

AWS Instance Setup and Static Website Deployment through S3 with DNS Route53 and Configure Mail Server

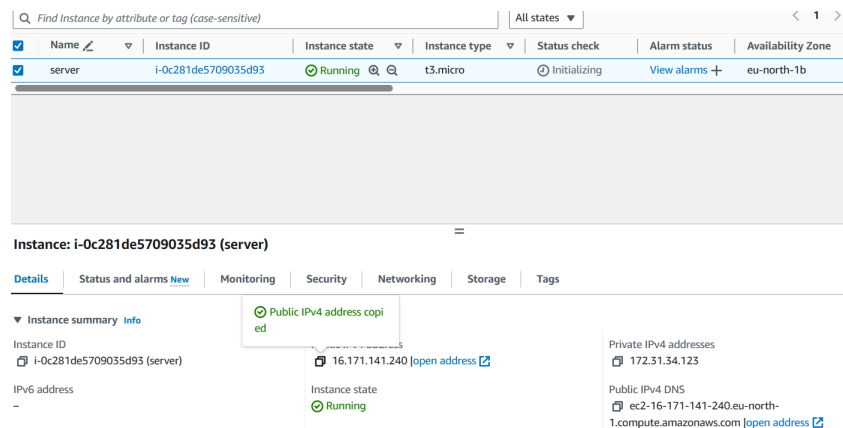
April 15, 2024

Overview

1. Create a virtual server instance and deploy an index.html file on it. The instance is accessed via DNS routing through Amazon Route 53.
2. DNS Routing with Hostinger and Route53.
3. Configuring Mail Service with Zoho.
4. Deploying Static Website on bucket (Amazon S3) and route it using DNS.

Steps To Follow :-

1. Creating an Instance:



- Create a virtual server instance with any AMI image, provide key pair, and create a security group allowing ssh, http and https port for inbound traffic.

Here my instance name is 'server'.

- Provide the instance with an Elastic IP so that if the instance experiences downtime, the public IP address associated with the instance remains unchanged.
- Go to 'Elastic IPs' in Network and Security, click on Allocate Elastic IP address, Provide the zone and Allocate.
- AWS will provide you with the IP from the pool of the IP.

Allocate Elastic IP address [Info](#)

Elastic IP address settings [Info](#)

Network border group [Info](#)

eu-north-1

Public IPv4 address pool

☒ Amazon's pool of IPv4 addresses

- Now associate the IP with your created Instance 'server' by providing your instance name from the list or giving its private IP and then click Associate.

Elastic IP address: 16.171.223.57

Resource type
Choose the type of resource with which to associate the Elastic IP address.

☒ Instance

☐ Network interface

Warning: If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance

i-Oc281de5709035d93

Private IP address
The private IP address with which to associate the Elastic IP address.

Choose a private IP address

Reassociation
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.

☐ Allow this Elastic IP address to be reassociated

Cancel Associate

- Now the instance 'server' is associated with the Elastic IP.

3

- After this, open ssh and connect to the instance, Install http and start and enable the http service.
- Make changes to the index.html file to the content you want by navigating to /var/www/html/index.html

2. DNS Routing with Hostinger and Route53:-


- First Move to Route53.
- Create a hosted zone and provide the domain name that you have, here I have a domain name 'iamnisha.online' purchased from Hostinger. So we are going to use the same and keep the type to the 'Public hosted zone' and click <Create hosted zone>.


A screenshot of the AWS Route 53 'Create hosted zone' form. The title is 'Create hosted zone' with an 'Info' link. Below the title is a section 'Hosted zone configuration' with a description: 'A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.' The form has three main sections: 1. 'Domain name' with an 'Info' link, a description 'This is the name of the domain that you want to route traffic for.', a text input field containing 'iamnisha.online', and a note 'Valid characters: a-z, 0-9, ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } . ~'. 2. 'Description - optional' with an 'Info' link, a description 'This value lets you distinguish hosted zones that have the same name.', a text area containing 'blogging website', and a note 'The description can have up to 256 characters. 16/256'. 3. 'Type' with an 'Info' link, a description 'The type indicates whether you want to route traffic on the internet or in an Amazon VPC.', and two radio button options: 'Public hosted zone' (selected) with a description 'A public hosted zone determines how traffic is routed on the internet.', and 'Private hosted zone' with a description 'A private hosted zone determines how traffic is routed within an Amazon VPC.'


