

Experiment 2

Aim: To Build Your Application using AWS CodeBuild and Deploy on S3 / SEBS using AWS CodePipeline, deploy Sample Application on EC2 instance using AWS CodeDeploy.

Contents:

1. s3 bucket
2. ec2 instance
3. elastic beanstalk

- s3 bucket

[Amazon S3](#) > [Buckets](#) > Create bucket

Create bucket [Info](#)

Buckets are containers for data stored in S3.

General configuration

AWS Region
US East (N. Virginia) us-east-1

Bucket type [Info](#)

☒ **General purpose**
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

☐ **Directory - New**
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name [Info](#)

test-Kunal

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#) [↗](#)

Copy settings from existing bucket - *optional*
Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

Format: s3://bucket/prefix

Default encryption [Info](#)

Server-side encryption is automatically applied to new objects stored in this bucket.

Encryption type [Info](#)

- ☒ Server-side encryption with Amazon S3 managed keys (SSE-S3)
- ☐ Server-side encryption with AWS Key Management Service keys (SSE-KMS)
- ☐ Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)
Secure your objects with two separate layers of encryption. For details on pricing, see [DSSE-KMS pricing](#) on the **Storage** tab of the [Amazon S3 pricing page](#). [↗](#)

Bucket Key

Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#) [↗](#)

- ☐ Disable
- ☒ Enable

► Advanced settings

[i](#) After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel

Create bucket

Amazon S3 > Buckets

► Account snapshot - updated every 24 hours [All AWS Regions](#)

Storage lens provides visibility into storage usage and activity trends. [Learn more](#) [↗](#)

[View Storage Lens dashboard](#)

General purpose buckets

Directory buckets

General purpose buckets (1) [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.



[Copy ARN](#)

Empty

Delete

Create bucket

[Find buckets by name](#)

< 1 > [⚙](#)

Name	▲	AWS Region	▼	IAM Access Analyzer	Creation date	▼
<input type="radio"/> test-kunal		US East (N. Virginia) us-east-1		View analyzer for us-east-1	August 12, 2024, 20:04:18 (UTC+05:30)	

Upload [Info](#)

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

Files and folders (1 Total, 50.0 B)

[Remove](#)[Add files](#)[Add folder](#)

All files and folders in this table will be uploaded.

[<](#) 1 [>](#)

<input type="checkbox"/>	Name ▾	Folder ▾	Type ▾	Size ▾
<input type="checkbox"/>	test.txt	-	text/plain	50.0 B

Destination [Info](#)

Destination

s3://test-Kunal

Upload succeeded
View details below.

Upload: status

[Close](#)

The information below will no longer be available after you navigate away from this page.

Summary

Destination

s3://test-Kunal

Succeeded

1 file, 287.0 B (100.00%)

Failed

0 files, 0 B (0%)

[Files and folders](#)[Configuration](#)

Files and folders (1 Total, 287.0 B)

[<](#) 1 [>](#)

Name	Folder ▾	Type ▾	Size ▾	Status ▾	Error ▾
test.html	-	text/html	287.0 B	Succeeded	-

PropertiesPermissionsVersions

Object overview

Owner

awslabsco0w3698888t1642940625

AWS Region

US East (N. Virginia) us-east-1

Last modified

August 12, 2024, 22:33:51 (UTC+05:30)


Size

287.0 B


Type

html


Key

 test.html


S3 URI

 s3://test-Kunal/test.html


Amazon Resource Name (ARN)

 arn:aws:s3:::test-Kunal/test.html

Entity tag (Etag)

 7a3411f1dad97a2779c8dc65580432d2

Object URL

 <https://test-Kunal.s3.amazonaws.com/test.html>

Edit static website hostingInfo

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting

☐ Disable

☒ Enable

Hosting type

☒ Host a static website

Use the bucket endpoint as the web address. [Learn more](#)

☐ Redirect requests for an object

Redirect requests to another bucket or domain. [Learn more](#)

Objects

Properties

Permissions

Metrics

Management

Access Points

Permissions overview

Access finding

Access findings are provided by IAM external access analyzers. Learn more about [How IAM analyzer findings work](#)

