CHAMPLAIN COLLEGE LENNOXVILLE
INTEGRATIVE PROJECT - (420-610-LE)

VALCOURT 2030 DEPLOYMENT DOCUMENTATION

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420-350-LE USING DATABASES
COMPUTER SCIENCE TECHNOLOGY

PRESENTED TO GABRIEL GASTUDILLO
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Documentation for Deployment of the Valcourt 2030 Application

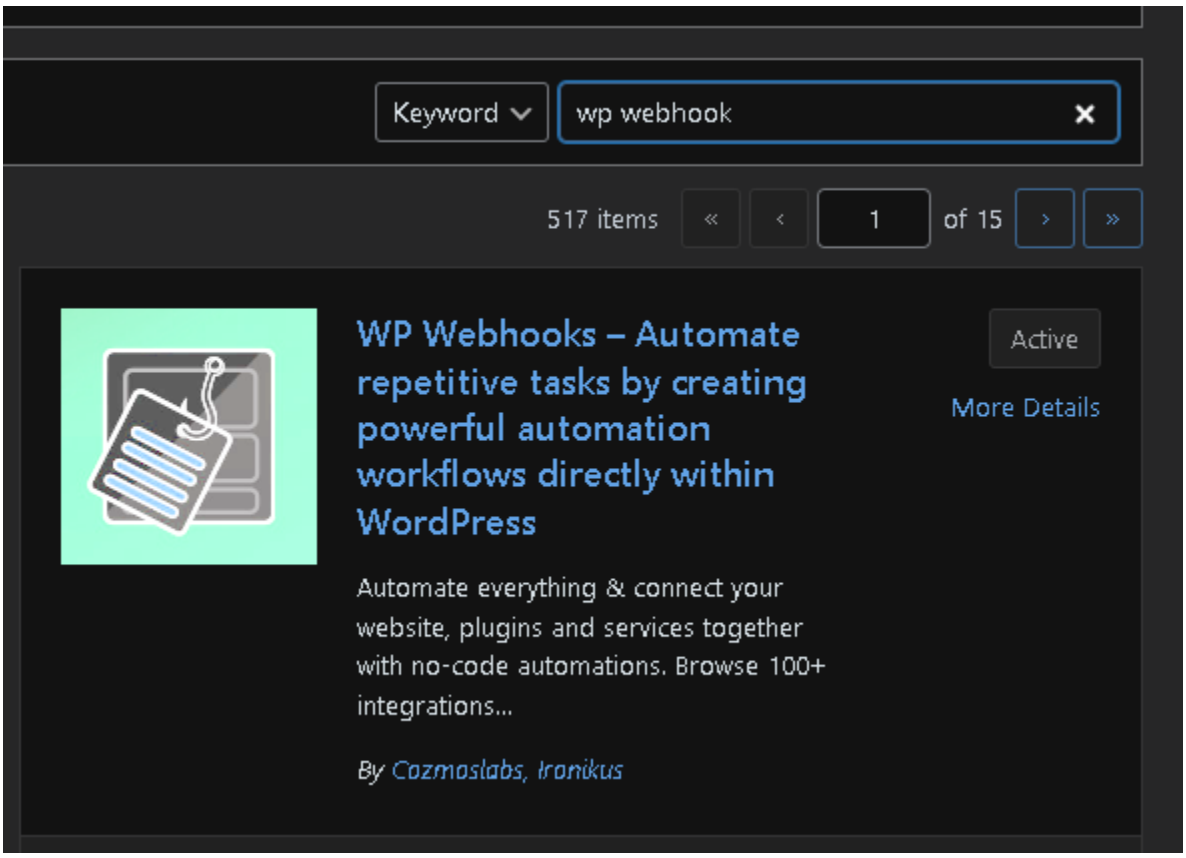
Prerequisites

Setting up webhook in WordPress

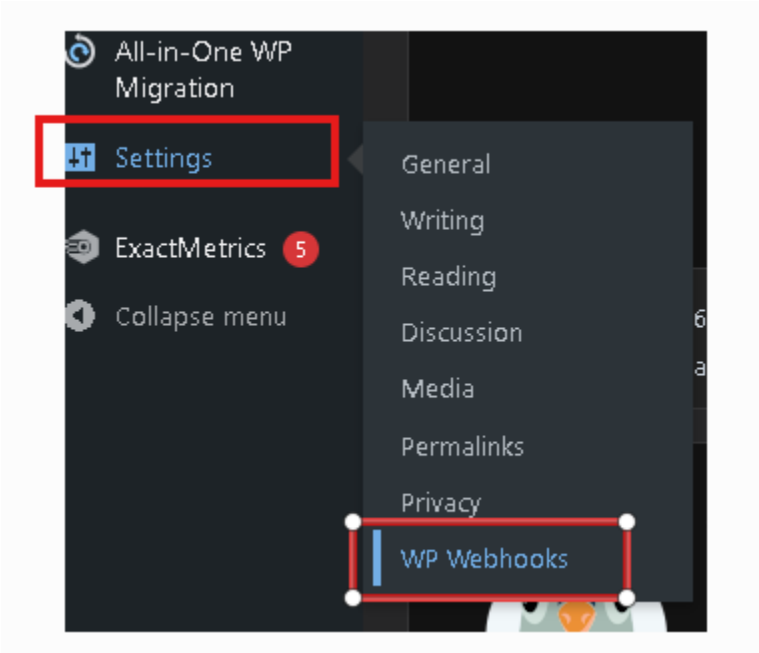
To be able set up the Webhooks part of the app you will have to install the WebHooks Plugin:

First, we will need to install the Webhook plugin:

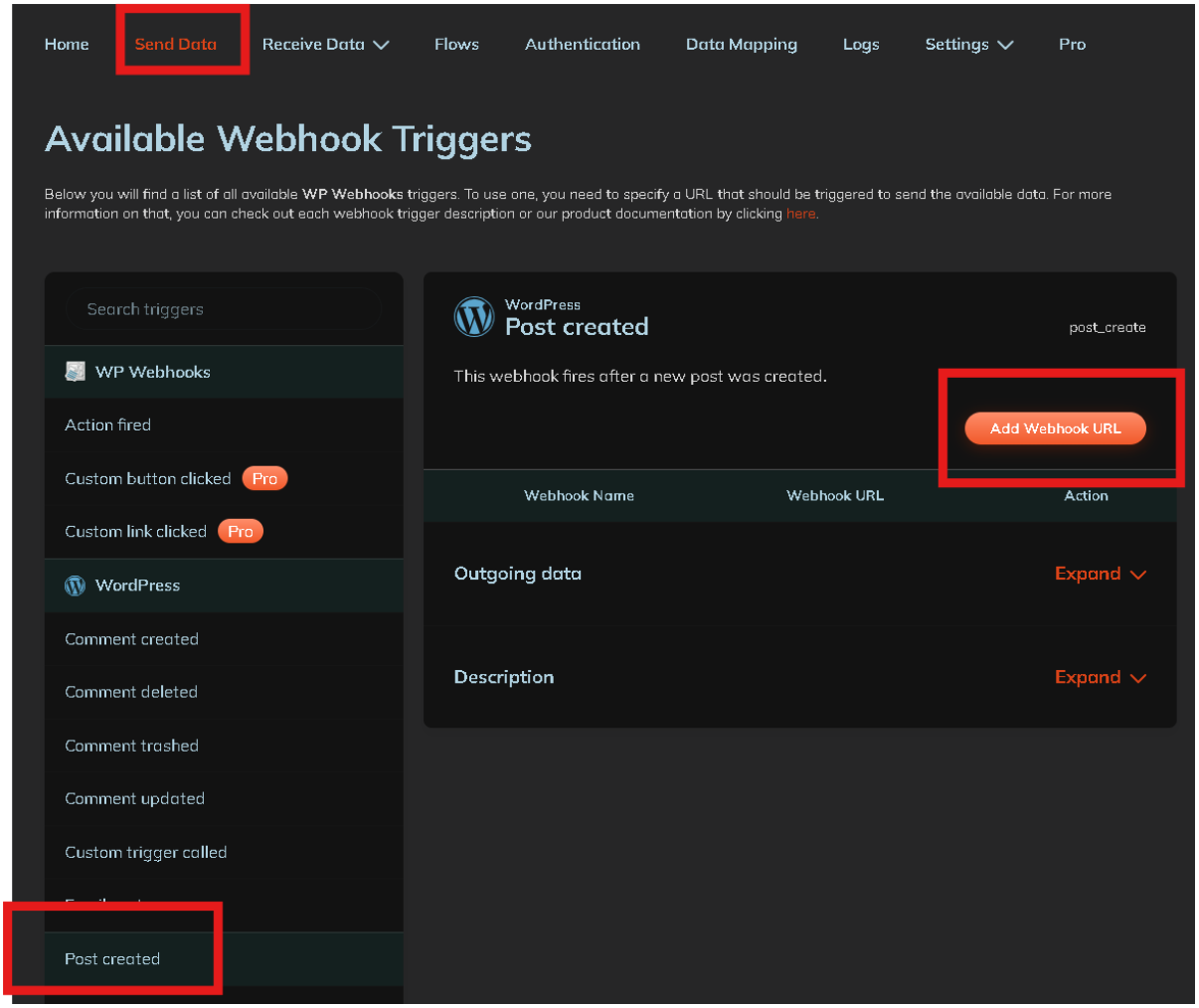
1) Go in the PLugin Section of your WordPress search for the following plugin and install it:



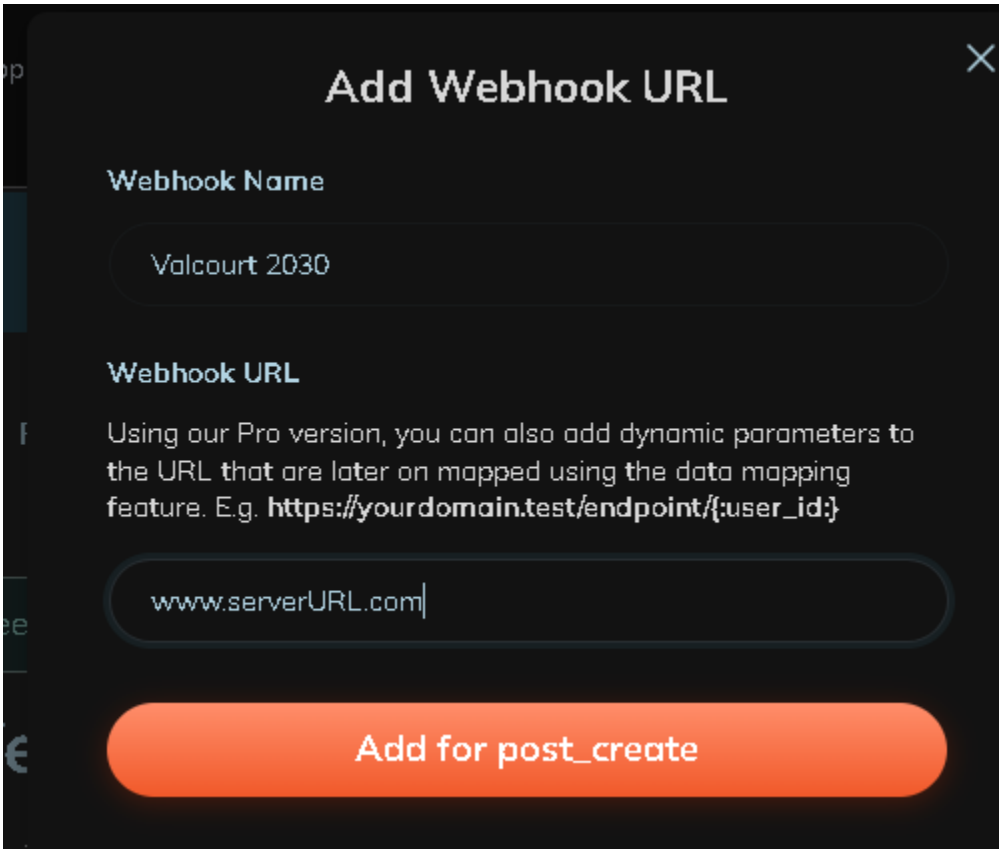
2) Go to your WP settings and click on WP WebHooks:



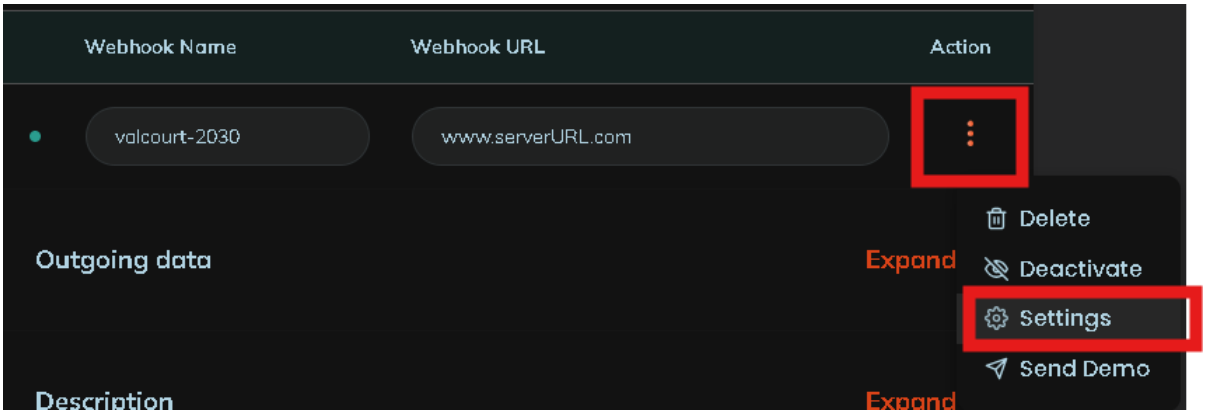
3) Click on Send Data > Post created > Add Webhook URL



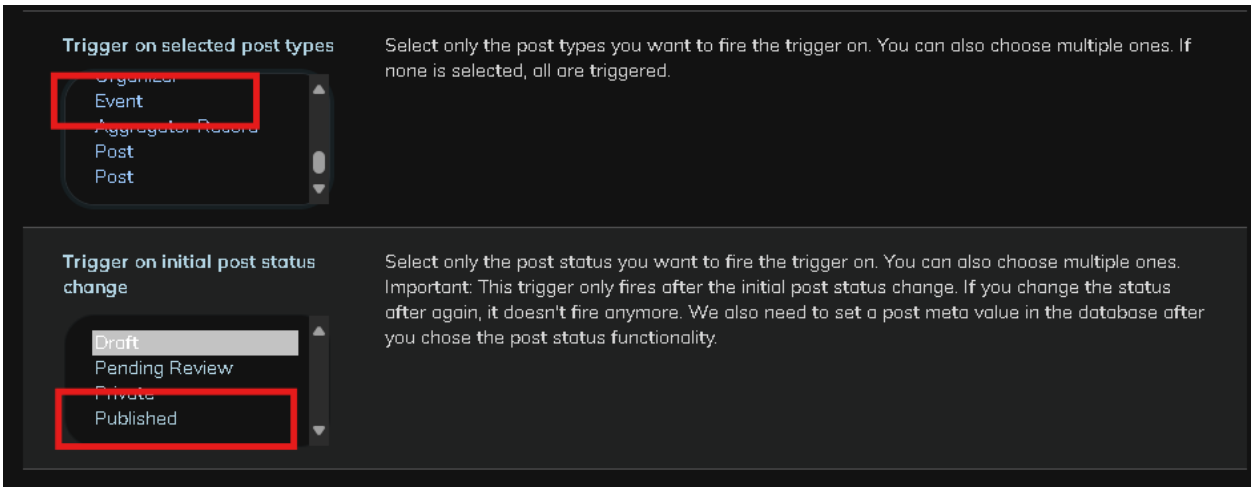
4) Enter the webhook name and the URL of your server and click on the Add for post_create button.



5) Click on the settings option



6) Change the following options. On Trigger on selected post types select EVENT and on Trigger on initial post status change select PUBLISHED, scroll down and click on SAVE and your Webhook should be good to go.

