CloudCheckr

Setting Up a Web Server with Amazon Web Services

Todd Bernhard

Product Marketing Director

aws certified
Cloud Practitioner

aws certified
Solutions Architect
Associate

Microsoft CERTIFIED
AZURE FUNDAMENTALS

Google Cloud Certified
G SUITE

CloudCheckr

THE CLOUD MANAGEMENT PLATFORM

AGENDA

- Create a Free AWS account

- Terminology Recap

- Create a Web Server

  - Hard Way

  - Medium Way

  - Easy Way

Create a Free AWS Account

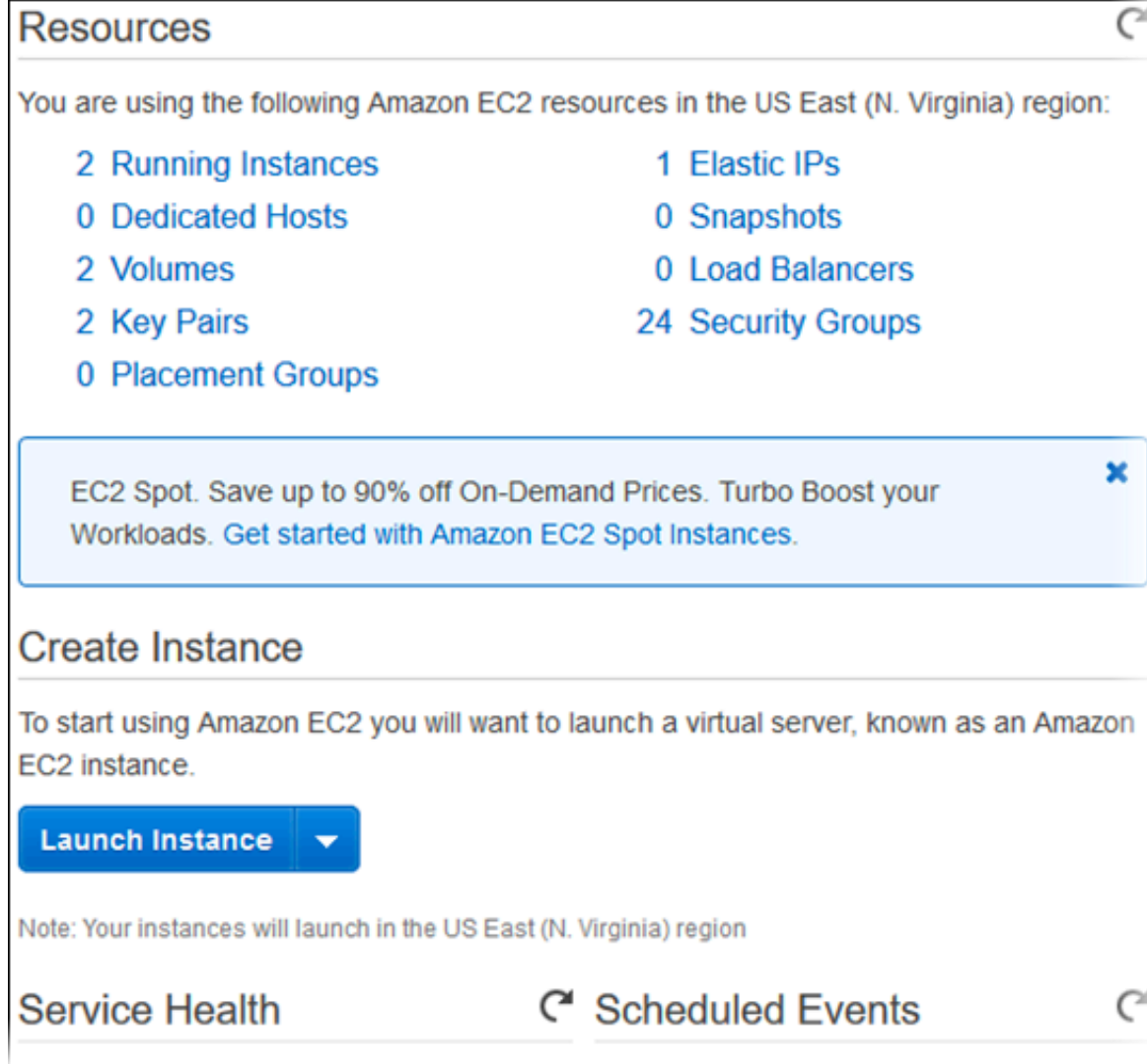- https://aws.amazon.com/

- Free tier indefinitely

- Earn free credits
  - Alexa Skill
  - Trade Shows
  - Surveys
  - Webinars

Terminology: Key Components of a Web Server

- VM = Virtual Machine or EC2 (Elastic Compute Cloud) for AWS

- Availability Zones = AWS/Azure/Google Data Center w/ servers & storage

- Region = Location (city) with one or more AZs connected via high-speed

- Storage = Persistent (remembers your files when server is shut down)

- SSL = Secure Sockets Layer, required for HTTPS. Needs an SSL Certificate.

- IP = Internet Protocol. Each server has an IP address, e.g. 192.9.168.1

- Load Balancer = Traffic Cop to route requests to multiple servers

- DNS = Domain Name Service, translates "dot com" name to IP address

HARD WAY - Server

- https://console.aws.amazon.com/

- Choose EC2

- Select nearby Region / Availability Zone

- Click "Launch Instance" button

- Specify Instance O.S. (Windows, Linux)

  – Amazon Linux AMI (Amazon Machine Image)

- Specify Type & Size

  – t2.nano

Resource: Step 2 from: https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_Tutorials.WebServerDB.CreateWebServer.html

HARD WAY - Network

- Create new VPC = Virtual Private Cloud

  – Logical group of connected resources (servers, database, storage, etc.)

- Create new Subnet

  – Create internal IP address "bank" for private network of connected devices

