

Placement Empowerment Program

Cloud Computing and DevOps Centre

Use Cloud CLI Tools Install the CLI for your cloud provider (e.g., AWS CLI). Use it to list resources, upload files to storage, and manage VMs.

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Introduction and Overview

Cloud CLI tools, such as AWS CLI, enable users to interact with cloud services directly from the terminal, making resource management more efficient and enabling automation. This task involves installing the AWS CLI, configuring it with AWS credentials, and performing basic operations like listing resources, uploading files to S3, and managing EC2 instances. CLI tools provide a faster, scriptable alternative to the AWS Management Console, enhancing productivity and automating cloud operations.

Objective

The goal of this project is to:

1. Learn Cloud CLI Basics – Install and configure AWS CLI to interact with cloud resources using command-line commands.
2. Manage Cloud Resources – Use AWS CLI to list cloud resources, upload files to S3, and manage EC2 instances efficiently.
3. Enhance Automation Skills – Gain hands-on experience in automating cloud tasks, improving efficiency over manual AWS Management Console operations.

Importance of Cloud CLI

Hands-on Learning & Efficiency – Cloud CLI provides direct interaction with cloud services, enabling faster and more efficient management compared to the web console.

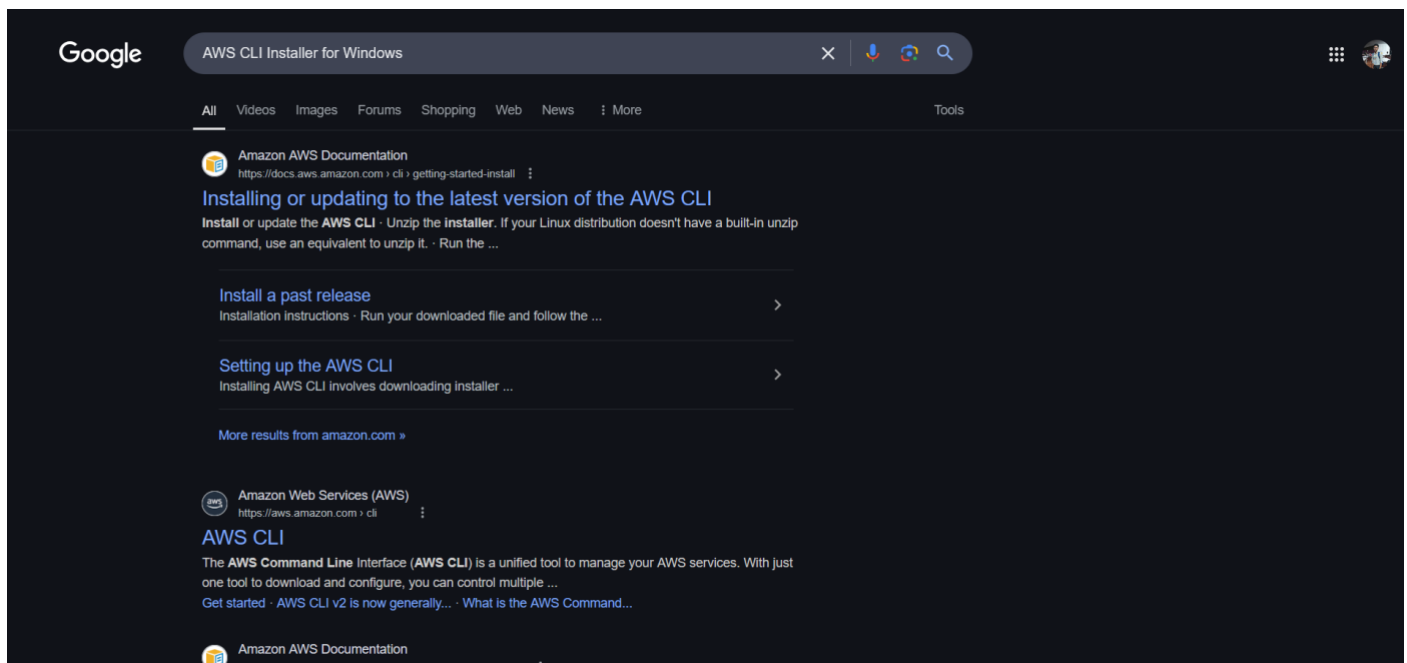
Automation & Scripting – It allows users to automate repetitive tasks, such as resource provisioning and deployments, improving productivity.

Remote Cloud Management – With CLI tools, users can manage cloud resources from any terminal, making it ideal for DevOps, remote administration, and large-scale cloud operations.

Step-by-Step Overview

Step1:

Search for "AWS CLI Installer for Windows" on Google and click the first link to access the official website.