- After the creation of a hosted zone the aws will provide you with some Nameservers, you have to provide the nameservers to your domain on hostinger.
- Open Hostinger and look for your Domain.

- Click on Manage given on the right of the domain section.
- There you will see the details of your domain, click on the 'DNS / Nameservers'.



iamnisha.online ▼


 Domain Overview

 DNS / Nameservers

 Domain Ownership

- Change the Nameservers to the servers provided by the aws after the creation of the hosted zone.
- First click on change Nameservers and fill the nameservers in the space provided and eliminate the full stop provided at the end of the name of nameservers then click save.

Records (2) DNSSEC signing Hosted zone tags (0)									
Records (2) Info <div>  <input type="button" value="Delete record"/> <input type="button" value="Import zone file"/> <input type="button" value="Create record"/> </div> <p>Automatic mode is the current search behavior optimized for best filter results. To change modes go to settings.</p> <div> <input type="text" value="Filter records by property or value"/> <div> Type ▼ Routing policy ▼ Alias ▼ </div> </div> <div> < 1 >  </div>									
<input type="checkbox"/>	Record ... ▼	Type ▼	Routin... ▼	Differ... ▼	Alias ▼	Value/Route traffic to ▼	TTL (s... ▼	Health	
<input type="checkbox"/>	iamnisha....	NS	Simple	-	No	ns-1202.awsdns-22.org. ns-957.awsdns-55.net. ns-488.awsdns-61.com. ns-1584.awsdns-06.co.uk.	172800	-	

DNS / Nameservers
 Domains -

DNS records

Child nameservers

Nameservers

Nameservers handle internet requests for you

ns1.dns-parking.com
ns2.dns-parking.com

Change Nameservers

Select Nameservers

☐ Use Hostinger nameservers (recommended)
 ☒ Change nameservers

- So now the DNS records are created and assigned to the domain through route53.

3. Give Record of the created Instance to Route53:-

- In the Hosted zone created before add the record for your instance, to do the same click on the create record inside your hosted zone. Keep the routing policy as 'Simple routing'.
- Leave the record name empty, fill the record type as 'A' that route traffic to an ipv4 address, and in the value section fill it with the ip of your instance, So that all the traffic will be routed to that particular instance, set the TTL according to your preference (here i had taken it as 60s).
- At last click on create record.

Create record [Info](#)

Quick create record [Switch to wizard](#)

▼ **Record 1** [Delete](#)

Record name [Info](#) iamnisha.online
Keep blank to create a record for the root domain.

Record type [Info](#)

☒ **Alias**

Value [Info](#)

Enter multiple values on separate lines.

TTL (seconds) [Info](#) [+1m](#) [1h](#) [1d](#) **Routing policy** [Info](#)

Recommended values: 60 to 172800 (two days)

- In the same way above we will create another record for canonical names that route traffic to another domain name.
 - Record name = www
- Record type = CNAME
- Value = iamnisha.online (your domain name)

Create record [Info](#)

Quick create record [Switch to wizard](#)

▼ **Record 1** [Delete](#)

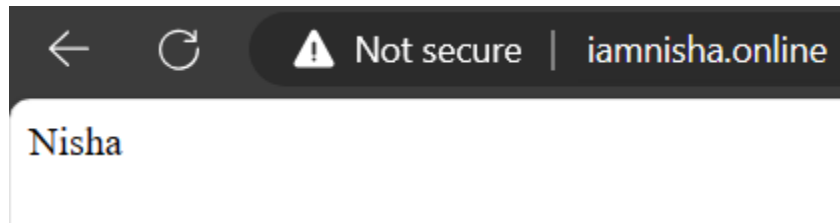
Record name [Info](#) iamnisha.online
Keep blank to create a record for the root domain.

