

# NAME: KSHITIJ GUPTA

## Enrolment Number: 21162101007

### Sub: CS

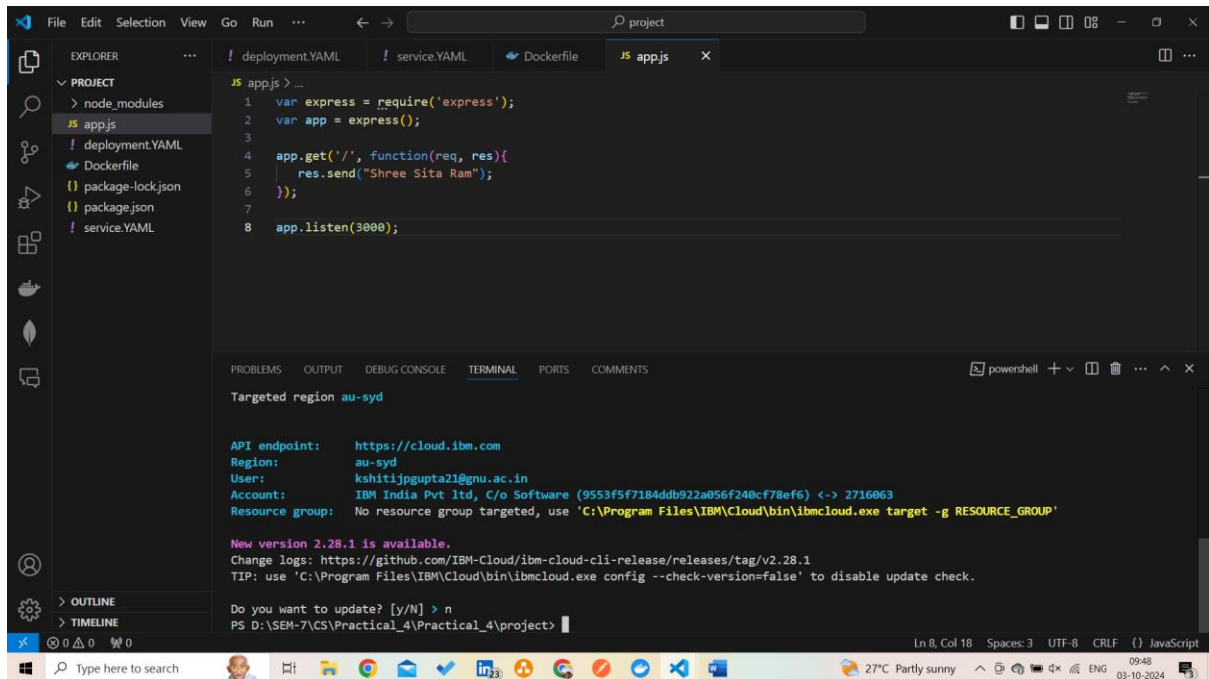
## Practical – Exam [Batch-71]

