lab

lab title

Bulletproof HTML5 Websites with AWS in a Nutshell

V1.28

Course title

BackSpace Academy
Nutshell Series

Table of Contents

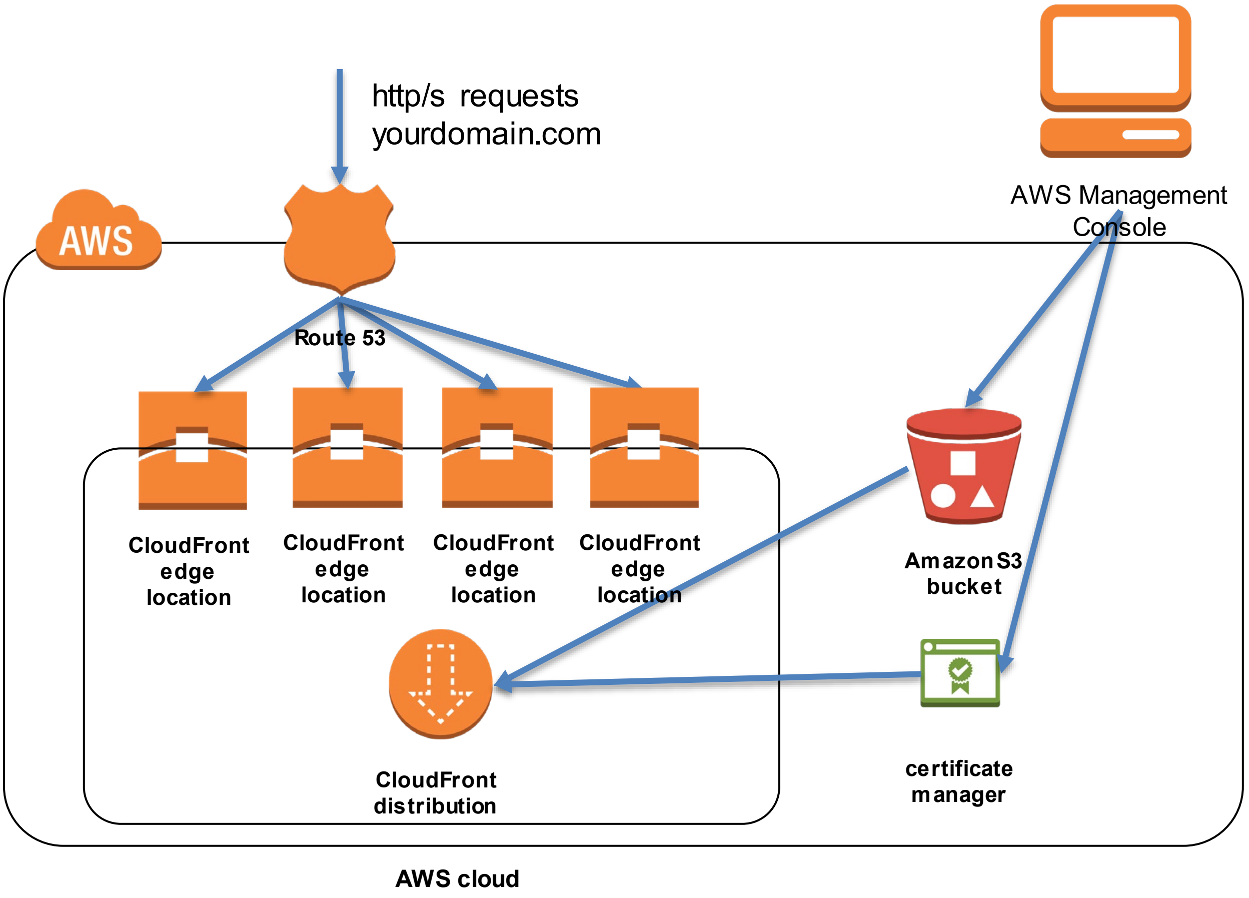
Contents

About the Lab

Please note that not all AWS services are supported in all regions. Please use the US-East-1 (North Virginia) region for this lab.

These lab notes are to support the instructional videos on Bulletproof HTML5 Websites with AWS in a Nutshell Course.

This is a typical use case for S3 and CloudFront to deliver highly available static websites that can handle heavy traffic.



Please note that AWS services change on a weekly basis and it is extremely important you check the version number on this document to ensure you have the lastest version with any updates or corrections.

Purchasing a Custom Domain Name

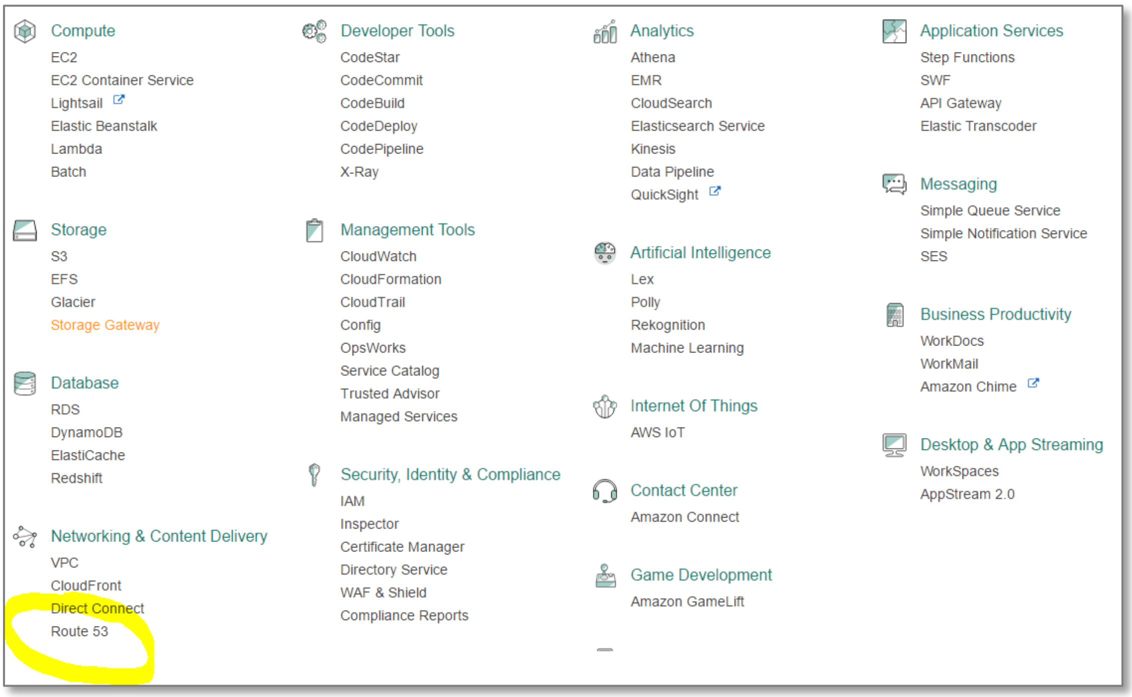
In this section, we will purchase a domain name through AWS Route 53.

***Please note this process will involve paying for a domain name with AWS.**

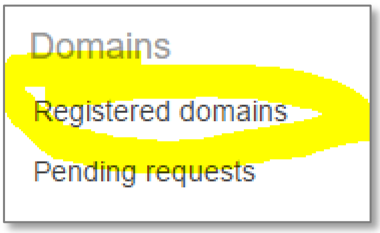
Our S3 bucket must have the same name as our domain name in order for it to be hosted by S3. So, our first task is to purchase a domain name.

This part involves purchasing a domain through the Route 53 service.

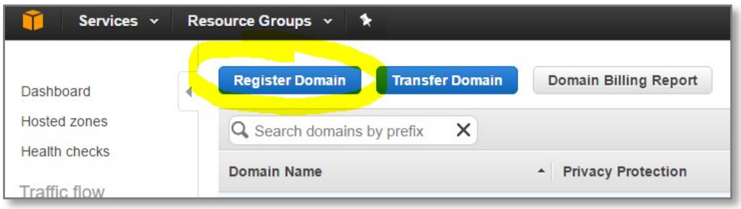
Click on the services menu and Route 53.



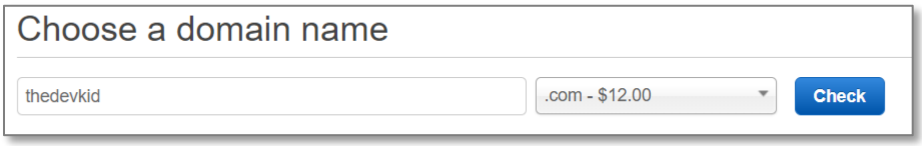
Click on Registered Domains from the menu



Click on Register Domain



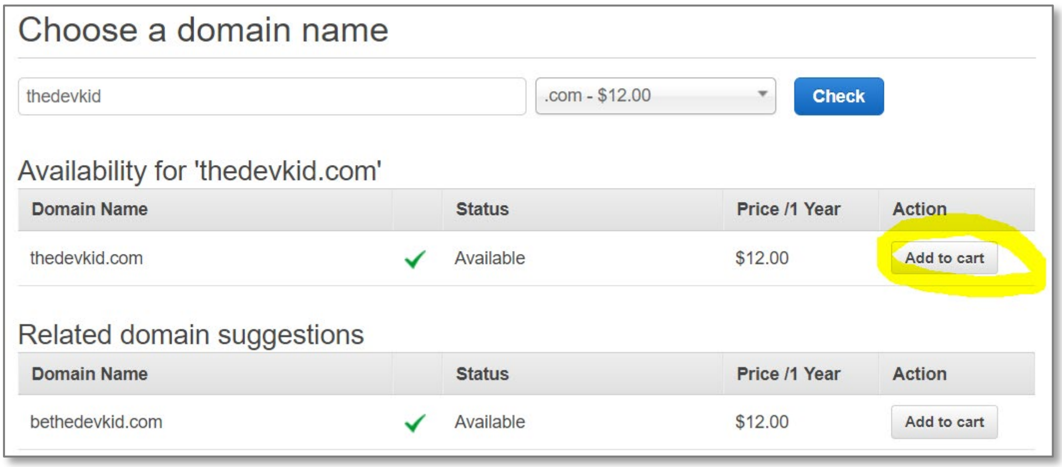
Type in the domain name you would like and click *Check* to see if it is available.



Choose a domain name

thedevkid | .com - $12.00 | Check

If it is available click 'add to cart"



Choose a domain name

thedevkid | .com - $12.00 | Check

Availability for 'thedevkid.com'

Domain Name		Status	Price /1 Year	Action
thedevkid.com	✓	Available	$12.00	Add to cart

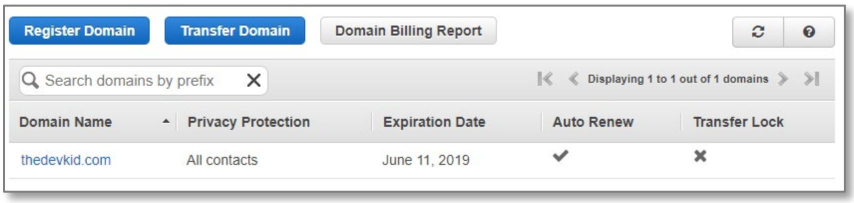
Related domain suggestions

Domain Name		Status	Price /1 Year	Action
bethedevkid.com	✓	Available	$12.00	Add to cart

Scroll down and click on 'Continue"

Complete the process making sure you use a valid email for the domain registration otherwise the process will fail. You should receive an email with a link to verify your email. About 30 minutes after your email address has been verified you should receive an email stating the domain was successfully registered with Route 53.

After the domain has been successfully registered you will see it in the 'Registered domains"



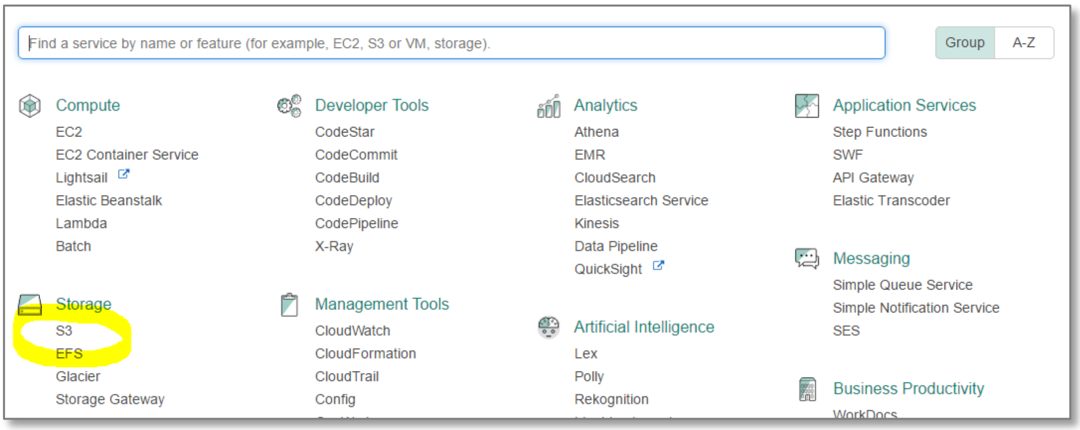
Domain Name	Privacy Protection	Expiration Date	Auto Renew	Transfer Lock
thedevkid.com	All contacts	June 11, 2019	✓	✗

Creating an S3 Bucket and Uploading our Website

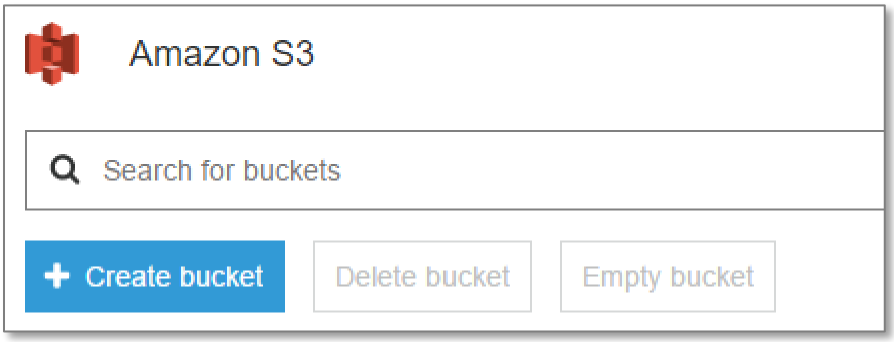
In this section we will create an S3 bucket and upload our HTML5 website.

Create an S3 Bucket

Click on the services menu and select S3.



Click on Create Bucket

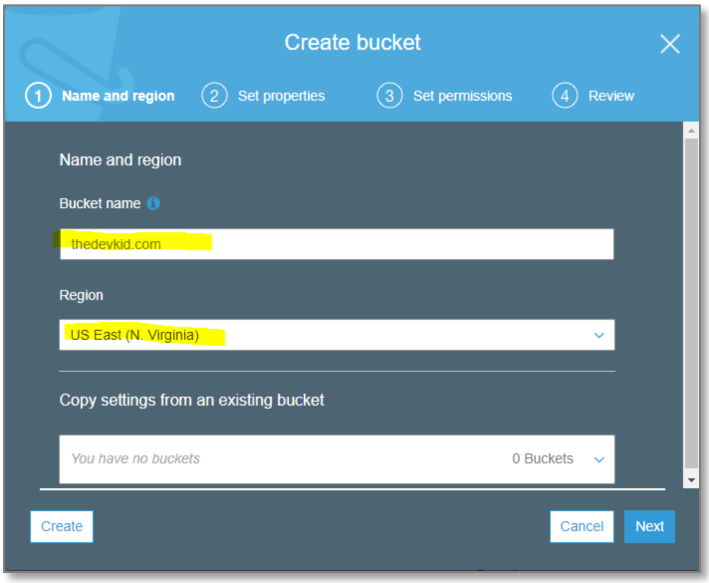


The create bucket dialog box will appear.