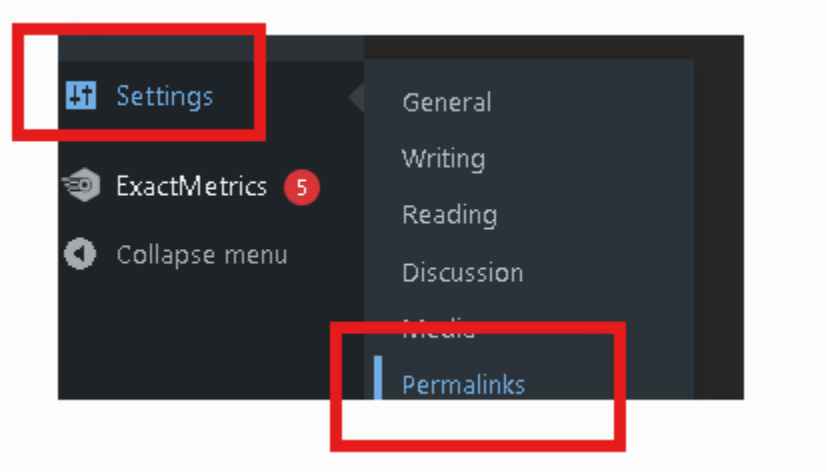


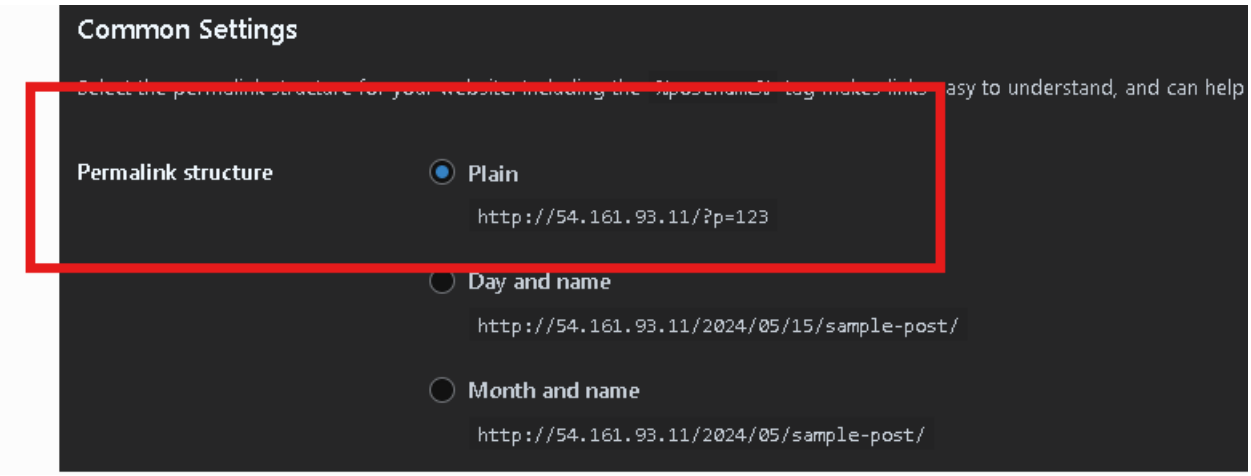
Now every new Event will be redirected to the Database and will be displayed on the Website.

Configuring tags in WordPress

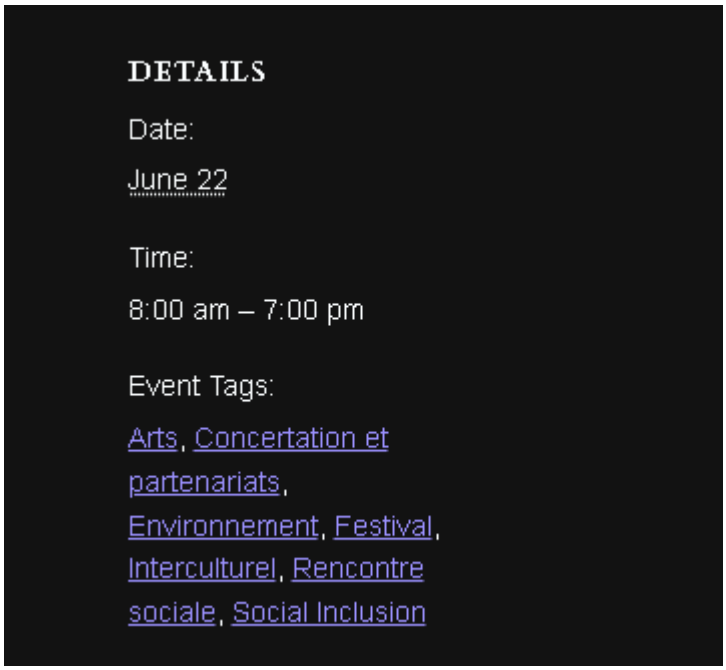
To make sure that the tags work on the WordPress website when clicking them on the events. (To see all the events that share the similar tag) You will need to twitch some WordPRess settings so they are displayed correctly.

To do so you will need to go to your Wordpress Permalink option on your settings and set them up as Plain:





Afterwards whenever you will click on the tags on a post it will show all the post with those tags.



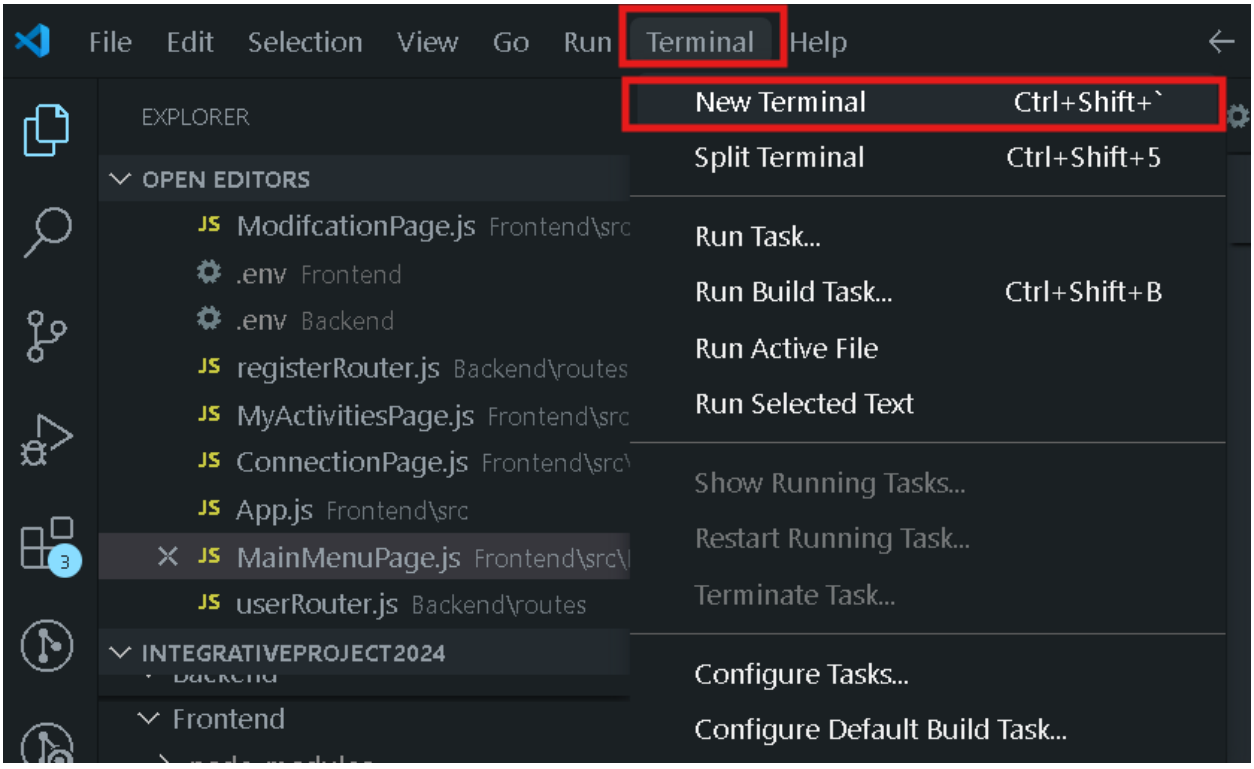
Deploying a React Application to AWS Elastic Beanstalk

This documentation outlines the steps to deploy a React application to AWS Elastic Beanstalk using the Elastic Beanstalk Command-Line Interface (CLI).

Deployment Process:

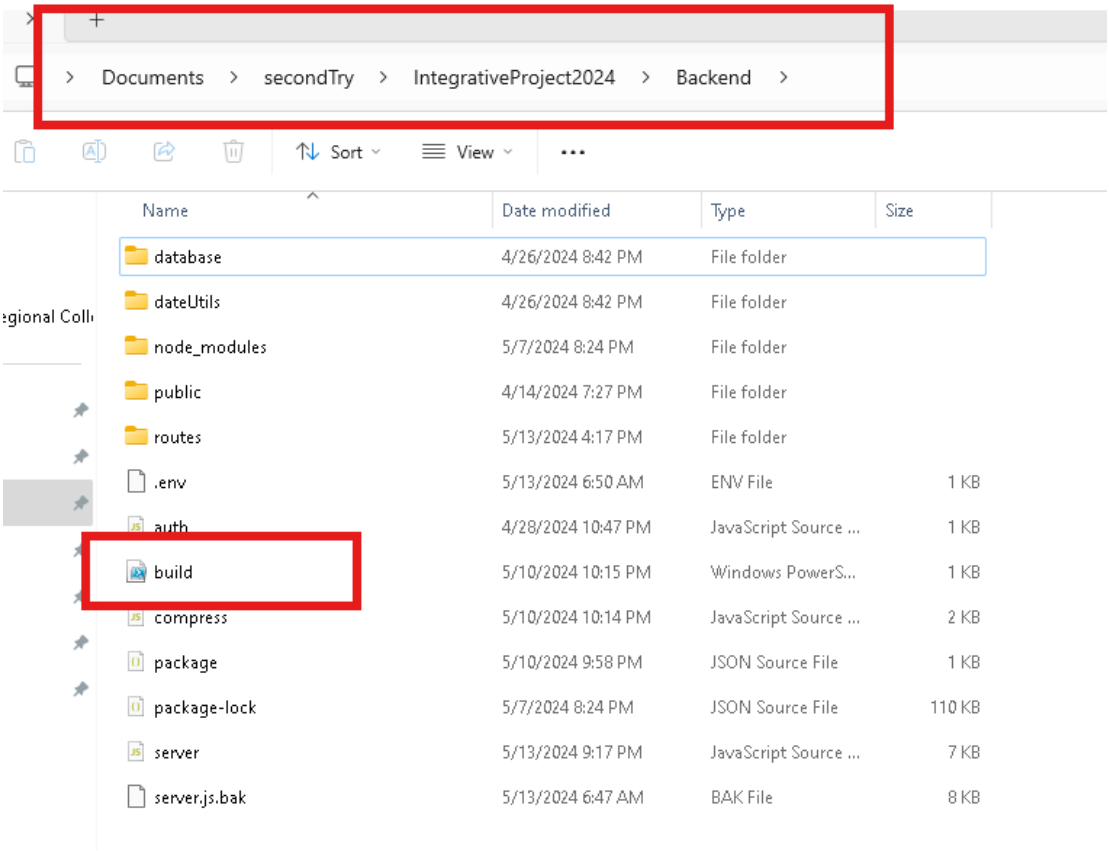
Create a zipped version of the build of the Valcour2030 application.

