

ETHNUS CODEMITHRA AWS CERTIFICATION

1. Login screen:

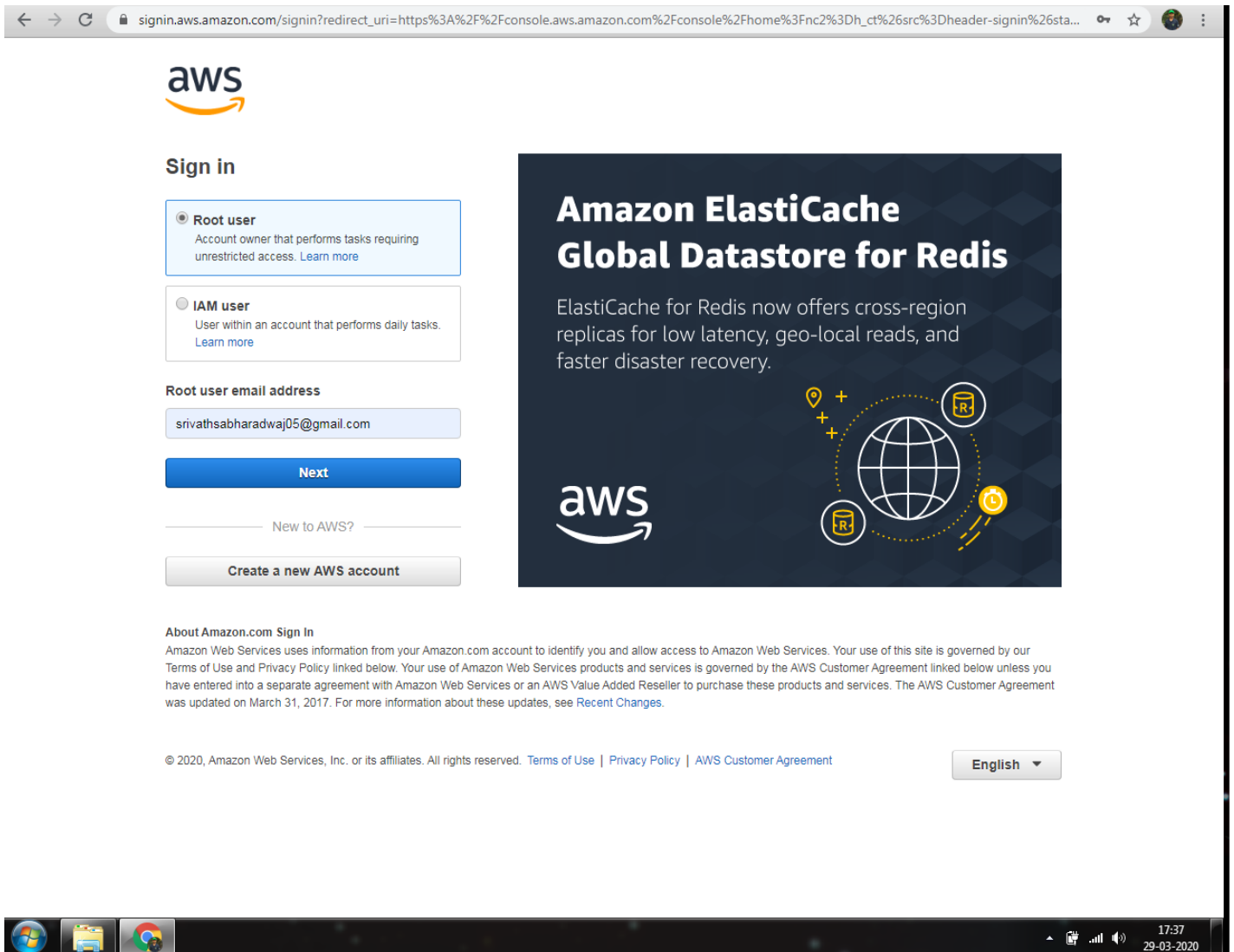


Fig 1. Login screen

2. EC2 Dashboard:

The screenshot displays the AWS Management Console for the EC2 service in the us-east-2 region. The interface includes a left-hand navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, and NETWORK & SECURITY. A central panel shows the 'Resources' section with a table of current EC2 resource usage. To the right, there are sections for 'Account attributes' and 'Explore AWS' with links to various services and documentation. A 'Launch instance' button is prominently displayed in the lower central area.

Resources

You are using the following Amazon EC2 resources in the US East (Ohio) Region:	
Running instances	1
Elastic IPs	0
Dedicated Hosts	0
Snapshots	0
Volumes	1
Load balancers	0
Key pairs	1
Security groups	3
Placement groups	0

Account attributes

- Supported platforms
- VPC
- Default VPC
- Console experiments
- Settings

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

[Launch instance](#)

Note: Your instances will launch in the US East (Ohio) Region

Fig 2. EC2 dashboard

2(a). AMI Selection:

The screenshot shows the AWS Management Console interface for selecting an Amazon Machine Image (AMI). The page is titled "Step 1: Choose an Amazon Machine Image (AMI)" and includes a "Cancel and Exit" link. A search bar is provided for finding AMIs by search term. The "Quick Start" section lists four AMIs:

- Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-0e01ce4ee18447327 (64-bit x86) / ami-03201f374ab66a26e (64-bit Arm). Select button. Options: 64-bit (x86), 64-bit (Arm).
- Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type** - ami-01b01bbd08f24c7a8. Select button. Option: 64-bit (x86).
- Red Hat Enterprise Linux 8 (HVM), SSD Volume Type** - ami-0520e698dd500b1d1 (64-bit x86) / ami-0099847d600887c9f (64-bit Arm). Select button. Options: 64-bit (x86), 64-bit (Arm).
- SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type** - ami-04c5bab51cc146925 (64-bit x86) / ami-02e73902018018171 (64-bit Arm). Select button. Options: 64-bit (x86), 64-bit (Arm).

Each AMI entry also includes details about the root device type, virtualization type, and ENA support.

Fig 2(a). Choosing an AMI

2(b). Instance type selection:

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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Fig 2(b). Choosing an instance type

2(c). Adding Storage:

The screenshot displays the AWS Management Console interface for the 'Add Storage' step of the EC2 Launch Wizard. The breadcrumb navigation at the top shows the following steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage (highlighted), 5. Add Tags, 6. Configure Security Group, and 7. Review. The main heading is 'Step 4: Add Storage', followed by a descriptive paragraph about attaching EBS and instance store volumes. Below this is a table with columns: Volume Type, Device, Snapshot, Size (GiB), Volume Type, IOPS, Throughput (MB/s), Delete on Termination, and Encryption. The table contains one row for the 'Root' volume, which is a 'General Purpose SSD (gp2)' of size 8 GiB, with IOPS of 100 / 3000 and throughput of N/A. The 'Delete on Termination' checkbox is checked, and the encryption is set to 'Not Encrypt'. An 'Add New Volume' button is located below the table. A light blue informational box states: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.' At the bottom right, there are navigation buttons: 'Cancel', 'Previous', 'Review and Launch' (in blue), and 'Next: Add Tags'. The footer includes a 'Feedback' link, 'English (US)' language selection, copyright information for 2008-2020, and links to 'Privacy Policy' and 'Terms of Use'. The system tray at the very bottom shows icons for Windows, File Explorer, Google Chrome, and a taskbar with the time 20:40 and date 28-03-2020.

