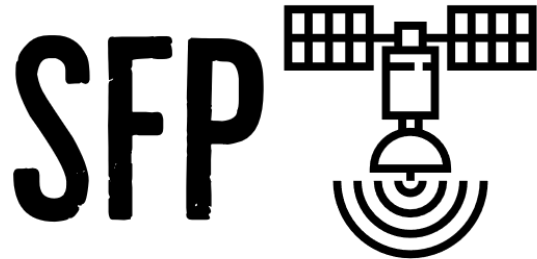


Team Satellite Fire Patrol

User Manual v1.0

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Introduction

We are pleased that you have chosen Thermal Watch for your academic needs. Thermal Watch is a system that is able to gather, process, store, and display historical and more recent land surface temperature of Hawaii. Here are the key highlights

- Historical Temperature Storage
- Display temperature averages
- Display individual temperature readings
- Alert system

The purpose of this manual is to help you, the client, successfully use, manage, and maintain the Thermal Watch web application.

Installation

Monsoon

Monsoon will handle the data retrieval, processing, storage, publishing, and the alert system. In order to start this process, the following steps need to be start the process

- Folder, 'DataProcessingScripts', needs to be moved into monsoon (the directory does not matter)
- Follow the steps in README.md to create dataConfig.json
- A conda environment needs to be created to run the bash script and install all required libraries. In order to do this, please run the commands below
 - module load anaconda3
 - conda create capstone
 - conda activate capstone
 - conda install -c conda-forge numpy
 - conda install -c conda-forge requests

- conda install -c conda-forge h5py
- conda install -c conda-forge geojson
- pip install global_land_mask
- the job needs to be executed by using the following command: sbatch job.sh
 - This job script will repeat automatically every 24 hours
 - This job script retrieves and processes ecostress from the last 24 hours. It also runs the alertSystemManager which gathers the most recent version of the alert system database.

AWS Server

The AWS server hosts the frontend of the website. We used the Vue.js framework, which allows us to quickly see our changes and easy compartmentalization.

Prerequisites to access:

- An SSH Key for the server
- User account

Access the server through this command using ssh:

```
ssh -i ~/.ssh/keyfile.pem user@35.82.41.91
```

Note: for Windows users, this can be achieved using Windows Subsystem Linux (WSL)

Configuration and Daily Operation

The website and everything regarding it is stored in the following directory, which can be accessed using the command below:

```
sudo cd /var/www/html/Vue
```

In the directory there is two subfolders “dist” and “Backend”. The Backend contains files for the AWS backend. In order to start the backend use the following command

```
forever start Backend.js
```

The command above will start the backend on the AWS instance on port 3002.

The dist directory is the vue application build. If you want to update the vue application, you will need to build the vue application with the following command

```
npm run build
```

This will build the vue application and create a new dist folder. Once the build is complete, you will need to move the dist folder to the following path /var/www/html/Vue. Once it is in that directory, issue the following commands

```
sudo systemctl reload apache2
```

```
sudo systemctl restart apache2
```

This will restart the AWS instance server to serve to the new vue application

Maintenance

The main maintenance required for this server will be security updates from the kernel or updates from vue. This section will walk you through updating the server and potentially updating the vue application.

Server Updates:

When you first ssh into the server it will tell you if there are any updates necessary at the time of login. You can also run:

```
sudo apt update or apt update
```

To check what is upgradable run this:

```
apt list --upgradable
```

Then to update all you can run:

```
sudo apt upgrade
```

Sometimes a reboot will be required for installation to reboot the server run:

```
sudo reboot
```

Then wait a few minutes before trying to ssh back into the server.

Vue Updates:

To check your current vue version, run:

```
vue --version
```

To update vue run:

```
npm update vue
```

Or

```
npm install -g @vue/cli
```

Then you can check your version was updated with the first command again.

Troubleshooting

Monsoon

Data issues

- Check to make sure the Data folder exists in scratch

AWS Server

To run the website, use the command:

```
npm run serve
```

Conclusion

Overall, there are three parts that need to work together for the website to function properly. There is Monsoon, AWS, and the Backend.js file on the AWS. AWS hosts the website framework using Vue.js and the backend serves the information directly from monsoon at a user's request. We have laid out the steps needed to troubleshoot and maintain this project in this document and will make changes to it based on clarity.