Enter your custom domain name.

Select US East (N. Virginia).

Click Next



Create bucket

Name and region

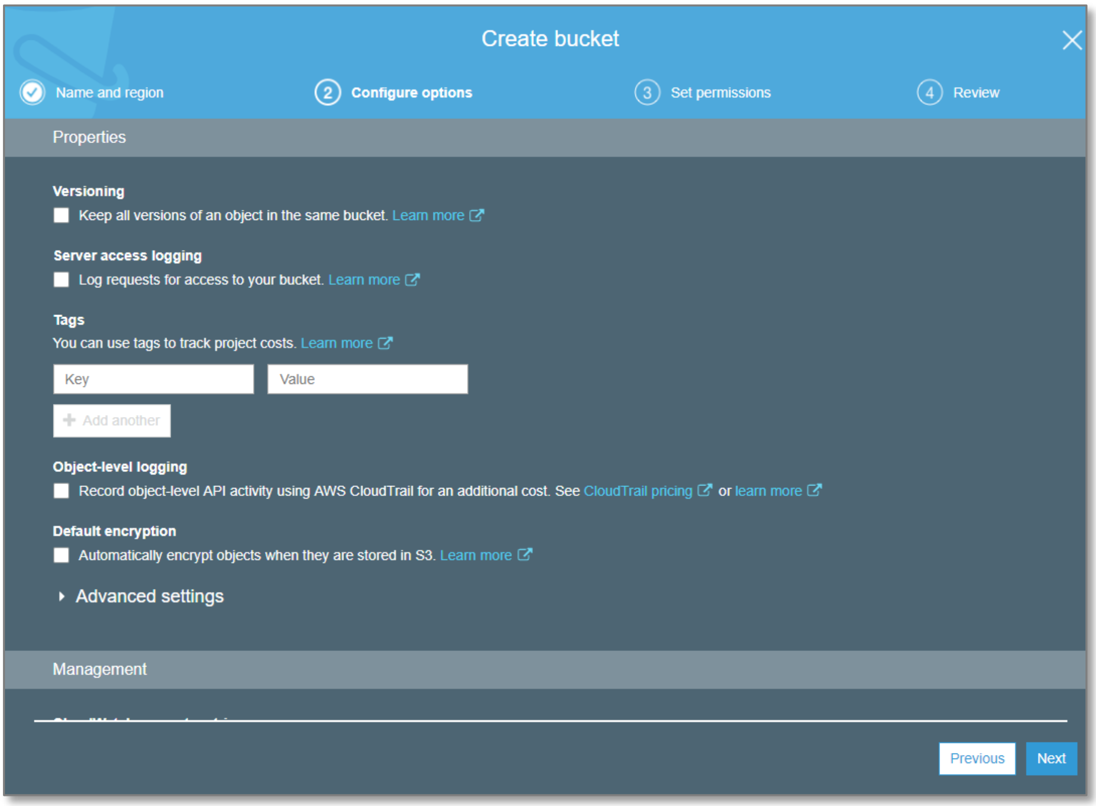
Bucket name: thedevkid.com

Region: US East (N. Virginia)

Copy settings from an existing bucket

You have no buckets — 0 Buckets

Click Next



Create bucket

Properties

Versioning

□ Keep all versions of an object in the same bucket. Learn more

Server access logging

□ Log requests for access to your bucket. Learn more

Tags

You can use tags to track project costs. Learn more

Object-level logging

□ Record object-level API activity using AWS CloudTrail for an additional cost. See CloudTrail pricing or learn more

Default encryption

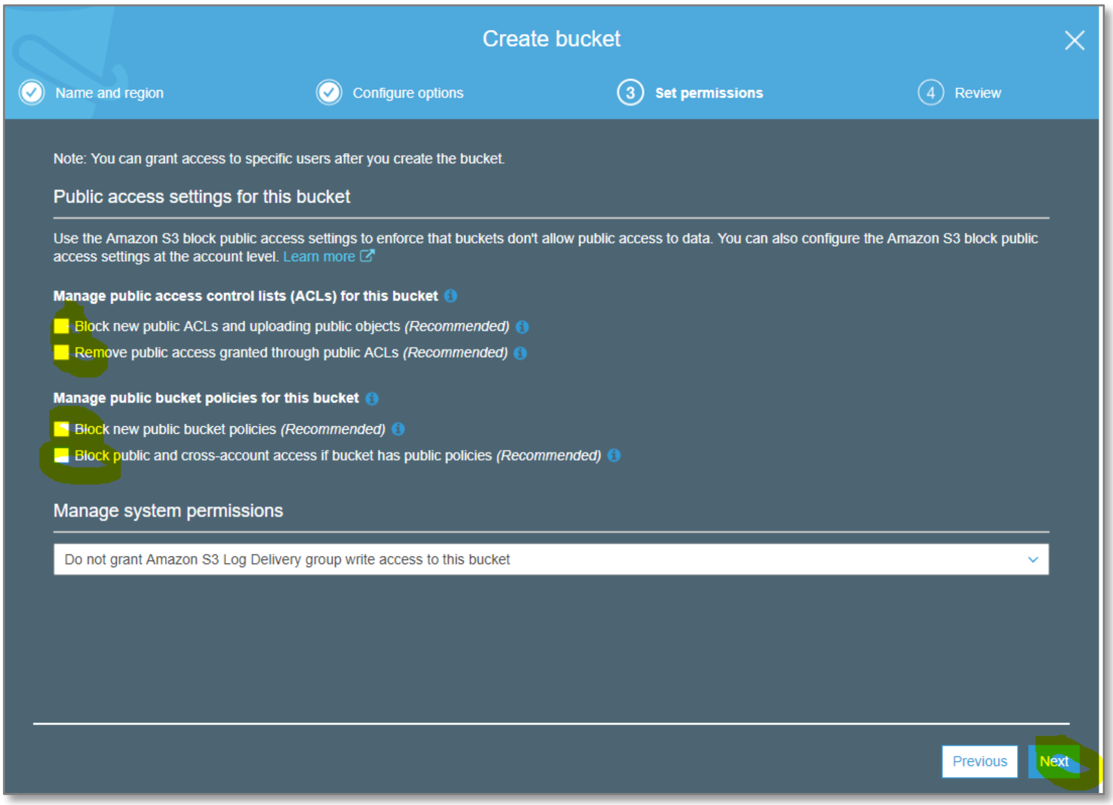
□ Automatically encrypt objects when they are stored in S3. Learn more

Advanced settings

Management

Uncheck the Blocks to make the bucket public

Click *Next*



Create bucket

✓ Name and region ✓ Configure options (3) **Set permissions** (4) Review

Note: You can grant access to specific users after you create the bucket.

Public access settings for this bucket

Use the Amazon S3 block public access settings to enforce that buckets don't allow public access to data. You can also configure the Amazon S3 block public access settings at the account level. Learn more

Manage public access control lists (ACLs) for this bucket

□ Block new public ACLs and uploading public objects *(Recommended)*

□ Remove public access granted through public ACLs *(Recommended)*

Manage public bucket policies for this bucket

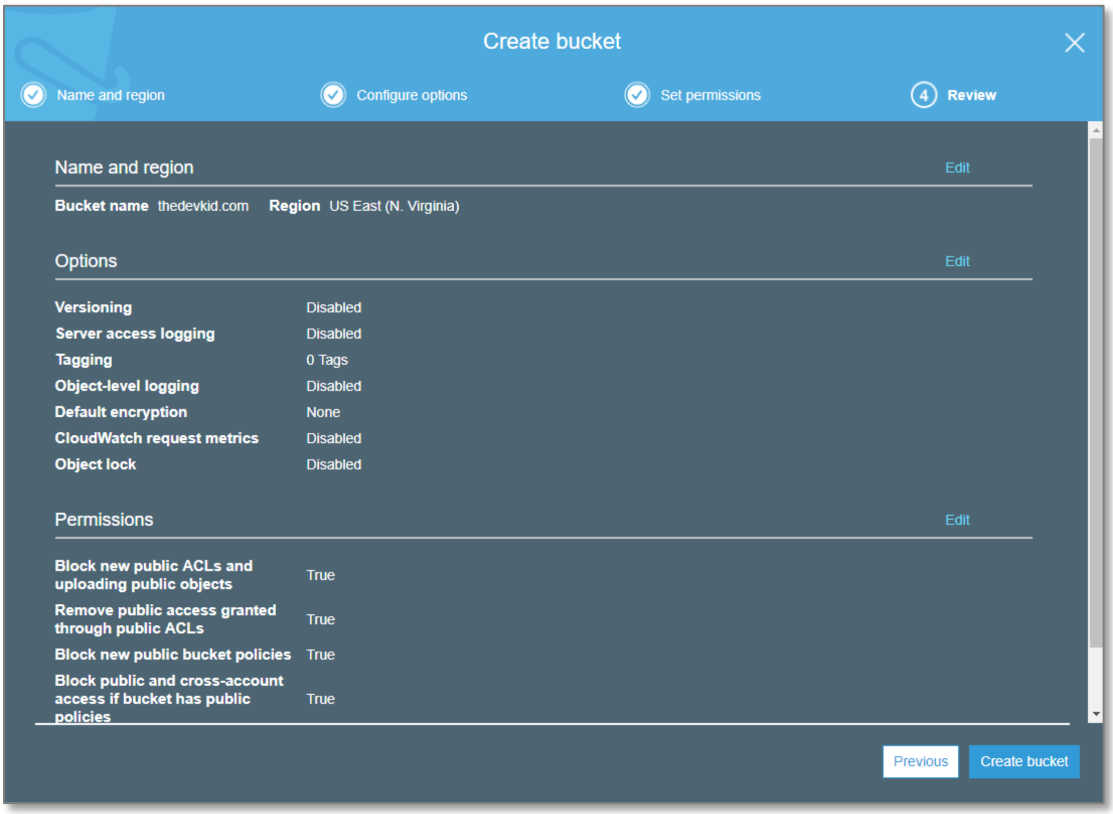
□ Block new public bucket policies *(Recommended)*

□ Block public and cross-account access if bucket has public policies *(Recommended)*

Manage system permissions

Do not grant Amazon S3 Log Delivery group write access to this bucket

Click *Create Bucket* to create the bucket.



Create bucket

✓ Name and region ✓ Configure options ✓ Set permissions (4) **Review**

Name and region

Bucket name thedevkid.com **Region** US East (N. Virginia)

Options

Versioning	Disabled
Server access logging	Disabled
Tagging	0 Tags
Object-level logging	Disabled
Default encryption	None
CloudWatch request metrics	Disabled
Object lock	Disabled

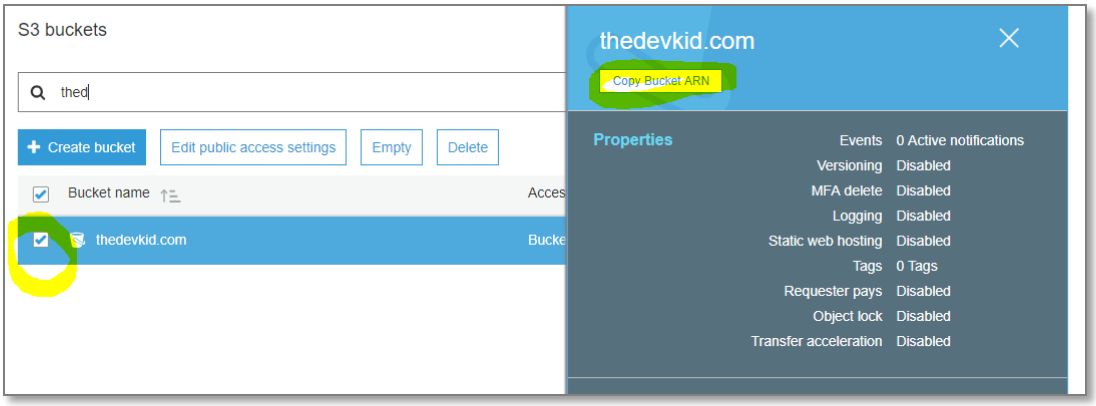
Permissions

Block new public ACLs and uploading public objects	True
Remove public access granted through public ACLs	True
Block new public bucket policies	True
Block public and cross-account access if bucket has public policies	True

Apply Public Permissions to our Bucket

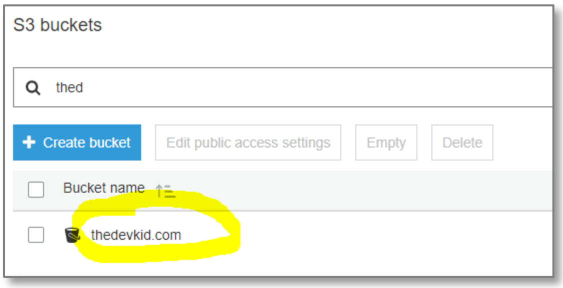
Click on the checkbox next to the bucket name

Click on *Copy Bucket ARN* (we will need this later on)



Events	0 Active notifications
Versioning	Disabled
MFA delete	Disabled
Logging	Disabled
Static web hosting	Disabled
Tags	0 Tags
Requester pays	Disabled
Object lock	Disabled
Transfer acceleration	Disabled

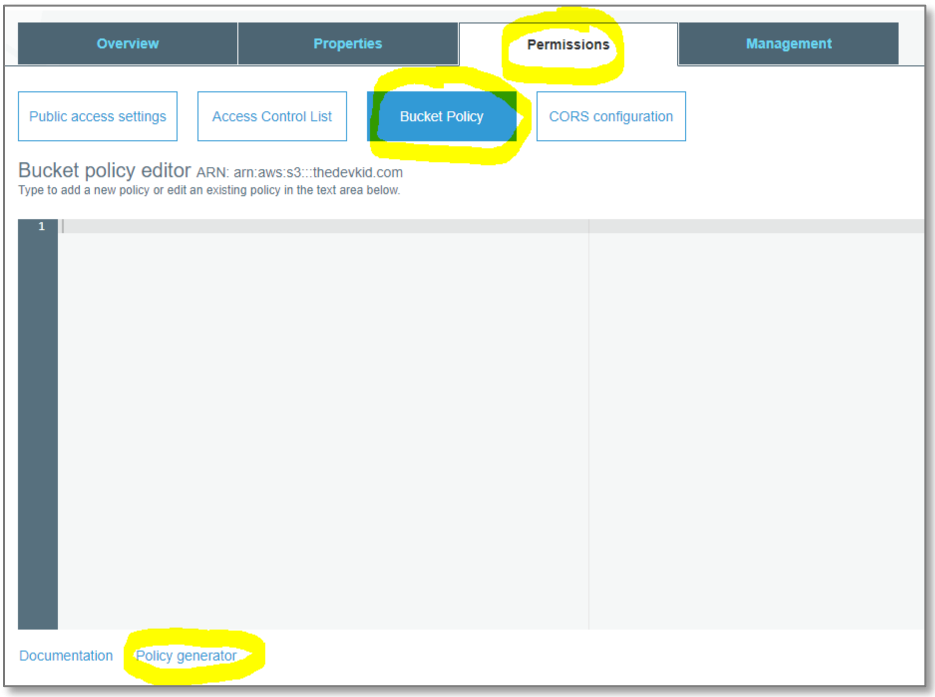
Now click on the bucket name link to open the bucket details page



Click on *Permission* tab

Select *Bucket Policy*

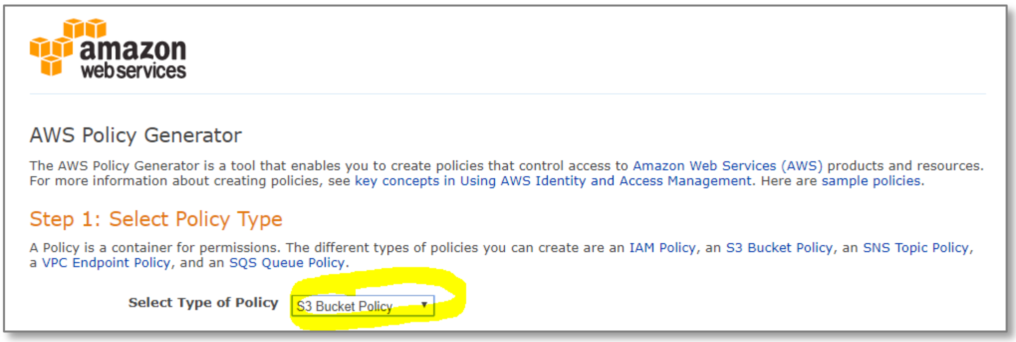
Click on *Policy generator*



Bucket policy editor ARN: arn:aws:s3:::thedevkid.com

Type to add a new policy or edit an existing policy in the text area below.

Select *S3 Bucket Policy*



AWS Policy Generator

The AWS Policy Generator is a tool that enables you to create policies that control access to Amazon Web Services (AWS) products and resources. For more information about creating policies, see key concepts in Using AWS Identity and Access Management. Here are sample policies.

Step 1: Select Policy Type

A Policy is a container for permissions. The different types of policies you can create are an IAM Policy, an S3 Bucket Policy, an SNS Topic Policy, a VPC Endpoint Policy, and an SQS Queue Policy.

Select Type of Policy: S3 Bucket Policy

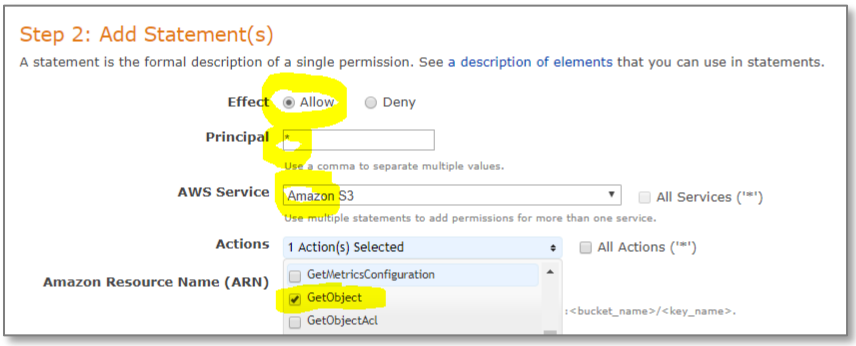
Add the following details:

Effect: *Allow*

Principal: ***

AWS Service: *Amazon S3*

Actions: *GetObject*



Step 2: Add Statement(s)

A statement is the formal description of a single permission. See a description of elements that you can use in statements.

Effect ● Allow ○ Deny

Principal *

Use a comma to separate multiple values.

AWS Service Amazon S3 □ All Services ('*')

Use multiple statements to add permissions for more than one service.

Actions 1 Action(s) Selected □ All Actions ('*')

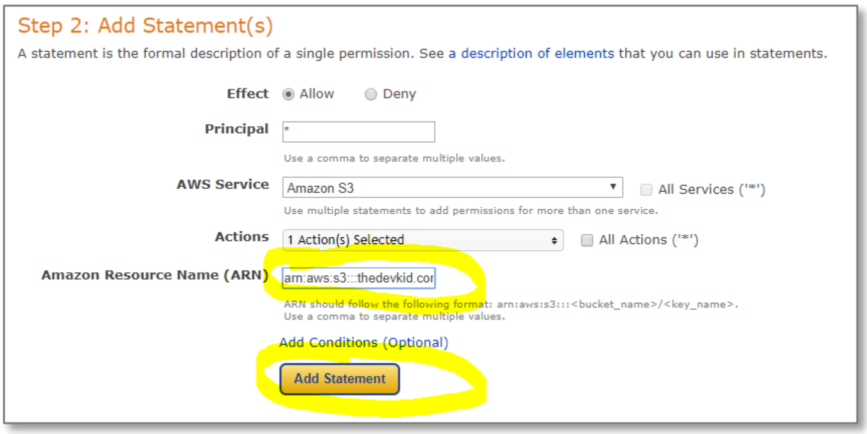
Amazon Resource Name (ARN)

□ GetMetricsConfiguration
☑ GetObject
□ GetObjectAcl

:<bucket_name>/<key_name>.

Amazon Resource Name (ARN): *Paste in the bucket ARN with /* on the end (e.g. arn:aws:s3:::mydomain.com/*)*

Click *Add Statement*



Step 2: Add Statement(s)

A statement is the formal description of a single permission. See a description of elements that you can use in statements.

Effect ● Allow ○ Deny

Principal *

Use a comma to separate multiple values.

AWS Service Amazon S3 □ All Services ('*')

Use multiple statements to add permissions for more than one service.

Actions 1 Action(s) Selected □ All Actions ('*')

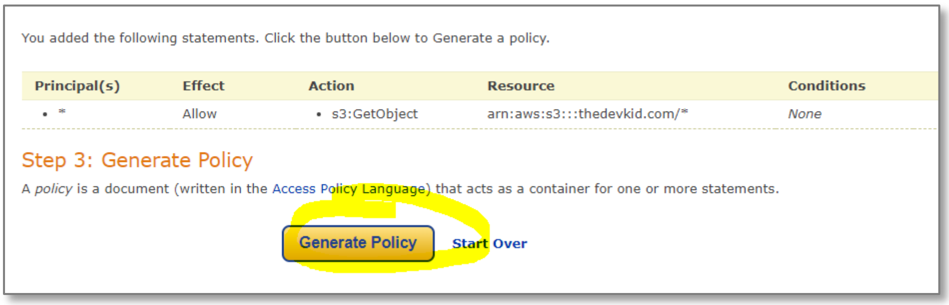
Amazon Resource Name (ARN) arn:aws:s3:::thedevkid.cor

ARN should follow the following format: arn:aws:s3:::<bucket_name>/<key_name>.
Use a comma to separate multiple values.

Add Conditions (Optional)

Add Statement

Click *Generate Policy*



You added the following statements. Click the button below to Generate a policy.

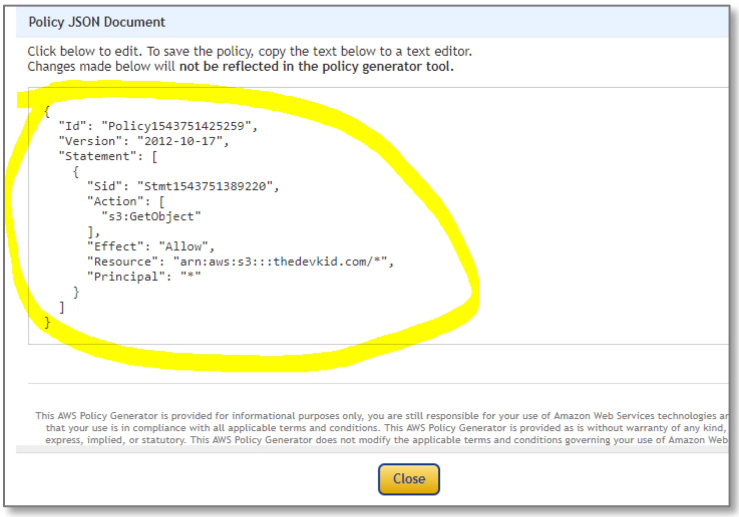
Principal(s)	Effect	Action	Resource	Conditions
• *	Allow	• s3:GetObject	arn:aws:s3:::thedevkid.com/*	None

Step 3: Generate Policy

A *policy* is a document (written in the Access Policy Language) that acts as a container for one or more statements.

Generate Policy Start Over

Copy the generated policy JSON text



Click below to edit. To save the policy, copy the text below to a text editor.
Changes made below will **not be reflected in the policy generator tool.**

```
{
  "Id": "Policy1543751425259",
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Stmt1543751389220",
      "Action": [
        "s3:GetObject"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:s3:::thedevkid.com/*",
      "Principal": "*"
    }
  ]
}
```

This AWS Policy Generator is provided for informational purposes only, you are still responsible for your use of Amazon Web Services technologies ar that your use is in compliance with all applicable terms and conditions. This AWS Policy Generator is provided as is without warranty of any kind, express, implied, or statutory. This AWS Policy Generator does not modify the applicable terms and conditions governing your use of Amazon Web

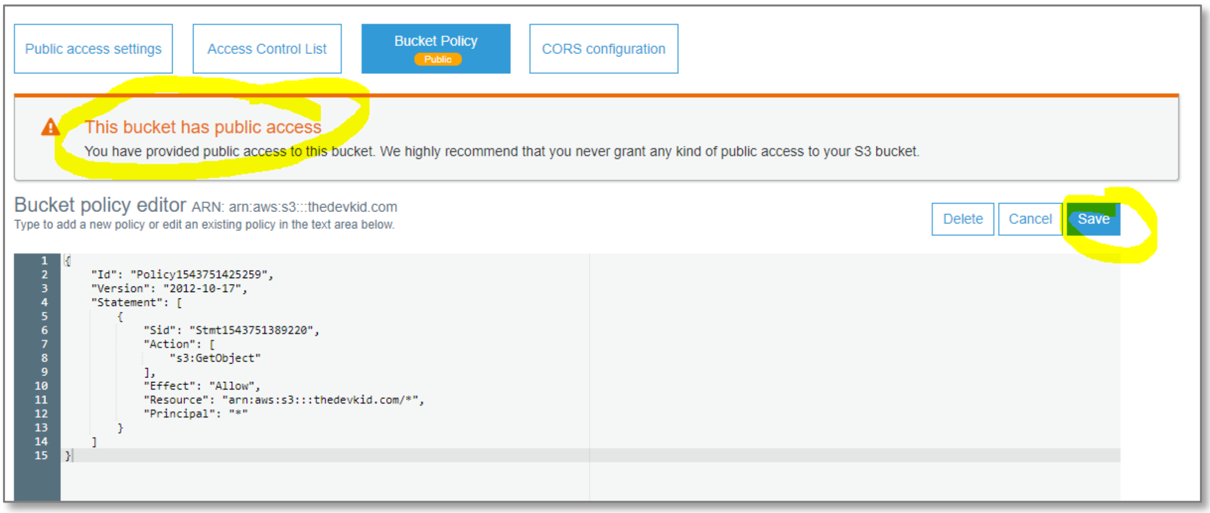
Now go back to *Permissions* tab

Paste in the JSON text

Click *Save*

A message will appear *This bucket has public access*

Troubleshooting – If you have *Error Access denied*, check you have *Block new public bucket policies* set as false in *Public access settings*



This bucket has public access

You have provided public access to this bucket. We highly recommend that you never grant any kind of public access to your S3 bucket.

Bucket policy editor ARN: arn:aws:s3:::thedevkid.com

Type to add a new policy or edit an existing policy in the text area below.

```
{
    "Id": "Policy1543751425259",
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "Stmt1543751389220",
            "Action": [
                "s3:GetObject"
            ],
            "Effect": "Allow",
            "Resource": "arn:aws:s3:::thedevkid.com/*",
            "Principal": "*"
        }
    ]
}
```

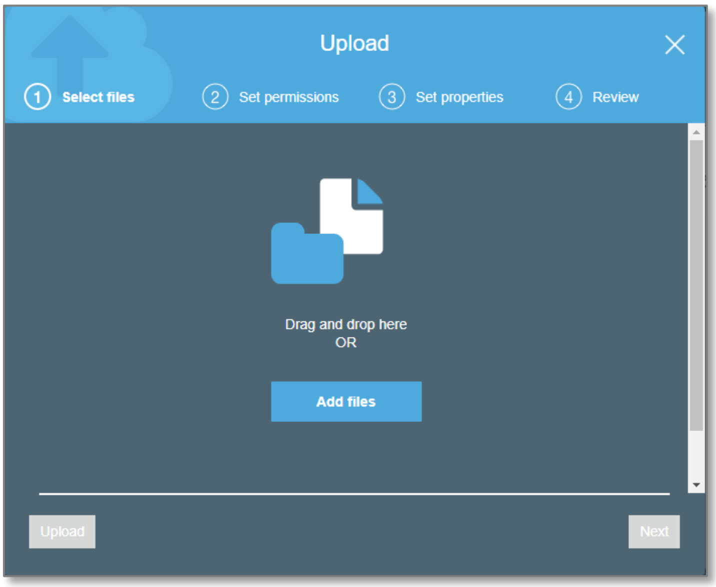
Upload Website Objects

Now it is time to upload our website objects. You can find free website templates at https://html5up.net/

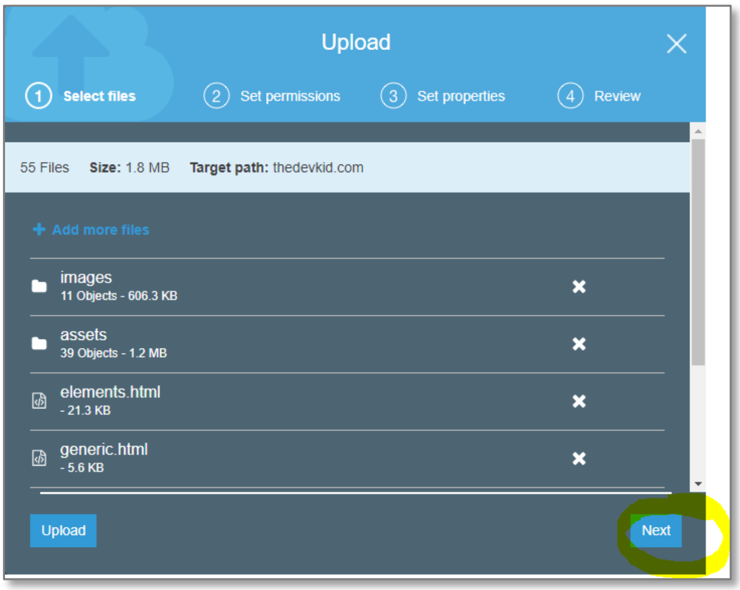
Select the root domain bucket (yourdomain.com)

Click *Upload*

You want to upload entire directories, including contents, do not Click *Add Files*. Open a Windows File Explorer window and drag the folder from File Explorer and drop on top of the Upload form.



Click ‘Next”



55 Files **Size:** 1.8 MB **Target path:** thedevkid.com

images
11 Objects - 606.3 KB

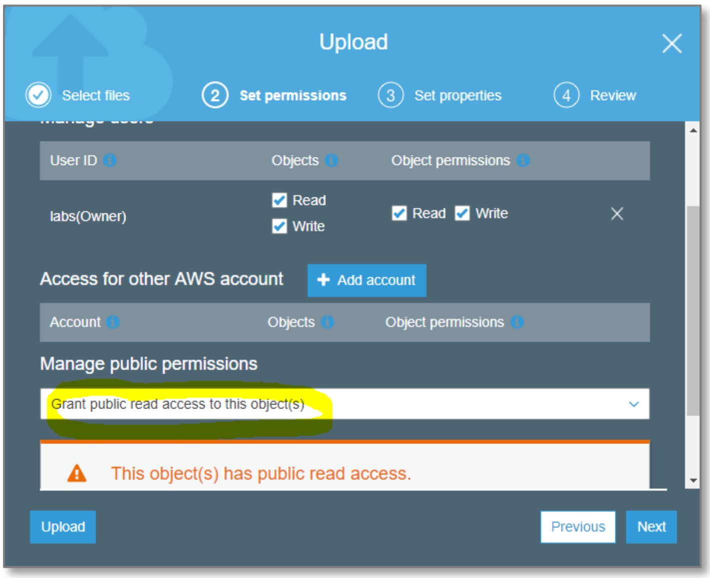
assets
39 Objects - 1.2 MB

elements.html
- 21.3 KB

generic.html
- 5.6 KB

Select *Manage Public Permissions*

Select *Grant public read access to this object(s)*



User ID	Objects	Object permissions
labs(Owner)	☑ Read ☑ Write	☑ Read ☑ Write

Access for other AWS account

Account	Objects	Object permissions

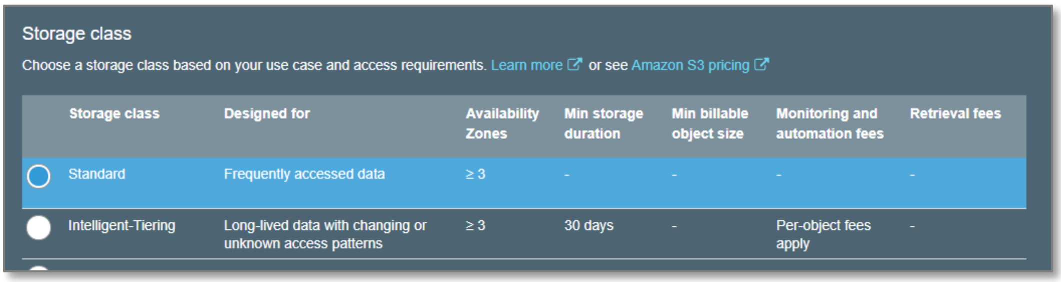
Manage public permissions

Grant public read access to this object(s)

This object(s) has public read access.

Click *Next*

Select *Standard* for Storage Class and *None* for encryption

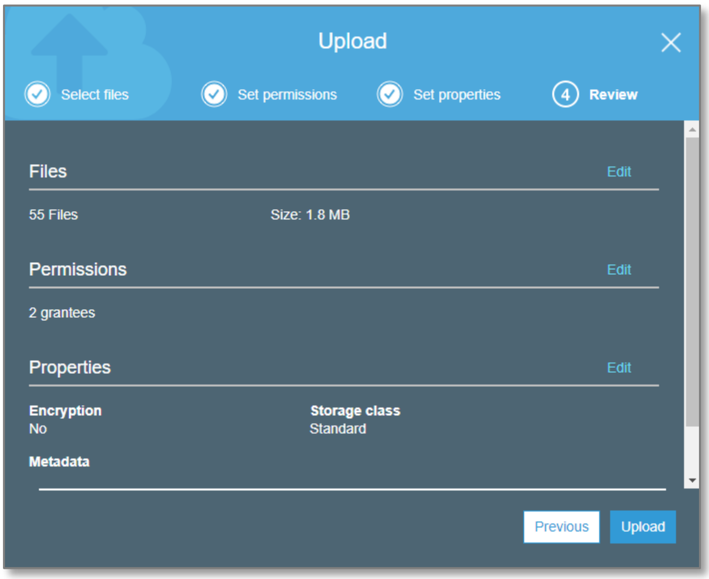


Storage class

Choose a storage class based on your use case and access requirements. Learn more or see Amazon S3 pricing

	Storage class	Designed for	Availability Zones	Min storage duration	Min billable object size	Monitoring and automation fees	Retrieval fees
○	Standard	Frequently accessed data	≥ 3	-	-	-	-
○	Intelligent-Tiering	Long-lived data with changing or unknown access patterns	≥ 3	30 days	-	Per-object fees apply	-

Click Next



Files

55 Files Size: 1.8 MB

Permissions

2 grantees

Properties

Encryption
No

Storage class
Standard

Metadata

Click Upload

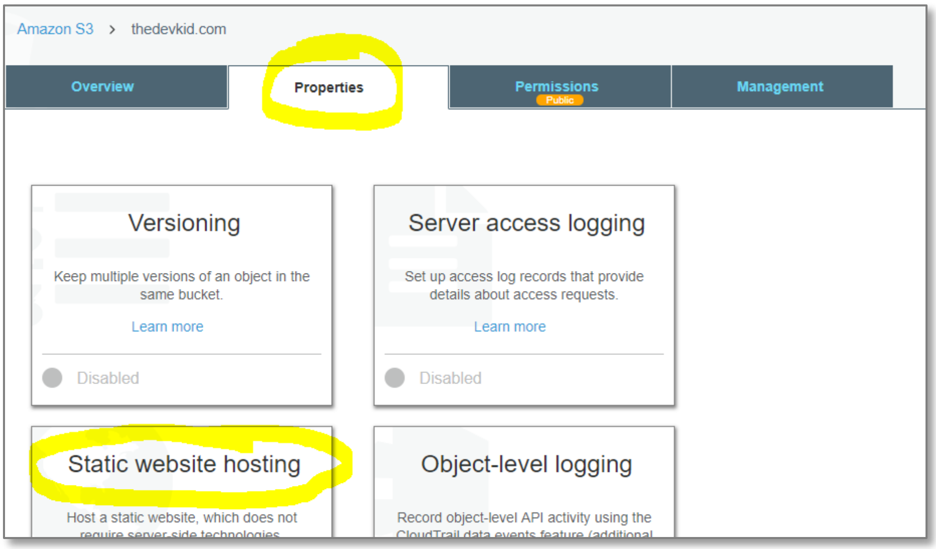
Your files will now be uploaded.

Enabling S3 Website Hosting

In this section we will enable website hosting for our root domain (yourdomain.com) and also redirect requests to the www subdomain (www.yourdomain.com) to our root domain.

Select *Properties*

Select *Static Website Hosting*



Versioning

Keep multiple versions of an object in the same bucket.

Server access logging

Set up access log records that provide details about access requests.

Static website hosting

Host a static website, which does not require server-side technologies

Object-level logging

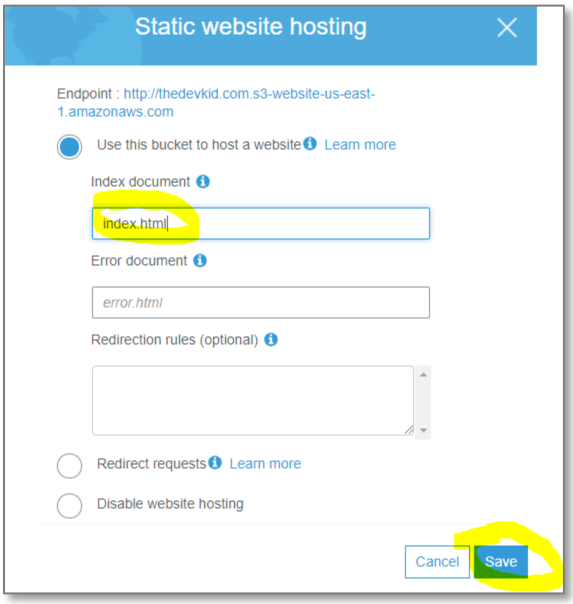
Record object-level API activity using the CloudTrail data events feature (additional

Now Select *Use this bucket to host a website*

Enter the *Index Document* (required)

Enter *Error Document* if available or else enter just enter *index.html* again

Click *Save*



Static website hosting

Endpoint : http://thedevkid.com.s3-website-us-east-1.amazonaws.com

● Use this bucket to host a website Learn more

Index document

index.html

Error document

error.html

Redirection rules (optional)

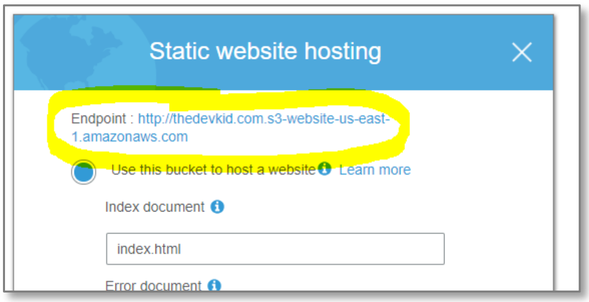
○ Redirect requests Learn more

○ Disable website hosting

If you go back into *Static Webstite Hosting* you will see the public endpoint for the S3 website.

Endpoint : http://yourdomain.com.s3-website-us-east-1.amazonaws.com

Click on the endpoint to see your website in your browser.



Static website hosting

Endpoint : http://thedevkid.com.s3-website-us-east-1.amazonaws.com

● Use this bucket to host a website Learn more

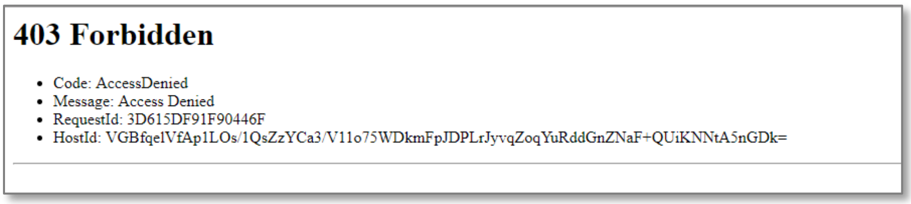
Index document

index.html

Error document

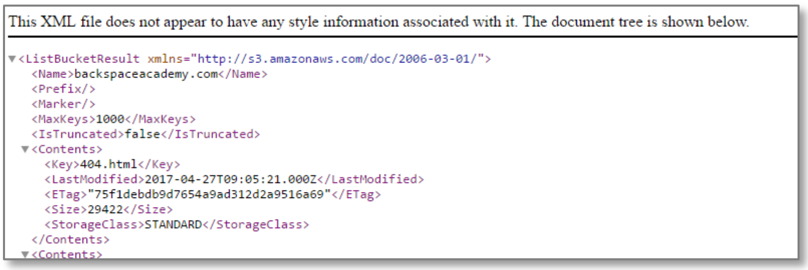
Troubleshooting

If you get either of the following message your object permissions are not set to public.



403 Forbidden

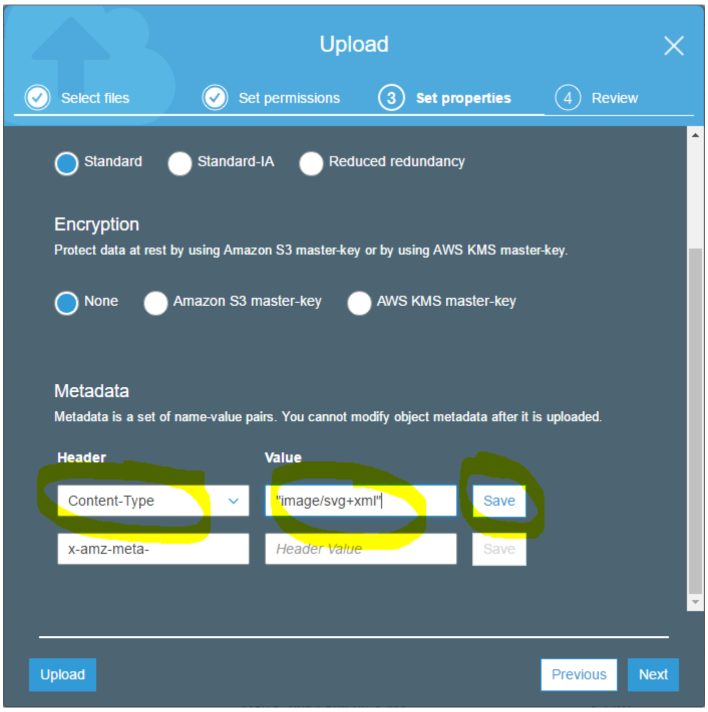
- Code: AccessDenied
- Message: Access Denied
- RequestId: 3D615DF91F90446F
- HostId: VGBfqelVfAp1LOs/1QsZzYCa3/V11o75WDkmFpJDPLrJyvqZoqYuRddGnZNaF+QUiKNNtA5nGDk=