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0f54692056aaa4c20	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

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20:40 28-03-2020

Fig 2(c). Adding storage

2(d). Security Group:

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a **new** security group ☐ Select an **existing** security group

Security group name:

Description:

Type <small>i</small>	Protocol <small>i</small>	Port Range <small>i</small>	Source <small>i</small>	Description <small>i</small>
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

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20:42 28-03-2020

Fig 2(d). Configuring security group

2(e). Key Pair Download:

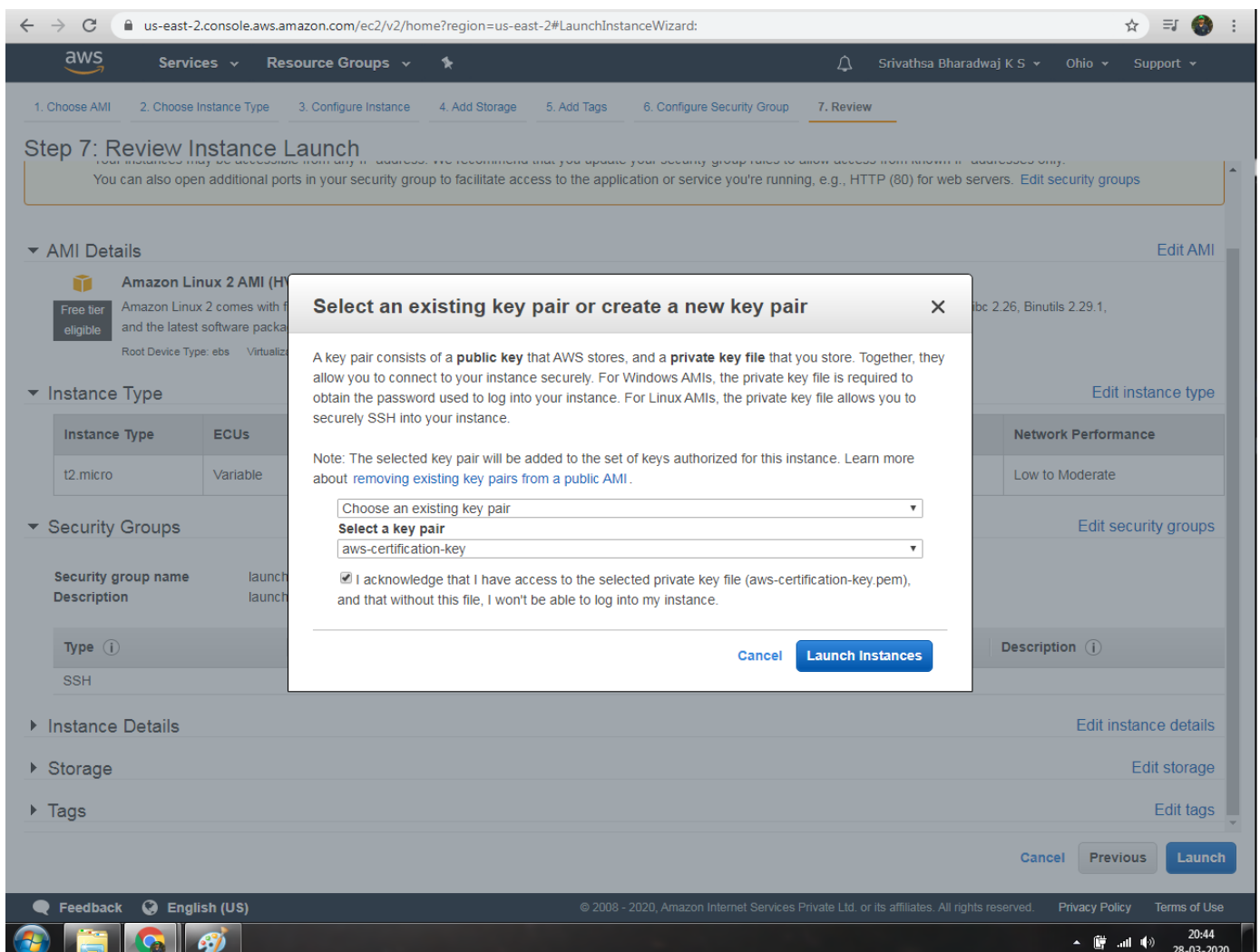


Fig 2(e). Key pair download

2(f). Conversion of .pem to .ppk:

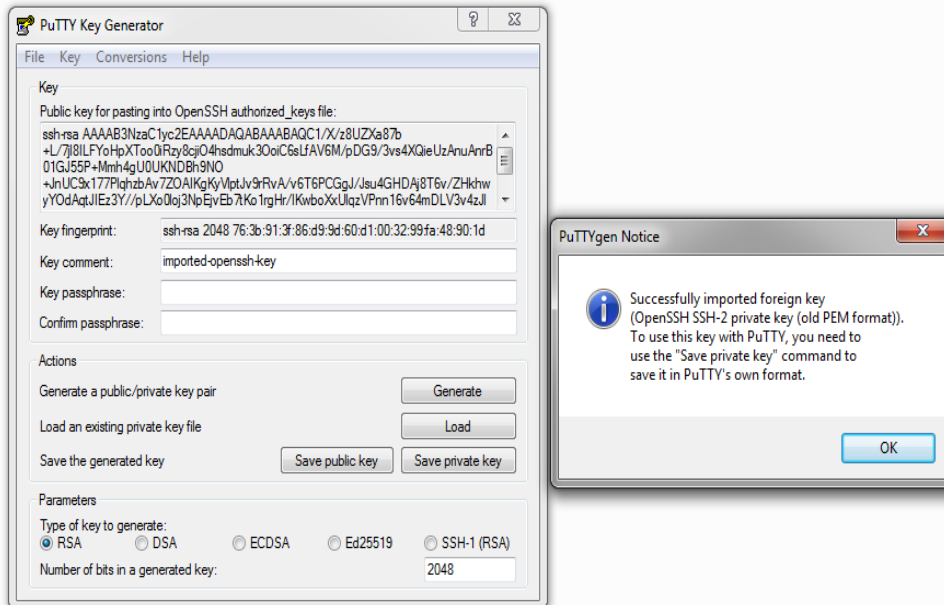


Fig 2(f). PuTTYgen conversion from pem to ppk

2(g). EC2 Login Screen:

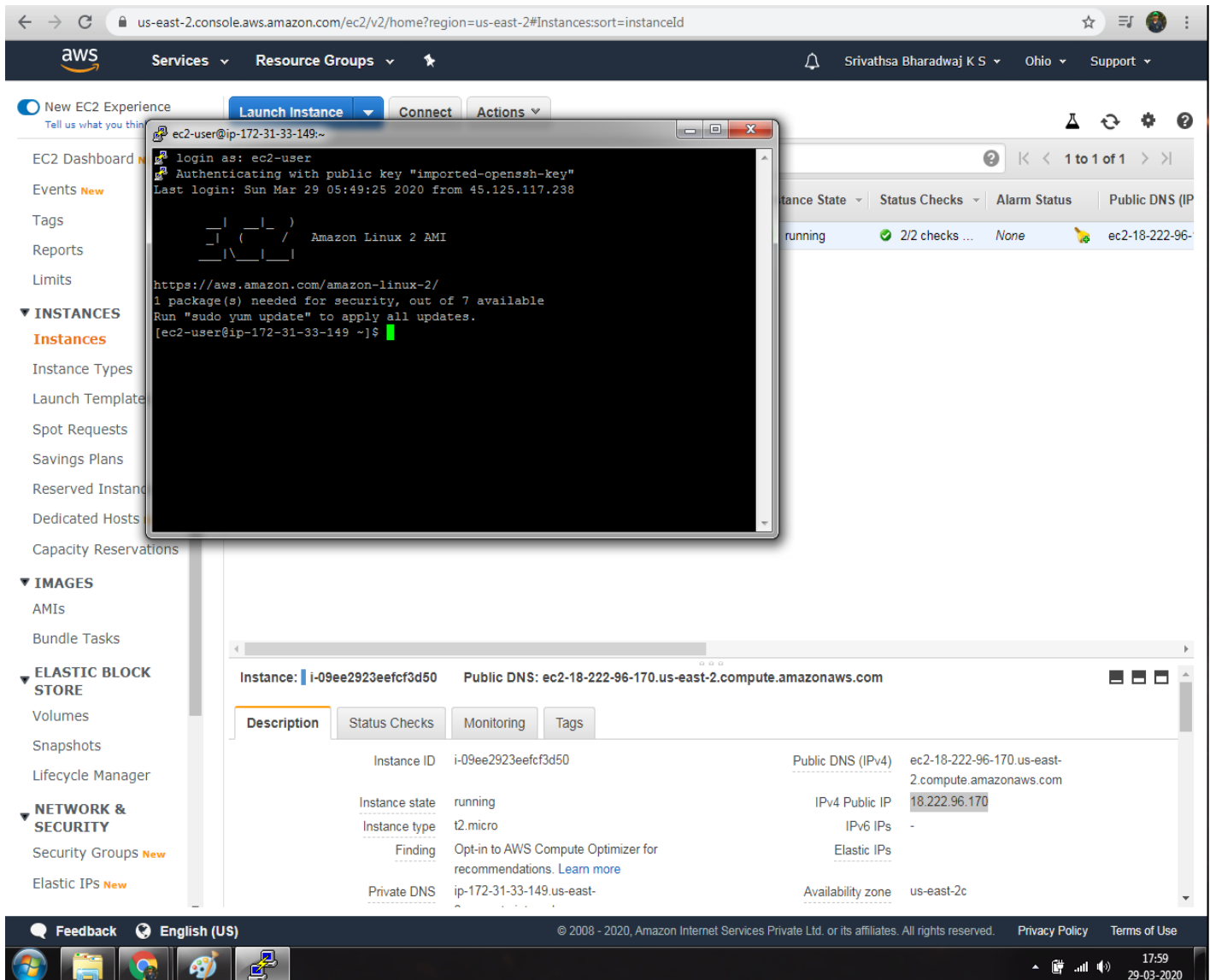


Fig 2(g). Logged in EC2 black screen

3. S3 Dashboard:

The screenshot displays the Amazon S3 console interface. At the top, a navigation bar includes the AWS logo, 'Services', 'Resource Groups', and a user profile 'Srivathsa Bharadwaj K S'. A blue banner at the top right contains a message about the console design update. The left sidebar lists navigation options: 'Buckets', 'Batch operations', 'Access analyzer for S3', 'Block public access (account settings)', and 'Feature spotlight'. The main content area, titled 'Amazon S3', shows a 'Buckets (1)' section with buttons for 'Copy ARN', 'Empty', 'Delete', and 'Create bucket'. Below these is a search bar and a table with one bucket entry.

	Name	Region	Access	Bucket created
<input type="radio"/>	aws-face-bucket	US East (Ohio) us-east-2	Objects can be public	2020-03-27T16:41:27.000Z

The bottom of the screen shows a Windows taskbar with icons for Feedback, English (US), and system status (17:46, 29-03-2020).

Fig 3. S3 dashboard

3(a). Bucket creation:

The screenshot displays the AWS S3 console's 'Create bucket' page. The browser address bar shows the URL: `s3.console.aws.amazon.com/s3/bucket/create?region=us-east-2`. The AWS logo and navigation menu are at the top. The 'Bucket name' field contains 'aws-face-bucket', with a note stating: 'Bucket name must be unique and must not contain spaces or uppercase letters. See rules for bucket naming'. The 'Region' dropdown is set to 'US East (Ohio) us-east-2'.

Bucket settings for Block Public Access

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 this bucket and its 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 this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

- ☒ **Block all public access**
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.
 - ☒ **Block public access to buckets and objects granted through *new* access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
 - ☒ **Block public access to buckets and objects granted through *any* access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
 - ☒ **Block public access to buckets and objects granted through *new* public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
 - ☒ **Block public and cross-account access to buckets and objects through *any* public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

► **Advanced settings**

Cancel **Create bucket**

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16:41 27-03-2020

Fig 3(a). Creating a bucket

3(b). Uploading an Object:

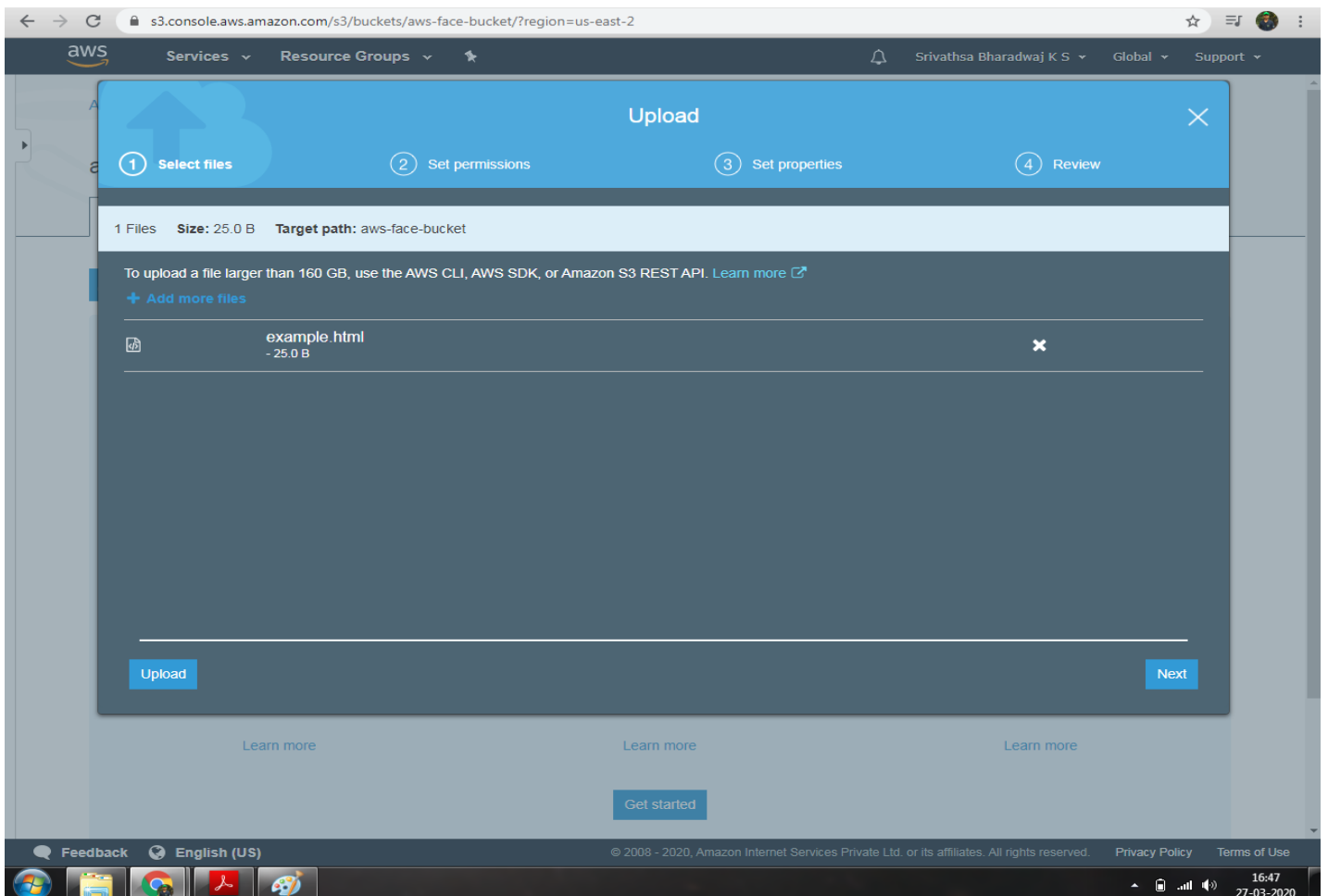


Fig 3(b). Uploading an object

3(c). Enabling Static Website:

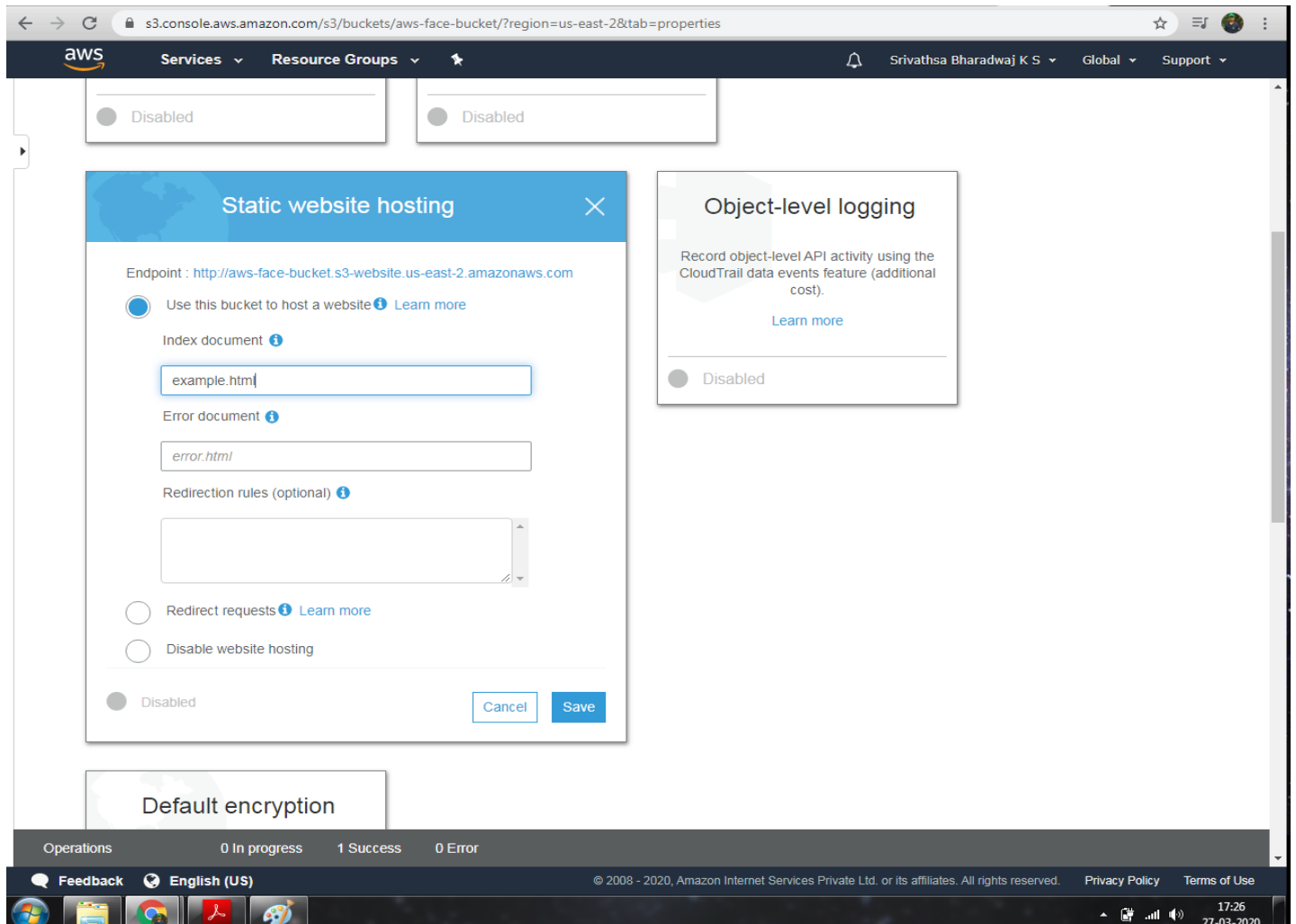


Fig 3(c). Enabling static website

3(d). Making the Object Public:

The screenshot shows the AWS S3 console interface for a bucket named 'aws-face-bucket'. The 'Permissions' tab is selected, and the 'Block public access' settings are displayed. A green notification bar at the top indicates 'Public access settings updated successfully'. The settings are as follows:

- Block all public access:** Off
- Block public access to buckets and objects granted through *new* access control lists (ACLs):** Off
- Block public access to buckets and objects granted through *any* access control lists (ACLs):** Off
- Block public access to buckets and objects granted through *new* public bucket or access point policies:** Off
- Block public and cross-account access to buckets and objects through *any* public bucket or access point policies:** Off

The bottom of the console shows the 'Operations' section with 0 In progress, 1 Success, and 0 Error. The footer includes the Amazon logo, 'English (US)', copyright information, and the date '27-03-2020'.

