Placement Empowerment Program

Cloud Computing and DevOps Centre

Write a Shell Script to Manage Cloud Resources: *Create a script to launch, stop, and terminate cloud VMs using the CLI.*

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Introduction:

Managing cloud resources effectively is essential for optimizing costs and ensuring your infrastructure scales according to demand. By creating a shell script, you can automate the management of your cloud virtual machines (VMs), saving time and reducing the risk of human error. This script will leverage the Command Line Interface (CLI) provided by your cloud service provider to perform essential tasks such as launching, stopping, and terminating VMs.

Objectives:

The primary objective of this shell script is to provide a convenient and automated way to manage cloud VMs using the CLI. By the end of this tutorial, you will have a script that can:

Launch new cloud VMs based on specified parameters.

Stop running VMs to save on costs when they are not in use.

Terminate VMs that are no longer needed to free up resources.

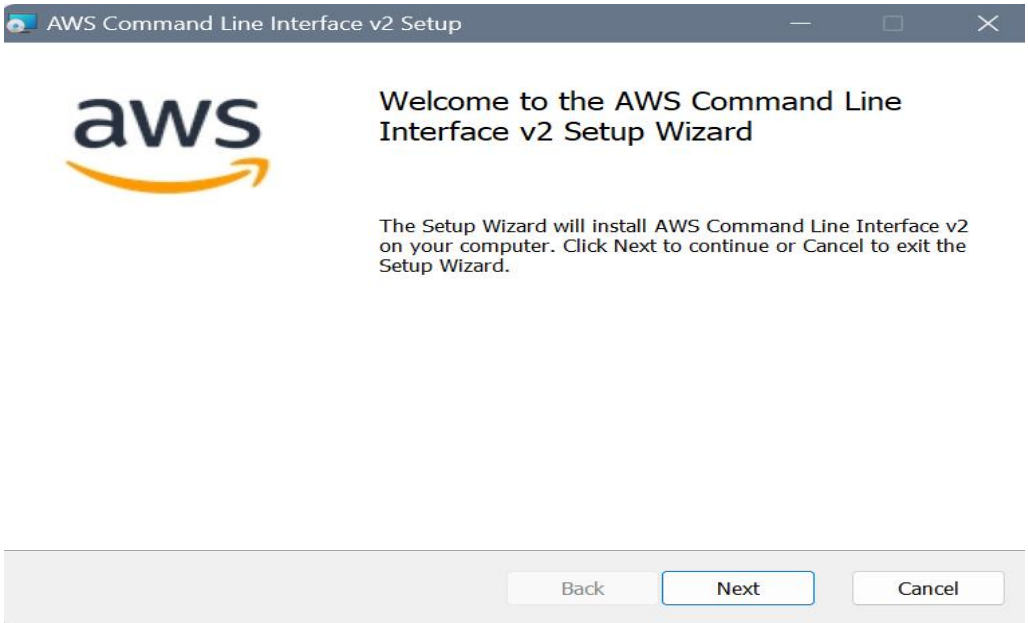
Step-by-Step Overview:

1. Set Up AWS CLI

Install AWS CLI: Follow the installation guide for your operating system.

Configure AWS CLI: Run the following command and enter your AWS credentials:

- First create an EC2 Instance in your console
- You will need your AWS Access Key ID, Secret Access Key, region, and output format



2. Set up your AWS CLI with your credentials

You'll be prompted to enter your:

- AWS Access Key ID
- AWS Secret Access Key
- Default region name
- Default output format (e.g., json)

```
AWS Access Key ID [****************M7OJ]: AKIA2MNVLVVF7K4MM7OJ
AWS Secret Access Key [****************SI2O]: Vkk7DU 02xxA5eC  +1iTBtkWA00  Fy3KPsS  O
Default region name [ap-south-1]: ap-south-1
Default output format [None]: json
```

3. Run Instance:

Now run the instance in the terminal by inputting the configurations of your instance

```
type t2.micro --key-name poo-key --security-group-ids sg-0102d89eacd83db9d --subnet-id subnet-009b250320823406e
{
    "ReservationId": "r-03fb5552defcacc60",
    "OwnerId": "713881791819",
    "Groups": [],
    "Instances": [
        {
            "Architecture": "x86_64",
            "BlockDeviceMappings": [],
            "ClientToken": "61221340-c906-465b-9d01-d2497ed4bf9e",
            "EbsOptimized": false,
            "EnaSupport": true,
```

