


Automatic loading  
of JSON file from  
S3 to DynamoDB  
using Lambda  
function




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# S3 file loaded in bucket

Amazon S3 > city23082021 > data/ > city.json

city.json [Info](#)

 Copy S3 URI

 Download

Open 

Object actions ▼

Properties

Permissions

Versions

## Object overview

Owner

AWS Region

US East (Ohio) us-east-2

Last modified

August 28, 2021, 19:14:37 (UTC+05:30)

Size

3.0 KB


Type

json


Key

 data/city.json

S3 URI

 s3://city23082021/data/city.json

Amazon Resource Name (ARN)

 arn:aws:s3:::city23082021/data/city.json

Entity tag (Etag)

 f4b873576cb0cf5d82f5ded55861ea78

Object URL

 <https://city23082021.s3.us-east-2.amazonaws.com/data/city.json>

# City.json file

city.json

```
{
  "LatD": 41,
  "LatM": 5,
  "LatS": 59,
  "NS": "N",
  "LonD": 80,
  "LonM": 39,
  "LonS": 0,
  "EW": "W",
  "City": "Youngstown",
  "State": "OH"
},
{
  "LatD": 42,
  "LatM": 52,
  "LatS": 48,
  "NS": "N",
  "LonD": 97,
  "LonM": 23,
  "LonS": 23,
  "EW": "W",
  "City": "Yankton",
  "State": "SD"
},
{
  "LatD": 46,
  "LatM": 35,
  "LatS": 59,
  "NS": "N",
  "LonD": 120,
  "LonM": 30,
  "LonS": 36,
  "EW": "W",
  "City": "Yakima"
```

# DynamoDB Table

DynamoDB > Tables > city

Tables (1)

Tag

Any table tag

Find tables by name

< 1 > ⚙

city

city

Overview | Indexes | Monitor | Global tables | Backups | Exports and streams | Additional settings

General information

Partition key City (String)	Sort key -	Capacity mode Provisioned	Table status ✔ Active ✔ No active alarms
Indexes 0 globals, 0 locals	DynamoDB stream ⊖ Disabled	Point-in-time recovery (PITR) ⊖ Disabled	Time to Live (TTL) Info ⊖ Disabled
Replication Regions 0 Regions	Encryption Owned by Amazon	Date created August 24, 2021, 21:54:57 (UTC+05:30)	Amazon Resource Name (ARN) arn:aws:dynamodb:us-east-2:093487613626:table/city

# Lambda Function Overview

Lambda > Functions > json\_from\_s3\_to\_dynamodb

## json\_from\_s3\_to\_dynamodb

Throttle

 Copy ARN

Actions ▼

### ▼ Function overview [Info](#)



json\_from\_s3\_to\_dynamodb



Layers

(1)



S3

+ Add trigger

+ Add destination

Description

-

Last modified

15 hours ago

Function ARN



arn:aws:lambda:us-east-2:093487613626:function:json\_from\_s3\_to\_dynamodb

# Lambda Function Layers and Runtime settings

**Runtime settings** [Info](#) Edit

Runtime  
Python 3.8

Handler [Info](#)  
lambda\_function.lambda\_handler

**Layers** [Info](#) Edit Add a layer

Merge order	Name	Layer version	Version ARN
1	Klayers-python38-pandas	38	arn:aws:lambda:us-east-2:770693421928:layer:Klayers-python38-pandas:38

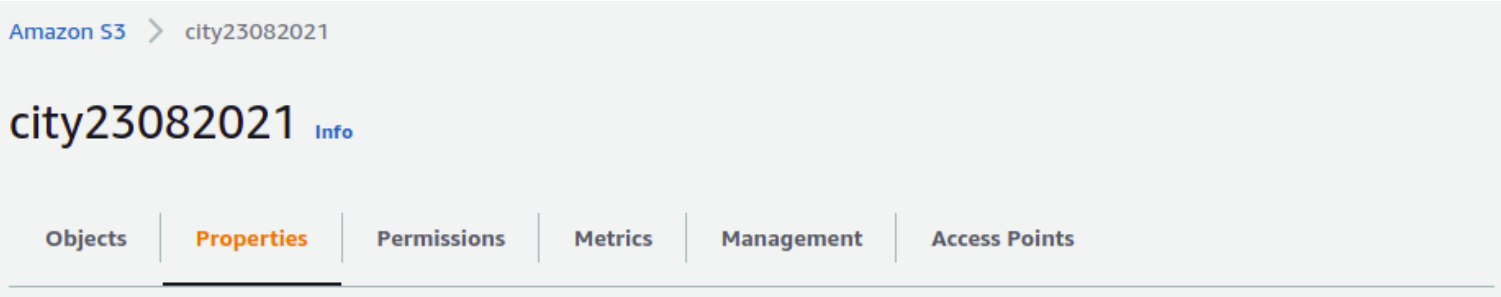
## Pandas library resource for layer 1

→ ↺ 🏠 🔒 [github.com/keithrozario/Klayers/blob/master/deployments/python3.8/arns/us-east-2.csv](https://github.com/keithrozario/Klayers/blob/master/deployments/python3.8/arns/us-east-2.csv)

apps ★ Bookmarks 📁 Imported Fro... 📺 US10Y: 2.291 -... 📦 Kitco Gold Chart 📈 Oil Price Chart 📈 DXY Index Qu... » 📁 Oth

