

# NAME : UDDHAV BAPU GUND | DESIGNATION: JR.AWS DEVELOPER

## TASK : AWS EC2 with Systems Manager (SSM)

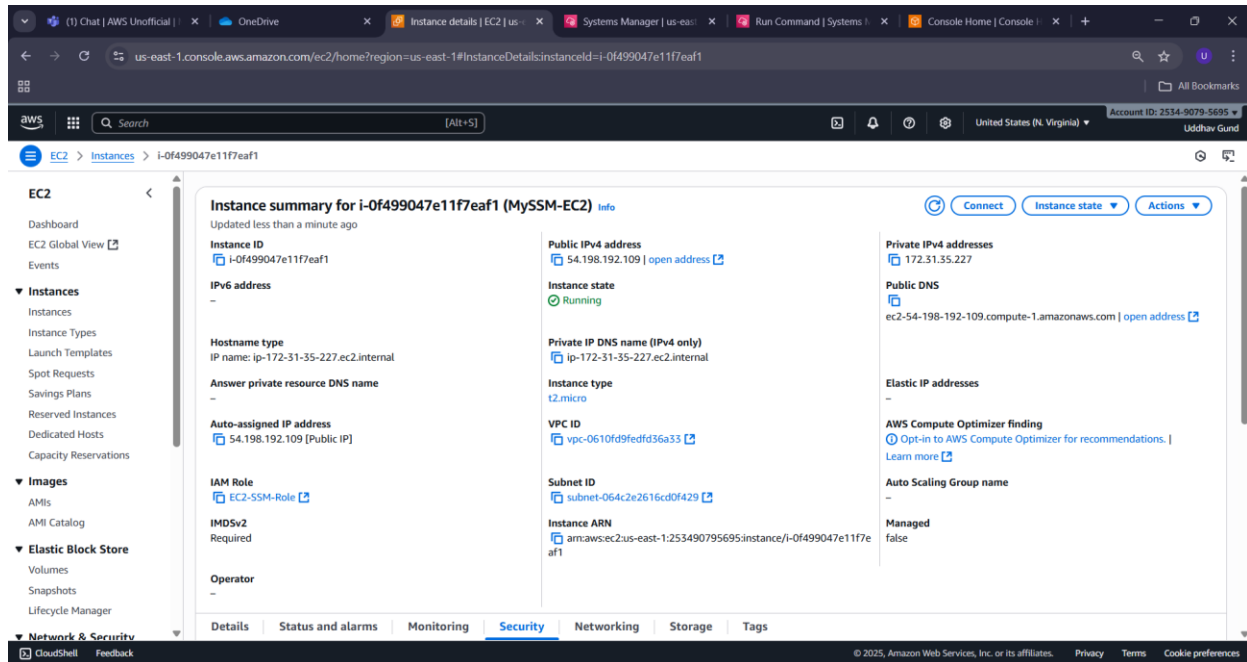
### 1. Introduction

This report demonstrates the setup and use of AWS EC2 with Systems Manager (SSM) to connect to an instance without SSH keys and execute commands remotely.

