

Table1: Evaluating the cloud services (Turco, 2021)

### **SAAS Cloud service model recommendation for Global entertainment:**

I would recommend “SAAS” (Software as a service) as the best fit for Global entertainment since it won’t have more sensitive data of customers, which won’t affect much to subscribers of Global entertainment (GE), so to reduce costs and maintenance, it can rely on SaaS model.

SaaS can set aside both time and money. For some SaaS applications, the foundation is essentially as direct as having an organization affiliation and getting a sign in. Also, support liabilities are moved from your IT office to the genuine merchant. This kills extra work hours and individual time that might have been vital to updating customary programming. Finally, SaaS applications will frequently have a more mediocre conviction to assimilate data which suggests quicker victory across your staff. (Turco, 2021)

Updates can require extended time and cash with the regular programming establishment process. Surprisingly more dreadful, performance inconsistencies between individuals in the workforce can cause compatibility issues and wasted time. With SaaS notwithstanding, customers can sign on to currently updated services. (Turco, 2021)

Another unprecedented part of SaaS is that the pay-more only as costs arise emerge model gives surprising versatility and decisions. Since the item is worked with from a distance by a merchant, changing your usage plan is essential and ought to be conceivable without early notice. Likewise, online use grants client’s access to the item from any area with web capacities. (Turco, 2021)

### **Task 3:**

#### **Hadoop Framework:**

Hadoop is a structure written in java that utilises dispersed capacity and equal handling to store and manage enormous information. It is the software generally used by information analysts to deal with extensive data, and its market size keeps on expanding. (Hari, 2022)

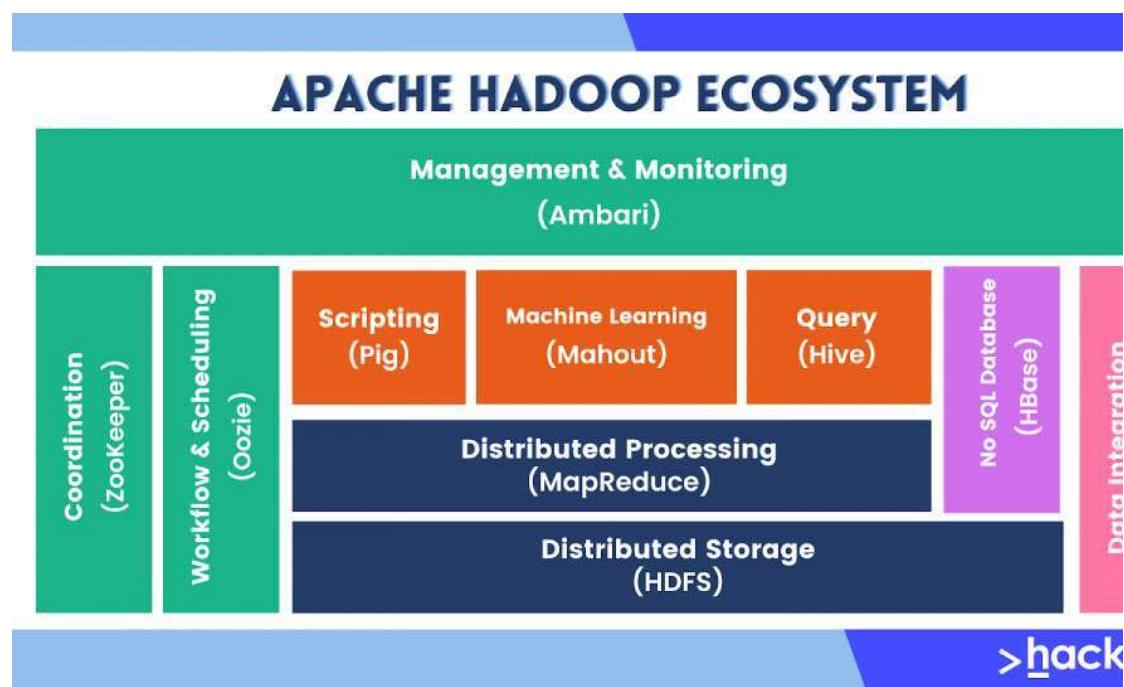


Fig 6: Apache Hadoop Ecosystem. Source (Hari, 2022)

### Few important components of Hadoop: (Hive - introduction 2022)

**MapReduce** is a product model for dealing with a ton of coordinated, semi-coordinated, and unstructured data on colossal lots of creation gear. (Hive - presentation 2022)

**HDFS:** Hadoop Distributed File System is a piece of the Hadoop structure used to store and process the datasets. It gives an inadequacy merciful report framework to run on thing hardware. (Hive - presentation 2022)

The Hadoop framework contains different sub-projects (contraptions) like Sqoop, Pig, and Hive to help Hadoop modules.

**Sqoop:** It is used to import and item data to and from HDFS and RDBMS.

**Pig:** It is a procedural language stage used to encourage content for MapReduce errands.

**Hive:** It is a stage used to encourage SQL type items to do MapReduce errands.

### Challenges of using Hadoop:

**MapReduce programming is certainly not a decent counterpart for all issues:** It's excellent for direct data solicitations and problems that can be isolated into autonomous units, yet it's not proficient for iterative and intelligent logical errands. MapReduce is document escalated. Since the hubs don't converse through sorts and rearrange, iterative calculations require various guide mix/sort-lessen stages to finish. This makes multiple records between MapReduce stages and is ineffective for advanced analytic processing. (SAS, 2022)

**Information security:** One more test revolves around the divided information security issues. Consistently securing data can be a challenge; Nevertheless, new devices and innovations are surfacing. The Kerberos verification treaty is an incredible advance toward making Hadoop conditions secure. (SAS, 2022)

**There's a broadly acknowledged talent gap:** It tends to be hard to track down passage level software engineers with adequate Java abilities to be helpful with MapReduce. That is one explanation dispersion suppliers are hustling to put social (SQL) innovation on top of Hadoop. Observing developers with SQL abilities more than MapReduce skills is more straightforward. Also, the Hadoop organization appears to be part artistry and part science, requiring low-level information on working frameworks, equipment, and Hadoop kernel settings. (SAS, 2022)

**Undeniable information management and governance:** Hadoop doesn't have simple to-utilise, full-include devices for information the administrators, information refining, governance, and metadata. Notably missing are devices for information quality and normalization. (SAS, 2022)

### Handling Risk management and mitigating the Security risks of big data for Global Entertainments (GE):

Risk management is recognizing and surveying the prioritization of issues.

In terms of big data analytics, risk management limits screens and facilitates the likelihood of disappointment or losing basic application information. Superior risk management will lead Global Entertainment to a better architecture of a system and better data management.

Hadoop has a high chance of information robbery (because of the absence of safety

calculations fused in Hadoop) because the high measure of information is gotten to by an expanded number of clients, and to keep up with and deal with the quality information, Global Entertainments need a system to secure the data to avoid system failure and data theft.

Risk Management Lifecycles and Activities

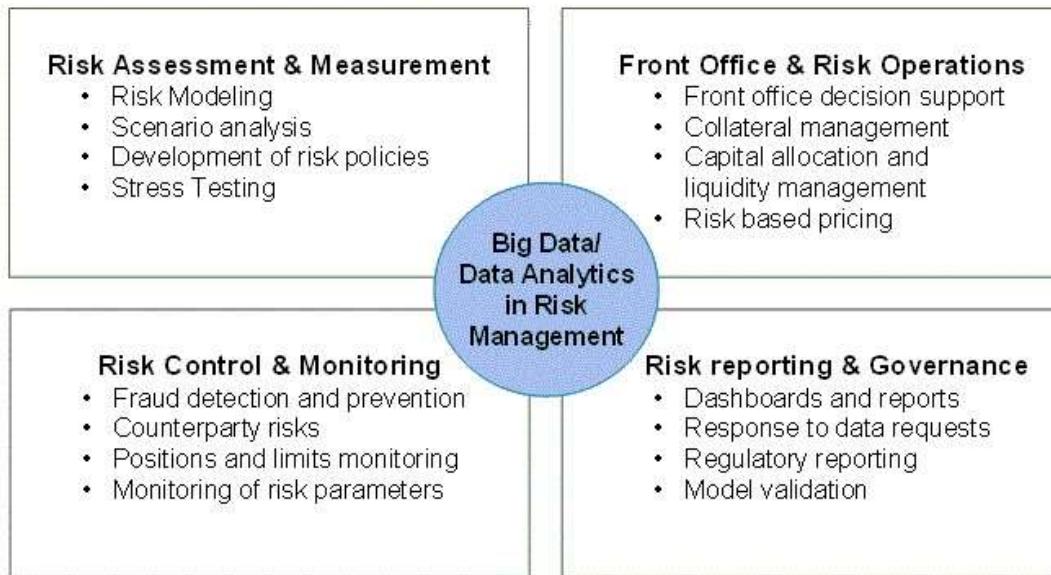


Fig 7: Risk management lifecycle and activities. Source (Krishnakumar, 2015)

#### Customary methods in Hadoop to secure: (Krishnakumar, 2015)

- Kerberos (very much like utilized for Network security): a conventional strategy is likewise carried out in Apache Hadoop.
- Apache Knox is utilized for border security.
- ESS (Enterprise-scale security) is utilized for getting the Apache Hadoop structure.
- Argus (a result of Apache Foundation) is used for checking and dealing with the structure.

To wrap things up, existing safety actions like web firewalls, logging, checking, and reviewing plans for information and setting up the board.

**Track information roots to help consistence and review conditions.** This step is frequently neglected as a backend noting the issue, yet GE must catch this information from the beginning. It may be a burdensome and tedious interaction to reflectively string together logs to follow sources, changes, and information's final location. It will help GE team to improve on the revealing system, empower the consistence groups to envision the whole information pipeline/information stream so they can see, in one view, sources changes, joins, and the last result area of the entire application. (kim, 2016)

**Guarantee that encryption incorporates access control:** When an encryption plan is picked, it ought to be feasible with the affiliation's entry control advancement. If not, clients with

different authorisations will not have the appropriate, specific permission to access sensitive data in the Hadoop environment that they require. (Aggarwal, 2021)

**Screen, identify and resolve issues** - Indeed, even the best security models will be viewed as accepting without the ability ought to sense resistance issues and thought or regular security violations and promptly fix them. Affiliations need to guarantee that the best work on checking and distinguishing proof cycles is set up. (Aggarwal, 2021)

#### Task 4:

#### Infrastructure diagram of Global Entertainment GE data migration:

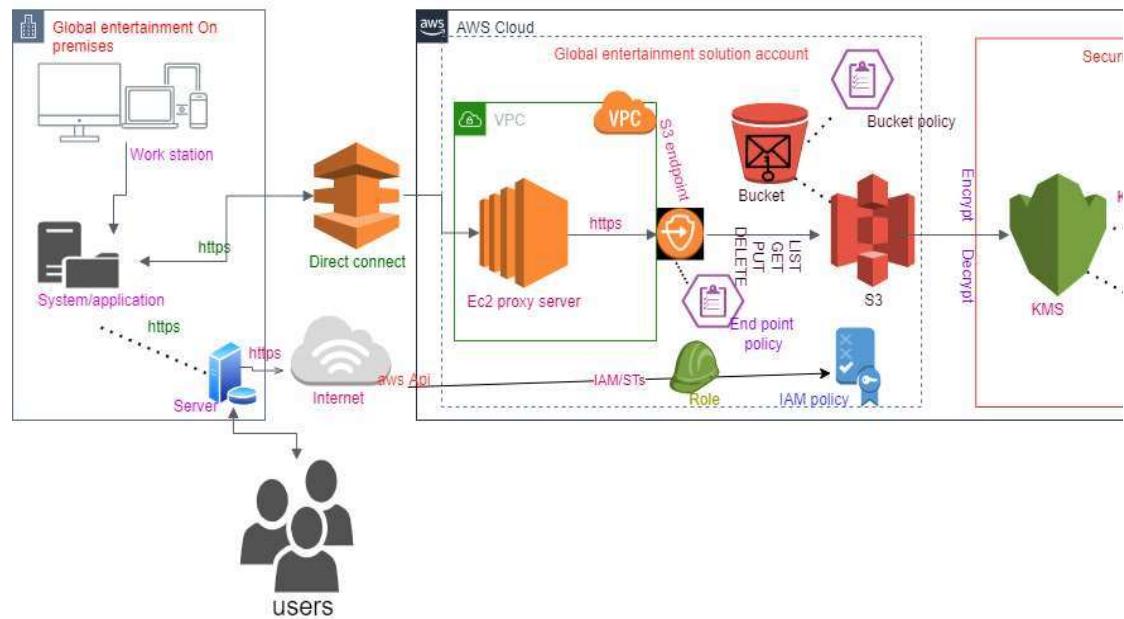


Diagram1: Data migrating from Global entertainment to Aws cloud. (Created by author with the help of draw.io)

#### Section B:

#### TASK 1 & TASK 2: Configure Steps to AWS:



## Sign up for AWS

### Root user email address

Used for account recovery and some administrative functions

### AWS account name

Choose a name for your account. You can change this name in your account settings after you sign up.

**Verify email address**

OR

**Sign in to an existing AWS account**

Fig 8. Go to the Amazon AWS website and create a free account.



## Sign in

### Root user

Account owner that performs tasks requiring unrestricted access. [Learn more](#)

### IAM user

User within an account that performs daily tasks. [Learn more](#)

### Root user email address

harshavardhan3128@hotmail.com

**Next**

By continuing, you agree to the [AWS Customer Agreement](#) or other agreement for AWS services, and the [Privacy Notice](#). This site uses essential cookies. See our [Cookie Notice](#) for more information.

Fig 9. After creating an account, log in with your details to the root user.



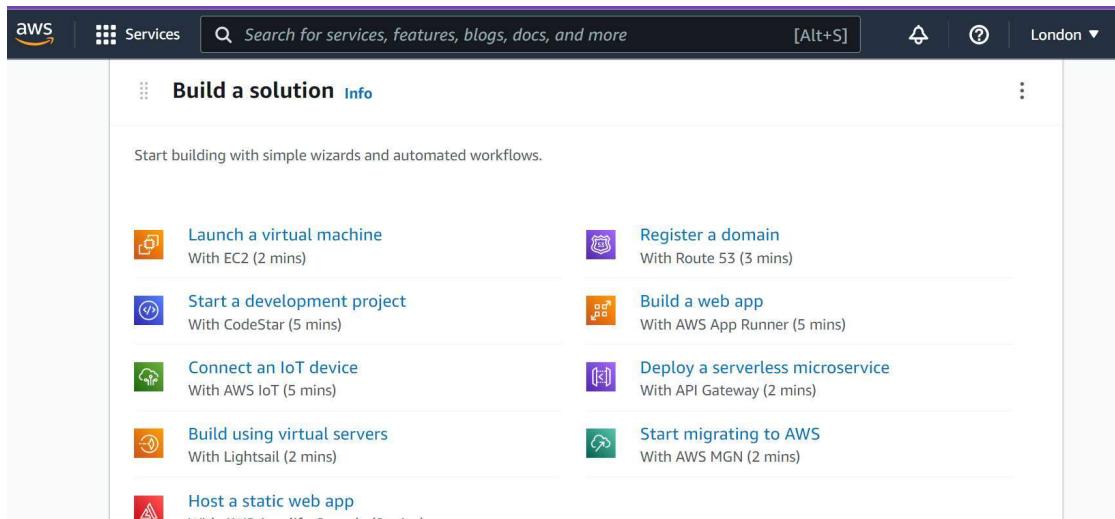


Fig 10. Login and Launch Ec2 to create a virtual machine.

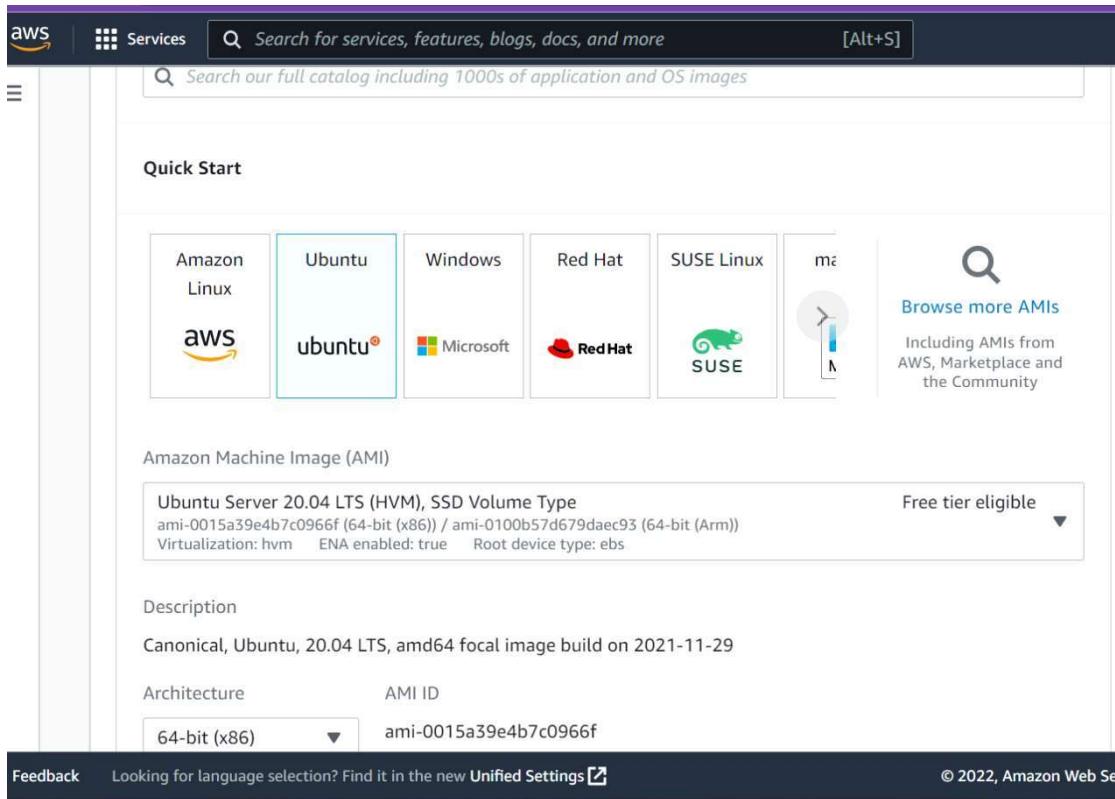


Fig 11. Select amazon machine image (Ubuntu) among those icons.

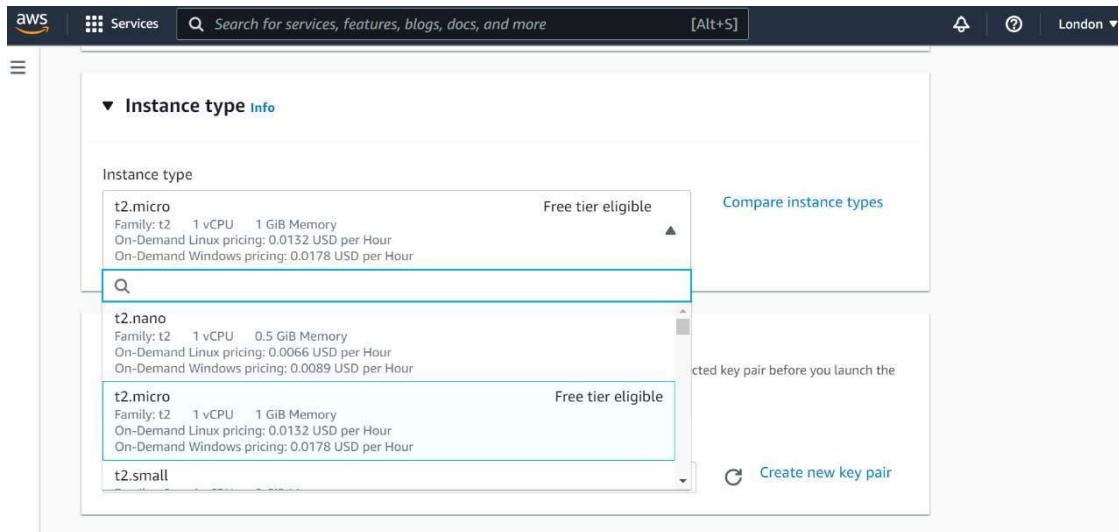


Fig 12. Scroll down and select an instance type.

