

Setup development environment

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# 1. Introduction

This documentation explains how to setup the Taiga development environment.

The Taiga platform consists of three main components:

- **taiga-back** (backend/api)
- **taiga-front** (frontend)
- **taiga-events** (websockets gateway) (optional)

And each one has its own dependencies, at compile time and runtime.

## 2. Before starting

This tutorial assumes that you are using a clean, recently updated, **ubuntu 14.04** image. Notes for Debian installations are included at the end of the appropriate sections.

**Taiga installation must be done with a "normal" user, never with root.**

## 3. Backend environment

This section helps with the download and configuration of the backend (api) Taiga service.

### 3.1. Install dependencies

The backend is written mainly in python (3.4) but for some third party libraries we need to install a C compiler and development headers.

```
sudo apt-get install -y build-essential binutils-doc autoconf flex bison libjpeg-dev
sudo apt-get install -y libfreetype6-dev zlib1g-dev libzmq3-dev libgdbm-dev libncurses5-
dev
sudo apt-get install -y automake libtool libffi-dev curl git tmux gettext
```

### 3.2. Setup a database

**taiga-back** also requires postgresql ( $\geq 9.3$ ) as a database

Install postgresql:

```
sudo apt-get install -y postgresql-9.3 postgresql-contrib-9.3
sudo apt-get install -y postgresql-doc-9.3 postgresql-server-dev-9.3
```

And setup the initial user, database, and permissions:

```
sudo -u postgres psql -c "CREATE ROLE taiga LOGIN PASSWORD 'changeme';"
sudo -u postgres createdb taiga -O taiga
echo 'local all taiga peer' | sudo -u postgres tee -a
/etc/postgresql/9.3/main/pg_hba.conf > /dev/null
sudo service postgresql reload
```

### 3.3. Setup python environment

To run **taiga-back** you should have python (3.4) installed along with some other third party libraries. As a first step, start installing python and virtualenvwrapper:

```
sudo apt-get install -y python3 python3-pip python-dev python3-dev python-pip
virtualenvwrapper
sudo apt-get install libxml2-dev libxslt-dev
```

**NOTE** **virtualenvwrapper** helps keep the system clean from third party libraries installed with the language's package manager by installing them in isolated virtual environments.

Restart the shell or run **bash** again, to reload the bash environment with virtualenvwrapper's variables and functions.

The next step is to download the code from GitHub and install its dependencies:

*Download the code*

```
cd ~
git clone https://github.com/taigaio/taiga-back.git taiga-back
cd taiga-back
git checkout stable
```

*Create a new virtualenv named **taiga***

```
mkvirtualenv -p /usr/bin/python3.4 taiga
```

### *Install dependencies*

```
pip install -r requirements.txt
```

### *Adjust Django Configuration*

You can tune your own environment configuration by editing a `settings/local.py` configuration file to overwrite any setting in `settings/common.py`.

For a basic configuration that works with these instructions, simply copy `settings/local.py.example` to `settings/local.py`.

Otherwise, just put this in your own `~/taiga-back/settings/local.py`

```
from .common import *  
  
# YOUR OWN CONFIGURATION HERE
```

### *Populate the database with initial basic data*

```
python manage.py migrate --noinput  
python manage.py loaddata initial_user  
python manage.py loaddata initial_project_templates  
python manage.py loaddata initial_role  
python manage.py compilemessages  
python manage.py collectstatic --noinput  
python manage.py sample_data
```

This creates a new user **admin** with password **123123** and some sample data.

## 3.4. Run

To run the development environment you can run:

```
workon taiga # enable the taiga virtualenv  
python manage.py runserver
```

Then you should be able to see a json representation of the list of endpoints at the url <http://localhost:8000/api/v1/>

## 3.5. Async tasks (Optional)

The default behavior in Taiga is to do all tasks synchronously, but some of them can be completely

asynchronous (for example webhooks or import/export). To do this, you have to configure and install the celery service requirements.

Install `rabbitmq-server` and `redis-server`:

```
sudo apt-get install -y rabbitmq-server redis-server
```

To run celery with Taiga you have to include the following lines in your `local.py`:

```
from .celery import *

BROKER_URL = 'amqp://guest:guest@localhost:5672//'
CELERY_RESULT_BACKEND = 'redis://localhost:6379/0'
CELERY_ENABLED = True
```

You can configure other broker or results backends as needed. If you need more info about configuration you can check the celery documentation web page: <http://docs.celeryproject.org/en/latest/index.html>

Once you have configured celery on Taiga, you have to run celery to process the tasks. You can run celery with:

```
workon taiga # enable the taiga virtualenv
celery -A taiga worker -l info -E
```

## 3.6. Debian installation notes

Debian stable (Jessie) provides all needed requirements, but old-stable (Wheezy) does not.

The latest Python available from Wheezy's apt repositories is only 3.1 and insufficient for taiga-back. Python 3.4 is available from stable (Jessie) if you are comfortable using mixed versions in your apt sources. Otherwise, you must build Python 3.4 from source (see <https://www.python.org/downloads/source/> for links). When building from source, if the bz2 development libraries are not already present on your system, then you must first:

```
sudo apt-get install libbz2-dev
```

Or else Python will build without the bz2 module necessary for some pip installed requirements.

