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Taller AREP – AWS CLI

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## Prerequisites

1. Install the AWS-CLI application.
2. Configure the AWS-CLI application:

aws configure

Example configuration:

AWS Access Key ID [None]: AKIAIOSFODNN7EXAMPLE

AWS Secret Access Key [None]: wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY

Default region name [None]: us-west-2

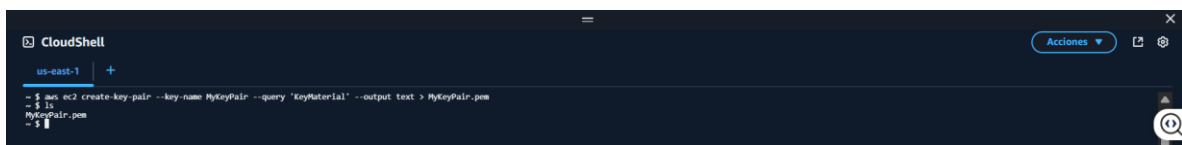
Default output format [None]: json

---

## Step 1: Create a Key Pair for EC2

```
aws ec2 create-key-pair --key-name MyKeyPair --query 'KeyMaterial' --output text > MyKeyPair.pem
```

```
ls
```



## Output:

MyKeyPair.pem

Make the private key readable only by you:

```
chmod 400 MyKeyPair.pem
```

```
ls -la
```

```
CloudShell
us-east-1 +

~$ aws ec2 create-key-pair --key-name MyKeyPair --query 'KeyMaterial' --output text > MyKeyPair.pem
~$ ls
MyKeyPair.pem
~$ chmod 400 MyKeyPair.pem
~$ ls -la
total 40
drwxrwxrwx. 4 cloudshell-user cloudshell-user 4096 Sep 23 03:21 .
drwxr-xr-x. 3 root root 4096 Sep 23 03:06 ..
-rw-r--r--. 1 cloudshell-user cloudshell-user 18 Sep 22 23:29 .bash_logout
-rw-r--r--. 1 cloudshell-user cloudshell-user 546 Sep 22 23:29 .bash_profile
-rw-r--r--. 1 cloudshell-user cloudshell-user 1100 Sep 22 23:29 .bashrc
drwxr-xr-x. 4 cloudshell-user cloudshell-user 4096 Sep 22 23:29 .config
drwxr-xr-x. 3 cloudshell-user cloudshell-user 4096 Sep 22 23:29 .local
-r-----. 1 cloudshell-user cloudshell-user 1675 Sep 23 03:21 MyKeyPair.pem
-rw-r--r--. 1 cloudshell-user cloudshell-user 684 Sep 22 23:29 .zprofile
-rw-r--r--. 1 cloudshell-user cloudshell-user 1335 Sep 22 23:29 .zshrc
~$
```

Output:

-r----- 1 user staff 1675 Oct 9 20:39 MyKeyPair.pem

Check the fingerprint:

aws ec2 describe-key-pairs --key-name MyKeyPair

```
CloudShell
us-east-1 +

~$ aws ec2 describe-key-pairs --key-name MyKeyPair
An error occurred (UnauthorizedOperation) when calling the DescribeKeyPairs operation: You are not authorized to perform this operation. User: arn:aws:sts::381401986764:assumed-role/voclabs/user3956468-angie.ramos@gmail.com:arn:aws:iam::381401986764:user3956468-angie.ramos@gmail.com is not authorized to perform: ec2:DescribeKeyPairs with an explicit deny in an identity-based policy
~$ aws ec2 create-key-pair --key-name MyKeyPair2 --query 'KeyMaterial' --output text > MyKeyPair2.pem
~$ chmod 400 MyKeyPair2.pem
~$ aws ec2 describe-key-pairs --key-name MyKeyPair2
{
  "KeyPairs": [
    {
      "KeyId": "key-041455ac350414aa",
      "KeyType": "rsa",
      "Tags": [],
      "CreateTime": "2025-09-23T03:36:00.054000+00:00",
      "Keyname": "MyKeyPair2",
      "KeyFingerprint": "79:51:f0:be:fa:8f:4b:f7:fc:c1:0e:3b:92:cf:fd:dc:a0:27:b6"
    }
  ]
}
```

Crear VPC

Una VPC es una parte aislada de la nube de AWS que contiene objetos de AWS, como instancias de Amazon EC2.