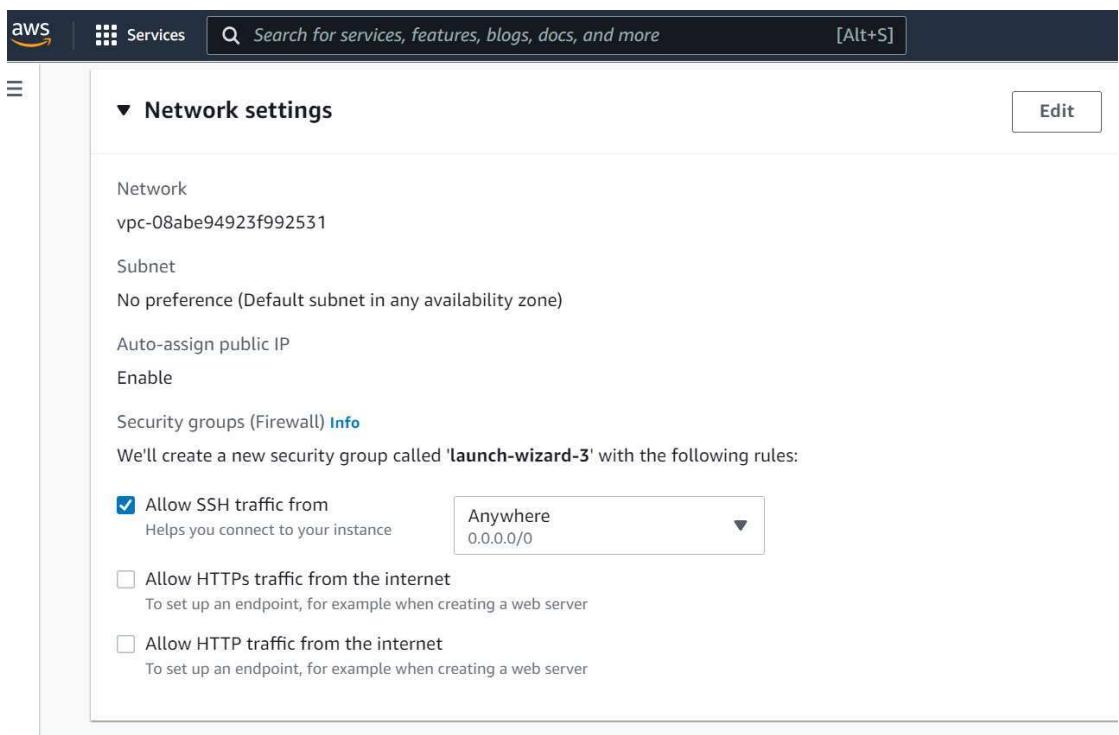


Fig 13. Configure network Settings.

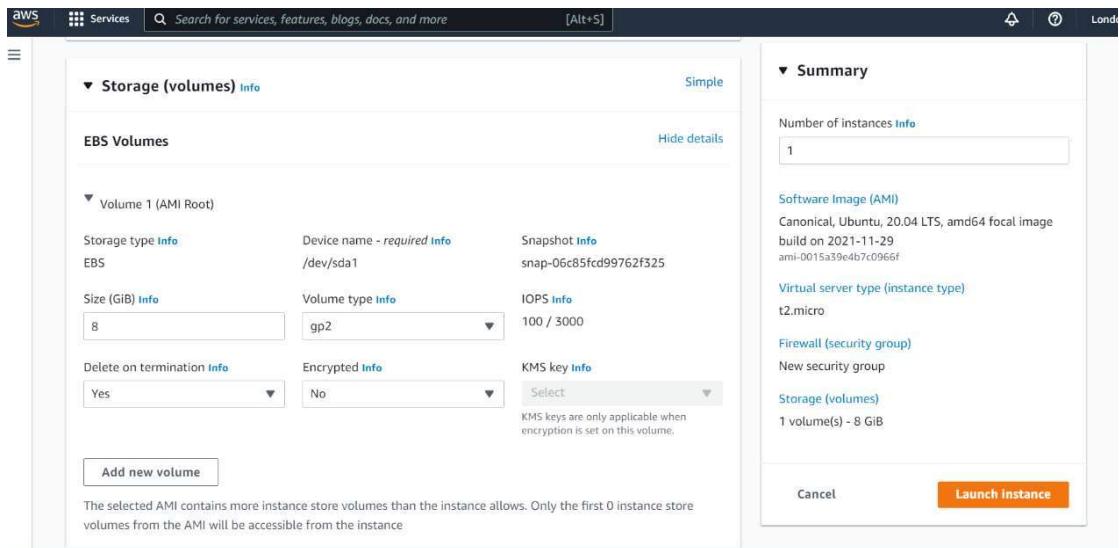


Fig 14. Configure storage settings

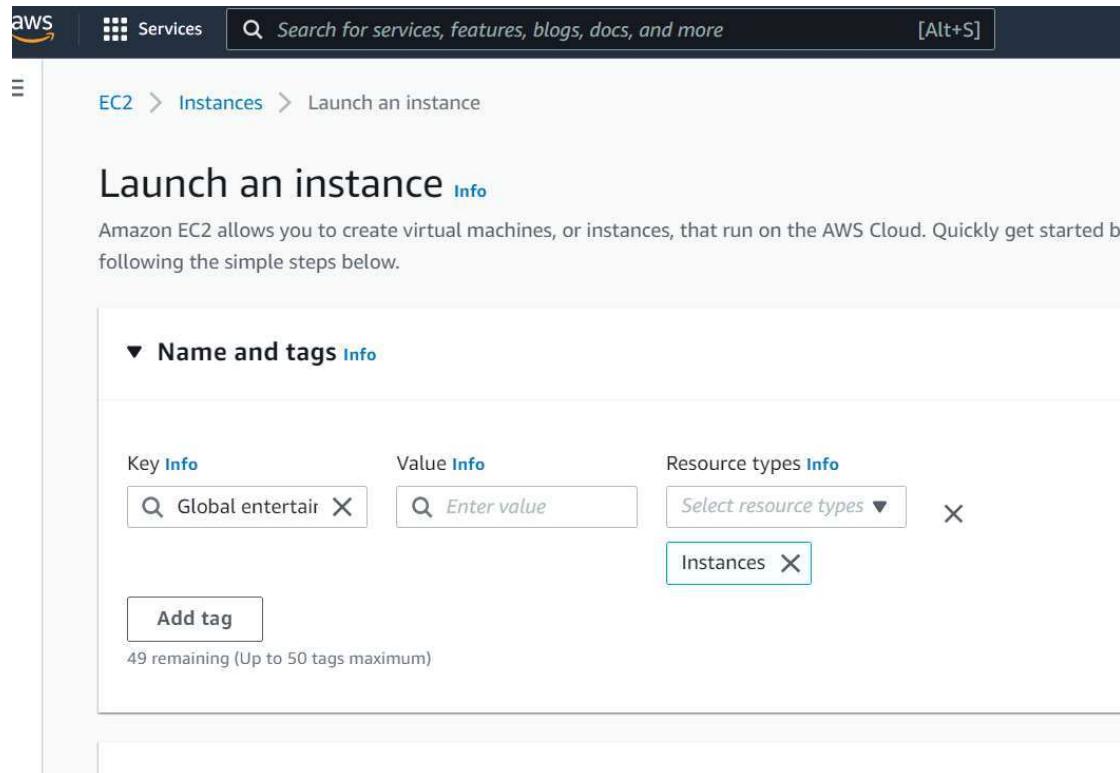


Fig 15. Add key tags

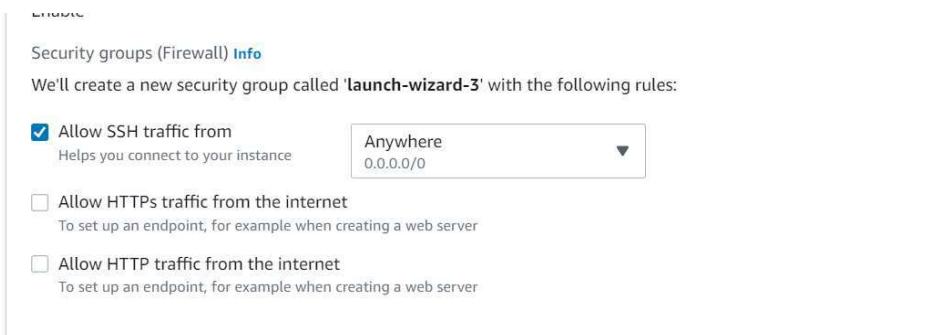


Fig 16. Aws will create security groups by the selected rules.

