



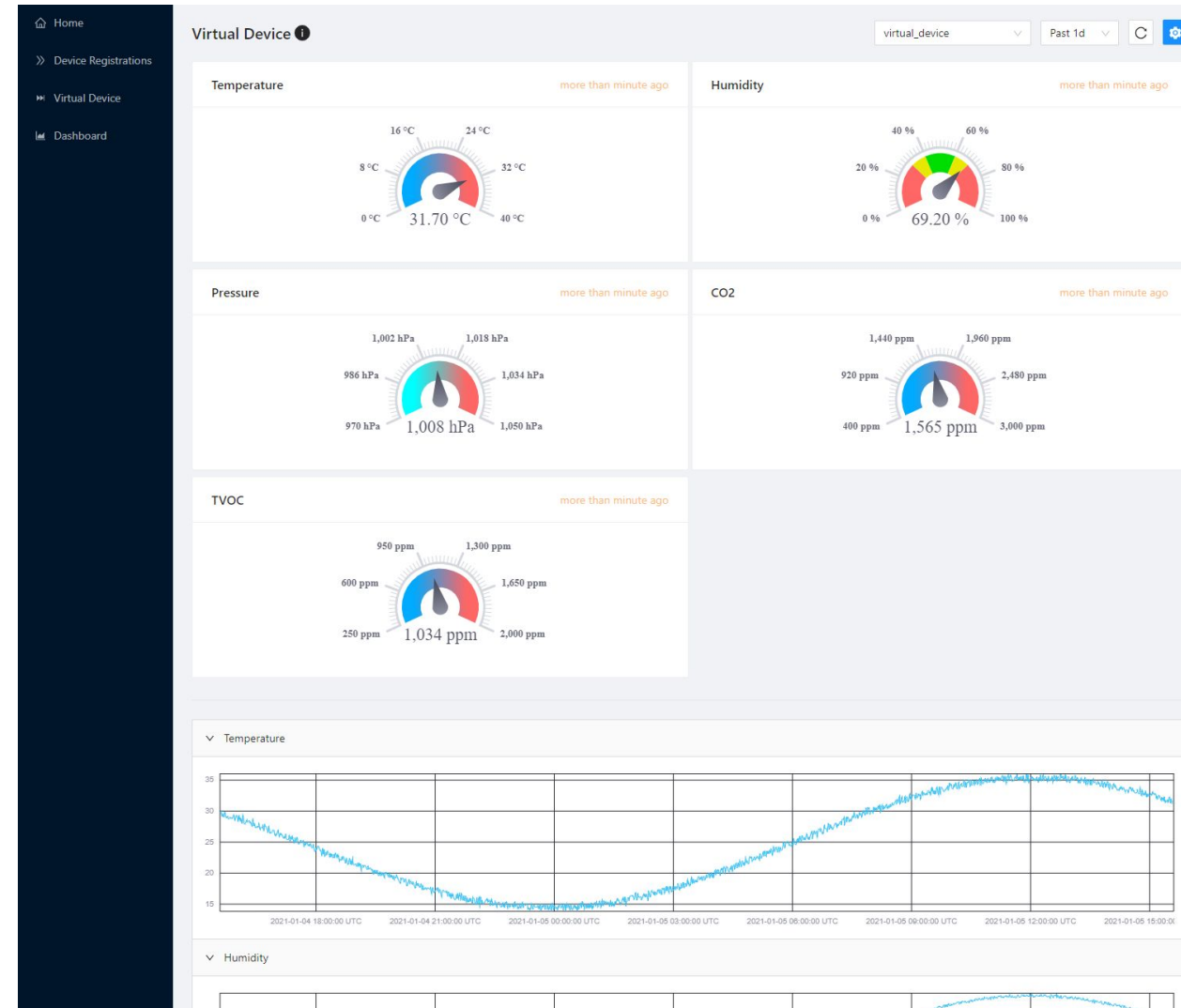
IoT Center Installation

Workshop

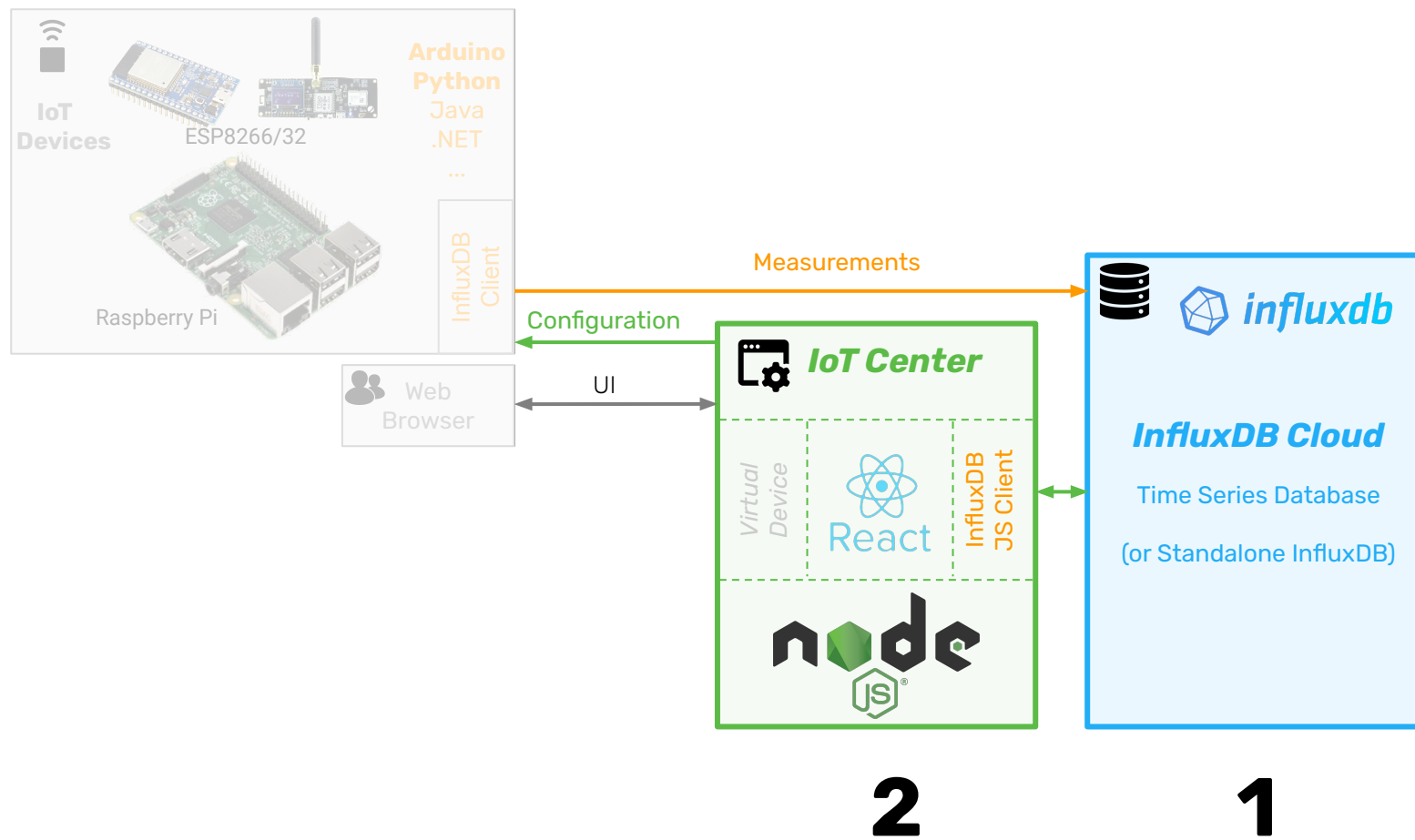


Agenda

- InfluxDB Cloud Account
- Prepare environment
 - Install git
 - Install node.js
 - Install yarn
- Get source code from GIT
- Build IoT Center
- Set IoT Center configuration
- Run IoT Center
- Virtual Device Test