- Auto-assign a Public IP address, to enable access from the Internet

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	ⓘ	1	Launch into Auto Scaling Group ⓘ
Purchasing option	ⓘ	☐ Request Spot instances	
Network	ⓘ	vpc- ████████	tutorial-vpc	⟳ Create new VPC
Subnet	ⓘ	subnet- ████████	Tutorial public	us-wes	Create new subnet
		249 IP Addresses available	
Auto-assign Public IP	ⓘ	Enable	

HARD WAY – Storage and Tags

- Storage: Accept defaults

  - EBS = Enhanced Block Storage (virtual hard disk drive for perpetual storage.

    - HDD = mechanical Hard Disk Drive or SSD = Solid State Disk for better performance

- Click Add Tags

  - Enter **Name** for **Key** and enter **tutorial-web-server** for **Value**.

Step 5: Add Tags
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
A copy of a tag can be applied to volumes, instances or both.
Tags will be applied to all instances and volumes. Learn more about tagging your Amazon EC2 resources.

Key	(127 characters maximum)	Value	(255 characters maximum)	Instances ⓘ	Volumes ⓘ	
Name		tutorial-web-server		☑	☑	✖

Add another tag   (Up to 50 tags maximum)

Cancel   Previous   **Review and Launch**   Next: Configure Security Group

HARD WAY – Security Group

- Virtual Firewall for Inbound and Outbound Rules

- Select "Configure Security Group"

- Create group, make note of name, and enable these rules:

  – HTTP

  – HTTPS (optional)

  – SSH

- Review & Launch

HARD WAY – Key Pair

- Create a new Key Pair, with a chosen name

- Download Key Pair somewhere safe

- Can only be downloaded once

- Required for administration

HARD WAY – Enable Web Server

- Connect to your Linux Instance

- Make sure the instance is up-to-date

  ```
  sudo yum update –y
  ```

- Install Apache Web Server (optionally with PHP sand mySQL support)

  ```
  sudo yum install -y httpd24 php56 php56-mysqlnd
  ```

