**CC Mini project : VESITtube**

**Objective :**  To demonstrate the usage of cloud for Storage as a Service.

**Title:** VESITtube : Video streaming service using S3 in AWS.

**Abstract:**  
The project implements Storage as a Service by storing the video objects in AWS S3 bucket.  
Project is implemented using Node JS. Users can upload videos on VESITtube and other users can stream it on their browsers. The allowed video file format is MP4.

**Introduction:**   
The project is video streaming web application where users can upload videos and stream it at any point. It uses aws s3 to store data on the amazon bucket.S3 provides comprehensive security and compliance capabilities that meet even the most stringent regulatory requirements. It gives customers flexibility in the way they manage data for cost optimization, access control, and compliance. S3 provides query-in-place functionality, allowing you to run powerful analytics directly on your data at rest in S3. And Amazon S3 is the most supported storage platform available, with the largest ecosystem of ISV solutions and systems integrator partners.

**Implementation details:**

The whole project is implemented using Node JS which is a javascript framework. VESITtube is hosted on Amazon Web Services. HTML is used to create basic template for website, node.js is used for dynamicity to the website creating a single page web application.In backend AWS-S3 is used for storing users information and videos details.

The backend uses expressJs is a web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs.

We’ve used aws sdk to implement actions like put videos and list videos into the AWS S3 bucket.

Router in express js are used to execute different pieces of code according to the request of the user.These routing methods specify a callback function (sometimes called “handler functions”) called when the application receives a request to the specified route (endpoint) and HTTP method. In other words, the application “listens” for requests that match the specified route(s) and method(s), and when it detects a match, it calls the specified callback function.

When the page loads, an AJAX request is made to the server to list all the videos stored in the bucket. The server responds by sending a JSON object. The frontend parses the object and dynamically creates buttons which corresponds to different videos.

**Steps :**

1. Install Nodejs , expressJs
2. Create AWS account for aws s3 service
3. Run cc.js file from the folder
4. Goto folder and open the frontend.html page
5. Change the CORS policy as following ( go to Console → Amazon S3 → your\_bucket → Permissions→ CORS configuration)

<?xml version="1.0" encoding="UTF-8"?>

<CORSConfiguration xmlns="http://s3.amazonaws.com/doc/2006-03-01/">

<CORSRule>

<AllowedOrigin>http://localhost:8000</AllowedOrigin>

<AllowedMethod>PUT</AllowedMethod>

<MaxAgeSeconds>3000</MaxAgeSeconds>

<ExposeHeader>x-amz-server-side-encryption</ExposeHeader>

<ExposeHeader>x-amz-request

-id</ExposeHeader>

<ExposeHeader>x-amz-id-2</ExposeHeader>

<AllowedHeader>\*</AllowedHeader>

</CORSRule>

</CORSConfiguration>

1. To upload the video copy the file path and paste it enter file path textfield and give a unique name to the video and click to upload
2. For the usage of the service go to Console → Amazon S3 → your\_bucket → Management → Metrics

**Github code link:** https://github.com/VESIT-CMPN/D17B\_Group\_2

**Front-end (HTML):**

**Home.html:**

<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>

</head>

<body>

<!--

<input type="text" id="path" placeholder="Enter file path">

<input type="text" id="name" placeholder="Enter file name">

<button id="submit">Upload</button>-->

<!-- BUTTon-->

<!-- BOOT-->

<div class="row">

<div class="col-lg-8">

<div class="embed-responsive embed-responsive-16by9">

<iframe width="800" height="450" id="someFrame" src="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/videoplayback.mp4" frameborder="0" allowfullscreen></iframe>

</div>

</div>

</div>

<!-- BOOT-->

<!-- BUTTon-->

</body>

<script type="text/javascript">

$(document).ready(function(){

$("a").click(function(e) {

e.preventDefault();

console.log("presedd"+$(this).attr("href"));

$("#someFrame").attr("src", $(this).attr("href"));

})

$("#buttons").bind('click',function(){

var play=event.target.value;

var new\_link="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/"+play;

$("#someFrame").attr("src",new\_link);

})

$('#submit').on('click',function(){

var path=$('#path').val();

var name=$('#name').val();