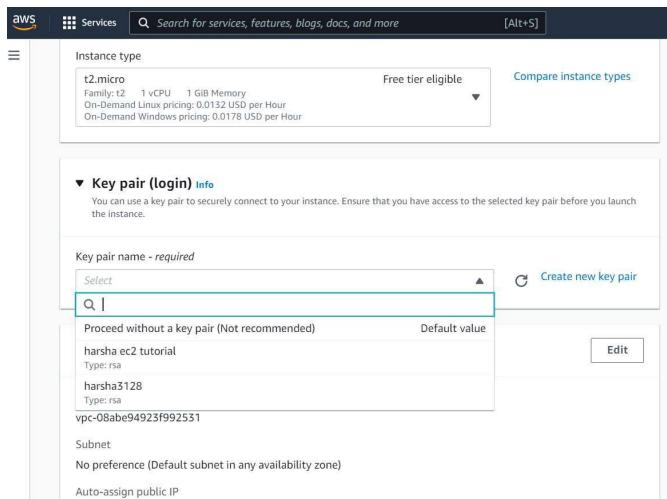


Fig 17. Select an existing keypair or create a new key pair

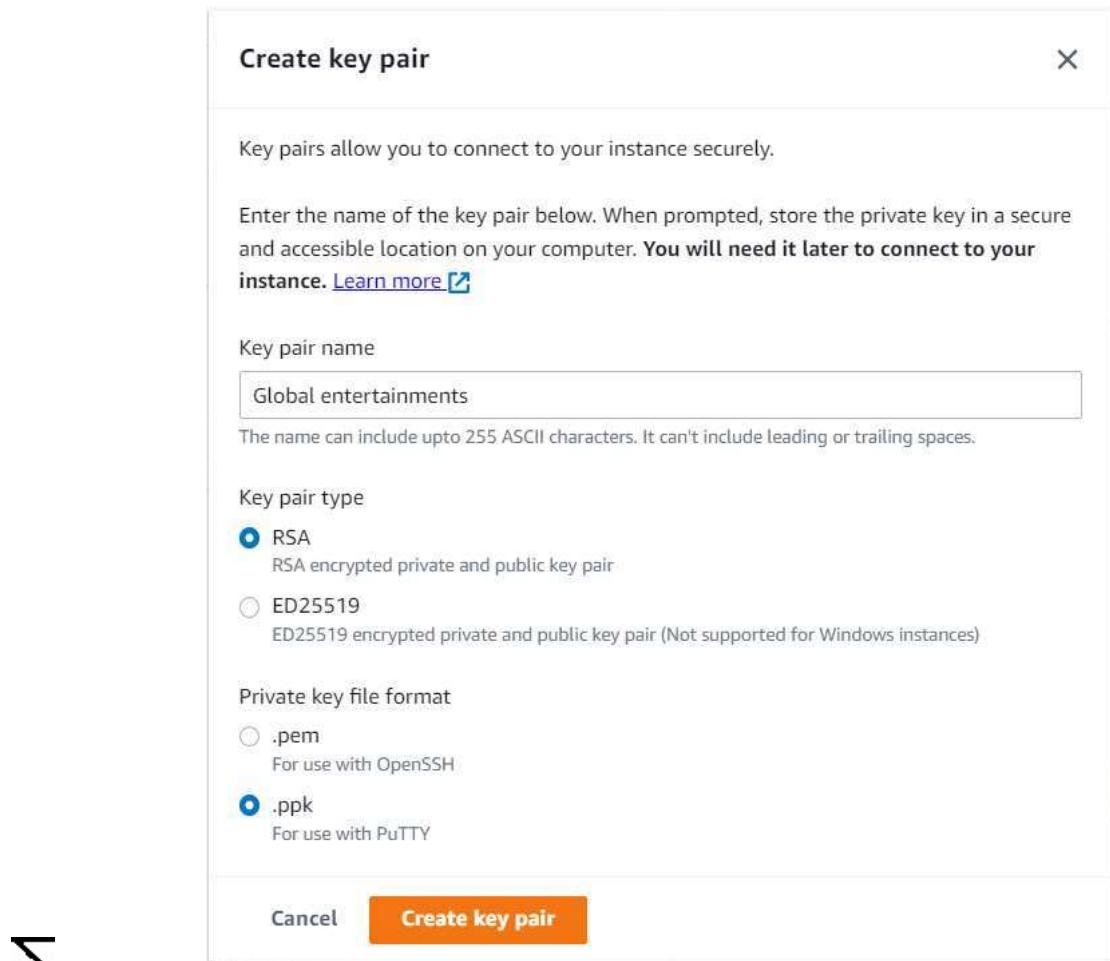


Fig 18. Create a new keypair and select key file format. ppk to use with puTTY.

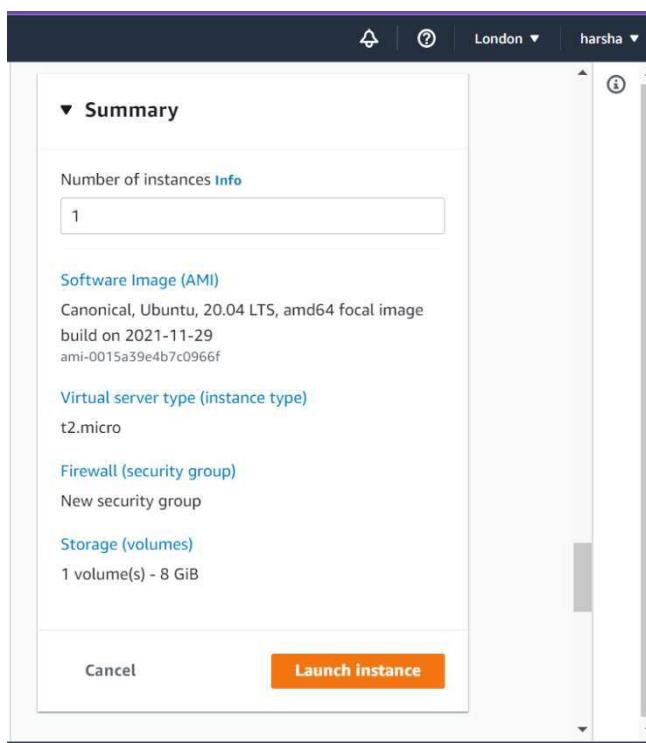


Fig 19. After configuring all settings on the right-hand side, you can see a summary. Review it and launch an instance.

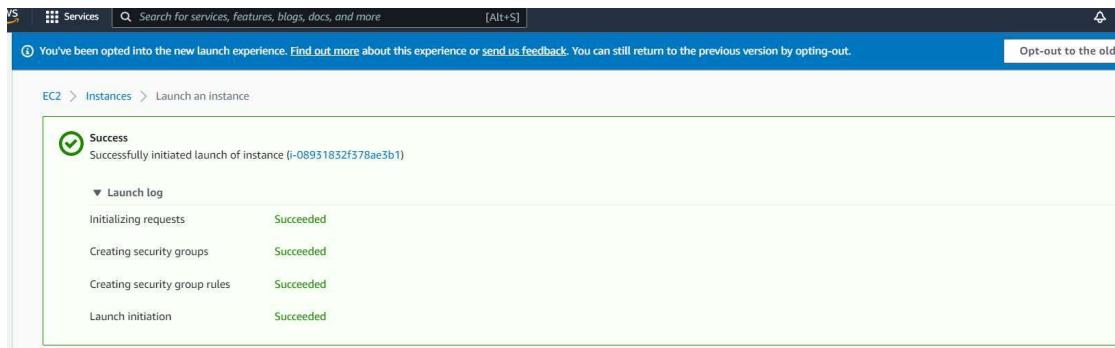


Fig 20. Successfully initiated launch.

## PUTTY:

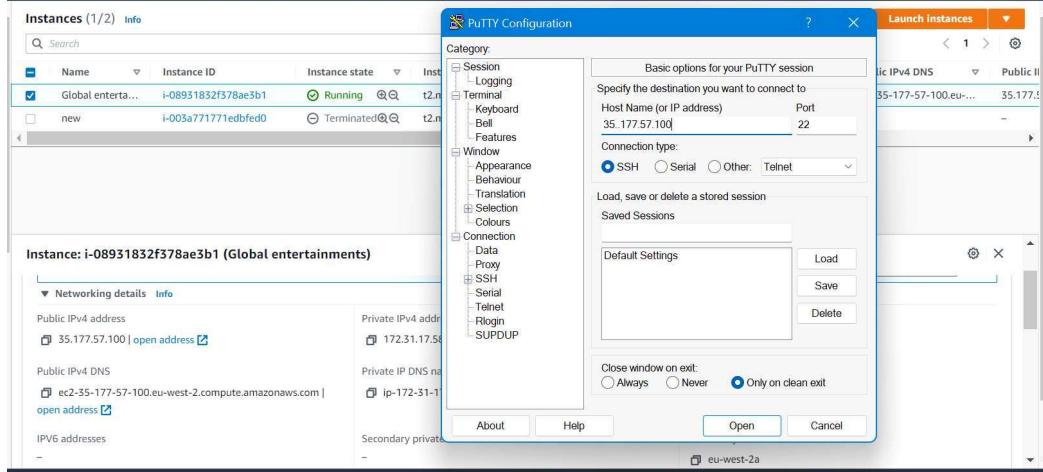


Fig 21. Connect to “PUTTY”

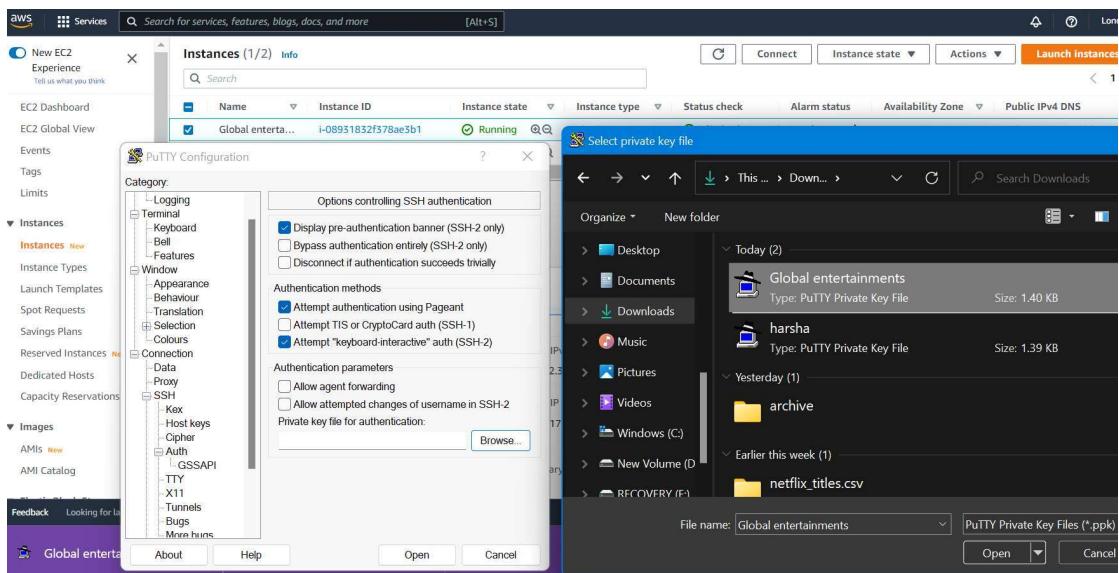


Fig 22. Configure Putty

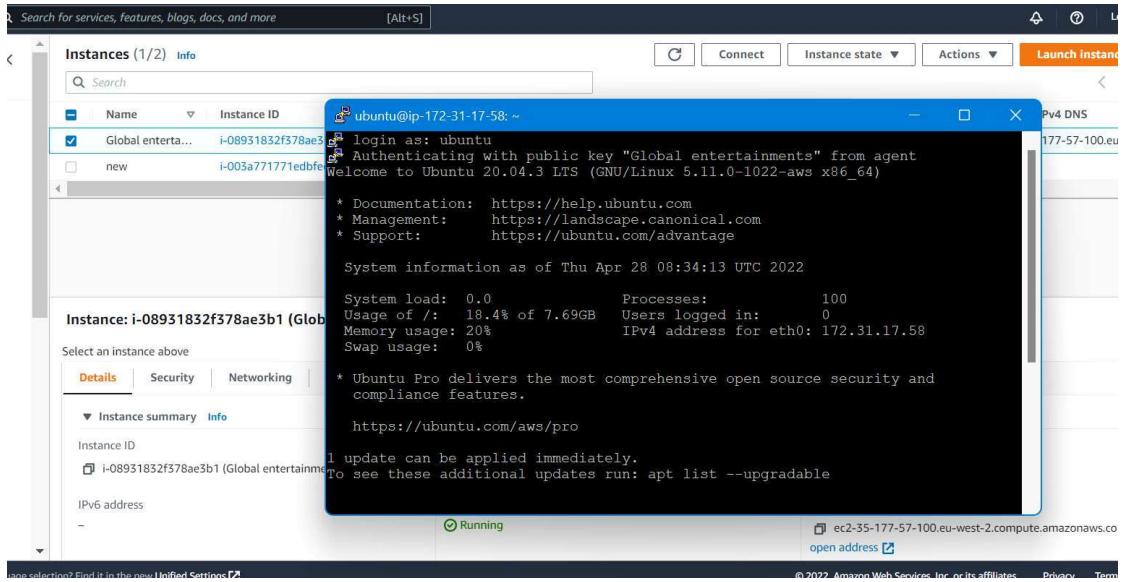


Fig 23. launched ubuntu instance successfully.

