Common command

Perintah di command line yang sering digunakan untuk pengelolaan server

01 - Set ip address di linux

Seting network di linux ubuntu

Terdapat beragam command yang digunakan untuk melakukan pengaturan ip-address di linux, bergantung pada versi ubuntu yang kita miliki. Biasanya menggunkan perintah `netplan apply` atau bisa menggunakan `ifup`. Nah disini kita coba menggunakan perintah `ip link set` cara menggunakannha adalah sebagai berikut:

```
sudo ip link set ens18 up
```

untuk konfigurasi ip harus menggunakan role sudo, artinya harus sebagai superadmin, sedangkan perintah diatas digunakan untuk mengatur port `ens18` agar berstatus `up` atau menyala. Perintah dibawah ini digunakan untuk meng-assign alamat ip addres ke port `ens19`.

```
sudo ip addr add <your_ip_address>/<your_subnet_mask> dev ens19
```

02 - Backup mysql

Backup MySql database

Proses *backup* mysql database melalui *command line* di OS Ubuntu paling mudah dengan menggunakan `mysqldump`, cara penggunaannya sebagai berikut:

```
mysqldump -u [username] -p [nama_database] > [nama_file_backup.sql]
```

`-u`	diikuti dengan username mysql
`-p`	password mysql
	nama database
`>`	diikuti dengan nama backup `*.sql`