Configuración de la VPC

Recursos que se van a crear

☒ Solo la VPC ☐ VPC y más

Etiqueta de nombre - opcional

Crea una etiqueta con una clave de "Nombre" y el valor que usted especifica.

AMISCU-VPC

Bloque de CIDR IPv4

☒ Entrada manual de CIDR IPv4 ☐ Bloque de CIDR IPv4 asignado por IPAM

CIDR IPv4

10.0.0.0/24

El tamaño del bloque CIDR debe estar entre /16 y /28.

Bloque de CIDR IPv6

☒ Sin bloque de CIDR IPv6 ☐ Bloque de CIDR IPv6 asignado por IPAM

☐ Bloque de CIDR IPv6 proporcionado por Amazon

☐ CIDR IPv6 de red propiedad

Tenencia

Predefinido

Etiquetas

Una etiqueta es una marca que se asigna a un recurso de AWS. Cada etiqueta consta de una clave y un valor opcional. Puede utilizar las etiquetas para buscar y filtrar sus recursos o hacer un seguimiento de los costos de AWS.

Clave

Q. Name

Valor - opcional

AMISCU-VPC

Eliminar etiqueta

Agregar etiqueta

Puede agregar 40 etiquetas más.

Cancelar Vista previa del código Crear VPC

**Panel de VPC** < vpc-0a4f06157d7a4953e

Vista global de EC2

Filtrar por VPC

**Nube virtual privada**

Sus VPC

Subredes

Tablas de enrutamiento

Puertas de enlace de Internet

Puerta de enlace de Internet de solo salida

Gateways de operador

Conjuntos de opciones de DHCP

Direcciones IP elásticas

Listas de prefijos administradas

Gateways NAT

Interconexiones

Servidores de ruta [Nueva](#)

**Seguridad**

CloudShell Comentarios

**vpc-0a4f06157d7a4953e / AWSCLI-VPC**

Detalles Información

ID de la VPC: vpc-0a4f06157d7a4953e

Estado: Available

Tenencia: default

VPC predeterminada: No

Métricas de uso de direcciones de red: Desactivado

Bloquear el acceso público: Desactivado

Conjunto de opciones de DHCP: dhcp-08e275d02a097c508

CIDR IPv4: 10.0.0.0/24

Grupos de reglas del firewall de DNS de Route 53 Resolver: No se pudieron cargar los grupos de reglas

Nombres de host de DNS: Desactivado

Tabla de enrutamiento principal: rtb-0b17db871b08a19b74

Grupo IPv6: -

ID de propietario: 381491986764

**Mapa de recursos** Información

Subnets (0): Subredes dentro de esta VPC

Route tables (1): Dirigir el tráfico de red a los recursos

Network Connections (0): Conexiones a otras redes

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**VPC dashboard** < Subnets

EC2 Global View

Filtrar por VPC

**Virtual private cloud**

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

NAT gateways

Peering connections

Route servers [New](#)

**Security**

Network ACLs

Security groups

CloudShell Feedback

**You have successfully created 1 subnet: subnet-017fdca27dd7168fc**

Subnets (1) Info

Find subnets by attribute or tag

Subnet ID: subnet-017fdca27dd7168fc

Clear filters

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 C
AWSCLI-subnet	subnet-017fdca27dd7168fc	<span>Available</span>	vpc-0a4f06157d7a4953e   AWS...	<span>Off</span>	10.0.0.0/28	-

Select a subnet

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**VPC dashboard** < Route tables

EC2 Global View

Filtrar por VPC

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Route servers [New](#)

**Security**

Network ACLs

Security groups

CloudShell Feedback

**Route table rtb-04658aff6bd886381 | AWSCLI-routeTable**

Details Info

Route table ID: rtb-04658aff6bd886381

Main: No

Explicit subnet associations: -

Edge associations: -

VPC: vpc-0a4f06157d7a4953e | AWSCLI-VPC

Owner ID: 381491986764

**Routes** Subnet associations Edge associations Route propagation Tags

Routes (1)

