Vyzkoušený postup upgradu

Instalace PG13

> *Pracuji jako obyčejný uživatel nad adresářem /opt/shared*
>
> *Záloha, hlavně pro pozdější kopírování nastavení:*

```
sudo cp -r /opt/postgreSQL_DB/ ./postgreSQL_DB/
```

> Podle návodu dokumentace: postgresql.org/download/linux/redhat

```
# Install the repository RPM:
sudo yum install -y https://download.postgresql.org/pub/repos/yum/reporpms/EL-7-
x86_64/pgdg-redhat-repo-latest.noarch.rpm

# Install PostgreSQL:
sudo yum install -y postgresql13-server
```

> Návod selhal.

Založení databáze

> Dále najitá cesta:

```
sudo -u postgres /usr/pgsql-13/bin/initdb --locale=en_US.UTF-8 -D /opt/pgsql/13/data
pg_ctl -D /opt/postgreSQL_DB/ stop
sudo -u postgres /usr/pgsql-13/bin/pg_upgrade \
        -b /usr/bin/ \
        -B /usr/pgsql-13/bin/ \
        -d /opt/postgreSQL_DB/ \
        -D /var/lib/pgsql/13/data/ \
        --check
```

> Chyba: Při spouštění zkušebního upgradu se vyskytuje problém s přejmenováním přepínače unix_socket_directory ⇒ unix_socket_directories

> Řešeno pomocí podvrhnutí souboru: [postgresql - pg_upgrade unrecognized configuration parameter "unix_socket_directory" - Database Administrators Stack Exchange](#)

```
mv /usr/bin/pg_ctl{,-orig}
echo '#!/bin/bash' > /usr/bin/pg_ctl
echo '"$0"-orig "${@/unix_socket_directory/unix_socket_directories}"' >> /usr/bin/pg_ctl
chmod +x /usr/bin/pg_ctl
# vrátit hack:
mv -f /usr/bin/pg_ctl{-orig,}
```

> Chyba: Při spouštění zkušebního upgradu databáze odmítá spojení

```
vim /opt/postgreSQL_DB/pg_hba.conf
# byl zakomentovaný řádek 88: local   all  all  trust
sudo -u postgres pg_ctl -D /opt/postgreSQL_DB/ reload
```

```
sudo -u postgres /usr/pgsql-13/bin/pg_upgrade \
        -b /usr/bin/ \
        -B /usr/pgsql-13/bin/ \
        -d /opt/postgreSQL_DB/ \
        -D /var/lib/pgsql/13/data/ \
        --check
Performing Consistency Checks on Old Live Server
------------------------------------------------
Checking cluster versions                              ok
Checking database user is the install user             ok
Checking database connection settings                  ok
Checking for prepared transactions                     ok
Checking for reg* data types in user tables            okChecking for contrib/isn with
bigint-passing mismatch         ok
Checking for tables WITH OIDS                          fatal
Your installation contains tables declared WITH OIDS, which is not
supported anymore.  Consider removing the oid column using
    ALTER TABLE ... SET WITHOUT OIDS;
A list of tables with the problem is in the file:
    tables_with_oids.txt
Failure, exiting
```

Chyba: Při spouštění zkušebního upgradu nalezeny tabulky s OID

sudo cat tables_with_oids.txt

In database: pst
  public.person
In database: pstvit
  public.person

Definice problematické tabulky person:

```
-- Table: public.person


-- DROP TABLE public.person;
CREATE TABLE public.person
(
    id_person integer NOT NULL DEFAULT nextval(('seq_person'::text)::regclass),
    username character varying(64) COLLATE pg_catalog."default",
    userfullname character varying(128) COLLATE pg_catalog."default",
    email character varying(64) COLLATE pg_catalog."default",
    mobil character varying(20) COLLATE pg_catalog."default",
```

```
    id_usersys integer,
    usergroups integer[],
    useraftername character varying(32) COLLATE pg_catalog."default",
    userbeforename character varying(32) COLLATE pg_catalog."default",
    homepage character varying COLLATE pg_catalog."default",
    id_personleaders integer[],
    lastvisit timestamp without time zone,
    userpasswd character(35) COLLATE pg_catalog."default",
    CONSTRAINT person_pkey PRIMARY KEY (id_person)
)
WITH (
    OIDS = FALSE
)
TABLESPACE pg_default;


ALTER TABLE public.person
    OWNER to rimnacm;


GRANT ALL ON TABLE public.person TO rimnacm;


GRANT SELECT ON TABLE public.person TO _measurement_prad
```

