

Databases

MongoDB, PostgreSQL, MariaDB, MySQL...

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PostgreSQL - Operation

Upgrade PostgreSQL on Ubuntu

In this example we're upgrade psql from version 10 to version 11.

Install the new version

```
root@srv01:~# apt install postgresql-11
```

List psql clusters

```
root@srv01:~# pg_lsclusters
Ver Cluster Port Status Owner    Data directory          Log file
10  main     5432 down   postgres /var/lib/postgresql/10/main /var/log/postgresql/postgresql-10-main.log
11  main     5433 online postgres /var/lib/postgresql/11/main /var/log/postgresql/postgresql-11-main.log
```

Backup psql

```
root@srv01:~# su - postgres
postgres@srv01:~$ pg_dumpall > psql_dump.sql
```

Stop the old cluster

```
root@srv01:~# pg_ctlcluster 10 main stop
```

Drop the new created cluster

```
root@srv01:~# pg_dropcluster --stop 11 main
```

Upgrade the old Cluster

```
root@srv01:~# pg_upgradecluster -m upgrade 10 main
Disabling connections to the old cluster during upgrade...
Restarting old cluster with restricted connections...
Stopping old cluster...
Creating new PostgreSQL cluster 11/main ...
/usr/lib/postgresql/11/bin/initdb -D /var/lib/postgresql/11/main --auth-local peer --auth-host
md5 --encoding UTF8 --lc-collate en_US.UTF-8 --lc-ctype en_US.UTF-8
The files belonging to this database system will be owned by user "postgres".
This user must also own the server process.
```

The database cluster will be initialized with locale "en_US.UTF-8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

```
fixing permissions on existing directory /var/lib/postgresql/11/main ... ok
creating subdirectories ... ok
selecting default max_connections ... 100
selecting default shared_buffers ... 128MB
selecting dynamic shared memory implementation ... posix
creating configuration files ... ok
running bootstrap script ... ok
performing post-bootstrap initialization ... ok
syncing data to disk ... ok
```

Success. You can now start the database server using:

```
/usr/lib/postgresql/11/bin/pg_ctl -D /var/lib/postgresql/11/main -l logfile start
```

Ver	Cluster	Port	Status	Owner	Data directory	Log file
11	main	5433	down	postgres	/var/lib/postgresql/11/main	/var/log/postgresql/postgresql-11-main.log

```
/usr/lib/postgresql/11/bin/pg_upgrade -b /usr/lib/postgresql/10/bin -
B /usr/lib/postgresql/11/bin -p 5432 -P 5433 -d /etc/postgresql/10/main -
D /etc/postgresql/11/main
```

Finding the real data directory for the source cluster ok

Finding the real data directory for the target cluster	ok
Performing Consistency Checks	

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
Creating dump of global objects	ok
Creating dump of database schemas	
	ok
Checking for presence of required libraries	ok
Checking database user is the install user	ok
Checking for prepared transactions	ok
If pg_upgrade fails after this point, you must re-initdb the new cluster before continuing.	
Performing Upgrade	

Analyzing all rows in the new cluster	ok
Freezing all rows in the new cluster	ok
Deleting files from new pg_xact	ok
Copying old pg_xact to new server	ok
Setting next transaction ID and epoch for new cluster	ok
Deleting files from new pg_multixact/offsets	ok
Copying old pg_multixact/offsets to new server	ok
Deleting files from new pg_multixact/members	ok
Copying old pg_multixact/members to new server	ok
Setting next multixact ID and offset for new cluster	ok
Resetting WAL archives	ok
Setting frozenxid and minmxid counters in new cluster	ok
Restoring global objects in the new cluster	ok
Restoring database schemas in the new cluster	
	ok
Copying user relation files	
	ok
Setting next OID for new cluster	ok
Sync data directory to disk	ok

```
Creating script to analyze new cluster          ok
Creating script to delete old cluster           ok
```

Upgrade Complete

Optimizer statistics are not transferred by pg_upgrade so,
once you start the new server, consider running:

```
./analyze_new_cluster.sh
```

Running this script will delete the old cluster's data files:

```
./delete_old_cluster.sh
```

pg_upgrade output scripts are in /var/log/postgresql/pg_upgradecluster-10-11-main.5n35

Re-enabling connections to the old cluster...

Copying old configuration files...

Copying old start.conf...

Copying old pg_ctl.conf...

Disabling automatic startup of old cluster...

Configuring old cluster to use a different port (5433)...

Success. Please check that the upgraded cluster works. If it does,
you can remove the old cluster with

```
pg_dropcluster 10 main
```

Ver	Cluster	Port	Status	Owner	Data directory	Log file
10	main	5433	down	postgres	/var/lib/postgresql/10/main	/var/log/postgresql/postgresql-10-main.log

Ver	Cluster	Port	Status	Owner	Data directory	Log file
11	main	5432	down	postgres	/var/lib/postgresql/11/main	/var/log/postgresql/postgresql-11-main.log

Start new cluster

```
root@srv01:~# pg_ctlcluster 11 main start
```

Post Checks

Check is the new cluster is working properly, when ready delete the old cluster

```
root@srv01:~# apt-get autoremove --purge postgresql-10
Reading package lists... Done
Building dependency tree
```

Reading state information... Done

The following packages will be REMOVED:

postgresql-10*

0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.

After this operation, 23.5 MB disk space will be freed.

Do you want to continue? [Y/n]

(Reading database ... 39243 files and directories currently installed.)

Removing postgresql-10 (10.6-1.pgdg16.04+1) ...

Purging configuration files for postgresql-10 (10.6-1.pgdg16.04+1) ...

Dropping cluster main...

Processing triggers for postgresql-common (197.pgdg16.04+1) ...

Building PostgreSQL dictionaries from installed myspell/hunspell packages...

Removing obsolete dictionary files: