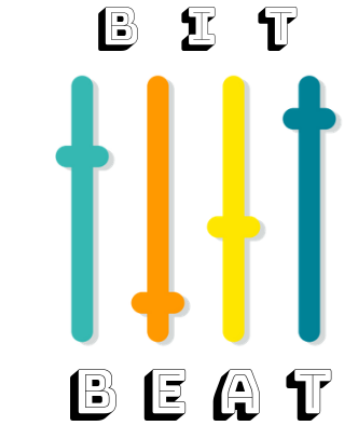
README



World Domination One Beat At A Time

Your company, **BitBeat,** is ready to share information with prospective customers. They will be launching their product, **BitBanger**, in a few months. Right now, they want to setup a static website where customers can learn about their product.

Amazon Simple Storage Service (Amazon S3) can host static websites without a need for a web server. The website is highly performant and scalable at a fraction of the cost of a traditional web server.

To host a static website, you configure an Amazon S3 bucket for website hosting and then upload your website content to the bucket. Amazon S3 is storage provides you with secure, durable, highly scalable object storage. A simple web services interface allows you to store and retrieve any amount of data from anywhere on the web.

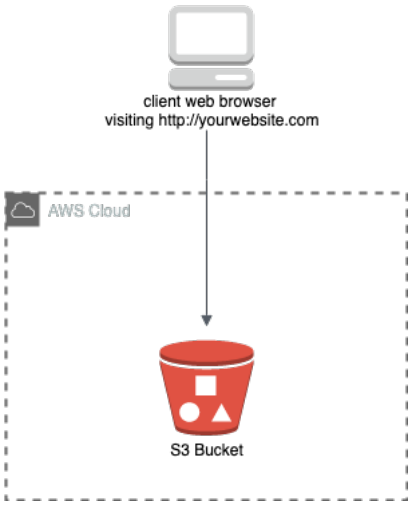
BEFORE GETTING STARTED

Here's some important information to know before starting this hands-on activity.

Requirements: You must have an AWS Educate account.

Activity Time: 60 minutes

Getting Help: If you experience any issues as you complete this activity, please ask your instructor for assistance.



Task Overview

In this hands-on activity, you are going to configure an S3 bucket to host a static website for **BitBeat**. You will need to enable the S3 bucket for website hosting, and you will need to set permissions to allow the general public to view the website.

Here is a list of tasks you will complete:

1. Create an S3 bucket
2. Enable S3 bucket static web hosting
3. Upload website files to the S3 bucket
4. Set public access permissions
5. Add a bucket policy
6. Test and troubleshoot public access to the S3 bucket

Learning Outcomes

After completing this activity, you should be able host a static website for an organization using S3 by:

1. Creating an S3 bucket with most restrictive permissions
2. Enabling static website hosting for an S3 bucket
3. Defining the index document for the static website
4. Set permissions require public permissions for website access
5. Uploading object for a static website to S3
6. Add a bucket policy to make objects in the S3 bucket readable

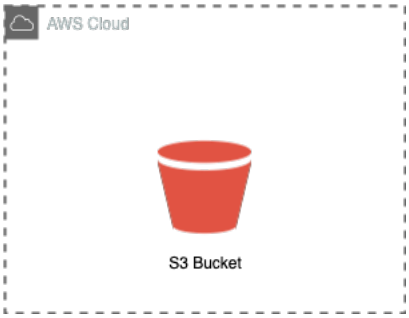
Let's Get Started!

VIRTUAL PRIVATE NETWOR

DID YOU KNOW?

A bucket is owned by the AWS account that created it. By default, you can create up to 100 buckets in each of your AWS accounts. After you create a bucket, you can't change its Region. Buckets are not transferable.

Before you can upload data to Amazon S3, you must create a bucket in one of the AWS Regions to store your data in. After you create a bucket, you can upload an unlimited number of data objects to the bucket.



Create S3 Bucket

1. In the **AWS Management Console** Find and select **S3**
2. In the **S3** console, click + Create bucket.
3. Enter a name for your bucket.

Note: *Your bucket name must be unique across all existing bucket names in Amazon S3. You cannot change a buckets name after the buckets has been created. (read more Bucket Restrictions and Limitations:*

https://docs.aws.amazon.com/AmazonS3/latest/dev/BucketRestrictions.html)

4. Review default **General Configuration** and **Advanced settings.** Click the external link icon to access and read AWS documentation. Then, s*croll down the page and click* Create bucket

Your new bucket will appear in your S3 dashboard.

Will someone be able to access your bucket from the internet? Why or why not?

Enable S3 bucket website hosting

Now that you have created an S3 buckets, you need to configure the bucket to host a static website.

Enable website hosting

1. Ensure you have your bucket selected, then select the **Properties** tab.
2. Select **Static Website Hosting.**

   Note: the endpoint URL for your bucket is displayed on the card. You will use this endpoint to access your website, so be sure to copy and paste the URL to a text file or Word document for later use.
3. On the **Static Website Hosting** card, select **Use this bucket to host a website**
4. Enter the name of the **Index document** and then click **Save.**

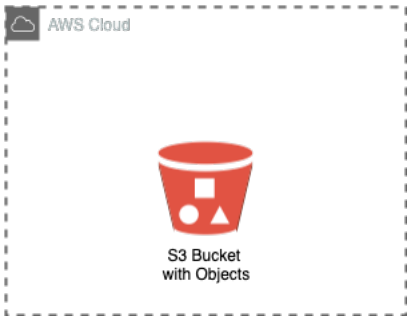
   For this exercise the index document name is index.html. You will not create a custom error document for this activity or add any redirection rules, however, this is an option when creating a static website.