Record type [Info](#)

☒ **Alias**

Value [Info](#)

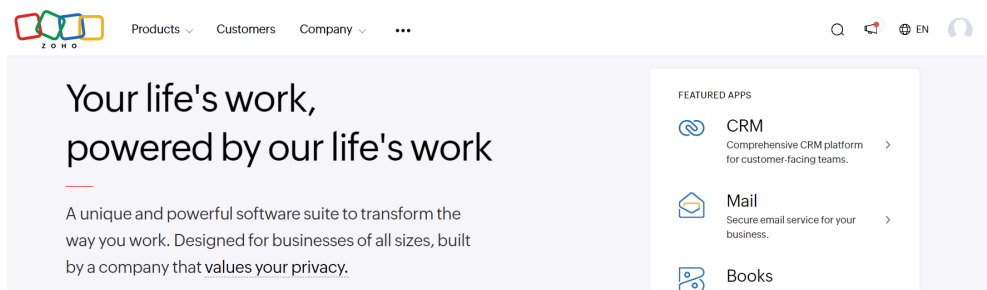
- Now all the records are created and the instance 'server' is routed to the domain 'iamnisha.online'.
- You can check it by browsing your domain name on the browser you will get the content of index.html that you provided when you created the instance. Let's see what I get.



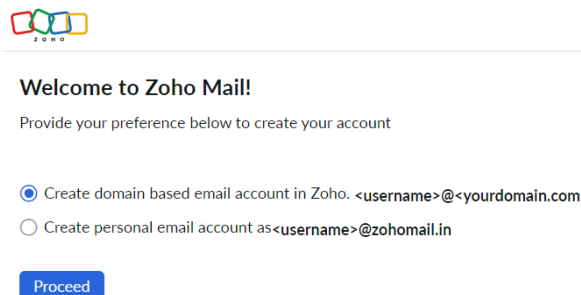
- So i got whatever there was in the index.html, so you can deploy anything like this and route it to any domain you want.

4. Configuring Mail Service with Zoho:-

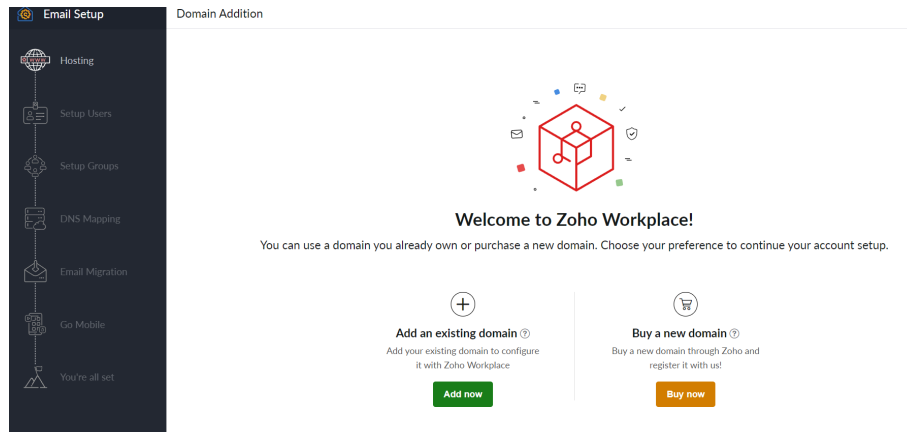
- Register an account with Zoho Mail or utilize an existing one.
- Select Mail from the featured apps as we need to configure mail service.



- Then click on the <ACCESS ZOH0 MAIL>.
- Select <Create domain based email account in Zoho. and press <Proceed>



- After this you will be asked to rather use the existing domain or purchase a new one. As we already have the domain so we will go with the existing one.



- After this you will be asked for some details, fill them with your preference, your existing domain name should have the name given in the record as CNAME.

Welcome to Zoho Workplace!

Add a domain you already own to continue your account setup.