[View analyzer for us-east-1](#)

Block public access (bucket settings)

Edit

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Block all public access

On

► Individual Block Public Access settings for this bucket

Bucket policy

EditDelete

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadGetObject",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::test-Kunal/*"
    }
  ]
}
```

Welcome to My Basic HTML Page

Kunal here

- Launching an EC2 instance

[EC2](#) > [Instances](#) > Launch an instance

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.


Name and tags [Info](#)


Name


Kunal


[Add additional tags](#)


Quick Start


Amazon Linux


macOS

Ubuntu

Windows

Red Hat

SUSE Linux

[Browse more AMIs](#)

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type Free tier eligible ▼
ami-04a81a99f5ec58529 (64-bit (x86)) / ami-0c14ff330901e49ff (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Architecture

64-bit (x86) ▼

AMI ID

ami-04a81a99f5ec58529

Verified provider

▼ **Instance type** [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour

☒ All generations


[Compare instance types](#)

[Additional costs apply for AMLs with pre-installed software](#)

▼ **Configure storage** [Info](#)


[Advanced](#)

1x GiB Root volume (Not encrypted)

 Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage



[Add new volume](#)

 Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.



0 x File systems

[Edit](#)

▼ Network settings [Info](#)

[Edit](#)

Network [Info](#)

vpc-073a9e2489cd0d33c

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

[Additional charges apply](#) when outside of [free tier allowance](#)

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called **'launch-wizard-1'** with the following rules:

☒ Allow SSH traffic from
Helps you connect to your instance

Anywhere

0.0.0.0/0

☐ Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server

☐ Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server

[EC2](#) > [Instances](#) > [Launch an instance](#)

✔ Success

Successfully initiated launch of instance ([i-0e39cd326d64588eb](#))

▼ Launch log

Initializing requests	✔ Succeeded
Creating security groups	✔ Succeeded
Creating security group rules	✔ Succeeded
Launch initiation	✔ Succeeded

Instances (1) Info								
<div> <input type="text" value="Find Instance by attribute or tag (case-sensitive)"/> All states ▾ </div> <div> Instance ID = i-0e39cd326d64588eb ✕ Clear filters </div> <div> < 1 > ⓘ </div>								
<input type="checkbox"/>	Name ↗ ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IP
<input type="checkbox"/>	Kunal	i-0e39cd326d64588eb	Running 🔍 🔍	t2.micro	2/2 checks passed View alarms +		us-east-1a	ec2-34-

Details	Status and alarms	Monitoring	Security	Networking	Storage	Tags
<div>▼ Instance summary Info</div> <div> <div> <div>Instance ID</div> <div>i-0e39cd326d64588eb (Kunal)</div> </div> <div> <div>IPv6 address</div> <div>-</div> </div> <div> <div>Hostname type</div> <div>IP name: ip-172-31-13-190.ec2.internal</div> </div> <div> <div>Answer private resource DNS name</div> <div></div> </div> <div> <div>Public IPv4 address</div> <div>34.201.2.60 open address</div> </div> <div> <div>Instance state</div> <div>Running</div> </div> <div> <div>Private IP DNS name (IPv4 only)</div> <div>ip-172-31-13-190.ec2.internal</div> </div> <div> <div>Instance type</div> <div></div> </div> <div> <div>Private IPv4 addresses</div> <div>172.31.13.190</div> </div> <div> <div>Public IPv4 DNS</div> <div>ec2-34-201-2-60.compute-1.amazonaws.com open address</div> </div> <div> <div>Elastic IP addresses</div> <div></div> </div> </div>						

```
[ec2-user@ip-172-31-13-190 ~]$ ls
[ec2-user@ip-172-31-13-190 ~]$ echo "hello"
hello
[ec2-user@ip-172-31-13-190 ~]$ cat > myfile.txt
this is advanced devops lab
^C
[ec2-user@ip-172-31-13-190 ~]$ cat myfile
cat: myfile: No such file or directory
[ec2-user@ip-172-31-13-190 ~]$ cat myfile.txt
this is advanced devops lab
[ec2-user@ip-172-31-13-190 ~]$
```