Filter routes

Destination	Target	Status	Propagated	Route Origin
10.0.0.0/24	local	<span>Active</span>	No	Create Route Table

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AWS console screenshot showing the VPC dashboard for the Internet gateway **igw-0e2265ea83c6a7604 / AWSCLI-ig**. The gateway is in a **Detached** state. A green notification banner at the top states: "The following Internet gateway was created: igw-0e2265ea83c6a7604 - AWSCLI-ig. You can now attach to a VPC to enable the VPC to communicate with the internet." An **Attach to a VPC** button is visible in the top right corner.

**Details**

Internet gateway ID	State	VPC ID	Owner
igw-0e2265ea83c6a7604	Detached	-	381491986764

**Tags**

Key	Value
Name	AWSCLI-ig

AWS console screenshot showing the VPC dashboard for the Internet gateway **igw-0e2265ea83c6a7604 / AWSCLI-ig**. The gateway is now in an **Attached** state. A green notification banner at the top states: "Internet gateway igw-0e2265ea83c6a7604 successfully attached to vpc-0a4f06157d7a4953e".

**Details**

Internet gateway ID	State	VPC ID	Owner
igw-0e2265ea83c6a7604	Attached	vpc-0a4f06157d7a4953e   AWSCLI-VPC	381491986764

**Tags**

Key	Value
Name	AWSCLI-ig

AWS console screenshot showing the VPC dashboard for the route table **rtb-04658aff6bd886381 / AWSCLI-routeTable**. The route table is successfully associated with the VPC. A green notification banner at the top states: "Updated routes for rtb-04658aff6bd886381 / AWSCLI-routeTable successfully".

**Details**

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-04658aff6bd886381	No	-	-

**VPC**: vpc-0a4f06157d7a4953e | AWSCLI-VPC  
**Owner ID**: 381491986764

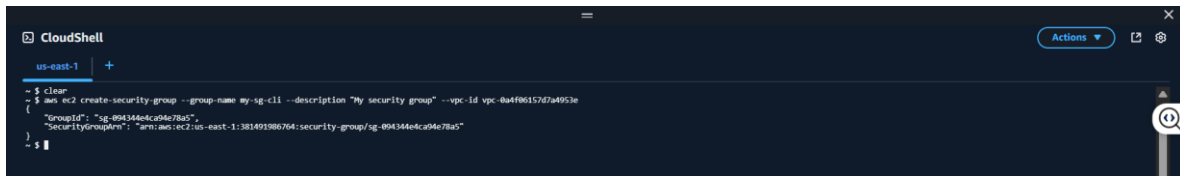
**Routes (2)**

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-0e2265ea83c6a7604	Active	No	Create Route
10.0.0.0/24	local	Active	No	Create Route Table

## Step 2: Create a Security Group

First, check for VPCs configured in your account.

```
aws ec2 create-security-group --group-name my-sg-cli --description "My security group" --vpc-id vpc-xxxxxxx
```



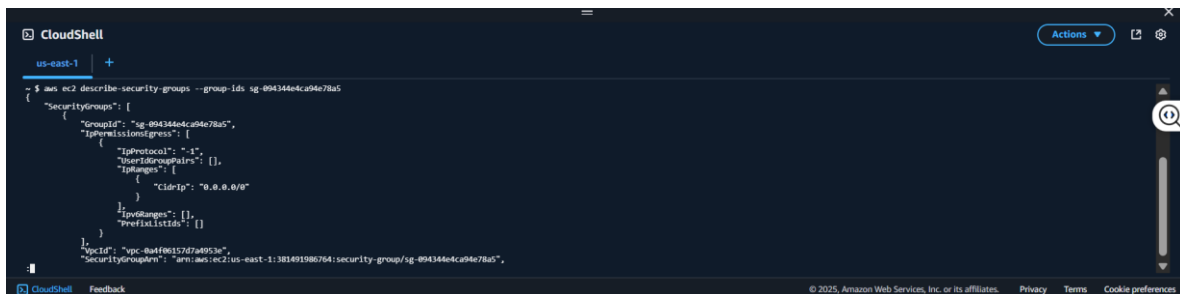
```
CloudShell
us-east-1 +
~ $ clear
~ $ aws ec2 create-security-group --group-name my-sg-cli --description "My security group" --vpc-id vpc-0a4f86157d7a4953e
{
  "GroupId": "sg-094344eca94e78a5",
  "SecurityGroupArn": "arn:aws:ec2:us-east-1:381491986764:security-group/sg-094344eca94e78a5"
}
~ $
```

