

# Activity 3 Briefing

## Operating System / Using LINUX

# operating system

(manages the hardware and running programs)

- load and manage processes
- provide interfaces to hardware *via* system calls
- provide a filesystem
- provide a basic user interface

# Managing CPUs

*process*  
*OS*

core 1



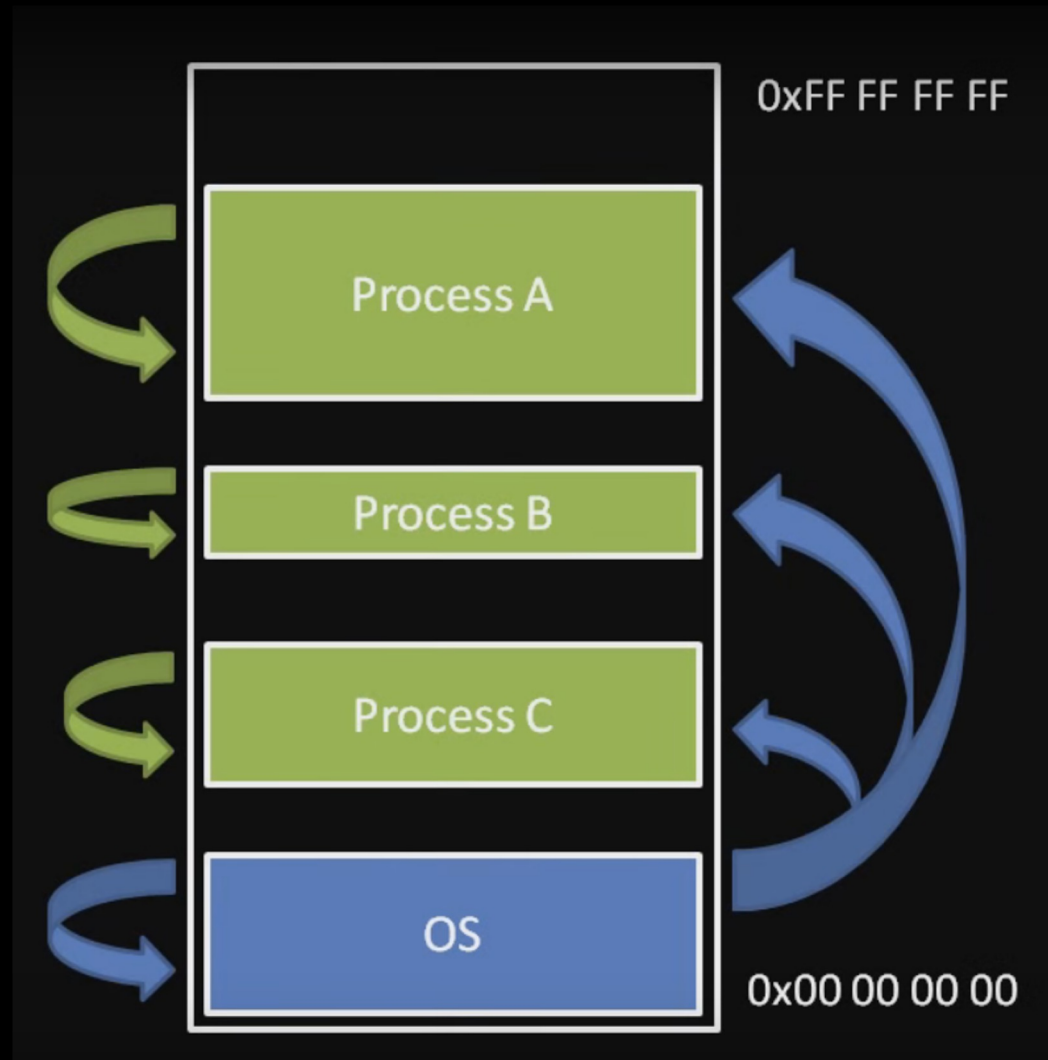
time

core 2



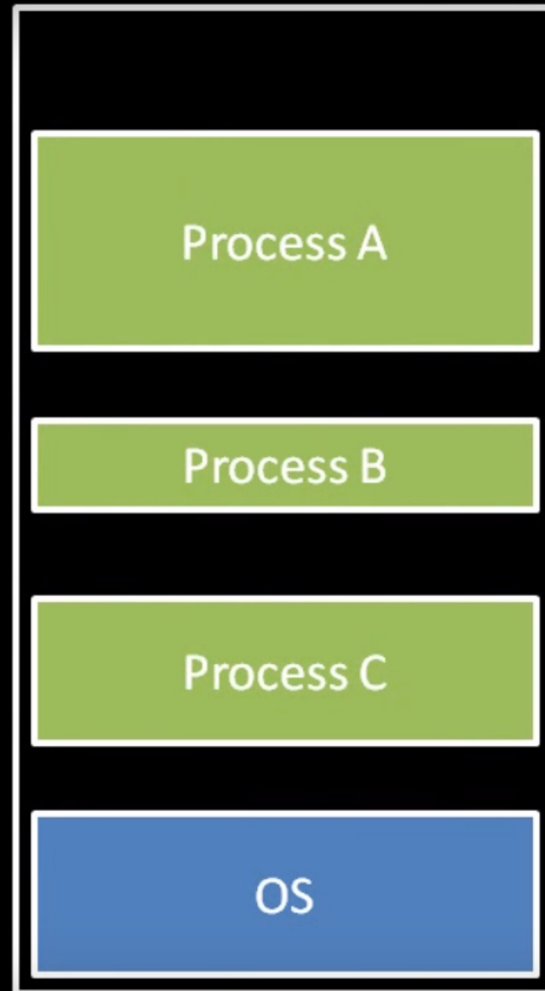
Scheduler in the OS code selects which process  
should run

# Managing Memory



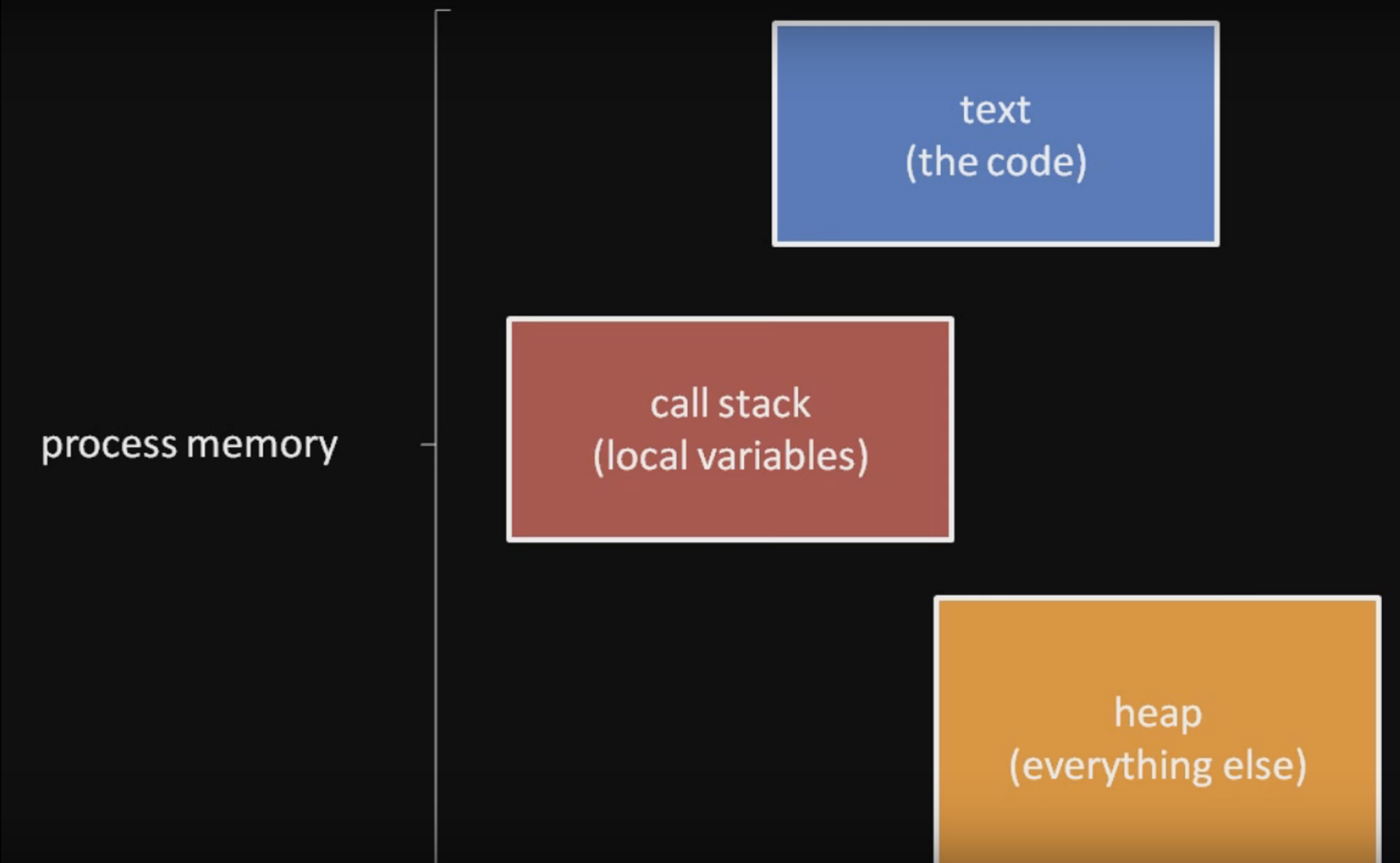
Separation of memory locations  
Restriction of Access