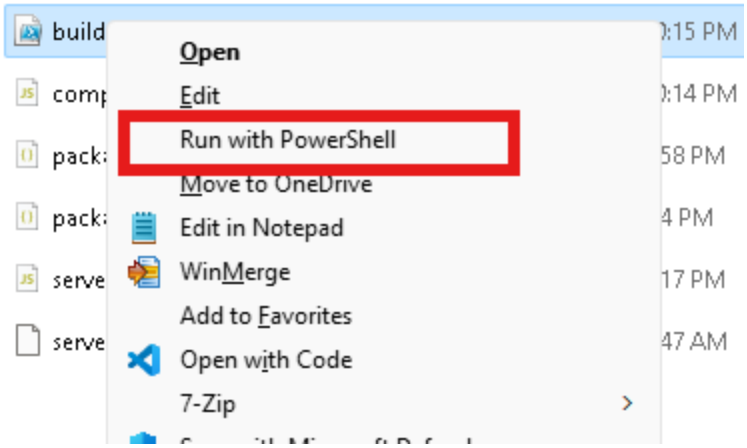
- To do so the person in charge of deploying would have to pull the last version of the application from the GitRepo:
  - https://github.com/VladimirEstevez/IntegrativeProject2024.git
- After they will need to install Node.js
  - Node.js — Run JavaScript Everywhere (nodejs.org)
- They will need to install Visual Studio Code and open the root folder of the project by doing Open Folder and selecting the folder that was cloned from the main repo.
- Afterwards, they will need to open a Terminal window in the project's root folder by clicking on Terminal, New Terminal.



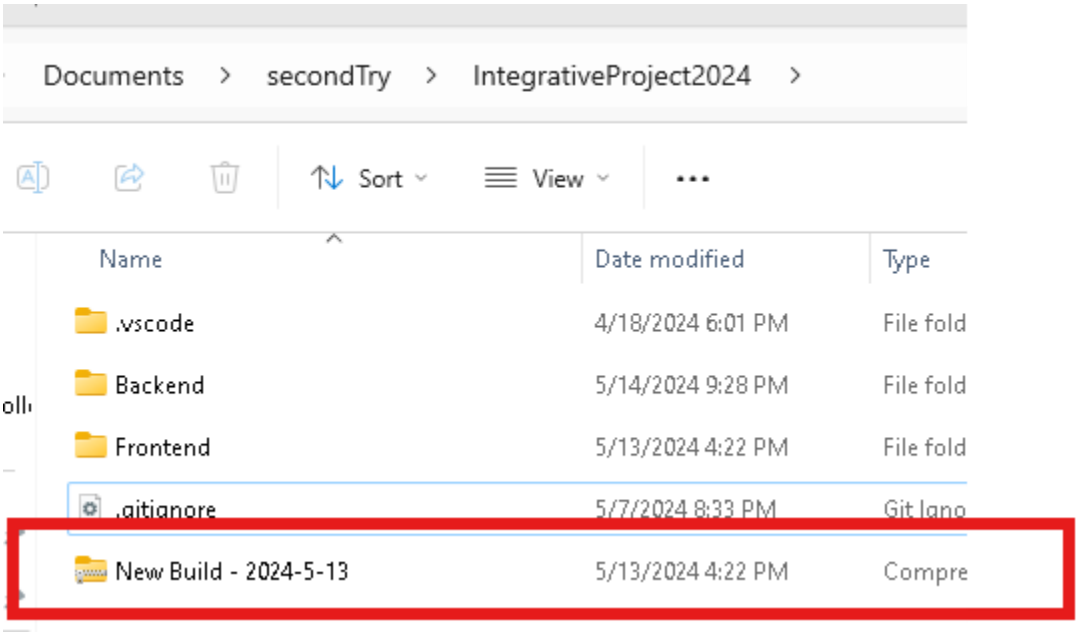
- Next, click on the Split Terminal option pointed by the red arrow

- Then tap the folowing:
  - On one of the tabs:
    - ***cd Frontend ; npm i***
  - And on the other one
    - ***cd Backend ; npm i***
- These commands should install all the dependencies needed to the application to be able to be build.
- Finally you will need to run the build to do so you could run the ***npm run bundle*** command on the Backend terminal or:
  - Go to the root folder of the project and press on the Shift + right click on the build script and select Run with PowerShell:





- This command will perform the same as the npm run bundle. It will generate a Zip file next to the Backend and Frontend folder with the date the build was performed.

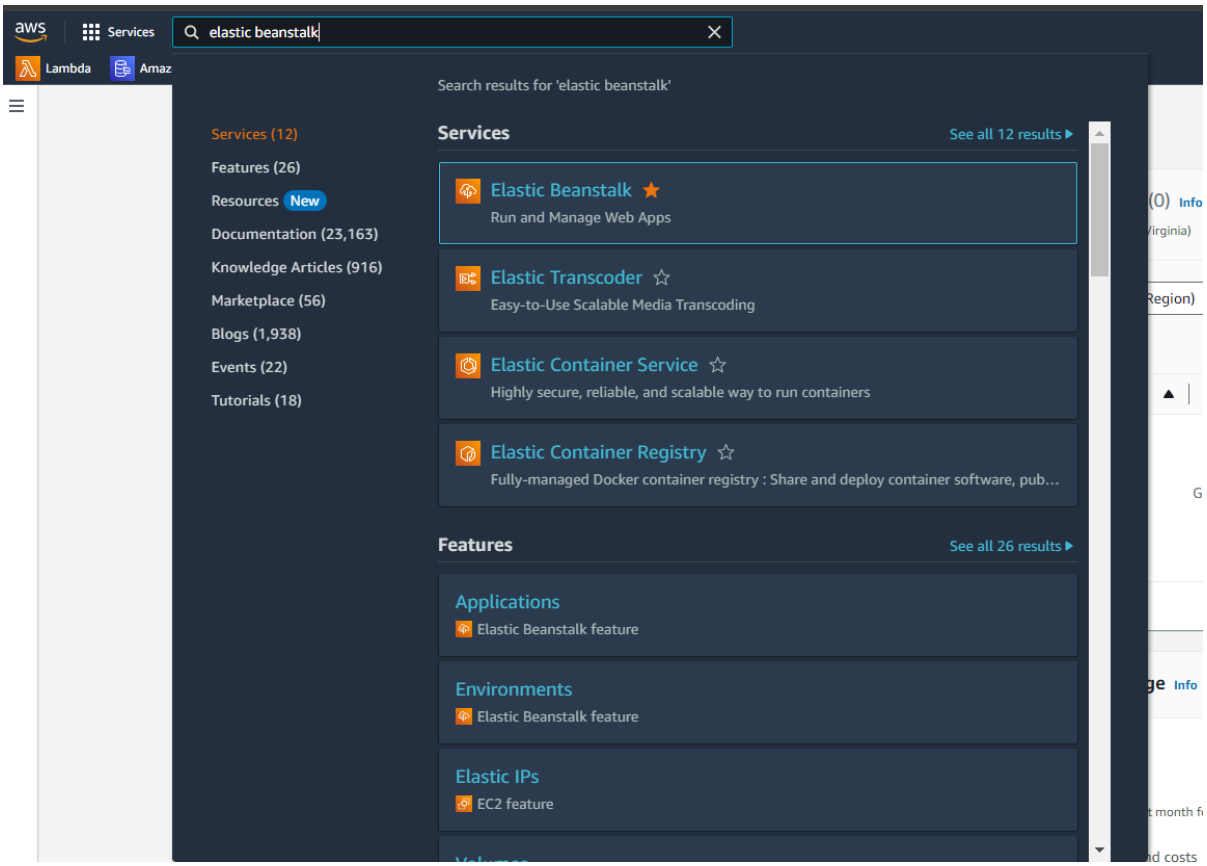


- This will be the Zip file we will be later uploading to the Elastic Beanstalk instance.