Fig 3(d). Making the object public

3(e). Checking S3 Link on the Browser:

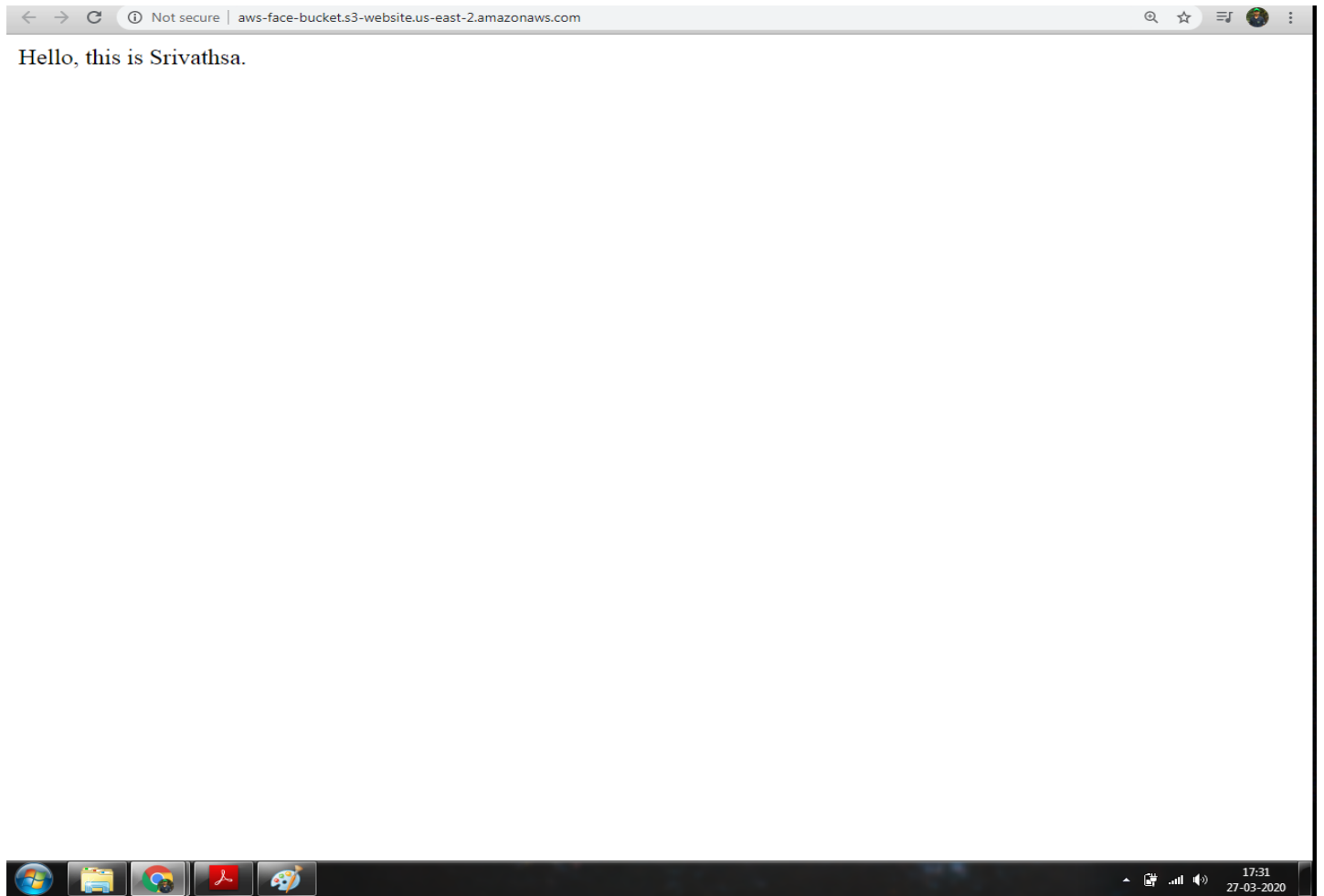


Fig 3(e). Checking the S3 link on the browser

4. Rekognition Dashboard:

The screenshot shows the Amazon Rekognition dashboard within the AWS Management Console. The browser address bar displays `us-east-2.console.aws.amazon.com/rekognition/home?region=us-east-2#/`. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and a user profile for 'Srivathsa Bharadwaj K S' in the 'Ohio' region. A left-hand sidebar lists navigation options: 'Amazon Rekognition', 'Custom Labels' (with a 'New' tag), 'Demos', 'Metrics', and 'Additional Resources'. The main content area features a large hero section with the title 'Amazon Rekognition', the subtitle 'Deep learning-based visual analysis service', and the tagline 'Search, verify, and organize millions of images and videos'. It includes 'Try Demo' and 'Download SDKs' buttons. Below this, three key features are highlighted: 'Easily Integrate Powerful Visual Analysis into Your App' (with a stack of layers icon), 'Continuously Learning' (with a circuit icon), and 'Integrated with AWS Services' (with a puzzle piece icon). Each feature includes a brief description of its capabilities. The footer contains a 'Feedback' button, 'English (US)' language selector, copyright information for 2008-2020, and links to 'Privacy Policy' and 'Terms of Use'. The system tray at the bottom shows the taskbar with application icons and a clock displaying 17:48 on 29-03-2020.

us-east-2.console.aws.amazon.com/rekognition/home?region=us-east-2#/
aws Services Resource Groups
Srivathsa Bharadwaj K S Ohio Support

Amazon Rekognition

Custom Labels ^{New}
Use Custom Labels

Demos
Object and scene detection
Image moderation
Facial analysis
Celebrity recognition
Face comparison
Text in image

Video Demos
Video analysis

Metrics
Metrics

Additional Resources
[Getting started guide](#)
[Download SDKs](#)
[Developer resources](#)
[Pricing](#)
[FAQ](#)
[Forum](#)

Amazon Rekognition

Deep learning-based visual analysis service
Search, verify, and organize millions of images and videos

[Try Demo](#)
[Download SDKs](#)

Easily Integrate Powerful Visual Analysis into Your App

You don't need computer vision or deep learning expertise to take advantage of Rekognition's high quality image and video analysis for your web, mobile, enterprise or device applications. Amazon Rekognition removes the complexity of building visual recognition capabilities by making powerful and accurate analysis available with easy to use APIs.