jump to system call code *via*  
special instruction



How processes access OS's memory

process memory



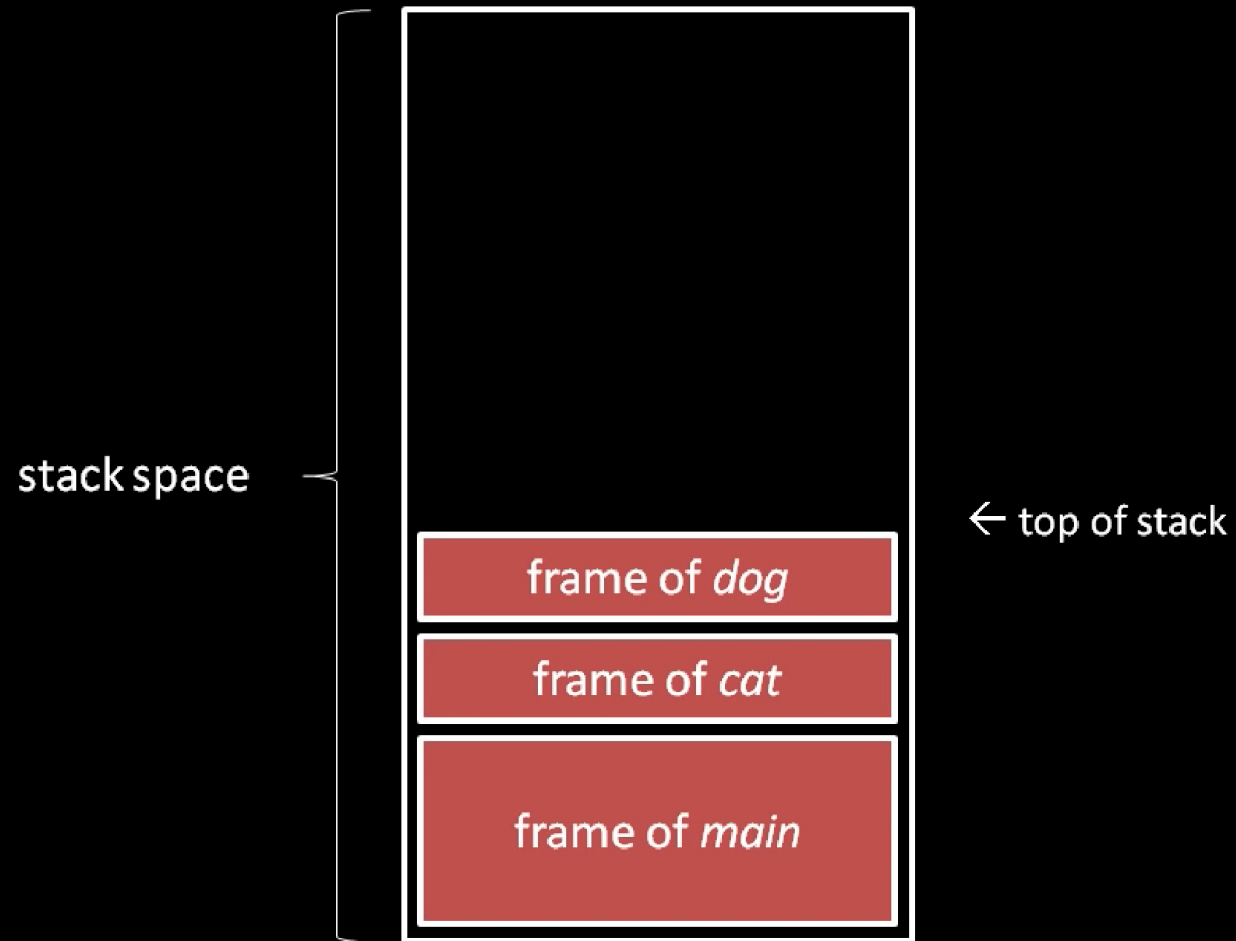
The diagram illustrates the layout of process memory. A vertical line on the left separates the label 'process memory' from the memory segments. To the right of this line, three segments are shown: 'text (the code)' in a blue box at the top, 'call stack (local variables)' in a red box in the middle, and 'heap (everything else)' in an orange box at the bottom. The segments are arranged vertically, with 'text' at the highest address and 'heap' at the lowest.