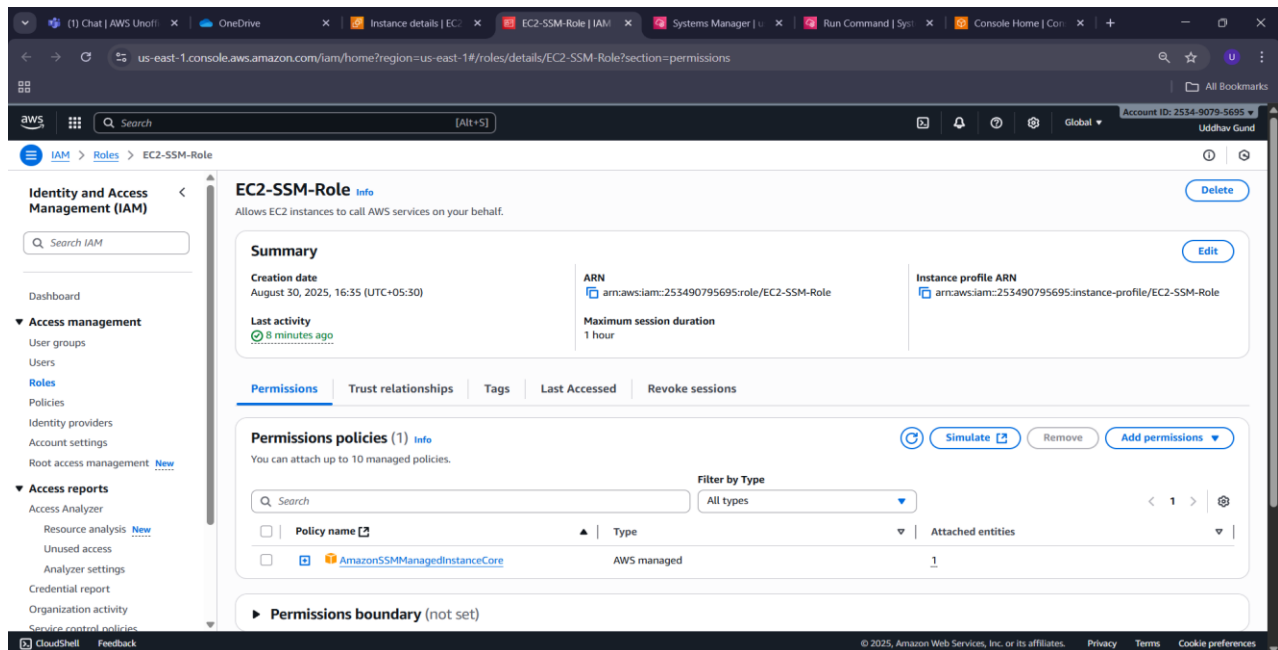
### 2. Steps Performed

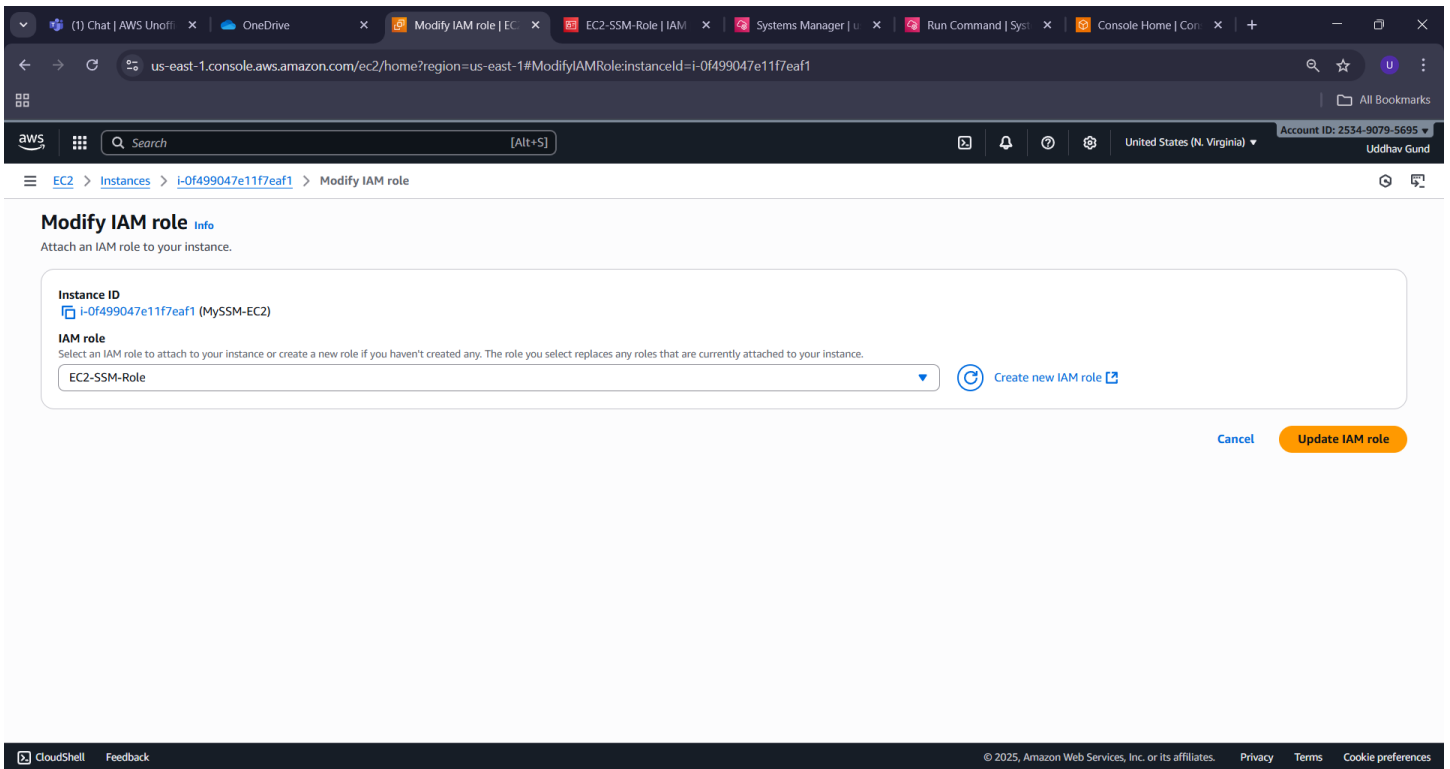
#### Step 1: Launch EC2 Instance with IAM Role

