

Lab 08

Deploy your app to AWS

WebApp

Datalab, CS, NTHU

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IAM

- Find IAM Services

The screenshot displays the AWS Management Console interface. At the top, the navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information for 'alanLin' in the 'Oregon' region. The main heading is 'AWS Management Console'. Below this, the 'AWS services' section features a search bar with 'IAM' entered. A dropdown menu shows 'IAM' with the description 'Manage User Access and Encryption Keys'. Below the search bar, 'Recently visited services' includes IAM, Elastic Beanstalk, and RDS. The 'Build a solution' section offers quick-start options: 'Launch a virtual machine' (With EC2, 2-3 minutes), 'Build a web app' (With Elastic Beanstalk, 6 minutes), and 'Build using virtual servers' (With Lightsail, 1-2 minutes). On the right, 'Access resources on the go' promotes the AWS Console Mobile App, and 'Explore AWS' highlights Amazon SageMaker and Amazon RDS.

AWS services

Find Services
You can enter names, keywords or acronyms.

Search: IAM

IAM
Manage User Access and Encryption Keys

Recently visited services

- IAM**
- Elastic Beanstalk**
- RDS**

All services

Build a solution
Get started with simple wizards and automated workflows.

Launch a virtual machine	Build a web app	Build using virtual servers
With EC2	With Elastic Beanstalk	With Lightsail
2-3 minutes	6 minutes	1-2 minutes

Access resources on the go

Access the Management Console using the AWS Console Mobile App. [Learn more](#)

Explore AWS

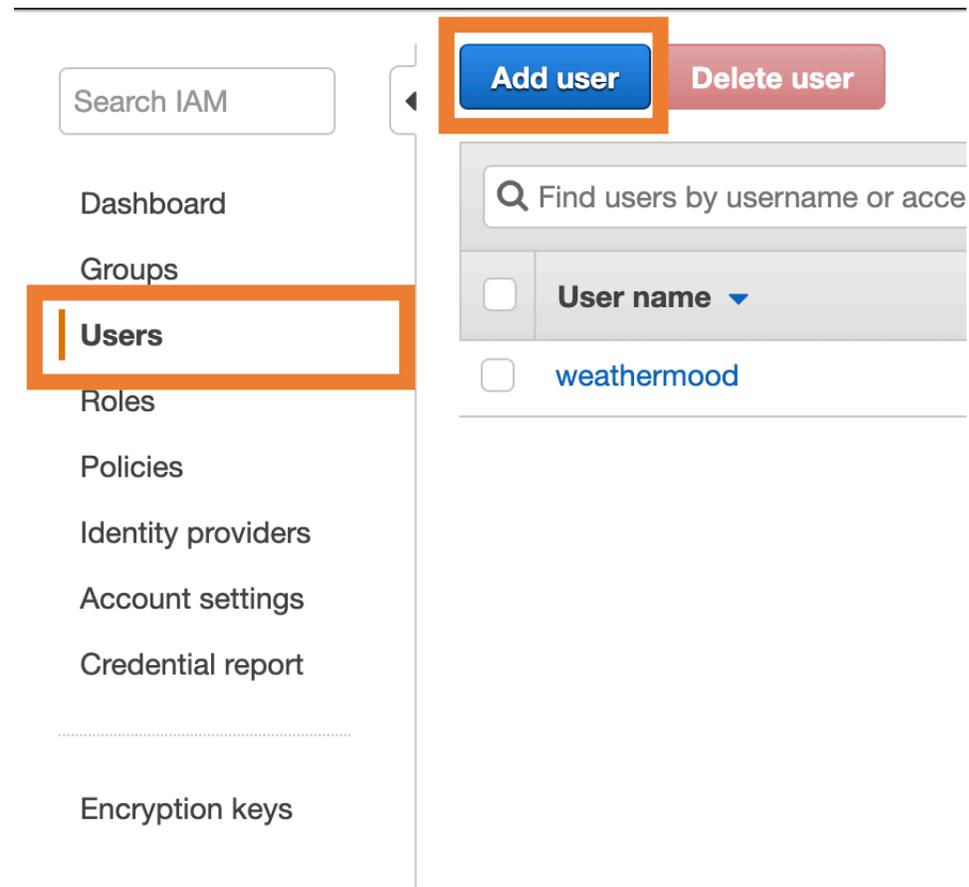
Amazon SageMaker
Machine learning for every developer and data scientist. [Learn more](#)