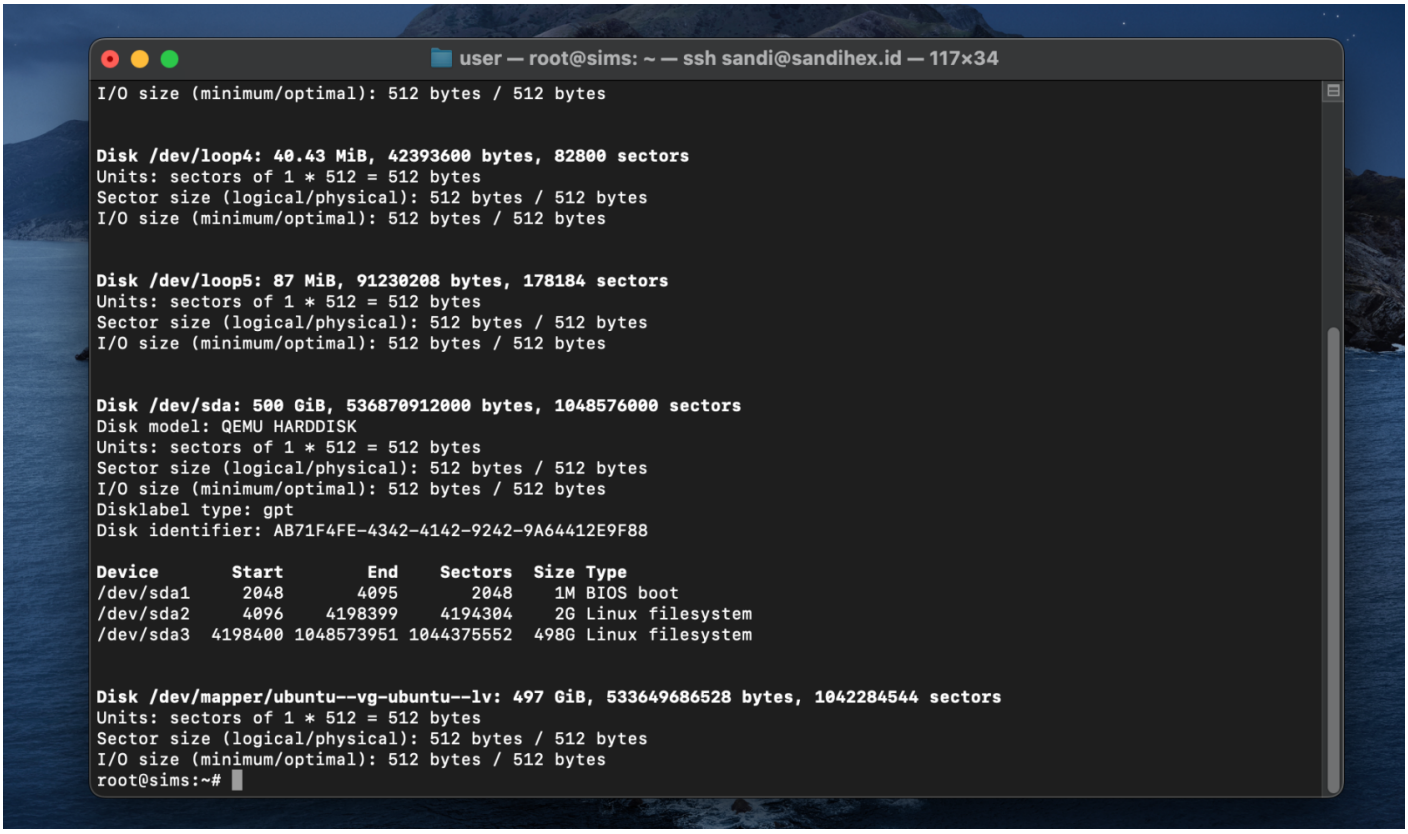
03 - Disk management di Ubuntu

Proses *management storage* di server ubuntu sering menjadi kesulitan tersendiri bagi programer, mengingat pada saat instalasi Ubuntu biasanya hanya mengalokasikan space sebesar 200GB di partisi root nya, sehingga seiring bertambahanya file didalam storage, diperlukan managment disk untuk menambah dari partisi yang belum