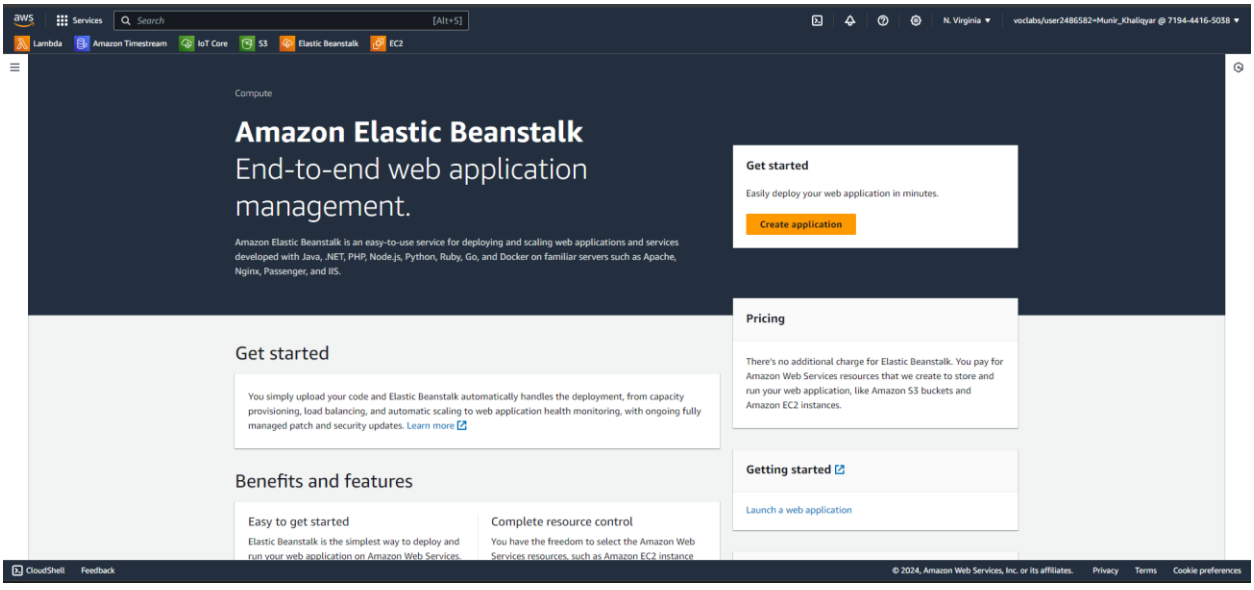
Initialization and environment creation:

You need an application environment for your application to be deployed and hosted in AWS and you can use the “Elastic Beanstalk” as your server.

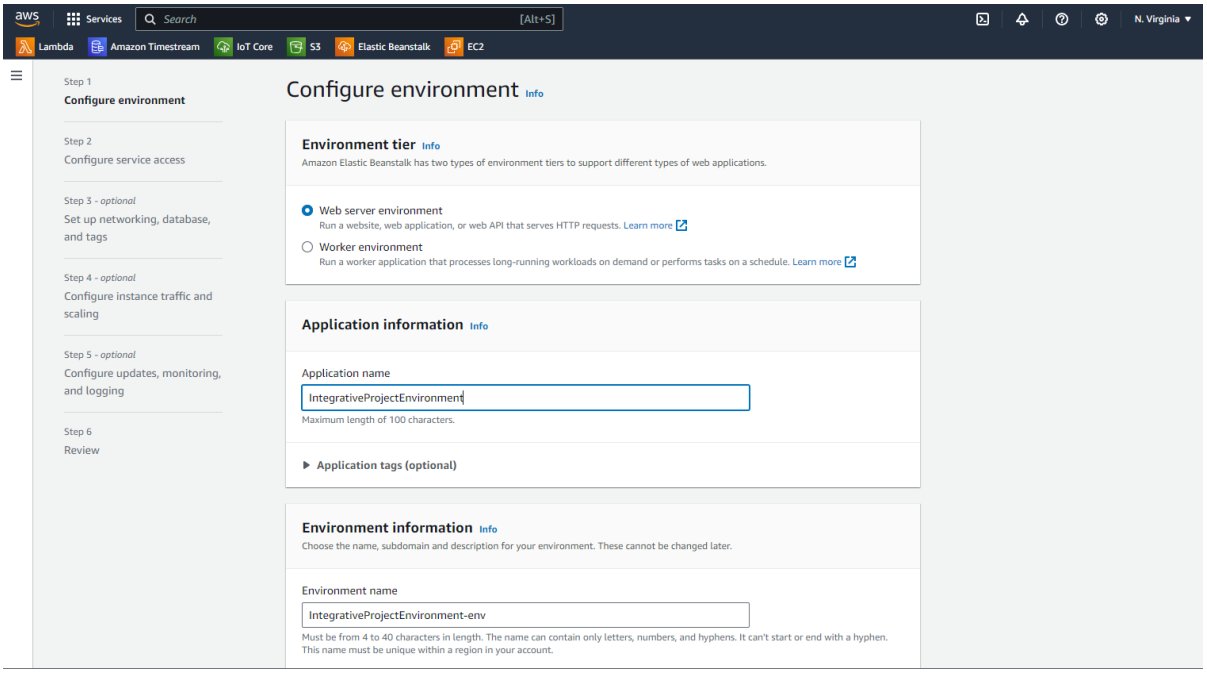
1. Sign in to your AWS account and look for “Elastic Beanstalk” in the console:



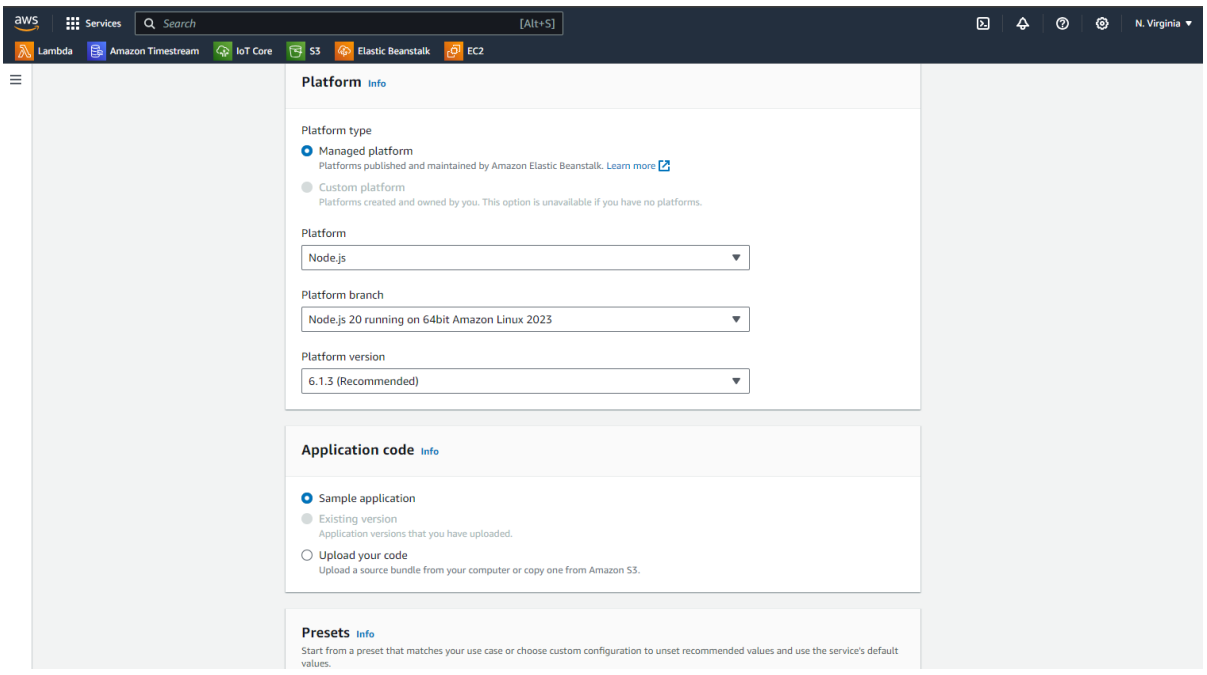
2. Click on “Create application”:



3. Put a name for your application, for example “IntegrativeProjectEnvironment” and choose environment name that AWS suggests:

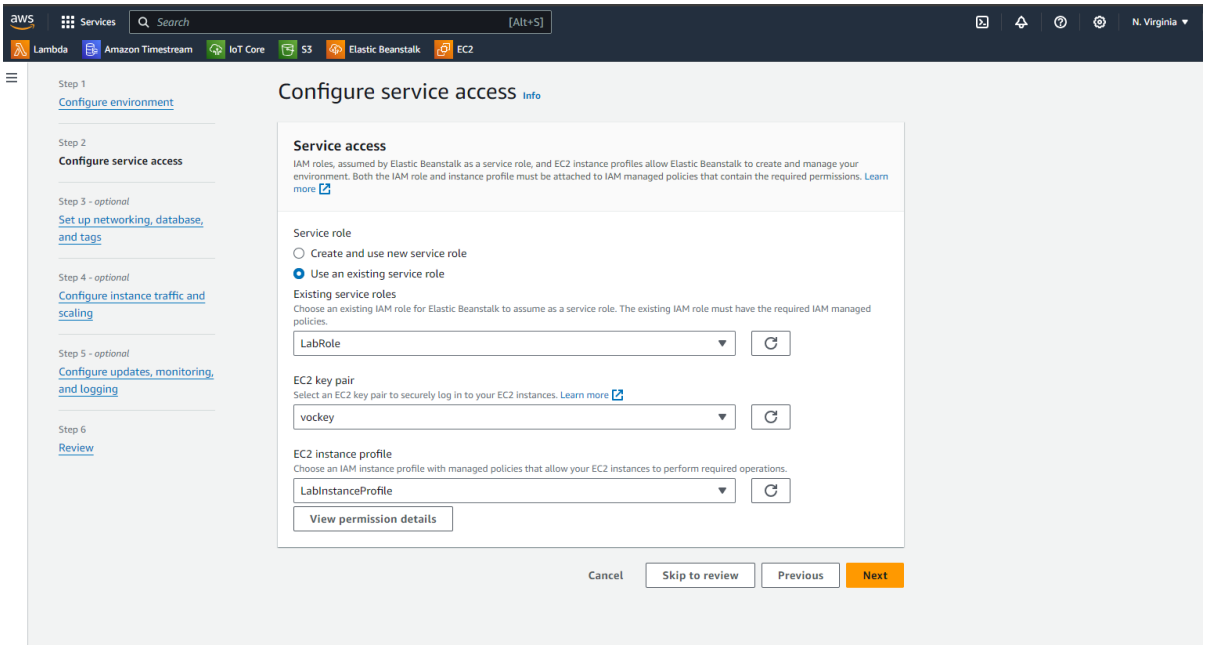


4. In the Platform section choose “Node.js” as Platform, choose “Node.js 20 running on 64bit Amazon Linux 2023” as Platform branch and choose “6.1.3 (Recommended)” as Platform version. Choose “Sample application” for Application code.

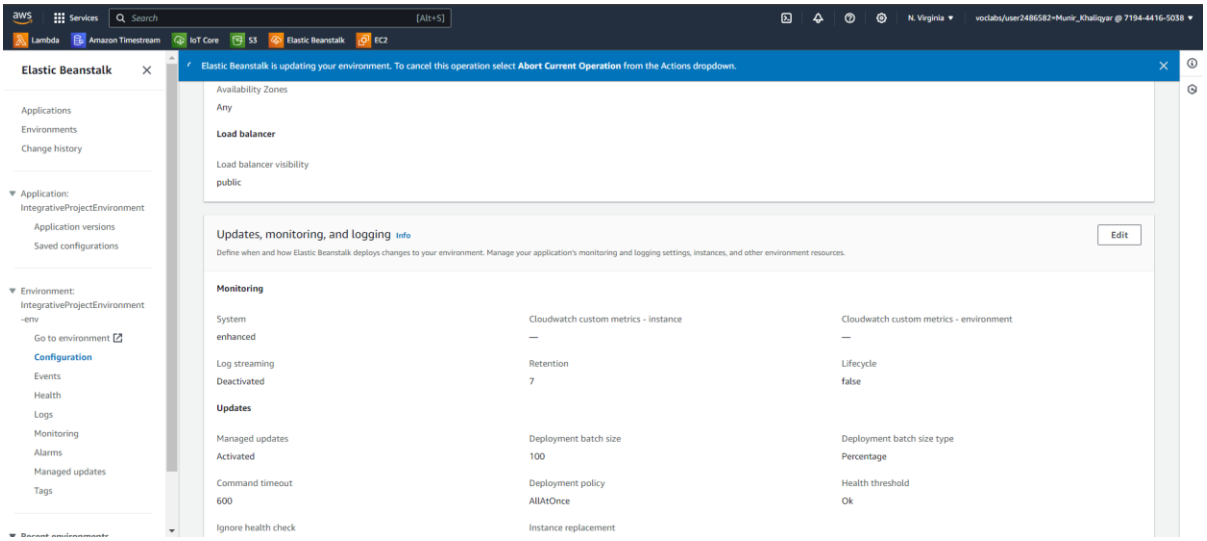


5. For the “Service access” choose “LabRole” for the Existing service roles, choose “vockey” for EC2 key pair, and “LabInstanceProfile” for EC2 instance profile then

click on “Skip to review” and then click on “Submit” to create the application environment.



6. When the environment is created, you need to add some environment variables. Go to Configuration, scroll down and find “Updates, monitoring, and logging” then click on “Edit”.



7. Add these variables:

DATABASE_URL=
SECRET_TOKEN=
EMAIL_PASSWORD=
PORT=8080
RECIPIENT_EMAIL=”Valcourt2030@outlook.com”
REACT_APP_SERVER_URL=

EMAIL_PROVIDER=”outlook”
SERVER_URL=

The “SECRET_TOKEN” is random numbers and letters. I recommend making it at least 10 characters including letters and numbers.

To be able to retrieve the EMAIL_PASSWORD Application password for valcourt2030@outlook.com follow these instructions:
Microsoft two-step verification - Microsoft Support

a. Go to the https://account.microsoft.com/security basics page and sign in to your Microsoft account.
b. Select more security options.
c. Under Two-step verification, choose Set up two-step verification to turn it on. If you see Turn off two-step verification, it's already turned on.
d. Once you've verified two-step verification is turned on, select Create a new app password under App passwords.
e. A new app password is generated and appears on your screen. Copy this password (without the spaces) and enter this password when Outlook prompts you for a password.

Creating the MongoDB Database

The DATABASE_URL variable will be provided to you when you create a MongoDB database. Here are the instructions on how to create a MongodDB database:

Prerequisites

- A MongoDB Atlas account. If you don’t have one, you can sign up at mongodb.com/cloud/atlas.
- Basic understanding of database concepts.
- MongoDB Compass installed on your computer. You can download it from the MongoDB Compass download page.

Step-by-Step Guide

Step 1: Log In to MongoDB Atlas

- Visit MongoDB Atlas.

- Click on the **Sign In** button and enter your credentials to log in to your account.

Step 2: Create a New Project

- After logging in, you will be directed to the Atlas dashboard.
- Click on **New Project**.
- Enter a name for your project and click **Next**.
- Optionally, add members to your project by entering their email addresses and selecting their roles. Click **Create Project**.

Step 3: Build a Cluster

- In your new project, click on **Build a Cluster**.
- At the top, select the **Shared** option to access the shared clusters.
- Choose the **M0 Sandbox** (Free Tier) to get started without any cost. Note that the M0 Sandbox has a storage limit of up to 512 MB.
- Choose **AWS** as your cloud provider.
- Select **N. Virginia (us-east-1)** as the region. This region is geographically close to many users in the United States and offers good performance.
- Click **Create Cluster**. The cluster creation process will take a few minutes.

Step 4: Configure Cluster Security

- Once your cluster is created, you need to configure the security settings.
- Click on **Database Access** in the left-hand menu.
- Click **Add New Database User**.
- Enter a username and password for your database user. **Take note of the username and password** because you will not be able to retrieve the password after it is created. Make sure to save these credentials securely as you will need them to connect to your cluster.
- Assign the user appropriate roles based on your needs (e.g., read Write).
- Click **Add User**.

Next, configure the IP Whitelist to allow connections to your cluster.