```
root@ip-172-31-32-173:~# sudo su
root@ip-172-31-32-173:~# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1
0 upgraded, 10 newly installed, 0 to remove and 26 not upgraded.
Need to get 1680 kB/2083 kB of archives.
After this operation, 8094 kB of additional disk space will be used.
```

```
root@ip-172-31-32-173:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Tue 2024-07-30 08:58:11 UTC; 44s ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 2619 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.4M (peak: 5.5M)
        CPU: 40ms
    CGroup: /system.slice/apache2.service
            └─2619 /usr/sbin/apache2 -k start
              └─2621 /usr/sbin/apache2 -k start
                └─2623 /usr/sbin/apache2 -k start

Jul 30 08:58:11 ip-172-31-32-173 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Jul 30 08:58:11 ip-172-31-32-173 systemd[1]: Started apache2.service - The Apache HTTP Server.
```

```
Jul 30 08:58:11 ip-172-31-32-173 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Jul 30 08:58:11 ip-172-31-32-173 systemd[1]: Started apache2.service - The Apache HTTP Server.
root@ip-172-31-32-173:~# cd /var/www/html
```



Elastic beanstalk

Compute

Amazon Elastic Beanstalk

End-to-end web application management.

Amazon Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

Get started

Easily deploy your web application in minutes.

Create application

Configure environment [Info](#)

Environment tier [Info](#)

Amazon Elastic Beanstalk has two types of environment tiers to support different types of web applications.

☒ Web server environment

Run a website, web application, or web API that serves HTTP requests. [Learn more](#) [↗](#)

☐ Worker environment

Run a worker application that processes long-running workloads on demand or performs tasks on a schedule. [Learn more](#) [↗](#)

Application information [Info](#)

Application name

Maximum length of 100 characters.

► Application tags (optional)

Platform [Info](#)

Platform type

☒ **Managed platform**

Platforms published and maintained by Amazon Elastic Beanstalk. [Learn more](#) 

☐ **Custom platform**

Platforms created and owned by you. This option is unavailable if you have no platforms.

Platform

Node.js

Platform branch

Node.js 20 running on 64bit Amazon Linux 2023

Platform version

6.2.0 (Recommended)

Review [Info](#)

Step 1: Configure environment

Edit

Environment information

Environment tier

Web server environment

Environment name

Kunal-web-env

Platform

arn:aws:elasticbeanstalk:eu-north-1::platform/PHP 8.3
running on 64bit Amazon Linux 2023/4.3.2

Application name

Kunal-web

Application code

Sample application

Step 2: Configure service access

Edit

Service access [Info](#)

Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.

Service role

EC2 instance profile

Lifecycle	Log streaming	Allow URL fopen						
false	Deactivated	On						
Display errors	Document root	Max execution time						
Off	-	60						
Memory limit	Zlib output compression	Proxy server						
256M	Off	nginx						
Logs retention	Rotate logs	Update level						
7	Deactivated	minor						
X-Ray enabled								
Deactivated								
Environment properties								
<table><thead><tr><th>Key</th><th>Value</th></tr></thead><tbody><tr><td colspan="2">No environment properties</td></tr><tr><td colspan="2">There are no environment properties defined</td></tr></tbody></table>			Key	Value	No environment properties		There are no environment properties defined	
Key	Value							
No environment properties								
There are no environment properties defined								
Cancel		<div>PreviousSubmit</div>						

Environment overview		Platform <div>Change version</div>
Health	Environment ID	Platform
Unknown	e-trkmirvjuz	Node.js 20 running on 64bit Amazon Linux 2023/6.2.0
Domain	Application name	Running version
-	Kunal-web	-
		Platform state
		Supported

Congratulations

Your first AWS Elastic Beanstalk Node.js application is now running on your own dedicated environment in the AWS Cloud

This environment is launched with Elastic Beanstalk Node.js Platform

What's Next?

- [AWS Elastic Beanstalk overview](#)
- [AWS Elastic Beanstalk concepts](#)
- [Deploying an Express Application to AWS Elastic Beanstalk](#)
- [Deploying an Express application with clustering to Elastic Beanstalk](#)
- [Customizing and Configuring a Node.js Container](#)
- [Working with Logs](#)