oLink

Toward freedom

oLink

User Guide

Release: v1.0 – 29 Aug 2021

Document Details

Revision History

Release No	Revision Date	Author	Reviewed By	Summary of Changes	Document Status
v1.0	29-Aug-2021	Kevin Jiang	Frank Lee	Initial release	Final

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1. Introduction

1.1. Purpose

The purpose of this guide is to provide an overall overview of oLink capability and also detail the individual features.

1.2. Objectives

To provide a clear understanding of the purpose and capabilities of the oLink, such that the reader can understand the features and also if required, be able to publish content/generate short URLs.

2. Overview

oLink is a firewall circumvention open-source toolset. It enables content providers from a free country like the US to target their audience in China and other repressive countries.

2.1. Components

In order to function oLink requires the additional components below to be available

- Windows Operation System. Win8.1, Win 10 is compatible. Mac OS and Other operation system is not supported at this time.
- SQL Server – used to store the content structure. The free express version is compatible.
- Web Browser – oLink work with the following industry-standard web browsers
    - Chrome
    - Safari
    - Firefox
    - Edge
    - Other modern web browsers

2.2. Service Account

Besides the above components, oLink also requires the below cloud service account to function

- Amazon Cloud Service Account.

2.3. oLink Topology and Publishing Flow

oLink uses the below components to break through the firewall.

- Management Console:

  Management Console allows users to store the following info
    - Cloud Service account details.
    - The channel name and note/description.
    - The contents in the channel.
- Content Retrieval Utility:

  The content retrieval utility fetches content (including audio, video, HTML page with <article> element and txt files) and saves it to local storage.

- Content Reconstruction

The content reconstruction fetch contents from local storage, then reconstruct contents and generate HTML files. Also, content reconstruction will upload generated files to AWS S3.

- URL Generator

  URL Generator creates short URL links that point to AWS s3 entry HTML which will not be blocked by the firewall. These links can then be promoted to users in a repressive regime.

A topology of the elements required for oLink is shown below.

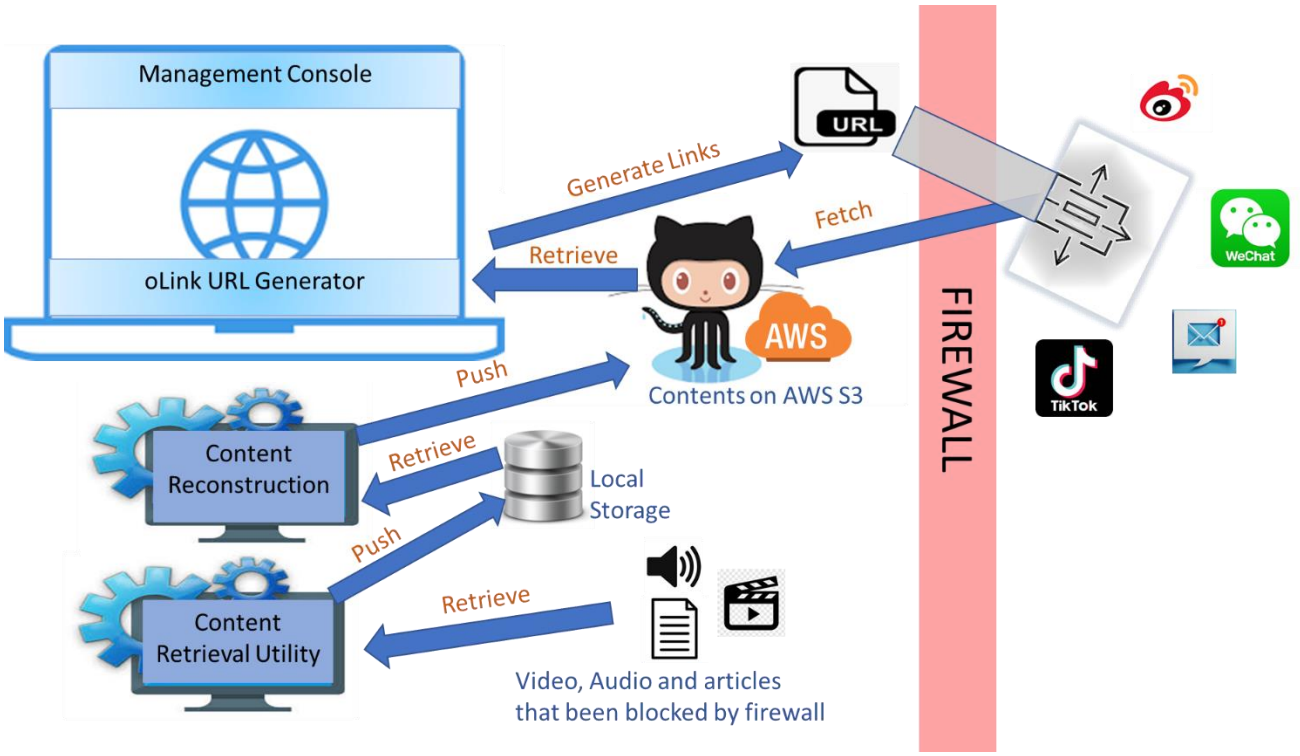


Figure 1 oLink Topology

3. oLink Features

3.1. Step 1: Save Amazon Cloud Service Account and Channel Details

oLink utilize the cloud service to allow content owner publish the article, audio and video to the audience in China and other repressive countries. So the first step is saving cloud service account details and channel details.

oLink requires below cloud service account details and channel details:

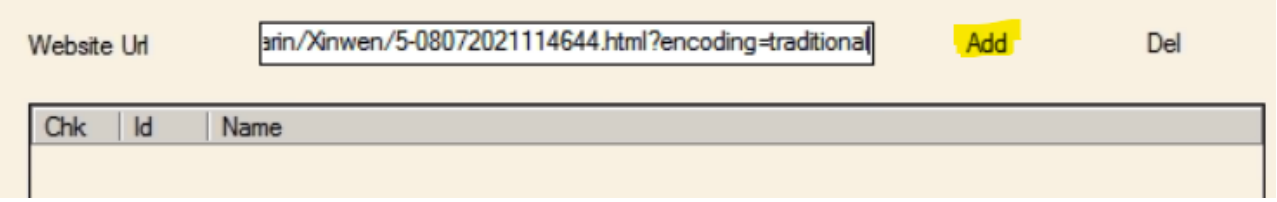
- S3 Id: Please ref to Chapter 5.2 for how to create S3 Id.
- S3 Key: Please ref to Chapter 5.2 for how to create an S3 key.
- S3 Bucket: Please ref to Chapter 5.3 for how to create an S3 Bucket.
- Channel Name:
- Channel Notes:

In the oLink “Management Console” Tab, the user needs to fill in the cloud service account/channel details and click the “Save”.