Step-1 build the image and run the image also login through CLI

**docker build -t internal-exam-img.**

**docker run --name C\_internal -p 3000:8000 internal-exam-img**

login through CLI



The screenshot shows the Visual Studio Code interface. The Explorer pane on the left shows a project structure with files like `deployment.YAML`, `service.YAML`, `Dockerfile`, `package-lock.json`, `package.json`, and `app.js`. The main editor displays the content of `app.js`, which is a simple Express.js server. The terminal window at the bottom shows the output of the `ibmcloud` CLI command, including the API endpoint, region, user, account, and resource group. It also displays a message about a new version (2.28.1) being available and a prompt to update.

```
JS app.js > ...
1  var express = require('express');
2  var app = express();
3
4  app.get('/', function(req, res){
5    res.send("Shree Sita Ram");
6  });
7
8  app.listen(3000);

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
Targeted region au-syd

API endpoint: https://cloud.ibm.com
Region: au-syd
User: kshitijpgupta21@gnu.ac.in
Account: IBM India Pvt ltd, C/o Software (9553f5f7184ddb922a056f240cf78ef6) <-> 2716063
Resource group: No resource group targeted, use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe target -g RESOURCE_GROUP'

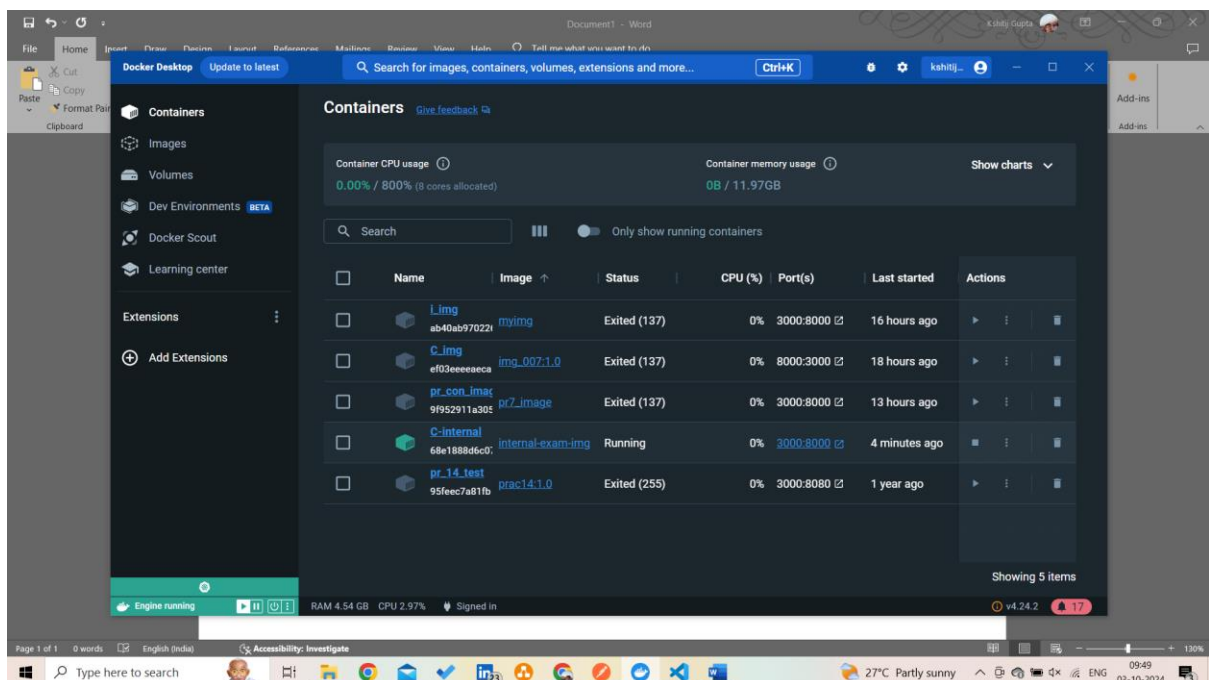
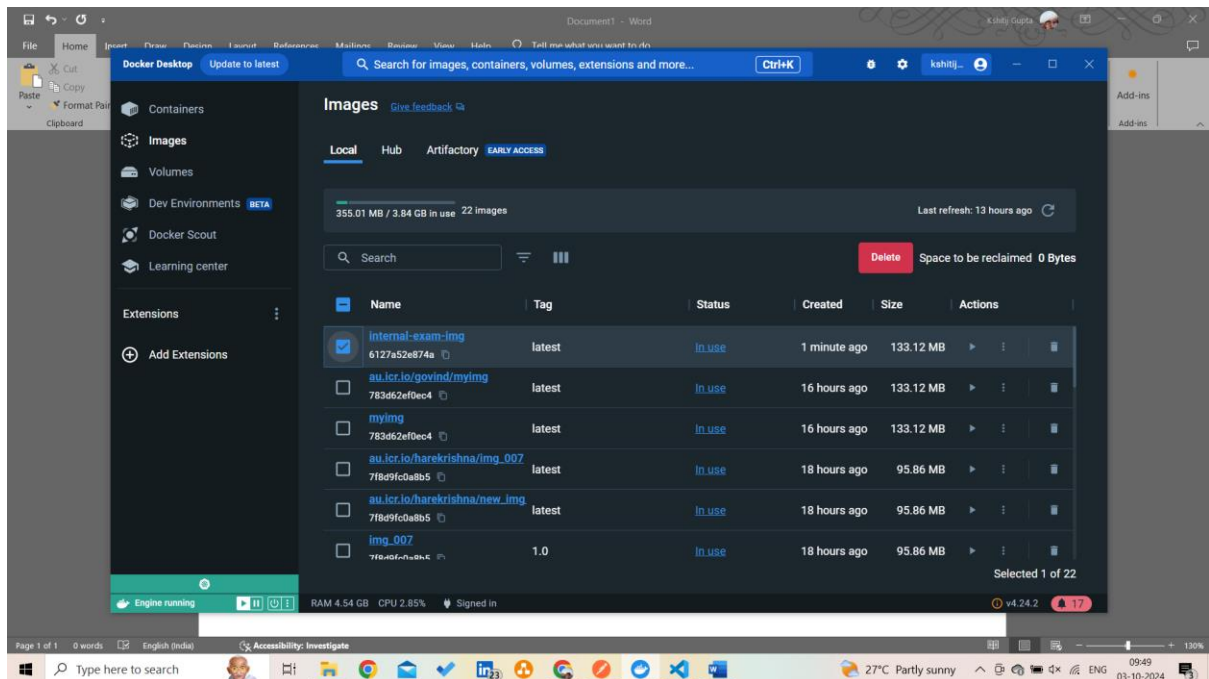
New version 2.28.1 is available.
Change logs: https://github.com/IBM-Cloud/ibm-cloud-cli-release/releases/tag/v2.28.1
TIP: use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe config --check-version=false' to disable update check.

Do you want to update? [y/N] > n
PS D:\SEM-7\CS\Practical_4\Practical_4\project>
```