Step 2:

Click on the "Install/Update" option located on the left-hand side of the Apache Lounge website. Select the link regarding your OS, Install by using the link provided else use the *msiexec* command

The screenshot displays the AWS CLI installation guide for Windows. The main content area is titled 'Windows' and includes sections for 'Install and update requirements' and 'Install or update the AWS CLI'. The requirements section lists two bullet points: 'We support the AWS CLI on Microsoft-supported versions of 64-bit Windows' and 'Admin rights to install software'. The installation section provides a link to the MSI installer and a command to run it using `msixec.exe`. Below the command, there is a terminal snippet showing the command: `C:\> msixec.exe /i https://awscli.amazonaws.com/AWSCLIV2.msi`. The page also features a 'Download history' section at the bottom, which shows the download progress of the `AWSCLIV2.msi` file, indicating it is 163 KB/s and 13.8 MB of 40.7 MB is downloaded, with 3 minutes left.

Step 3:

Once installed, verify the installation by opening Command Prompt (cmd) or PowerShell and running **aws --version**

```
C:\Users\Nantha Krishnan>aws --version
aws-cli/2.23.11 Python/3.12.6 Windows/11 exe/AMD64
```

It should return something like

```
aws-cli/2.x.x Python/3.x.x Windows/x86_64
```

Step 4:

Before using AWS CLI, you need to configure it with your AWS credentials.

Open Command Prompt and type **aws configure**

It will ask for:

AWS Access Key ID → Get it from AWS IAM > Security Credentials

AWS Secret Access Key → Get it from AWS IAM > Security Credentials

Default region name → Example: us-east-1 (Find yours in AWS Console)

Default output format → Keep it as json or press Enter for default

Step 1
Access key best practices & alternatives

Step 2 - optional
Set description tag

Step 3
Retrieve access keys

Retrieve access keys [Info](#)

Access key
If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.

Access key	Secret access key
AKIAWFIPSVMMHCVR5NEQ	***** Show

Access key best practices

- Never store your access key in plain text, in a code repository, or in code.
- Disable or delete access key when no longer needed.
- Enable least-privilege permissions.
- Rotate access keys regularly.

For more details about managing access keys, see the [best practices for managing AWS access keys](#).

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```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\Nantha Krishnan> aws configure
AWS Access Key ID [*****BLES]: AKIAWFIPSVMMH25RYIFU
AWS Secret Access Key [*****Bn4b]: 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
Default region name [us-east-1]: us-east-1
Default output format [text]: |
```

Step 5:

To see all storage buckets, Type **aws s3 ls** in cmd

To check running EC2 instances **aws ec2 describe-instances** in cmd

```
C:\Users\Nantha Krishnan>aws s3 ls
2025-02-02 18:53:05 krishbucket876
```

```

in-use subnet-0390f0de74e290210 vpc-0414813d0d706a8de
ASSOCIATION amazon ec2-54-242-41-58.compute-1.amazonaws.com 54.242.41.58
ATTACHMENT 2025-01-29T03:37:54+00:00 eni-attach-0b7b64de45a251f99 True 0 0 attached
GROUPS sg-01c1e4e9bcb8a9110 launch-wizard-1
OPERATOR False
PRIVATEIPADDRESSES True ip-172-31-24-198.ec2.internal 172.31.24.198
ASSOCIATION amazon ec2-54-242-41-58.compute-1.amazonaws.com 54.242.41.58
NETWORKPERFORMANCEOPTIONS default
OPERATOR False
PLACEMENT us-east-1b default
PRIVATEDNSNAMEOPTIONS False True ip-name
SECURITYGROUPS sg-01c1e4e9bcb8a9110 launch-wizard-1
STATE 16 running
TAGS Name krish ec server
RESERVATIONS 423623830296 r-005347a238f24cd96
INSTANCES 0 x86_64 uefi-preferred 7589b781-a708-4c68-8832-65d26ffd0b4d legacy-bios False True xen ami-0c614dee691cbbf37 i-0837135
69b t2.micro nantha 2025-01-29T03:55:11+00:00 Linux/UNIX ip-172-31-92-253.ec2.internal 172.31.92.253 ec2-54-205-214-168.compute-1.amaz
om 54.205.214.168 /dev/xvda ebs True subnet-02f1feb695271303d RunInstances 2025-01-29T03:55:11+00:00 hvm vpc-04148
6a8de
BLOCKDEVICEMAPPINGS /dev/xvda
EBS 2025-01-29T03:55:12+00:00 True attached vol-0fb3dfdc5eb59a8
CAPACITYRESERVATIONSPSPECIFICATION open
CPUOPTIONS 1
ENCLAVEOPTIONS False
HIBERNATIONOPTIONS False
MAINTENANCEOPTIONS default
METADATATOPTIONS enabled disabled 2 required disabled applied
MONITORING disabled
NETWORKINTERFACES interface 12:b8:42:66:9f:e7 eni-0be920980295c1b3c 423623830296 ip-172-31-92-253.ec2.internal 172.31.92.253 T
in-use subnet-02f1feb695271303d vpc-0414813d0d706a8de
ASSOCIATION amazon ec2-54-205-214-168.compute-1.amazonaws.com 54.205.214.168
ATTACHMENT 2025-01-29T03:55:11+00:00 eni-attach-09236e39821f6a3ac True 0 0 attached
GROUPS sg-00a4264ea7e551915 launch-wizard-2
OPERATOR False
PRIVATEIPADDRESSES True ip-172-31-92-253.ec2.internal 172.31.92.253
ASSOCIATION amazon ec2-54-205-214-168.compute-1.amazonaws.com 54.205.214.168
NETWORKPERFORMANCEOPTIONS default
OPERATOR False
PLACEMENT us-east-1a default
PRIVATEDNSNAMEOPTIONS False True ip-name
SECURITYGROUPS sg-00a4264ea7e551915 launch-wizard-2
STATE 16 running
TAGS Name kri server

```

Step 6:

Create an S3 Bucket by typing **aws s3 mb s3://your-unique-bucket-name** in cmd