Visit AWS around the world at a Summit
AWS Global Summits bring the cloud computing community together to connect, collaborate, and learn about AWS. [Learn more](#)

Amazon RDS
Set up, operate, and scale your relational database in

IAM

- For security reason, we have to create new user with less permission
- Users -> Add user



IAM

- Check “Programmatic access” and “AWS Management Console Access”
- Uncheck “Require password reset” if you want to keep the custom password
- Finish the form then click next

Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name*

[+ Add another user](#)

Select AWS access type

Select how these users will access AWS. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Access type*



Programmatic access

Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools.



AWS Management Console access

Enables a **password** that allows users to sign-in to the AWS Management Console.

Console password*



Autogenerated password



Custom password



Show password

Require password reset



User must create a new password at next sign-in

Users automatically get the [IAMUserChangePassword](#) policy to allow them to change their own password.

* Required

Cancel

IAM

- Create group

Add user



▼ Set permissions

 Add user to group	 Copy permissions from existing user	 Attach existing policies directly
---	---	---

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

Add user to group

Create group	 Refresh
---------------------	---

IAM

- Search “AWSElasticBeanstalkFullAccess”

Create group ✕

Create a group and select the policies to be attached to the group. Using groups is a best-practice way to manage users' permissions by job functions, AWS service access, or your custom permissions. [Learn more](#)

Group name

Filter policies Showing 8 results

	Policy name	Type	Used as	Description
<input type="checkbox"/>	AWSElasticBeanstalkCustomPlatformforE...	AWS managed	None	Provide the instance in your custom platform builder environment permission to launch EC2 inst...
<input type="checkbox"/>	AWSElasticBeanstalkEnhancedHealth	AWS managed	Permissions policy (1)	AWS Elastic Beanstalk Service policy for Health Monitoring system
<input checked="" type="checkbox"/>	AWSElasticBeanstalkFullAccess	AWS managed	Permissions policy (1)	Provides full access to AWS Elastic Beanstalk and underlying services that it requires such as S...
<input type="checkbox"/>	AWSElasticBeanstalkMulticontainerDocker	AWS managed	Permissions policy (1)	Provide the instances in your multicontainer Docker environment access to use the Amazon EC...
<input type="checkbox"/>	AWSElasticBeanstalkReadOnlyAccess	AWS managed	None	Provides read only access to AWS Elastic Beanstalk via the AWS Management Console.
<input type="checkbox"/>	AWSElasticBeanstalkService	AWS managed	Permissions policy (1)	AWS Elastic Beanstalk Service role policy which grants permissions to create & manage resourc...
<input type="checkbox"/>	AWSElasticBeanstalkWebTier	AWS managed	Permissions policy (1)	Provide the instances in your web server environment access to upload log files to Amazon S3.

IAM

- Add user to the group you just create
- Click Next:Tags

 Add user to group

 Copy permissions from existing user

 Attach existing policies directly

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

Add user to group

Create group Refresh

Showing 2 results

Group	Attached policies
<input checked="" type="checkbox"/> lab_demo	AWSElasticBeanstalkFullAccess
<input type="checkbox"/> weathermood	AWSElasticBeanstalkFullAccess

Cancel Previous Next: Tags

IAM

- Tags is optional
- You can use the tags to organize, track, or control access for this user.

Add user



Add tags (optional)

IAM tags are key-value pairs you can add to your user. Tags can include user information, such as an email address, or can be descriptive, such as a job title. You can use the tags to organize, track, or control access for this user. [Learn more](#)

Key	Value (optional)	Remove
<input type="text" value="Add new key"/>	<input type="text"/>	

You can add 50 more tags.

Cancel

Previous

Next: Review

IAM

- Create User

Add user



Review

Review your choices. After you create the user, you can view and download the autogenerated password and access key.

User details

User name	lab_demo
AWS access type	Programmatic access and AWS Management Console access
Console password type	Custom
Require password reset	No
Permissions boundary	Permissions boundary is not set

Permissions summary

The user shown above will be added to the following groups.

Type	Name
Group	lab_demo

Tags

No tags were added.

Cancel

Previous

Create user

IAM

- Download .csv file.