IoT Center Installation Approach





Create InfluxDB Cloud Account

Skip this if you already have the InfluxDB account

Skip this step if you already have the account

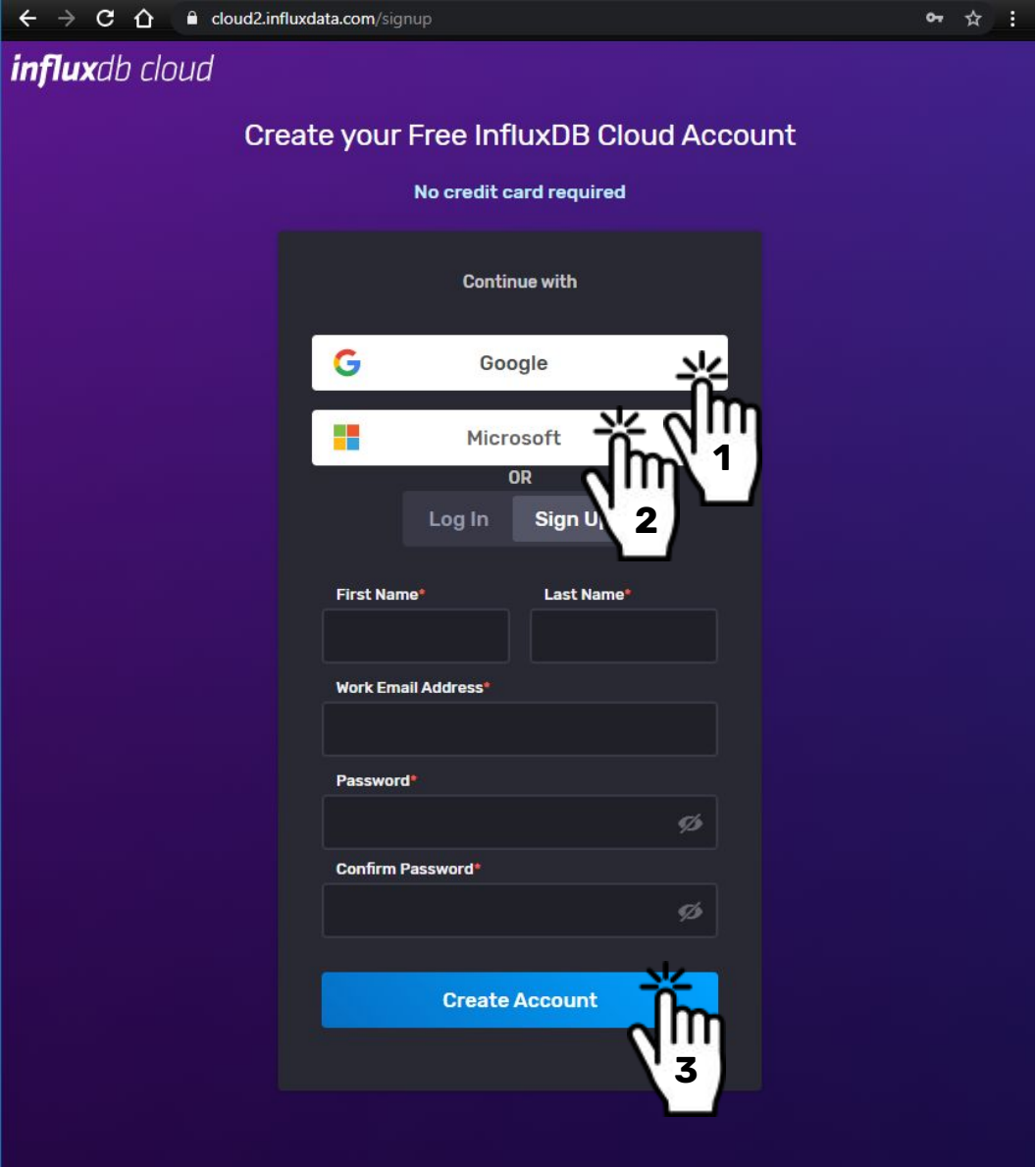
Sign up to Influxdb Cloud

Open Web Browser

<https://cloud2.influxdata.com/>

Three options:

1. Register via **Google** email
 - Select right Google account
2. Register via **Microsoft** email
 - Select right Microsoft account
 - Requires *Read profile* rights
3. Create account via **any email**
 - Fill Name, Email, Password
 - Receive email for validation

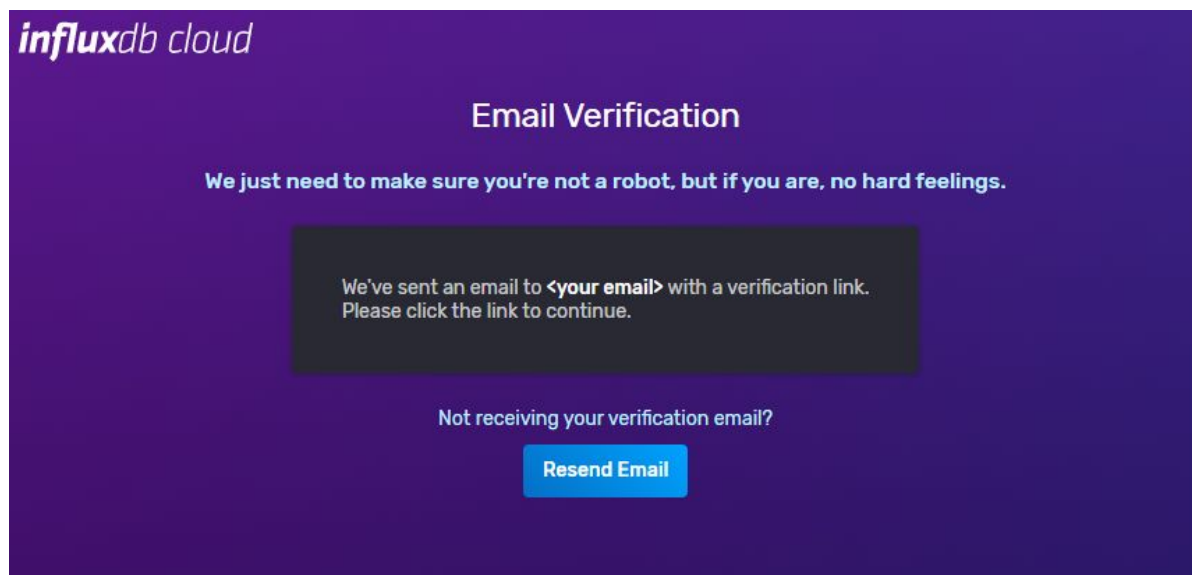


The screenshot shows the 'influxdb cloud' sign-up page. The browser address bar displays 'cloud2.influxdata.com/signup'. The page title is 'Create your Free InfluxDB Cloud Account' with the subtext 'No credit card required'. The sign-up options are 'Continue with Google' and 'Continue with Microsoft', separated by 'OR'. Below these are 'Log In' and 'Sign Up' buttons. The form fields include 'First Name*', 'Last Name*', 'Work Email Address*', 'Password*', and 'Confirm Password*'. A blue 'Create Account' button is at the bottom. Three hand icons with numbers 1, 2, and 3 indicate the steps: 1 points to the Google/Microsoft options, 2 points to the 'Sign Up' button, and 3 points to the 'Create Account' button.



Verification

Only when email option was selected



Registration




1. Select any provider
2. Company name
3. Read & check agreement
4. Click continue

influxdb cloud

Where do you want to store your data?

No credit card required

1 Choose a Provider & Region

| Amazon Web Services | Google Cloud | Microsoft Azure |
|---|---|---|
|  |  |  |

EU Frankfurt

Don't see the region you need? [Let us know.](#)

2 Enter Company Name


My company

3 Read and agree to our service agreements

☒ I have viewed and agree to the [InfluxDB Cloud 2.0 Services Subscription Agreement](#) and [InfluxData Global Data Processing Agreement](#).