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<ListBucketResult xmlns="http://s3.amazonaws.com/doc/2006-03-01/">
   <Name>backspaceacademy.com</Name>
   <Prefix/>
   <Marker/>
   <MaxKeys>1000</MaxKeys>
   <IsTruncated>false</IsTruncated>
 ▼<Contents>
     <Key>404.html</Key>
     <LastModified>2017-04-27T09:05:21.000Z</LastModified>
     <ETag>"75f1debdb9d7654a9ad312d2a9516a69"</ETag>
     <Size>29422</Size>
     <StorageClass>STANDARD</StorageClass>
   </Contents>
 ▼<Contents>
```

If you find svg images are not showing on your website it is most probably incorrect header information. Upload the specific files again but add Content-type "image/svg+xml" in the Metadata section (you need to scroll down to see it).



● Standard ○ Standard-IA ○ Reduced redundancy

Encryption

Protect data at rest by using Amazon S3 master-key or by using AWS KMS master-key.

● None ○ Amazon S3 master-key ○ AWS KMS master-key

Metadata

Metadata is a set of name-value pairs. You cannot modify object metadata after it is uploaded.

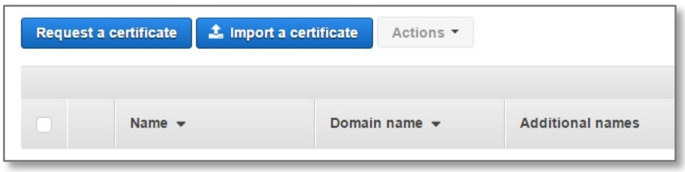
Header	Value	
Content-Type	"image/svg+xml"	Save
x-amz-meta-	Header Value	Save

Creating an SSL Certificate with AWS Certificate Manager

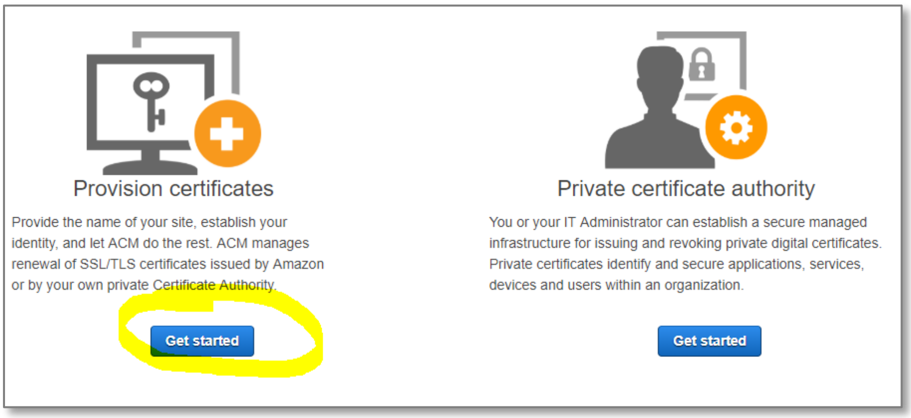
In this section we will use the AWS Certificate Manager to create an SSL certificate we can use to enable HTTPS with CloudFront.

Please note that to require HTTPS between viewers and CloudFront, you must change the AWS region to US East (N. Virginia) before you request or import a certificate.

Click on the services menu and select AWS Certificate Manager.



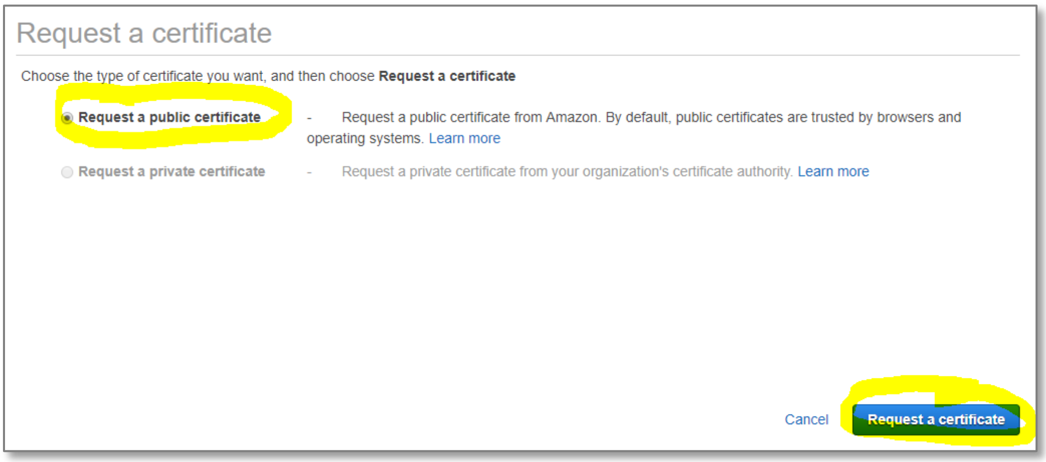
Click *Provision Certificate*



Provide the name of your site, establish your identity, and let ACM do the rest. ACM manages renewal of SSL/TLS certificates issued by Amazon or by your own private Certificate Authority.

You or your IT Administrator can establish a secure managed infrastructure for issuing and revoking private digital certificates. Private certificates identify and secure applications, services, devices and users within an organization.

Click *Request a certificate*



Request a certificate

Choose the type of certificate you want, and then choose **Request a certificate**

● **Request a public certificate** - Request a public certificate from Amazon. By default, public certificates are trusted by browsers and operating systems. Learn more

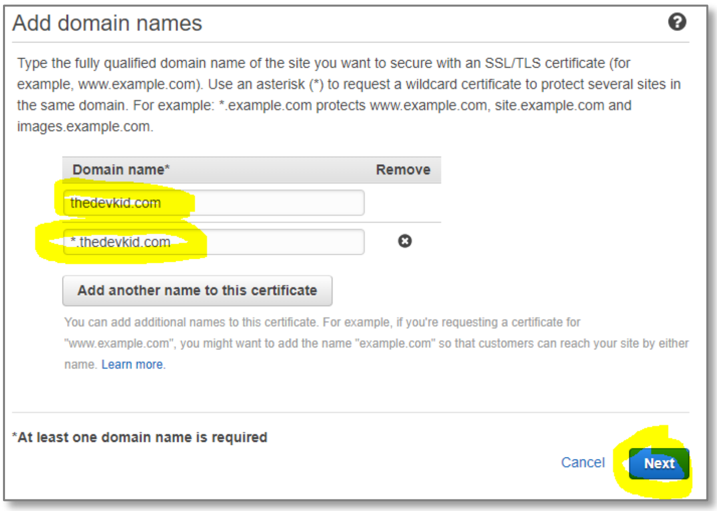
○ **Request a private certificate** - Request a private certificate from your organization's certificate authority. Learn more

Enter the root domain (yourdomain.com)

Click *Add another name to this certificate*

Enter the root domain prefixed with *. (*.yourdomain.com)

Click *Next*



Add domain names

Type the fully qualified domain name of the site you want to secure with an SSL/TLS certificate (for example, www.example.com). Use an asterisk (*) to request a wildcard certificate to protect several sites in the same domain. For example: *.example.com protects www.example.com, site.example.com and images.example.com.

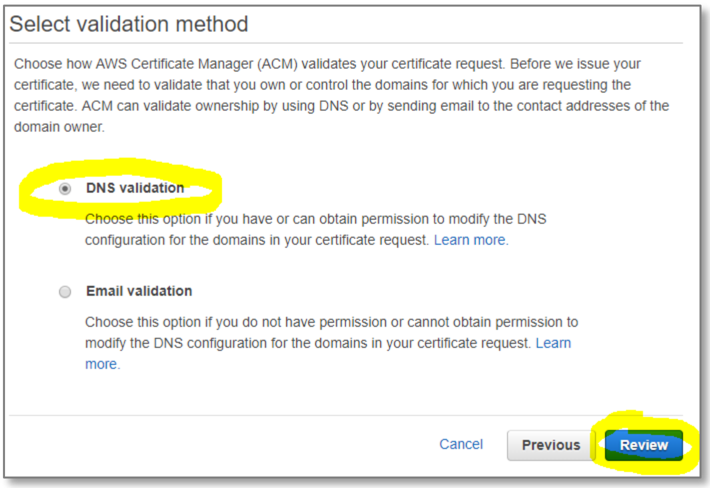
Domain name*	Remove
thedevkid.com	
*.thedevkid.com	⊗

You can add additional names to this certificate. For example, if you're requesting a certificate for "www.example.com", you might want to add the name "example.com" so that customers can reach your site by either name. Learn more.

*At least one domain name is required

Select *DNS validation*

Click *Review*



Select validation method

Choose how AWS Certificate Manager (ACM) validates your certificate request. Before we issue your certificate, we need to validate that you own or control the domains for which you are requesting the certificate. ACM can validate ownership by using DNS or by sending email to the contact addresses of the domain owner.

● DNS validation

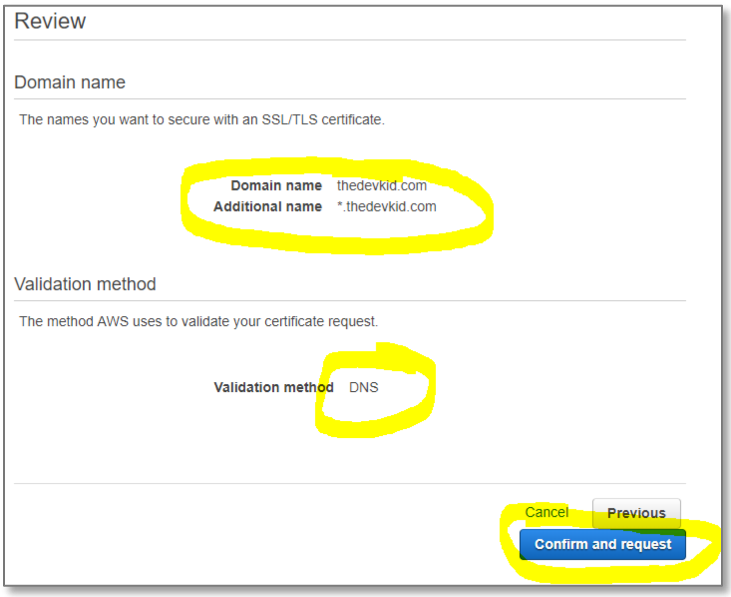
Choose this option if you have or can obtain permission to modify the DNS configuration for the domains in your certificate request. Learn more.

○ Email validation

Choose this option if you do not have permission or cannot obtain permission to modify the DNS configuration for the domains in your certificate request. Learn more.

Check everything is ok

Click *Confirm and request*



Review

Domain name

The names you want to secure with an SSL/TLS certificate.

Domain name thedevkid.com
Additional name *.thedevkid.com

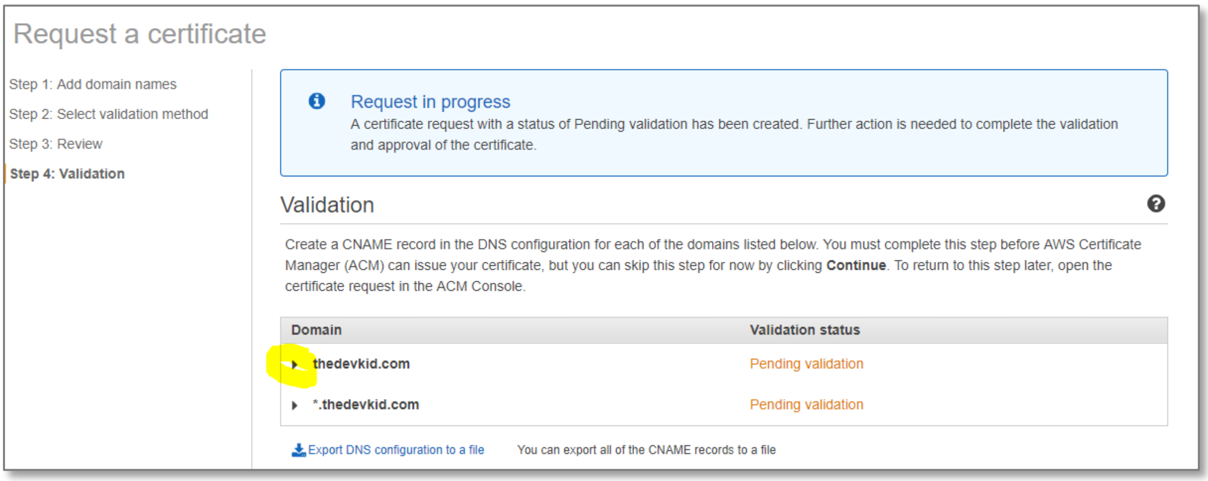
Validation method

The method AWS uses to validate your certificate request.

Validation method DNS

After a about a minute you will see messages *Pending validation*

Expand the domain by clicking on the claret



Request a certificate

Step 1: Add domain names
Step 2: Select validation method
Step 3: Review
Step 4: Validation

Request in progress
A certificate request with a status of Pending validation has been created. Further action is needed to complete the validation and approval of the certificate.

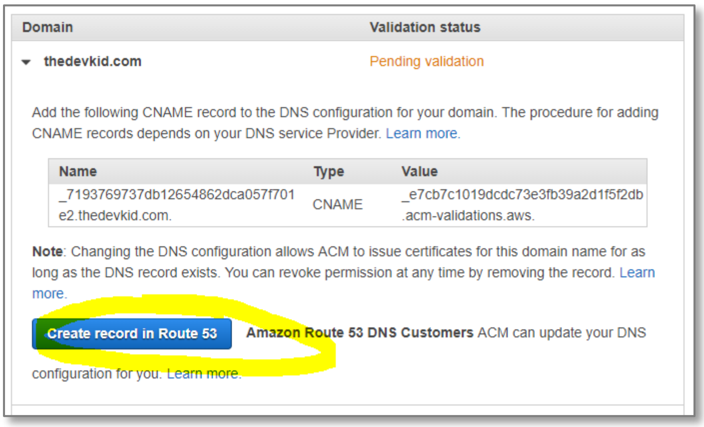
Validation

Create a CNAME record in the DNS configuration for each of the domains listed below. You must complete this step before AWS Certificate Manager (ACM) can issue your certificate, but you can skip this step for now by clicking **Continue**. To return to this step later, open the certificate request in the ACM Console.

Domain	Validation status
▸ thedevkid.com	Pending validation
▸ *.thedevkid.com	Pending validation

Export DNS configuration to a file   You can export all of the CNAME records to a file

Click *Create record in Route 53*



Domain	Validation status
▾ thedevkid.com	Pending validation

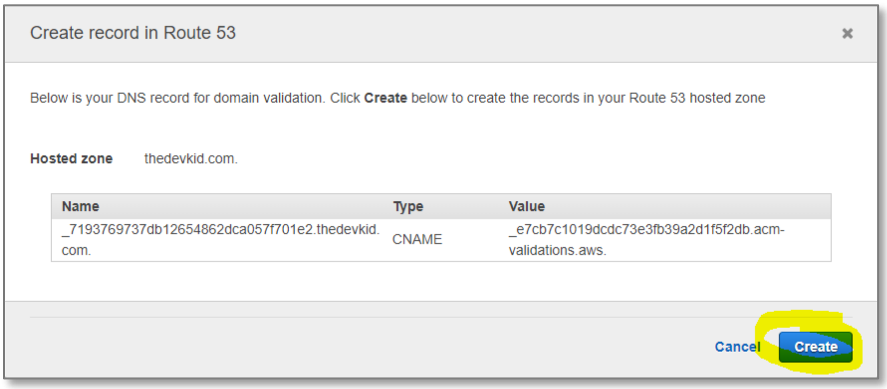
Add the following CNAME record to the DNS configuration for your domain. The procedure for adding CNAME records depends on your DNS service Provider. Learn more.

Name	Type	Value
_7193769737db12654862dca057f701e2.thedevkid.com.	CNAME	_e7cb7c1019dcdc73e3fb39a2d1f5f2db.acm-validations.aws.

Note: Changing the DNS configuration allows ACM to issue certificates for this domain name for as long as the DNS record exists. You can revoke permission at any time by removing the record. Learn more.

Create record in Route 53 **Amazon Route 53 DNS Customers** ACM can update your DNS configuration for you. Learn more.