Continuously Learning

Amazon Rekognition is designed to use deep learning technology to analyze billions of images and videos daily. It is continuously learning as we add support for new capabilities and learn from more and more data.

Integrated with AWS Services

Amazon Rekognition is designed to work seamlessly with other AWS services. Rekognition integrates directly with Amazon S3 and AWS Lambda so you can build scalable, affordable, and reliable visual analysis applications. You can start analyzing images and videos stored in Amazon S3 without moving any data. You can also run real-time video analysis on streams coming from Amazon Kinesis Video Streams.

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17:48 29-03-2020

Fig 4. Rekognition dashboard

4(a). Face Detect:

The screenshot displays the AWS Rekognition console's 'Facial analysis' demo. The browser address bar shows the URL: `us-east-2.console.aws.amazon.com/rekognition/home?region=us-east-2#/face-detection`. The AWS logo and navigation tabs (Services, Resource Groups) are visible at the top. The left sidebar lists various features, with 'Facial analysis' highlighted. The main content area features a large image of a family with three faces detected and outlined. Below this, there are options to 'Choose a sample image' or 'Use your own image'. The 'Results' section on the right provides a detailed analysis of the detected faces.

Attribute	Confidence Score
looks like a face	99.9 %
appears to be male	99.4 %
age range	22 - 34 years old
smiling	99.9 %
appears to be happy	99.7 %
not wearing glasses	99.6 %

Fig 4(a). Face detect

4(b). Face Compare:

The screenshot displays the AWS Rekognition console's 'Face comparison' page. The interface is divided into several sections:

- Header:** Includes the AWS logo, navigation links for 'Services' and 'Resource Groups', and user information for 'Srivathsa Bharadwaj K S' in the 'Ohio' region.
- Left Sidebar:** A navigation menu for 'Amazon Rekognition' with options like 'Custom Labels', 'Demos', 'Object and scene detection', 'Image moderation', 'Facial analysis', 'Celebrity recognition', 'Face comparison' (highlighted), 'Text in image', 'Video Demos', 'Video analysis', 'Metrics', 'Additional Resources', 'Download SDKs', 'Developer resources', 'Pricing', 'FAQ', and 'Forum'.
- Main Content Area:**
 - Face comparison:** A heading followed by the instruction 'Compare faces to see how closely they match based on a similarity percentage.'
 - Reference face:** A large image of a young girl. Below it, a section titled 'Choose a sample image' shows two smaller thumbnails of the same girl. Further down, a 'Use your own image' section includes an 'Upload' button, a 'Go' button for 'Use image URL', and a note: 'Image must be .jpeg or .png format and no larger than 5MB. Your image isn't stored.'
 - Comparison faces:** A large image of three girls. Below it, a 'Choose a sample image' section shows two thumbnails of the same group. The 'Use your own image' section is identical to the reference face section.
- Results Panel (Right):**
 - Done with the demo?** A link to 'Learn more'.
 - Results:** A section showing three comparisons. The first shows two identical images of the girl with an equals sign and a 'Similarity' of '99.9 %'. The second and third comparisons show different images with a not-equals sign, indicating a low similarity score.
 - Request** and **Response** sections are visible but empty.

The footer contains a 'Feedback' link, 'English (US)' language selection, copyright information '© 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.', 'Privacy Policy', 'Terms of Use', and a system clock showing '18:13' on '29-03-2020'.

Fig 4(b). Face compare

4(c). Celebrity Recognition:

The screenshot displays the AWS Rekognition console's 'Celebrity recognition' page. The left sidebar contains a navigation menu with options like 'Amazon Rekognition', 'Custom Labels', 'Demos', 'Object and scene detection', 'Image moderation', 'Facial analysis', 'Celebrity recognition' (highlighted), 'Face comparison', 'Text in image', 'Video Demos', 'Video analysis', 'Metrics', and 'Additional Resources'. The main content area is titled 'Celebrity recognition' and includes a sub-header 'Rekognition automatically recognizes celebrities in images and provides confidence scores.' Below this, a large image of a man's face is shown with a blue bounding box. To the right, a 'Results' section displays a small image of the same man, the name 'Andy Jassy', and a 'Match confidence' of '100 %'. Below the main image, there are two sections: 'Choose a sample image' with two small image thumbnails, and 'Use your own image' which includes an 'Upload' button, a 'Go' button for a URL, and a text input field. The bottom of the page features a footer with 'Feedback', 'English (US)', copyright information, 'Privacy Policy', and 'Terms of Use'. The system tray at the very bottom shows the date '29-03-2020' and time '18:14'.

Fig 4(c). Celebrity recognition

4(d). Text in Image:

The screenshot shows the AWS Rekognition console interface for the 'Text in image' demo. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information. The left sidebar lists various features: Amazon Rekognition, Custom Labels, Demos, Object and scene detection, Image moderation, Facial analysis, Celebrity recognition, Face comparison, Text in image (highlighted), Video Demos, Video analysis, Metrics, and Additional Resources. The main content area is titled 'Text in image' and includes a description: 'Rekognition automatically detects and extracts text in your images. [Learn More](#)'. Below this is a large image of a coffee cup with a smiley face and the text 'IT'S MONDAY but keep Smiling'. The text is highlighted with blue boxes. Below the image are two options: 'Choose a sample image' (with a small image of the coffee cup) and 'Use your own image' (with a button to 'Upload' or 'drag and drop' and a field for 'Use image URL' with a 'Go' button). The right sidebar shows the 'Results' section, which is currently empty, and a 'Request' section with a 'Response' field. The bottom of the console shows a footer with 'Feedback', 'English (US)', copyright information, and links to 'Privacy Policy' and 'Terms of Use'.