Next: Choose a plan

Continue







Select plan

- Select **Free** tier (time-unlimited)
- You can upgrade the tier any time

influxdb cloud

Want a plan with no limits?
You can upgrade later at any time.

| Usage-Based I know my workload | Free I'm just trying this out | Annual Enterprise scale |
|---|---|---|
|  |  |  |
| Unlimited Storage | 30 days Storage | Unlimited Storage |
| Slack, PagerDuty, and HTTP | Slack only | All Alert Handlers |
| Unlimited Reads Unlimited Writes Up to 1,000,000 Series | 1000 kb/s Reads 17 kb/s Writes Up to 10,000 Series | Unlimited Reads Unlimited Writes Unlimited Series |
| Billed monthly | No credit card required | Yearly Contract |
| Upgrade Now | Keep | Contact Sales |



InfluxDB 2 Cloud Account Created

If you already have the InfluxDB account, please login

The screenshot shows the InfluxDB 2 Cloud 'Getting Started' dashboard. On the left is a vertical sidebar with icons for Data, Explore, Boards, Tasks, Alerts, and Settings. The main area is titled 'Getting Started' and features three numbered steps: 1. 'Load your data' with a funnel icon, 2. 'Build a dashboard' with a dashboard icon, and 3. 'Set up alerting' with a hexagonal network icon. Each step has a corresponding blue button. To the right of the main area are three sections: 'Account' with a 'Logout' button, 'Recent Dashboards' with a search bar and two dashboard titles ('Node.js Application Monitoring' and 'IoT Center'), and 'Useful Links' with links to 'Documentation', 'Community Forum', 'Feature Requests', and 'Report a bug'. At the bottom right, the version 'Version (e01e8ce)' is displayed. Below the 'Getting Started' steps is a section titled 'Some Handy Guides and Tutorials' with four links: 'Get Started with Flux', 'Explore Metrics', 'Build a Dashboard', and 'Write a Task'. A blue 'Upgrade Now' button is located in the top right corner of the dashboard area.



Generate API Token for IoT Center

Menu

- **Data**

Tab

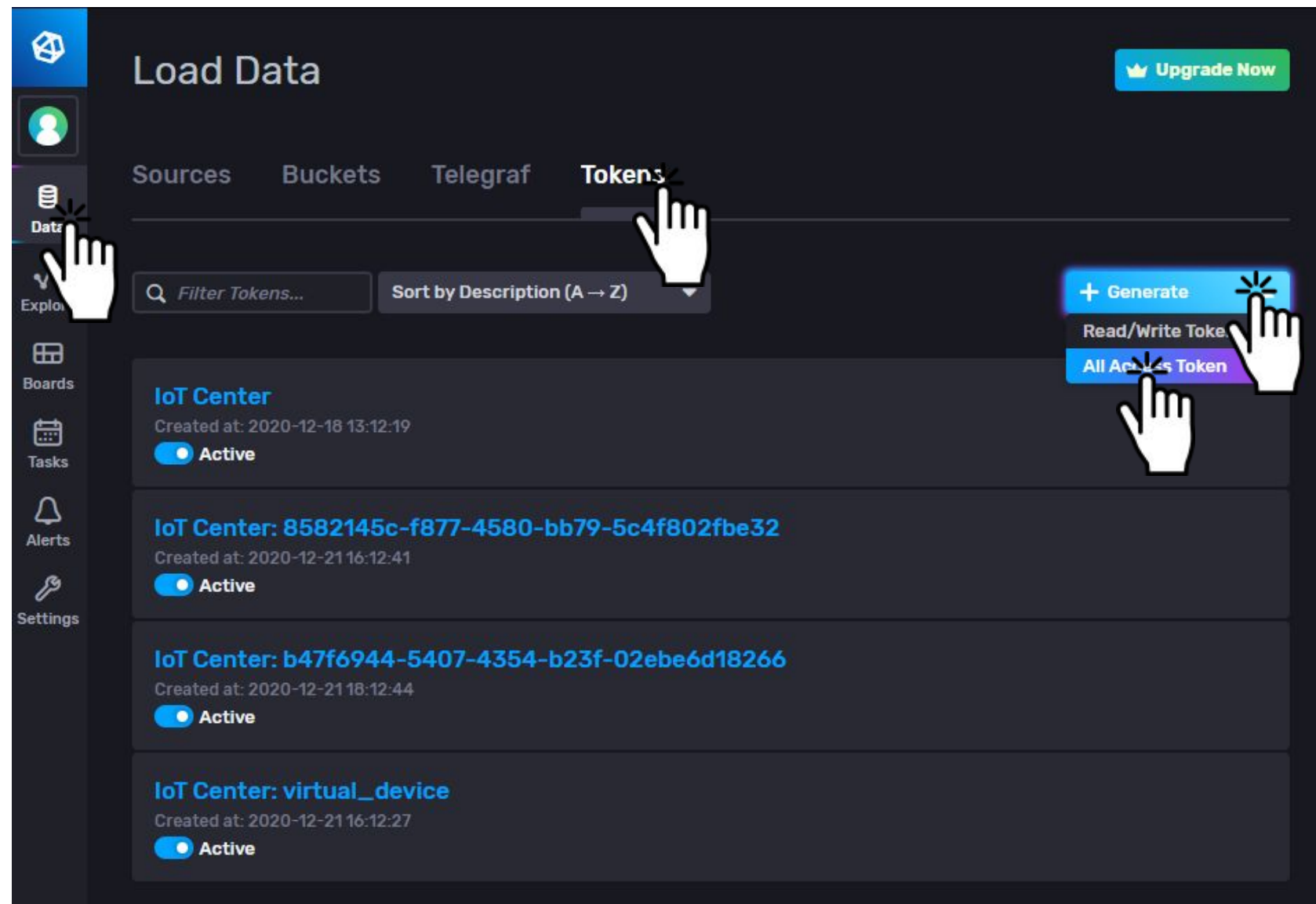
- **Tokens**

Button

- **Generate**

Select

- **All Access Token**



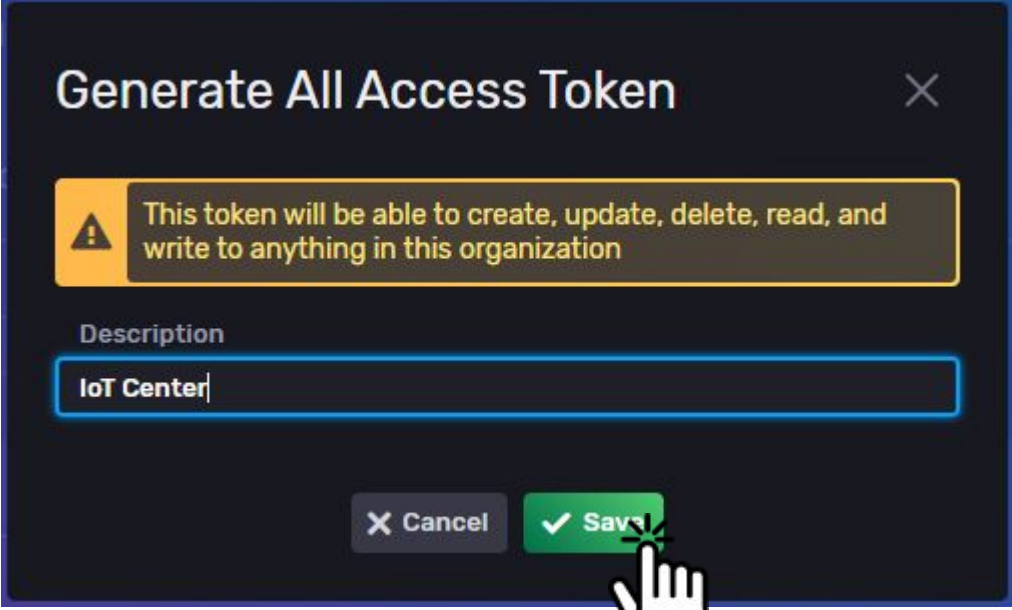
Define API Token Name

Enter Description

- e.g. "IoT Center"

