# Step-by-Step Guide to Deploy ThingsBoard on Windows via Docker Desktop

This guide explains how to set up \*\*ThingsBoard \*\* on \*\*Windows 10/11\*\* using \*\*Docker Desktop\*\*.

## **Requirements**

Make sure you have:

- Windows 10/11 (64-bit)

- [Docker Desktop](https://www.docker.com/products/docker-desktop/) installed and running

- Internet connection

- Administrator access

**## Step 1: Verify Docker Installation**

Open \*\*PowerShell\*\* or \*\*Command Prompt\*\* and run: bash

docker --version

docker compose version

**## Step 2: Create a Folder for ThingsBoard**

Create a project directory (for example):

mkdir C:\thingsboard-docker

cd C:\thingsboard-docker

**## Step 3: Create a docker-compose.yml File**

In C:\thingsboard-docker, create a file named **docker-compose.yml** and paste the following content:

version: '3.3'

services:

postgres:

image: postgres:14

container\_name: tb-postgres

restart: always

environment:

POSTGRES\_DB: thingsboard

POSTGRES\_USER: postgres

POSTGRES\_PASSWORD: root

volumes:

- ./pgdata:/var/lib/postgresql/data

thingsboard:

image: thingsboard/tb-postgres

container\_name: thingsboard

depends\_on:

- postgres

ports:

- "8080:8080"

- "1883:1883"

- "5683-5688:5683-5688/udp"

environment:

TB\_QUEUE\_TYPE: in-memory

SPRING\_DATASOURCE\_URL: jdbc:postgresql://postgres:5432/thingsboard

SPRING\_DATASOURCE\_USERNAME: postgres

SPRING\_DATASOURCE\_PASSWORD: root

volumes:

- ./tb-data:/data

- ./tb-logs:/var/log/thingsboard

**## Step 4: Initialize the Database**

Run this command **once** to set up the ThingsBoard database:

docker compose run --rm thingsboard install

Wait until initialization logs finish.

## Step 5: Start ThingsBoard

Bring the containers up:

docker compose up -d

This will start:

* PostgreSQL
* ThingsBoard service

**## Step 6: Access the Web UI**

* After 1–2 minutes, open your browser and visit:
* <http://localhost:8080>
* **Default login credentials**

| **Role** | **Username** | **Password** |
| --- | --- | --- |
| Tenant | tenant@thingsboard.org | tenant |
| Sysadmin | sysadmin@thingsboard.org | sysadmin |

## Step 7: Connect Your ESP8266 (NodeMCU)

In your ESP8266 code, set the MQTT server to your **Windows PC IP address** (not localhost):

const char\* mqtt\_server = "192.168.x.x"; // Your Windows IP

const int mqtt\_port = “enter port number;

const char\* access\_token = "DEVICE\_ACCESS\_TOKEN";

You can find the **access token** in ThingsBoard under:  
**Devices → Your Device → Details → Access Token**