Fig 4(d). Text in image

5. EC2 and S3:

5(a). AWS-SDK Installation:

```
ec2-user@ip-172-31-33-149:/var/www/html/face
=====
Installing:
php                                x86_64                                7.2.28-1.amzn2                                amzn2extra-php7.2                                2.9 M
Transaction Summary
=====
Install 1 Package

Total download size: 2.9 M
Installed size: 9.1 M
Is this ok [y/d/N]: y
Downloading packages:
php-7.2.28-1.amzn2.x86_64.rpm                                | 2.9 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : php-7.2.28-1.amzn2.x86_64                                1/1
  Verifying  : php-7.2.28-1.amzn2.x86_64                                1/1
Installed:
php.x86_64 0:7.2.28-1.amzn2

Complete!
[ec2-user@ip-172-31-33-149 ~]$ curl -s https://getcomposer.org/installer | php
All settings correct for using Composer
The installation directory "/" is not writable
[ec2-user@ip-172-31-33-149 ~]$ cd
[ec2-user@ip-172-31-33-149 ~]$ curl -s https://getcomposer.org/installer | php
All settings correct for using Composer
Downloading...

Composer (version 1.10.1) successfully installed to: /home/ec2-user/composer.phar
Use it: php composer.phar

[ec2-user@ip-172-31-33-149 ~]$ cd /var/www/html
[ec2-user@ip-172-31-33-149 html]$ cd face
[ec2-user@ip-172-31-33-149 face]$ sudo php -d memory_limit=-1 ~/composer.phar require aws/aws-sdk-php
Using version ^3.133 for aws/aws-sdk-php
./composer.json has been updated
Loading composer repositories with package information
Updating dependencies (including require-dev)
Package operations: 7 installs, 1 update, 0 removals
  - Installing symfony/polyfill-mbstring (v1.15.0): Downloading (100%)
  - Installing mtdowling/jmespath.php (2.5.0): Downloading (100%)
  - Installing guzzlehttp/promises (v1.3.1): Downloading (100%)
  - Installing ralouphie/getallheaders (3.0.3): Downloading (100%)
  - Installing psr/http-message (1.0.1): Downloading (100%)
  - Installing guzzlehttp/psr7 (1.6.1): Downloading (100%)
  - Installing guzzlehttp/guzzle (6.5.2): Downloading (100%)
  - Updating aws/aws-sdk-php (2.8.31 => 3.133.46): Downloading (100%)
guzzlehttp/psr7 suggests installing zendframework/zend-httpdierrunner (Emit PSR-7 responses)
guzzlehttp/guzzle suggests installing psr/log (Required for using the Log middleware)
guzzlehttp/guzzle suggests installing ext-intl (Required for Internationalized Domain Name (IDN) support)
Package guzzle/guzzle is abandoned, you should avoid using it. Use guzzlehttp/guzzle instead.
Writing lock file
Generating autoload files
1 package you are using is looking for funding.
Use the 'composer fund' command to find out more!
[ec2-user@ip-172-31-33-149 face]$
```

Fig 5(a). Installing aws-sdk

5(b). PHP Installation:

The screenshot displays the AWS Management Console interface. A terminal window titled 'ec2-user@ip-172-31-33-149:~' is open, showing the progress of PHP installation. The terminal output includes verification steps for various components and a list of installed dependencies. The installation is marked as 'Complete!'.

Terminal Output:

```
Verifying : mailcap-2.1.41-2.amzn2.noarch 10/13
Verifying : httpd-filesystem-2.4.41-1.amzn2.0.1.noarch 11/13
Verifying : httpd-tools-2.4.41-1.amzn2.0.1.x86_64 12/13
Verifying : php-common-5.4.16-46.amzn2.0.2.x86_64 13/13

Installed:
  php.x86_64 0:5.4.16-46.amzn2.0.2

Dependency Installed:
  apr.x86_64 0:1.6.3-5.amzn2.0.2
  apr-util.x86_64 0:1.6.1-5.amzn2.0.2
  apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
  generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd.x86_64 0:2.4.41-1.amzn2.0.1
  httpd-filesystem.noarch 0:2.4.41-1.amzn2.0.1
  httpd-tools.x86_64 0:2.4.41-1.amzn2.0.1
  libzip010-compat.x86_64 0:0.10.1-9.amzn2.0.5
  mailcap.noarch 0:2.1.41-2.amzn2
  mod_http2.x86_64 0:1.15.3-2.amzn2
  php-cli.x86_64 0:5.4.16-46.amzn2.0.2
  php-common.x86_64 0:5.4.16-46.amzn2.0.2

Complete!
[ec2-user@ip-172-31-33-149 ~]$
```

The background shows the AWS console with the 'Launch Instance' button highlighted. The instance details for 'i-09ee2923eefcf3d50' are visible, showing the Public DNS as 'ec2-3-21-166-51.us-east-2.compute.amazonaws.com'.

Fig 5(b). Installing php


```

ec2-user@ip-172-31-33-149:/var/www/html/face
<?php
/*
install php - sudo yum install php
curl -oS https://getcomposer.org/installer | php
cd /var/www/html
sudo mkdir face
cd face
sudo php -d memory_limit=-1 ~/composer.phar require aws/aws-sdk-php

in case if you get memory error -
sudo /bin/dd if=/dev/zero of=/var/swap.1 bs=1M count=1024
sudo /sbin/mkswap /var/swap.1
sudo /sbin/swapon /var/swap.1

sudo wget https://i.pinimg.com/originals/b9/7e/a3/b97ea33b5842c7894b804923c6c05580.jpg
sudo mv b97ea33b5842c7894b804923c6c05580.jpg sample.jpg

*/
error_reporting(0);

require_once(__DIR__ . '/vendor/autoload.php');

use Aws\S3\S3Client;
use Aws\Rekognition\RekognitionClient;

$bucket = 'aws-face-bucket';
$keyname = 'sample.jpg';

$s3 = S3Client::factory([
    'profile'      => 'default',
    'region'       => 'us-east-2',
    'version'      => '2006-03-01',
    'signature'    => 'v4'
]);

try {
    // Upload data.
    $result = $s3->putObject([
        'Bucket'      => $bucket,
        'Key'         => $keyname,
        'SourceFile'  => __DIR__ . "/" . $keyname,
        'ACL'         => 'public-read'
    ]);

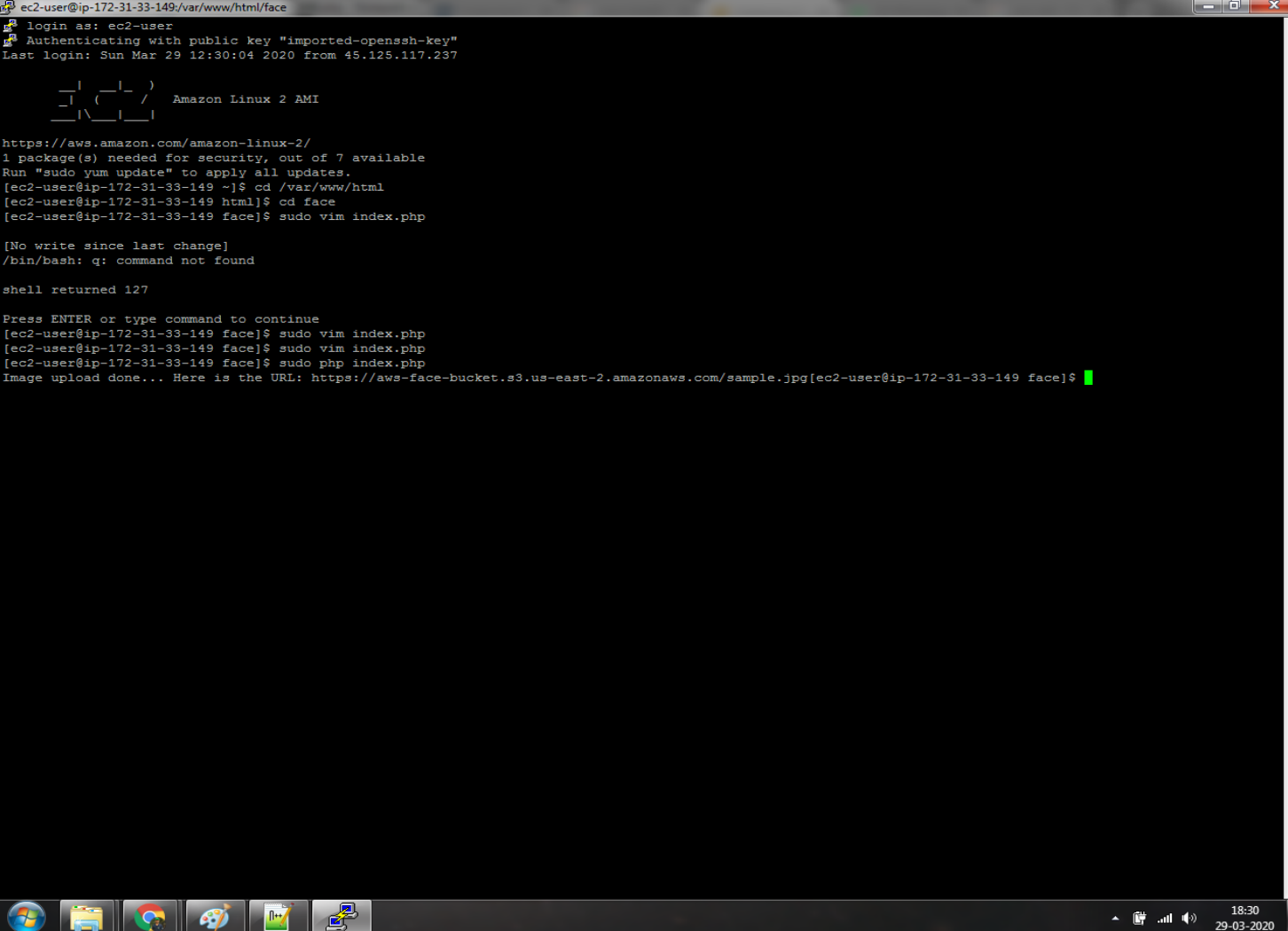
    // Print the URL to the object.
    $imageUrl = $result['ObjectURL'];
    if($imageUrl) {
        echo "Image upload done... Here is the URL: " . $imageUrl;
    }
} catch (Exception $e) {
    echo $e->getMessage() . PHP_EOL;
}
}
}

"index.php" 55L, 1227C
55,1 All
18:29
29-03-2020