- An EC2 instance (MySSM-EC2) was launched using a free-tier t2.micro.
- IAM Role EC2-SSM-Role with AmazonSSMManagedInstanceCore policy was attached.



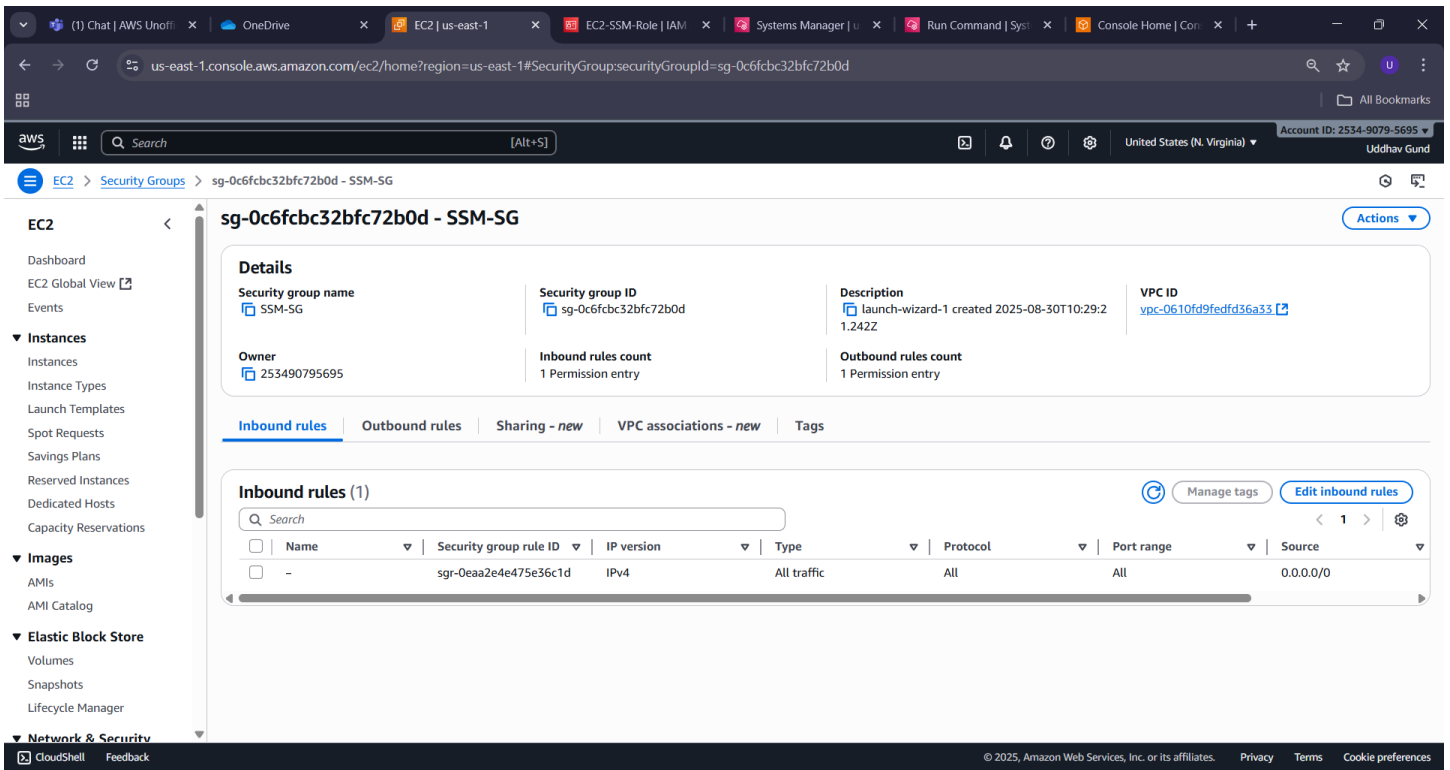
Role created and attached to instance





## Step 2: Configure Security Group

- Security group SSM-SG was created with:
  - Inbound: All traffic from 0.0.0.0/0
  - Outbound: All traffic allowed