You can see my runing image and container imgae

Image name: internal-exam-img

Container image name: C-img



- ## ibmcloud plugin install container-registry

The screenshot shows the Visual Studio Code interface. The Explorer sidebar on the left displays the file structure, with 'app.js' selected under the 'node\_modules' directory. The main editor window shows the content of 'app.js', which includes a GET route handler and a server listener. The terminal window at the bottom shows the output of running 'npm install' and 'npm run dev', indicating successful installation and execution of the application.

```

EXPLORER
  PROJECT
    > node_modules
      app.js
    ! deployment.YAML
    Dockerfile
    ! package-lock.json
    ! package.json
    ! service.YAML

! deployment.YAML
! service.YAML
Dockerfile
app.js x

app.js > ...
4  app.get('/', function(req, res){
5  });
6
7
8  app.listen(3000);
9
10

TERMINAL
powershell
Plug-in 'container-service[kubernetes-service/ks] 1.0.665' found in repository 'IBM Cloud'
Plug-in 'container-service[kubernetes-service/ks] 1.0.665' was already installed. Do you want to re-install it or not? [y/N] > y
Attempting to download the binary file...
30.75 MiB / 30.75 MiB [=====] 100.00% 2s
32241152 bytes downloaded
Installing binary...
OK
Plug-in 'container-service 1.0.665' was successfully installed into C:\Users\Kshiti\bluemix\plugins\container-service. Use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe plugin show container-service' to show its details.
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.3.11' found in repository 'IBM Cloud'
Plug-in 'container-registry[cr] 1.3.11' was already installed. Do you want to re-install it or not? [y/N] > y
Attempting to download the binary file...
12.25 MiB / 12.25 MiB [=====] 100.00% 1s
12842496 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.3.11' was successfully installed into C:\Users\Kshiti\bluemix\plugins\container-registry. Use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe plugin show container-registry' to show its details.
PS D:\SEM-7\CS\Practical_4\Practical_4\project>
  
```

- Target your service and and login into your account

**ibmcloud target -g default**

**ibmcloud ks cluster config - -cluster c\_id**

- create your namespace

**ibmcloud cr namespace-add kshitijname {to add namespace in registry}**

**ibmcloud cr login {login into namespcae}**

```

! deployment.YAML X ! service.YAML Dockerfile JS appjs 9+
! deployment.YAML
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: kshitij2-deploy
5 spec:
6   selector:
7     matchLabels:
8       app: mynew-app
9   replicas: 1
10  template:
11    metadata:
12      labels:
13        app: mynew-app

PROBLEMS 33 OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
User: kshitijpgupta21@gnu.ac.in
Account: IBM India Pvt ltd, C/o Software (9553f5f7184ddb922a056f240cf78ef6) <-> 2716063
Resource group: default
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud ks cluster config --cluster cr3cp7vs0jfdn8bg998g
OK
The configuration for cr3cp7vs0jfdn8bg998g was downloaded successfully.

Added context for cr3cp7vs0jfdn8bg998g to the current kubeconfig file.
You can now execute 'kubectl' commands against your cluster. For example, run 'kubectl get nodes'.
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud cr namespace-add kshitijname
Adding namespace 'kshitijname' in resource group 'default' for account IBM India Pvt ltd, C/o Software in registry au.icr.io...

The requested namespace is already owned by your account.

OK
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud cr login
Logging 'docker' in to 'au.icr.io'...
Logged in to 'au.icr.io'.
Ln 4, Col 17 Spaces: 2 UTF-8 CRLF YAM

