

Setup Superset

1. Overviews

This document provides a step-by-step overview of setting up Apache using Podman and on an Ubuntu 22.04 system.

2. Task requirement

To run the superset with a podman.

Definition of Superset

Superset is a tool that helps people look at data and make graphs and charts easily. It can be used instead of expensive business tools and works with different types of data. You can use it to create charts without knowing how to code it's simple and quick.

3. Environment details

OS: Ubuntu 22.04 System configuration

CPU: Intel Core i5-8350U CPU @ 1.70GHz x 8 RAM: 8GB Storage: 512GB

4. List of tools and technologies

Podman version 3.4.2

Others

VIM

5. Definition of tools

Podman - It is an open-source tool for developing, managing, and running containers on your Linux systems.

Vim - It is a highly configurable text editor built to make creating and changing any kind of text very efficient.

6. Command for the setup or configuration

Step 1. Run the following command to install curl.

```
sudo apt install curl
```

sudo: Provides administrative privileges to the command.

apt: Refers to the APT package manager used for managing software.

Install: Specifies the action to be taken, which is to install a package.

curl: The name of the package to be installed, a command-line tool for URL-related data transfer. (curl :- is a command-line tool that allows you to fetch data from the internet. It's like a web browser for your terminal. You can download files, make web requests, and interact with web services directly from the command line.)

Output

```
aman@aman:~$ sudo apt install curl
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libcurl4
The following NEW packages will be installed:
  curl
The following packages will be upgraded:
  libcurl4
1 upgraded, 1 newly installed, 0 to remove and 235 not upgraded.
Need to get 396 kB of archives.
After this operation, 417 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 libcurl4 amd64 7.68.0-1ubuntu2.20 [235 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 curl amd64 7.68.0-1ubuntu2.20 [161 kB]
Fetched 396 kB in 5s (86.0 kB/s)
(Reading database ... 179151 files and directories currently installed.)
Preparing to unpack .../libcurl4_7.68.0-1ubuntu2.20_amd64.deb ...
Unpacking libcurl4:amd64 (7.68.0-1ubuntu2.20) over (7.68.0-1ubuntu2.16) ...
Selecting previously unselected package curl.
Preparing to unpack .../curl_7.68.0-1ubuntu2.20_amd64.deb ...
Unpacking curl (7.68.0-1ubuntu2.20) ...
Setting up libcurl4:amd64 (7.68.0-1ubuntu2.20) ...
Setting up curl (7.68.0-1ubuntu2.20) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
```

Step 2. Updating Packages and Repositories.

```
sudo apt update
```

sudo: This stands for "Superuser Do" and is used to execute commands with superuser (administrator) privileges. It allows you to perform actions that require elevated permissions.

apt: This stands for "Advanced Package Tool." It's a command-line tool used to manage software packages on Debian-based systems. You can use it to install, update, remove, and manage software packages.

update: This is a subcommand of apt that instructs the package manager to update the package information. The package information is a database of available software packages, their versions, and where to download them from.

(Running "sudo apt update" ensures that your system is aware of the latest software packages and updates available in the repositories.

Output

```
aman@aman:~$ sudo apt upgrade
[sudo] password for aman:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
  libpostproc55 libavcodec58 libavutil56 libswscale5 libswresample3
  libavformat58 libavfilter7
Learn more about Ubuntu Pro at https://ubuntu.com/pro
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
aman@aman:~$
```

Step 3. Run the Upgrade command.

```
sudo apt upgrade
```

sudo: This stands for "Superuser Do" and is used to execute commands with superuser (administrator) privileges. It allows you to perform actions that require elevated permissions.

apt: This stands for "Advanced Package Tool." It's a command-line tool used to manage software packages on Debian-based systems. You can use it to install, update, remove, and manage software packages.

Update: This is the specific task you're asking the computer to do. You want it to go online, check for any new updates or changes to the software it has, and bring that information back to your computer.

Output

```
aman@aman:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  gir1.2-goa-1.0
Use 'sudo apt autoremove' to remove it.
The following packages will be upgraded:
```

Step 4. Run the following command to install Podman.

```
sudo apt install podman
```

sudo: Provides administrative privileges to the command, allowing you to make changes to the system.

apt: Refers to the APT package manager used for managing software.

install: is the action you want to perform, which means you want to add the specified software to your system.