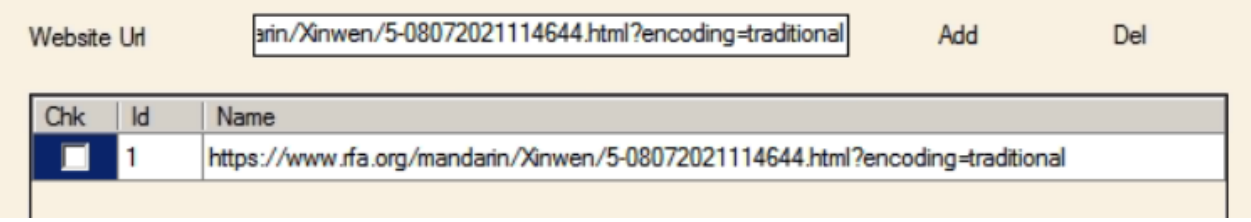
3.2. Step 2: Add Articles

The next step is adding articles. Copy articles URL to Website Url and click “Add button”.
Currently, oLink only supports WordPress, Youtube link and Facebook article link only support through purchasing professional service.

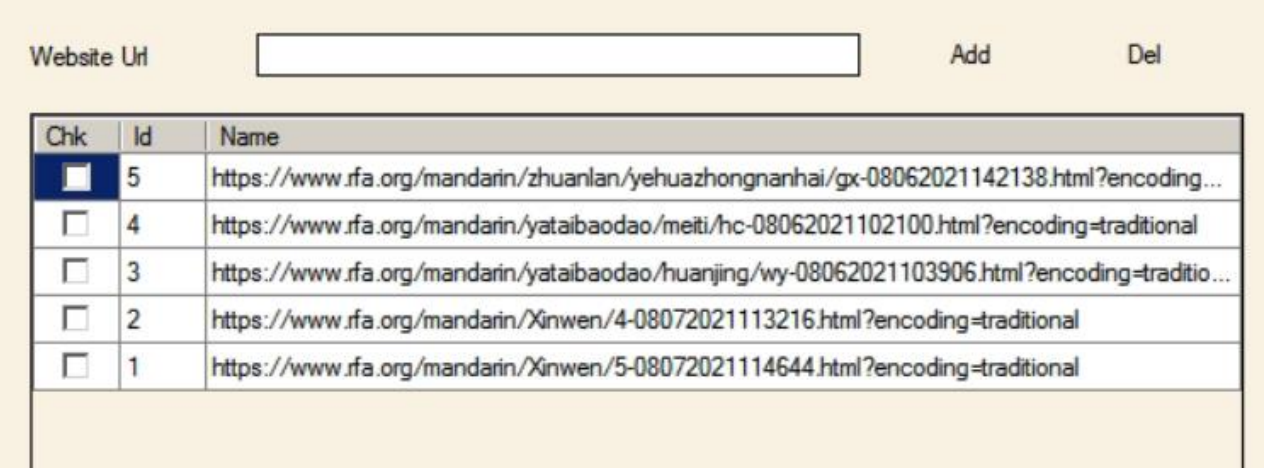
- Copy the URL to the “Website Url” field:



- Click the “Add” button



- Repeat the above two steps, add multiple articles



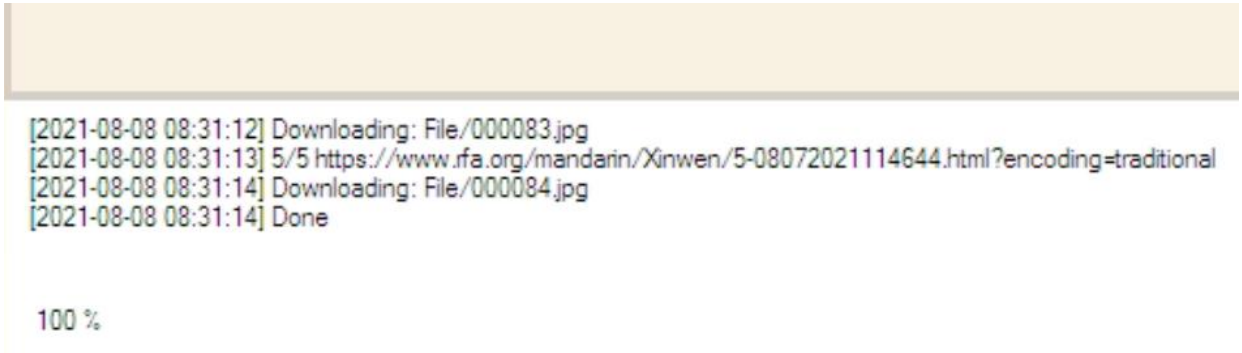
- The user also can select the single or multiple articles, then click the “Del” button to delete the article from the list.

3.3. Step 3: Content Retrieval

The next step is the retrieval of the content, like the text, audio and video from the webpage selected in step2.

- Click Tab “Content Retrieval”
- Click Button “Retrieve”

- oLink start the “Content Retrieval”, detail logs displayed in the below text box.

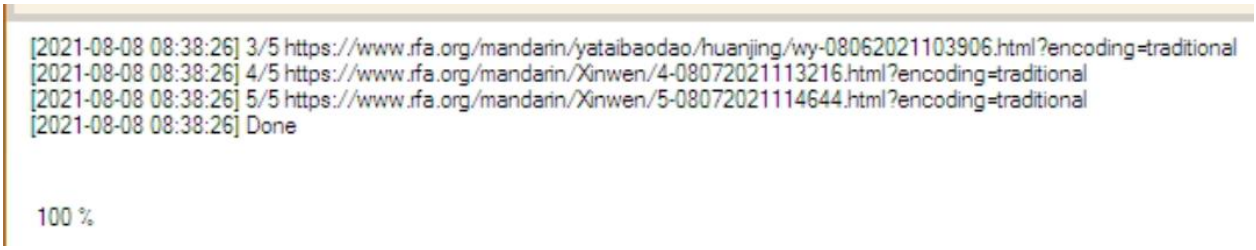


3.4. Step 4: Content Reconstruction

The next step is the content reconstruction, build the web pages in a special way to break through the firewall. In this step, oLink will use the text, audio and video file created in step 3, build multiple HTML pages:

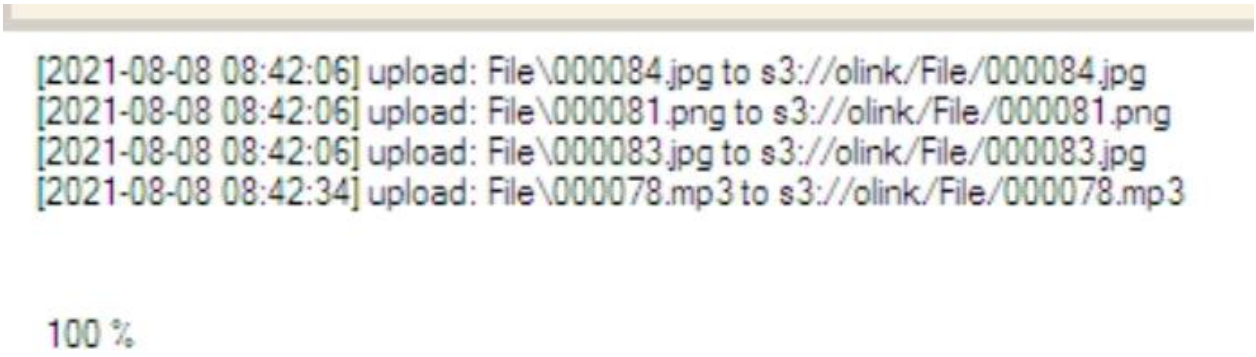
- Click Tab “Content Reconstruction”
- Click Button “Reconstruct”

- oLink start the “Content Reconstruct”, detail logs displayed in the below text box.



- HTML fiels generated
- Click the “Upload” button

- All the HTML files uploaded to the S3 bucket

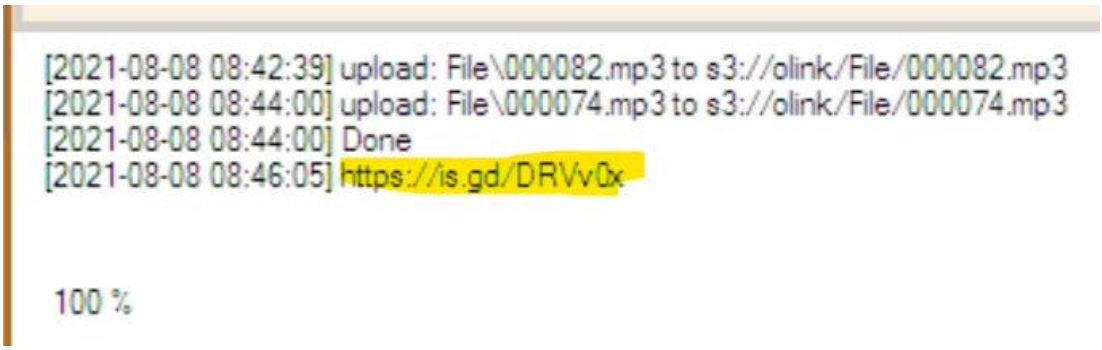


3.5. Step 5: URL Generator

This is the last step, generate the short URLs that can be used in SMS, Social media, email and other channels.

- Click Tab “URL Generator”
- Click Button “Generate”

- Short link generated. Repeat the above step, can generate multiple short links.



- If you use a browser to open the link, you can view all the articles selected in step 2.

- The generated HTML has the below functions:

    1. Click the article list to view the selected article.
    2. Play the audio/video in the article.
    3. Click the Home button return to the article list.
    4. Click the browser button back to the last viewed article.
    5. Mobile-friendly HTML design

4. oLink - Limitations

4.1. oLink Limitations

oLink has the following current limitations.

- The open-source version does not support the Youtube link, Facebook link.
- The open-source version only supports websites created by WordPress.

5. oLink Configuration

5.1. Create Database and Config Database Connection

1. Create a folder “C:\oLink”.
2. Create a sub-folder “C:\oLink\DB”.
3. Use the below script to create the database. (If the user prefer to store the database in a different folder, needs to update below “folder and file name” marked in yellow.)

```
USE [master]
GO

/****** Object:  Database [oLink]    Script Date: 8/01/2022 9:22:00 PM ******/
CREATE DATABASE [oLink]
 CONTAINMENT = NONE
 ON  PRIMARY
( NAME = N'oLink', FILENAME = N'C:\oLink\DB\oLink.mdf' , SIZE = 3072KB , MAXSIZE = UNLIMITED, FILEGROWTH = 1024KB )
 LOG ON
( NAME = N'oLink_log', FILENAME = N'C:\oLink\DB\oLink.ldf' , SIZE = 1024KB , MAXSIZE = 2048GB , FILEGROWTH = 10%)
GO


IF (1 = FULLTEXTSERVICEPROPERTY('IsFullTextInstalled'))
begin
EXEC [oLink].[dbo].[sp_fulltext_database] @action = 'enable'
end
GO

ALTER DATABASE [oLink] SET ANSI_NULL_DEFAULT OFF
GO

ALTER DATABASE [oLink] SET ANSI_NULLS OFF
GO

ALTER DATABASE [oLink] SET ANSI_PADDING OFF
GO

ALTER DATABASE [oLink] SET ANSI_WARNINGS OFF
GO

ALTER DATABASE [oLink] SET ARITHABORT OFF
GO

ALTER DATABASE [oLink] SET AUTO_CLOSE OFF
GO
```

```
ALTER DATABASE [oLink] SET AUTO_SHRINK OFF
GO

ALTER DATABASE [oLink] SET AUTO_UPDATE_STATISTICS ON
GO

ALTER DATABASE [oLink] SET CURSOR_CLOSE_ON_COMMIT OFF
GO

ALTER DATABASE [oLink] SET CURSOR_DEFAULT  GLOBAL
GO

ALTER DATABASE [oLink] SET CONCAT_NULL_YIELDS_NULL OFF
GO

ALTER DATABASE [oLink] SET NUMERIC_ROUNDABORT OFF
GO

ALTER DATABASE [oLink] SET QUOTED_IDENTIFIER OFF
GO

ALTER DATABASE [oLink] SET RECURSIVE_TRIGGERS OFF
GO

ALTER DATABASE [oLink] SET  DISABLE_BROKER
GO

ALTER DATABASE [oLink] SET AUTO_UPDATE_STATISTICS_ASYNC OFF
GO

ALTER DATABASE [oLink] SET DATE_CORRELATION_OPTIMIZATION OFF
GO

ALTER DATABASE [oLink] SET TRUSTWORTHY OFF
GO

ALTER DATABASE [oLink] SET ALLOW_SNAPSHOT_ISOLATION OFF
GO

ALTER DATABASE [oLink] SET PARAMETERIZATION SIMPLE
GO

ALTER DATABASE [oLink] SET READ_COMMITTED_SNAPSHOT OFF
GO

ALTER DATABASE [oLink] SET HONOR_BROKER_PRIORITY OFF
GO

ALTER DATABASE [oLink] SET RECOVERY SIMPLE
GO

ALTER DATABASE [oLink] SET  MULTI_USER
```

```
GO

ALTER DATABASE [oLink] SET PAGE_VERIFY CHECKSUM
GO

ALTER DATABASE [oLink] SET DB_CHAINING OFF
GO

ALTER DATABASE [oLink] SET FILESTREAM( NON_TRANSACTED_ACCESS = OFF )
GO

ALTER DATABASE [oLink] SET TARGET_RECOVERY_TIME = 60 SECONDS
GO

ALTER DATABASE [oLink] SET DELAYED_DURABILITY = DISABLED
GO

ALTER DATABASE [oLink] SET ACCELERATED_DATABASE_RECOVERY = OFF
GO

ALTER DATABASE [oLink] SET QUERY_STORE = OFF
GO

ALTER DATABASE [oLink] SET  READ_WRITE
GO



USE [oLink]
GO

/****** Object:  Table [dbo].[G10 事物] ******/
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

CREATE TABLE [dbo].[G10 事物](
	[序号] [int] IDENTITY(1,1) NOT NULL,
	[名称] [nvarchar](max) NULL,
	[标题] [nvarchar](max) NULL,
	[摘要] [nvarchar](max) NULL,
	[封面] [nvarchar](max) NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

/****** Object:  Table [dbo].[G10 文件] ******/
```

```
CREATE TABLE [dbo].[G10 文件](
        [序号] [int] IDENTITY(1,1) NOT NULL,
        [名称] [nvarchar](max) NOT NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

/****** Object:  Table [dbo].[G10 配置] ******/


CREATE TABLE [dbo].[G10 配置](
        [S3Id] [nvarchar](50) NOT NULL,
        [S3Key] [nvarchar](max) NOT NULL,
        [S3Bucket] [nchar](10) NOT NULL,
        [Name] [nvarchar](50) NULL,
        [Note] [nvarchar](max) NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO
```