```

```

! deployment.YAML X ! service.YAML Dockerfile JS appjs 9+
! deployment.YAML
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: kshitij2-deploy
5 spec:
6   selector:
7     matchLabels:
8       app: mynew-app
9   replicas: 1
10  template:
11    metadata:
12      labels:
13        app: mynew-app

PROBLEMS 33 OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
Warning: PowerShell detected that you might be using a screen reader and has disabled PSReadLine for compatibility purposes. If you want to re-enable it, run 'Import-Module PSReadLine'.

PS D:\SEM-7\CS\Practical_4\Practical_4\project> kubectl apply -f ./deployment.YAML
deployment.apps/kshitij2-deploy created
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud target -g default
Targeted resource group default

API endpoint: https://cloud.ibm.com
Region: au-syd
User: kshitijpgupta21@gnu.ac.in
Account: IBM India Pvt ltd, C/o Software (9553f5f7184ddb922a056f240cf78ef6) <-> 2716063
Resource group: default
PS D:\SEM-7\CS\Practical_4\Practical_4\project> ibmcloud ks cluster config --cluster cr3cp7vs0jfdn8bg998g
OK
Ln 4, Col 17 Spaces: 2 UTF-8 CRLF YAM

```

- Tag your image and push it into namespace

**docker tag internal-exam-img au.icr.io/kshitiiname/internal-exam-img**

**docker push au.icr.io/kshitiiname/internal-exam-img**

**check deployment and service file and then deploy it**

- and create deployment

**kubectl apply -f ./service.YAML**

**kubectl apply -f ./deployment.YAML**

The screenshot shows a VS Code editor with a file explorer on the left containing files like `deployment.YAML`, `service.YAML`, `Dockerfile`, `package-lock.json`, `package.json`, and `app.js`. The main editor displays the `deployment.YAML` file with the following content:

```

! deployment.YAML
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: kshiti2-deploy
5  spec:
6    selector:
7      matchLabels:
8        app: mynew-app
9    replicas: 1
10   template:
11     metadata:
12       labels:
13         app: mynew-app

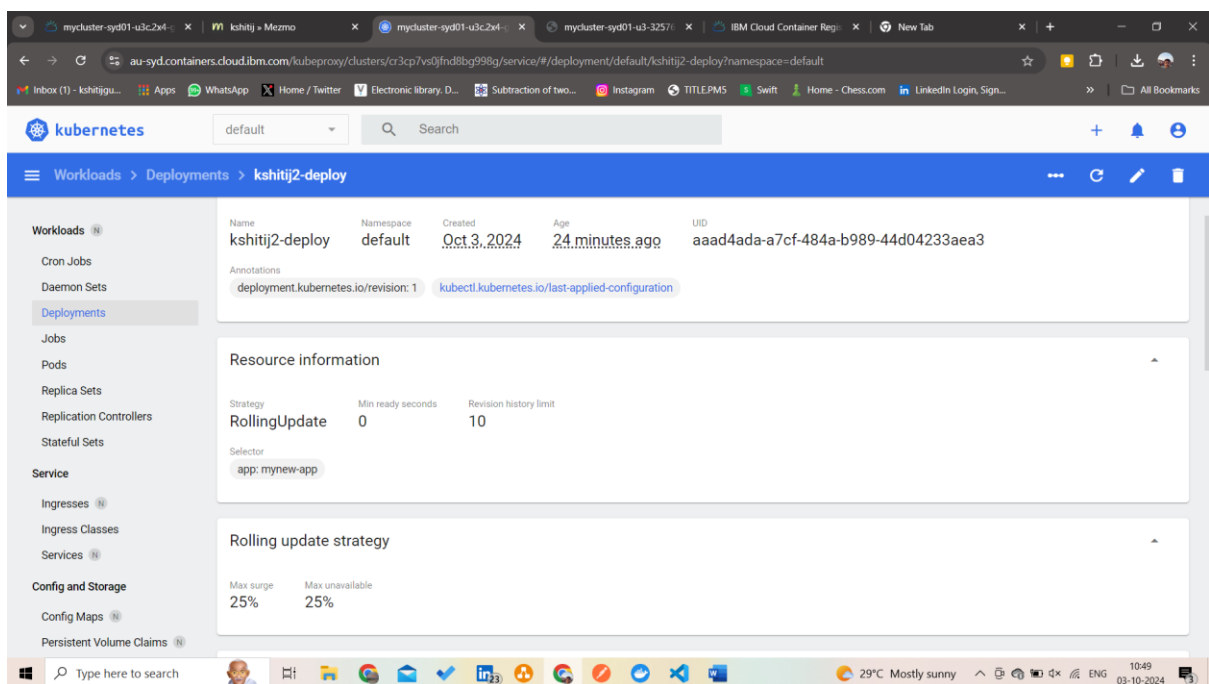
```

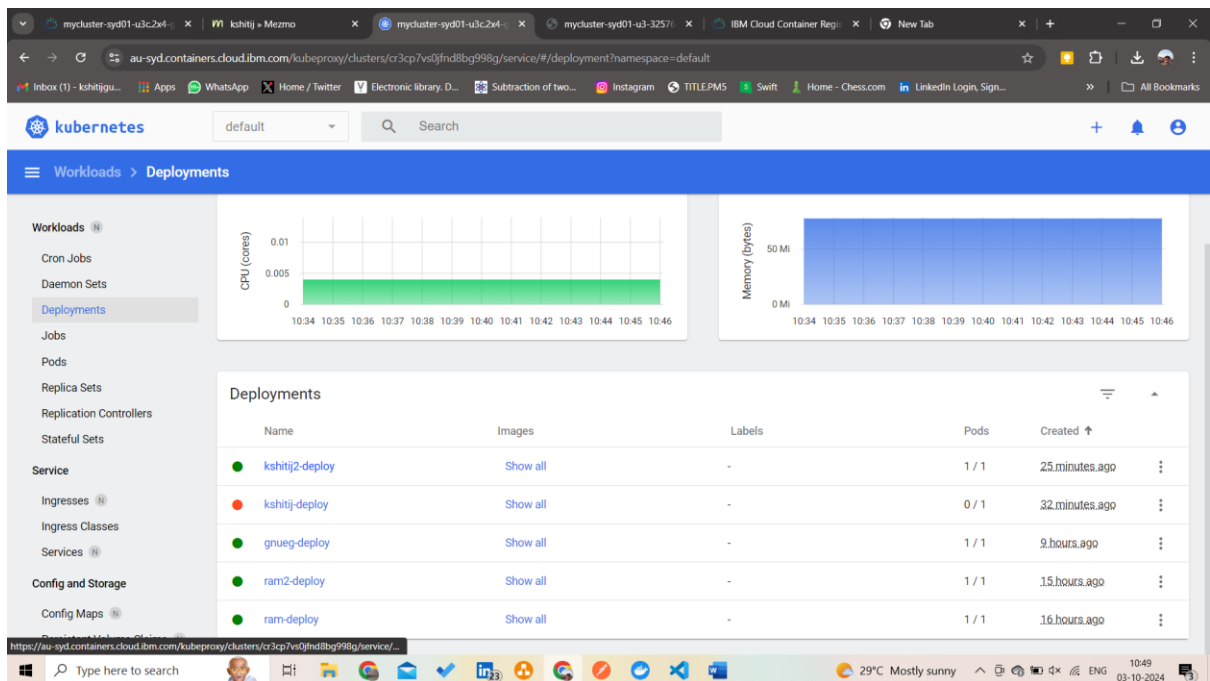
The terminal window at the bottom shows the following commands and output:

```

PS D:\SEM-7\CS\Practical_4\Practical_4\project> docker tag internal-exam-img au.icr.io/kshitiiname/internal-exam-img
PS D:\SEM-7\CS\Practical_4\Practical_4\project> docker push au.icr.io/kshitiiname/internal-exam-img
Using default tag: latest
The push refers to repository [au.icr.io/kshitiiname/internal-exam-img]
3e46057ee011: Mounted from internalexam2-007/internal-exam-img
f6e96cc5325d: Mounted from internalexam2-007/internal-exam-img
e89f1ed2eb29: Mounted from internalexam2-007/internal-exam-img
a2048422e351: Mounted from internalexam2-007/internal-exam-img
e2be10e97665: Mounted from internalexam2-007/internal-exam-img
06fd85419b65: Mounted from internalexam2-007/internal-exam-img
f58c462fa079: Mounted from internalexam2-007/internal-exam-img
63ca1fb43ae: Mounted from internalexam2-007/internal-exam-img
latest: digest: sha256:3b840396c2d292464c87522db331296a603c45c5b20b5fa67019f4d8af5fc05 size: 1994
PS D:\SEM-7\CS\Practical_4\Practical_4\project> kubectl apply -f ./service.YAML
service/thekshiti2-service unchanged
PS D:\SEM-7\CS\Practical_4\Practical_4\project> kubectl apply -f ./deployment.YAML
deployment.apps/kshiti2-deploy created
PS D:\SEM-7\CS\Practical_4\Practical_4\project>

```





Deployments				
Name	Images	Labels	Pods	Created
kshiti2-deploy	au.icr.io/kshitiiname/internal-exam-img Show less		1 / 1	25.minutes.ago
kshiti-deploy	Show all	-	0 / 1	32.minutes.ago

In second part Create ingress service and run it

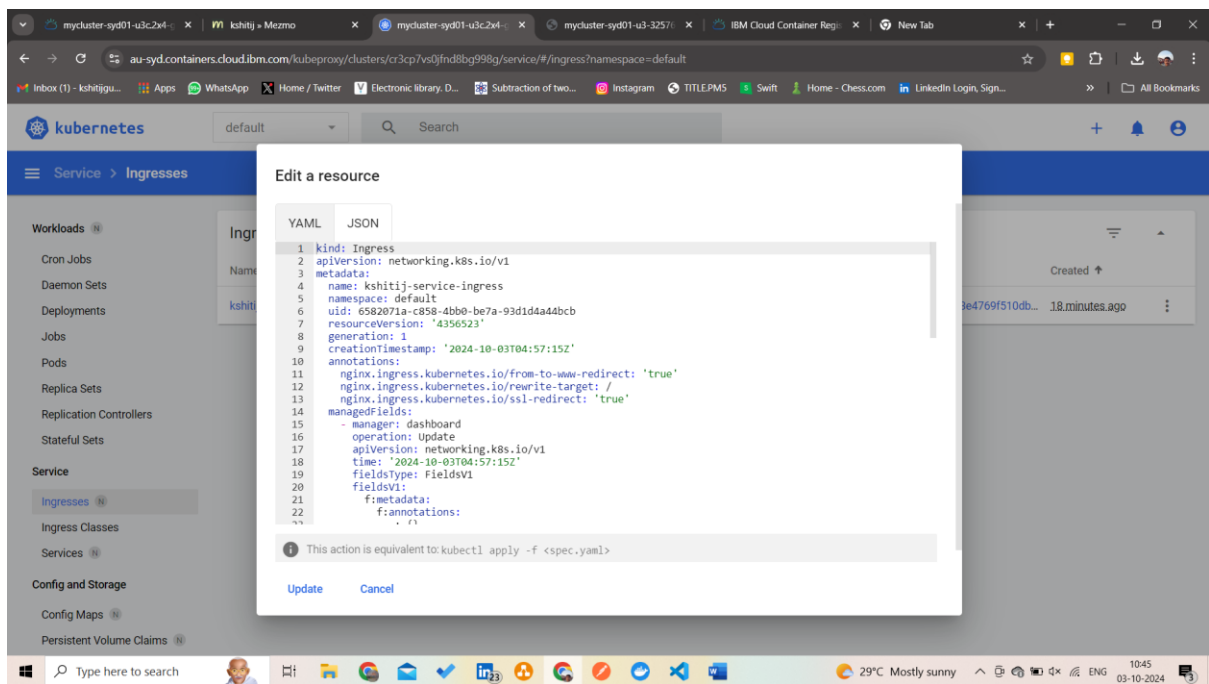
The screenshot shows the Kubernetes dashboard interface. The top navigation bar includes the 'kubernetes' logo and a search bar. The left sidebar lists various Kubernetes resources under 'Workloads' and 'Service'. The 'Ingresses' page is selected, displaying a table with the following data:

Name	Labels	Endpoints	Hosts	Created
kshiti-service-ingress	-	159.23.71.178	mycluster-syd01-u3-325769-3e4769f510db...	a minute ago

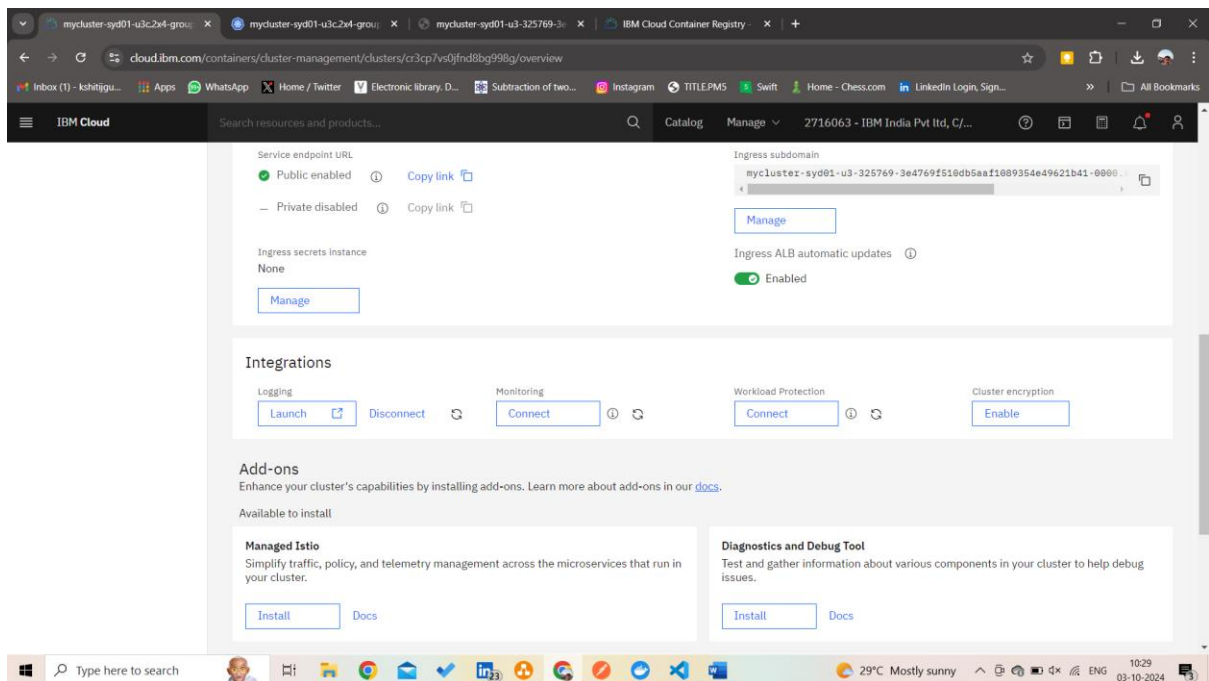
The bottom of the dashboard shows a Windows taskbar with various application icons and system information: 29°C Mostly sunny, 10:28, 03-10-2024.

The screenshot shows a web browser window with the URL `mycluster-syd01-u3-325769-3e4769f510db5aaf1089354e49621b41-0000.au-syd.containers.appdomain.cloud`. The page content displays the message: "Hello docker is running". The browser's address bar and Windows taskbar are visible at the bottom, matching the one in the previous screenshot.





## Integrate log analysis with kubernetes





In mezmio you can see your logs

The screenshot shows the Mezmio application interface. On the left, there's a sidebar with navigation options like 'Find a View', 'Template Available', 'Everything', 'Views', and 'kshiti'. The main area displays a list of log entries with details such as time, IP address, request method, and status. A 'Timeline' panel on the right shows a visual representation of the log data over time, with a 'Time scale' dropdown set to '60 minutes (default)'. The bottom of the screen shows a Windows taskbar with various application icons and system information like '29°C Mostly sunny' and '10:59 03-10-2024'.

Set the Email alert

The screenshot shows the 'Create a preset' dialog box in the Mezmio application. The dialog has a 'Preset name' input field and an 'Add Preset' button. Below this, there are several notification channel options: Slack, Email (selected), Webhook, PagerDuty, and Sysdig. The 'Email' option is highlighted with a blue border. At the bottom of the dialog, there is a 'Save Alert' button. The background shows the Mezmio interface with the 'Manage Alerts' view selected in the sidebar.

mycluster-syd01-u3c2x4-gro... Manage Alerts - Memo mycluster-syd01-u3c2x4-gro... mycluster-syd01-u3-325769-3... IBM Cloud Container Registry

app.au-syd.logging.cloud.ibm.com/4d8a93e6b7/manage/alerts

Inbox (1) - kshiti... Apps WhatsApp Home / Twitter Electronic library D... Subtraction of two... Instagram TITLE.PMS Swift Home - Chess.com LinkedIn Login, Sign... All Bookmarks

