EC2

Details of a specific instance

```
aws ec2 describe-instances --instance-ids i-071a95f81feb60852
```

Filter by instance type

```
aws ec2 describe-instances --filters "Name=instance-type,Values=t2.micro"
```

Launch a new instance

```
aws ec2 run-instances --image-id ami-5b673c34 --count 1 --instance-type t2.micro
--key-name batch03 --security-group-ids sg-deb102b3 --subnet-id subnet-dd942a91
```

Start instance

```
aws ec2 start-instances --instance-ids i-082b7528a1a2812bf
```

Stop instance

```
aws ec2 stop-instances --instance-ids i-082b7528a1a2812bf
```

Terminate instance

```
aws ec2 terminate-instances --instance-ids i-0921e8803c0f2b4ce
```

Add a tag to instance

```
aws ec2 create-tags --resources i-082b7528a1a2812bf --tags Key=Department,Value=Finance
```

S3

Create a bucket

```
aws s3 mb s3://mybucket
```

Move local file to S3

```
aws s3 mv test.txt s3://mybucket/test2.txt
```

Copy local file to S3

```
aws s3 cp test.txt s3://mybucket/test2.txt
```

List bucket contents in detail

```
aws s3 ls s3://mybucket --recursive --human-readable --summarize
```

Remove bucket and contents

```
aws s3 rb s3://mybucket --force
```

Sync local to S3 and delete extras

```
aws s3 sync . s3://mybucket --delete
```

Enable static website hosting

```
aws s3 website s3://my-bucket/ --index-document index.html --error-document error.html
```

VPC

Create a new VPC

```
aws ec2 create-vpc --cidr-block 10.0.0.0/16
```

Create a subnet in VPC

```
aws ec2 create-subnet --vpc-id vpc-12345678 --cidr-block 10.0.1.0/24
```

Create internet gateway

```
aws ec2 create-internet-gateway
```

Attach IGW to VPC

```
aws ec2 attach-internet-gateway --vpc-id vpc-12345678 --internet-gateway-id igw-12345678
```

Create route table

```
aws ec2 create-route-table --vpc-id vpc-12345678
```

IAM

Create IAM user

```
aws iam create-user --user-name devuser
```

Create IAM group

```
aws iam create-group --group-name DevGroup
```

Create IAM role with trust policy

```
aws iam create-role --role-name MyRole --assume-role-policy-document
file://trust-policy.json
```

Attach policy to user

```
aws iam attach-user-policy --user-name devuser --policy-arn
arn:aws:iam::aws:policy/AmazonEC2FullAccess
```

Create access key

```
aws iam create-access-key --user-name devuser
```

CloudWatch

List metrics

```
aws cloudwatch list-metrics
```

Get CPU metrics for instance

```
aws cloudwatch get-metric-statistics --metric-name CPUUtilization --namespace AWS/EC2
--start-time 2025-08-20T00:00:00Z --end-time 2025-08-21T00:00:00Z --period 300
--statistics Average --dimensions Name=InstanceId,Value=i-1234567890abcdef0
```

Create CPU alarm

```
aws cloudwatch put-metric-alarm --alarm-name HighCPU --metric-name CPUUtilization
--namespace AWS/EC2 --statistic Average --period 300 --threshold 80 --comparison-operator
GreaterThanThreshold --evaluation-periods 2 --alarm-actions
arn:aws:sns:us-east-1:123456789012:MyTopic --dimensions
Name=InstanceId,Value=i-1234567890abcdef0
```

CloudFormation

Create stack

```
aws cloudformation create-stack --stack-name MyStack --template-body file://template.yaml
```

Update stack

```
aws cloudformation update-stack --stack-name MyStack --template-body file://template.yaml
```

Delete stack

```
aws cloudformation delete-stack --stack-name MyStack
```

EKS

Create EKS cluster

```
aws eks create-cluster --name MyCluster --role-arn arn:aws:iam::123456789012:role/EKSRole
--resources-vpc-config
subnetIds=subnet-12345678,subnet-87654321,securityGroupIds=sg-12345678
```

Create node group

```
aws eks create-nodegroup --cluster-name MyCluster --nodegroup-name MyNodes
--scaling-config minSize=1,maxSize=3,desiredSize=2 --disk-size 20 --subnets
subnet-12345678 subnet-87654321 --instance-types t3.medium --ami-type AL2_x86_64
--node-role arn:aws:iam::123456789012:role/EKSNodeRole
```

Update kubeconfig for kubectl

```
aws eks update-kubeconfig --name MyCluster --region us-east-1
```