190	pandas	1.3.1	deprecated	2021-10-15T02:00:48	arn:aws:lambda:us-east-2:770693421928:layer:Klayers-python38-pandas:37
191	pandas	1.3.2	latest		arn:aws:lambda:us-east-2:770693421928:layer:Klayers-python38-pandas:38
192	parliament	1.4.0	deprecated	2021-08-27T02:02:39	arn:aws:lambda:us-east-2:770693421928:layer:Klayers-python38-parliament:74

# Bucket property setup



Under property tab setup Event notification

**Event notifications (1)**  
Send a notification when specific events occur in your bucket. [Learn more](#)

Edit

Delete

Create event notification

<input type="checkbox"/>	Name	Event types	Filters	Destination type	Destination
<input type="checkbox"/>	S3PutEvent	All object create events	data, .json	Lambda function	<a href="#">json_from_s3_to_dynamodb</a>

# S3 Create Event Notification

## Create event notification [Info](#)

The notification configuration identifies the events you want Amazon S3 to publish and the destinations where you want Amazon S3 to send the notifications. [Learn more](#)

### General configuration

Event name

Event name can contain up to 255 characters.

Prefix - *optional*

Limit the notifications to objects with key starting with specified characters.

Suffix - *optional*

Limit the notifications to objects with key ending with specified characters.

### Event types

Specify at least one type of event for which you want to receive notifications. [Learn more](#)

#### ☒ All object create events

s3:ObjectCreated:\*

##### ☒ Put

s3:ObjectCreated:Put

##### ☒ Post

s3:ObjectCreated:Post

##### ☒ Copy

s3:ObjectCreated:Copy

##### ☒ Multipart upload completed

s3:ObjectCreated:CompleteMultipartUpload

### Destination

Choose a destination to publish the event. [Learn more](#)

#### ☒ Lambda function

Run a Lambda function script based on S3 events.

#### ☐ SNS topic

Send notifications to email, SMS, or an HTTP endpoint.

#### ☐ SQS queue

Send notifications to an SQS queue to be read by a server.

### Specify Lambda function

#### ☒ Choose from your Lambda functions

#### ☐ Enter Lambda function ARN

### Lambda function



# S3 Event notification configuration sets Lambda trigger

Lambda > Functions > json\_from\_s3\_to\_dynamodb

json\_from\_s3\_to\_dynamodb

ThrottleCopy ARNActions

Function overview Info

CodeTestMonitorConfigurationAliasesVersions

General configuration

Triggers

Permissions

Destinations

Environment variables

Tags

VPC

Monitoring and operations tools

Triggers (1)


RefreshEnableDisableFix errorsDeleteAdd trigger

Search S31 match

☐

Trigger

☐

 **S3: city23082021**  
arn:aws:s3:::city23082021

▼ Details

Event type: **ObjectCreated**  
Notification name: **S3PutEvent**  
Prefix: **data**  
Suffix: **.json**

# AIM Policy to access S3 and DynamoDB



The screenshot displays the AWS Identity and Access Management (IAM) console. On the left, the navigation pane shows the 'Policies' section under 'Access management'. The main content area shows the details for a policy named 's3\_lambda\_dynamodb'. The policy is defined with the following JSON:

```
1 {  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {  
5       "Sid": "VisualEditor0",  
6       "Effect": "Allow",  
7       "Action": [  
8         "s3:*",  
9         "dynamodb:*"  
10      ],  
11      "Resource": "*"   
12    }  
13  ]  
14 }
```

The policy is currently in a 'Visual Editor' state, as indicated by the 'VisualEditor0' SID. The 'Effect' is set to 'Allow', and the 'Action' is set to 's3:\*' and 'dynamodb:\*'. The 'Resource' is set to '\*'. The policy is currently in a 'Visual Editor' state, as indicated by the 'VisualEditor0' SID.