Example output:

```
{
  "GroupId": "sg-01f4c77b81e9dc434"
}
```

List security groups:

```
aws ec2 describe-security-groups --group-ids sg-01f4c77b81e9dc434
```

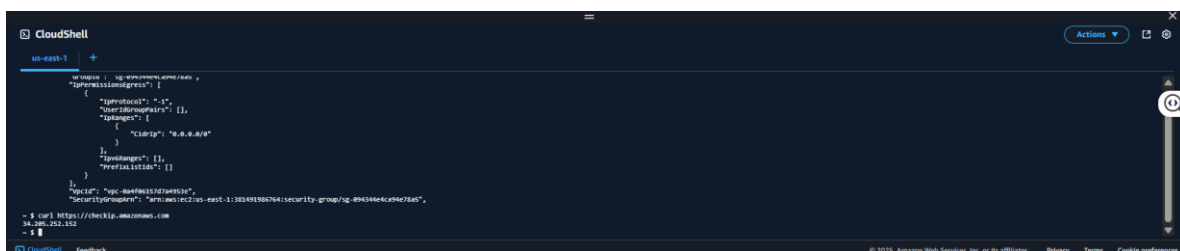


```
CloudShell
us-east-1 +
~ $ aws ec2 describe-security-groups --group-ids sg-094344eca94e78a5
{
  "SecurityGroups": [
    {
      "GroupId": "sg-094344eca94e78a5",
      "IpPermissions": [
        {
          "IpProtocol": "-1",
          "UserIdGroupPairs": [],
          "Ranges": [
            {
              "CidrIp": "0.0.0.0/0"
            }
          ],
          "IpRanges": [],
          "PrefixListIds": []
        }
      ],
      "VpcId": "vpc-0a4f86157d7a4953e",
      "SecurityGroupArn": "arn:aws:ec2:us-east-1:381491986764:security-group/sg-094344eca94e78a5",
      "Description": "My security group"
    }
  ]
}
~ $
```

## Add Ingress Rules

Check your public IP address (optional for restricted access):

curl <https://checkip.amazonaws.com>



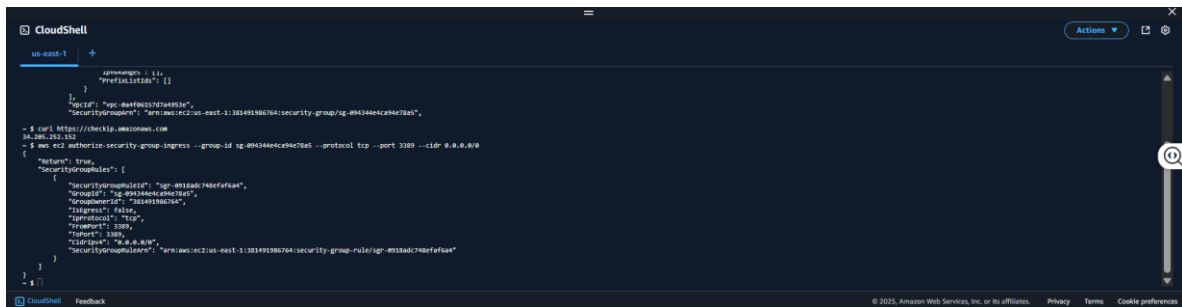
```
CloudShell
us-east-1 +
~ $ curl https://checkip.amazonaws.com
186.96.109.58
~ $
```

Example output:

186.96.109.58

Allow RDP (port 3389):

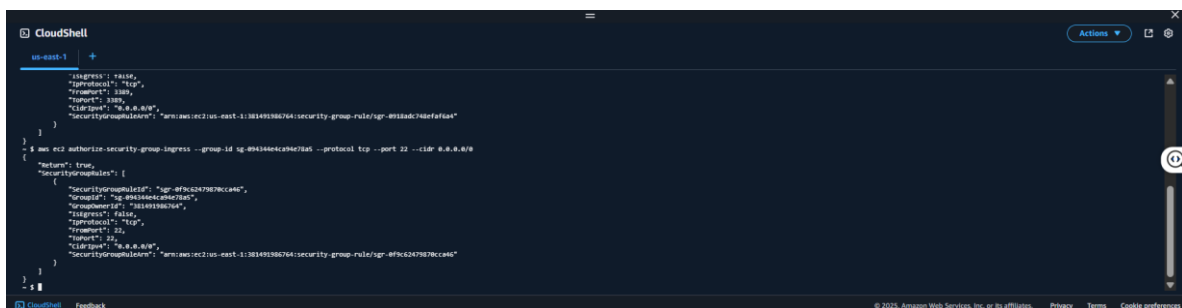
```
aws ec2 authorize-security-group-ingress --group-id sg-01f4c77b81e9dc434 --protocol tcp --port 3389 --cidr 0.0.0.0/0
```



```
CloudShell
us-east-1 +
jenneng@i-1:
~$ aws ec2 authorize-security-group-ingress --group-id sg-01f4c77b81e9dc434 --protocol tcp --port 22 --cidr 0.0.0.0/0
{
  "Return": true,
  "SecurityGroupRules": [
    {
      "SecurityGroupRuleId": "sgr-0133ad74defafae",
      "GroupId": "sg-01f4c77b81e9dc434",
      "FromPort": 22,
      "ToPort": 22,
      "Protocol": "tcp",
      "IpPermissions": [
        {
          "IpProtocol": "tcp",
          "FromPort": 22,
          "ToPort": 22,
          "CidrIp": "0.0.0.0/0",
          "SecurityGroupRuleId": "sgr-0133ad74defafae"
        }
      ]
    }
  ]
}
```

Allow SSH (port 22):

```
aws ec2 authorize-security-group-ingress --group-id sg-01f4c77b81e9dc434 --protocol tcp --port 22 --cidr 0.0.0.0/0
```



```
CloudShell
us-east-1 +
jenneng@i-1:
~$ aws ec2 authorize-security-group-ingress --group-id sg-01f4c77b81e9dc434 --protocol tcp --port 80 --cidr 0.0.0.0/0
{
  "Return": true,
  "SecurityGroupRules": [
    {
      "SecurityGroupRuleId": "sgr-0133ad74defafae",
      "GroupId": "sg-01f4c77b81e9dc434",
      "FromPort": 80,
      "ToPort": 80,
      "Protocol": "tcp",
      "IpPermissions": [
        {
          "IpProtocol": "tcp",
          "FromPort": 80,
          "ToPort": 80,
          "CidrIp": "0.0.0.0/0",
          "SecurityGroupRuleId": "sgr-0133ad74defafae"
        }
      ]
    }
  ]
}
```

Group id: sg-094344e4ca94e78a5

Subnet id: subnet-017fdca27dd7168fc

### Step 3: Create the Instance

Before creating the instance, ensure you have a subnet configured.

