

Botrus : installation and run guide

Requirements

Software

The Botrus system needs **Python 3.7** and **Docker** to be installed.

The following `pip` packages are needed :

- `streamlit` for Web interfaces
- `bottle` for Relay networking
- `Pillow`

`Tkinter` is also required for the User interface. It can be installed by typing `(sudo) apt install python3-tk` in the command line.

It is highly recommended to pull Docker images manually before running any contributor or user application.

```
docker pull bde2020/spark-master:3.1.1-hadoop3.2
docker pull bde2020/spark-worker:3.1.1-hadoop3.2
```

Networking

For the Docker overlay network, the computer needs to be available on the following ports :

- **TCP** 2377
- **TCP / UDP** 7946
- **UDP** 4789

Furthermore, Spark web UIs need the following ports :

- For master nodes, **TCP** 8080 and 4040
- For worker nodes, **TCP** 8081

Also, relay nodes need to be accessible on port 8889 **TCP**. Contributor nodes need to be accessible on port 8503 **TCP** to get access to the settings web UI

Run

User

To run a user application, type the following command in the command line.

```
python3 user_interface.py
```

Relay

To run a relay application, type the following command in the command line.

```
python3 relay.py
```

Contributor

To run a contributor application, type the following command in the command line.

```
streamlit run contributor.py
```