Button

- Save



Generate All Access Token

⌵

⚠ This token will be able to create, update, delete, read, and write to anything in this organization

Description

IoT Center

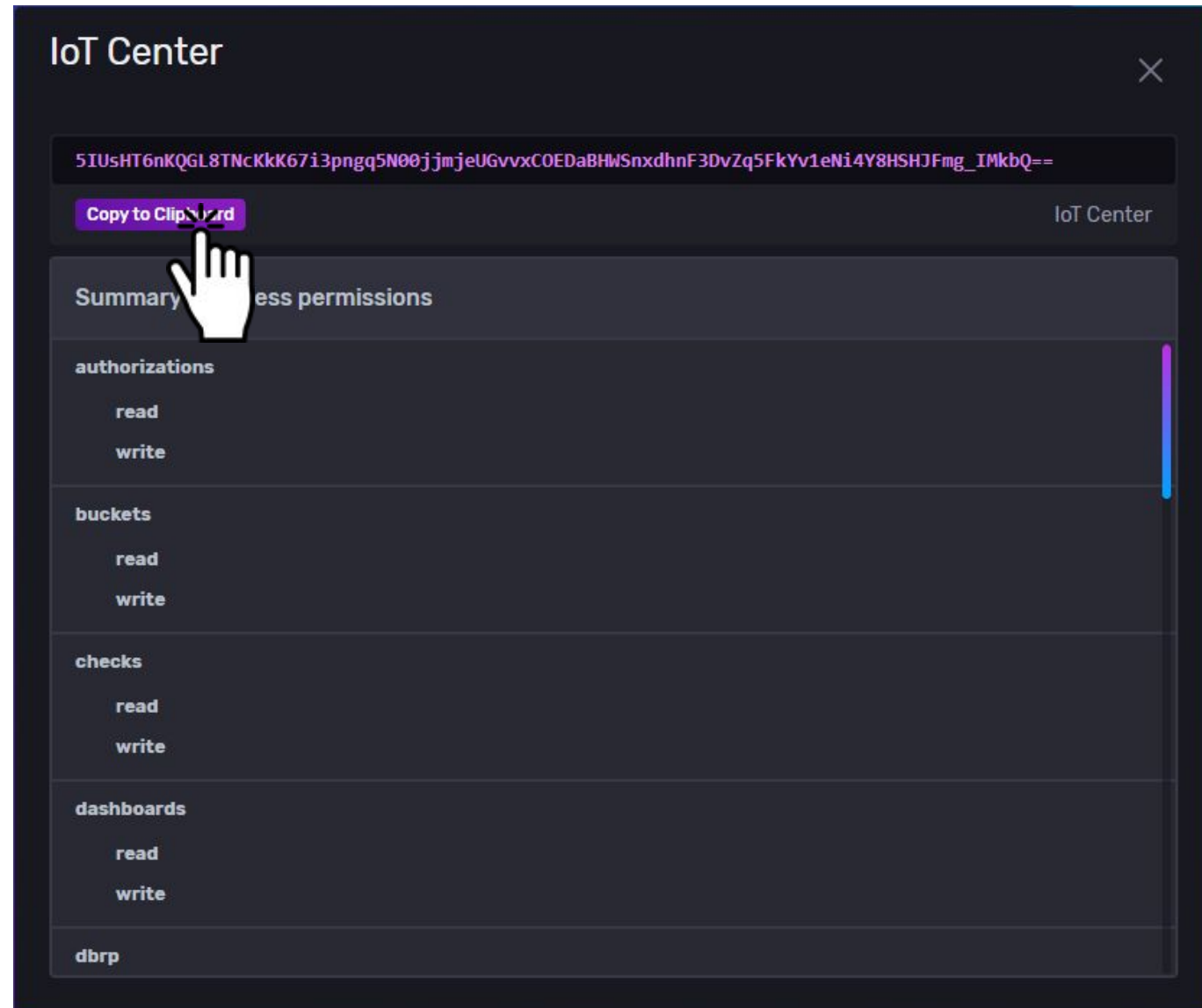
⌵ Cancel ✓ Save



Get API Token

1. Click on the token name
2. Click button
 - **Copy to clipboard**

Keep this page open - we use the token later



Tools installation for macOS

- Install **brew** package manager tool - see <https://brew.sh/>
- Run **brew install yarn**

```
$ bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
==> Checking for `sudo` access (which may request your password)...
Password:
==> This script will install:
/usr/local/bin/brew
...
$ brew install yarn
Downloading ...
```



Install git

- All OS (Linux/Windows/macOS)
- Test git

```
$ git --version  
git version 2.25.1
```

In case of **command not found**:

- Follow instructions at <https://git-scm.com/downloads>

Downloads



Download IoT Center source code

Run: **git clone https://github.com/bonitoo-io/iot-center-v2**

Slides: **iot-center-v2/slides**

Already exists? Run: **git pull**

```
$ git clone https://github.com/bonitoo-io/iot-center-v2
Cloning into 'iot-center-v2'...
remote: Enumerating objects: 1185, done.
remote: Total 1185 (delta 0), reused 0 (delta 0), pack-reused 1185
Receiving objects: 100% (1404/1404), 1.92 MiB | 1.92 MiB/s, done.
Resolving deltas: 100% (977/977), done.
```



Tools installation for **Linux/macOS** systems

- Move to app directory: **cd iot-center-v2/app/**
- Run **./tools.sh** (installs npm, yarn, node)
- Tools installation requires to enter **password** (uses **sudo**)

```
/iot-center-v2/app$ ./tools.sh
```

```
=====
```

```
Installing npm...
```

```
[sudo] password for mirek:
```

```
Reading package lists... Done
```

```
Building dependency tree
```

```
...
```



Tools installation

- Test **node** and **yarn** tools

```
$ node --version  
v12.19.0
```

```
$ yarn --version  
1.22.5
```

Required versions:

- node [v12.x.x](https://nodejs.org/en/download/) and newer
<https://nodejs.org/en/download/>
- yarn [x.x.x](https://classic.yarnpkg.com/en/docs/install) not [0.xx+git](https://classic.yarnpkg.com/en/docs/install)
<https://classic.yarnpkg.com/en/docs/install>



Build IoT Center

- Directory: **cd iot-center-v2/app/**
- Run: **yarn install** (takes up to several minutes)

```
/iot-center-v2/app$ yarn install
yarn install v1.22.5
[1/4] Resolving packages...
[2/4] Fetching packages...
[4/4] Building fresh packages...
Done in 140.75s.
```