4. Config Database connection

   The database connection string is stored in “oLink.exe.config”.

   If your database is using windows authentication, edit “oLink.exe.config” as below

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <add key="DB" value="server=localhost;Initial Catalog=oLink; ;persist security info=True; Integrated
Security=SSPI;/>
  </appSettings>
  <startup>
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.5" />
  </startup>
</configuration>
```

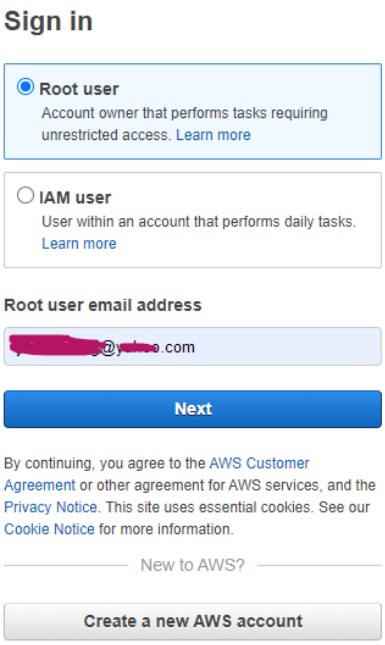
   If your database is using SQL Server authentication, edit “oLink.exe.config” as below, use your username and password to replace “sa” and “sapassword”.

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <add key="DB" value="server=localhost;Initial Catalog=oLink;User ID=sa;Password=sapasword"/>
  </appSettings>
  <startup>
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.5" />
  </startup>
</configuration>
```

5.2. Config AWS Access Key

You can use the AWS Management Console to create/manage the access keys. Follow the below steps to create AWS Access Key

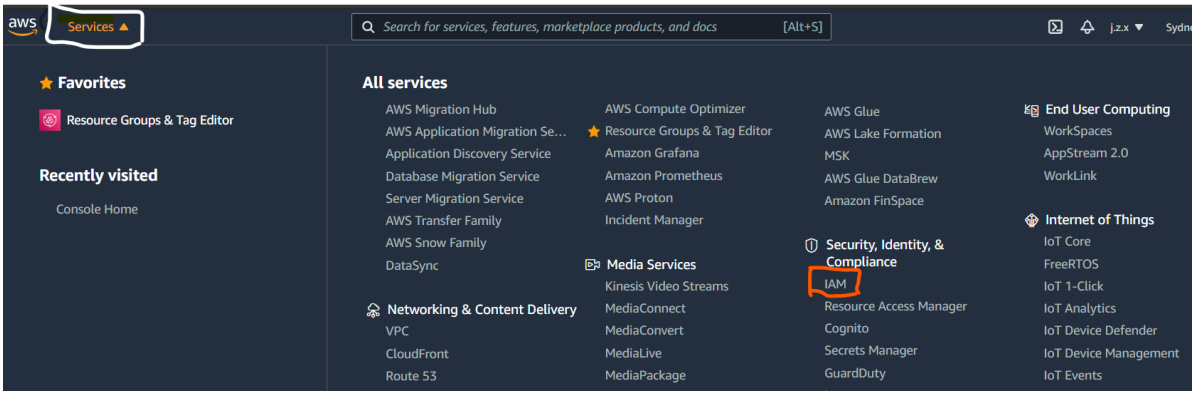
1. sign in to the AWS console.



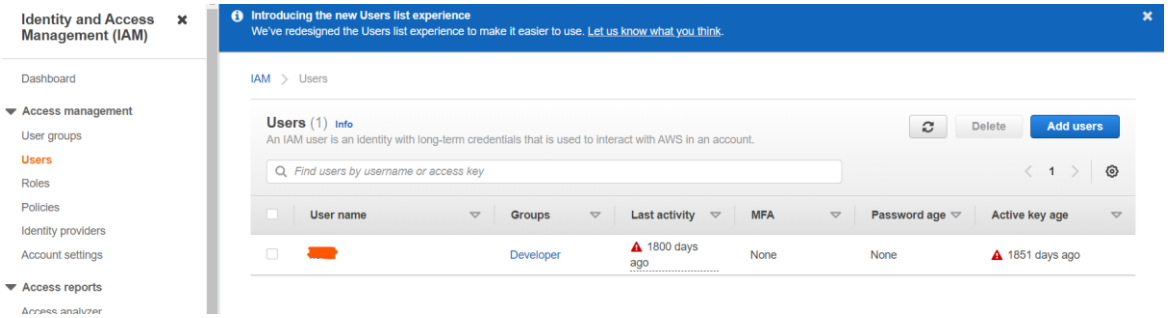
Select “Root User” and key in the email address and password.

For your convenience, the AWS sign-in page uses a browser cookie to remember your user name and account information. If you previously signed in as a different user, choose Sign in to a different account near the bottom of the page to return to the main sign-in page.