# AIM Role for using Policy

## Identity and Access Management (IAM)

### Dashboard

### ▼ Access management

User groups

Users

**Roles**

Policies

Identity providers

Account settings

### ▼ Access reports

Access analyzer

Archive rules

Analyzers

Settings



Credential report

Organization activity

[Roles](#) > [s3\\_lambda\\_dynamodb](#)

## Summary

Delete role

Role ARN	arn:aws:iam::093487613626:role/s3_lambda_dynamodb 
Role description	Allows Lambda functions to call AWS services on your behalf.   <a href="#">Edit</a>
Instance Profile ARNs	
Path	/
Creation time	2021-08-27 00:51 UTC+0530
Last activity	2021-08-28 19:14 UTC+0530 (Today)
Maximum session duration	1 hour <a href="#">Edit</a>

### Permissions

### Trust relationships

### Tags


### Access Advisor

### Revoke sessions

### ▼ Permissions policies (2 policies applied)

Attach policies

[+ Add inline policy](#)

Policy name ▼	Policy type ▼	
▶  <a href="#">AWSLambdaBasicExecutionRole</a>	AWS managed policy	✕
▶ <a href="#">s3_lambda_dynamodb</a>	Managed policy	✕

# Using Policy in Lambda function

Lambda > Functions > json\_from\_s3\_to\_dynamodb

json\_from\_s3\_to\_dynamodb

Throttle

Copy ARN

Actions ▼

► Function overview [Info](#)

Code

Test

Monitor

**Configuration**

Aliases

Versions

**Resource-based policy** [Info](#)

[View policy document](#)

A resource-based policy lets you grant permissions to other AWS accounts or services on a per-resource basis.

**Policy statements (1)**

Edit

Delete

Add permissions

Find policy statements

< 1 >

Statement ID

▼

Principal

▲

Conditions

Ac

○ 093487613626\_event\_permissions\_from\_city23082021\_for\_json\_from\_s3\_to\_dynamodb

s3.amazonaws.com

StringEquals,  
ArnLike

lan

# Policy statement

## Policy statement details

Statement ID

093487613626\_event\_permissions\_from\_city23082021\_for\_json\_from\_s3\_to\_dynamodb

Principal

s3.amazonaws.com

Effect

Allow

Action

lambda:InvokeFunction

Conditions

```
{
  "StringEquals": {
    "AWS:SourceAccount": "093487613626"
  },
  "ArnLike": {
    "AWS:SourceArn": "arn:aws:s3:::city23082021"
  }
}
```

# Cloudwatch log group

CloudWatch > Log groups > /aws/lambda/json\_from\_s3\_to\_dynamodb

## /aws/lambda/json\_from\_s3\_to\_dynamodb

Actions ▼

View in Logs Insights

Search log group

### ▼ Log group details

Retention

Never expire

KMS key ID

-

Creation time

2 days ago

Metric filters

0

Stored bytes

17.81 KB

Subscription filters

0

ARN

arn:aws:logs:us-east-2:093487613626:log-group:/aws/lambda/json\_from\_s3\_to\_dynamodb:\*

Contributor Insights rules

-

# Cloudwatch logs on uploading file city.json

CloudWatch

☐ New menu experience

Favorites

Dashboards

▼ Alarms ⚠️ 0 ✅ 2 ⋮ 0

In alarm

All alarms

▼ Logs

Log groups

Log streams

Metric filters

Subscription filters

Contributor Insights

Tags

Log streams (1/12)

⌵

Log stream

⌵

Last event time

⌵

☒

2021/08/28/[\$LATEST]18d80de4cb2c438dbe1bc21964...

2021-08-28 19:14:40 (UTC+05:30)

☐

2021/08/28/[\$LATEST]be694a04498a4f5c80d91cc7ab5...

2021-08-28 18:56:36 (UTC+05:30)

CloudWatch > Log groups > /aws/lambda/json\_from\_s3\_to\_dynamodb > 2021/08/28/[\$LATEST]18d80de4cb2c438dbe1bc219641ef5c8

Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

☐ View as text 

Actions ⌵

Create Metric Filter

Clear 1m 30m 1h 12h Custom

▶

Timestamp

Message

No older events at this moment. [Retry](#)

▶ 2021-08-28T19:14:38.197+05:30 OpenBLAS WARNING - could not determine the L2 cache size on this system, assuming 256k

▶ 2021-08-28T19:14:39.974+05:30 START RequestId: d9cb5c06-1a0c-4439-b2c0-0916756aff09 Version: \$LATEST

▶ 2021-08-28T19:14:40.763+05:30 END RequestId: d9cb5c06-1a0c-4439-b2c0-0916756aff09

▶ 2021-08-28T19:14:40.763+05:30 REPORT RequestId: d9cb5c06-1a0c-4439-b2c0-0916756aff09 Duration: 787.55 ms Billed Durat...

No newer events at this moment. [Auto retry paused](#). [Resume](#)

# DynamoDB table items added by lambda function

## Items Info

Autopreview

Tables (1)

Tag

Any table tag

Find tables by name

< 1 >

⚙

city

▼ city

View table details

Scan

Query

Table or Index

city

► Filters

Run

Reset

✓ Completed

Read capacity units consumed: 0.5

Items returned (17)

Actions ▼

Create item

Find Items

< 1 >

⚙

✕

<input type="checkbox"/>	City ▼	EW ▼	LatD ▼	LatM ▼	LatS ▼	LonD ▼	LonM
<input type="checkbox"/>	Wilmington	W	34	14	24	77	55
<input type="checkbox"/>	Wisconsin ...	W	43	37	48	89	46
<input type="checkbox"/>	Youngstown	W	41	5	59	80	39