Errors

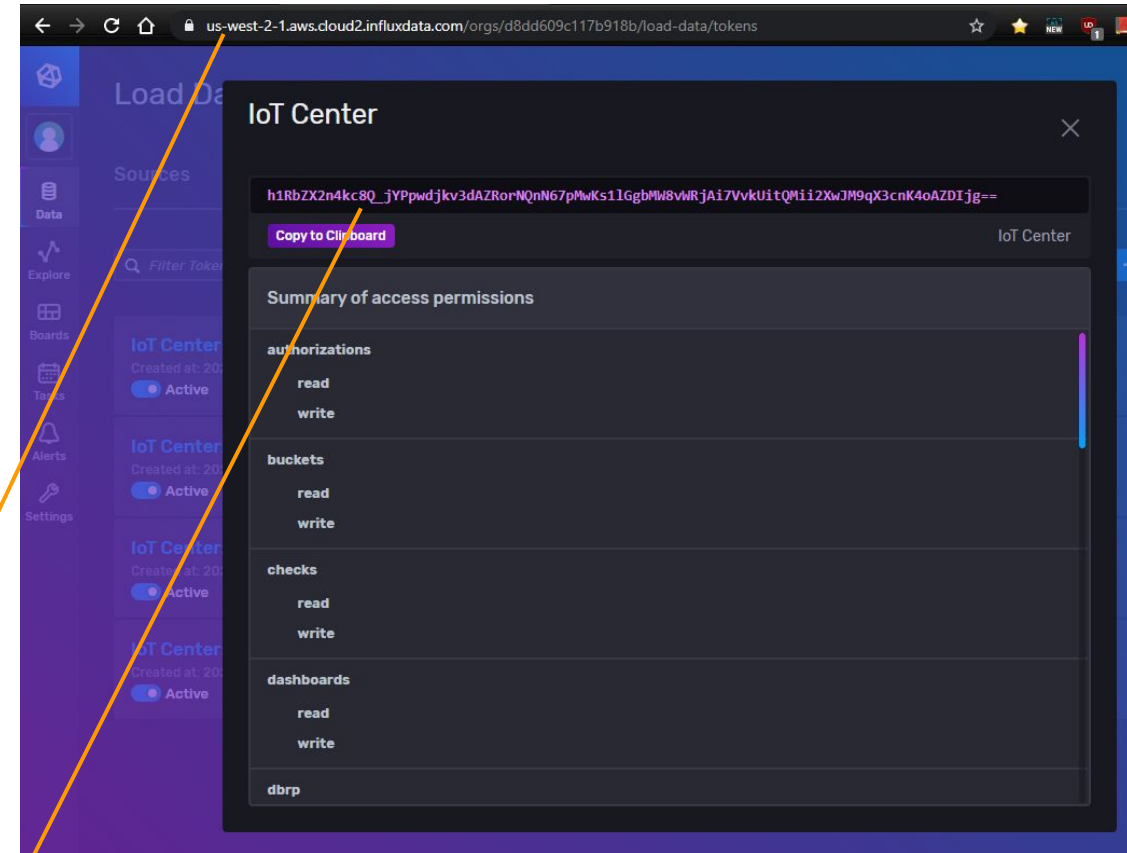
- *[Errno 2] No such file or directory: 'install'* – **upgrade yarn version**
- *The engine "node" is incompatible. Expected version ">=12.0.0"* – **upgrade node.js**



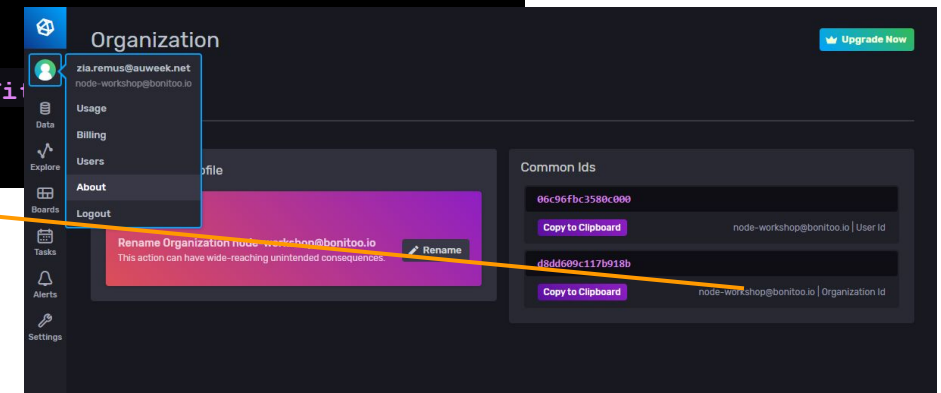
Configure start scripts

Modify files in **iot-center-v2/app** directory

- Windows - open file **dev.bat**
- Linux/macOS - open file **dev.sh**



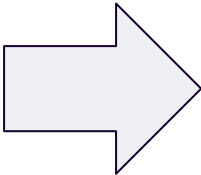
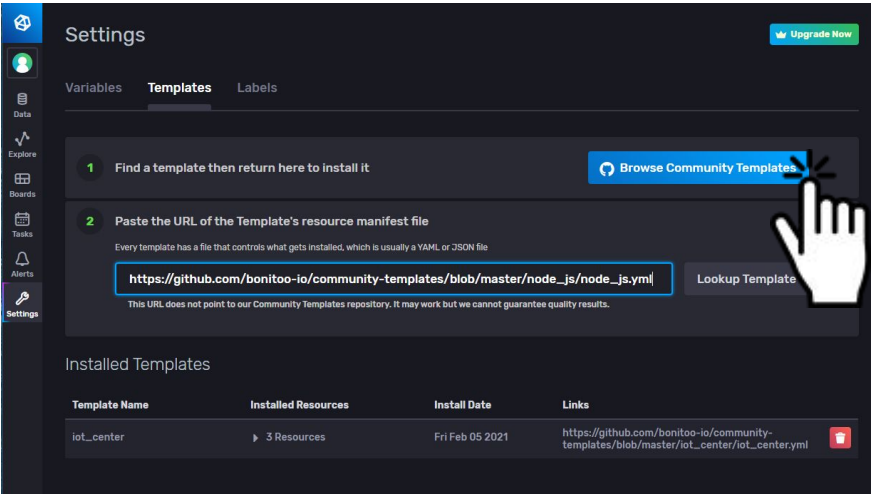
```
SET INFLUX_URL=https://us-west-2-1.aws.cloud2.influxdata.com
SET INFLUX_TOKEN=h1RbZX2n4kc8Q_jYPpwdjKv3dAZRorNQnN67pMwKs1lGgbMW8vWRjAi7VvkUitQMii2XwJM9qX3cnK4oAZDIjg==
SET INFLUX_ORG=node-workshop@bonitoo.io
```





Monitoring Template Installation

Show & contribute to InfluxDB Templates



InfluxDB Community Templates

verify-all-templates passing Slack join chat

InfluxDB 2.0 introduces [InfluxDB templates](#)—prepackaged InfluxDB configurations that contain everything from dashboards and Telegraf configurations to notifications and alerts in a single manifest file. Use InfluxDB templates to get a fresh instance of InfluxDB set up quickly, create reusable templates for common setups, back up your own deployment setup, and share your templates with the community.

In true open source spirit, you can update InfluxDB templates with common use cases and share with other InfluxDB users, so they can get started faster, use known configurations, and contribute improvements to templates that benefit everyone in the community.

The purpose of this repository is to promote the creation, sharing, and reuse of templates among the InfluxDB community. Anybody can submit new templates or improvements upon existing templates and use these templates in their own InfluxDB instances.

Templates

Start by reading [how to use a template](#), then check each template's individual instructions for further setup and customization options.

| Template | Description | Author |
|--|---|---|
| Air Quality | Retrieve air quality statistics from the US EPA website | Kristina Robinson |
| Algorithmia | Monitor machine learning model performance metrics | @koverholt |
| Apex Legends | Collect player metrics from the game Apex Legends | @b3vis |
| AWS Cloudwatch Monitoring | Monitor AWS EC2 and ELB | bonitoo.io |
| Ceph Cluster | Monitor your Ceph Cluster with Prometheus metrics | @bonitoo.io |
| Counter Strike: Global Offensive | Get stats about your game. Kills, Deaths and stats by weapon. | Ignacio Van Droogenbroeck |
| Covid-19 in South America | Current data and graphs covering Covid-19 cases and deaths in South America | Ignacio Van Droogenbroeck |
| Cribl LogStream | Monitor and visualize your metric data from Cribl LogStream. | Clint Sharp |
| Currency Exchange Rates | Visualize and analyze currency exchange rates using Quandl. | Wojciech Kocjan |
| DigitalOcean Billing | Get your balance, month consumption and month to date balance | Ignacio Van |



Install Dashboard 1/2

Left Menu

- Settings

Tab

- Templates

Paste the URL

- URL below

Button

- Lookup template

Settings

Variables **Templates** Labels

1 Find a template then return here to install it [Browse Community Templates](#)

2 Paste the URL of the Template's resource manifest file

Every template has a file that controls what gets installed, which is usually a YAML or JSON file

[Lookup Template](#)

This URL does not point to our Community Templates repository. It may work but we cannot guarantee quality results.