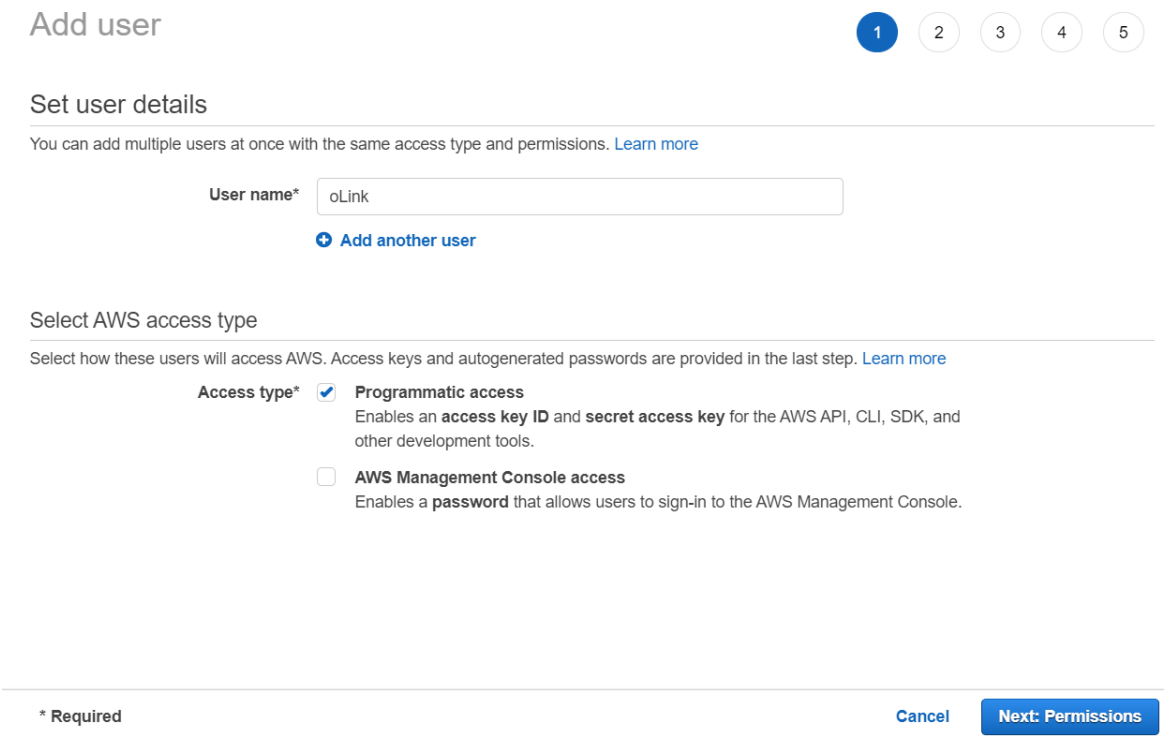
2. Click Services -> IAM



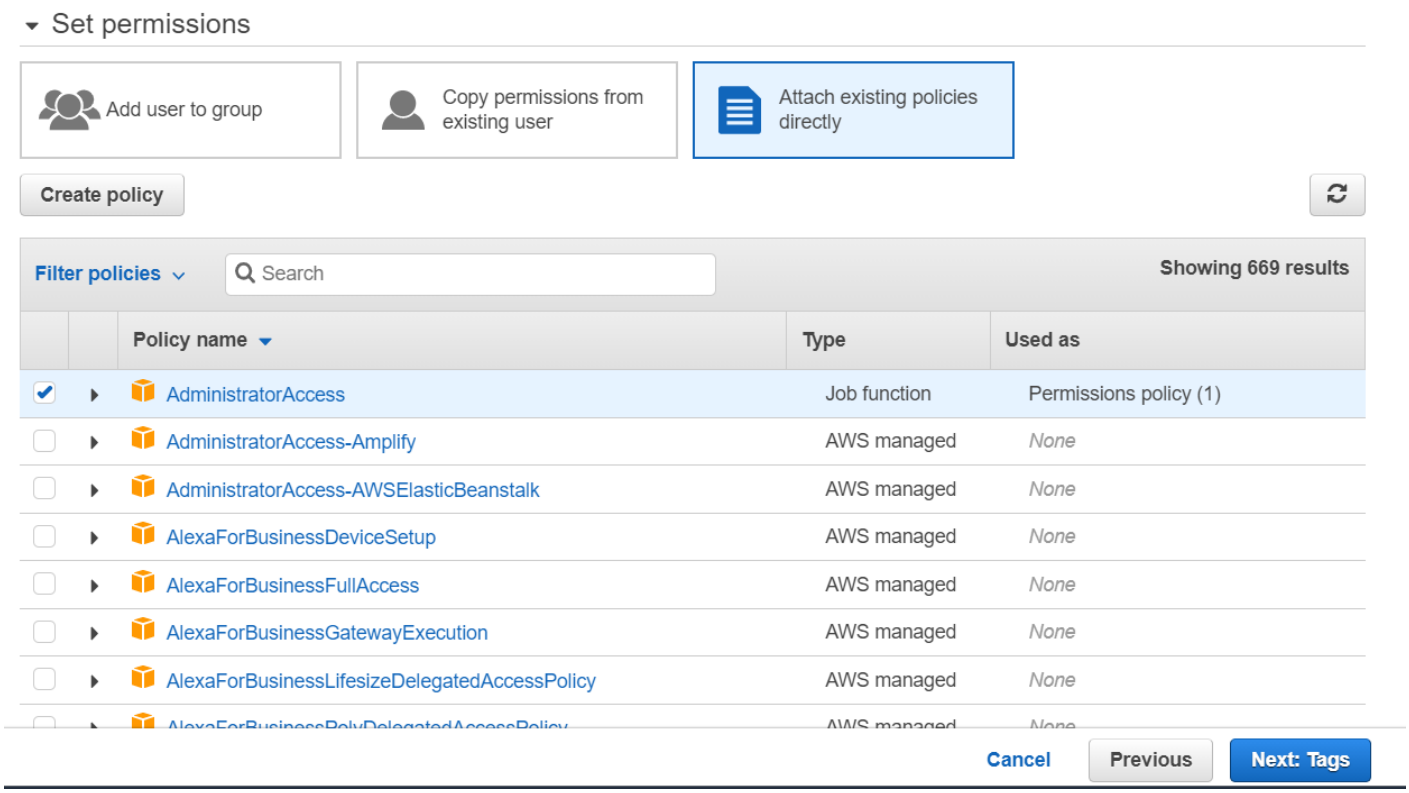
3. Select Users -> Add Users



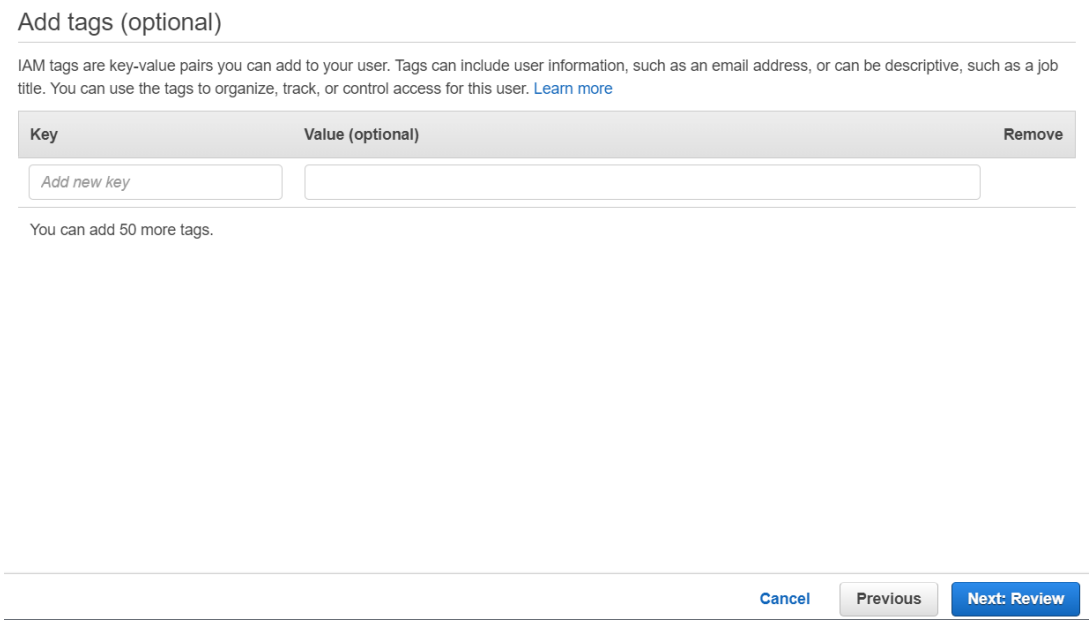
4. Key in “User Name”, Tick Access type: “Programmatic access”, then click “Next Permissions”



