# Deploy Top View on server

This section is going to show you how to deploy Top View on any server step by step.

## Set up ports

Top View will listen to 8443 port for Http connection so you may want to reserve your 8443 port for Top View use. Also set up your firewall to open 8443 port for outside user if necessary. If you want to set up Https connection for Top View, you need ask your server admin to reverse 443 port to 8443 port by reverse proxy, e.g. Nginx.

## Install dependencies

\* Install Cmake

```sh

sudo apt-get install build-essential cmake

```

\* Install Boost

```sh

sudo apt-get install zlib1g-dev libboost-filesystem-dev \

libboost-program-options-dev \

libboost-system-dev \

libboost-thread-dev \

libboost-iostreams-dev \

libboost-chrono-dev \

libxalan-c-dev

```

\* Install NodeJS and NPM

```sh

sudo apt-get install nodejs

sudo apt-get install npm

```

\* Install PM2

PM2 is a process manager for the JavaScript runtime Node.js. It can help us deploy Top View and keep it online 24/7. As pm2 is used for managing jobs in a cluster, if you are setting up a local server you can skip installing pm2.

```sh

sudo npm install -g pm2

sudo pm2 startup systemd

```

## Download Top View on your server

You can download the latest version source code of Top View on Github release page or you can pull Top View Github repository directly to your server.

## Build cpp program for Top View

We are using a cpp program for Top View to process mzML file, so you have to build it before start Top View. First, go to top\_view\_dir/cpp/build/, then use Cmake to build mzML process program. You can try this script below step by step. It may take a while to build this program(please install dependencies first).

```sh

cd cpp/build

cmake ..

make

```

## Install npm modules for NodeJS

All the dependencies for NodeJS has been stored in package.json file. You need go to the root directory and run the following command.

```sh

npm install

```

## For local server setup - change authentication URL

Open auth.js in top\_view\_nodes folder and go to line 13-14. Comment out line 13 and uncomment line 14 as below.

```sh

line 13 //callbackURL: 'https://toppic.soic.iupui.edu/auth/google/callback'

line 14 callbackURL: 'http://localhost:8443/auth/google/callback'

```

## Make it run

We recommend to use PM2 to run Top View as a service. There is already a file called ecosystem.config.js under Top View root directory to set up PM2. If you want to set it up yourself, please go to PM2 online document for your need.

```sh

# start server by pm2

pm2 start ecosystem.config.js --env production

```

If you are setting up a local server, you can start a server by using the command below instead of starting pm2. Then open a browser and go to localhost:8443.

```sh

# at top\_view\_nodes directory (root)

node server.js

```

## Stop Top View

By using PM2, you can easily start or stop Top View at any time. For example, you can stop it by running command \_pm2 delete Top View\_. For more information, please check PM2 document.