$('#path').val(' ');

$('#name').val(' ');

console.log("path is"+path);

//AJAX

$.ajax({

url:"http://localhost:8080/upload",

data:{'link':path,'name':name}, //Reference to count\_current\_record

success:function(result){

}

});

//AJAX

});

$.ajax({

url:"http://localhost:8080/list", //Reference to count\_current\_record

success:function(result){

var obj=JSON.parse(result);

//console.log(obj[0]['val'].split('/')[4])

for(var i=0;i<obj.length;i++){

var $something= $('<input/>').attr({ type: 'button', value:obj[i]['val'].split('/')[4],id:i,class:"btn btn-primary"});

var br='<br>';

$("#buttons").append(br);

$("#buttons").append($something);

}

}

});

});

</script>

</html>

**frontend.html:**

<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>

</head>

<body>

<nav class="navbar navbar-inverse">

<div class="container-fluid">

<div class="navbar-header">

<div class="h3" style="color: white;">VesitTube</div>

</div>

<ul class="nav navbar-nav">

<li class="active"><a href="./home.html">Home</a></li>

<li><a href="./upload.html">Upload</a></li>

</ul>

</div>

</nav>

<!--

<input type="text" id="path" placeholder="Enter file path">

<input type="text" id="name" placeholder="Enter file name">

<button id="submit">Upload</button>-->

<div class="row">

<div class="col-lg-8">

<div class="embed-responsive embed-responsive-16by9">

<iframe width="1000" height="450" id="someFrame" src="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/videoplayback.mp4" frameborder="1" allowfullscreen = "true"></iframe>

</div>

</div>

<div class="col-lg-4">

<h3>Videos</h3>

<div id="buttons">

</div>

</div>

</div>

<!-- BUTTon-->

<!-- BOOT-->

<!-- BOOT-->

<!-- BUTTon-->

</body>

<script type="text/javascript">

$(document).ready(function(){

$("a").click(function(e) {

e.preventDefault();

console.log("presedd"+$(this).attr("href"));

$("#someFrame").attr("src", $(this).attr("href"));

})

$("#buttons").bind('click',function(){

var play=event.target.value;

var new\_link="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/"+play;

$("#someFrame").attr("src",new\_link);

})

$('#submit').on('click',function(){

var path=$('#path').val();

var name=$('#name').val();

$('#path').val(' ');

$('#name').val(' ');

console.log("path is"+path);

//AJAX

$.ajax({

url:"http://localhost:8080/upload",

data:{'link':path,'name':name}, //Reference to count\_current\_record

success:function(result){

}

});

//AJAX

});

$.ajax({

url:"http://localhost:8080/list", //Reference to count\_current\_record

success:function(result){

var obj=JSON.parse(result);

//console.log(obj[0]['val'].split('/')[4])

for(var i=0;i<obj.length;i++){

var $something= $('<input/>').attr({ type: 'button', value:obj[i]['val'].split('/')[4],id:i,class:"btn btn-primary"});

var br='<br>';

$("#buttons").append(br);

$("#buttons").append($something);

}

}

});

});

</script>

</html>

**upload.html:**

<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>

</head>

<body>

<h3>Upload new Video</h3>

<div class="input-group">

<span class="input-group-addon">Enter file path </span>

<input id="path" type="text" class="form-control" name="msg" placeholder="Additional Info">

</div>

<br>

<div class="input-group">

<span class="input-group-addon">Enter file name</span>

<input id="name" type="text" class="form-control" name="msg" placeholder="Additional Info">

</div>

<br>

<button id="submit">Upload</button>

<!--

File path :<input type="text" id="path" placeholder="Enter file path"><br>

File Name :<input type="text" id="name" placeholder="Enter file name"><br>

<button id="submit">Upload</button>

<form>

<br>

<div class="input-group">

<span class="input-group-addon">Enter file path </span>

<input id="path" type="text" class="form-control" name="msg" placeholder="Additional Info">

</div>

<div class="input-group">

<span class="input-group-addon">Enter file name</span>

<input id="name" type="text" class="form-control" name="msg" placeholder="Additional Info">