- Start the Apache Web Server and add web page

  ```
  sudo service httpd start

  cd htdocs

  echo "hello world" > index.html
  ```

MEDIUM WAY – Use Lightsail (or Elastic Beanstalk)

- Go to AWS Console

  aws.amazon.com

- Click on Lightsail

- Click Create Instance
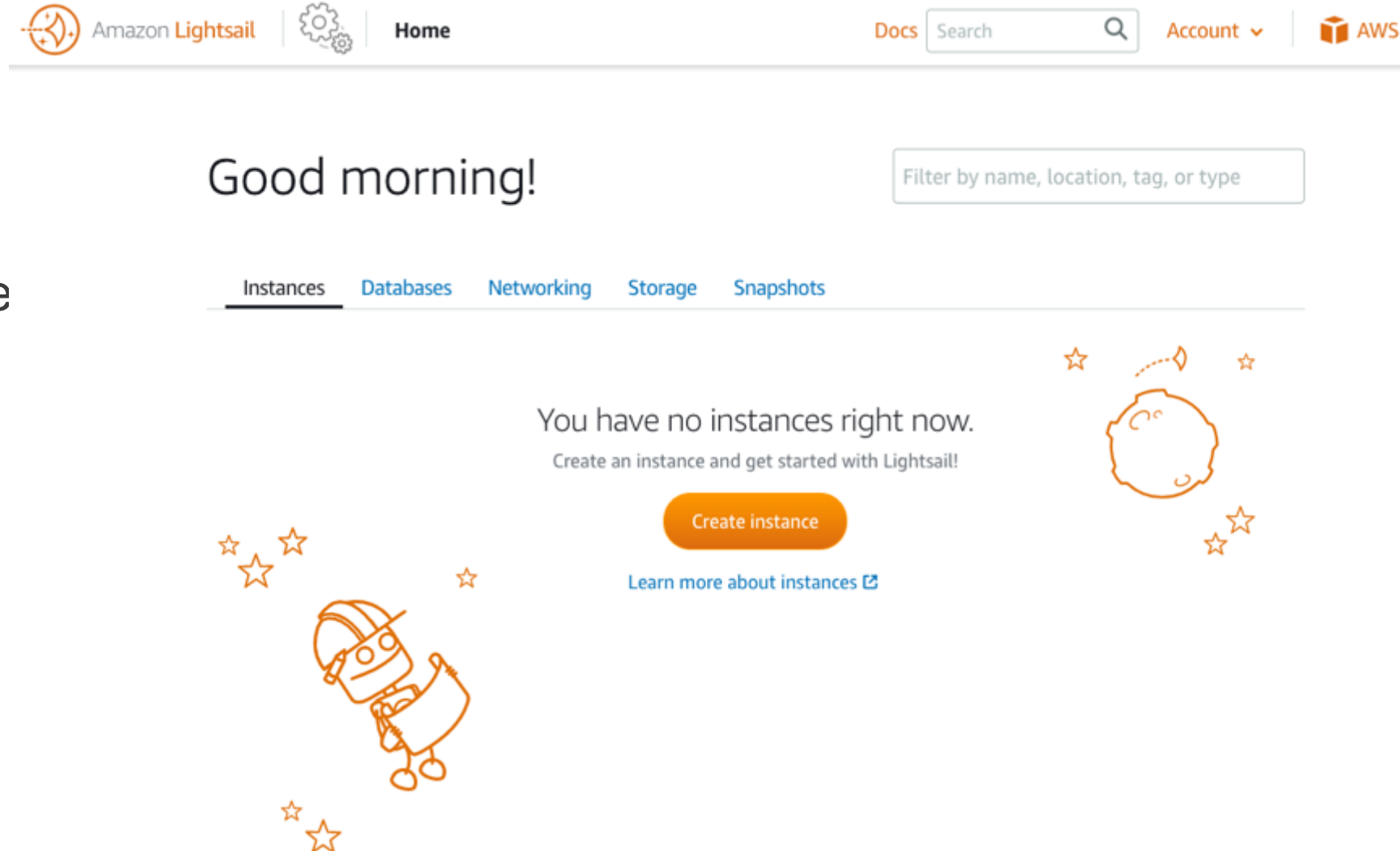
MEDIUM WAY – Lightsail Instance

- Select Options
  - Virginia, Zone A
  - Linux/Unix
  - LAMP (PHP 7)

Instance location ?