### Step 3: Verify SSM Managed Instance

- The instance was verified in Systems Manager → Fleet Manager → Managed Instances.
- Status: Managed (Online)

### Step 4: Connect with Session Manager

- Used Session Manager to connect without SSH keys.
- Example command executed:  
uptime

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-0f499047e11f7eaf1

EC2 > Instances > i-0f499047e11f7eaf1 > Connect to instance

#### Connect Info

Connect to an instance using the browser-based client.

EC2 Instance Connect   **Session Manager**   SSH client   EC2 serial console

**Introducing Systems Manager just-in-time node access**  
Move towards zero standing privileges by requiring operators to request access before remotely connecting to instances. [Learn more](#)

**Session Manager usage:**

- Connect to your instance without SSH keys, a bastion host, or opening any inbound ports.
- Sessions are secured using an AWS Key Management Service key.
- You can log session commands and details in an Amazon S3 bucket or CloudWatch Logs log group.
- Configure sessions on the Session Manager [Preferences](#) page.

Cancel   **Connect**

---

CloudShell   Feedback   © 2025, Amazon Web Services, Inc. or its affiliates.   Privacy   Terms   Cookie preferences

us-east-1.console.aws.amazon.com/systems-manager/session-manager/i-0f499047e11f7eaf1?region=us-east-1#

Session ID: root-kigpc0lucypc9ytrpvig9dfyt   Shortcuts   Instance ID: i-0f499047e11f7eaf1   **Terminate**

```
sh-5.2$ uptime
 12:07:10 up 1:12, 0 users, load average: 0.04, 0.01, 0.00
sh-5.2$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M  0  4.0M  0% /dev
tmpfs           475M  0  475M  0% /dev/shm
tmpfs           190M  420K  190M  1% /run
/dev/xvda1      8.0G  1.6G  6.4G  20% /
tmpfs           475M  0  475M  0% /tmp
/dev/xvda128    10M  1.3M  8.7M  13% /boot/efi
sh-5.2$ sudo yum update -y
Last metadata expiration check: 0:15:47 ago on Sat Aug 30 11:51:47 2025.
Dependencies resolved.
Nothing to do.
Complete!
sh-5.2$ echo "Hello from SSM Run Command"
Hello from SSM Run Command
sh-5.2$ uptime
 12:09:34 up 1:15, 0 users, load average: 0.02, 0.03, 0.00
sh-5.2$
```

## Step 5: Execute Run Command

- Used Run Command → AWS-RunShellScript document.
- Script executed:

```
echo "Hello from SSM Run Command"
```

```
uptime
```