Podman : is the name of the software you want to install. Podman is a tool used for managing containers, similar to Docker.

Output

```
aman@aman:~$ sudo apt install podman
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  catatonit common containernetworking-plugins containers-common criu crun fuse-overlayfs fuse3
  libfuse3-3 libnet1 libnftables1 libprotobuf-c1 podman-machine-cni podman-plugins slirp4netns uidmap
The following packages will be REMOVED:
  fuse
The following NEW packages will be installed:
  catatonit common containernetworking-plugins containers-common criu crun fuse-overlayfs fuse3
  libfuse3-3 libnet1 libnftables1 libprotobuf-c1 podman podman-machine-cni podman-plugins slirp4netns
  uidmap
0 upgraded, 17 newly installed, 1 to remove and 0 not upgraded.
Need to get 31.1 MB of archives.
After this operation, 153 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 libfuse3-3 amd64 3.9.0-2 [74.0 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 fuse3 amd64 3.9.0-2 [24.7 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal/main amd64 libnet1 amd64 1.1.6+dfsg-3.1build1 [43.3 kB]
```

Step 5. Run the following command to check the Podman version.

```
podman version
```

Podman : is a tool that helps you manage containers, which are like virtual machines for running applications.

version : you're checking which edition of Podman you have. It's like checking if you have the latest or older version with improvements or fixes.

Output

```
aman@aman:~$ podman version
Version:      3.4.2
API Version:  3.4.2
Go Version:   go1.15.2
Built:        Thu Jan  1 05:30:00 1970
OS/Arch:      linux/amd64
```

Step 6. Run the echo command

```
echo -e "[registries.search]\nregistries = ['docker.io']" | sudo tee
/etc/containers/registries.conf
```

Output

```
aman@aman:~$ echo -e "[registries.search]\nregistries = ['docker.io']" | sudo tee /etc/containers/registries.conf
[registries.search]
registries = ['docker.io']
aman@aman:~$
```

Step 7. Pull apache in superset.

```
podman pull apache/superset
```

Output

```
aman@aman:~$ podman pull apache/superset
Resolving "apache/superset" using unqualified-search registries (/etc/containers/registries.conf)
Trying to pull docker.io/apache/superset:latest...
Getting image source signatures
Copying blob a378f10b3218 done
Copying blob 8529ad8df27f done
Copying blob c2cc0c2c5762 done
Copying blob b41d32331f87 done
Copying blob c11bdfacfd25 done
Copying blob 8ad08235b1d3 done
Copying blob cc3bcdb50319 done
Copying blob 45a99dbb690d done
Copying blob 46a576915575 done
Copying blob eb56f90ba117 done
Copying blob 6984b214a68a done
Copying blob 8afe6fb8ef94 done
Copying blob 92002a87e705 done
Copying blob 423b4c047235 done
Copying config 8a254ef5f4 done
Writing manifest to image destination
Storing signatures
8a254ef5f41b0905c229aef004f44471588754862f28a62441c7b287fdad1aca
aman@aman:~$
```

Step 8. Run the command to install vim.

```
sudo apt install vim
```

sudo: This part of the command is used to execute it with administrative or superuser privileges, allowing you to install software system-wide.

apt: Refers to the APT package manager, which is commonly used on Debian-based Linux distributions like Ubuntu to manage software packages.

Install: Specifies the action to be performed, which is to install a package.

Vim:- It is a highly configurable text editor built to make creating and changing any kind of text very efficient.

Output

```
aman@aman:~$ sudo apt install vim
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 2 not upgraded.
Need to get 8,568 kB of archives.
After this operation, 37.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 vim-runtime all 2:8.2.3995-1ubuntu2.13 [6,834 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 vim amd64 2:8.2.3995-1ubuntu2.13 [1,734 kB]
Fetched 8,568 kB in 4s (2,389 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 202050 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2%3a8.2.3995-1ubuntu2.13_all.deb ...
Adding 'diversion of /usr/share/vim/vim82/doc/help.txt to /usr/share/vim/vim82/doc/help.txt.vim-tiny by vim-runtime'
Adding 'diversion of /usr/share/vim/vim82/doc/tags to /usr/share/vim/vim82/doc/tags.vim-tiny by vim-runtime'
Unpacking vim-runtime (2:8.2.3995-1ubuntu2.13)
```