Provide your existing domain name *

www.iamnisha.online

Provide your organization name *

N-enterprise

Industry Type

Art, Architecture & Design

Add now
Cancel

- After this the domain 'iamnisha.online' is added successfully, here the next step is to create an email Id. We can now proceed for domain verification.

Super Administrator Email Address
admin@iamnisha.online

- When you click <Proceed for domain verification> you will get some data, we just need to create a record in the hosted zone that we created above with the given data.

Domain Verification - iamnisha.online

[Chat with us !](#)

For security reasons, you need to verify your ownership of 'iamnisha.online'. You can verify this by one of the following methods. Please note that it won't affect your existing email/domain management services.

Add a TXT record in the DNS *(Recommended)*

1. We have identified that your domain manager is 'Amazon'. [Login](#) to your 'Amazon' DNS account.
2. Now, add a new TXT record, and paste the below TXT value into the DNS configuration. Click [here](#) for detailed instructions.

TXT Name / Host	TXT Value / Content
@ (or) Leave it blank	zoho-verification=zb45622656.zmverify.zoho.in

3. You may have to wait for 30 minutes to 1 day for this change to propagate, depending on the TTL value that you've entered.
4. Finally, come back to this page and click on the below button to complete the domain verification process.

[Verify TXT Record](#)[Share Instructions](#)

- Leave the record name empty, record type as 'TXT', and for value copy the value data provided on zoho (shown in the picture above) otherwise everything else will be the same.

Record name [Info](#)

Keep blank to create a record for the root domain.

☒ Alias

Value [Info](#)

Enter multiple values on separate lines. You can separate long strings into separate lines by appending a space at the end before you continue the string on the next line.

TTL (seconds) [Info](#)

Recommended value: 60 to 172800 (from AWS)

Routing policy [Info](#)

- After the creation of the record, click on the <Verify TXT Record>. If everything will be okay then verification will be successful.
- Later on we will perform DNS mapping by adding some more records to the hosted zone, the data will be provided by the zoho.
- Now you know how to create records so create all the records needed and verify them, it will take some time to verify based on the TTL value.

- Here you will have to create a record for TXT leaving the domain name empty,, but for domain verification you already created an TXT record with the same specification so add the value of this data next to the previous one by editing the record.

Email Setup

Hosting Summary

Setup Users

Setup Groups

DNS Mapping

Email Migration

Go Mobile

You're all set

Go to Admin Console

DNS Mapping

1. We have identified that your domain manager is 'Amazon'. Login to your 'Amazon' DNS account.

2. Now, add the below records into the DNS settings page. Click [here](#) for detailed instructions.

	Record Type	Host	Value	Priority	Status
MX	MX	@	mx.zoho.in	10	!
	MX	@	mx2.zoho.in	20	!
	MX	@	mx3.zoho.in	50	!
SPF	TXT	@	v=spf1 include:zoho.in ~all	-	!
DKIM	TXT	zmail_domainkey	v=DKIM1; k=rsa; p=MIGfMA0GC... DdrbNKNXgkAaScFZ7YDhaGvknCTxHj3kNFeW+ZcH+XHczgP3v+COMtEyqUUhHnyH+x2bMj15UQzZHrfgdnFk6McCmesboLCF2Cw7D+12y1dJ+GjohTQAv7eoyulD3cNkQApSfAPMEQjcy+LihPxhN/j+uTC/5wIDAQAB	-	!

Note: Provide minimum TTL(Time To Live) value in your domain DNS settings page. You may have to wait for 30 minutes to 1 day for this change to propagate, depending on the TTL value that you've entered. You can also verify if the records have propagated in this link: [Fast tool to check ur dns chat or email \(support@zohomail.com\)](#) to see you need assistance in.

[Verify all records](#)

[Back to Setup Groups](#) [Proceed to Email Migration](#)

Quick create record

Record 1

Record name [Info](#) .iamnisha.online

Record type [Info](#)

Keep blank to create a record for the root domain.

