**THINGSBOARD SETUP (On Ubuntu Server)**

1. **Prerequisite**:

Ubuntu Server: version 1**8.04 LTS**

Hardware requirements: Depends on database and amount of devices connected to the system. To run **ThingsBoard** and **PostgreSQL** on a single machine you will need **atleast 2GB RAM**. (In our case, we have used **16GB RAM** for handling complex functionalities like Advanced Analytics and Telemetry messages from devices)

1. **Install Java 8 (OpenJDK):**

ThingsBoard service is running on Java 8. Follow the instructions to install OpenJDK 8.



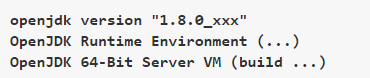
Please don’t forget to configure your operating system to use OpenJDK 8 by default. You can configure which version is the default using the following command:



You can check the installation using the following command:



Expected command output is:



1. **ThingsBoard service installation :**

Download and extract the package.

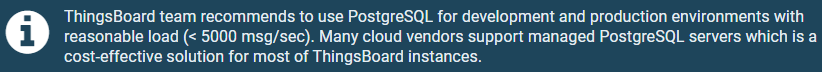


Install ThingsBoard as a service.



1. **Configure ThingsBoard database :**

ThingsBoard is able to use SQL or hybrid database approach. (Used PostgreSQL here)



PostgreSQL Installation

Instructions listed below will help you to install PostgreSQL.

***# install \*\*wget\*\* if not already installed:***

**sudo apt install -y wget**

***# import the repository signing key:***

**wget --quiet -O - https://www.postgresql.org/media/keys/ACCC4CF8.asc | sudo apt-key add -**

***# add repository contents to your system:***

**RELEASE=$(lsb\_release -cs)**

**echo "deb http://apt.postgresql.org/pub/repos/apt/ ${RELEASE}"-pgdg main | sudo tee /etc/apt/sources.list.d/pgdg.list**

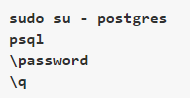
***# install and launch the postgresql service:***

**sudo apt update**

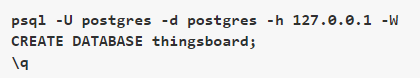
**sudo apt -y install postgresql-12**

**sudo service postgresql start**

Once PostgreSQL is installed you may want to create a new user or set the password for the the main user. The instructions below will help to set the password for main postgresql user.



Then, press “Ctrl+D” to return to main user console and connect to the database to create thingsboard DB:



Thingsboard Configuration

Edit ThingsBoard configuration file.



Add the following line to the config file. Don’t forget **to replace** “PUT\_YOUR\_POSTGRESQL\_PASSWORD\_HERE” with your **real postgres user password:**

***# DB Configuration***

**export DATABASE\_ENTITIES\_TYPE=sql**

**export DATABASE\_TS\_TYPE=sql**

**export SPRING\_JPA\_DATABASE\_PLATFORM=org.hibernate.dialect.PostgreSQLDialect**

**export SPRING\_DRIVER\_CLASS\_NAME=org.postgresql.Driver**

**export SPRING\_DATASOURCE\_URL=jdbc:postgresql://localhost:5432/thingsboard**

**export SPRING\_DATASOURCE\_USERNAME=postgres**

**export SPRING\_DATASOURCE\_PASSWORD=PUT\_YOUR\_POSTGRESQL\_PASSWORD\_HERE**

**export SPRING\_DATASOURCE\_MAXIMUM\_POOL\_SIZE=5**

***# Specify partitioning size for timestamp key-value storage. Allowed values: DAYS, MONTHS, YEARS, INDEFINITE.***

**export SQL\_POSTGRES\_TS\_KV\_PARTITIONING=MONTHS**

1. **Choose ThingsBoard queue service :**

ThingsBoard is able to use various messaging systems/brokers for storing the messages and communication between ThingsBoard services.

**In Memory** queue implementation is built-in and default. It is useful for development(PoC) environments and is not suitable for production deployments or any sort of cluster deployments.

In Memory queue is built-in and enabled by default. No additional configuration steps required.

1. **Run Installation script :**

Once ThingsBoard service is installed and DB configuration is updated, you can execute the following script:



1. **Running ThingsBoard service :**

Now let’s start the ThingsBoard service!

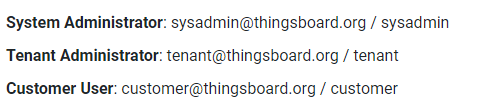
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Once started, you will be able to open Web UI using the following link:

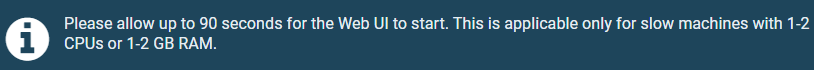


**Note:** If you are not able to see the Web UI then it means that the port is utilized by the system for some other process. So, either you can kill the process running on this port or if the process is a system kernel then, in the ThingsBoard config file, change the PORT to any other. [In our case, the Web UI link was available as ***http://localhost:8083/*** ]

The following default credentials are available if you have specified *–loadDemo* during execution of the installation script:



**Note:** You can change the credentials after logging into the Web UI in the account profile section.



1. **Post-installation steps :**

**Configure HAProxy to enable HTTPS**

You may want to configure HTTPS access using HAProxy. This is possible in case you are hosting ThingsBoard in the cloud and have a valid DNS name assigned to your instance. Please follow this [guide](https://thingsboard.io/docs/user-guide/install/pe/add-haproxy-ubuntu) to install HAProxy and generate valid SSL certificate using Let’s Encrypt.

1. **Troubleshooting :**

ThingsBoard logs are stored in the following directory:



You can issue the following command in order to check if there are any errors on the backend side:

