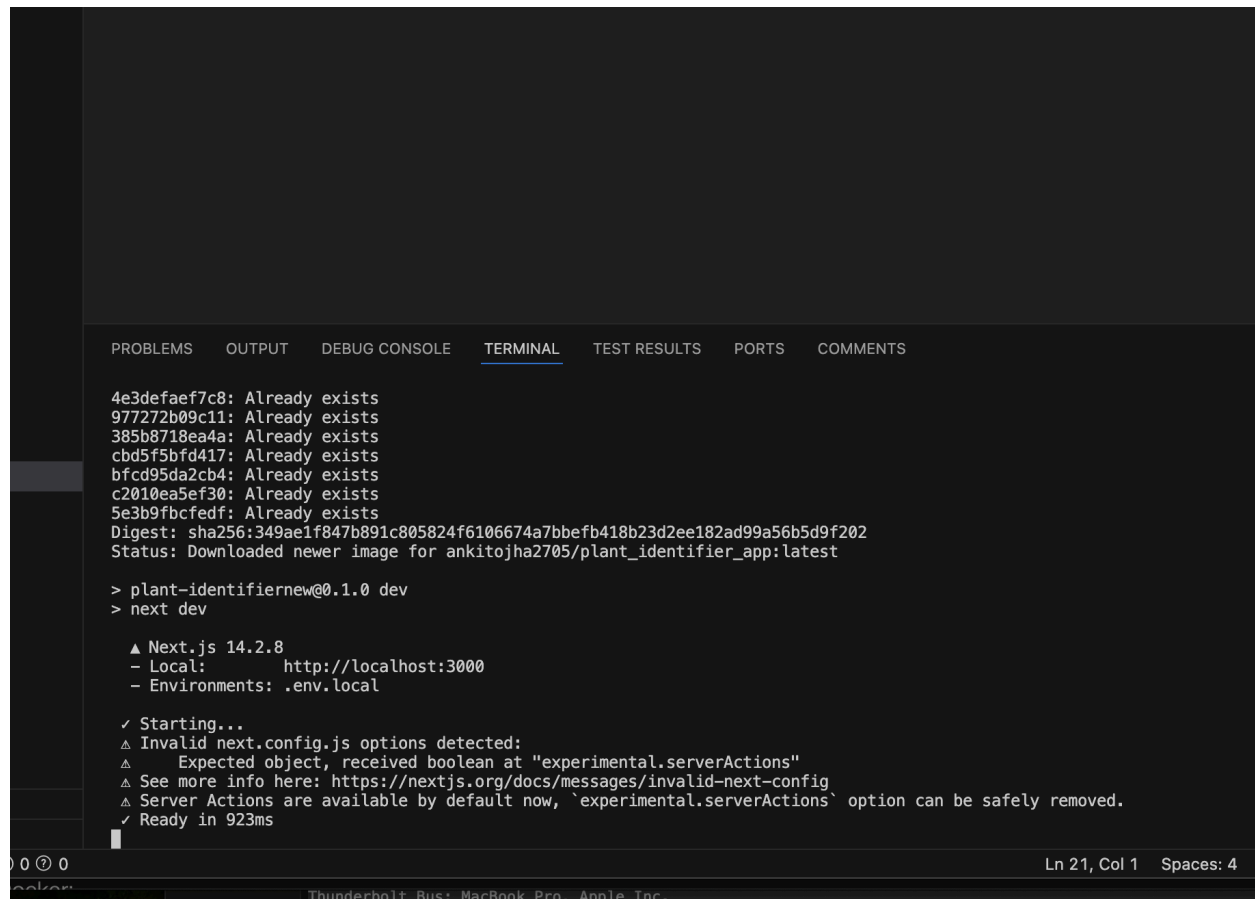


Compare performance of an application running in VMs vs containers

1. Startup time :Docker

Code : `time docker run -p 3000:3000 ankitojha2705/plant_identifier_app`



```
4e3defaef7c8: Already exists
977272b09c11: Already exists
385b8718ea4a: Already exists
cbd5f5bfd417: Already exists
bfd95da2cb4: Already exists
c2010ea5ef30: Already exists
5e3b9fbcfedf: Already exists
Digest: sha256:349ae1f847b891c805824f6106674a7bbefb418b23d2ee182ad99a56b5d9f202
Status: Downloaded newer image for ankitojha2705/plant_identifier_app:latest

> plant-identifiernew@0.1.0 dev
> next dev

▲ Next.js 14.2.8
- Local:      http://localhost:3000
- Environments: .env.local

✓ Starting...
▲ Invalid next.config.js options detected:
▲   Expected object, received boolean at "experimental.serverActions"
▲ See more info here: https://nextjs.org/docs/messages/invalid-next-config
▲ Server Actions are available by default now, `experimental.serverActions` option can be safely removed.
✓ Ready in 923ms
```

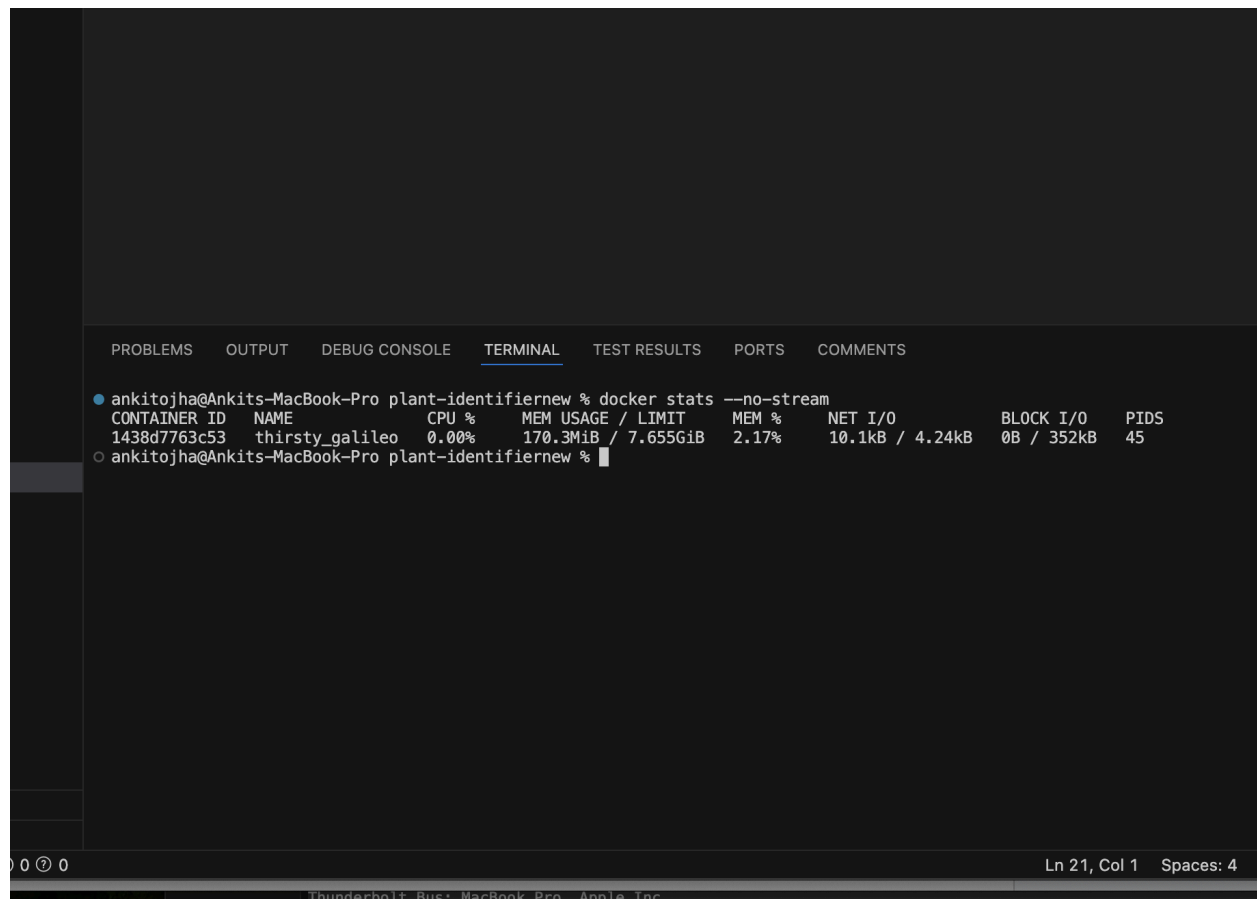
Ln 21, Col 1 Spaces: 4

2. Memory usage: Docker

PROBLEMS	OUTPUT	DEBUG CONSOLE	TERMINAL	TEST RESULTS	PORTS	COMMENTS	
CONTAINER ID	NAME	CPU %	MEM USAGE / LIMIT	MEM %	NET I/O	BLOCK I/O	PIDS
1438d7763c53	thirsty_galileo	0.02%	170.3MiB / 7.655GiB	2.17%	10.1kB / 4.24kB	0B / 352kB	45

3. CPU utilization: Docker

Code : `docker stats --no-stream`



```
ankitojha@Ankits-MacBook-Pro plant-identifiernew % docker stats --no-stream
CONTAINER ID   NAME          CPU %       MEM USAGE / LIMIT   MEM %      NET I/O       BLOCK I/O    PIDS
1438d7763c53   thirsty_galileo 0.00%      170.3MiB / 7.655GiB  2.17%     10.1kB / 4.24kB  0B / 352kB   45
ankitojha@Ankits-MacBook-Pro plant-identifiernew %
```

4: Request throughput

Code :

Install Apache Bench:

```
brew install apache-benchmark
```

Then run

```
ab -n 1000 -c 100 http://localhost:3000/
```

```
brew install apache-spark

==> Casks
apache-couchdb

To install apache-couchdb, run:
brew install --cask apache-couchdb
ankitojha@Ankits-MacBook-Pro plant-identifiernew % ab -n 1000 -c 100 http://localhost:3000/
This is ApacheBench, Version 2.3 <$Revision: 1913912 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking localhost (be patient)
Completed 100 requests
Completed 200 requests
Completed 300 requests
Completed 400 requests
Completed 500 requests
Completed 600 requests
Completed 700 requests
Completed 800 requests
Completed 900 requests
Completed 1000 requests
Finished 1000 requests

Server Software:
Server Hostname:      localhost
Server Port:          3000

Document Path:        /
Document Length:       8450 bytes

Concurrency Level:     100
Time taken for tests:   3.781 seconds
Complete requests:      1000
Failed requests:         0
Total transferred:      8704000 bytes
HTML transferred:       8450000 bytes
Requests per second:    264.48 [#/sec] (mean)
Time per request:       378.098 [ms] (mean)
Time per request:       3.781 [ms] (mean, across all concurrent requests)
Transfer rate:          2248.10 [Kbytes/sec] received

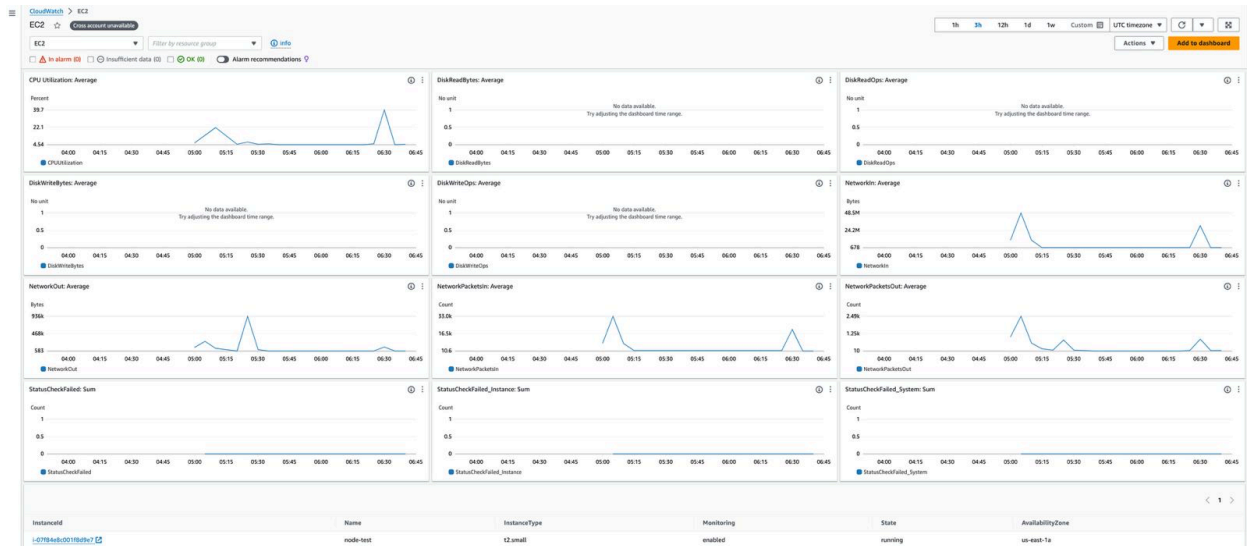
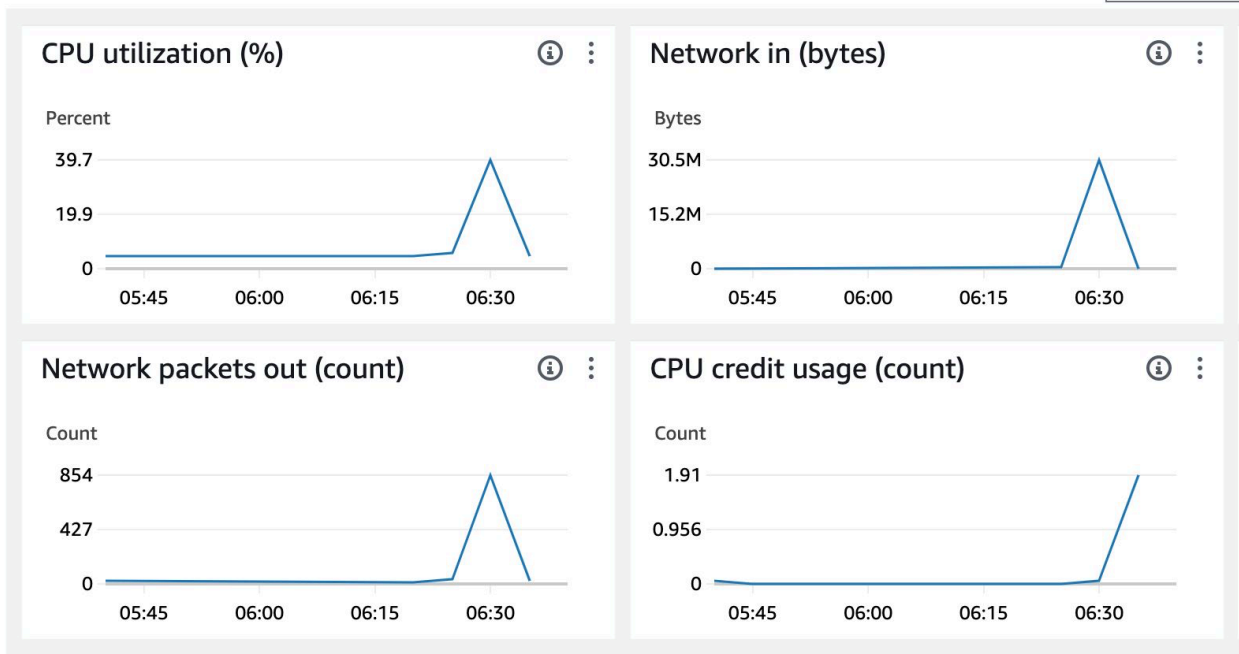
Connection Times (ms)
      min    mean[+/-sd] median    max
Connect:    0       3   1.4      3      7
Processing: 190    225  58.6    203   1516
Waiting:    143    181  58.4    161   1512
Total:      193    228  58.1    206   1517

Percentage of the requests served within a certain time (ms)
 50%    206
 66%    226
```

0 0 0 Ln 21, Col 1 Spaces: 4

CPU Utilization may be comparable under load, but the container should be more
Thunderbolt Bus: MacBook Pro, Apple Inc.

Matrics for VM:



▼ Instance details [info](#)

Platform
Ubuntu (Inferred)

Platform details
Linux/UNIX

Stop protection
Disabled

Instance auto-recovery
Default

AMI Launch Index
0

Credit specification
standard

Usage operation
RunInstances

Enclaves Support
-

Allow tags in instance metadata
Disabled

▼ Host and placement group [info](#)

Host ID
-

Host resource group name
-

Virtualization type
hvm

Number of vCPUs
1

AMI ID
[ami-0c86c205ae9224db8](#)

AMI name
[ubuntu/images/hvm-ssd-gp3/ubuntu-noble-24.04-amd64-server-20240801](#)

Launch time
[Wed Sep 18 2024 22:00:51 GMT-0700 \(Pacific Daylight Time\)](#) (about 2 hours)

Lifecycle
normal

Key pair assigned at launch
[node-test](#)

Kernel ID
-

RAM disk ID
-

Boot mode
[uefi-preferred](#)

Use IBBN as guest OS hostname
[Disabled](#)

Affinity
-

Tenancy
[default](#)

Reservation
[r-0a325bce5d3a84313](#)

Monitoring
[detailed](#)

Termination protection
Disabled

AMI location
[amazon/ubuntu/images/hvm-ssd-gp3/ubuntu-noble-24.04-amd64-server-20240801](#)

Stop-Aibernate behavior
Disabled

State transition reason
-

State transition message
-

Owner
[720482741731](#)

Current instance boot mode
[legacy-bios](#)

Answer RBN DNS hostname IPv4
[Disabled](#)

Placement group
-

Placement group ID
-

Partition number
-