### AWS Simple Storage Service. (S3)

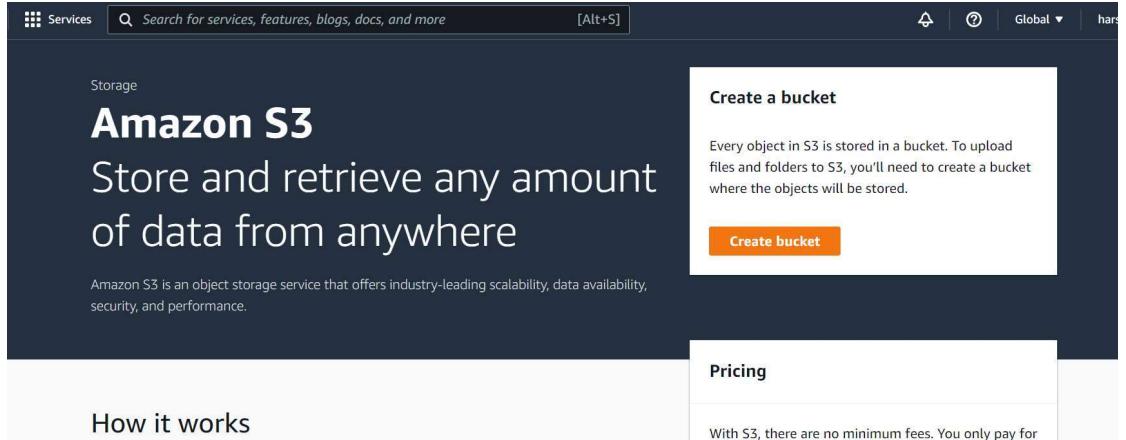


Fig 24. Search for s3 in amazon services and start creating a bucket.

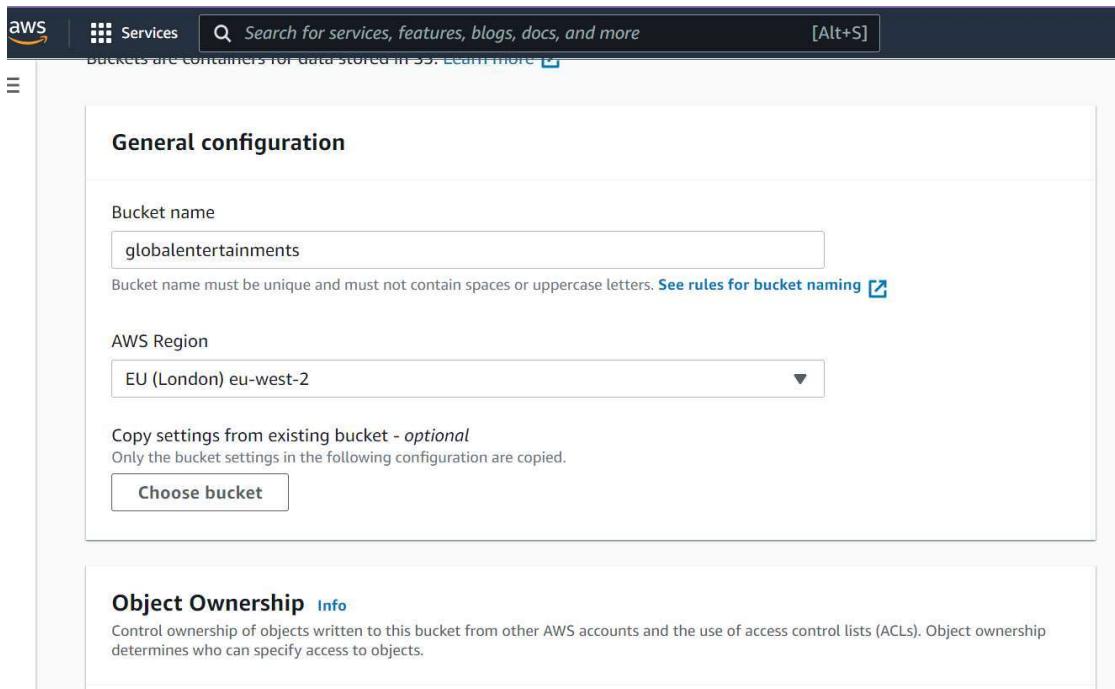


Fig 25. create a bucket by giving unique name.

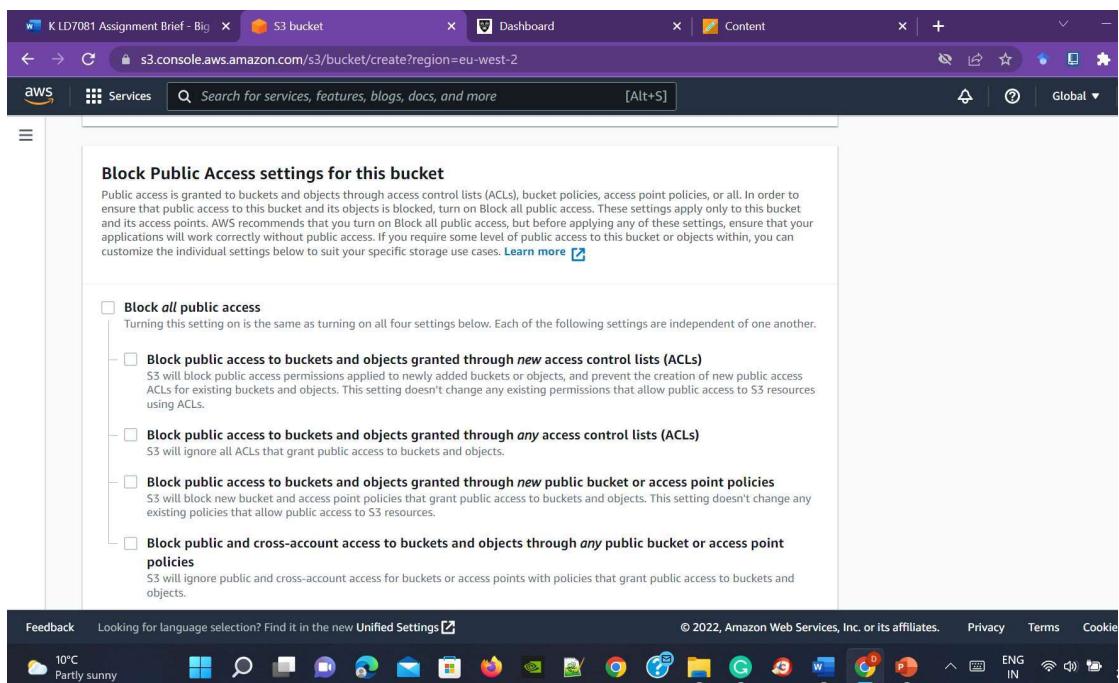


Fig 26. Unblock all public access settings.

The screenshot shows the AWS S3 Buckets page. On the left, a sidebar menu includes 'Buckets', 'Access Points', 'Object Lambda Access Points', 'Multi-Region Access Points', 'Batch Operations', 'Access analyzer for S3', 'Block Public Access settings for this account', 'Storage Lens', and 'Dashboards'. The main content area has a header 'Account snapshot' with a link to 'View Storage Lens dashboard'. Below it is a section titled 'Buckets (1) [Info](#)', stating 'Buckets are containers for data stored in S3.' It features a table with one row for 'globalentertainments'. The table columns are 'Name', 'AWS Region', 'Access', and 'Creation date'. The bucket details are: Name - globalentertainments, AWS Region - EU (London) eu-west-2, Access - Objects can be public, Creation date - April 28, 2022, 09:55:04 (UTC+01:00). Action buttons include 'Copy ARN', 'Empty', 'Delete', and 'Create bucket'.

Fig 27. Bucket created.

The screenshot shows the AWS S3 Bucket properties page for 'globalentertainments'. The left sidebar is identical to Fig 27. The main content area has a header 'globalentertainments [Info](#)'. It features tabs for 'Objects', 'Properties' (which is selected), 'Permissions', 'Metrics', 'Management', and 'Access Points'. Under 'Bucket overview', it shows the AWS Region (EU (London) eu-west-2), Amazon Resource Name (ARN) (arn:aws:s3:::globalentertainments), and Creation date (April 28, 2022, 09:55:04 (UTC+01:00)). A 'Bucket Versioning' section explains its purpose and provides a 'Edit' button. A note at the bottom states: 'For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see Using Amazon S3 Block Public Access.'

Fig 28. Edit Bucket properties.

The screenshot shows the AWS S3 Edit static website hosting page. The left sidebar is identical to Fig 27. The main content area has a header 'Edit static website hosting [Info](#)'. It features a 'Static website hosting' section with a note: 'Use this bucket to host a website or redirect requests.' It includes 'Static website hosting' (radio button 'Enable' is selected), 'Hosting type' (radio button 'Host a static website' is selected), and a note: 'For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see Using Amazon S3 Block Public Access.' At the bottom is a link 'Index document'.

Fig 29. Enable Static web hosting.

The screenshot shows the AWS S3 'Upload' interface. At the top, there's a search bar with the placeholder 'Search for services, features, blogs, docs, and more' and a keyboard shortcut '[Alt+S]'. Below the search bar, the word 'Upload' is displayed with an 'Info' link. A note below says: 'Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more'.

In the center, there's a large dashed box with the instruction 'Drag and drop files and folders you want to upload here, or choose Add files, or Add folders.' Below this is a table titled 'Files and folders (1 Total, 3.3 KB)'. The table has one row with the file 'globalentertainments.html' which is a 'text/html' file of size 3.3 KB. There are buttons for 'Remove', 'Add files', and 'Add folder' at the top of the table. A search bar labeled 'Find by name' is also present. The table has columns for Name, Folder, Type, and Size.

At the bottom, there's a section titled 'Destination'.

Fig 30. upload a html file in s3.

The screenshot shows the AWS S3 'Upload: status' page. At the top, there's a green banner with the message 'Upload succeeded' and a link 'View details below.' Below the banner, the title 'Upload: status' is displayed. A note says: 'The information below will no longer be available after you navigate away from this page.'

A summary table is shown:

Summary	
Destination s3://globalentertainments	Succeeded 🕒 1 file, 3.3 KB (100.00%)
	Failed 🕒 0 files, 0 B (0%)

At the bottom, there are two tabs: 'Files and folders' (which is selected) and 'Configuration'.