Step 9. Run command openssl.

```
openssl rand -base64 42
```

output

```
aman@aman:~$ openssl rand -base64 42
LpqMXertcV00JlcCTyprkGdzpqnKSP9vsIgH9ltSxwPRq0hHtkoLx+vX
aman@aman:~$
aman@aman:~$
```

Step 10. To paste key in vim editor.

```
vim superset_config.py
```

Output

The screenshot shows a terminal window with a dark purple background. At the top, the title bar indicates 'Activities', 'Terminal', and the date/time 'Nov 4 13:51'. The terminal prompt is 'aman@aman: ~'. A single line of code is visible: `SECRET_KEY = 'LpqMXertcV00JLcCTyprkGdzpqnKSP9vsLgH9ltSxwPRq0hHtkoLx+v'`. The bottom status bar shows the file name `"superset_config.py"` with a size of 11 lines and 728 bytes, and a search bar with the text 'All'.

Note:- in this file save the above generate key.

Step 11. To create podman container.

```
podman run -d -p 8080:8088 -e "SUPERSET_SECRET_KEY=your_secret_key_here" --
name superset apache/superset
```

Output

```
aman@aman:~$ podman run -d -p 8080:8088 -e "SUPERSET_SECRET_KEY=your_secret_key_here" --name superset apache/superset
5fcc209c38ec3b77eb6efc7b6900b5e2119449b13dc9d27ab961b00fe7e7c61
aman@aman:~$
aman@aman:~$
```

Step 12. To check podman container is running or not.

podman ps

Output

```
aman@aman:~$ podman ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
5efcc209c38e	docker.io/apache/superset:latest	/usr/bin/run-serv...	39 seconds ago	Up 39 seconds ago	0.0.0.0:8080->8080/tcp	superset

Step 13. Set up your local admin account.

```
podman exec -it superset superset fab create-admin \
```

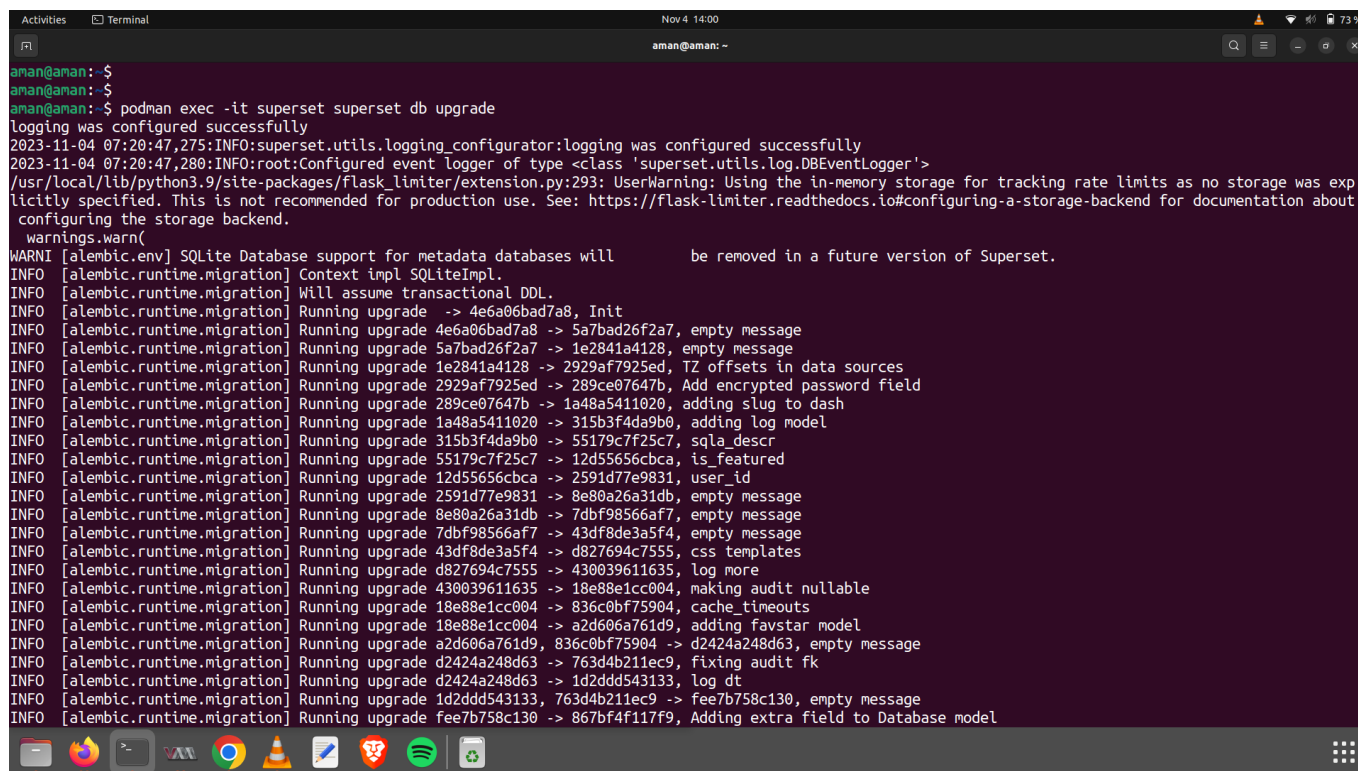
Output

