Факультет программной инженерии и компьютерной техники

Лабораторная работа №2

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Задание

Этап 1. Инициализация кластера БД

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Этап 2. Конфигурация и запуск сервера БД

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Этап 3. Дополнительные табличные пространства и наполнение базы

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Решение

```
cd $HOME
mkdir uwo39
```

init.sh

```
export PGDATA="$HOME/uwo39"
export PGCLIENTENCODING="KOI8R"
mkdir -p "$PGDATA"
initdb --locale="ru_RU.KOI8-R"
```

```
source set-env.sh
./init.sh
```

```
type
address
```

pg_hba.conf

```
# PostgreSQL Client Authentication Configuration File
# TYPE  DATABASE        USER        ADDRESS                 METHOD

# Unix-domain socket in peer mode.
local   all             all                                 peer
# TCP/IP socket, accept all connections. Use SHA-256
host  all         all         0.0.0.0/0               scram-sha-256
# Reject all other connections
host  all         all         0.0.0.0/0               reject
```

Номер порта: 9253

```
port = 9253
```

Способ аутентификации TCP/IP клиентов: по паролю SHA-256

```
password_encryption = scram-sha-256
```

Директория WAL файлов: $PGDATA/pg_wal

```
archive_mode = on
archive_command = 'cp %p $HOME/uwo39/pg_wal'
```

Формат лог-файлов: .log

```
log_destination = 'stderr'
logging_collector = on
log_directory = 'log'
log_filename = 'postgresql-%Y-%m-%d_%H%M%S.log'
```

Уровень сообщений лога: WARNING

```
log_min_messages = warning
```

Дополнительно логировать:

```
work_mem = 8MB
```

```
checkpoint_timeout = 5min
```

```
effective_cache_size = 2GB
```

```
fsync = on
```

```
commit_delay = 0
```

Запуск сервера

```
pg_ctl start
```

```
psql -p 9253 -d postgres
```

```
source set-env.sh
./setup-conf.sh
pg_ctl start
```

Создать новое табличное пространство для индексов: $HOME/amh13

```
CREATE TABLESPACE ispace LOCATION '$HOME/amh13';
```

```
ОШИБКА:  путь к табличному пространству должен быть абсолютным
```

```
CREATE TABLESPACE ispace LOCATION '/var/db/postgres0/amh13';
```

На основе template1 создать новую базу: longblueroad

```
createdb -p 9253 --template=template1 longblueroad
```

Создать новую роль, предоставить необходимые права, разрешить подключение к базе

```
$ psql -p 9253 -d longblueroad
longblueroad=# CREATE TABLE road (id SERIAL PRIMARY KEY, name TEXT NOT NULL
UNIQUE, length INT NOT NULL);
CREATE TABLE
longblueroad=# CREATE INDEX ON road(name) TABLESPACE ispace;
CREATE INDEX
longblueroad=# CREATE ROLE driver LOGIN PASSWORD 'AZCVoi172e9A&CV981';
CREATE ROLE
longblueroad=# GRANT CONNECT ON DATABASE longblueroad TO driver;
GRANT
longblueroad=# GRANT INSERT ON TABLE road TO driver;
GRANT
longblueroad=# -- USAGE: For sequences, allows use of the currval and nextval
functions.
longblueroad=# GRANT USAGE, SELECT ON SEQUENCE road_id_seq TO driver;
GRANT
```

От имени новой роли (не администратора) произвести наполнение ВСЕХ созданных баз тестовыми наборами данных. ВСЕ табличные пространства должны использоваться по назначению

```
$ psql -p 9253 -d longblueroad -U driver -W
Password:
psql: error: connection to server on socket "/tmp/.s.PGSQL.9253" failed: ВАЖНО:
пользователь "driver" не прошёл проверку подлинности (Peer)
```

```
$ psql -h 0.0.0.0 -p 9253 -d longblueroad -U driver -W
Password:
longblueroad=>
```

```
longblueroad=> SELECT * FROM road;
ОШИБКА:  нет доступа к таблице road
```

```
longblueroad=> \i test-data.sql
```

Вывести список всех табличных пространств кластера и содержащиеся в них объекты

```
$ psql -p 9253 -d longblueroad
longblueroad=# SELECT oid, spcname, pg_tablespace_location(oid) FROM
pg_tablespace;
```

```
  oid  |  spcname   | pg_tablespace_location
-------+------------+------------------------
  1663 | pg_default |
  1664 | pg_global  |
 16388 | ispace   | /var/db/postgres0/amh13
(3 строки)
longblueroad=# SELECT relname, spcname FROM pg_tablespace INNER JOIN pg_class
ON pg_class.reltablespace = pg_tablespace.oid;
                  relname                  |  spcname
-------------------------------------------+-----------
 road_name_idx                             | ispace
 pg_toast_1262                             | pg_global
 pg_toast_1262_index                       | pg_global
 pg_toast_2964                             | pg_global
 pg_toast_2964_index                       | pg_global
 pg_toast_1213                             | pg_global
 pg_toast_1213_index                       | pg_global
 pg_toast_1260                             | pg_global
 pg_toast_1260_index                       | pg_global
 pg_toast_2396                             | pg_global
 pg_toast_2396_index                       | pg_global
 pg_toast_6000                             | pg_global
 pg_toast_6000_index                       | pg_global
 pg_toast_3592                             | pg_global
 pg_toast_3592_index                       | pg_global
 pg_toast_6243                             | pg_global
 pg_toast_6243_index                       | pg_global
 pg_toast_6100                             | pg_global
 pg_toast_6100_index                       | pg_global
 pg_database_datname_index                 | pg_global
 pg_database_oid_index                     | pg_global
 pg_db_role_setting_databaseid_rol_index | pg_global
 pg_tablespace_oid_index                   | pg_global
 pg_tablespace_spcname_index               | pg_global
 pg_authid_rolname_index                   | pg_global
 pg_authid_oid_index                       | pg_global
 pg_auth_members_oid_index                 | pg_global
 pg_auth_members_role_member_index         | pg_global
 pg_auth_members_member_role_index         | pg_global
 pg_auth_members_grantor_index             | pg_global
 pg_shdepend_depender_index                | pg_global
 pg_shdepend_reference_index               | pg_global
 pg_shdescription_o_c_index                | pg_global
 pg_replication_origin_roiident_index      | pg_global
 pg_replication_origin_roname_index        | pg_global
 pg_shseclabel_object_index                | pg_global
 pg_parameter_acl_parname_index            | pg_global
 pg_parameter_acl_oid_index                | pg_global
 pg_subscription_oid_index                 | pg_global
```

```
 pg_subscription_subname_index           | pg_global
 pg_authid                               | pg_global
 pg_subscription                         | pg_global
 pg_database                             | pg_global
 pg_db_role_setting                      | pg_global
 pg_tablespace                           | pg_global
 pg_auth_members                         | pg_global
 pg_shdepend                             | pg_global
 pg_shdescription                        | pg_global
 pg_replication_origin                   | pg_global
 pg_shseclabel                           | pg_global
 pg_parameter_acl                        | pg_global
(51 строка)
```

reltablespace: If zero, the database's default tablespace is implied.

Not meaningful if the relation has no on-disk file, except for partitioned tables, where this is the tablespace in which partitions will be created when one is not specified in the creation command.

Исходный код

:// b.c / a / -ed / ee/ a e /d d / ab2

Заключение