Installed Templates

| Template Name | Installed Resources | Install Date | Links |
|---------------|---------------------|-----------------|---|
| iot_center | ▶ 3 Resources | Fri Feb 05 2021 | https://github.com/bonitoo-io/community-templates/blob/master/iot_center/iot_center.yml |

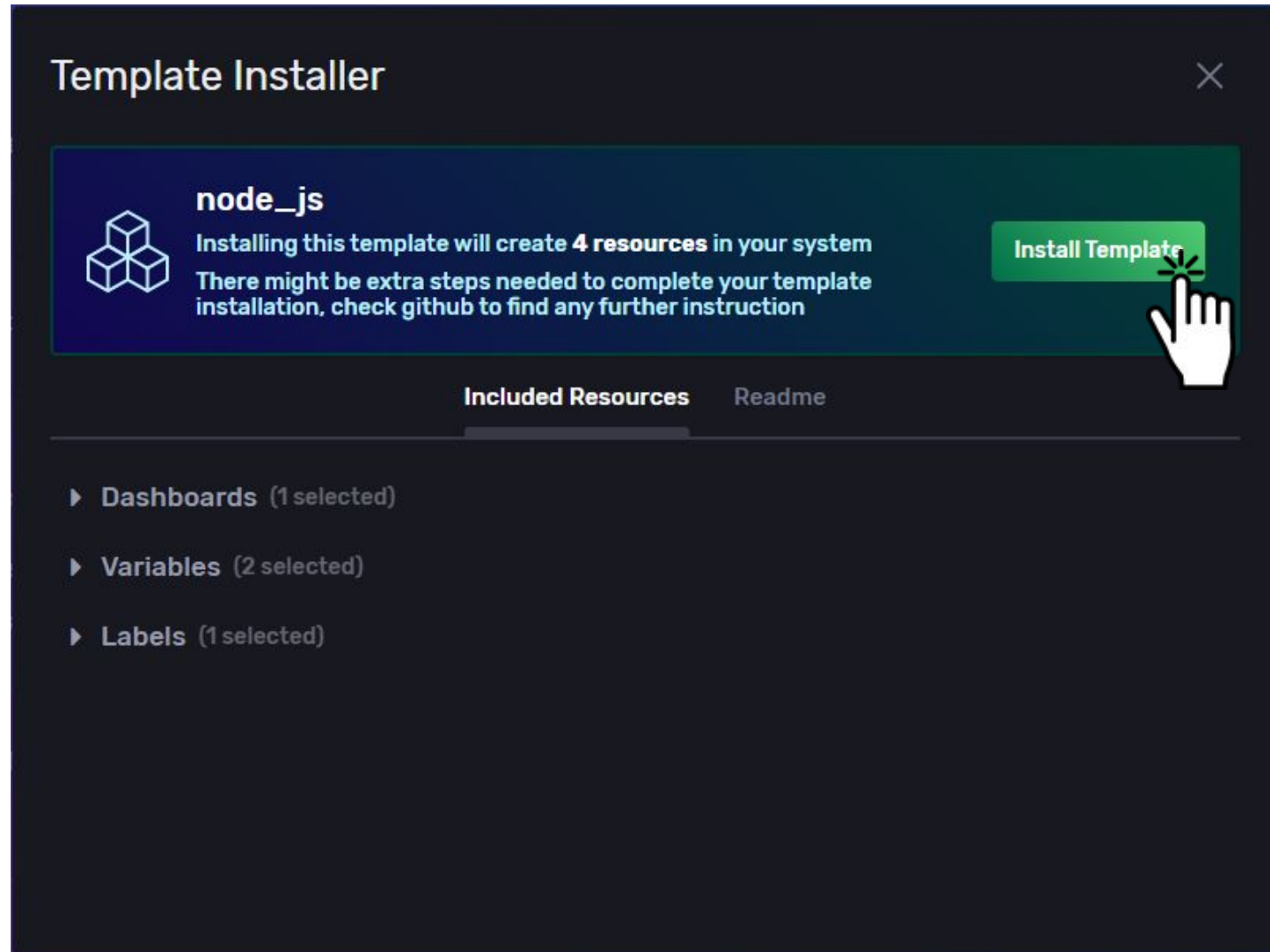
https://github.com/influxdata/community-templates/blob/master/node_js/node_js.yml











Confirm imported template

Button

- Install Template



Imported Template



Settings

[Variables](#)[Templates](#)[Labels](#)

1 Find a template then return here to install it



[Browse Community Templates](#)

2 Paste the URL of the Template's resource manifest file

Every template has a file that controls what gets installed, which is usually a YAML or JSON file

[Lookup Template](#)

Installed Templates

| Template Name | Installed Resources | Install Date | Links |
|---------------|---------------------|-----------------|---|
| iot_center | ▶ 3 Resources | Fri Feb 05 2021 | https://github.com/bonitoo-io/community-templates/blob/master/iot_center/iot_center.yml  |
| node_js | ▶ 4 Resources | Fri Feb 05 2021 | https://github.com/bonitoo-io/community-templates/blob/master/node_js/node_js.yml  |

[Upgrade Now](#)





Start IoT Center

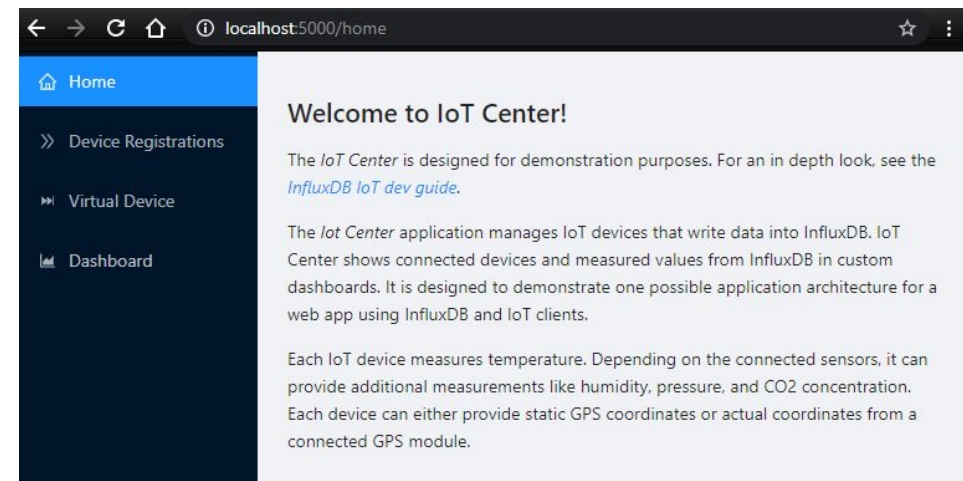
Start IoT Center

- Execute
 - **dev.bat** (Windows)
 - **./dev.sh** (Linux/macOS)

```
./dev.sh
yarn run v1.22.5
cd server && yarn start
node index.js
Enable proxy from /influx/* to https://us-west-2-1.aws.cloud2.influxdata.com/*
Bucket 'iot_center' exists.
INFLUX_URL=https://us-west-2-1.aws.cloud2.influxdata.com
INFLUX_TOKEN=***
INFLUX_ORG=node-workshop@bonitoo.io
INFLUX_BUCKET=iot_center
Listening on http://localhost:5000
```

- Open Web browser: <http://localhost:3000>

Keep this script running - we will use it later



Virtual Device - Generate demo data

Left menu

- **Virtual Device**

Top screen

- **Button** with pencil

Virtual Device

Device Configuration

| | | | |
|-----------------|---|-----------------------|--------------------------------|
| Device ID | virtual_device | Registration Time | 2020-12-21T15:09:27.549049304Z |
| InfluxDB URL | https://us-west-2-1.aws.cloud2.influxdata.com | InfluxDB Organization | iot-center-workshop@bonitoo.io |
| InfluxDB Bucket | iot_center | InfluxDB Token | *** |