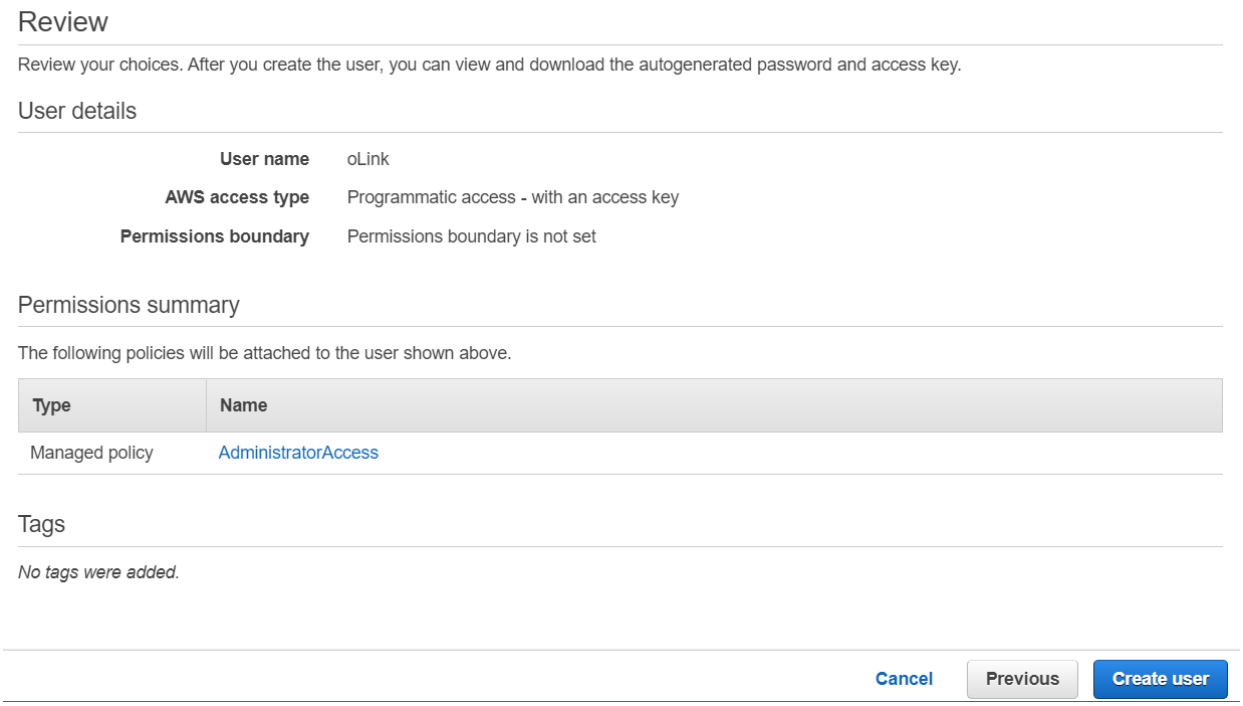
5. Select “Attach existing policies directly”, tick “AdministratorAccess”, then tick “Next Tags” .



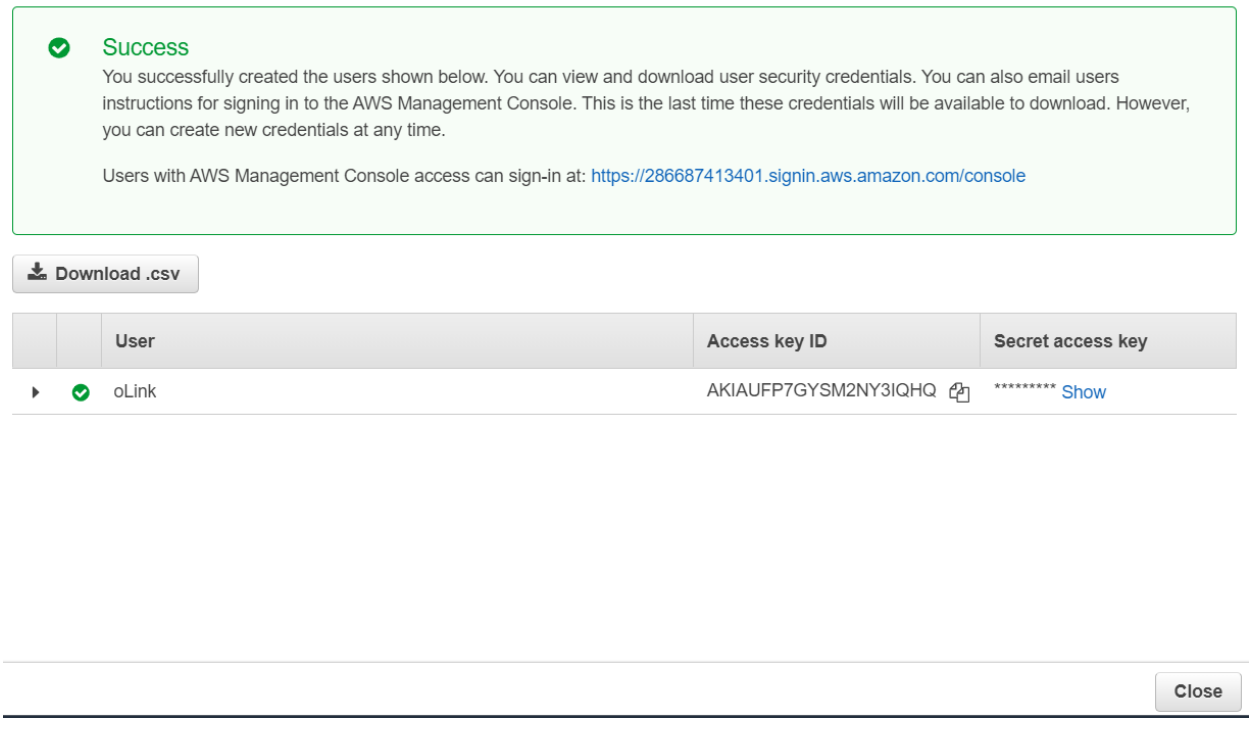
6. Click “Next: Review”