Oprava:

```
sudo -u postgres psql pst
psql (9.2.24)
pst=# ALTER TABLE public.person SET WITHOUT OIDS;
pst=# \q

lukas.pelc@pg-prod2.nti.tul.cz /opt/shared $ sudo -u postgres /usr/pgsql-13/bin/pg_upgrade
-b /usr/bin/ -B /usr/pgsql-13/bin/ -d /opt/postgreSQL_DB/ -D /opt/pg
sql/13/data/ --check
Performing Consistency Checks on Old Live Server
-------------------------------------------------
Checking cluster versions                                ok
Checking database user is the install user               ok
Checking database connection settings                    ok
Checking for prepared transactions                       ok
Checking for reg* data types in user tables              ok
Checking for contrib/isn with bigint-passing mismatch    ok
Checking for tables WITH OIDS                            ok
Checking for invalid "sql_identifier" user columns       ok
Checking for invalid "unknown" user columns              ok
Checking for hash indexes                                ok
Checking for roles starting with "pg_"                   ok
Checking for incompatible "line" data type               ok
Checking for presence of required libraries              ok
Checking database user is the install user               ok
```

```
Checking for prepared transactions                          ok
Checking for new cluster tablespace directories             ok



*Clusters are compatibl
```

> Uff!

> Chyba: Při spuštění bez --check dvaktát došlo místo a bylo nutné smazat init a požádosti na diskový prostor provést znovu.

```
sudo rm -rf /opt/pgsql/
sudo -u postgres /usr/pgsql-13/bin/initdb --locale=en_US.UTF-8 -D /opt/pgsql/13/data
sudo -u postgres /usr/pgsql-13/bin/pg_upgrade -b /usr/bin/ -B /usr/pgsql-13/bin/ -d
/opt/postgreSQL_DB/ -D /opt/pgsql/13/data/
```

Nyní je potřeba změnit konfigurační soubory

```
sudo -u postgres vim /opt/pgsql/13/data/pg_hba.conf
```

1. Zakomentovat lokální spojení

2. Přidat hosty podle původního vzoru pg_hba.conf


```
lukas.pelc@pg-prod2.nti.tul.cz /opt/shared $ sudo -u postgres pg_ctl -D /opt/pgsql/13/data/
start
server starting
lukas.pelc@pg-prod2.nti.tul.cz /opt/shared $ LOG:  unrecognized configuration parameter
"dynamic_shared_memory_type" in file "/opt/pgsql/13/data/postgresql.conf" line 142
LOG:  unrecognized configuration parameter "max_wal_size" in file
"/opt/pgsql/13/data/postgresql.conf" line 228
LOG:  unrecognized configuration parameter "min_wal_size" in file
"/opt/pgsql/13/data/postgresql.conf" line 229
FATAL:  configuration file "/opt/pgsql/13/data/postgresql.conf" contains errors
```

> Ještě postgresql.conf

```
sudo -u postgres vim /opt/pgsql/13/data/postgresql.conf
```

> Zde by si postgres možná zasloužil lepší nastavení. Nevím jaké jsou parametry serveru.

```
# https://pgtune.leopard.in.ua/#/
# DB Version: 13
# OS Type: linux
# DB Type: web
# Total Memory (RAM): 2 GB
# CPUs num: 2
# Data Storage: hdd
```

```
max_connections = 200
shared_buffers = 512MB
effective_cache_size = 1536MB
maintenance_work_mem = 128MB
checkpoint_completion_target = 0.9
wal_buffers = 16MB
default_statistics_target = 100
random_page_cost = 4
effective_io_concurrency = 2
work_mem = 2621kB
min_wal_size = 1GB
max_wal_size = 4GB
max_worker_processes = 2
max_parallel_workers_per_gather = 1
max_parallel_workers = 2
max_parallel_maintenance_workers = 1
```