You are creating this instance in **Virginia, Zone A** (us-east-1a)
Change AWS Region and Availability Zone

Pick your instance image ?

Select a platform

Linux/Unix
20 blueprints

Microsoft Windows
3 blueprints

Select a blueprint

Apps + OS   OS Only

WordPress
5.1.1-2

WordPress Multisite
5.1.1-2

LAMP (PHP 7)
7.1.28

Node.js
12.1.0

Joomla
3.9.5

Magento
2.3.1-1

MEAN
4.0.9

Drupal
8.6.15

MEDIUM WAY – Lightsail Pricing

- Choose cheapest rate

  – First Month = FREE!

  – Remember to turn it off after tutorial or within 30 days

Sort by:	**Price per month**	Memory	Processing	Storage	Transfer

First month free!

	$3.50 USD	$5 USD	$10 USD	$20 USD	$40 USD	Price per month
	512 MB	1 GB	2 GB	4 GB	8 GB	Memory
	1 vCPU	1 vCPU	1 vCPU	2 vCPUs	2 vCPUs	Processing
	20 GB SSD	40 GB SSD	60 GB SSD	80 GB SSD	160 GB SSD	Storage
	1 TB	2 TB	3 TB	4 TB	5 TB	Transfer

MEDIUM WAY – Lightsail Identification

- Name your instance

- Optionally apply tags

- Click Create Instance

- Wait, while instance is pending

  – a.k.a. Spinning up

Identify your instance

Your Lightsail resources must have unique names.

LAMP_PHP_7-1   × 1

TAGGING OPTIONS

Use tags to filter and organize your resources in the Lightsail console. Key-value tags can also be used to organize your billing, and to control access to your resources.
Learn more about tagging. ⊡

Key-only tags ?

+ Add key-only tags

Key-value tags ?

+ Add key-value tag

Key   Value   ×
name   →   tutorial

Create instance

MEDIUM WAY – Lightsail Access

- Click on tiny command shell icon

  ```
  cd htdocs
  ```

  ```
  echo "hello world" > index.html
  ```

MEDIUM WAY – Lightsail Test

- Click on instance title

- Make note of Public IP

- Enter Public IP into a web browser address bar

- When you see the Hello World page, select File -> Save As and save it as index.html on your computer for use in an upcoming task

EASY WAY – S3 Bucket Web Server Method

- For Static Web Sites Only

- Go to AWS Console

  `aws.amazon.com`

- Click on S3 under Storage

- Click Create bucket

EASY WAY – Create S3 Bucket

- Enter a unique name and make note of it

- Specify Region
  - Click Next
  - Ignore optional details
  - Click Next
  - UNCHECK "Block all public access"
  - Click next

- Click Create Bucket

EASY WAY – Enable Static Web Hosting on S3 Bucket

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 ✕

Endpoint : http://approchester-test-sept3.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

⬤ Disabled

Cancel | Save

- Click on Bucket Name and select Properties

- Click "Static website hosting"

- Click "Use this bucket to host a website"