text  
(the code)

call stack  
(local variables)

heap  
(everything else)





```
Function main(){  
    ...  
    ...  
    cat();  
    ...  
}
```

```
Function cat(){  
    dog();  
}
```

```
Function dog(){  
    ...  
    ...  
}
```

0x FF FF FF FF

stack

heap

heap

heap

code

0x 00 00 00 00

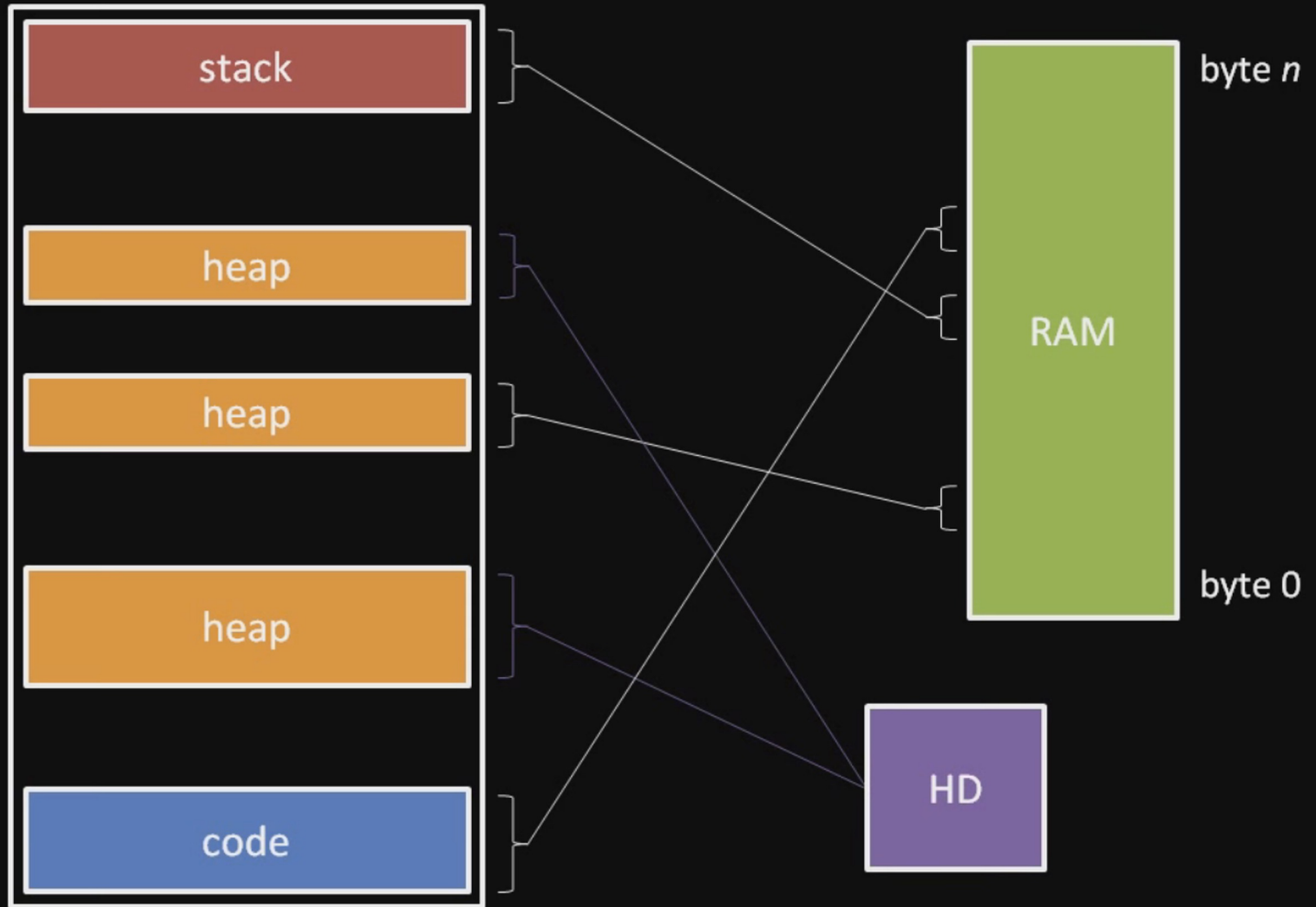
RAM

byte  $n$

byte 0

HD

Handling Physical Memory



# Managing Storage

HD

partition 1

partition 2

partition 3

HD

partition 4

flash drive

partition 5

CD-ROM

partition 6

partition 7

Drive Letters / File Path  
Mount/Unmount Folders

ubuntu



Observe OS's functionality through Hands-on Ubuntu try out

- User Interfaces
  - Command Line Interface
  - GUI
- User Accounts
- Storage
  - Storage Abstraction (File System)
  - Permission
  - File Handling
- Applications
  - Discovering / Installing / Using App
- UNIX Shell
  - Writing Shell Script





Student Login

(For students enrolled in a class)

学生の方はこちらからログインしてください。

已注册课程的学生请在这里登录

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Educator Login

(For educators who have access to the AWS Academy Portal)

講師の方（AWS Academyメンバーポータルアカウントをお持ちの方）はこちらからログインしてください。

教师请在这里登录（您需使用AWS Academy Portal账户登录）



Account



Dashboard



Courses



Calendar



Inbox



History



Help



**Notifications.** Tell us how and when you would like to be notified of events in C

Notification Preferences

## Dashboard



**AWS Academy Learner Lab [38859]**

ALLv1-38859







EN-US ▼

## Learner Lab

[Environment Overview](#)[Environment Navigation](#)[Access the AWS Management Console](#)[Region restriction](#)[Service usage and other restrictions](#)[Using the terminal in the browser](#)[Running AWS CLI commands](#)[Using the AWS SDK for Python](#)[Preserving your budget](#)[Accessing EC2 Instances](#)[SSH Access to EC2 Instances](#)[SSH Access from Windows](#)[SSH Access from a Mac](#)

