Introduction : This document provides the guide to setting up the DHIS2 core software. The machine on which the setup was performed successfully has following specifications :

OS :Ubuntu 20.04.6 LTS
CPU :Intel Pentium G3240 @ 3.10 GHZ
CPU Cores :2
Memory :7.6 GB
Drive :Hard Disk Drive
The following softwares were required to install on the machine during the server setup :
PostgreSQL : 14.9 (In other words PostgreSQL-14)
Java :OpenJDK 11.0.20.1 (In other words JDK-11)
Tomcat :9
PostGIS :3
*Note : Some help was seeked form the following official DHIS2 installation guide

https://docs.dhis2.org/en/manage/performing-system-administration/dhis-core-version-master/installation.html

Linux commands

Create a new user called dhis by invoking:

```
sudo useradd -d /home/dhis -m dhis -s /bin/false
```

Set User password

```
sudo passwd dhis
```

creating the configuration directory

```
sudo mkdir /home/dhis/config
sudo chown dhis:dhis /home/dhis/config
```

Setting server time zone and locale

```
sudo dpkg-reconfigure tzdata
```

PostgreSQL is sensitive to locales so you might have to install your locale first. To check existing locales and install new ones (e.g. Norwegian):

```
locale -a
sudo locale-gen nb_NO.UTF-8
```

PostgreSQL installation

Install PostgreSQL by invoking:

```
sudo apt-get install -y postgresql-14 postgresql-14-postgis-3
```

Create a Postgresql user

```
sudo -u postgres createuser -SDRP dhis
```

Create a postgresql database

```
sudo -u postgres createdb -O dhis dhis2
```

Add postGIS extension

```
sudo -u postgres psql -c "create extension postgis;" dhis2
```

Some additional extension

```
sudo -u postgres psql -c "create extension btree_gin;" dhis2
sudo -u postgres psql -c "create extension pg_trgm;" dhis2
```

Restart PostgreSQL by invoking the following command:

```
sudo systemctl restart postgresql
```

Java installation

```
sudo apt-get install -y openjdk-11-jdk
```

Check your java version

```
java -version
```

DHIS2 configuration¶

```
/home/dhis/config/dhis.conf
```

A configuration file for PostgreSQL corresponding to the above setup has these properties:

```
# ---------------------------------------------------------------------
# Database connection
# ---------------------------------------------------------------------

# JDBC driver class
connection.driver_class = org.postgresql.Driver

# Database connection URL
connection.url = jdbc:postgresql:dhis2

# Database username
connection.username = dhis

# Database password
connection.password = xxxx

# ---------------------------------------------------------------------
# Server
# ---------------------------------------------------------------------

# Enable secure settings if deployed on HTTPS, default 'off', can be 'on'
# server.https = on

# Server base URL
# server.base.url = https://server.com
```

Install tomcat9:

```
sudo apt-get install -y tomcat9-user
```

This package lets us easily create a new Tomcat instance. The instance will be created in the current directory. An appropriate location is the home directory of the `dhis` user:\

```
cd /home/dhis
```

Create tomcat instance

```
sudo tomcat9-instance-create /home/dhis/tomcat-dhis
```

Give the user to the access of the instance directory

```
sudo chown -R dhis:dhis /home/dhis/tomcat-dhis/
```

Edit the setenv.sh file :

```
sudo nano /home/dhis/tomcat-dhis/bin/setenv.sh
```

Replace the setenv.sh file code with the following code :

```
#!/bin/sh
#
CATALINA_HOME=/usr/share/tomcat9
# Find the Java runtime and set JAVA_HOME
. /usr/libexec/tomcat9/tomcat-locate-java.sh
# Default Java options
if [ -z "$JAVA_OPTS" ]; then
JAVA_OPTS="-Djava.awt.headless=true"
fi
JAVA_HOME='/usr/lib/jvm/java-11-openjdk-amd64/'
JAVA_OPTS='-Xms4000m -Xmx7000m'
DHIS2_HOME='/home/dhis/config'
```

Edit the server.xml file :

```
sudo nano /home/dhis/tomcat-dhis/conf/server.xml
```

Replace the code of file (which is look like the following code) with the following code :

```
<Connector port="8080" protocol="HTTP/1.1"
connectionTimeout="20000"
redirectPort="8443"
relaxedQueryChars="[]" />
```

Click the following link and download the DHIS2 with the version 2.40.1 :

https://dhis2.org/downloads/

Move the downloaded example.war file to the dhis user files :

```
sudo mv /home/zmq183/Downloads/dhis2-stable-40.1.0.war
/home/dhis/tomcat-dhis/webapps/ROOT.war
```

Edit the startup.sh file :

```
sudo nano /home/dhis/tomcat-dhis/bin/startup.sh
```

Replace the code of startup.sh with the following code :

```
#!/bin/sh

set -e

if [ "$(id -u)" -eq "0" ]; then

echo "This script must NOT be run as root" 1>&2

exit 1

fi

export CATALINA_BASE="/tomcat-dhis"

/usr/share/tomcat9/bin/startup.sh

echo "Tomcat started"
```

Running DHIS2

```
sudo -u dhis tomcat-dhis/bin/startup.sh
```

DHIS2 can be stopped by invoking:

```
sudo -u dhis tomcat-dhis/bin/shutdown.sh
```

Assuming that the WAR file is called ROOT.war, you can now access your DHIS2 instance at the following URL:

http://localhost:8080

Set the permission to dhis directory

```
sudo chmod -R 777 /home/dhis/
```

Some special command used in setup and installation of tomcat server, dhis2 tool

1.Command for apache server

```
sudo service apache2 start

sudo service apache2 status

sudo service apache2 stop
```

2.command for tomacat9

sudo systemctl start tomcat9

sudo systemctl status tomcat9

sudo systemctl stop tomcat9

3. command for postgresql

sudo systemctl start postgre

sudo systemctl status postgre

sudo systemctl stop postgre

Running Dhis2 Deshboard

sudo -u tomcat /home/dhis/tomcat-dhis/bin/startup.sh

sudo -u tomcat /home/dhis/tomcat-dhis/bin/shutdown.sh

Set permission to the directory

sudo chmod -R 777 /path/

Create a file

sudo touch file_NAME

create directory

sudo mkdir dir_name

sudo rmdir dir_name

Read ,write and Edit file

Sudo nano dirname/file_name

Clean the configuration file

sudo rm -rf /dir_name/file_name

Update your package list

sudo apt-get update

sudo apt-get upgrade

Remove server

sudo apt-get remove –purge server_name

Identify package name with their corresponding version

dpkg –list | grep packag_name

Check version

java –version

psql –version

node -v

yarn -v

Create and delete user

sudo adduser user_name

sudo passwd password_nfif

sudo deluser user_name