teralokasikan. Nah, di ubuntu terdapat command `fdisk` untuk menghandle kebutuhan tersebut.

> `fdisk` adalah command tool yang sangat berguna untuk mengatur partisi di dalam linux. command ini dieksekusi dengan role sudo, karena merubah konfigurasi dari hardware.

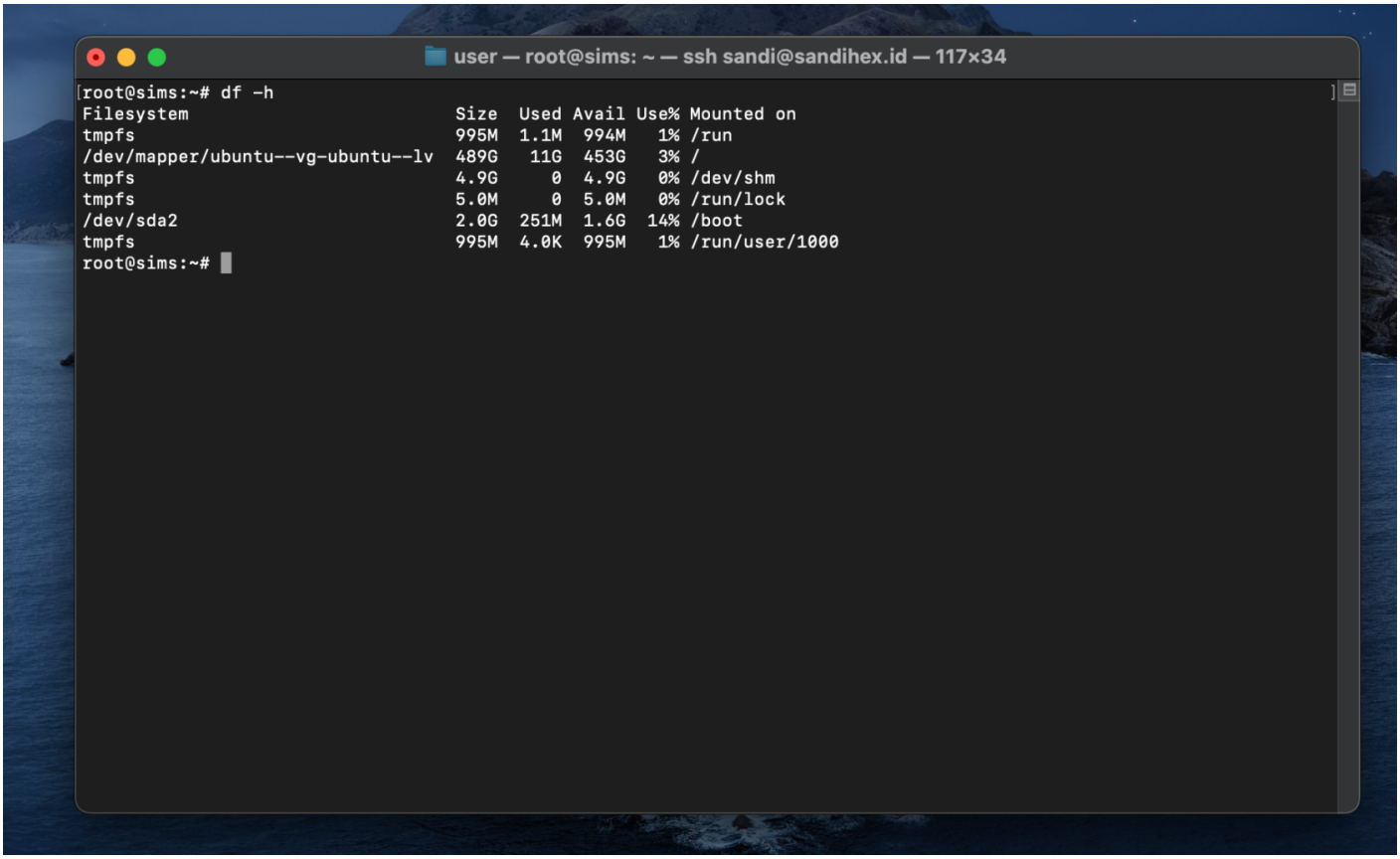
Melakukan list seluruh partisi yang ada di ubuntu menggunakan perintah:

```
sudo fdisk -l
```

