

## TASK 2

### DEPLOY A VIRTUAL MACHINE & INSTALL WEB SERVER

#### GOAL :

Launch an EC2/Compute Engine VM and configure Apache / nginx web server.

#### Requirements

- Create VM instance (Ubuntu)
- Configure firewall rules (port 80)
- Install Apache or nginx
- Display a custom “Hello from Cloud VM” page

#### Deliverables

1. Public VM IP with live page
2. Commands used & screenshots

#### 1 . EC2 Instance Running :

The screenshot shows the AWS Cloud9 IDE interface. The code editor contains a file named 'app.js' with the following content:

```
const http = require('http');
const port = 8080;
const hostname = '0.0.0.0';

http.createServer((req, res) => {
    res.statusCode = 200;
    res.setHeader('Content-Type', 'text/plain');
    res.end('Hello from Cloud9');
}).listen(port, hostname, () => {
    console.log(`Server running at http://${hostname}:${port}`);
});
```

The terminal window shows the command 'npm start' being run, and the output indicates that the application is listening on port 8080.

## 2 . Security Group Inbound Rules :

The screenshot shows the AWS Cloud9 IDE interface. The main window displays the 'sg-0bdeadc07351e9313 - launch-wizard-7' security group details. The 'Inbound rules' tab is selected, showing two entries:

Security group rule ID	IP version	Type	Protocol	Port range	Source
sgr-034713a34b32a626	IPv4	SSH	TCP	22	0.0.0.0/0
sgr-08f6bbe90b7e7951c	IPv4	HTTP	TCP	80	0.0.0.0/0

## 3 . Terminal – Apache Installed & Running :

The screenshot shows a Microsoft Windows terminal window titled 'C:\Windows\System32\cmd.e' running on a Microsoft Windows 10 Pro system. The user is installing Apache 2.4 on an Amazon Linux 2023 instance via SSH. The command used was:

```
curl https://aws.amazon.com/linux/amazon-linux-2023 | sh
```

The terminal output shows the following steps:

- Updating the yum repository:

```
[ec2-user@ip-172-31-41-98 ~]$ sudo yum update -y
```

- Installing Apache 2.4:

```
[ec2-user@ip-172-31-41-98 ~]$ sudo yum install httpd -y
```

- Output of the yum install command:

Package	Architecture	Version	Repository	Size
httpd	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	47 k
apr	x86_64	1.7.5-1.amzn2023.0.4	amazonlinux	129 k
apr-util	x86_64	1.6.3-1.amzn2023.0.2	amazonlinux	97 k
apr-util-lmdb	x86_64	1.6.3-1.amzn2023.0.2	amazonlinux	13 k
generic-logos-httpd	noarch	18.0.0-12.amzn2023.0.3	amazonlinux	19 k
httpd-core	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	1.4 M
httpd-filesystem	noarch	2.4.66-1.amzn2023.0.1	amazonlinux	13 k
httpd-tools	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	81 k
libbrotli	x86_64	1.0.9-4.amzn2023.0.2	amazonlinux	315 k
mailcap	noarch	2.1.49-3.amzn2023.0.3	amazonlinux	33 k