```
C:\Users\Nantha Krishnan>aws s3 mb s3://sample-bucket6565
make_bucket: sample-bucket6565
```

Upload a file to S3 Bucket by typing **aws s3 cp yourfile.txt s3://your-unique-bucket-name/** in cmd

```
C:\Users\Nantha Krishnan>aws s3 cp "C:\Users\admin\Desktop\index.html" s3://sample-bucket6565upload: Desktop\index.html
to s3://sample-bucket6565/index.html
```

Amazon S3

General purpose buckets
Directory buckets
Table buckets
Access Grants
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3

Block Public Access settings for this account

▼ **Storage Lens**
Dashboards
Storage Lens groups
AWS Organizations settings

► **Account snapshot - updated every 24 hours** All AWS Regions [View Storage Lens dashboard](#)

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. [Learn more](#)

General purpose buckets | Directory buckets

General purpose buckets (1) Info All AWS Regions [Refresh](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

Buckets are containers for data stored in S3.

Find buckets by name

Name	AWS Region	IAM Access Analyzer	Creation date
sample-bucket6565	US East (N. Virginia) us-east-1	View analyzer for us-east-1	February 1, 2025, 20:38:05 (UTC+05:30)

sample-bucket6565 Info

[Objects](#) | [Metadata](#) | [Properties](#) | [Permissions](#) | [Metrics](#) | [Management](#) | [Access Points](#)

Objects (1) [Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#)

[Upload](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix

Name	Type	Last modified	Size	Storage class
index.html	html	February 1, 2025, 20:46:54 (UTC+05:30)	609.0 B	Standard

Step 7:

To Start an EC2 Instance, Type **aws ec2 start-instances --instance-ids <INSTANCE_ID>** in cmd

Replace <INSTANCE_ID> with your actual instance ID

```
C:\Users\Nantha Krishnan> aws ec2 start-instances --instance-ids i-0a3c2170890ffb3e1
```

```

{
  "StartingInstances": [
    {
      "InstanceId": "i-0a3c2170890ffb3e1",
      "CurrentState": {
        "Code": 0,
        "Name": "pending"
      },
      "PreviousState": {
        "Code": 80,
        "Name": "stopped"
      }
    }
  ]
}

```

Dashboard
EC2 Global View
Events
▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests

Instances (1/3) Info
Last updated 2 minutes ago
Connect
Instance state ▼
Actions ▼
Launch instances ▼

Find Instance by attribute or tag (case-sensitive)
All states ▼

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input type="checkbox"/>	krish ec server	i-017f1f541d6cc12b9	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input checked="" type="checkbox"/>	poc6565	i-0978d6b1f571a21f9	Running	t2.micro	Initializing	View alarms +	us-east-1b
<input type="checkbox"/>	kri server	i-0837135acb7fb169b	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a

Expected Outcome

By completing this POC, you will:

1. **Successful Installation & Configuration** – AWS CLI will be installed and configured with the correct credentials, allowing seamless interaction with AWS services.
2. **Ability to List Cloud Resources** – You will be able to list AWS resources such as S3 buckets, EC2 instances, and IAM users using CLI commands.
3. **File Management in S3** – You will gain hands-on experience in uploading, downloading, and managing files in Amazon S3 using the CLI.
4. **EC2 Instance Control** – You will learn how to start, stop, and reboot EC2 instances from the command line, improving your cloud management skills.
5. **Improved Automation Skills** – By using CLI instead of the AWS Console, you will develop automation capabilities essential for DevOps and cloud computing.