☐ Alias

Value [Info](#)

10 mx.zoho.in
20 mx2.zoho.in
50 mx3.zoho.in

Enter multiple values on separate lines. Format: [priority] [mail server host name]

TTL (seconds) [Info](#) Routing policy [Info](#)

Quick create record [Switch to wizard](#)

Record 1 [Delete](#)

Record name [Info](#) .iamnisha.online

Record type [Info](#)

Keep blank to create a record for the root domain.

☒ Alias

Value [Info](#)

v=DKIM1; k=rsa;
p=MIGfMA0GC...
DdrbNKNXgkAaScFZ7YDhaGvknCTxHj3kNFeW+ZcH+XHczgP3v+COMtEyqUUhHnyH+x2bMj15UQzZHrfgdnFk6McCmesboLCF2Cw7D+12y1dJ+GjohTQAv7eoyulD3cNkQApSfAPMEQjcy+LihPxhN/j+uTC/5wIDAQAB

Enter multiple values on separate lines. You can separate long strings into separate lines by appending a space at the end before you continue the string on the next line.

TTL (seconds) [Info](#) Routing policy [Info](#)

- After creating all the required records go to the zoho website and click on the <Verify all records>.
- After the verification is done you will be sent to the mailbox with the mail id you created, try sending mail to the mail id created (admin@iamnisha.online) through your personal id, you will receive the mail and thus the mail server is configured to your domain name.

5. Create a bucket and deploy a static website:-

- Go to Amazon S3 service of the AWS to create a bucket.
- Click on <Create bucket> and provide the needed data.

Bucket Type = General type

Bucket Name = As for the bucket name the bucket name should be same as the domain name like here i made the bucket with name 'lohar.iamnisha.online'.

Uncheck the [Block all public access]

Keep the other settings as it is.

- Go inside the bucket and upload the files of your website that is to be deployed.

Amazon S3 > Buckets > lohar.iamnisha.online

lohar.iamnisha.online Info Publicly accessible

Objects (4) Info Refresh Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	img/	Folder	-	-	-
<input type="checkbox"/>	index.html	html	April 15, 2024, 15:22:33 (UTC+05:30)	10.3 KB	Standard
<input type="checkbox"/>	script.js	js	April 15, 2024, 15:22:34 (UTC+05:30)	3.2 KB	Standard
<input type="checkbox"/>	style.css	css	April 15, 2024, 15:22:34 (UTC+05:30)	8.3 KB	Standard