7. Click “Create User”.



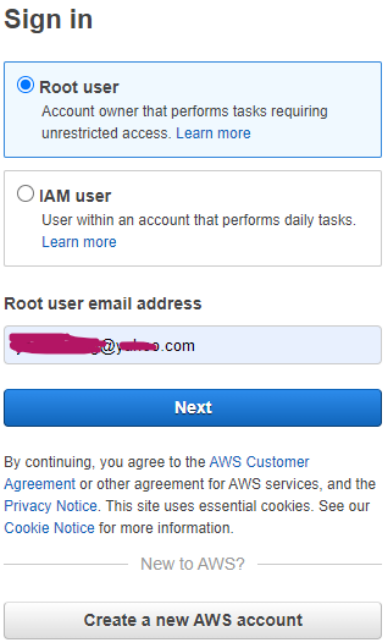
8. Click “Download .csv”, save it to the folder oLink installed, then click “Close”.



9. Find Access key ID and Secret access key in the csv file and save as S3 id and S3 Key in the oLink Management Console Tab.

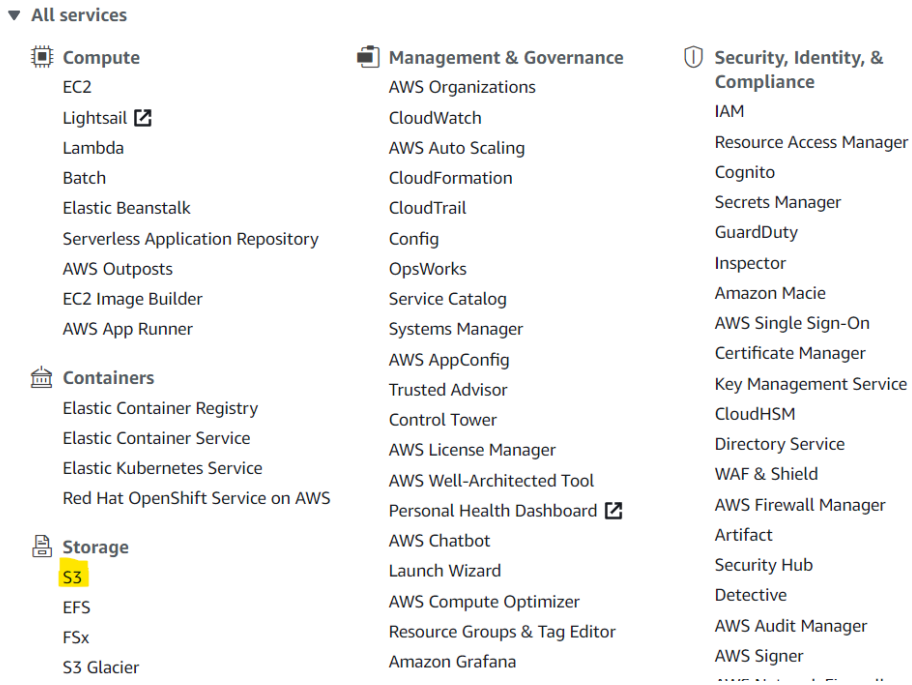
5.3 Create S3 Bucket

1. sign in to the AWS console.

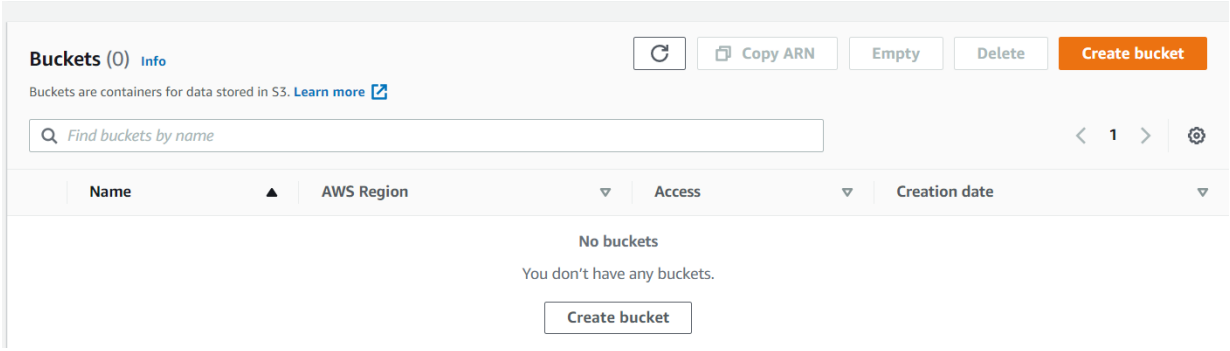


Select “Root User” and key in the email address and password.