Click *Create*



Create record in Route 53 ×

Below is your DNS record for domain validation. Click **Create** below to create the records in your Route 53 hosted zone

Hosted zone thedevkid.com.

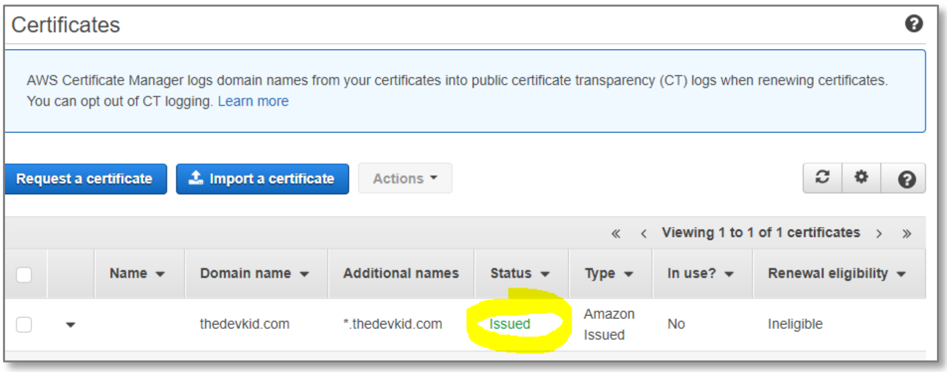
Name	Type	Value
_7193769737db12654862dca057f701e2.thedevkid.com.	CNAME	_e7cb7c1019dcdc73e3fb39a2d1f5f2db.acm-validations.aws.

Cancel Create

There is no need to repeat the process for the wildcard domain as the records are the same.

Click *Continue*

After about 30 minutes the certificate will be validated. You can click the refresh icon to check its status.



Certificates

AWS Certificate Manager logs domain names from your certificates into public certificate transparency (CT) logs when renewing certificates. You can opt out of CT logging. Learn more

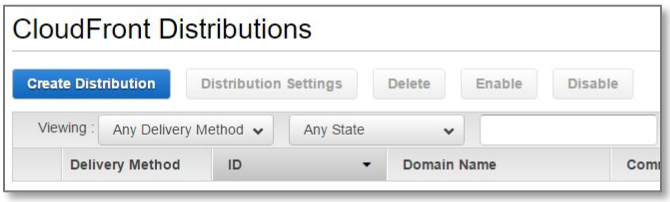
□		Name	Domain name	Additional names	Status	Type	In use?	Renewal eligibility
□	▾		thedevkid.com	*.thedevkid.com	Issued	Amazon Issued	No	Ineligible

Creating a CloudFront Distribution

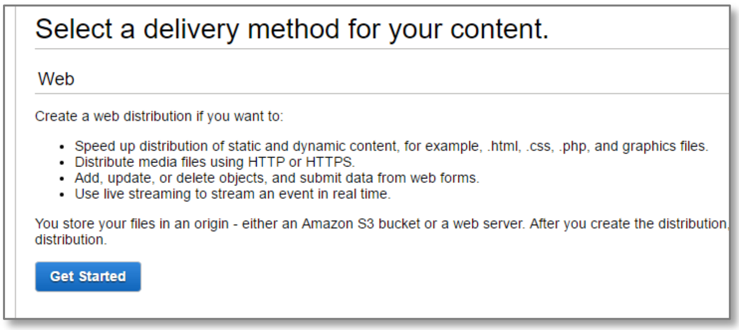
In this section we will use the AWS CloudFront Content Delivery Network (CDN) to cache our site to edge locations across the Globe.

Click on the services menu and select CloudFront.

Click on *Create Distribution*



Select *Web – Get Started*



Select a delivery method for your content.

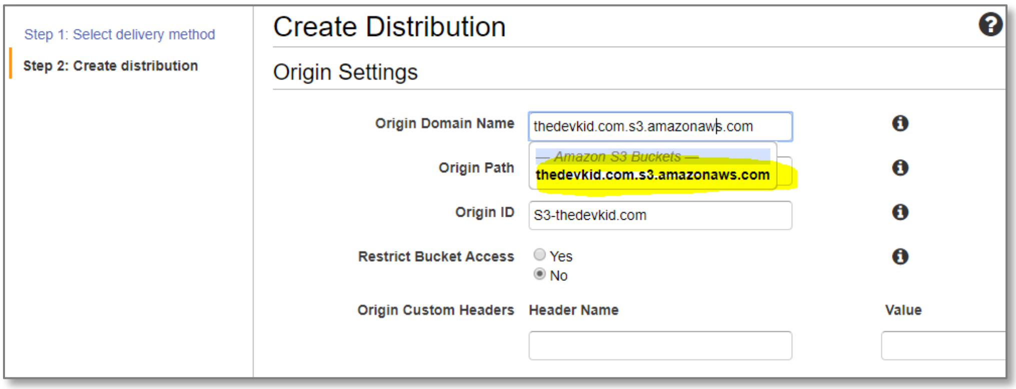
Web

Create a web distribution if you want to:

- Speed up distribution of static and dynamic content, for example, .html, .css, .php, and graphics files.
- Distribute media files using HTTP or HTTPS.
- Add, update, or delete objects, and submit data from web forms.
- Use live streaming to stream an event in real time.

You store your files in an origin - either an Amazon S3 bucket or a web server. After you create the distribution, distribution.

In *Origin Settings* select your s3 bucket as the *Origin Domain Name*



Create Distribution

Origin Settings

Origin Domain Name: thedevkid.com.s3.amazonaws.com

— Amazon S3 Buckets —
thedevkid.com.s3.amazonaws.com

Origin Path

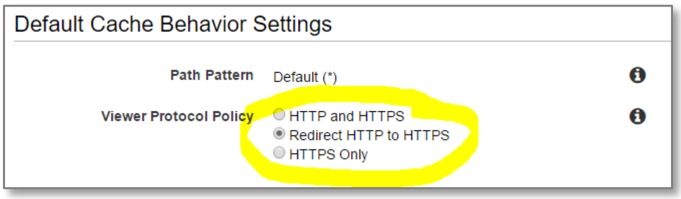
Origin ID: S3-thedevkid.com

Restrict Bucket Access: ○ Yes ● No

Origin Custom Headers: Header Name | Value

In Default *Cache Behavior Settings*

Set *Viewer Protocol Policy* to *Redirect HTTP to HTTPS*

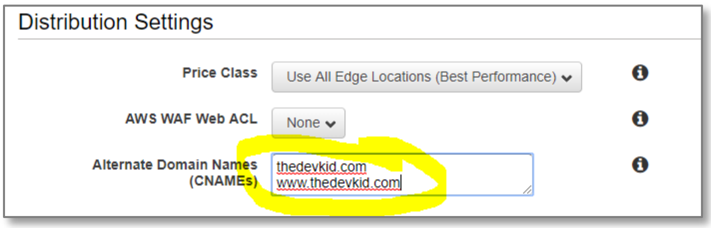


Default Cache Behavior Settings

Path Pattern: Default (*)

Viewer Protocol Policy:
○ HTTP and HTTPS
● Redirect HTTP to HTTPS
○ HTTPS Only

Under *Distribution Settings* enter your domain name and subdomains (www.yourdomain.com) into *Alternate Domain Names (CNAMEs)*



Distribution Settings

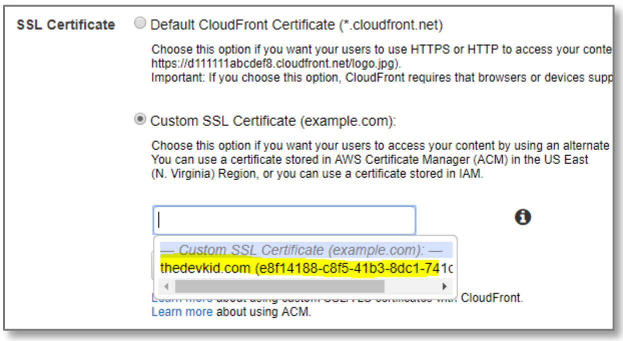
Price Class: Use All Edge Locations (Best Performance)

AWS WAF Web ACL: None

Alternate Domain Names (CNAMEs):
thedevkid.com
www.thedevkid.com

Under *Distribution Settings* enter/select your custom SSL certificate

If the Custom SSL option is not available your certificate is either not issued yet or information has not propagated to CloudFront service yet. Cancel the distribution and try again after a few minutes.



SSL Certificate

○ Default CloudFront Certificate (*.cloudfront.net)

Choose this option if you want your users to use HTTPS or HTTP to access your conte
https://d111111abcdef8.cloudfront.net/logo.jpg).
Important: If you choose this option, CloudFront requires that browsers or devices supp

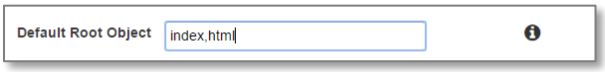
● Custom SSL Certificate (example.com):

Choose this option if you want your users to access your content by using an alternate
You can use a certificate stored in AWS Certificate Manager (ACM) in the US East
(N. Virginia) Region, or you can use a certificate stored in IAM.

— Custom SSL Certificate (example.com): —
thedevkid.com (e8f14188-c8f5-41b3-8dc1-741c

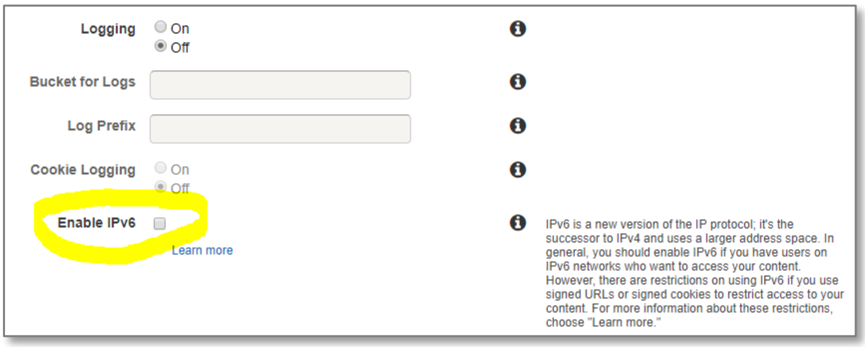
CloudFront.
Learn more about using ACM.

Under *Distribution Settings* enter the index.html file for your website



Default Root Object: index.html

Under *Distribution Settings* uncheck 'Enable iPv6"



Logging ○ On ● Off

Bucket for Logs

Log Prefix

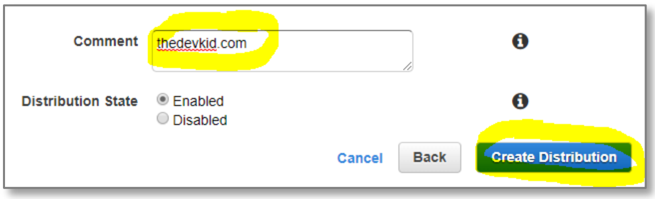
Cookie Logging ○ On ● Off

Enable IPv6 □

IPv6 is a new version of the IP protocol; it's the successor to IPv4 and uses a larger address space. In general, you should enable IPv6 if you have users on IPv6 networks who want to access your content. However, there are restrictions on using IPv6 if you use signed URLs or signed cookies to restrict access to your content. For more information about these restrictions, choose "Learn more."

Put in a comment so that you easily identify the distribution.

Click *Create Distribution*



Comment: thedevkid.com

Distribution State ● Enabled ○ Disabled

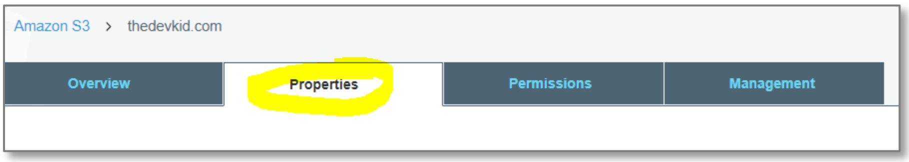
The Status of the distribution will change when it has been distributed to the edge locations.

Optional - Requiring HTTPS for Communication Between CloudFront and Your Amazon S3 Origin

If you are creating a secure site you can also require HTTPS for communication between your S3 bucket and CloudFront. This is achieved by disabling website hosting for the S3 bucket. It will then only be possible to view the website through CloudFront.

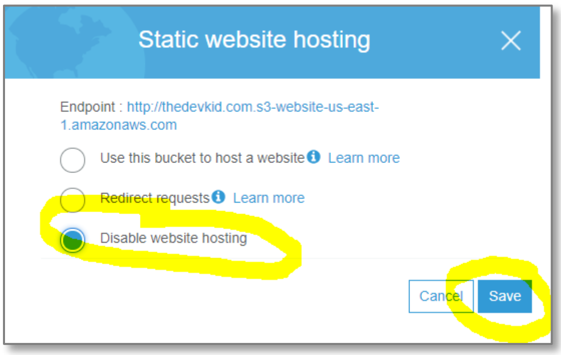
Go to the S3 management console and select the bucket.

Select the *Properties* tab



Select *Static website hosting*

Select *Disable website hosting* and then click *Save*



Endpoint : http://thedevkid.com.s3-website-us-east-1.amazonaws.com

○ Use this bucket to host a website ℹ Learn more

○ Redirect requests ℹ Learn more

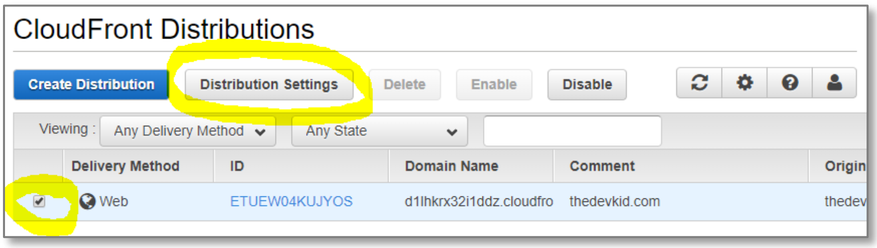
● Disable website hosting

Invalidating a CloudFront Distribution

If you need to change your website and update your CloudFront distribution you can force CloudFront to fetch and update the distribution using invalidations.

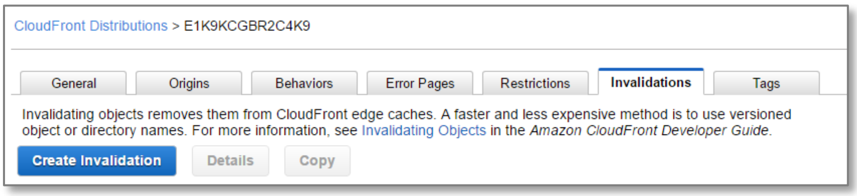
To invalidate/update a CloudFront distribution:

Click on the distribution from the list of distributions



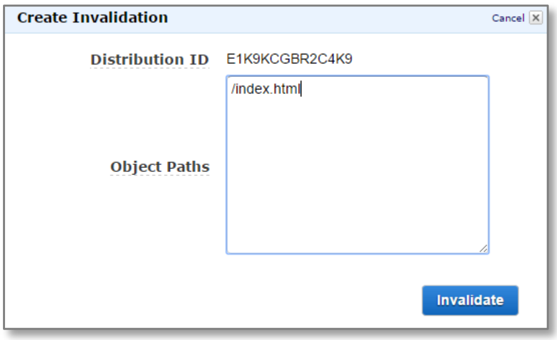
	Delivery Method	ID	Domain Name	Comment	Origin
☑	Web	ETUEW04KUJYOS	d1lhkrx32i1ddz.cloudfro	thedevkid.com	thedev

Click on the *Invalidations* tab
Click *Create Invalidation*