3. Write the script

Now, write the following script in a notepad and save it as ‘ec2_manager.ps1’.
Then, save this file in a folder named script.

```
Write-Host "1) List Instances"
Write-Host "2) Start Instance"
Write-Host "3) Stop Instance"
Write-Host "4) Terminate Instance"
Write-Host "5) Exit"

$choice = Read-Host "Enter your choice"

switch ($choice) {
    "1" { List-Instances }
    "2" { Start-Instance }
    "3" { Stop-Instance }
    "4" { Terminate-Instance }
    "5" { Write-Host "Exiting..."; exit }
    default { Write-Host "Invalid choice! Please try again." }
}
```

4. Run the script

Now, right click on the file and click on run with powershell.

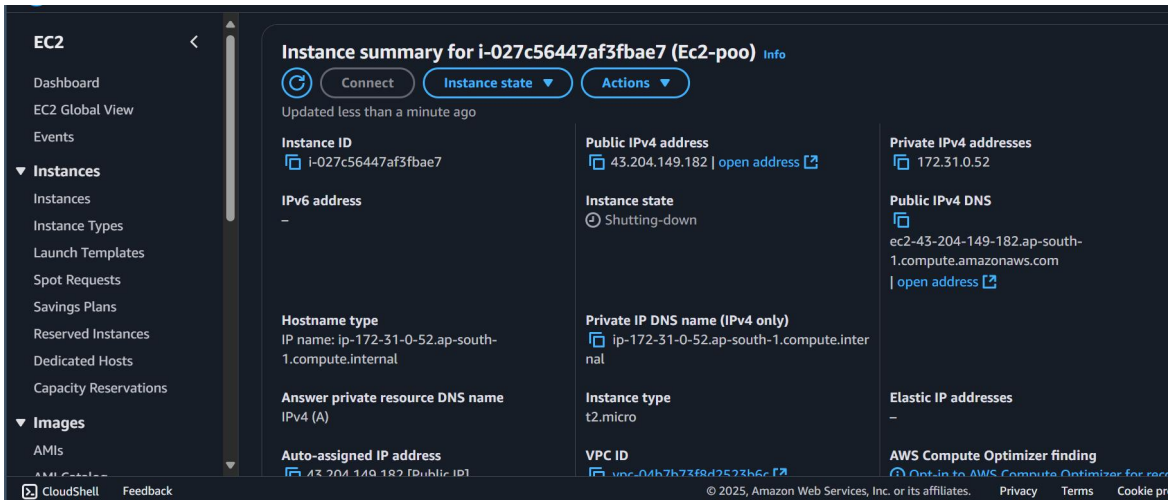
Now, the script is executed in a powershell window.

Select the required option and give the instance id of the ec2 instance you previously created.

```
Select an option:
1) List Instances
2) Start Instance
3) Stop Instance
4) Terminate Instance
5) Exit
Enter your choice: 4
Enter Instance ID to terminate: i-0f6c105434829ec0a
```

5. Verifying

Now, check the console to verify is the following actions are being performed on your given instance.



Outcome :

By creating a shell script to manage your cloud resources, you will achieve the following outcomes:

Automation: You will have a powerful tool that automates the tasks of launching, stopping, and terminating cloud VMs, reducing the need for manual intervention and minimizing the risk of human error.

Efficiency: The script will streamline the management of your cloud infrastructure, saving you time and effort by handling repetitive tasks quickly and consistently.

Cost Optimization: By automating the stopping of VMs when they are not in use and terminating them when no longer needed, you will optimize your cloud usage and reduce unnecessary costs.

Scalability: The script will allow you to easily scale your infrastructure up or down based on demand, ensuring that your resources are used efficiently and that your application can handle varying levels of traffic.

Flexibility: You can customize the script to meet your specific needs and integrate it with other automation tools or workflows, enhancing its functionality and adaptability.