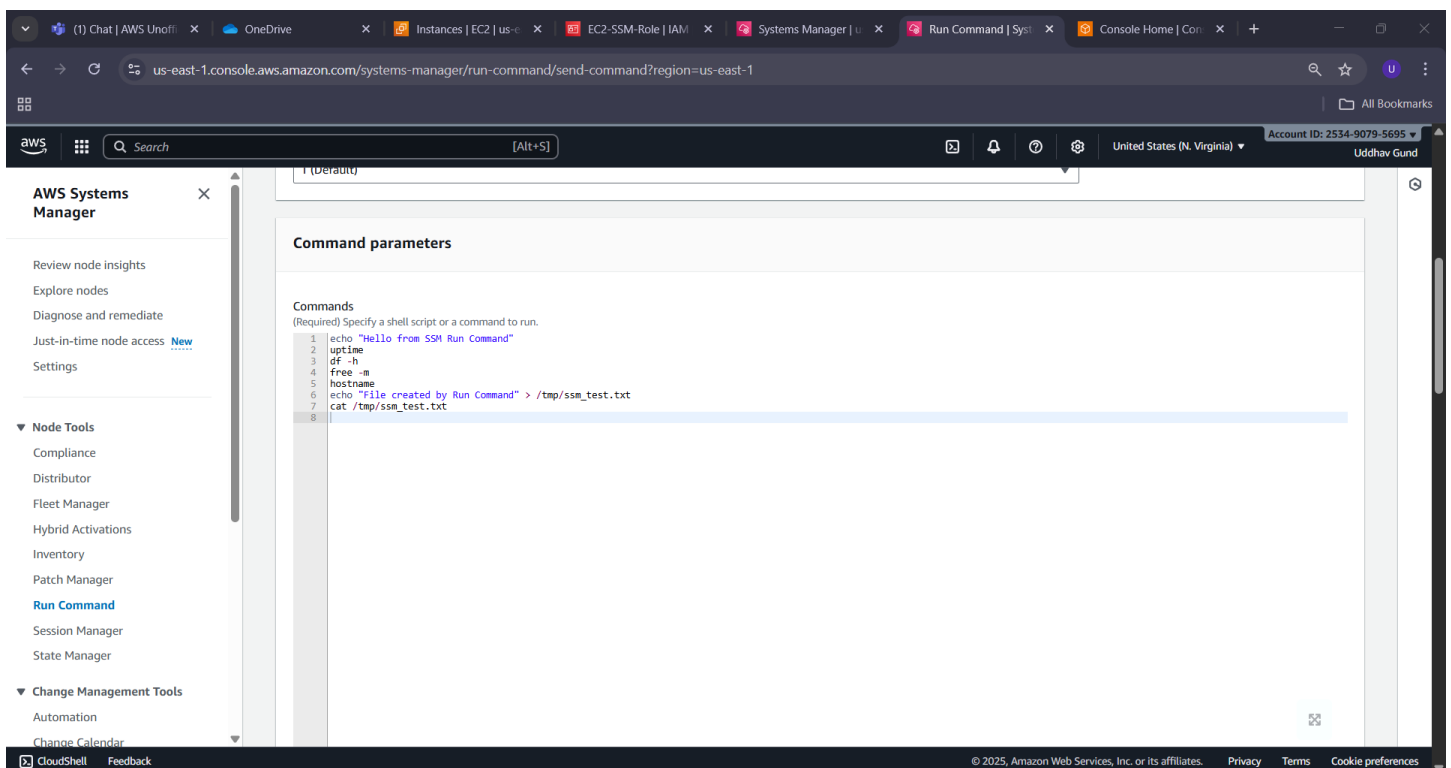
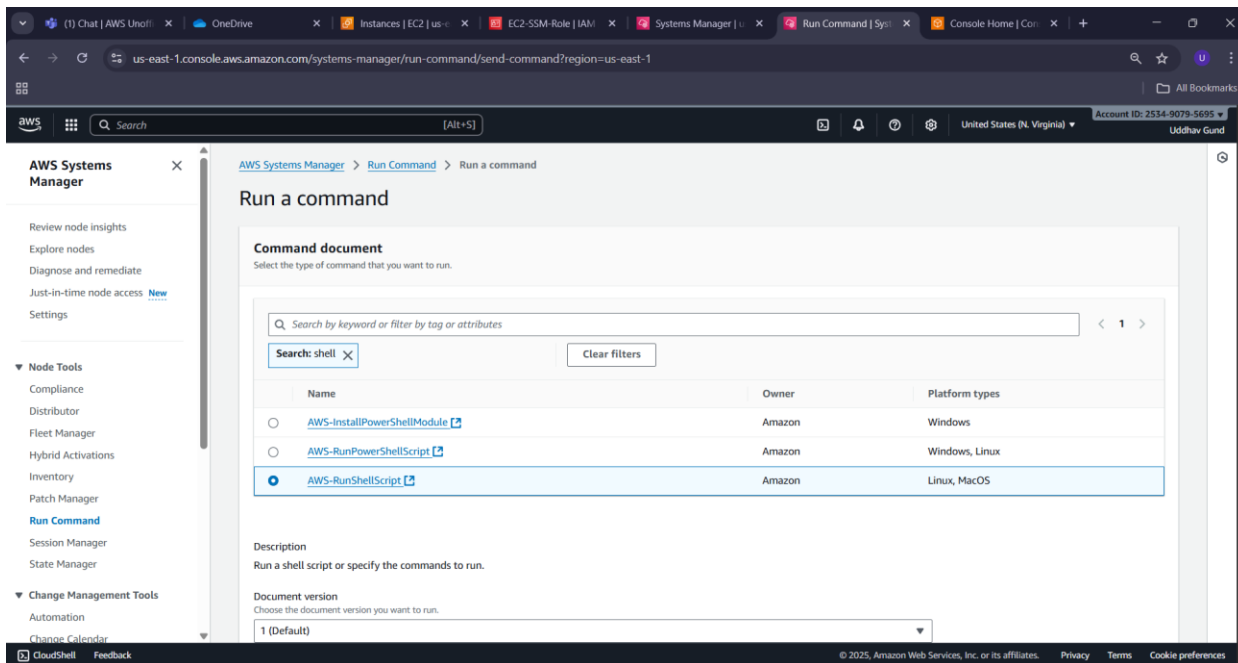
```
df -h
```

```
free -m
```

```
hostname
```

```
echo "File created by Run Command" > /tmp/ssm_test.txt
```

```
cat /tmp/ssm_test.txt
```