</div>

</form>

<br>

-->

<!-- BUTTon-->

<!-- BOOT-->

<!-- BOOT-->

<!-- BUTTon-->

</body>

<script type="text/javascript">

$(document).ready(function(){

$("a").click(function(e) {

e.preventDefault();

console.log("presedd"+$(this).attr("href"));

$("#someFrame").attr("src", $(this).attr("href"));

})

$("#buttons").bind('click',function(){

var play=event.target.value;

var new\_link="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/"+play;

$("#someFrame").attr("src",new\_link);

})

$('#submit').on('click',function(){

var path=$('#path').val();

var name=$('#name').val();

$('#path').val(' ');

$('#name').val(' ');

console.log("path is"+path);

//AJAX

$.ajax({

url:"http://localhost:8080/upload",

data:{'link':path,'name':name}, //Reference to count\_current\_record

success:function(result){

}

});

//AJAX

});

$.ajax({

url:"http://localhost:8080/list", //Reference to count\_current\_record

success:function(result){

var obj=JSON.parse(result);

//console.log(obj[0]['val'].split('/')[4])

for(var i=0;i<obj.length;i++){

var $something= $('<input/>').attr({ type: 'button', value:obj[i]['val'].split('/')[4],id:i,class:"btn btn-primary"});

var br='<br>';

$("#buttons").append(br);

$("#buttons").append($something);

}

}

});

});

</script>

</html>

**Back-end (Node JS):**

**cc.js:**

var AWS = require('aws-sdk'),

fs = require('fs');

var express = require('express');

var app = express();

var port = process.env.PORT || 8080;

var router = express.Router();

var url = require("url");

// For dev purposes only

AWS.config.update({ accessKeyId: 'AKIAIZ26MXVD5SHOLT5Q', secretAccessKey: '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' });

var s3 = new AWS.S3();

// Read in the file, convert it to base64, store to S3

//Upload

router.get('/upload', function(req, res) {

res.setHeader('Access-Control-Allow-Origin', '\*');

res.setHeader('Access-Control-Allow-Methods', 'GET, POST, OPTIONS, PUT, PATCH, DELETE'); // If needed

res.setHeader('Access-Control-Allow-Headers', 'X-Requested-With,contenttype'); // If needed

res.setHeader('Access-Control-Allow-Credentials', true); // If needed

var param = url.parse(req.url,true).query;

var link=param.link;

var name=param.name;

console.log('link'+link);

fs.readFile(link, function (err, data) {

if (err) { throw err; }

var base64data = new Buffer(data, 'binary');

s3.putObject({

Bucket: 'testabhijeetcoder',

Key: name,

Body: base64data,

ACL: 'public-read',

ContentType: 'video/mp4'

},function (resp) {

console.log(arguments);

console.log('Successfully uploaded package.');

res.end(JSON.stringify({'status':'Successfully Uploaded'}));

});

});

});

//Upload

//Listing

router.get('/list', function(req, res) {

res.setHeader('Access-Control-Allow-Origin', '\*');

res.setHeader('Access-Control-Allow-Methods', 'GET, POST, OPTIONS, PUT, PATCH, DELETE'); // If needed

res.setHeader('Access-Control-Allow-Headers', 'X-Requested-With,contenttype'); // If needed

res.setHeader('Access-Control-Allow-Credentials', true); // If needed

var params = {

Bucket: "testabhijeetcoder"

//Key: "sample.3gp"

};

s3.listObjects(params, function(err, data) {

if (err) console.log(err, err.stack); // an error occurred

else console.log("done"); // successful response

var it=data.Contents.length;

var links=[];

var val;

for(var i=0;i<it;i++){

console.log('Link is:https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/'+data.Contents[i]['Key']);

val="https://s3.eu-central-1.amazonaws.com/testabhijeetcoder/"+data.Contents[i]['Key'];

links.push({'id':i,'val':val});

console.log("length"+links.length);

}

res.end(JSON.stringify(links));

});

});

//Listing

app.use('/', router);