The latest Postgresql available for Wheezy is 9.1, but a fully Wheezy-compatible 9.3 build is available from the official Postgresql apt repositories, however:

```
echo "deb http://apt.postgresql.org/pub/repos/apt/ wheezy-pgdg main" | sudo tee -a
/etc/apt/sources.list
sudo apt-get update
```

## 4. Frontend installation

This section helps you install the frontend application

### 4.1. Install dependencies

The frontend application runs entirely in a browser, and thus must be deployed as javascript, css and html. In the case of **taiga-front** we have used other languages. Because of this, you will need to install some additional dependencies that compile **taiga-front** code into something the browser can understand.

#### 4.1.1. Ruby and Gems

Ruby is used mainly for compiling **sass** (css preprocessor). It is also used for sass linting but that is only in development environments.

*Install ruby*

```
sudo apt-get install -y ruby
```

*Install required gems*

```
gem install --user-install sass scss-lint
```

*Make gems' scripts available from your path by putting this in your ~/.bashrc*

```
export PATH=~/.gem/ruby/1.9.1/bin:$PATH
```

Restart the shell, source ~/.bashrc, or run bash again to make the path changes available.

#### 4.1.2. NodeJS and friends

NodeJS is used to execute **gulp** and **bower**:

- **gulp**: task execution tool. Used mainly for executing deployment and compilation tasks.
- **bower**: javascript dependency management tool. Used mainly for downloading third party libraries used by **taiga-front**.

### *Install nodejs*

```
sudo apt-get install -y nodejs npm
```

*Make sure your bash responds to the node command to have a smooth installation of gulp and bower*

```
node
```

If you get a "Command not found" error, then run

```
sudo ln -s /usr/bin/nodejs /usr/bin/node
```

(If you're on Debian, see the Debian-specific installation notes below.)

*Install **gulp** and **bower** using the recently installed npm*

```
sudo npm install -g gulp bower
```

### *Download the code*

```
cd ~  
git clone https://github.com/taigaio/taiga-front.git taiga-front  
cd taiga-front  
git checkout stable
```

*Install all dependencies needed to run gulp and compile taiga-front*

```
npm install  
bower install
```

## 4.2. Debian installation notes

While Debian stable (Jessie), provides a nodejs package out of the box, old-stable (Wheezy) does not. You can access one via the wheezy-backports apt repository, however, which can be added to your system as follows:

```
echo "deb http://ftp.us.debian.org/debian wheezy-backports main" | sudo tee -a  
/etc/apt/sources.list
```

Then, after a:



```
sudo apt-get update
```

You can:

```
sudo apt-get install nodejs
```

Note that Debian installs the executable as nodejs not node, so you will need to provide this alias by issuing the following command:

```
sudo update-alternatives --install /usr/bin/node nodejs /usr/bin/nodejs 100
```

Stable (Jessie) also provides an npm package, but npm is not available for old-stable (Wheezy), not even from wheezy-backports. Thus, you will need to install it manually via:

```
curl https://www.npmjs.com/install.sh | sudo sh
```

## 4.3. Final steps

Having installed all the dependencies, all you have left to do is to run the code itself.

*Run gulp*

```
cd ~/taiga-front  
gulp
```

Now, you can access <http://localhost:9001> for access to taiga-front.

### NOTE

If you have npm errors when executing gulp delete the tmp files and install the dependencies again.

```
rm -rf ~/.npm; rm -rf node_modules  
npm install  
bower install  
gulp
```

## 5. Events installation

This step is completely optional and can be skipped

Taiga events needs rabbitmq (the message broker) to be installed

### *Installing rabbitmq*

```
sudo apt-get install rabbitmq-server
```

### *Creating a taiga user and virtualhost for rabbitmq*

```
sudo rabbitmqctl add_user taiga PASSWORD
sudo rabbitmqctl add_vhost taiga
sudo rabbitmqctl set_permissions -p taiga taiga ".*" ".*" ".*"
```

*Update your taiga-back settings to include the following lines in your local.py:*

```
EVENTS_PUSH_BACKEND = "taiga.events.backends.rabbitmq.EventsPushBackend"
EVENTS_PUSH_BACKEND_OPTIONS = {"url": "amqp://taiga:PASSWORD@localhost:5672/taiga"}
```

The next step is downloading the code from GitHub and installing the dependencies:

### *Download the code*

```
cd ~
git clone https://github.com/taigaio/taiga-events.git taiga-events
cd taiga-events
```

### *Install all the javascript dependencies needed*

```
npm install
sudo npm install -g coffee-script
```

*Copy config.example.json to config.json and edit it to update the values for your rabbitmq uri and secret key.*

```
cp config.example.json config.json
```

*Your config.json should look something like:*

```
{  
  "url": "amqp://taiga:PASSWORD@localhost:5672/taiga",  
  "secret": "mysecret",  
  "websocketServer": {  
    "port": 8888  
  }  
}
```

*Now run the taiga events service*

```
coffee index.coffee
```