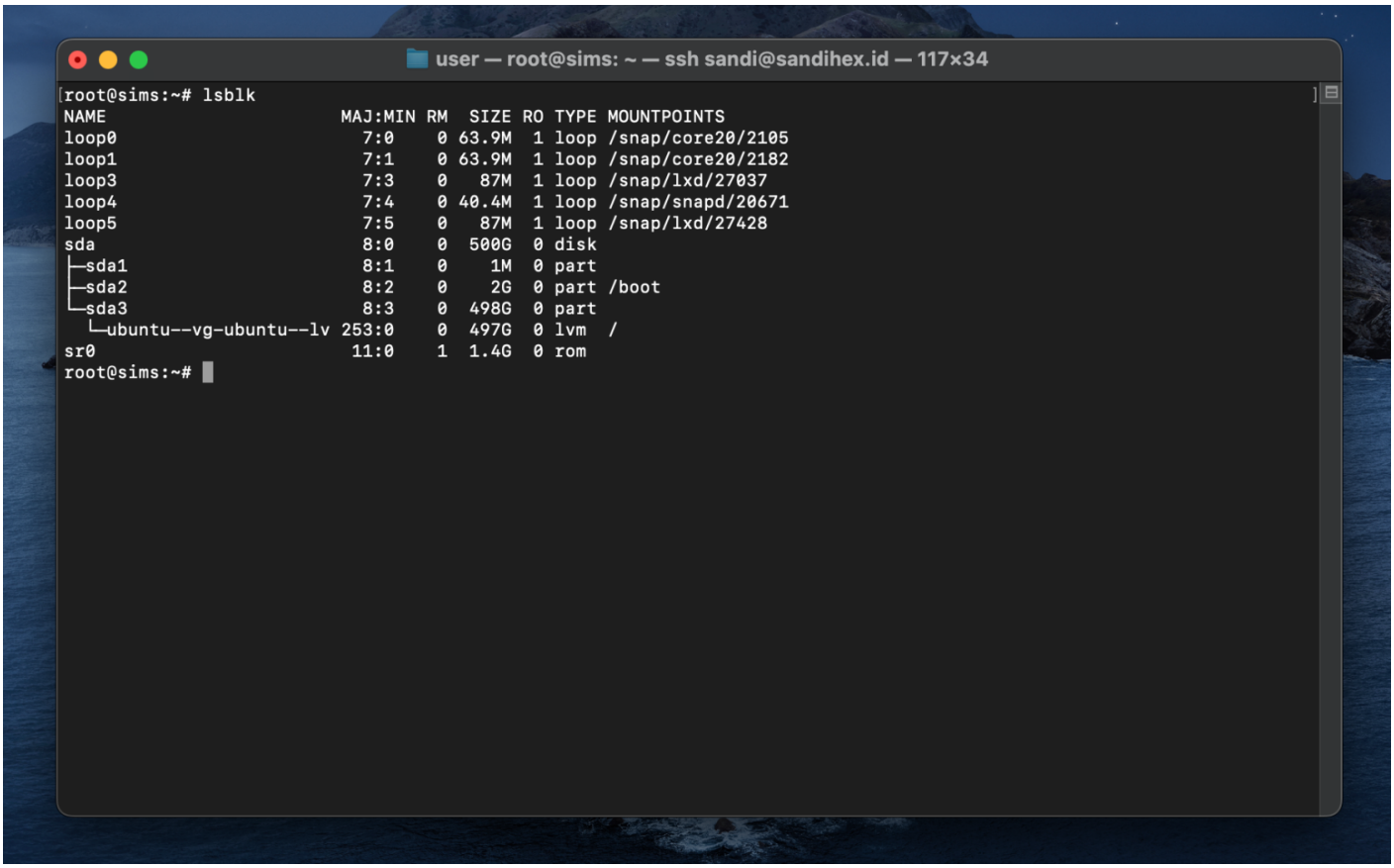


hasilnya adalah list sektor dari disk yang kita miliki, diatas terdata tiga device yang dimount yaitu `/dev/sda1` , `/dev/sda2` dan `/dev/sda3`. Terdapat juga informasi block memory, start block, end block, ukuran partisi dan tipe dari partisi data. Terdapat juga command lain untuk melihat partisi dari file kita yaitu `df -h`.

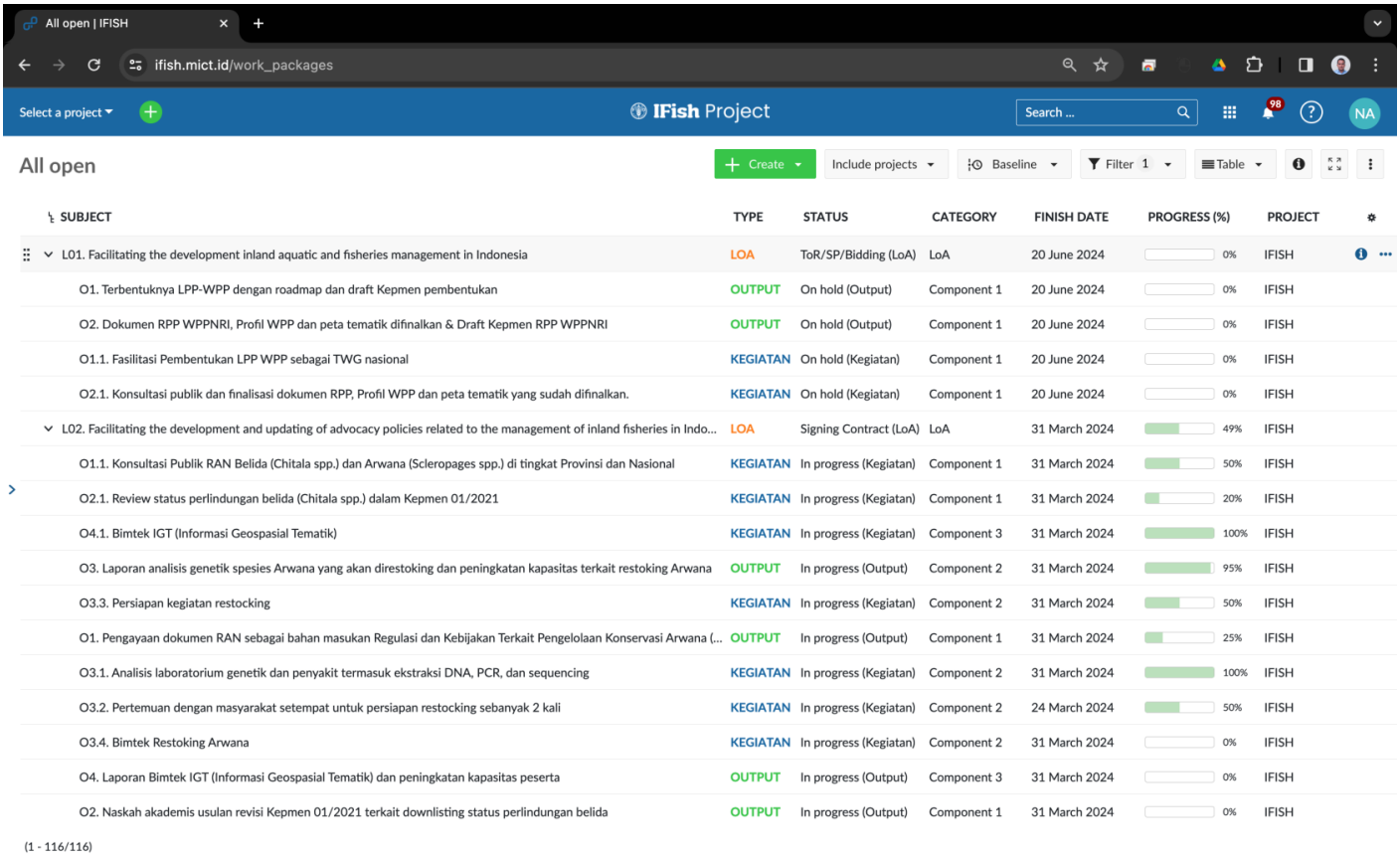
```
sudo df -h
```



selain bebera perintah diatas, terdapat juga perintah untuk memberikan informasi list of block dari memory kita di ubuntu yaitu `lsblk`. seperti contoh berikut:


user — root@sims: ~ — ssh sandi@sandihex.id — 117×34
root@sims:~# lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
loop0 7:0 0 63.9M 1 loop /snap/core20/2105
loop1 7:1 0 63.9M 1 loop /snap/core20/2182
loop3 7:3 0 87M 1 loop /snap/lxd/27037
loop4 7:4 0 40.4M 1 loop /snap/snapd/20671
loop5 7:5 0 87M 1 loop /snap/lxd/27428
sda 8:0 0 500G 0 disk
├─sda1 8:1 0 1M 0 part
├─sda2 8:2 0 2G 0 part /boot
└─sda3 8:3 0 498G 0 part
└─ubuntu--vg-ubuntu--lv 253:0 0 497G 0 lvm /
sr0 11:0 1 1.4G 0 rom
root@sims:~#

04 - Belajar ganti logo openproject



Berawal dari keinginan mengubah logo **OpenProject** menjadi logo *custom* **(IFish-project)**, yang terjadi malah server blank selama 6 jam. Ingat Sandi, sebelum lakukan major changing lakukan snapshot untuk memudahkan rollback ketika ada error. Pusing juga ya 6 jam bergelut dengan aplikasi OpenProject yang tidak bisa diakses, sementara sedang akan digunakan besok. Hampir mual dan gak doyan makan.

Lalu apa sebenarnya masalahnya, ternyata karena perbedaan dependencies antara Node.js dan NPM, jadi setelah diganti logonya, harus di precompile, sementara NPM sudah auto update jadi tidak kompatibel lagi dengan Node.js. Pas precompile error, sementara output dari precompile ini adalah themes yang akan ditampilkan sebagai frontend. Akibatnya halaman menjadi putih bersih, tapi begitu di inspect dengan CTRL+Shift+i terindikasi semuanya missing. Ok, apa yang saya lakukan:

Langkah pertama | Downgrade versi NPM dan NODE.JS dengan perintah berikut, (Jodoh Node.JS versi 10.19.0 adalah NPM 6.14.14)

```
curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.39.1/install.sh | bash
```

Langkah kedua | Install nvm, nvm adalah node *version manager*, *tools* mudah untuk mengelolan versi node.js yang akan digunakan.

```
nvm install 10.19.0
```

Atur nvm untuk menggunanakan node.js versi 10. dengan perintah sebagai berikut:

```
nvm use 10.19.0
```

Kemudian, insatll versi NPM sesuai dengan jodohnya yaitu versi 6.14.14

```
npm  install -g npm@6.14.14
```

Oke proses ***downgrade*** telah selesai, lanjut pekerjaan utama yang tertunda selama enam jam yaitu *compile* frontend openproject.

1. Laksanakan prosedur kompiler dengan perintah: `openproject run rake assets:precompile`.
2. Laksanakan prosesur stop service, `systemctl stop openproject`.
3. Laksanakan proses configure, Ingat configure bukan re-configure. `openproject configure`.
4. Jalankan service, `systemctl start openproject`.

> “
> ## Apa itu Node.Js dan NPM?
>
> **Node.js:** adalah platform runtime JavaScript yang dibangun di atas mesin JavaScript V8 dari Google Chrome. Node.js memungkinkan eksekusi kode JavaScript di luar browser, sehingga dapat digunakan untuk mengembangkan aplikasi server-side dan scripting di lingkungan server. Node.js menyediakan lingkungan yang efisien dan non-blocking, yang membuatnya cocok untuk menghadapi tugas berbasis I/O dan menjalankan server web, API, dan aplikasi lainnya.
>
> **npm (Node Package Manager):** adalah manajer paket untuk Node.js. Ini adalah repositori publik yang memungkinkan pengembang JavaScript untuk berbagi dan mengelola paket kode JavaScript yang dapat digunakan dalam proyek mereka. Dengan npm, Anda dapat dengan mudah menginstal, mengelola, dan memperbarui dependensi atau paket yang diperlukan dalam proyek Node.js Anda. npm juga menyediakan alat untuk menjalankan skrip, mengelola proyek, dan memfasilitasi kolaborasi dalam pengembangan

perangkat lunak.