us-east-1.console.aws.amazon.com/systems-manager/run-command/send-command?region=us-east-1

Search [Alt+S]

United States (N. Virginia) Account ID: 2534-9079-5695 Uddhav Gund

### AWS Systems Manager

- Review node insights
- Explore nodes
- Diagnose and remediate
- Just-in-time node access **New**
- Settings

#### Node Tools

- Compliance
- Distributor
- Fleet Manager
- Hybrid Activations
- Inventory
- Patch Manager
- Run Command**
- Session Manager
- State Manager

#### Change Management Tools

- Automation
- Change Calendar

### Target selection

Choose a method for selecting targets.

- ☐ Specify instance tags  
Specify one or more tag key-value pairs to select instances that share those tags.
- ☒ Choose instances manually  
Manually select the instances you want to register as targets.
- ☐ Choose a resource group  
Choose a resource group that includes the resources you want to target.

i-0f499047e11f7eaf1 X

### Instances

Search

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Availability zone	Ping status	Last ping time
<input checked="" type="checkbox"/>	MySSM-EC2	i-0f499047e11f7eaf1	running	us-east-1a	Online	8/30/2025 at 18:03:16 GMT+0530 (India Standard Time)

### Other parameters

Comment  
(Optional) Type a note about the command

CloudShell Feedback

© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

## Step 6: View Run Command Output

- Command successfully executed.
- Output included system uptime, disk usage, memory usage, hostname, and created test file.

us-east-1.console.aws.amazon.com/systems-manager/run-command/af28f96d-c95a-4d24-bef2-2394ae8607f2?region=us-east-1

Search [Alt+S]

United States (N. Virginia) Account ID: 2534-9079-5695 Uddhav Gund

### AWS Systems Manager

- Review node insights
- Explore nodes
- Diagnose and remediate
- Just-in-time node access **New**
- Settings

#### Node Tools

- Compliance
- Distributor
- Fleet Manager
- Hybrid Activations
- Inventory
- Patch Manager
- Run Command**
- Session Manager
- State Manager

#### Change Management Tools

- Automation
- Change Calendar

Command ID: af28f96d-c95a-4d24-bef2-2394ae8607f2 was successfully sent!

### AWS Systems Manager > Run Command > Command ID: af28f96d-c95a-4d24-bef2-2394ae8607f2

Command ID: af28f96d-c95a-4d24-bef2-2394ae8607f2

Cancel command Rerun Copy to new

### Command status

Overall status	Detailed status	# targets	# completed	# error	# delivery timed out
Success	Success	1	1	0	0