Fig 31. Uploaded successfully

Amazon S3 > Buckets > globalentertainments > globalentertainments.html

Owner	S3 URI
cc7a611f2277e5904c7679989f865be505f527e3f0f9b9bd049c658a29ed7459	<a href="s3://globalentertainments/globalentertainments.html">s3://globalentertainments/globalentertainments.html</a>
AWS Region	Amazon Resource Name (ARN)
EU (London) eu-west-2	<a href="#">arn:aws:s3:::globalentertainments/globalentertainments.html</a>
Last modified	Entity tag (Etag)
April 28, 2022, 11:03:44 (UTC+01:00)	<a href="#">e-K6930_7301_c01af0f_2745808</a>

Fig 32. Launch the website.

globalentertainments - S3 bucket | Global Entertainments - Watch T | +

globalentertainments.s3.eu-west-2.amazonaws.com/globalentertainments.html?response-con

# Global Entertainments.

## Sign In

Email or phone number  
Password  
  
 Remember me  
[Need Help?](#)

Login with Facebook

New to Global Entertainments ?

[Sign up now](#)

This page is protected by Google reCAPTCHA to ensure you're not a bot. [Learn more](#).

[Questions? Contact us.](#)  
[Gift Card Terms](#) [Terms of Use](#) [Privacy Statement](#)

English

Fig 33. Successfully launched the website.

## AWS Identity and Access Management (IAM):

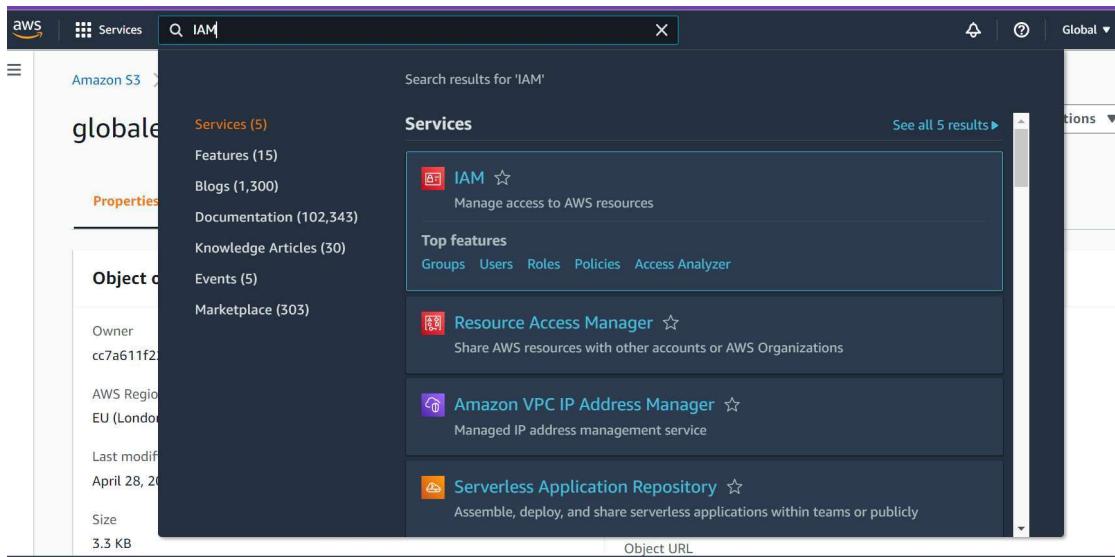


Fig 34. Search for IAM on search bar and choose IAM and start creating a user.

Add user

Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name\* Globalentertainments

[+ Add another user](#)

Select AWS access type

Select how these users will primarily access AWS. If you choose only programmatic access, it does NOT prevent users from accessing the console using an assumed role. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Select AWS credential type\*

- Access key - Programmatic access  
Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools.
- Password - AWS Management Console access  
Enables a **password** that allows users to sign-in to the AWS Management Console.

\* Required

[Cancel](#) [Next: Permissions](#)

Fig 35. Add user and give name to user.

WS Services Search for services, features, blogs, docs, and more [Alt+S]

Select AWS access type

Select how these users will primarily access AWS. If you choose only programmatic access, it does NOT prevent users from accessing the console using an assumed role. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Select AWS credential type\*  **Access key - Programmatic access**  
Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools.

**Password - AWS Management Console access**  
Enables a **password** that allows users to sign-in to the AWS Management Console.

Console password\*  Autogenerated password  Custom password  
  
  
 Show password

Require password reset  User must create a new password at next sign-in  
Users automatically get the [IAMUserChangePassword](#) policy to allow them to change their own password.

---

Fig 36. Add custom password.

aws Services Search for services, features, blogs, docs, and more [Alt+S]

Set permissions boundary

Set a permissions boundary to control the maximum permissions this user can have. This is an advanced feature used to delegate permission management to others. [Learn more](#)

Create user without a permissions boundary  
 Use a permissions boundary to control the maximum user permissions

Select policy to set the permissions boundary

Create policy

Policy name	Type	Used as
AccessAnalyzerServiceRolePolicy	AWS managed	None
AdministratorAccess	Job function	None
AdministratorAccess-Amplify	AWS managed	None
AdministratorAccess-AWSElasticBeanstalk	AWS managed	None

Showing 944 results

Cancel Previous Next: Tags

Fig 37. Set permissions that the user only can access.

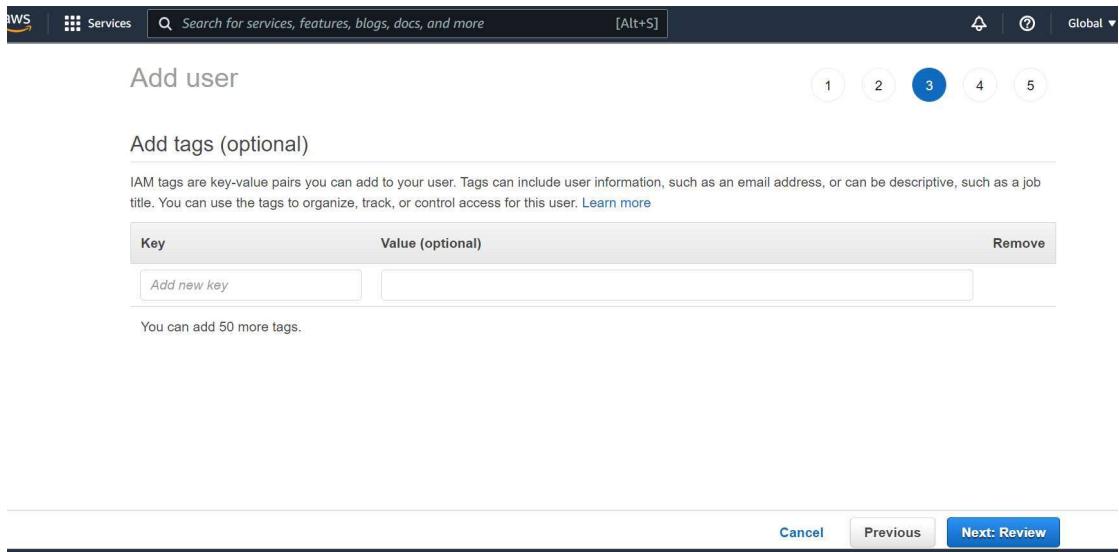


Fig 38. Add tags of your choice.

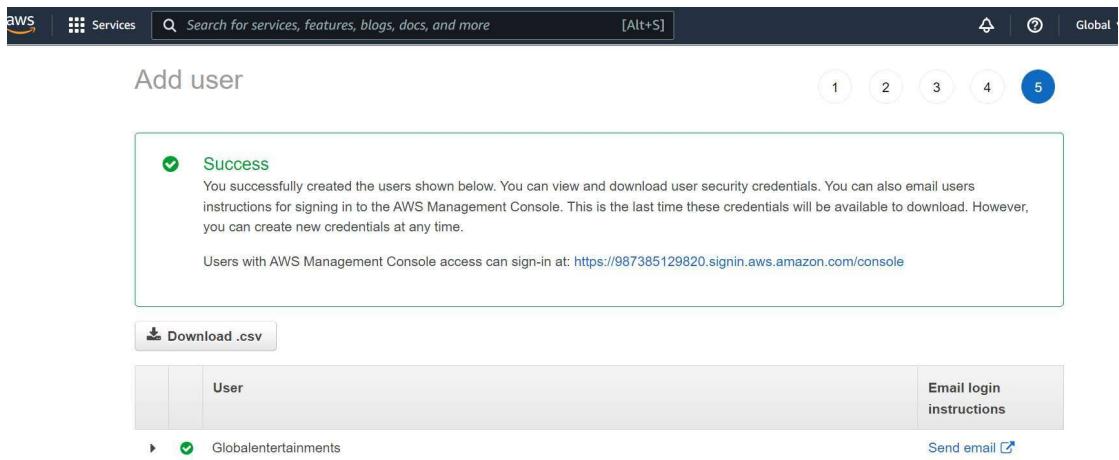


Fig 39. Review and create a user and here you can download dataset as well.

**aws**

Sign in as IAM user

Account ID (12 digits) or account alias  
987385129820

IAM user name  
Globalentertainments

Password  
.....

Remember this account

**Sign in**

[Sign in using root user email](#)

Fig 40. Sign in as IAM user.

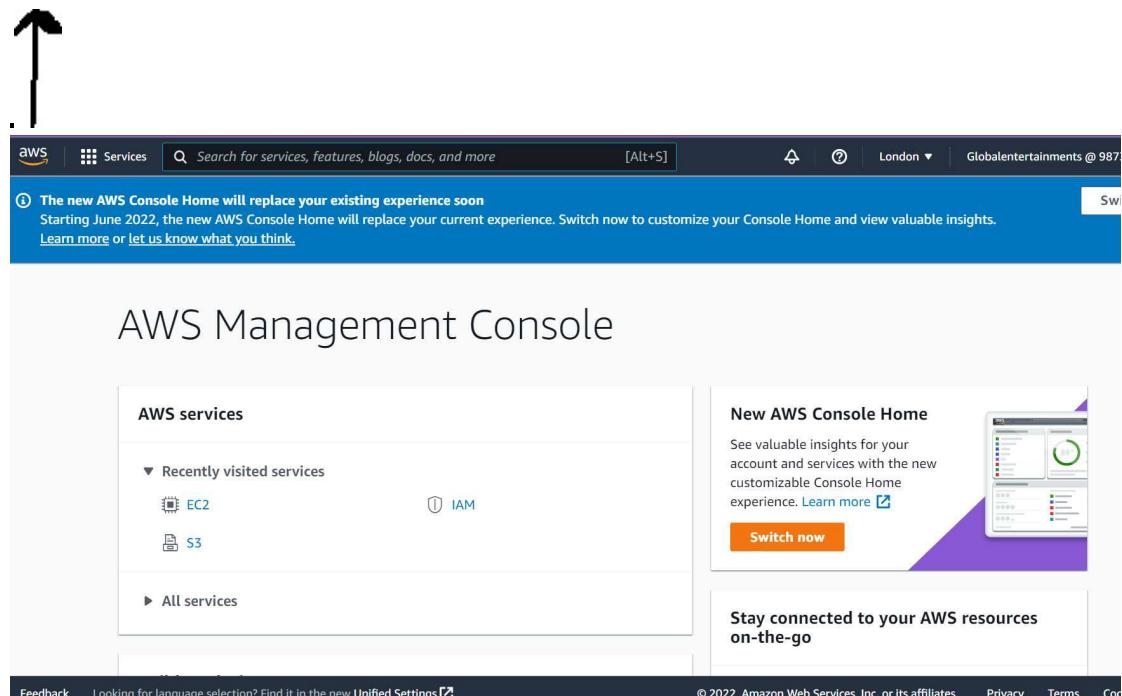


Fig 41. Successfully signed in as a IAM user. And you can see top right corner IAM username with account id.