Run the following command to launch a **t2.micro** instance:

```
aws ec2 run-instances --image-id ami-032930428bf1abbff --count 1 --instance-type t2.micro --key-name MyKeyPair --security-group-ids sg-01f4c77b81e9dc434 --subnet-id subnet-1175cf1d
```

```
CloudShell
us-east-1
+++
{
  "ReservationId": "r-0f2a03a533eb3ae",
  "OwnerId": "3881991986764",
  "Owner": {},
  "Instances": [
    {
      "Architecture": "x86_64",
      "AvailabilityZone": "us-east-1a",
      "ClientToken": "j0e1j0b6-f6c7-492d-87bf-8a36c280215a",
      "EbsOptimized": false,
      "ElasticGpu": false,
      "ElasticInference": false,
      "ElasticNetwork": true,
      "ElasticNetwork": true,
      "NetworkInterface": [
        {
          "Attachment": {
            "AttachTime": "2023-09-23T01:03:35-04:00",
            "AttachmentId": "eni-attach-4dbd0b4e2e0d5a1",
            "DeleteOnTermination": true,
            "DeviceIndex": 0,
            "InstanceId": "i-03361788fab40a2b6",
            "NetworkCardIndex": 0
          },
          "Description": "",
          "Groups": [
            {
              "GroupId": "sg-0188e0c0a4e78a5",
              "GroupName": "sg-ig-cls"
            }
          ],
          "IpAddress": {},
          "MacAddress": "08:00:27:1d:8d:65",
          "NetworkInterfaceId": "eni-01881b9d10f837c0d",
          "OwnerId": "3881991986764",
          "PrivateIpAddress": "10.0.0.7",
          "PrivateIpAllocationId": "ipalloc-0c83ee9411ba54ac",
          "Primary": true
        }
      ]
    }
  ]
}
```

Subnets (1/7) info

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID
AWSCli-subnet	subnet-017f6ca27d67168fc	Available	vpc-0a38e29c544bd79a0	Off	172.31.64.0/20	-	-
subnet-017f6ca27d67168fc	subnet-017f6ca27d67168fc	Available	vpc-0a38e29c544bd79a0	Off	10.0.0.0/28	-	-
subnet-09b3027a836722f46	subnet-09b3027a836722f46	Available	vpc-0a38e29c544bd79a0	Off	172.31.16.0/20	-	-
subnet-00aba85c9e765d879	subnet-00aba85c9e765d879	Available	vpc-0a38e29c544bd79a0	Off	172.31.80.0/20	-	-
subnet-05f494518f9151495	subnet-05f494518f9151495	Available	vpc-0a38e29c544bd79a0	Off	172.31.0.0/20	-	-
subnet-0a3d277474543133	subnet-0a3d277474543133	Available	vpc-0a38e29c544bd79a0	Off	172.31.48.0/20	-	-
subnet-0c0da92c480558b04	subnet-0c0da92c480558b04	Available	vpc-0a38e29c544bd79a0	Off	172.31.32.0/20	-	-

subnet-017f6ca27d67168fc / AWSCli-subnet

Details

Subnet ID: subnet-017f6ca27d67168fc

Subnet ARN: arn:aws:ec2:us-east-1:3881991986764:subnet/subnet-017f6ca27d67168fc

State: Available

IPv6 CIDR: 10.0.0.0/28

VPC: vpc-0a38e29c544bd79a0

Block Public Access: Off

IPv6 CIDR association ID: -

Route table: rtb-04658af6bd886381

Elastic IP addresses > 98.89.124.190

Elastic IP address associated successfully. Elastic IP address 98.89.124.190 has been associated with Instance i-03b5788fab40a2b6

98.89.124.190

Summary

Allocated IPv4 address: 98.89.124.190

Association ID: ipalloc-0c83ee9411ba54ac

Network interface ID: eni-01881b9d10f837c0d

Address pool: Amazon

Type: Public IP

Scope: VPC

Network interface owner account ID: 3881991986764

Network border group: us-east-1

Allocation ID: ipalloc-0c83ee9411ba54ac

Associated instance ID: i-03b5788fab40a2b6

Public DNS: -

Service managed: -

Reverse DNS record: -

Private IP address: 10.0.0.7

NAT Gateway ID: -

Tags(0)

No tags associated with this resource. Click the Manage tags button to add your first tag.

## Step 4: Connect to the Instance

ssh -i "MyKeyPair.pem" [ec2-user@ec2-34-204-197-22.compute-1.amazonaws.com](mailto:ec2-user@ec2-34-204-197-22.compute-1.amazonaws.com)





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## Conclusion

Congratulations! You just learned how to automatically deploy an EC2 instance on AWS.

---

## References

- [AWS CLI User Guide](#)