After this operation, 35,8 kB of additional disk space will be used.
Get:1 http://ru.archive.ubuntu.com/ubuntu jammy-updates/main amd64 mysql-client
all 8.0.35-0ubuntu0.22.04.1 [9 354 B]
Fetched 9 354 B in 0s (57,3 kB/s)
Selecting previously unselected package mysql-client.
(Reading database ... 207859 files and directories currently installed.)
Preparing to unpack .../mysql-client_8.0.35-0ubuntu0.22.04.1_all.deb ...
Unpacking mysql-client (8.0.35-0ubuntu0.22.04.1) ...
Setting up mysql-client (8.0.35-0ubuntu0.22.04.1) ...
```

3. Просмотр баз данных

```
root@Ubuntu:/home/alina# sudo mysql -u root -p -e 'show databases';
Enter password:
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
root@Ubuntu:/home/alina#
```

4. Пример выполнения команды в mysql

```
Type 'help;' or '\h' for help. Type '\c' to
mysql> clear
mysql> show databases
-> wer
-> wer
-> cvdmklc
-> ^C
mysql> ^C
mysql> show databases
-> ;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
```

Создание базы данных и таблицы в ней, просмотр структуры БД

```
mysql> CREATE DATABASE lab_bd;
Query OK, 1 row affected (0,03 sec)

mysql> use lab_bd;
Database changed
mysql> create table worker (
  -> id INT AUTO_INCREMENT PRIMARY KEY,
  -> name varchar(20),
  -> dept varchar(10),
  -> salary int(10)
  -> );
Query OK, 0 rows affected, 1 warning (0,08 sec)

mysql> desc worker;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| id    | int           | NO   | PRI | NULL    | auto_increment |
| name  | varchar(20)   | YES  |     | NULL    |                |
| dept  | varchar(10)   | YES  |     | NULL    |                |
| salary | int           | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0,00 sec)
```

5. Добавление записей в таблицу

```
mysql> insert into worker(name, dept, salary) values ('Ivan', 'Programmer', 100000);
Query OK, 1 row affected (0,04 sec)

mysql> nsert into worker(name, dept, salary) values ('Ivan', 'Programmer', 100000);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'insert into worker(name, dept, salary) values ('Ivan', 'Programmer', 100000)' at line 1
mysql> nsert into worker(name, dept, salary) values ('Ivan', 'Programmer', 100000);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'insert into worker(name, dept, salary) values ('Ivan', 'Programmer', 100000)' at line 1
mysql> insert into worker(name, dept, salary) values ('Yulia', 'Manager', 30000);
Query OK, 1 row affected (0,02 sec)
```

6. Просмотр записей в таблице

```
mysql> select * from worker
  -> ;
+-----+-----+-----+-----+
| id | name  | dept      | salary |
+-----+-----+-----+-----+
| 1  | Ivan  | Programmer | 100000 |
| 2  | Yulia | Manager    | 30000  |
+-----+-----+-----+-----+
2 rows in set (0,00 sec)

mysql> █
```

7. Выход из mysql

```
mysql> quit  
Bye
```

8. Повтор 5 пункта

```
root@Ubuntu:/home/alina# sudo mysql -u root -p -e 'show databases';  
Enter password:  
+-----+  
| Database |  
+-----+  
| information_schema |  
| lab_bd |  
| mysql |  
| performance_schema |  
| sys |  
+-----+  
root@Ubuntu:/home/alina#
```

9. Создание дампа БД

```
root@Ubuntu:/home/alina# sudo mysqldump -u root -p lab_bd > /home/alina/basedump  
.sql  
Enter password:  
root@Ubuntu:/home/alina#
```

10. Просмотр содержимого дампа


```

root@Ubuntu:/home/alina# cat basedump.sql
-- MySQL dump 10.13  Distrib 8.0.35, for Linux (x86_64)
--
-- Host: localhost    Database: lab_bd
--
-- Server version      8.0.35-0ubuntu0.22.04.1
Files
--
/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!50503 SET NAMES utf8mb4 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;

--
-- Table structure for table `worker`
--

DROP TABLE IF EXISTS `worker`;
/*!40101 SET @saved_cs_client      = @@character_set_client */;
/*!50503 SET character_set_client = utf8mb4 */;
CREATE TABLE `worker` (
  `id` int NOT NULL AUTO_INCREMENT,
  `name` varchar(20) DEFAULT NULL,
  `dept` varchar(10) DEFAULT NULL,
  `salary` int DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB AUTO_INCREMENT=3 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Dumping data for table `worker`
--

LOCK TABLES `worker` WRITE;
/*!40000 ALTER TABLE `worker` DISABLE KEYS */;

```

Б) Восстановление БД из дампа

1. Удаление БД

```
root@Ubuntu:/home/alina# sudo mysqladmin -u root -p drop lab_bd
Enter password:
Dropping the database is potentially a very bad thing to do.
Any data stored in the database will be destroyed.

Do you really want to drop the 'lab_bd' database [y/N] y
Database "lab_bd" dropped
root@Ubuntu:/home/alina#
```

2. Создание БД

```
root@Ubuntu:/home/alina# sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 22
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql> create database lr_bd2
-> ;
Query OK, 1 row affected (0,03 sec)

mysql> quit
Bye
```

3. Запись данных в БД из дампа

```
root@Ubuntu:/home/alina# sudo mysql -u root -p lr_bd2 < /home/alina/basedump.sql
Enter password:
root@Ubuntu:/home/alina#
```

4. Просмотр содержимого БД

```
mysql> use lr_bd2
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> select * from workers
-> ;
ERROR 1146 (42S02): Table 'lr_bd2.workers' doesn't exist
mysql> select * from worker;
+----+-----+-----+-----+
| id | name  | dept      | salary |
+----+-----+-----+-----+
| 1  | Ivan  | Programmer | 100000 |
| 2  | Yulia | Manager    | 30000  |
+----+-----+-----+-----+
2 rows in set (0,00 sec)

mysql>
```