2. Click “All Services” -> S3



3. Click Button “Create Bucket”



4. In Bucket name, enter a DNS-compliant name for your bucket.

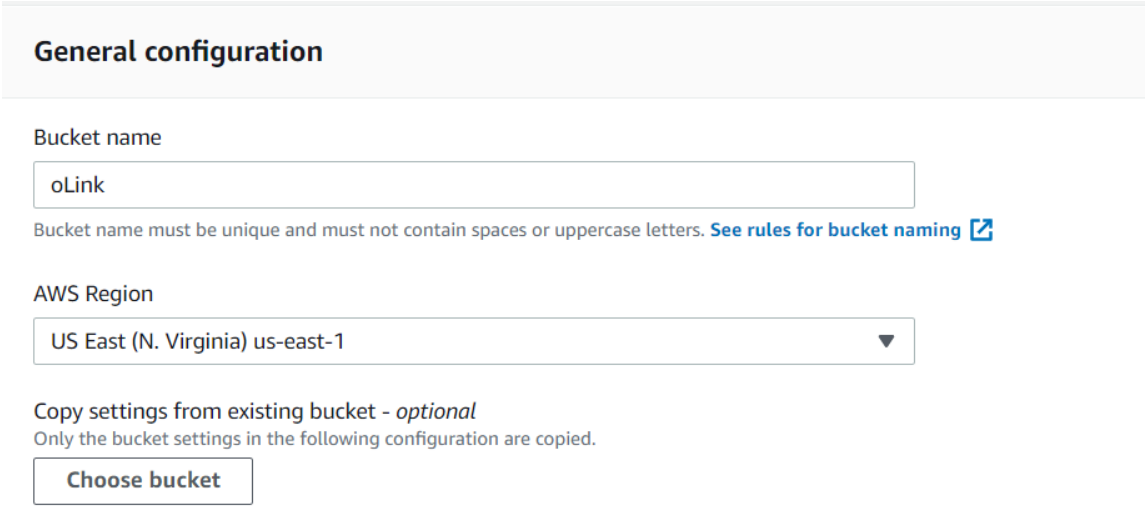
   The bucket name must

   - Be unique across all of Amazon S3.
   - Be between 3 and 63 characters long.
   - Not contain uppercase characters.
   - Start with a lowercase letter or number.

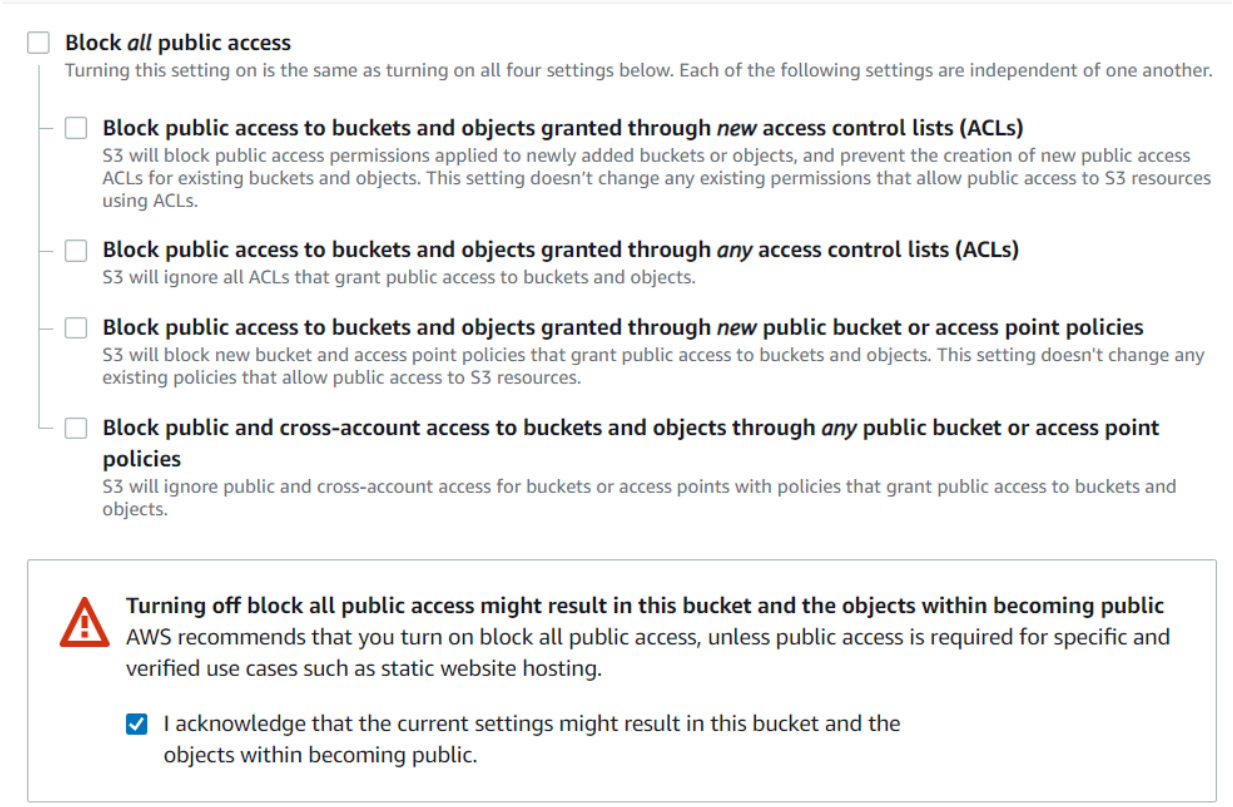
   After you create the bucket, you can't change its name.

Avoid including sensitive information, such as account numbers, in the bucket name. The bucket name is visible in the URLs that point to the objects in the bucket.

5. In Region, select “US East (N. Virginia) us-east-1”



6. Untick “Block All Public Access”
   Also, tick “I acknowledge that the current settings might result in this bucket and the objects within becoming public.”



7. Click Button “Create Bucket”

8. Save the bucket name as S3 Bucket in the oLink Management Console Tab.

5.4 Install AWS CLI

1. Download and run the AWS CLI MSI installer for Windows (64-bit):

https://awscli.amazonaws.com/AWSCLIV2.msi

Alternatively, you can run the msiexec command to run the MSI installer.

```
C:\> msiexec.exe /i https://awscli.amazonaws.com/AWSCLIV2.msi
```

For various parameters that can be used with msiexec, see msiexec on the Microsoft Docs website.

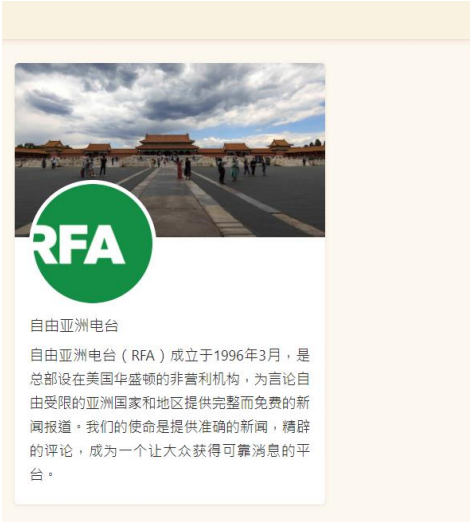
2. To confirm the installation, open the Start menu, search for cmd to open a command prompt window, and at the command prompt use the aws --version command.

```
C:\> aws --version
aws-cli/2.4.5 Python/3.8.8 Windows/10 exe/AMD64 prompt/off
```

If Windows is unable to find the program, you might need to close and reopen the command prompt window to refresh the path, or Adding the AWS CLI to your path.

5.5 Config “Logo” picture

The user can config the logo section of the generated web page.



In the oLink folder -> File, you can find two image file

1. ooFace.jpg
2. ooHead.jpg

ooFace.jpg is the logo file, the resolution is 360 * 360 px

The default image is like below, the user can change to their logo.

ooHead.jpg is the picture in the upper section, the resolution is 640 * 359 px.

The default image is like below, the user can change it to their picture.