Invalidating objects removes them from CloudFront edge caches. A faster and less expensive method is to use versioned object or directory names. For more information, see Invalidating Objects in the *Amazon CloudFront Developer Guide*.

Enter the object path to the file you want to invalidate/update (e.g. /index.html) or use a wildcard symbol to invalidate all the files (e.g. /*)



Create Invalidation

Distribution ID E1K9KCGBR2C4K9

Object Paths /index.html

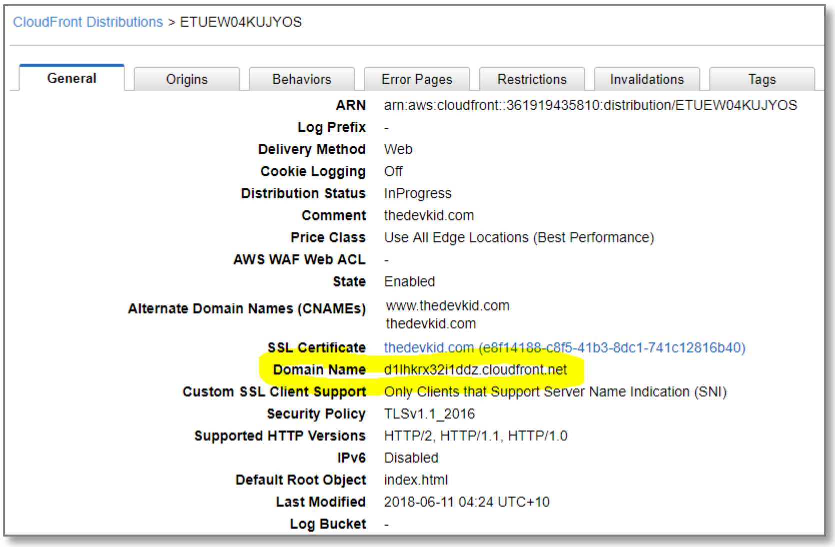
Click *Invalidate*

This will take some time to complete.

Routing Traffic with AWS Route 53

In this section we will direct all requests to our domain name and www subdomain to CloudFront using Route 53 Domain Name Service (DNS).

Go back to the CloudFront Distribution page and copy the distribution domain name



ARN	arn:aws:cloudfront::361919435810:distribution/ETUEW04KUJYOS
Log Prefix	-
Delivery Method	Web
Cookie Logging	Off
Distribution Status	InProgress
Comment	thedevkid.com
Price Class	Use All Edge Locations (Best Performance)
AWS WAF Web ACL	-
State	Enabled
Alternate Domain Names (CNAMEs)	www.thedevkid.com thedevkid.com
SSL Certificate	thedevkid.com (e8f14188-c8f5-41b3-8dc1-741c12816b40)
Domain Name	d1lhkrx32i1ddz.cloudfront.net
Custom SSL Client Support	Only Clients that Support Server Name Indication (SNI)
Security Policy	TLSv1.1_2016
Supported HTTP Versions	HTTP/2, HTTP/1.1, HTTP/1.0
IPv6	Disabled
Default Root Object	index.html
Last Modified	2018-06-11 04:24 UTC+10
Log Bucket	-

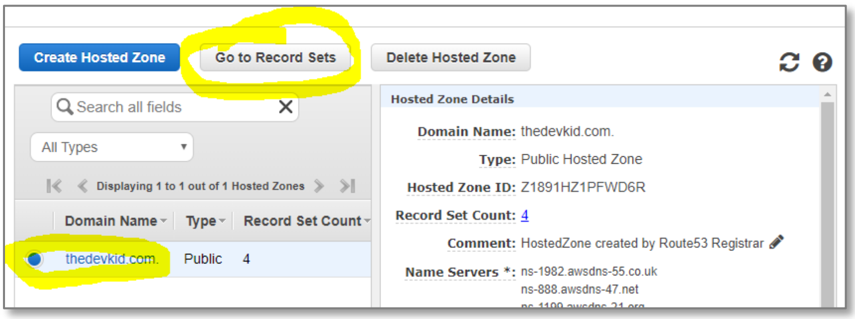
Now go back to the Route 53 Management Console:

Click on the services menu and select Route 53.

Click on Hosted Zones

Click on the hosted zone created by the Route 53 Registrar

Click on *Go to Record Sets*



Domain Name	Type	Record Set Count
thedevkid.com.	Public	4

Hosted Zone Details

Domain Name:	thedevkid.com.
Type:	Public Hosted Zone
Hosted Zone ID:	Z1891HZ1PFWD6R
Record Set Count:	4
Comment:	HostedZone created by Route53 Registrar
Name Servers *:	ns-1982.awsdns-55.co.uk ns-888.awsdns-47.net ns-1199.awsdns-21.org

Click on *Create Record Set*

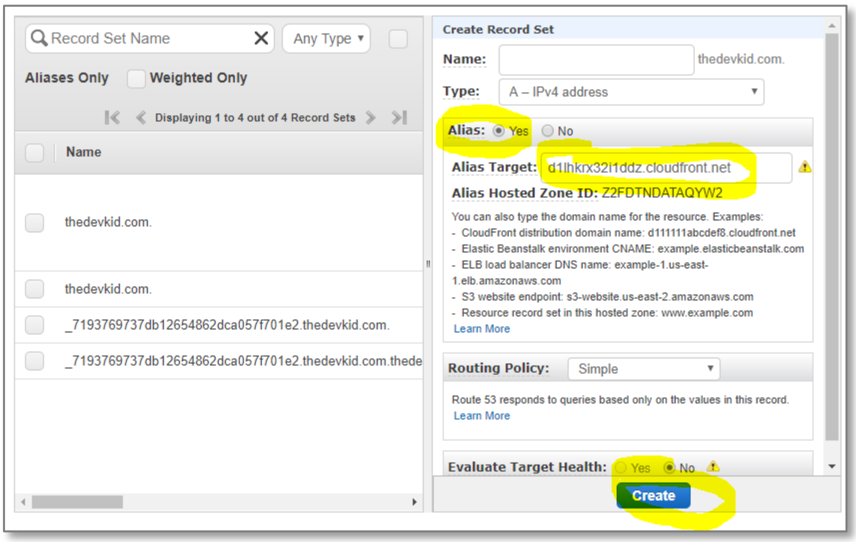
Select *A-IPv4 address* as Type

Check Alias: *Yes*

Leave *Name* empty

Enter the distribution domain name as Alias Target:

Click *Create*



Record Set Name | Any Type

Aliases Only □ Weighted Only

Displaying 1 to 4 out of 4 Record Sets

□ Name

□ thedevkid.com.

□ thedevkid.com.

□ _7193769737db12654862dca057f701e2.thedevkid.com.

□ _7193769737db12654862dca057f701e2.thedevkid.com.thede

Create Record Set

Name: thedevkid.com.

Type: A – IPv4 address

Alias: ● Yes ○ No

Alias Target: d1lhkrx32i1ddz.cloudfront.net

Alias Hosted Zone ID: Z2FDTNDATAQYW2

You can also type the domain name for the resource. Examples:
- CloudFront distribution domain name: d111111abcdef8.cloudfront.net
- Elastic Beanstalk environment CNAME: example.elasticbeanstalk.com
- ELB load balancer DNS name: example-1.us-east-1.elb.amazonaws.com
- S3 website endpoint: s3-website.us-east-2.amazonaws.com
- Resource record set in this hosted zone: www.example.com

Learn More

Routing Policy: Simple

Route 53 responds to queries based only on the values in this record. Learn More

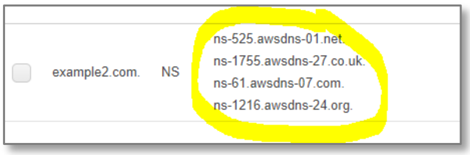
Evaluate Target Health: ○ Yes ● No

Create

Routing Traffic with a Domain Name from another Registrar

If you have a domain name from another registrar (e.g. GoDaddy) you can still direct traffic for this domain to AWS by replacing the NS records. That way all DNS requests will be directed to AWS name servers. The process is as follows:

1. Create a Route53 hosted zone for the domain
2. Copy the NS records for the hosted zone



□ example2.com. NS ns-525.awsdns-01.net.
ns-1755.awsdns-27.co.uk.
ns-61.awsdns-07.com.
ns-1216.awsdns-24.org.

3. Replace the NS records in your registrars DNS service with the NS records from your Route53 hosted zone
4. Add the A record to your Route53 hosted zone as detailed previously above.

Route Requests for www Subdomain

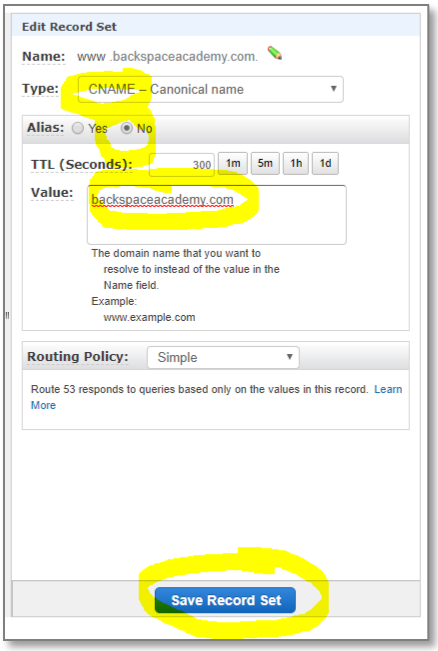
Click on *Create Record Set*

Select *CNAME* as Type

Select 'No" for Alias.

Enter www for *Name*

Enter your domain name (or the CloudFront domain, either will work) for the www subdomain as Value (without the http:// at the start)



Edit Record Set

Name: www .backspaceacademy.com.

Type: CNAME – Canonical name

Alias: ○ Yes ● No

TTL (Seconds): 300

Value: backspaceacademy.com

The domain name that you want to resolve to instead of the value in the Name field.
Example:
www.example.com

Routing Policy: Simple

Route 53 responds to queries based only on the values in this record. Learn More

Click on *Create Record Set*

After some time the changes will be propagated to the Internet and you will be able to navigate to your domain name in your browser and see your website.

Checking DNS Propagation Status

The Route 53 entries detailed above will take a while to propagate across the Internet. This could be anywhere from a couple of minutes to an hour. You can check the status of DNS propagation using the following site:

Global DNS Propagation Checker

After the records have successfully propagated you will be able to navigate to your domain name and see your website.

Redirecting Domain Traffic to another Domain

In this section we will direct all requests to our domain name and www subdomain to another domain using S3 website redirecting and Route 53 Domain Name Service (DNS). This is useful if we have multiple domain names for the same domain (e.g. xxxx.com, xxxx.net, xxxx.com.au etc).

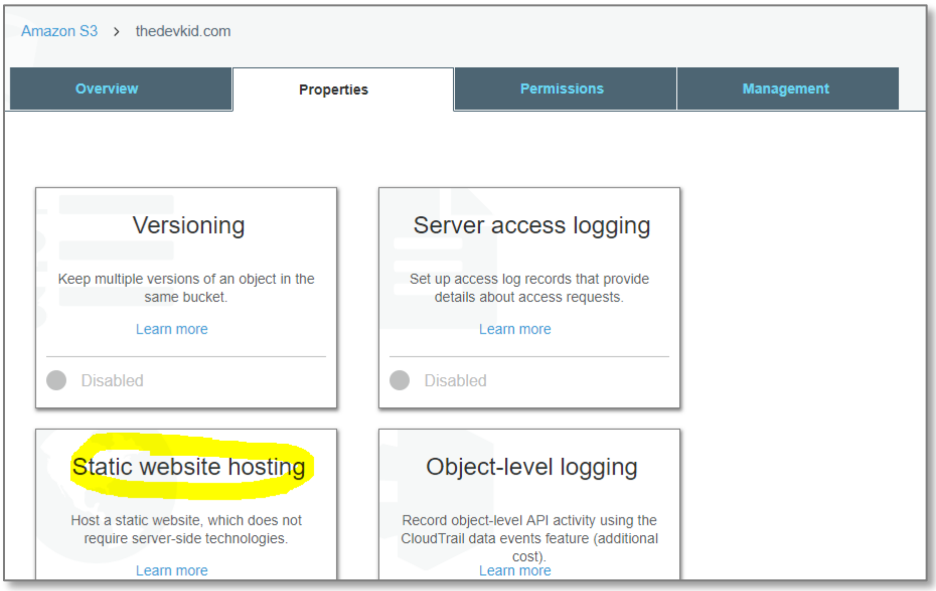
DNS services must conform to a standard (RFC1912). Subdomains can be routed using CNAME but apex domains cannot. For example, you cannot use a CNAME to redirect to google.com. Also, the A record cannot be used to point to another apex domain not managed by your hosted zone. S3 website redirecting solves this problem by accepting requests for a domain and redirecting them to another domain

*Note only http requests can be redirected using this technique. S3 website redirection does not support https.

Go back to the S3 console

Select the domain bucket

Select 'Properties" – 'Static Website Hosting"

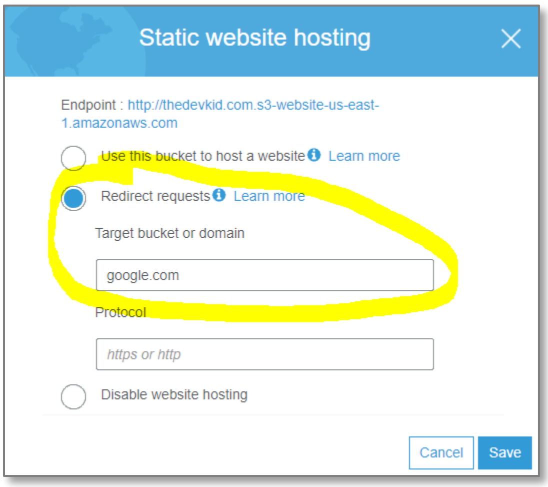

Amazon S3 › thedevkid.com
Overview
Properties
Permissions