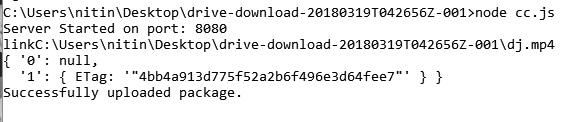
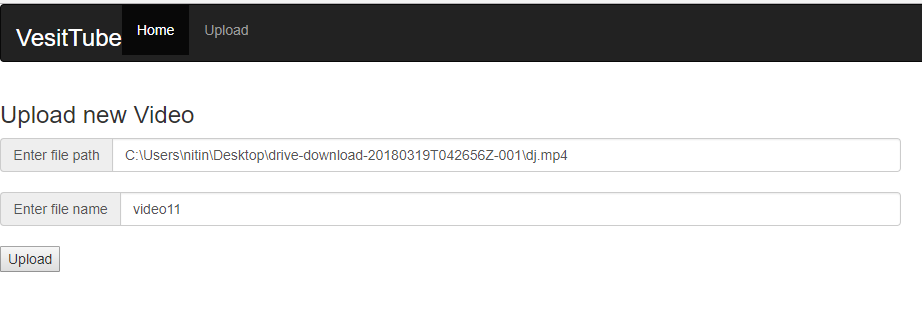
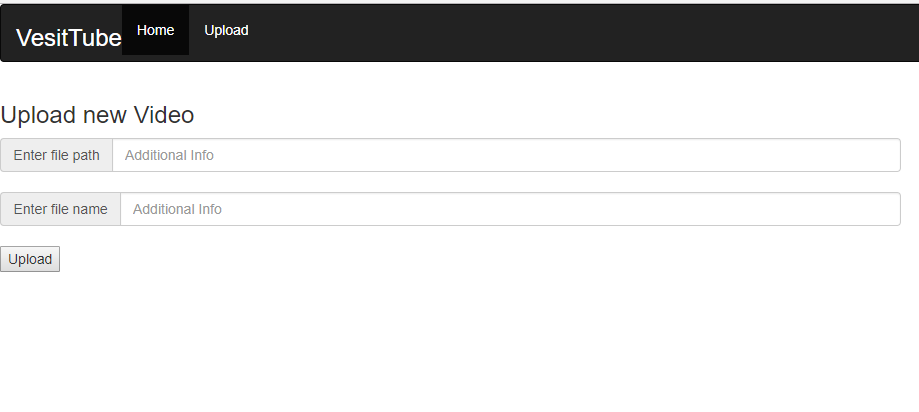
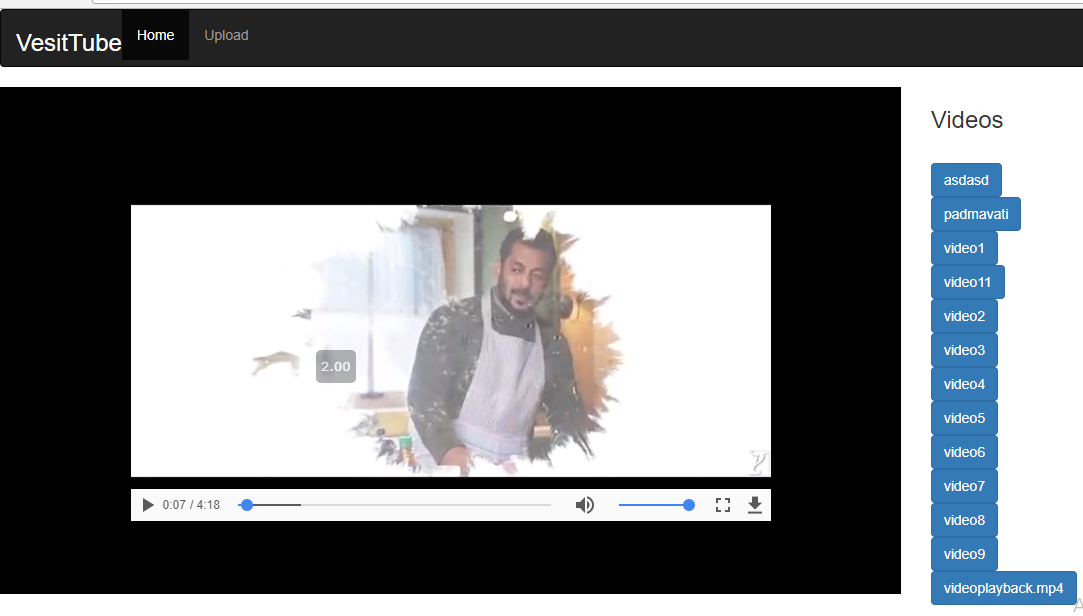
// START THE SERVER