## Environment Overview

This Learner Lab provides a sandbox environment for ad-hoc exploration of AWS services.

**This environment is long-lived.** When the session timer runs to 0:00, the session will end, but any

aws

Services

Search

[Alt+S]

N. Virginia

voclabs/user2389844=\_Student\_View

New EC2 Experience

Tell us what you think

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

▼ Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

▼ Images

AMIs

AMI Catalog

EC2

>

Instances

>

i-09c11fa8bf755734f

Instance summary for i-09c11fa8bf755734f (6531022121\_Atiwong)

Info

Updated less than a minute ago

Refresh

Connect

Instance state ▼

Actions ▼

Instance ID

i-09c11fa8bf755734f (6531022121\_Atiwong)

Public IPv4 address

52.4.169.224 | [open address](#)

Private IPv4 addresses

172.31.55.78

IPv6 address

—

Instance state

Running

Public IPv4 DNS

ec2-52-4-169-224.compute-1.amazonaws.com | [open address](#)

Hostname type

Private IP DNS name (IPv4 only)

ip-172-31-55-78.ec2.internal

Answer private resource DNS name

Instance type

t2.micro

IPv4 (A)

VPC ID

vpc-0f5ca47cc80400a78

Auto-assigned IP address

52.4.169.224 [Public IP]

AWS Compute Optimizer finding

⊗

User: arn:aws:sts::129411292310:assumed-role/voclabs/use  
r2389844=\_Student\_View\_\_\_\_\_ is not authorized to perform: compute-optimizer:G  
etEnrollmentStatus on resource: \* because no identity-based  
policy allows the compute-optimizer:GetEnrollmentStatus a  
ction  
[Retry](#)

IAM Role

—

Subnet ID

subnet-0c2cfd8a88fdbe2b2

Elastic IP addresses

—

Auto Scaling Group name

—