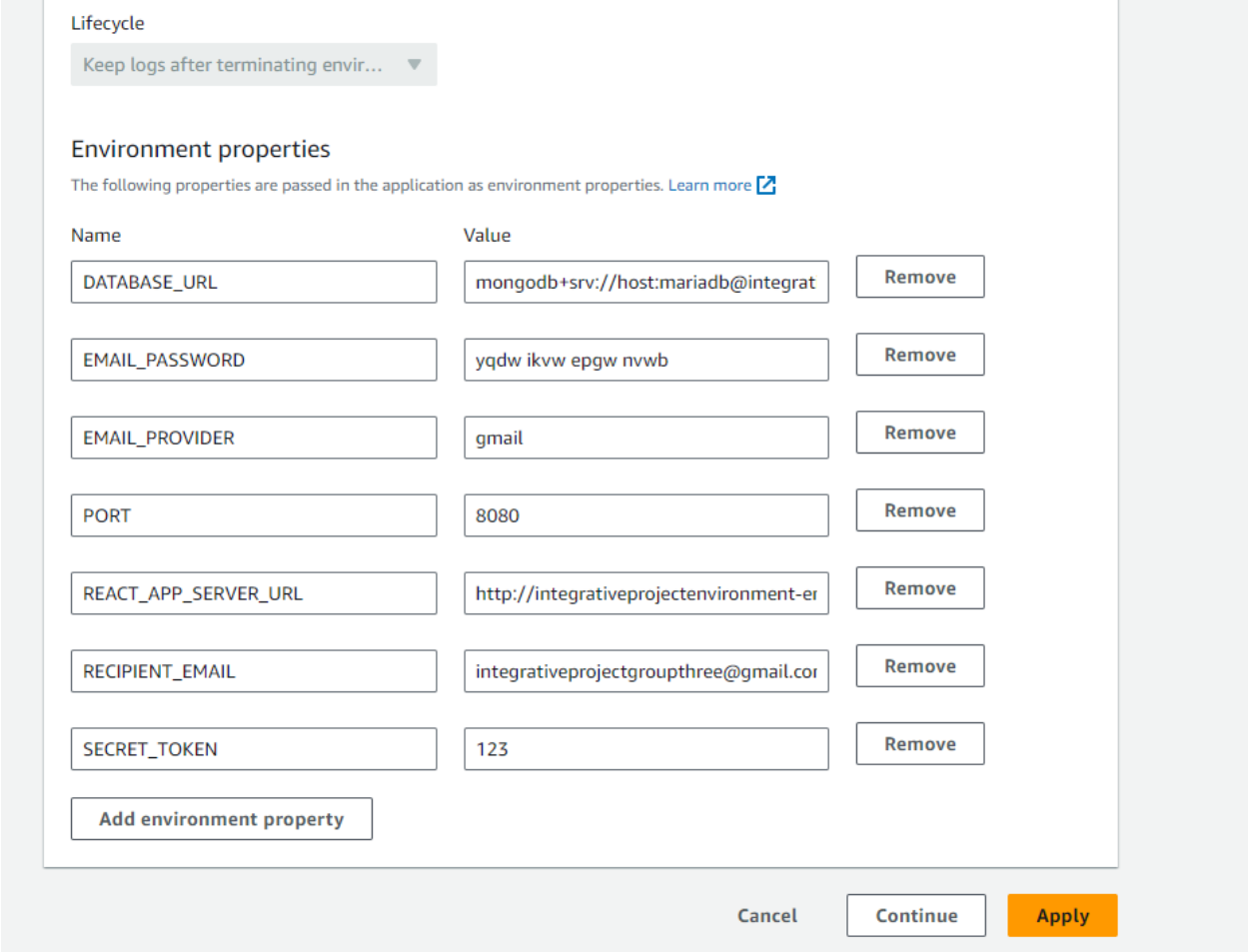
- Click on **Network Access** in the left-hand menu.
- Click **Add IP Address**.
- You can allow access from anywhere by adding 0.0.0.0/0, or specify your IP address or CIDR range for more restricted access.
- Click **Confirm**.

Step 5: Connect to Your Cluster

- Go back to the **Clusters** view.
- Click **Connect** next to your cluster.
- Choose your connection method. You can connect using MongoDB's native drivers, MongoDB Compass, or via the command line.
- To connect using MongoDB Compass:
    - If you haven't installed MongoDB Compass, download and install it from the MongoDB Compass download page.
    - Open MongoDB Compass.
    - In the Atlas UI, click on **Connect using MongoDB Compass**.
    - Select your version of MongoDB Compass and copy the provided connection string.
    - Open MongoDB Compass and paste the connection string in the **New Connection** dialog.
    - Replace <username> and <password> in the connection string with the database user credentials you created earlier.
    - Click **Connect** to connect to your cluster.

Conclusion

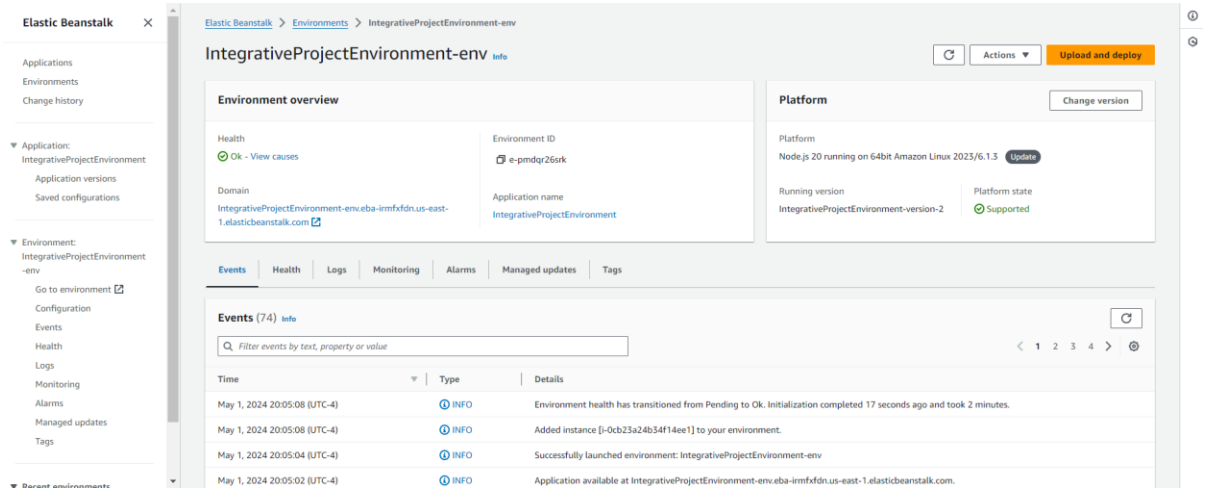
By following these steps, you have successfully created a MongoDB cluster on MongoDB Atlas and connected to it using MongoDB Compass or a connection string. You can now use this cluster to store, manage, and query your data efficiently. With the MongoDB Compass connection, you have direct access to view and manage your data within the database, providing a powerful interface for database operations. The connection string you used to connect to MongoDB Compass will be the one you will be using on the DATABASE_URL= environment variable on the Elastic Beanstalk instance.



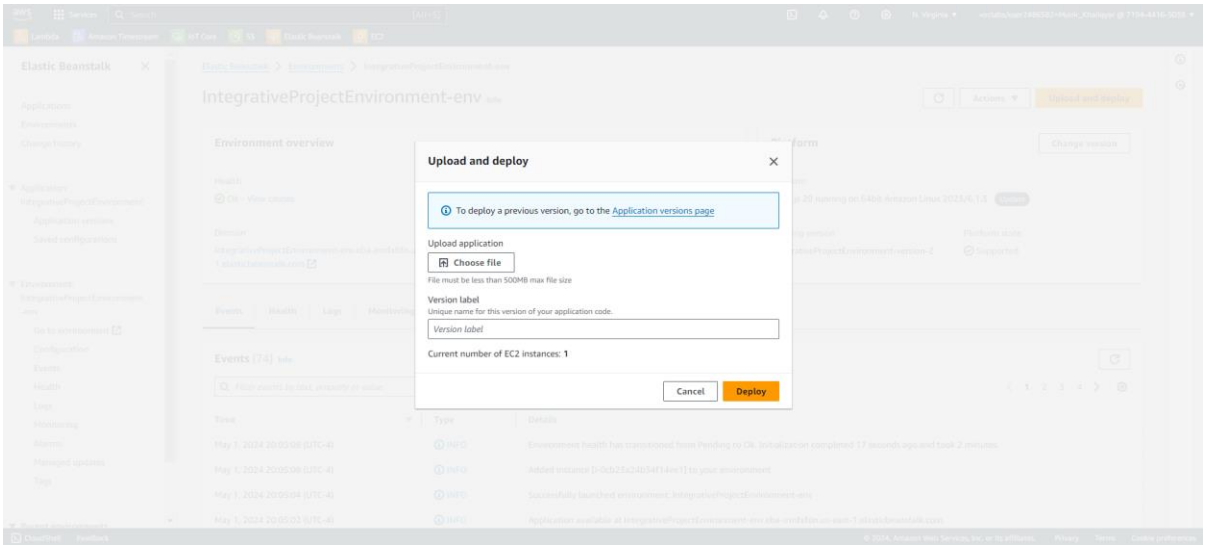
After filling in all the values of the different variables click on the Apply button to confirm the changes.

8. When the changes are done you should see the status of the “Health” is “Ok” then you can upload the zipped folder of the application that we created before (see previous step Create a zipped version of the build of the Valcour2030 application)

by clicking on “Upload and deploy”.



9. Then you can choose the zipped folder from your computer and add a name to the version of the application in the “Version label”.



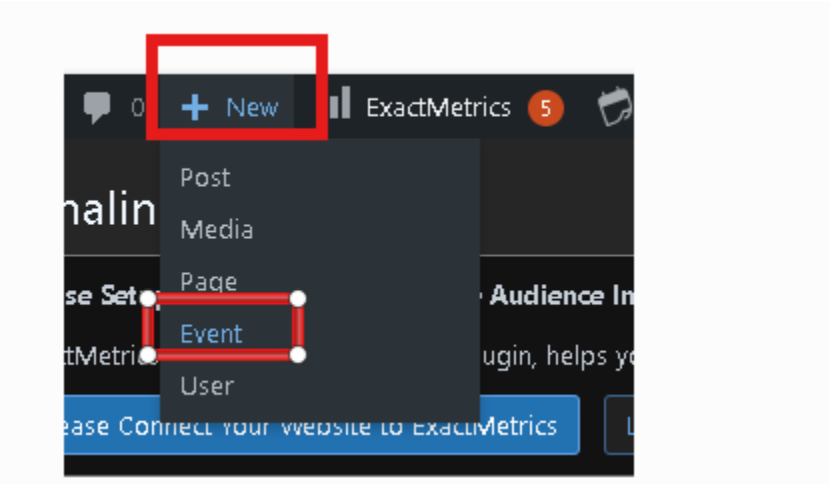
Accessing the Application:

Upon successful deployment, access the deployed React application using the provided URL or DNS NAME.