// ==============================================

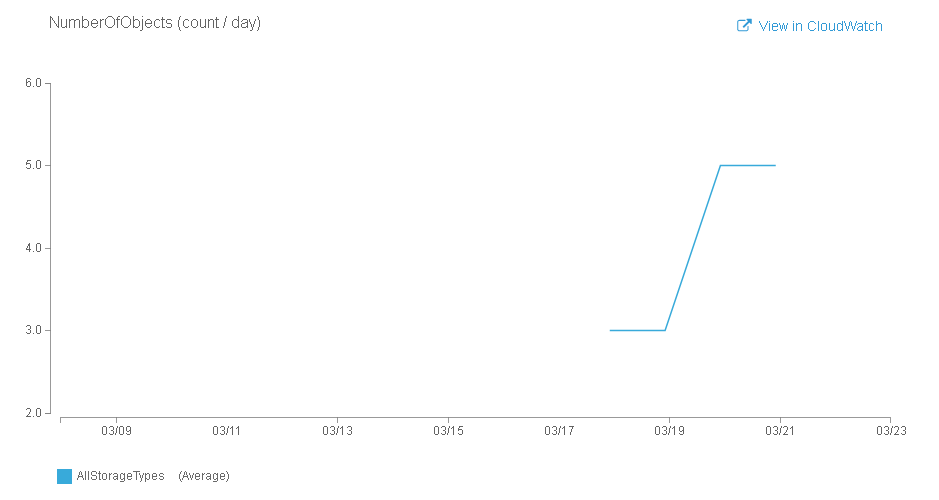
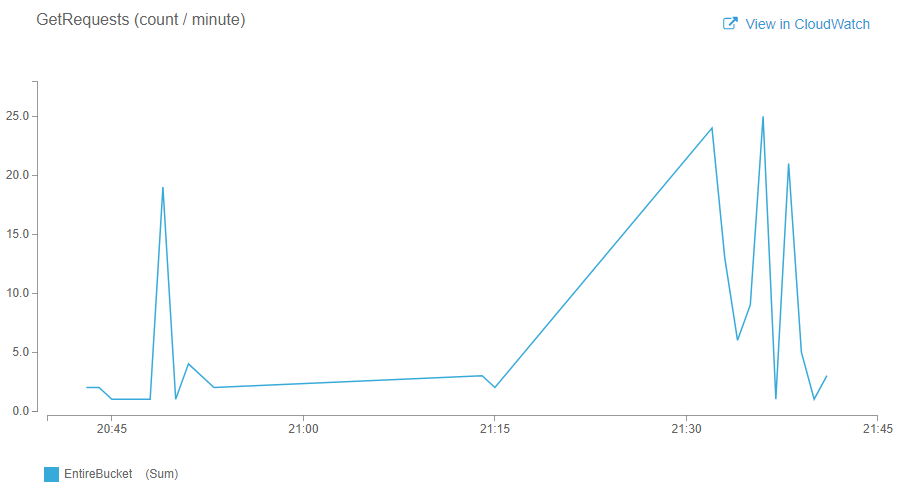
app.listen(port);