### Targets and outputs

Search command invocations

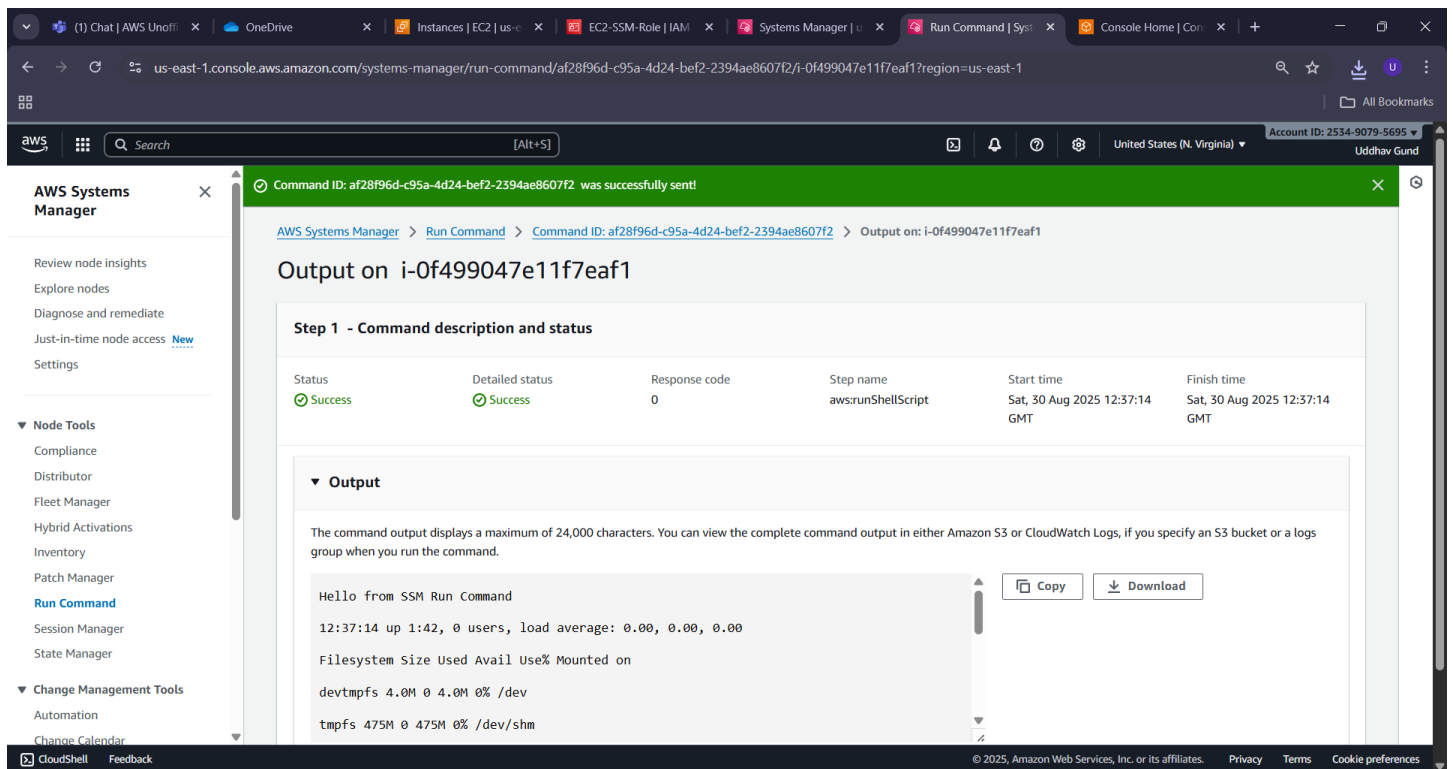
Instance ID	Instance name	Status	Detailed Status	Start time	Finish time
i-0f499047e11f7eaf1	ip-172-31-35-227.ec2.internal	Success	Success	Sat, 30 Aug 2025 12:37:14 GMT	Sat, 30 Aug 2025 12:37:14 GMT

CloudWatch alarm

Command description

CloudShell Feedback

© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



## Output :

Hello from SSM Run Command

12:37:14 up 1:42, 0 users, load average: 0.00, 0.00, 0.00

Filesystem    Size    Used Avail Use% Mounted on

devtmpfs    4.0M    0 4.0M    0% /dev

tmpfs        475M    0 475M    0% /dev/shm

tmpfs        190M 420K 190M    1% /run

/dev/xvda1   8.0G 1.6G 6.4G 20% /

tmpfs        475M 4.0K 475M    1% /tmp

/dev/xvda128 10M 1.3M 8.7M 13% /boot/efi

total    used    free    shared buff/cache    available

Mem:      949      140      485      0      322      671

Swap:      0      0      0

ip-172-31-35-227.ec2.internal

File created by Run Command

## 3. Conclusion

- Successfully connected to EC2 without SSH keys using Session Manager.
- Verified SSM Agent functionality with Run Command.
- Demonstrated remote command execution and file creation.