```

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5(d). Upload Success:



```
ec2-user@ip-172-31-33-149:/var/www/html/face
login as: ec2-user
Authenticating with public key "imported-openssh-key"
Last login: Sun Mar 29 12:30:04 2020 from 45.125.117.237

 _ _ _ _ _
| | | | |
|_|_|_|_|_| Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 7 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-33-149 ~]$ cd /var/www/html
[ec2-user@ip-172-31-33-149 html]$ cd face
[ec2-user@ip-172-31-33-149 face]$ sudo vim index.php

[No write since last change]
/bin/bash: q: command not found

shell returned 127

Press ENTER or type command to continue
[ec2-user@ip-172-31-33-149 face]$ sudo vim index.php
[ec2-user@ip-172-31-33-149 face]$ sudo vim index.php
[ec2-user@ip-172-31-33-149 face]$ sudo php index.php
Image upload done... Here is the URL: https://aws-face-bucket.s3.us-east-2.amazonaws.com/sample.jpg[ec2-user@ip-172-31-33-149 face]$
```

Fig 5(d). Upload success

6. EC2 and Rekognition:

6(a). Face Detect Success:

```
ec2-user@ip-172-31-33-149:~$ cd /var/www/html/face
Install 1 Package

Total download size: 2.9 M
Installed size: 9.1 M
Is this ok [y/d/N]: y
Downloading packages:
php-7.2.28-1.amzn2.x86_64.rpm | 2.9 MB 00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : php-7.2.28-1.amzn2.x86_64 1/1
  Verifying  : php-7.2.28-1.amzn2.x86_64 1/1

Installed:
  php.x86_64 0:7.2.28-1.amzn2

Complete!
[ec2-user@ip-172-31-33-149 ~]$ curl -sS https://getcomposer.org/installer | php
All settings correct for using Composer
The installation directory "/" is not writable
[ec2-user@ip-172-31-33-149 ~]$ cd
[ec2-user@ip-172-31-33-149 ~]$ curl -sS https://getcomposer.org/installer | php
All settings correct for using Composer
Downloading...

Composer (version 1.10.1) successfully installed to: /home/ec2-user/composer.phar
Use it: php composer.phar

[ec2-user@ip-172-31-33-149 ~]$ cd /var/www/html
[ec2-user@ip-172-31-33-149 html]$ cd face
[ec2-user@ip-172-31-33-149 face]$ sudo php -d memory_limit=-1 ~/composer.phar require aws/aws-sdk-php
Using version ^3.133 for aws/aws-sdk-php
./composer.json has been updated
Loading composer repositories with package information
Updating dependencies (including require-dev)
Package operations: 7 installs, 1 update, 0 removals
  - Installing symfony/polyfill-mbstring (v1.15.0): Downloading (100%)
  - Installing mtdowling/jmespath.php (2.5.0): Downloading (100%)
  - Installing guzzlehttp/promises (v1.3.1): Downloading (100%)
  - Installing ralouphie/getallheaders (3.0.3): Downloading (100%)
  - Installing psr/http-message (1.0.1): Downloading (100%)
  - Installing guzzlehttp/psr7 (1.6.1): Downloading (100%)
  - Installing guzzlehttp/guzzle (6.5.2): Downloading (100%)
  - Updating aws/aws-sdk-php (2.8.31 => 3.133.46): Downloading (100%)
guzzlehttp/psr7 suggests installing zendframework/zend-httphandler (Emit PSR-7 responses)
guzzlehttp/guzzle suggests installing psr/log (Required for using the Log middleware)
guzzlehttp/guzzle suggests installing ext-intl (Required for Internationalized Domain Name (IDN) support)
Package guzzle/guzzle is abandoned, you should avoid using it. Use guzzlehttp/guzzle instead.
Writing lock file
Generating autoload files
1 package you are using is looking for funding.
Use the 'composer fund' command to find out more!
[ec2-user@ip-172-31-33-149 face]$ ls
composer.json  composer.lock  index.php  sample.jpg  vendor
[ec2-user@ip-172-31-33-149 face]$ sudo vim index.php
[ec2-user@ip-172-31-33-149 face]$ sudo php index.php
Image upload done... Here is the URL: https://aws-face-bucket.s3.us-east-2.amazonaws.com/sample.jpg
Totally there are 9 faces[ec2-user@ip-172-31-33-149 face]$
```

Fig 6(a). Face detect success