- Now edit the bucket permission by entering into the 'Permissions' section and add the bucket policy.
- Click on Edit and write the policy that allows you to list the buckets and get all the objects of the buckets.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Principal": "*",
      "Action": [
        "s3:GetObject",
        "s3:ListBucket"
      ],
      "Resource": [
        "arn:aws:s3:::lohar.iamnisha.online/*",
        "arn:aws:s3:::lohar.iamnisha.online"
      ]
    }
  ]
}
```

- After this go to the 'Properties' section and add the details into 'Static website hosting'.

Edit static website hosting
Info

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting

☐ Disable
☒ Enable

Hosting type

☒ Host a static website
Use the bucket endpoint as the web address. [Learn more](#)
☐ Redirect requests for an object
Redirect requests to another bucket or domain. [Learn more](#)

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](#)

Index document

Specify the home or default page of the website.

Error document - optional

This is returned when an error occurs.

The Index document will be the document of your website's dashboard . Here mine is 'index.html'.

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting

Enabled

Hosting type

Bucket hosting

✓ Bucket website endpoint copied

When you enable static website hosting, the website is available at the AWS Region-specific website endpoint of the bucket. [Learn more](#)

<http://lohar.iamnisha.online.s3-website.eu-north-1.amazonaws.com>

- Copy the URL as shown in the image and run it on the browser, your website is deployed.
- Now after this we will route this bucket through DNS.
- We will add the record of this bucket in the Hosted zone that we created in previous parts.
- Add record in the hosted zone (iamnisha.online) with details given in image.
- We need to route traffic to S3 thus we will add alias to 'S3 website endpoint' and then select the bucket that is to be routed.

Edit record



Record name [Info](#)

lohar

.iamnisha.online

Keep blank to create a record for the root domain.

Record type [Info](#)

A – Routes traffic to an IPv4 address and so...

☒ Alias

Route traffic to [Info](#)

Alias to S3 website endpoint

Europe (Stockholm)

Q s3-website.eu-north-1.amazonaws.com. X

Routing policy [Info](#)

Simple routing

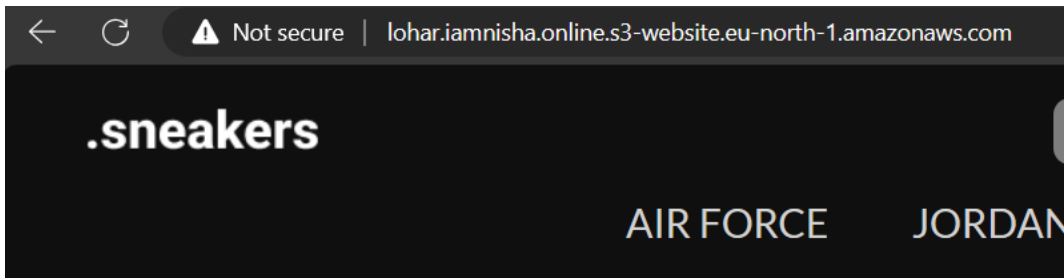
Evaluate target health

☒ Yes

Cancel

Save

- After this we can access the website using domain (lohar.iamnisha.online).



- Now the domain name is also associated with the bucket, but here we will add one more thing.
- We will generate access logs, to record details about requests made to bucket in the object.
- First create one more bucket to store the logs. Here my logs bucket name is 'iamnishaweb-logs'.
- To generate logs we need to add details, for this again visit the Properties section of the bucket (lohar.iamnisha.online) and click on <Edit> for 'Server access logging'.
- Provide required details like destination for recording logs.

Destination will be like: S3://bucket_name(iamnishaweb-logs)/prefix_with_path

Prefixes can be anything that we want.

Server access logging

- ☐ Disable
☒ Enable



Bucket policy will be updated

When you enable server access logging, the S3 console automatically updates your bucket policy to include access to the S3 log delivery group.

Destination

Specify a destination bucket in the Europe (Stockholm) eu-north-1 Region. To store your logs under a particular prefix, make sure that you include a slash (/) after the name of the prefix. Otherwise, the prefix will be added to the name of your log files.

Format: s3://<bucket>/<optional-prefix-with-path>

Destination Region

Europe (Stockholm) eu-north-1

Destination bucket name

iamnishaweb-logs

Destination prefix

iamnisha

Log object key format

- ☒ [DestinationPrefix][YYYY]-[MM]-[DD]-[hh]-[mm]-[ss]-[UniqueString]
☐ [DestinationPrefix][SourceAccountId]/[SourceRegion]/[SourceBucket]/[YYYY]/[MM]/[DD]/[YYYY]-[MM]-[DD]-[hh]-[mm]-[ss]-[UniqueString]




- Now the access logs will be recorded in the bucket iamnishaweb-logs.

iamnishaweb-logs [Info](#)

[Objects](#) | [Properties](#) | [Permissions](#) | [Metrics](#) | [Management](#) | [Access Points](#)

Objects (67) [Info](#) [Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

<input type="checkbox"/>	Name ▲	Type ▼	Last modified ▼	Size ▼	Storage class ▼
<input type="checkbox"/>	 iamnisha2024-04-15-11-12-10-E906362D50F35980	-	April 15, 2024, 16:42:11 (UTC+05:30)	1.4 KB	Standard
<input type="checkbox"/>	 iamnisha2024-04-15-11-12-15-34EDA5EA8072C014	-	April 15, 2024, 16:42:16 (UTC+05:30)	1.9 KB	Standard
<input type="checkbox"/>	 iamnisha2024-04-15-11-16-40-8F527F832F10F6A0A0	-	April 15, 2024, 16:46:41 (UTC+05:30)	6.6 KB	Standard