```
aman@aman:~$ podman exec -it superset superset fab create-admin \
--username admin \
--firstname Superset \
--lastname Admin \
--email admin@superset.com \
--password admin
logging was configured successfully
2023-11-04 07:20:15,466:INFO:superset.utils.logging_configurator:logging was configured successfully
2023-11-04 07:20:15,472:INFO:root:Configured event logger of type <class 'superset.utils.log.DBEventLogger'>
/usr/local/lib/python3.9/site-packages/flask_limiter/extension.py:293: UserWarning: Using the in-memory storage for tracking rate limits as no storage was explicitly specified. This is not recommended for production use. See: https://flask-limiter.readthedocs.io#configuring-a-storage-backend for documentation about configuring the storage backend.
  warnings.warn(
Recognized Database Authentications.
Admin User admin created.
aman@aman:~$
aman@aman:~$
```

Step 14. Migrate local DB to the latest.

```
podman exec -it superset superset db upgrade
```

Output



```
aman@aman:~$
aman@aman:~$
aman@aman:~$ podman exec -it superset superset db upgrade
logging was configured successfully
2023-11-04 07:20:47,275:INFO:superset.utils.logging_configurator:logging was configured successfully
2023-11-04 07:20:47,280:INFO:root:Configured event logger of type <class 'superset.utils.log.DBEventLogger'>
/usr/local/lib/python3.9/site-packages/flask_limiter/extension.py:293: UserWarning: Using the in-memory storage for tracking rate limits as no storage was explicitly specified. This is not recommended for production use. See: https://flask-limiter.readthedocs.io#configuring-a-storage-backend for documentation about configuring the storage backend.
  warnings.warn(
WARNI [alembic.env] SQLite Database support for metadata databases will be removed in a future version of Superset.
INFO [alembic.runtime.migration] Context impl SQLiteImpl.
INFO [alembic.runtime.migration] Will assume transactional DDL.
INFO [alembic.runtime.migration] Running upgrade -> 4e6a06bad7a8, Init
INFO [alembic.runtime.migration] Running upgrade 4e6a06bad7a8 -> 5a7bad26f2a7, empty message
INFO [alembic.runtime.migration] Running upgrade 5a7bad26f2a7 -> 1e2841a4128, empty message
INFO [alembic.runtime.migration] Running upgrade 1e2841a4128 -> 2929af7925ed, TZ offsets in data sources
INFO [alembic.runtime.migration] Running upgrade 2929af7925ed -> 289ce07647b, Add encrypted password field
INFO [alembic.runtime.migration] Running upgrade 289ce07647b -> 1a48a5411020, adding slug to dash
INFO [alembic.runtime.migration] Running upgrade 1a48a5411020 -> 315b3f4da9b0, adding log model
INFO [alembic.runtime.migration] Running upgrade 315b3f4da9b0 -> 55179c7f25c7, sqla_descr
INFO [alembic.runtime.migration] Running upgrade 55179c7f25c7 -> 12d55656cbca, is_featured
INFO [alembic.runtime.migration] Running upgrade 12d55656cbca -> 2591d77e9831, user_id
INFO [alembic.runtime.migration] Running upgrade 2591d77e9831 -> 8e80a26a31db, empty message
INFO [alembic.runtime.migration] Running upgrade 8e80a26a31db -> 7dbf98566af7, empty message
INFO [alembic.runtime.migration] Running upgrade 7dbf98566af7 -> 43df8de3a5f4, empty message
INFO [alembic.runtime.migration] Running upgrade 43df8de3a5f4 -> d827694c7555, css templates
INFO [alembic.runtime.migration] Running upgrade d827694c7555 -> 430039611635, log more
INFO [alembic.runtime.migration] Running upgrade 430039611635 -> 18e88e1cc004, making audit nullable
INFO [alembic.runtime.migration] Running upgrade 18e88e1cc004 -> 836c0bf75904, cache_timeouts
INFO [alembic.runtime.migration] Running upgrade 18e88e1cc004 -> a2d606a761d9, adding favstar model
INFO [alembic.runtime.migration] Running upgrade a2d606a761d9, 836c0bf75904 -> d2424a248d63, empty message
INFO [alembic.runtime.migration] Running upgrade d2424a248d63 -> 763d4b211ec9, fixing audit fk
INFO [alembic.runtime.migration] Running upgrade d2424a248d63 -> 1d2ddd543133, log dt
INFO [alembic.runtime.migration] Running upgrade 1d2ddd543133, 763d4b211ec9 -> fee7b758c130, empty message
INFO [alembic.runtime.migration] Running upgrade fee7b758c130 -> 867bf4f117f9, Adding extra field to Database model
```

Step 15. Setup roles.