Settings

- Organization
- Views
- Template Library
- Categories
- Alerts
- Archiving
- Streaming
- Billing
- Parsing
- Support

46bc513c-d75f-4ffc-8868-05f... IBM - Today

Save Alert


### Email

Test Delete alert channel

Type: **Presence** Absence

When: 1 Line appears within 30 seconds

Log lines from Oct 3, 2024



Send an alert:  
☒ At the end of 30 seconds  
☐ Immediately after 1 Line

Custom schedule: ☐ off

Recipients: kshiti.jgupta21@gnu.ac.in

Timezone: GMT +05:30 Asia/Kolkata

29°C Mostly sunny 10:33 03-10-2024

mycluster-syd01-u3c2x4-gro... Manage Alerts - Memo mycluster-syd01-u3c2x4-gro... mycluster-syd01-u3-325769-3... IBM Cloud Container Registry

app.au-syd.logging.cloud.ibm.com/4d8a93e6b7/manage/alerts

Inbox (1) - kshiti... Apps WhatsApp Home / Twitter Electronic library D... Subtraction of two... Instagram TITLE.PMS Swift Home - Chess.com LinkedIn Login, Sign... All Bookmarks

Settings

- Organization
- Views
- Template Library
- Categories
- Alerts
- Archiving
- Streaming
- Billing
- Parsing
- Support

46bc513c-d75f-4ffc-8868-05f... IBM - Today

## Manage Alerts

Programmatically manage account configuration via API or Terraform.

### Presets

Add Preset

Email Alert Edit

### View-Specific Alerts

All Presence Absence

You haven't created any view-specific alerts yet.

29°C Mostly sunny 10:34 03-10-2024

mycluster-syd01-u3c2x4... x kshitiy + Mezmo x mycluster-syd01-u3c2x4... x mycluster-syd01-u3-3257... x IBM Cloud Container Reg... x New Tab

au-syd.containers.cloud.ibm.com/kubeproxy/clusters/cr3cp7vs0jfd8bg998g/service/#/workloads?namespace=ibm-observe

kubernetes ibm-observe Search

### Workloads

- Workloads (4)
- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers
- Stateful Sets
- Service
- Ingresses (1)
- Ingress Classes
- Services (1)
- Config and Storage
- Config Maps (1)
- Persistent Volume Claims (1)

Running 1

Daemon Sets

Running 1

Pods

Daemon Sets

Name	Images	Labels	Pods	Created ↑
logdna-agent	Show all	Show all	1 / 1	16 hours ago

Pods

Type here to search

29°C Mostly sunny 10:38 03-10-2024

File Edit Selection View Go Run ... project

EXPLORER

- PROJECT
- > node\_modules
- JS app.js
- ! deployment.YAML
- Dockerfile
- { package-lock.json
- { package.json
- ! service.YAML

JS app.js

```

1 app.js > ...
2
3 app.get('/', function(req, res){
4   });
5
6
7
8 app.listen(3000);
9
10

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

13.38 MiB / 13.38 MiB [=====] 100.00% 1s

14024704 bytes downloaded

Installing binary...

OK

Plug-in 'observe-service 1.0.82' was successfully installed into C:\Users\Kshitiy\bluemix\plugins\observe-service. Use 'C:\Program Files\IBM\Cloud\bin\ibmcloud.exe plugin show observe-service' to show its details.

PS D:\SEM-7\CS\Practical\_4\Practical\_4\project> ibmcloud ob logging config list --cluster cr3cp7vs0jfd8bg998g

Listing configurations...

OK

Instance name: Log Analysis-group2

Instance ID: 46bc513c-d75f-4ffc-8868-05f1d0d02a66

CRN: crn:v1:bluemix:public:logdna:au-syd:a/9553f5f7184ddb922a056

Agent Namespace: ibm-observe

Private Endpoint: false

Discovered Agent: false

PS D:\SEM-7\CS\Practical\_4\Practical\_4\project>

You have Docker installed on your system. Do you want to install the recommended 'Dev Containers' extension from Microsoft for it?

Install Show Recommendations

Ln 10, Col 1 Spaces: 3 UTF-8 CRLF {} JavaScript

Type here to search

29°C Mostly sunny 10:39 03-10-2024