Add user



Success

You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.

Users with AWS Management Console access can sign-in at: <https://124817121290.signin.aws.amazon.com/console>

 Download .csv

	User	Access key ID	Secret access key	Email login instructions
▶	✔ lab_demo		***** Show	Send email 

Clone project

- Clone project from GitLab
 - Weathermood
 - Weathermood-server
- Checkout branch
 - Weathermood -> server-file
 - Weathermood-server -> file
- Npm install first to get all the package

awsebcli

- Please install awsebcli first
 - https://docs.aws.amazon.com/en_us/elasticbeanstalk/latest/dg/eb-cli3-install.html#eb-cli3-install.cli-only
- Under weathermood-server
 - eb init

```
→ weathermood-server git:(file) eb init
```

```
Select a default region
```

```
1) us-east-1 : US East (N. Virginia)
2) us-west-1 : US West (N. California)
3) us-west-2 : US West (Oregon)
4) eu-west-1 : EU (Ireland)
5) eu-central-1 : EU (Frankfurt)
6) ap-south-1 : Asia Pacific (Mumbai)
7) ap-southeast-1 : Asia Pacific (Singapore)
8) ap-southeast-2 : Asia Pacific (Sydney)
9) ap-northeast-1 : Asia Pacific (Tokyo)
10) ap-northeast-2 : Asia Pacific (Seoul)
11) sa-east-1 : South America (Sao Paulo)
12) cn-north-1 : China (Beijing)
13) cn-northwest-1 : China (Ningxia)
14) us-east-2 : US East (Ohio)
15) ca-central-1 : Canada (Central)
16) eu-west-2 : EU (London)
17) eu-west-3 : EU (Paris)
(default is 3):
```

```
Select an application to use
```

```
1) weathermood-server
2) [ Create new Application ]
(default is 1):
```

```
Note: Elastic Beanstalk now supports AWS CodeCommit; a fully-managed source control service. For more information, see Docs: https://aws.amazon.com/codecommit/
```

```
Do you wish to continue with CodeCommit? (y/N) (default is n): n
```

awsebcli

- `eb create --single`
- Enter `weathermood-{group_id}` for DNS CNAME prefix.
- Ex: `weathermood-1` for group 1
-

→ `weathermood-server git:(file) eb create --single`

Enter Environment Name

(default is weathermood-server-dev2):

Enter DNS CNAME prefix

(default is weathermood-server-dev2):

Creating application version archive "app-c335-190427_200345".

Uploading weathermood-server/app-c335-190427_200345.zip to S3. This may take a while.

Upload Complete.

Environment details for: weathermood-server-dev2

Application name: weathermood-server

Region: us-west-2

Deployed Version: app-c335-190427_200345

Environment ID: e-k3dfmttvx9

Platform: arn:aws:elasticbeanstalk:us-west-2::platform/Docker running on 64bit Amazon Linux 2.0

0

Tier: WebServer-Standard-1.0

CNAME: weathermood-server-dev2.us-west-2.elasticbeanstalk.com

Updated: 2019-04-27 12:04:01.290000+00:00

Printing Status:

2019-04-27 12:04:00 INFO createEnvironment is starting.

2019-04-27 12:04:01 INFO Using elasticbeanstalk-us-west-2-124817121290 as Amazon

cket for environment data.

2019-04-27 12:04:21 INFO Created security group named: awseb-e-k3dfmttvx9-stack-

roup-XZU3E0MIYNUA

2019-04-27 12:04:36 INFO Created EIP: 35.162.132.172

2019-04-27 12:05:42 INFO Waiting for EC2 instances to launch. This may take a few

2019-04-27 12:06:34 INFO Successfully pulled node:6.10

2019-04-27 12:07:21 INFO Successfully built aws_beanstalk/staging-app

2019-04-27 12:07:29 INFO Docker container 8f99f3d3ed7d is running aws_beanstalk/

2019-04-27 12:08:04 INFO Application available at weathermood-server-dev2.us-west-

nstalk.com.