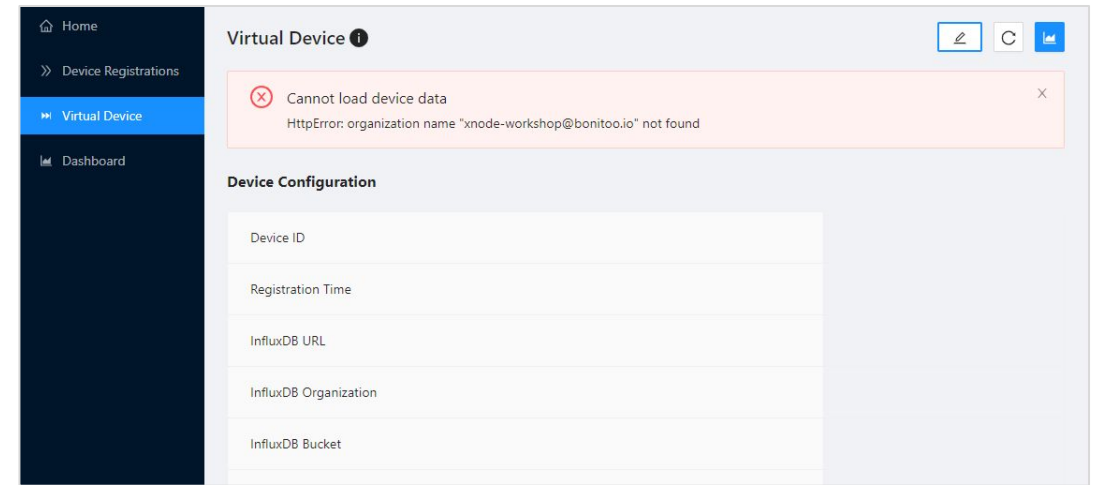
Measurements

| Field | min | max | max time | entry count | sensor |
|-------------|--------|--------|----------------------|-------------|---------------------------|
| CO2 | 780 | 2620 | 2021-07-27T01:02:00Z | 10080 | virtual_CO2Sensor |
| Humidity | 48.8 | 99.9 | 2021-07-27T01:02:00Z | 10080 | virtual_HumiditySensor |
| Lat | 28.53 | 36.22 | 2021-07-27T01:02:00Z | 10080 | virtual_GPSSensor |
| Lon | -104.2 | -77.75 | 2021-07-27T01:02:00Z | 10080 | virtual_GPSSensor |
| Pressure | 970 | 1040 | 2021-07-27T01:02:00Z | 10080 | virtual_PressureSensor |
| TVOC | 506 | 1744 | 2021-07-27T01:02:00Z | 10080 | virtual_TVOCSensor |
| Temperature | 0 | 24.1 | 2021-07-27T01:02:00Z | 10080 | virtual_TemperatureSensor |



Issues?

Errors



Error: 500 Error: connect ECONNREFUSED 127.0.0.1:8086

- fix **dev.bat/dev.sh** - you probably didn't save the file

HttpError: organization name "xnode-workshop@bonitoo.io" not found

- fix **INFLUX_ORG** - wrong organization name

Error: Unsupported protocol "null in URL: "us-west-2-1.aws.cloud2.influxdata.com"

- fix **INFLUX_URL** - add https://

Error: 500 Error: getaddrinfo ENOTFOUND xus-west-2-1.aws.cloud2.influxdata.com

- fix **INFLUX_URL** - wrong address

Error: 500 Error: 401 Unauthorized : {"code":"unauthorized","message":"unauthorized access"}

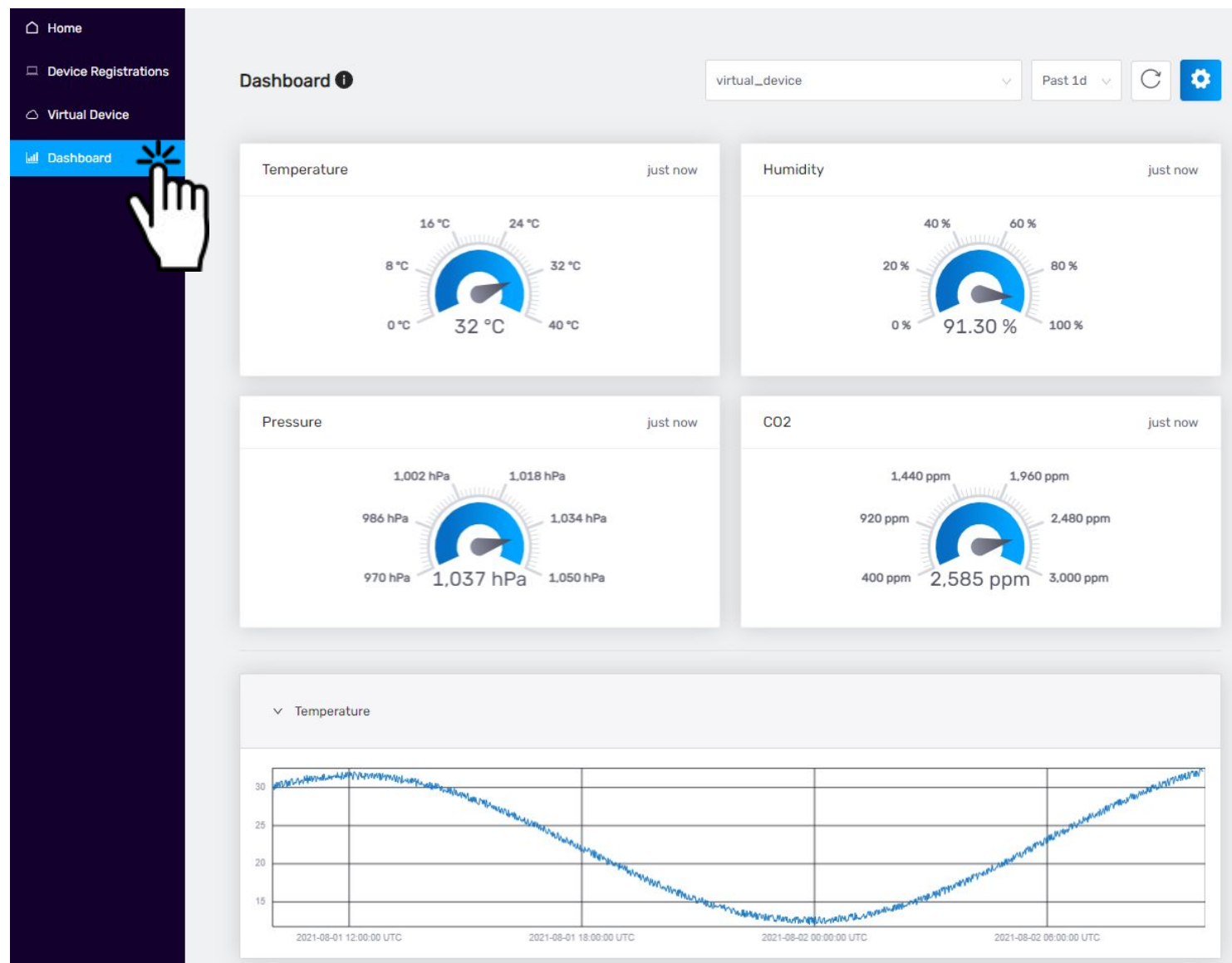
- fix **INFLUX_TOKEN** - invalid credentials