Secara singkat, Node.js memberikan runtime JavaScript di sisi server, sementara npm adalah alat manajemen paket yang memungkinkan pengelolaan dependensi dan distribusi kode di ekosistem Node.js. Keduanya bekerja bersama untuk mendukung pengembangan aplikasi JavaScript yang efisien dan dapat diandalkan di berbagai platform.

05 - Kopi sertifikatt SSH agar tidak perlu login

```
ssh-copy-id -i ~/.ssh/id_rsa.pub ifish@ifish.mict.id
```

06 - PosgreSQL

PostgreSQL, or Postgres, is an object-relational database management system that uses the SQL language. It's free, open-source, reliable, robust, and performant. PostgreSQL is also one of the most popular & used relational databases.

`psql` is an interface you can access through the terminal to interact with Postgres databases. You can use it to connect to a database, add & read & modify data, check the available databases & fields, run commands from a file, and so on.

If you want to learn about Postgres commands or refresh your memory, you are in the right place! This article will teach you the top `psql` commands and flags you need to know when working with PostgreSQL.

1. Connect to a database - `psql -d`

The first step involves learning how to connect to a database. There are two ways to connect to a PostgreSQL database, depending on where the database resides.

Same host database

If the database is on the same host as your machine, you can use the following command:

```
psql -d <db-name> -U <username> -W


// example
psql -d tutorials_db -U admin -W
```

The above command includes three flags:

- `-d` - specifies the name of the database to connect to
- `-U` - specifies the name of the user to connect as
- `-W` - forces psql to ask for the user password before connecting to the database

In this example, the command connects you to the `tutorials_db` under the `admin` user.

Different host database

In the cases where your database is hosted somewhere else, you can connect as follows:

```
psql -h <db-address> -d <db-name> -U <username> -W


//example
psql -h my-psql-db.cloud.neon.tech -d tutorials_db -U admin -W
```

The `-h` flag specifies the host address of the database.

SSL mode

There might be cases where you want to use SSL for the connection.

```
psql "sslmode=require host=<db-address> dbname=<db-name> user=<username>"


//example
psql "sslmode=require host=my-psql-db.cloud.neon.tech dbname=tutorials_db user=admin"
```

The above command opens an SSL connection to the specified database.

2. List all databases - `\l`

In many cases, you will work with more than one database. You can list all the available databases with the following command:

```
\l
```

List all Postgres databases with the psql command \l

The above image illustrates what happens when you run the command. You get a table with all databases and their name, owner, access privileges, and other information.

3. Switch to another database - `\c`

You can also switch to another database with the following command:

```
\c <db-name>
```

```
// example
\c tutorials_db
```

The below image illustrates the result after running the command.

Switch to another Postgres database with the psql command \c

The command switches to the specified database under the user you logged in previously.

4. List database tables - \dt

Let's consider you want to see all the tables from the database. You can list all database tables as follows:

```
\dt
```

List all tables from a database with the psql command \dt

The `\dt` psql command returns the tables alongside:

- the schema they belong to
- their type
- their owner

5. Describe a table - \d

psql also has a command that lets you see the table's structure.

```
\d <table-name>


// example
\d tutorials
```

Describe a table with the psql command \d

The `\d` command returns all the columns, their types, collection, whether they are nullable or not, and their configured default value.

If you want more information about a table, you can use the command:

```
\d+ <table-name>
```

Get extra information about a table with the psql command \d+

Image not found or type unknown

Now, you get extra information such as storage, compression, stats target, and a description.

6. List all schemas - \dn

The `\dn` psql command lists all the database schemas.

List all schemas with the psql \dn command

Image not found or type unknown

It returns the name of the schemas and their owners.

7. List users and their roles - \du

Sometimes, you might need to change the user. Postgres has a command that lists all the users and their roles.

```
\du
```

List all users and their roles with the psql command \du

Image not found or type unknown

As the image shows, the command returns all the users.

8. Retrieve a specific user - \du

You can also retrieve information about a specific user with the following command:

```
\du <username>


//example
/du postgres
```

Retrieve information about a specific user with psql command \du

Image not found or type unknown

Now, you can see the roles of the specified user, and whether the user is a member of a group or not.

9. List all functions - `\df`

You can list all the functions from your database with the `\df` command.