- Dependencies resolved.
- Apache 2.4 is now installed.

```
C:\Windows\System32\cmd.exe + - 12/13 13/13
Verifying : mod_http2-2.0.27-1.amzn2023.0.3.x86_64
Verifying : mod_lua-2.4.66-1.amzn2023.0.1.x86_64
Installed:
apr-1.7.5-1.amzn2023.0.4.x86_64
apr-util-lmb-1.6.3-1.amzn2023.0.2.x86_64
generic-logs-httd-18.0.0-12.amzn2023.0.3.noarch
httpd-core-2.4.66-1.amzn2023.0.1.x86_64
httpd-tools-2.4.66-1.amzn2023.0.1.x86_64
mailcap-2.1.49-3.amzn2023.0.3.noarch
mod_lua-2.4.66-1.amzn2023.0.1.x86_64

apr-util-1.6.3-1.amzn2023.0.2.x86_64
apr-util-openssl-1.6.3-1.amzn2023.0.2.x86_64
httpd-2.4.66-1.amzn2023.0.1.x86_64
httpd-filesystem-2.4.66-1.amzn2023.0.1.noarch
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
mod_http2-2.0.27-1.amzn2023.0.3.x86_64

Complete!
[ec2-user@ip-172-31-41-98 ~]$ sudo systemctl start httpd
[ec2-user@ip-172-31-41-98 ~]$ sudo systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[ec2-user@ip-172-31-41-98 ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
      Active: active (running) since Wed 2026-02-11 16:30:17 UTC; 27s ago
        Docs: man:httpd.service(8)
     Main PID: 22730 (httpd)
       Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
          Tasks: 177 (limit: 1067)
         Memory: 13.3M
            CPU: 96ms
           CGroup: /system.slice/httpd.service
           ├─22730 /usr/sbin/httpd -DFOREGROUND
           ├─22832 /usr/sbin/httpd -DFOREGROUND
           ├─22837 /usr/sbin/httpd -DFOREGROUND
           ├─22840 /usr/sbin/httpd -DFOREGROUND
           └─22866 /usr/sbin/httpd -DFOREGROUND

Feb 11 16:30:17 ip-172-31-41-98.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server>
Feb 11 16:30:17 ip-172-31-41-98.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Feb 11 16:30:17 ip-172-31-41-98.ap-south-1.compute.internal httpd[22730]: Server configured, listening on: port 80

[ec2-user@ip-172-31-41-98 ~]$ cd /var/www/html
[ec2-user@ip-172-31-41-98 html]$ pwd
/var/www/html
[ec2-user@ip-172-31-41-98 html]$ sudo nano index.html

ENG IN 10:20 PM 11-02-2026
```

#### 4 . Terminal – Custom Page Created :

```
C:\Windows\System32\cmd.exe + - 12/13 13/13
Verifying : mod_http2-2.0.27-1.amzn2023.0.3.x86_64
Verifying : mod_lua-2.4.66-1.amzn2023.0.1.x86_64
Installed:
apr-1.7.5-1.amzn2023.0.4.x86_64
apr-util-lmb-1.6.3-1.amzn2023.0.2.x86_64
generic-logs-httd-18.0.0-12.amzn2023.0.3.noarch
httpd-core-2.4.66-1.amzn2023.0.1.x86_64
httpd-tools-2.4.66-1.amzn2023.0.1.x86_64
mailcap-2.1.49-3.amzn2023.0.3.noarch
mod_lua-2.4.66-1.amzn2023.0.1.x86_64

apr-util-1.6.3-1.amzn2023.0.2.x86_64
apr-util-openssl-1.6.3-1.amzn2023.0.2.x86_64
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httpd-filesystem-2.4.66-1.amzn2023.0.1.noarch
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
mod_http2-2.0.27-1.amzn2023.0.3.x86_64

Complete!
[ec2-user@ip-172-31-41-98 ~]$ sudo systemctl start httpd
[ec2-user@ip-172-31-41-98 ~]$ sudo systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
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           ├─22840 /usr/sbin/httpd -DFOREGROUND
           └─22866 /usr/sbin/httpd -DFOREGROUND

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Feb 11 16:30:17 ip-172-31-41-98.ap-south-1.compute.internal httpd[22730]: Server configured, listening on: port 80

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[ec2-user@ip-172-31-41-98 html]$ pwd
/var/www/html
[ec2-user@ip-172-31-41-98 html]$ sudo nano index.html

ENG IN 10:20 PM 11-02-2026
```

## 5 . Browser – Live Website :

<http://13.201.27.228>



**Hello from Cloud VM**

Running on Amazon Linux EC2



## 1 . PUBLIC VM IP :

13.201.27.228

## 2 . COMMANDS USED :

```
sudo yum update -y  
sudo yum install httpd -y  
sudo systemctl start httpd  
sudo systemctl enable httpd  
cd /var/www/html  
sudo nano index.html
```