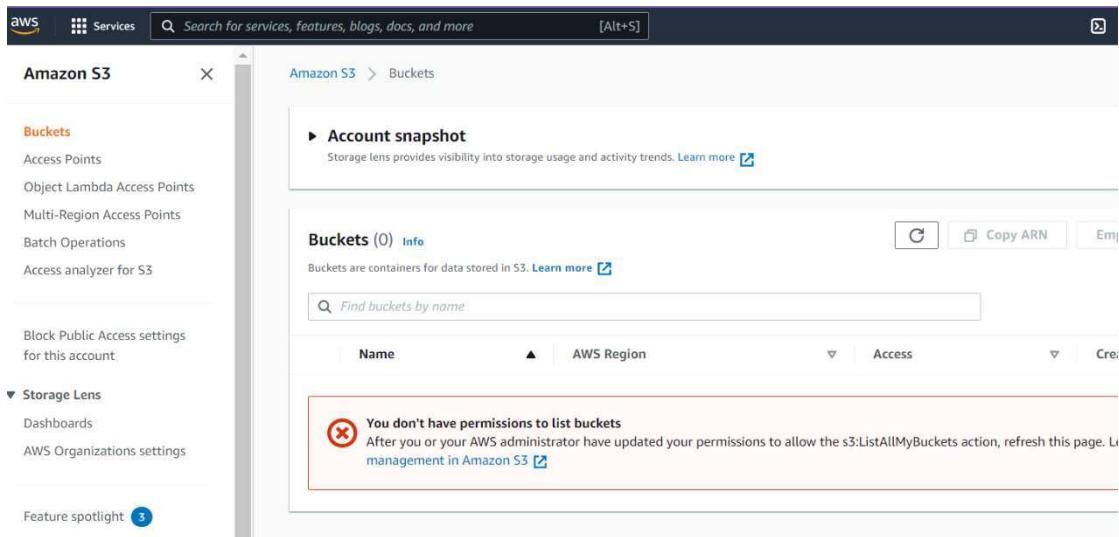


Fig 42. Here you can see the user is restricted because the user has limited permissions.

### Multifactor Authentication (MFA):

The screenshot shows the AWS IAM service page. In the 'Security recommendations' section, there are two items: 'Add MFA for root user' (marked with a red warning icon) and 'Root user has no active access keys' (marked with a green checkmark). Below this is the 'IAM resources' section, which displays counts for User groups (0), Users (1), Roles (2), Policies (0), and Identity providers (0).

Fig 42. Add multifactor authentication to the root account.

### Your Security Credentials

This page allows managing AWS credentials. It includes sections for 'Password' (disabled), 'Multi-factor authentication (MFA)' (disabled), 'Access keys (access key ID and secret access key)', and 'CloudFront key pairs'. A note at the bottom says: 'Use MFA to increase the security of your AWS environments. Signing in to MFA-protected accounts requires a user name, password, and an authentication code from an MFA device.' A blue 'Activate MFA' button is present.

Fig 43. Activate MFA

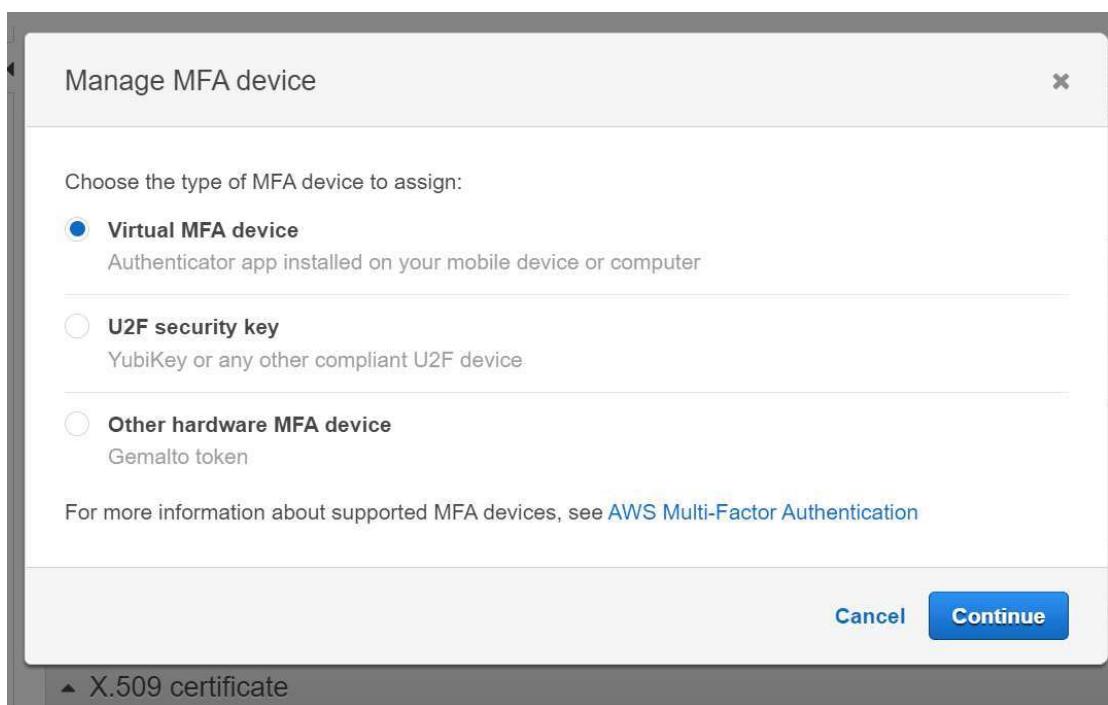


Fig 44. Choose MFA device

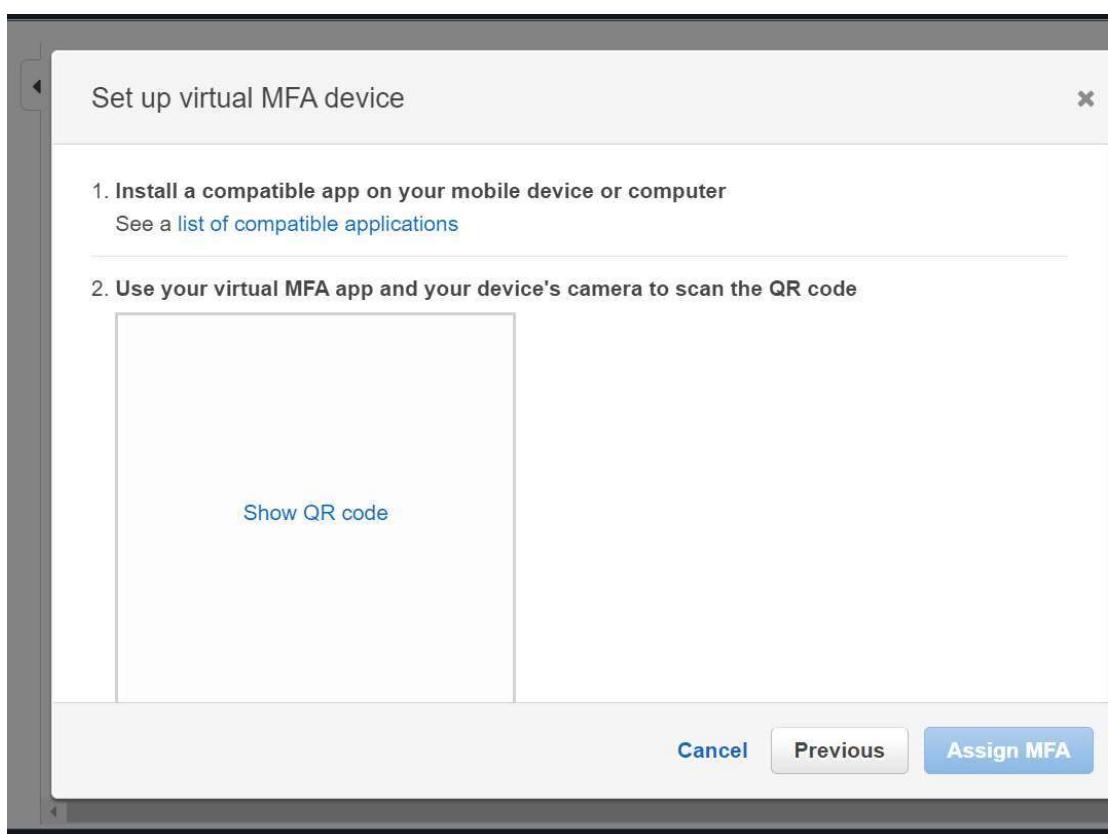


Fig 45. Install any authenticator application in your mobile device and scan the QR code.