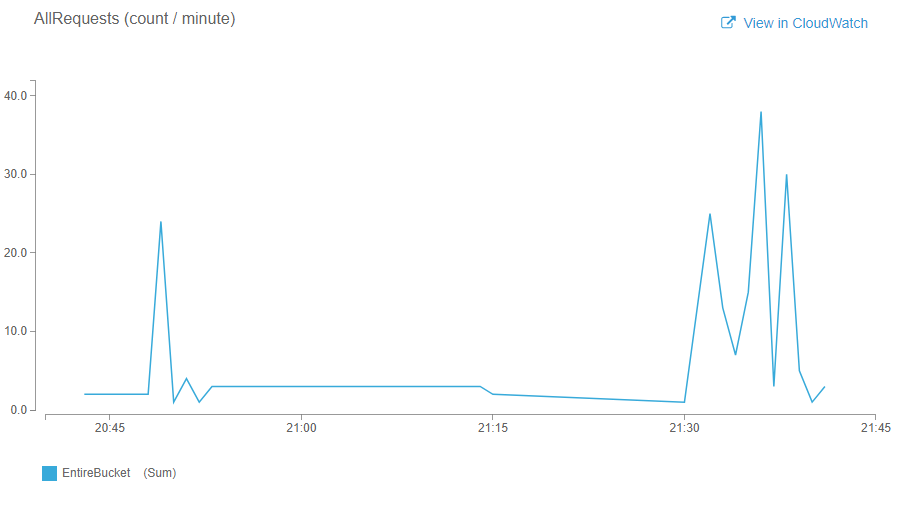
console.log('Server Started on port: ' + port);

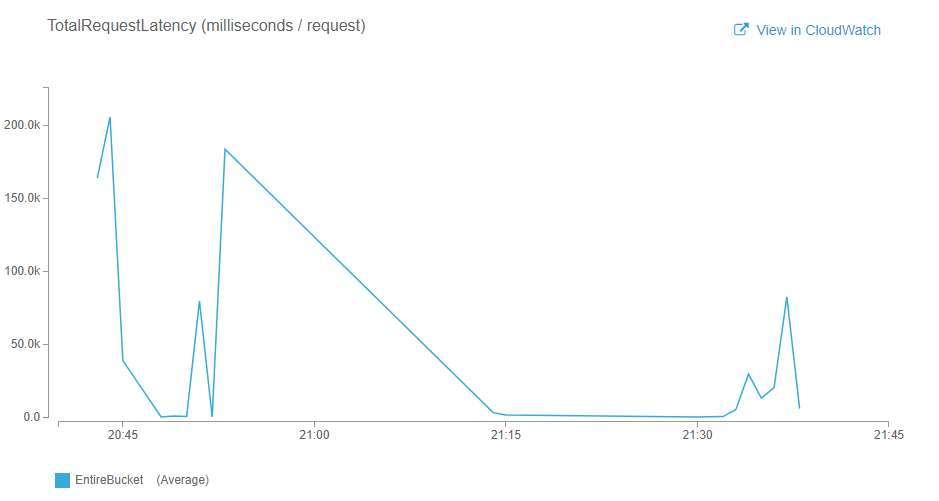
**Screenshots:**

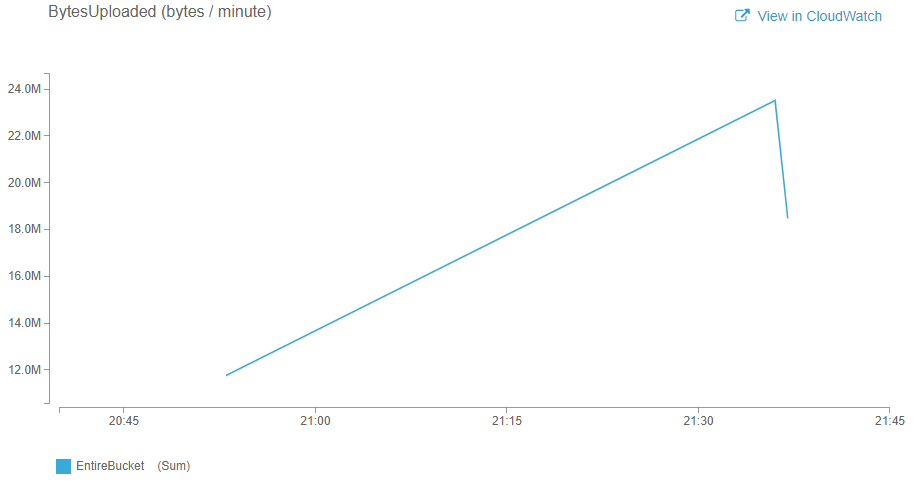
****

**Analytics:**

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**Conclusion:** A Cloud storage system for Video storage and streaming was successfully implemented and hosted on AWS Cloud services.