- Type index.html for Index document

- Click Save

EASY WAY – Upload Web Page(s) to S3 Bucket

- Click Get Started or Upload

EASY WAY – Upload Web Page(s) to S3 Bucket

- Drag and Drop web site docs including the index.html file saved earlier

- Be sure to grant public read access

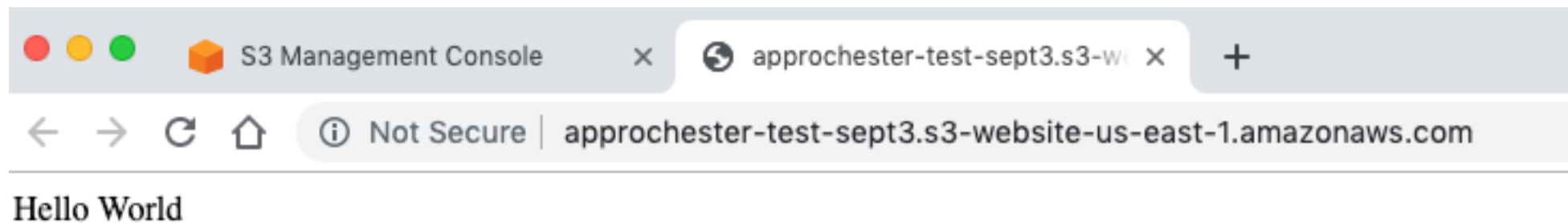- Accept default storage class, Upload
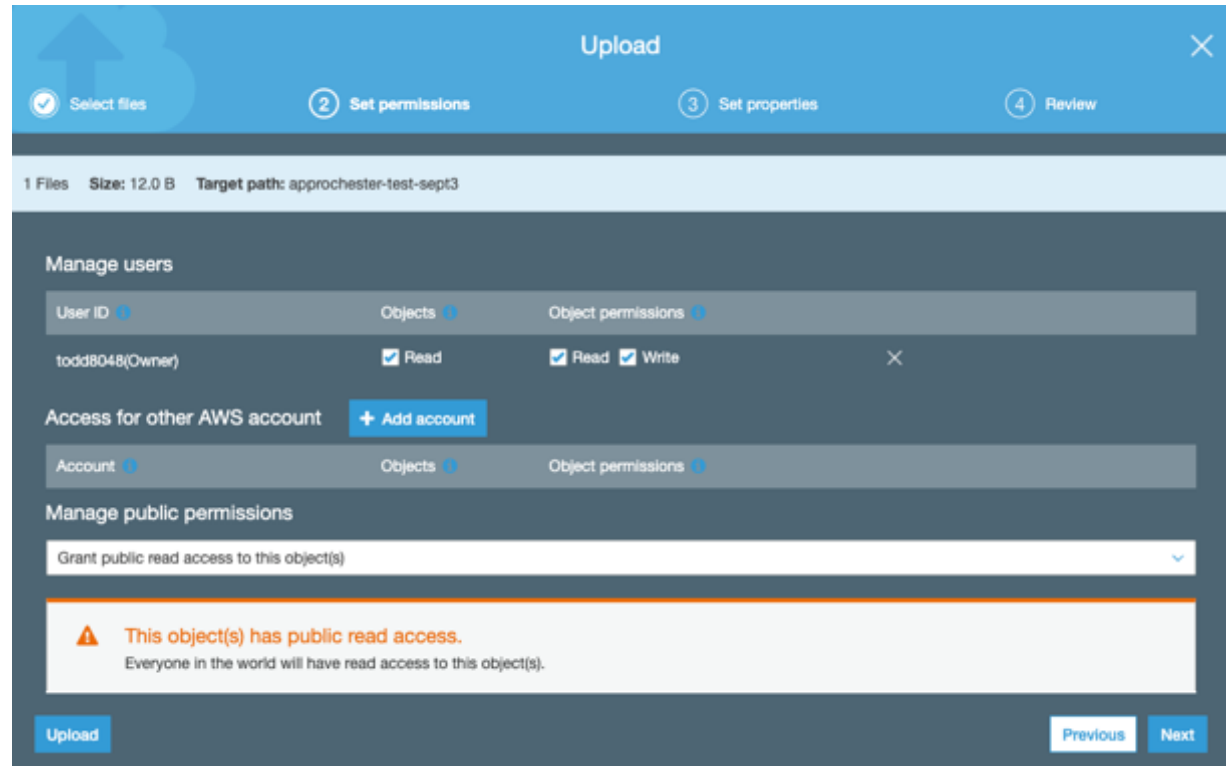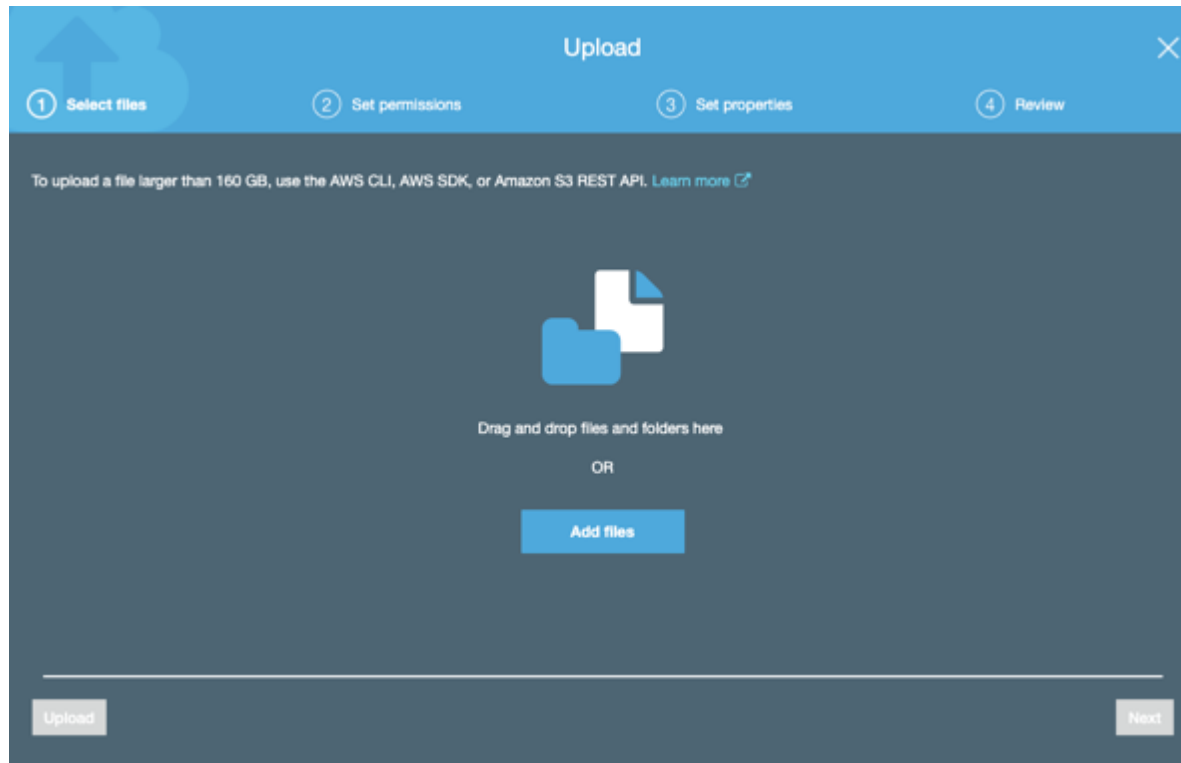
EASY WAY – Access Web Site on S3 Bucket

- Upload index.html file to S3 Bucket

- Open browser and enter:

  http://*<bucket-name>*.s3-website.*<AWS-region>*.amazonaws.com

- For example:

  http://approchester-test-sept3.s3-website-us-east-1.amazonaws.com

Hello World

Redirect Domain Name to IP Address

DNS management

If you already have a domain name, such as example.com, Route 53 can tell the Domain Name System (DNS) where on the Internet to find web servers, mail servers, and other resources for your domain.
Learn More

Get started now

- Go to AWS Console

  aws.amazon.com

- Click on Route 53, under Networking

- Can use AWS for Domain Registration (extra $$$!)

- Click on DNS Management: Get Started Now

- Click Create Hosted Zone

- Remainder for self-paced lab, if desired

THANK YOU

Q & A