2019-04-27 12:08:05 INFO Successfully launched environment: weathermood-server-

Elastic Beanstalk

- Find Elastic Beanstalk service
- Click the Applications you just create
- Get the URL

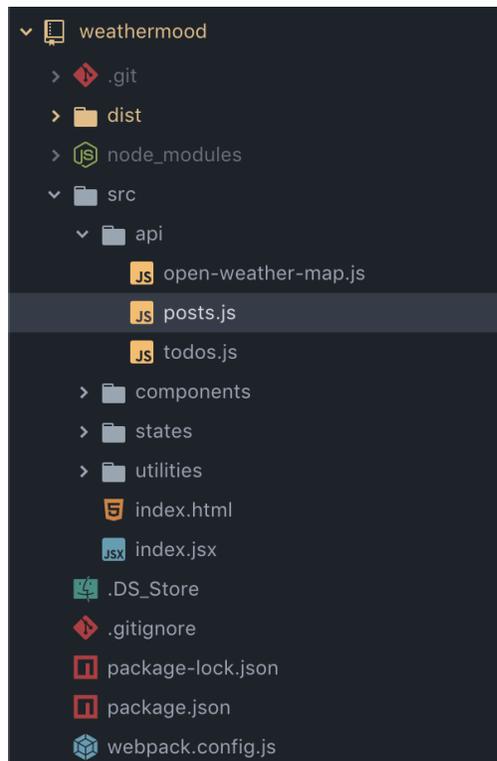
The screenshot shows the AWS Elastic Beanstalk console. The top navigation bar includes 'aws', 'Services', 'Resource Groups', and user information. The main content area is titled 'All Applications' and shows two application environments: 'weathermood-server-dev' and 'weathermood-server-dev2'. Both environments are in a 'Web Server' tier and have a 'Health status: Ok'. The 'weathermood-server-dev2' environment is highlighted with a green border. On the left, there are links for 'Learn More', 'Get started using Elastic Beanstalk', 'Modify the code', 'Create and connect to a database', 'Add a custom domain', 'Featured', 'Create your own custom platform', 'Command Line Interface (v3)', and 'Installing the AWS EB CLI'. At the bottom, there is a 'Get Started' section with terminal commands for creating and deploying an application.

The screenshot shows the 'Overview' page for the 'weathermood-server-dev2' environment. The breadcrumb navigation is 'All Applications > weathermood-server > weathermood-server-dev2'. The environment ID is 'e-k3dfmttx9' and the URL is 'weathermood-server-dev2.us-west-2.elasticbeanstalk.com'. The 'Health' status is 'Ok' with a green checkmark icon. The 'Running Version' is 'app-c335-190427_200345'. The 'Configuration' is 'Docker running on 64bit Amazon Linux/2.12.10'. There are buttons for 'Causes', 'Upload and Deploy', and 'Change'. Below the overview, there is a 'Recent Events' table with the following data:

Time	Type	Details
2019-04-27 20:08:40 UTC+0800	INFO	Environment health has transitioned from Pending to Ok. Initialization completed 50 seconds ago and took 4 minutes.
2019-04-27 20:08:05 UTC+0800	INFO	Successfully launched environment: weathermood-server-dev2
2019-04-27 20:08:04 UTC+0800	INFO	Application available at weathermood-server-dev2.us-west-2.elasticbeanstalk.com.
2019-04-27 20:07:29 UTC+0800	INFO	Docker container 8f99f3d3ed7d is running aws_beanstalk/current-app.
2019-04-27 20:07:21 UTC+0800	INFO	Successfully built aws_beanstalk/staging-app