```
podman exec -it superset superset init
```

Output


```

aman@aman:~$ podman exec -it superset superset init
logging was configured successfully
2023-11-04 07:21:17,186:INFO:superset.utils.logging_configurator:logging was configured successfully
2023-11-04 07:21:17,191:INFO:root:Configured event logger of type <class 'superset.utils.log.DBEventLogger'>
/usr/local/lib/python3.9/site-packages/flask_limiter/extension.py:293: UserWarning: Using the in-memory storage for tracking rate limits as no storage was explicitly specified. This is not recommended for production use. See: https://flask-limiter.readthedocs.io#configuring-a-storage-backend for documentation about configuring the storage backend.
  warnings.warn(
Syncing role definition
2023-11-04 07:21:24,826:INFO:superset.security.manager:Syncing role definition
Syncing Admin perms
2023-11-04 07:21:25,001:INFO:superset.security.manager:Syncing Admin perms
Syncing Alpha perms
2023-11-04 07:21:25,015:INFO:superset.security.manager:Syncing Alpha perms
Syncing Gamma perms
2023-11-04 07:21:25,161:INFO:superset.security.manager:Syncing Gamma perms
Syncing sql_lab perms
2023-11-04 07:21:25,330:INFO:superset.security.manager:Syncing sql_lab perms
Fetching a set of all perms to lookup which ones are missing
2023-11-04 07:21:25,530:INFO:superset.security.manager:Fetching a set of all perms to lookup which ones are missing
Creating missing datasource permissions.
2023-11-04 07:21:25,538:INFO:superset.security.manager:Creating missing datasource permissions.
Creating missing database permissions.
2023-11-04 07:21:25,542:INFO:superset.security.manager:Creating missing database permissions.
Cleaning faulty perms
2023-11-04 07:21:25,549:INFO:superset.security.manager:Cleaning faulty perms

```

Step16. Load Examples.

```
podman exec -it superset superset load_examples
```

Output

```

aman@aman:~$ podman exec -it superset superset load_examples
logging was configured successfully
2023-11-04 07:21:39,054:INFO:superset.utils.logging_configurator:logging was configured successfully
2023-11-04 07:21:39,059:INFO:root:Configured event logger of type <class 'superset.utils.log.DBEventLogger'>
/usr/local/lib/python3.9/site-packages/flask_limiter/extension.py:293: UserWarning: Using the in-memory storage for tracking rate limits as no storage was explicitly specified. This is not recommended for production use. See: https://flask-limiter.readthedocs.io#configuring-a-storage-backend for documentation about configuring the storage backend.
  warnings.warn(
Creating database reference for examples
2023-11-04 07:21:40,240:INFO:superset.utils.database:Creating database reference for examples
Loading examples metadata and related data into examples
Creating default CSS templates
Loading [World Bank's Health Nutrition and Population Stats]

```

Step 17. Open the browser.

```
Log in and take a look -- navigate to http://localhost:8080/login/ -- u/p:
[admin/admin]
```

Output