DID YOU KNOW?

On a static website, individual webpages are fixed and do not change. It may also have client-side scripts are used for page navigation, data validation, and formatting. By contrast, a dynamic website relies on server-side processing, including server-side scripts such as PHP, JSP, or ASP.NET. Amazon S3 does not support server-side scripting.

Upload website files to the S3 bucket

Now that you have create the S3 bucket and configured it for website hosting, you are ready to upload the **BitBeat** website files to the bucket. *For this task you need to download the static website files we have created for you. Go to* ***http://tinyurl.com/s3static*** and download and save these two files to your desktop: *index.html* and *bitbangers.png.*



Upload Objects

1. After you download the website files to your desktop go to the S3 dashboard, click on the bucket name to open the bucket management page.
2. Click the **Upload** button at the top of the screen.
3. Drag and drop the website file you previously downloaded to your desktop to the bucket upload screen and then click **Next**
4. Accept the defaults on the Manage User page and click **Next**
5. Select the **Standard storage** class and click **Next**
6. Review the upload data and then click **Upload**

Your uploaded file appears as an object on the S3 bucket Overview tab.

DID YOU KNOW?

Amazon S3 applies the most restrictive combination of the bucket-level and account-level block public access settings. For example, if you allow public access for a bucket but block all public access at the account level, Amazon S3 will continue to block public access to the bucket. In this scenario, you would have to edit your bucket-level and account-level block public access settings.

Set public access permissions

It's time to make your bucket accessible to anyone who wants to view your static website. When you configure a bucket as a website, you must grant public read access to the bucket so that people can access the website. To make your bucket publicly readable, you must disable block public access settings for the bucket and write a bucket policy.

Let's begin by disabling the *block public access* settings

1. Select **Bucket** you just configured to host a static website
2. Select the **Permissions** tab and select **Block public access**
3. Select **Edit** in the bucket settings, uncheck the box next to **Block *all* public access,** and then click **Save**
4. In the **Edit block permission access** window, type **confirm** in the text field and the click **confirm**.

Add a bucket policy

Now that you've opened the S3 buck up to be readable by the public. To make the objects in your bucket publicly readable, you must write a bucket policy that grants everyone *s3:GetObject* permission.

1. Choose the bucket that you have configured as a static website
2. Choose **Permissions**
3. Choose **Bucket Policy**
4. In the **Bucket policy editor**, add a bucket policy (*use policy provided below*)

Sample bucket policy

Copy and paste the bucket policy below. This sample bucket policy grants everyone access to the objects in the specified folder. You will need to change the ***Resource*** to match your bucket, this means that you need to copy your bucket **ARN** (Amazon Resource Name) found on the **Bucket policy editor** *(i.e. arn:aws:s3:::example-bucket/)*

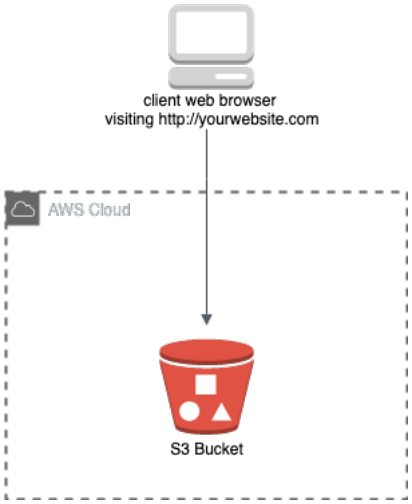
```
{
  "Version":"2012-10-17",
```

```
"Statement":[{
        "Sid":"PublicReadGetObject",
      "Effect":"Allow",
          "Principal": "*",
    "Action":["s3:GetObject"],
    "Resource":["arn:aws:s3:::example-bucket/*"
    ]
  }
 ]
}
```

5. And click **Save**

Test and troubleshoot public access to the S3 bucket
Now it's time to test the BitBeat website to ensure it accessible.

Enter the following URL in the browser, replacing *example-bucket* with the name of your bucket



and *website-region* with the name of the AWS Region where you deployed your bucket:

http://*example-bucket*.s3-website-*region*.amazonaws.com

Does your index.html page display in the web browser?

GREAT JOB!

You have successfully hosted **BitBeat's** static website

Let's Review

You were able to setup a static website hosted on Amazon S3. This website is available at the Amazon S3 website endpoint. Here are the tasks you successfully completed:

1. Create an S3 bucket
2. Enable S3 bucket static web hosting
3. Upload website files to the S3 bucket
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Test Your Knowledge

- ☐ What is your S3 bucket URL? _____
- ☐ What is your S3 bucket ARN?_____
- ☐ What is the default permission of an S3 bucket?_____

Resources

1. How to create an S3 bucket - https://docs.aws.amazon.com/AmazonS3/latest/user-guide/create-bucket.html
2. Permissions required for website access - https://docs.aws.amazon.com/AmazonS3/latest/dev/WebsiteAccessPermissionsReqd.html
3. Working with an S3 bucket - https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingBucket.html#bucket-config-options-intro
4. Bucket Restrictions and Limitations - https://docs.aws.amazon.com/AmazonS3/latest/dev/BucketRestrictions.html