Project Code

- Go to weathermood project
 - weathermood -> src -> api -> post.js
- Paste Url to postBaseUrl



```
import axios from 'axios';

// Develop server URL
// const postBaseUrl = 'http://localhost:8080/api';

// Staging server URL
// const postBaseUrl = 'http://weathermood-staging.us-west-2.elasticbeanstalk.com/api';

// Production server URL
const postBaseUrl = 'http://weathermood-server-dev2.us-west-2.elasticbeanstalk.com/api';

export function listPosts(searchText = '') {
  let url = `${postBaseUrl}/posts`;
  if (searchText)
    url += `?searchText=${searchText}`;

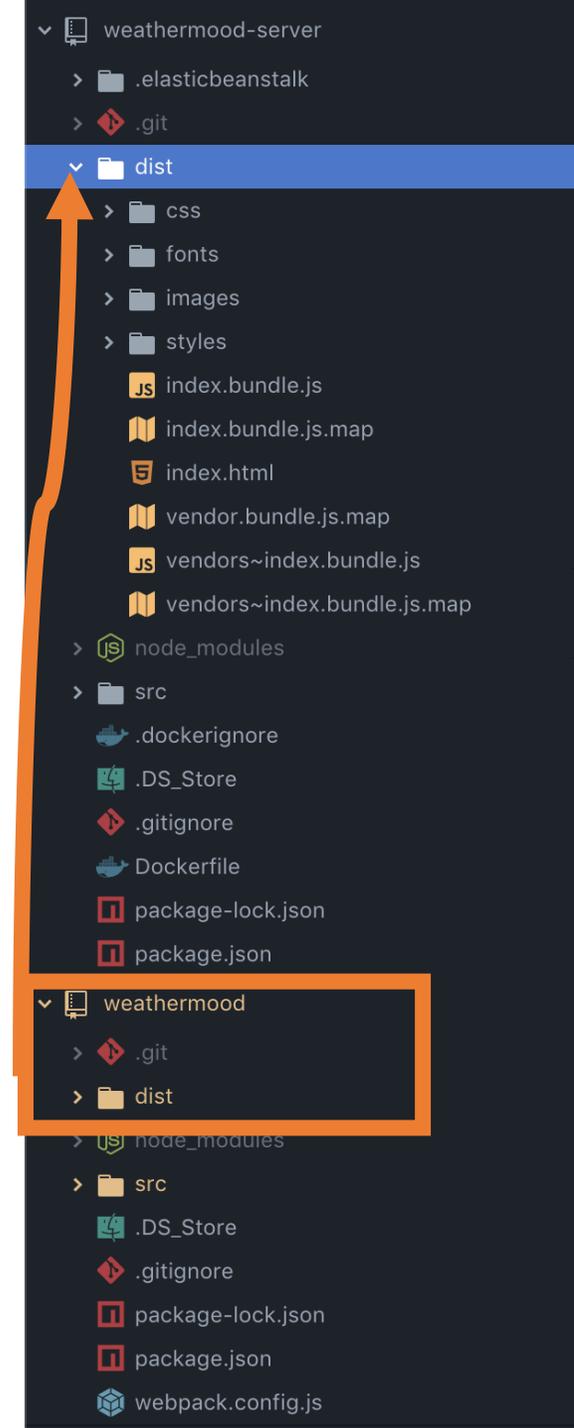
  console.log(`Making GET request to: ${url}`);

  return axios.get(url).then(function(res) {
    if (res.status !== 200)
      throw new Error(`Unexpected response code: ${res.status}`);

    return res.data;
  });
}
```

Project Code

- Rebulid weathermood project
 - npm run build
- Copy weathermood dist floder to weathermood-server dist floder



awsebcli

- `eb deploy <env>`
- It will deploy committed change only. Therefore, you have to commit before you deploy.

```
→ weathermood-server git:(file) eb deploy
Creating application version archive "app-c335-190427_202417".
Uploading weathermood-server/app-c335-190427_202417.zip to S3. This may take a while.
Upload Complete.
2019-04-27 12:24:30 INFO Environment update is starting.
2019-04-27 12:24:33 INFO Deploying new version to instance(s).
2019-04-27 12:24:40 INFO Successfully pulled node:6.10
2019-04-27 12:24:40 INFO Successfully built aws_beanstalk/staging-app
2019-04-27 12:24:49 INFO Docker container 66d894332056 is running aws_beanstalk/current-app.
2019-04-27 12:24:56 INFO New application version was deployed to running EC2 instances.
2019-04-27 12:24:56 INFO Environment update completed successfully.

Alert: An update to the EB CLI is available. Run "pip install --upgrade awsebcli" to get the latest version.
```

```
→ weathermood-server git:(file) X git add .
→ weathermood-server git:(file) X git commit -m "for lab demo"
[file 0312b98] for lab demo
4 files changed, 5 insertions(+), 6 deletions(-)
create mode 100644 dist/.DS_Store
rewrite dist/index.bundle.js (62%)
rewrite dist/index.bundle.js.map (60%)
→ weathermood-server git:(file) eb deploy
```


Assignment

- Deploy server and client to AWS.
- Store TODOs in server.
- Get TODOs from server and show them in TodoList.