Test Demo Data

Left Menu

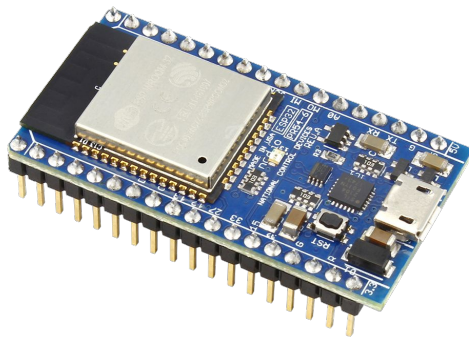
- Click **Dashboard**



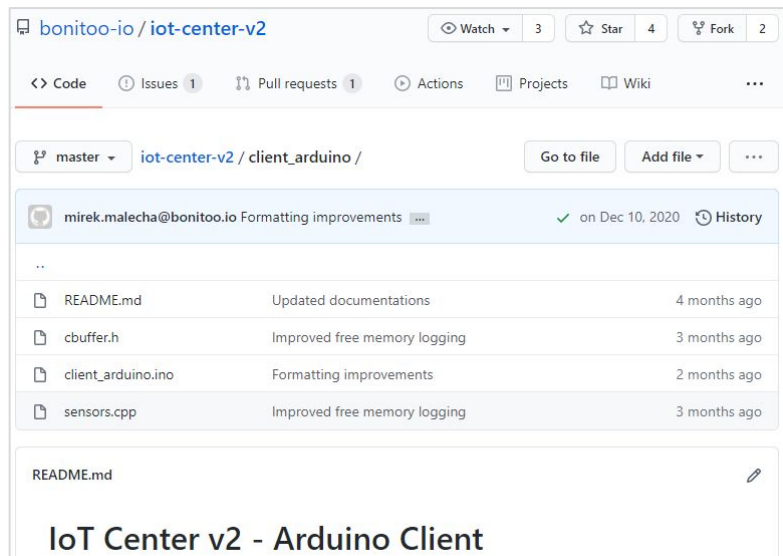
IoT Platforms source code (temperature sensor required)

ESP8266 and ESP32 devices

Arduino



https://github.com/bonitoo-io/iot-center-v2/tree/master/client_arduino

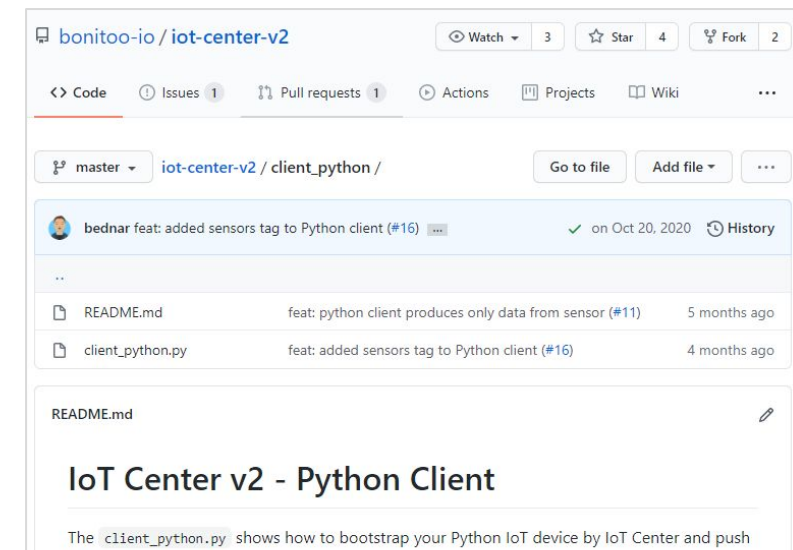


Raspberry Pi

Python



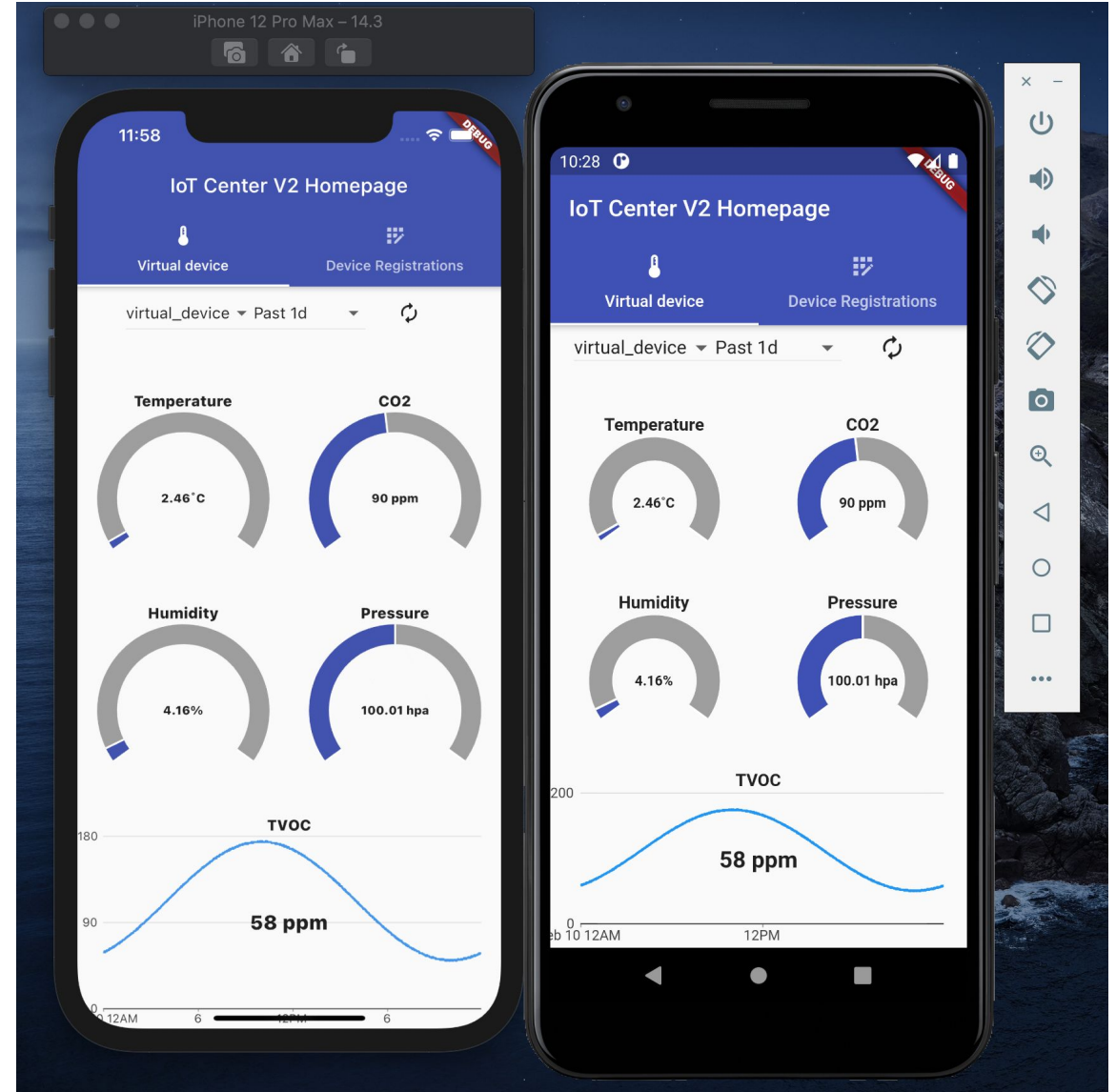
https://github.com/bonitoo-io/iot-center-v2/tree/master/client_python



Mobile client - Flutter

Using Dart InfluxDB Library

<https://github.com/influxdata/iot-center-flutter>





Break – 5 minutes

05:00

Errors

Error: 500 Error: connect ECONNREFUSED 127.0.0.1:8086

- fix **dev.bat/dev.sh** – you probably didn't save the file



HttpError: organization name "xnode-workshop@bonitoo.io" not found

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Error: Unsupported protocol "null in URL: "us-west-2-1.aws.cloud2.influxdata.com"

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Error: 500 Error: getaddrinfo ENOTFOUND xus-west-2-1.aws.cloud2.influxdata.com

- fix **INFLUX_URL** – wrong address

Error: 500 Error: 401 Unauthorized : {"code":"unauthorized","message":"unauthorized access"}

- fix **INFLUX_TOKEN** – invalid credentials