List all available functions with the psql command \df

The command returns all functions and the:

- schema they belong to
- names
- result data type
- argument data types
- type

10. List all views - `\dv`

The `psql` interface enables you to list all the database views with the `\dv` command.

11. Save query results to a file - `\o`

There might be cases where you want to analyze the result of a query at a later time. Or two compare two query results. The `psql` interface allows you to do that.

You can save query results in a file as follows:

```
\o <file-name>


// example
\o query_results
...run the psql commands...
\o - stop the process and output the results to the terminal again
```

Let's save the following query results in a file:

- the available database tables
- the result of describing a database table
- the list of all users
- the details of the user "postgres"

Save query results to a file

Note: To stop saving results to the file, you need to run the `\o` command again without the file name.

Query results in a file

Image not found or type unknown

The above image illustrates the file containing all the query results.

12. Run commands from a file - `\i`

It's also possible to run commands from a file. For simple commands, it might not be the best solution. But when you want to run multiple commands and complex SQL statements, it helps a lot.

Create a `txt` file with the following content:

```
\l
\dt
\du
```

When you run the file, it should return a list of all:

- databases
- database tables
- users

You can run commands from a file with the following `psql` command:

```
\i <file-name>


// example
\i psql_commands.txt
```

Run psql commands from a file

Image not found or type unknown

The command returned all the databases, tables, and users as expected.

Quit psql - `\q`

You quit the `psql` interface with the `\q` command.

Get APIs instantly for PostgreSQL

All the above commands with psql are great to connect to PostgreSQL on the commandline for direct access and execution of operations. But in case you are looking to build APIs for data access on Postgres, you should check out Hasura. Hasura connects to your existing or new PostgreSQL database, introspects the schema(s) and lets you generate CRUD APIs in GraphQL and REST declaratively in minutes. Read more here to get started with Hasura and PostgreSQL.

Note: Any flavor of Postgres which is wire compatible will work with Hasura.

Summary

The `psql` interface is powerful and allows you to do many things, including running SQL statements. If you want to get started with PostgreSQL or deepen your knowledge, check out our PostgreSQL Tutorial. You can also check out the Postgre articles on our blog.

> If you are looking for options to host your Postgres database, check these PostgreSQL hosting options.

07 - Backup openproject

Backing up your OpenProject installation

We advise to backup your OpenProject installation regularly — especially before upgrading to a newer version.

What should be backed up

In general the following parts of your OpenProject installation should be backed up:

- Data stored in the database
- Configuration files
- Uploaded files (attachments)
- Repositories (subversion, git) if applicable

Package-based installation (DEB/RPM)

The DEB/RPM packages provide a backup tool which can be used to take a snapshot of the current OpenProject installation. This tool will create a backup of all parts mentioned above. The backup tool is invoked by executing the following command:

```
sudo openproject run backup
```

The command will create backup files in the following location on your system:

```
/var/db/openproject/backup
```

The content of that directory should look very similar to the following.

```
root@ip-10-0-0-228:/home/admin# ls -al /var/db/openproject/backup/
total 1680
drwxr-xr-x 2 openproject openproject    4096 Nov 19 21:00 .
drwxr-xr-x 6 openproject openproject    4096 Nov 19 21:00 ..
-rw-r----- 1 openproject openproject 1361994 Nov 19 21:00 attachments-20191119210038.tar.gz
-rw-r----- 1 openproject openproject    1060 Nov 19 21:00 conf-20191119210038.tar.gz
```

```
-rw-r----- 1 openproject openproject     126 Nov 19 21:00 git-repositories-20191119210038.tar.gz
-rw-r----- 1 openproject openproject  332170 Nov 19 21:00 postgresql-dump-20191119210038.pgdump
-rw-r----- 1 openproject openproject     112 Nov 19 21:00 svn-repositories-20191119210038.tar.gz
```

You should then copy those dump files to a secure location, for instance an S3 bucket or some sort of backup server.

Docker-based installation

If you are using docker-compose, then the data volumes are managed by Docker and you should have a look at the official Docker documentation for instructions on how to backup.

If you are using the all-in-one container, then you can simply backup any local volumes that you chose to bind-mount with the `-v` option when launching the container. For instance if you launched the container with:

```
sudo mkdir -p /var/lib/openproject/{pgdata,assets}


docker run -d -p 8080:80 --name openproject -e SECRET_KEY_BASE=secret \
  -v /var/lib/openproject/pgdata:/var/openproject/pgdata \
  -v /var/lib/openproject/assets:/var/openproject/assets \
  openproject/community:13
```

Then you would need to backup the `/var/lib/openproject` folder (for instance to S3 or FTP server).

Dumping the database

When using docker-compose you can simply dump the database from the database container.

```
docker exec -it db_1 pg_dump -U postgres -d openproject -x -O > openproject.sql
```

This assumes that the database container is called `db_1`. Find out the actual name on your host using `docker ps | postgres`.

All-in-one container

If you need a regular dump of the database you can get one using `pg_dump` like this:

```
docker exec -it $OP_CONTAINER_NAME su - postgres -c 'pg_dump -d openproject -x -O' > openproject.sql
```

Where `$OP_CONTAINER_NAME` is the name of your OpenProject container. If you don't know it you can find it using `docker ps | grep openproject`.

Importing the dump into a new container

Follow the instructions in the restoring section to import a dump into a new container.

08 - IPTABLES prerouting

Memasukan iptables dalam reverse-proxy:

```
sudo iptables -t nat -A PREROUTING -p tcp --dport 8001 -j DNAT --to-destination 10.1.1.4:21
```

Membaca list iptables dalam server linux:

```
iptables -t nat -L
```

Melakukan penghapusan pada pengaturan `iptables -t nat -D` lengkapnya:

```
sudo iptables -t nat -D PREROUTING -p tcp --dport 8001 -j DNAT --to-destination 192.168.1.100:21
```

09 - Install latest Anaconda

Download insatller dalam format `bash` melalui link berikut.

```
curl -O https://repo.anaconda.com/archive/Anaconda3-2024.02-1-Linux-x86_64.sh
```

Buat installer ini menjadi file excutable:

```
sudo chmod +x Anaconda3-2024.02-1-Linux-x86_64.sh
```

runing installer dengan perintah

```
./Anaconda3-2024.02-1-Linux-x86_64.sh
```

Make Jupyter Notebook acces remotely

```
jupyter notebook --generate-config
```

10. Resize LVM Linux

To mount `sdb` to an LVM (Logical Volume Manager) on Linux, you'll first need to prepare the disk and create the necessary partitions and volumes. Here's a step-by-step guide:

1. **Partition the disk (`sdb`)**: You can use a partitioning tool like `fdisk` or `parted` to create partitions on `sdb`. For example, you can create a single partition spanning the entire disk.
   bash
   Copy code
   `sudo fdisk /dev/sdb`
   Then follow the prompts to create a new partition (`n`), choose primary partition, select the default partition number, and use the entire disk (`+1T`).
2. **Create a Physical Volume (PV)**: After partitioning, you need to initialize the partition as a physical volume for LVM.
   bash
   Copy code
   `sudo pvcreate /dev/sdb1`
3. **Extend the Volume Group (VG)**: If you want to extend an existing volume group, you can use `vgextend`. If you want to create a new one, you can use `vgcreate`. For extending an existing VG, you might have to check its name.
   bash
   Copy code
   `sudo vgextend ubuntu-vg /dev/sdb1`
   Replace `ubuntu-vg` with the name of your volume group.
4. **Create a Logical Volume (LV)**: Once the volume group is extended, you can create a logical volume within it.
   perl
   Copy code
   `sudo lvcreate -l 100%FREE -n sdb-lv ubuntu-vg`
   This creates a logical volume named `sdb-lv` using all available space in the volume group `ubuntu-vg`.
5. **Format the Logical Volume**: You'll need to format the newly created logical volume with a file system. Replace `ext4` with your desired file system type.
   bash
   Copy code
   `sudo mkfs.ext4 /dev/ubuntu-vg/sdb-lv`
6. **Mount the Logical Volume**: Create a mount point and mount the logical volume.
   bash
   Copy code
   `sudo mkdir /mnt/sdb`
   `sudo mount /dev/ubuntu-vg/sdb-lv /mnt/sdb`

Now your `sdb` disk should be mounted to `/mnt/sdb` as an LVM.

Remember to replace volume group and logical volume names (`ubuntu-vg` and `sdb-lv` respectively) with your actual ones. Also, ensure you understand the implications of these operations on your system before proceeding.

Resize

```
lvextend -l +100%FREE /dev/ubuntu-vg/ubuntu-lv
```

Eksekusi perubahan

```
resize2fs /dev/mapper/ubuntu–vg-ubuntu–lv
```

11. Create Python Kernel in Jupyter Notebook

Python kernel jupyter notebook

```
python -m ipykernel install --user --name pytorch-env --display-name "Python (pytorch-env)"
```