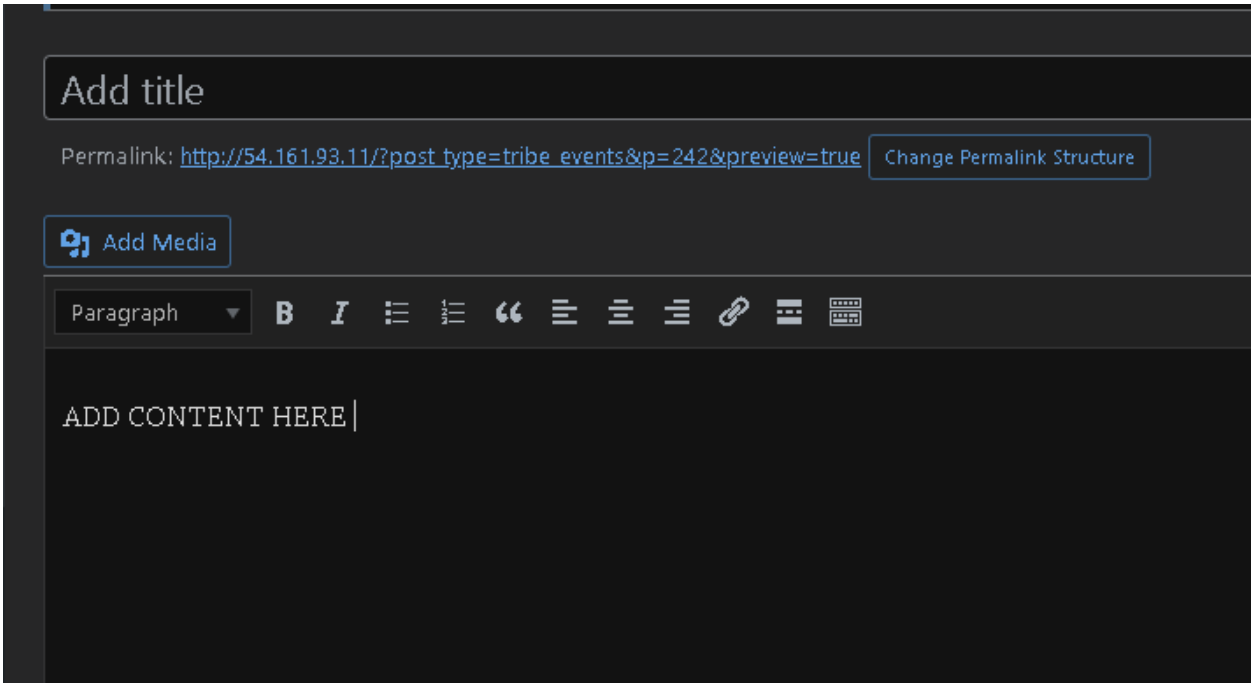
Navigate to the URL in a web browser to view the deployed application.

Creating a new Event on the WordPress Website

- Click on New and Event

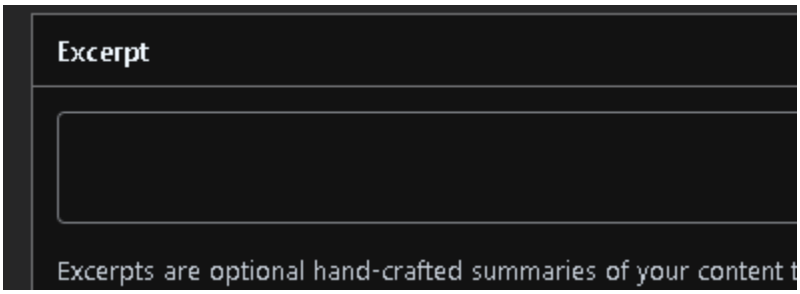


- You will add the title and content full description on the two following fields:

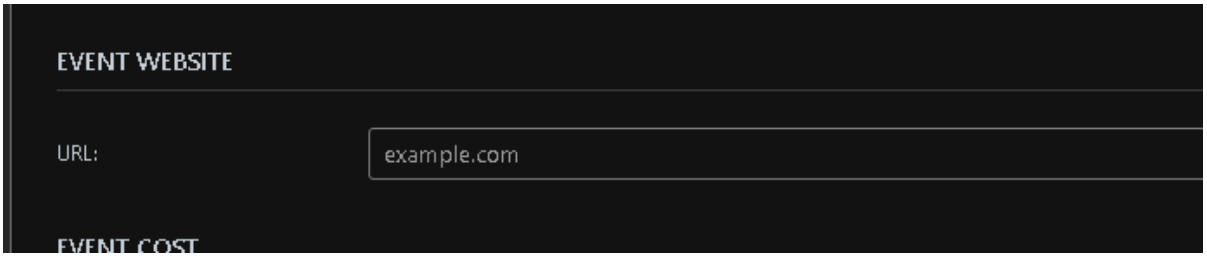


- You will add a short description of the event on the Excerpt field, this will be displayed next to the thumbnail where all the activities are shown but will not be

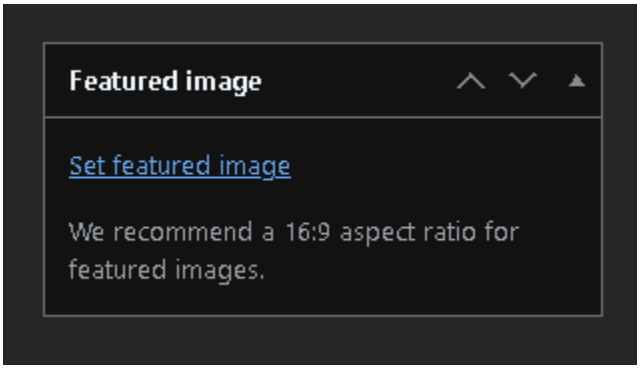
part of the Main Activity view.



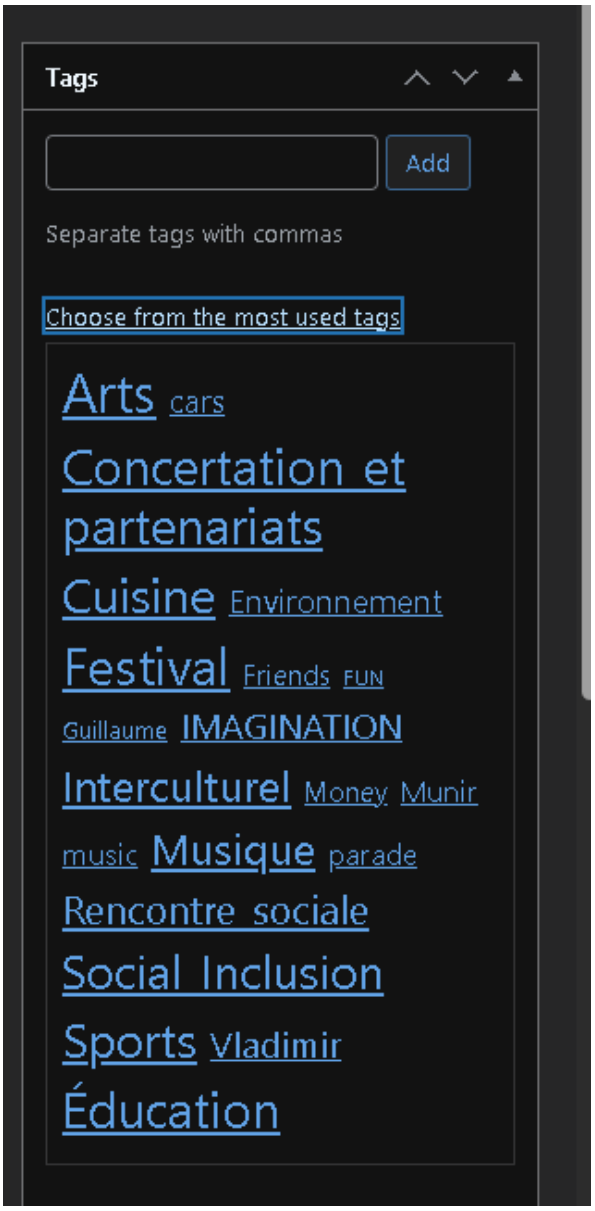
- On this part you will add the form that the user will need to fill out to be able to register to the activity :



- You will add the image that will be shown as thumbnail and displayed in the following part of the site



- And on this section you will add the different tags that the activity will be having



- After filling in the date and venue, you can publish the event, and it will be added to the database and website if the application has been correctly deployed.