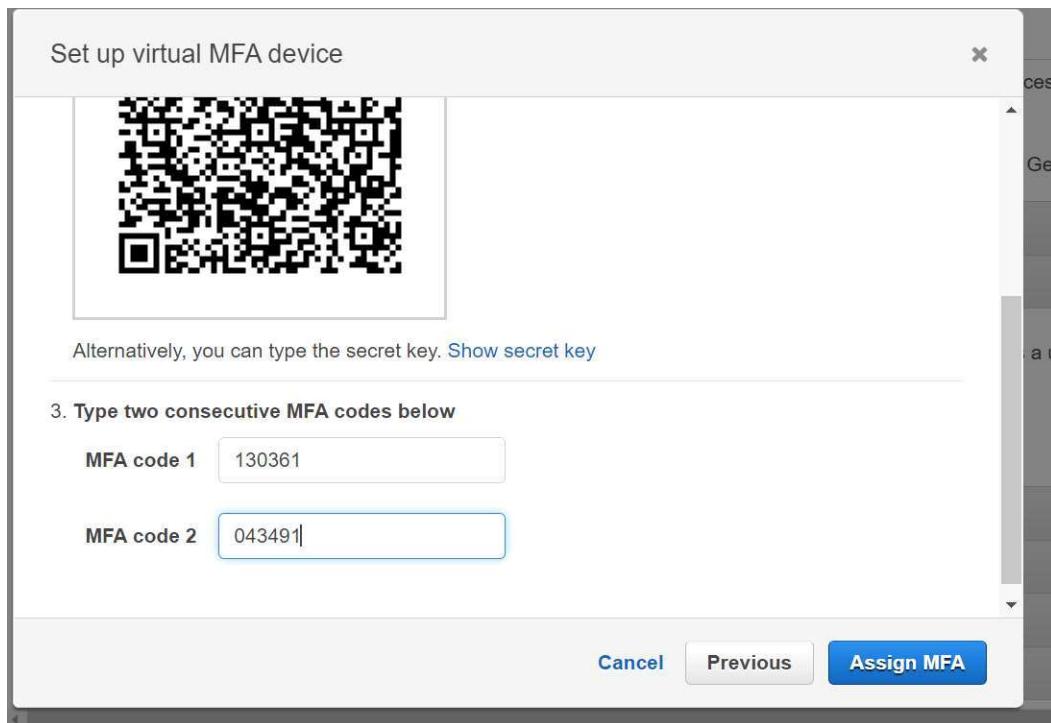


Fig 46. Add two MFA codes that you see in the authenticator app, which you installed on your device and press assign MFA.

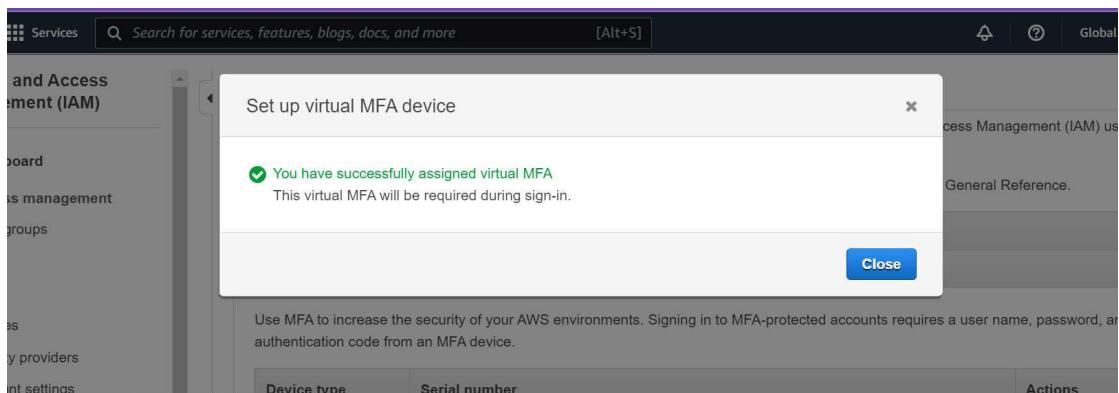


Fig 47. Now successfully assigned multi-factor authentication to root account.

#### TASK 4:

##### Social, Legal and Ethical considerations for Cloud and Big data:

Cloud computing brings astonishing benefits and advantages to organisations. Be that as it may, it likewise brings a few difficulties. There are a few social, legal, and ethical issues that you should think about while moving into the cloud and big data. We should see the most challenging legal issues around cloud and big data and how to beat them.

##### Security Procedures:

Most organisations that execute cloud arrangements and services don't have security techniques. Likewise, they need measures to support or assess cloud applications. For instance, associations required these security systems while embracing the trend of BYOD (bring your own device). (Blaisdell, 2013) General data security arrangement, various levels of safety, and careful techniques to utilise one's gadget and move or duplicate data are a

portion of the decisions open to shield data in organisations. In particular, security techniques ought to be spread out as demonstrated by every association's objective and work process. (Blaisdell, 2013)

#### **Data Ownership:**

Whenever someone or a company utilises Cloud computing platforms, it might be inquired, "who claims the information"? Might this information at any point be considered not public property, or does the simple reality of using a cloud computing platform imply that this information naturally may have a place with a third party? (Murphy and Rocchi, 2021)

#### **Data Ownership Considerations and Issues:**

Above all else, Data ownership requires guaranteeing that information is collected accurately. Obligations also incorporate doling out job-based admittance honours whenever characterised information. (Egnyte, 2021)

As per regularly utilised information proprietary rules, the accompanying ought to be viewed while characterising job-based admittance controls for information: (Egnyte, 2021)

- How is the information connected?
- How long is the information held?
- What information should be encrypted?
- How might information be annihilated?

#### **Licensed innovation Rights:**

Authorised innovation Rights vary starting with one country and then the next, so what safeguarded advancement guidelines will apply in the cloud. Guarantee you know the rules and opportunities of the country where you store your data. The provider you pick should comprehend how to defend its store's authorised development and avoid potential breach traps. (Blaisdell, 2013)

#### **Classified Data Theft Attacks:**

Data put away in the cloud might be compromised. Thusly, most cloud suppliers offer different client's phases of safety protection, which think about the best security. Encryption might have failed to safeguard data from information breaks, yet there are various techniques that you can complete. A couple of models integrate noticing data access in the cloud to perceive uncommon data access plans. The client ought to comprehend the cloud provider's disclosure technique and how quickly they would uncover the break. Most U.S. states have security break revelation guidelines requiring the provider to illuminate the clients when their data has been compromised. (Blaisdell, 2013)

The Service Level Agreement ought to refer to many of these legitimate issues. You should see every one of the provisions of the cloud's supplier and think about the venture's requirements and goals before consenting to an arrangement. (Blaisdell, 2013)

#### **Ethical considerations in information sharing:**

Clear direction planned by the National Statistician's Data Ethics Advisory Committee (NSDEC). A visual figure of NSDEC Principles is provided below.

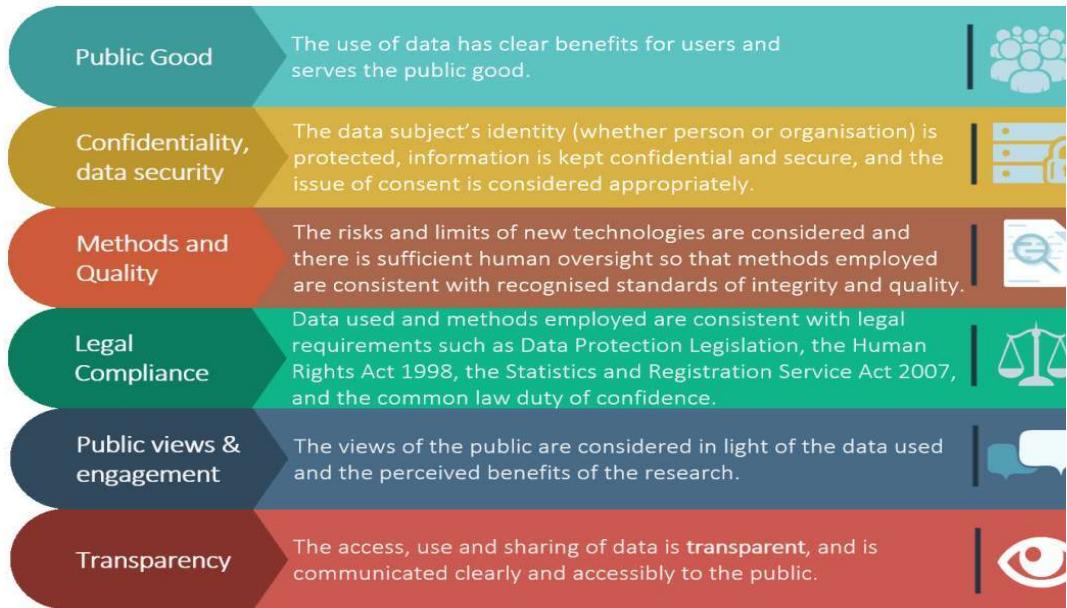


Fig 48. NSDEC principles. Source (Zahid, 2021)

#### Copyright Considerations: (Zahid, 2021)

- Copyright is a protected innovation right allocated consequently to the maker
- Arranged datasets contain unique copyright - look for authorization to document while gathering
- Information owner (specialist) has the copyright of examination information
- Information files publish information - hold no copyright

#### ICO compliance:

Anybody with admittance to information in the UK should know about the prerequisites to consent to the Information Commissioner's Office (ICO). The association answerable for the information should be enrolled with the ICO. All associations should have information handling policies that all workers or subcontractors know about. When an individual is given admittance to a cloud platform containing information, they are expected to sign the arrangement and comprehend the necessities to guarantee the information isn't abused. (Boiko, 2021)

Assuming that there is a breach, the information protection official for the association should contact the ICO to make them mindful. This will probably bring about a considerable fine and potential reputational harm. (Boiko, 2021)

Assuming that the company group grows past the UK, information sharing might depend on different principles. For instance, Canada has a Personal Information Protection and Electronic Documents Act (PIPEDA), and the US has a Privacy Shield. Continuously look at the only nation's regulation and, like with the European Economic Area (EEA), there are no extra all-encompassing necessities. (Boiko, 2021)

#### Information reinforcements (Data Backups):

All information ought to be supported and scrambled. In case of an episode, for example,

blackout, the data should be safely put away, and the cloud supplier should have proper disaster recuperation strategies. (Boiko, 2021)

Utilizing a cloud stage implies that all information is upheld and scrambled in numerous areas so that it may be recuperated on account of a calamity. For example, a public cloud supplier, Amazon Web Services, has above 99.99% uptime and 100 per cent information dependability, which implies the information will be accessible all the time. (Boiko, 2021)

The global entertainment IT division might need to keep an actual reinforcement for extra consolation. This isn't generally so dependable or secure as a cloud stage, so guarantee the correct degrees of safety are set up. The information is encoded should the support be taken. (Boiko, 2021)

### Conclusion:

This examination report was basic in portraying and sorting out how Global Entertainment (GE) can use endless cloud and big data innovation and moral, legitimate and security issues. This paper has seen some of the key benefits that make cloud and big data famous. Cloud administrations are flexible, get a good deal on the cost of assignments, and should be visible from any area and at some random time with admittance to processing devices. Thusly, cloud organisations are principal since they increase business efficiency. Besides, countermeasures to using moral issues and security challenges impact the cloud and big data. The standard game plans consolidate the usage of antivirus and antimalware structures. The audit proposed utilising interference disclosure systems and firewalls to screen the traffic through the association and square clients perceived as spam. Encryption and approving security plans are in a like manner seen as replies to these issues.

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