Management
Versioning
Keep multiple versions of an object in the same bucket.
Learn more
Disabled
Server access logging
Set up access log records that provide details about access requests.
Learn more
Disabled
Static website hosting
Host a static website, which does not require server-side technologies.
Learn more
Object-level logging
Record object-level API activity using the CloudTrail data events feature (additional cost).
Learn more

Select 'Redirect requests"

Enter a domain name to redirect requests to (you can use google.com if you want to).

Enter protocol.

Click 'Save"



Static website hosting

Endpoint : http://thedevkid.com.s3-website-us-east-1.amazonaws.com

○ Use this bucket to host a website Learn more

● Redirect requests Learn more

Target bucket or domain

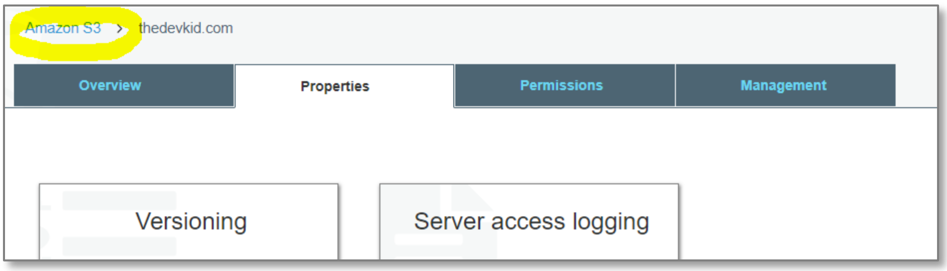
google.com

Protocol

https or http

○ Disable website hosting

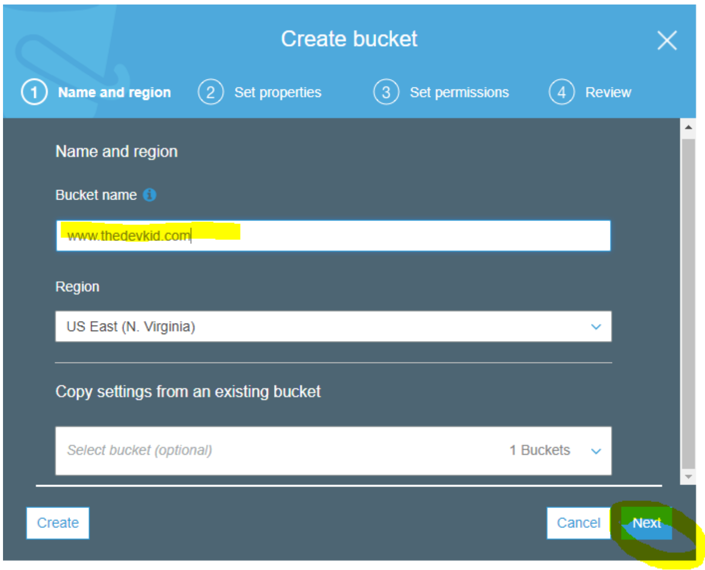
Go back to the bucket list



Click *Create bucket*

Enter the www subdomain for the name of the bucket

Click ‘Next”



Create bucket

Name and region

Bucket name

www.thedevkid.com

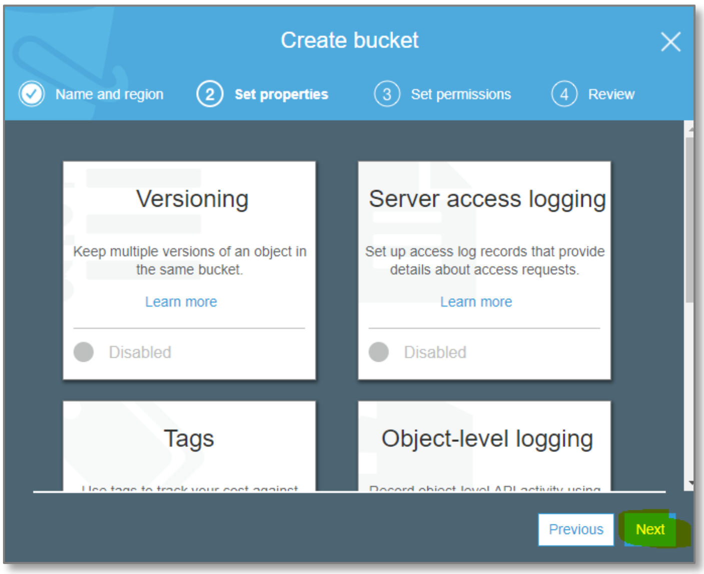
Region

US East (N. Virginia)

Copy settings from an existing bucket

Select bucket (optional) 1 Buckets

Click ‘Next”



Versioning

Keep multiple versions of an object in the same bucket.

○ Disabled

Server access logging

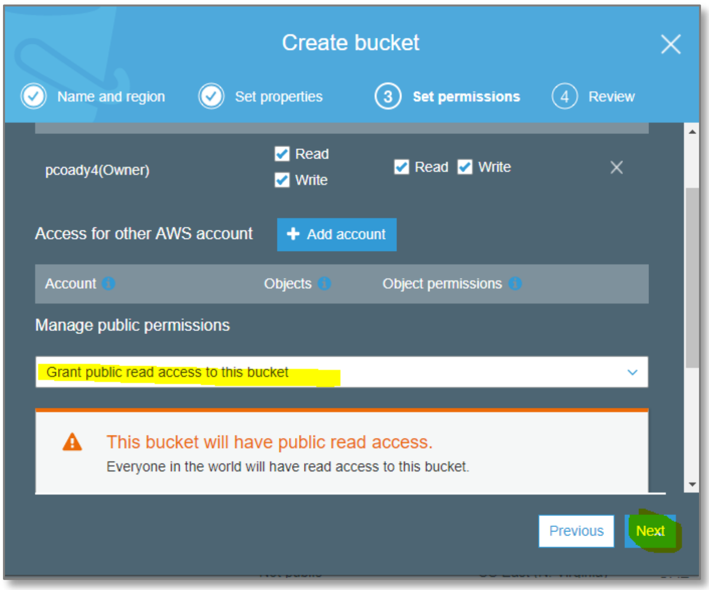
Set up access log records that provide details about access requests.

○ Disabled

Tags

Object-level logging

Select ‘Grant public read access to this bucket”



pcoady4(Owner) ☑ Read ☑ Write ☑ Read ☑ Write

Access for other AWS account

Account	Objects	Object permissions

Manage public permissions

Grant public read access to this bucket

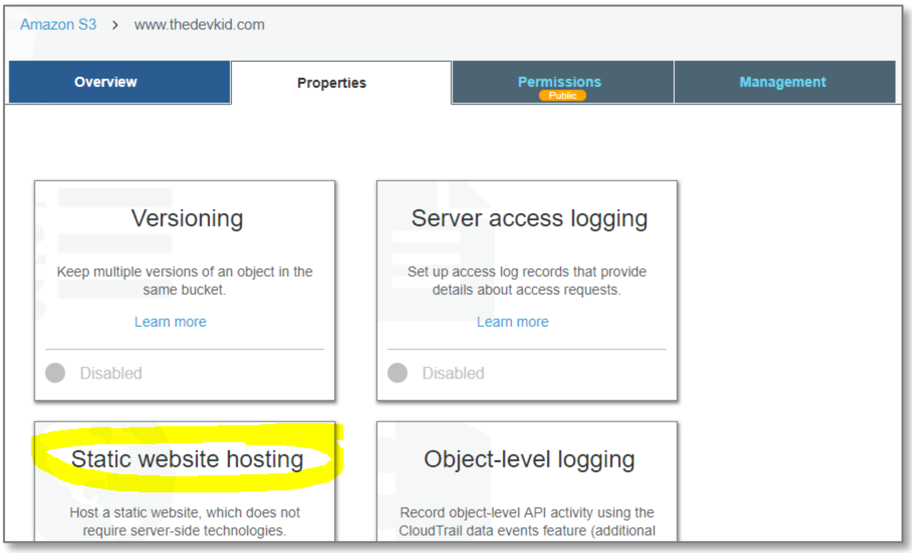
This bucket will have public read access.

Everyone in the world will have read access to this bucket.

Click ‘Create Bucket”

After the bucket has been created select the bucket

Select ‘Properties” – ‘Static website hosting”



Amazon S3 > www.thedevkid.com

Versioning

Keep multiple versions of an object in the same bucket.

Learn more

○ Disabled

Server access logging

Set up access log records that provide details about access requests.

Learn more

○ Disabled

Static website hosting

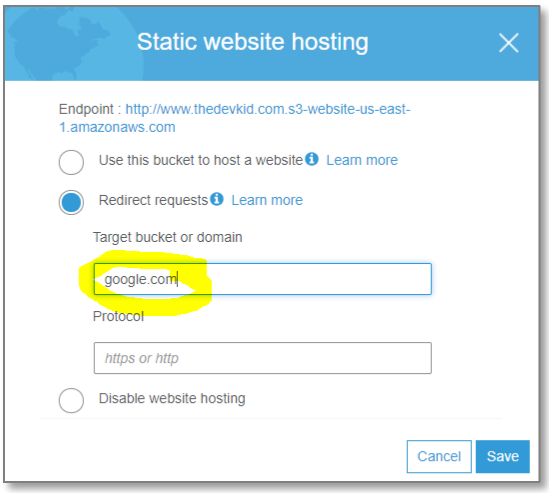
Host a static website, which does not require server-side technologies.

Object-level logging

Record object-level API activity using the CloudTrail data events feature (additional

Redirect requests as before to the other domain on http

Copy the endpoint for use later



Static website hosting

Endpoint : http://www.thedevkid.com.s3-website-us-east-1.amazonaws.com

○ Use this bucket to host a website Learn more

● Redirect requests Learn more

Target bucket or domain: google.com

Protocol: https or http

○ Disable website hosting

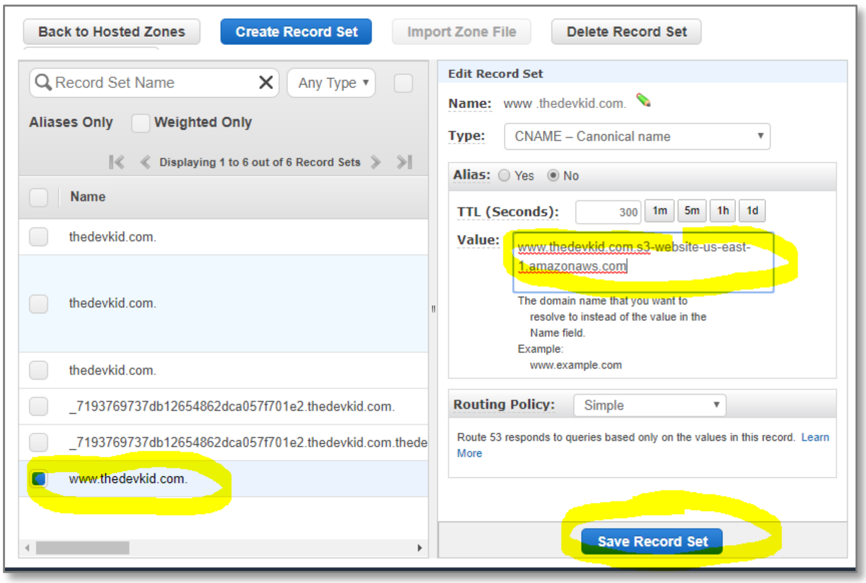
Go back to the Route53 console

Select the domain hosted zone

Click on the CNAME entry

Enter the www bucket website endpoint without the ‘http://”

Click ‘Save Record Set”



Back to Hosted Zones | Create Record Set | Import Zone File | Delete Record Set

Record Set Name | Any Type

Aliases Only □ Weighted Only

Displaying 1 to 6 out of 6 Record Sets

	Name
□	thedevkid.com.
□	thedevkid.com.
□	thedevkid.com.
□	_7193769737db12654862dca057f701e2.thedevkid.com.
□	_7193769737db12654862dca057f701e2.thedevkid.com.thede
☑	www.thedevkid.com.

Edit Record Set

Name: www .thedevkid.com.

Type: CNAME – Canonical name

Alias: ○ Yes ● No

TTL (Seconds): 300 1m 5m 1h 1d

Value: www.thedevkid.com.s3-website-us-east-1.amazonaws.com

The domain name that you want to resolve to instead of the value in the Name field.
Example:
www.example.com

Routing Policy: Simple

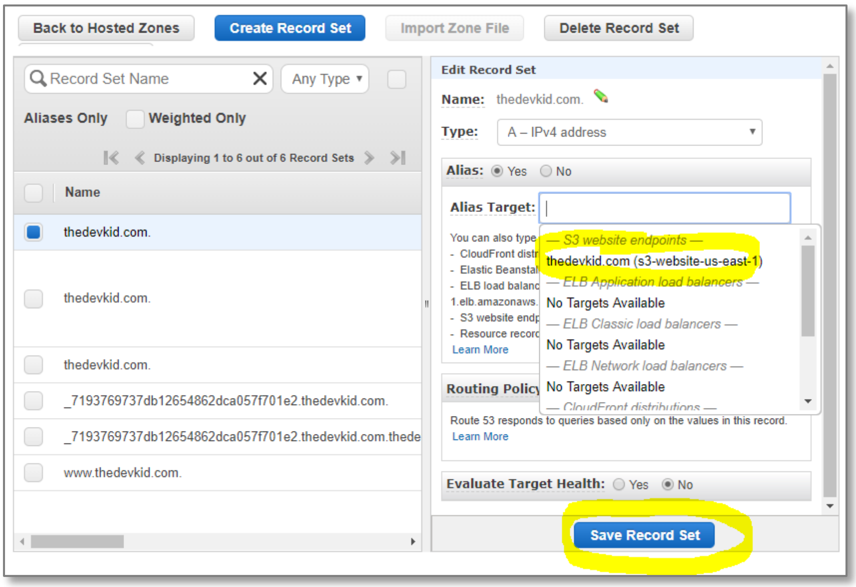
Route 53 responds to queries based only on the values in this record. Learn More

Save Record Set

Now select the A record

Change the Alias target to the domain S3 website endpoint

Click ‘Save Record Set”



Back to Hosted Zones | Create Record Set | Import Zone File | Delete Record Set

Record Set Name | Any Type

Aliases Only □ Weighted Only

Displaying 1 to 6 out of 6 Record Sets

	Name
☑	thedevkid.com.
□	thedevkid.com.
□	thedevkid.com.
□	_7193769737db12654862dca057f701e2.thedevkid.com.
□	_7193769737db12654862dca057f701e2.thedevkid.com.thede
□	www.thedevkid.com.

Edit Record Set

Name: thedevkid.com.

Type: A – IPv4 address

Alias: ● Yes ○ No

Alias Target:

You can also type
- CloudFront distr
- Elastic Beanstal
- ELB load balanc
1.elb.amazonaws.
- S3 website endp
- Resource record
Learn More

— S3 website endpoints —
thedevkid.com (s3-website-us-east-1)
— ELB Application load balancers —
No Targets Available
— ELB Classic load balancers —
No Targets Available
— ELB Network load balancers —
No Targets Available
— CloudFront distributions —

Routing Policy

Route 53 responds to queries based only on the values in this record.
Learn More

Evaluate Target Health: ○ Yes ● No

Save Record Set

After some time the records will have propagated and all requests will be redirected to the other domain.

*Note only http requests can be redirected using this technique. S3 website redirection does not support https.

Deleting the Website

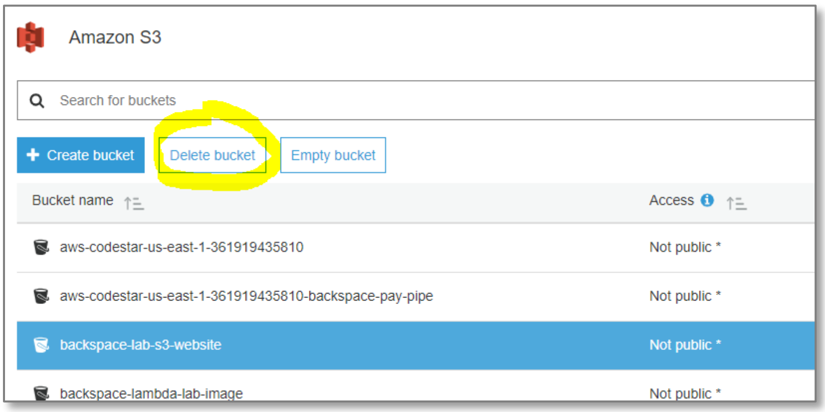
In this section we will show you how to delete all the resources if you no longer need the website.

Delete Bucket

Go to the S3 console

Select the bucket

Click *delete bucket*



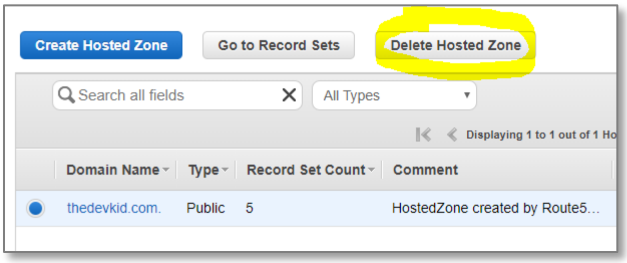
Bucket name	Access
aws-codestar-us-east-1-361919435810	Not public *
aws-codestar-us-east-1-361919435810-backspace-pay-pipe	Not public *
backspace-lab-s3-website	Not public *
backspace-lambda-lab-image	Not public *

Remove Route 53 Hosted Zone

Go to the Route53 console

Select the hosted zone

Click *Delete Hosted Zone*



	Domain Name	Type	Record Set Count	Comment
●	thedevkid.com.	Public	5	HostedZone created by Route5...

Delete CloudFront Distribution

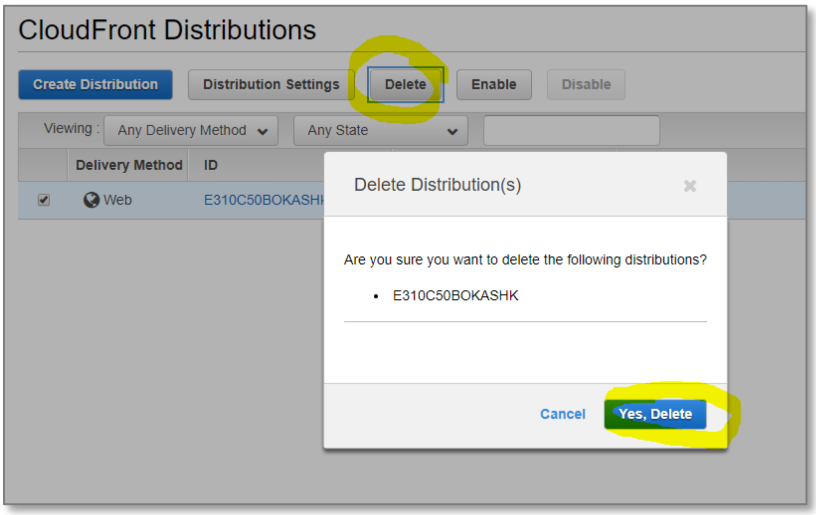
Go to the CloudFront console

Select CloudFront Distribution

Click *Disable*

Wait for status to change to *disabled*

Click *Delete*



Delete Distribution(s)

Are you sure you want to delete the following distributions?

- E310C50BOKASHK