
Using and Abusing AWS Lambda

A guide to fun ideas you should keep out
of production
by Alex Keeling

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assertion

AWS Lambda is just a regular computer, with a bunch of convenience on top

If you can run it on your local machine, you can run it on Lambda

as long as it's not too big* or long-running**

*50MB zipped, 250 MB unzipped

**15 minutes

—

Problem 1:

Garbage Day

SMS Garbage Day Reminder

```
1 import os
2 import time
3 import boto3
4
5 SECONDS_IN_WEEK = 604800
6
7 def lambda_handler(event, context):
8     numbers = os.environ['NUMBERS'].split(',')
9     odd_week = bool(int((time.time()) / SECONDS_IN_WEEK) % 2)
10
11     if odd_week:
12         message = 'Garbage day tomorrow: Blue & Green'
13     else:
14         message = 'Garbage day tomorrow: Clear & Green'
15
16     for number in numbers:
17         sns = boto3.client('sns')
18         response = sns.publish(
19             PhoneNumber=number,
20             Message=message
21         )
22         print(f'Sent "{message}" to {number}')
23         print(f'response: {response}')
```



—

Problem 2:

Git mirroring

Test Project

Source

Assets

Resources

Full-Response

Scripts

Deployment

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/

Name	Size	Last modified	Message
src		2019-01-29	Initial commit made by AWS CodeFirst during project creation.
README.md	3.45 KB	6 seconds ago	Initial commit made by AWS CodeFirst during project creation.
buildspec.yml	645 B	2019-01-29	Initial commit made by AWS CodeFirst during project creation.
index.js	233 B	2 hours ago	Initial commit made by AWS CodeFirst during project creation.
template.yml	1,021 KB	2019-01-29	Initial commit made by AWS CodeFirst during project creation.

README

Lambda is fun!

This sample code helps get you started with a simple project with service using serverless architecture stuff.

What's Here

This sample includes:

- `README.md` - this file
- `buildspec.yml` - this file is used by a service to package your application for deployment to server.
- `index.js` - this file contains the sample code for the web service.
- `template.yml` - this file contains the Application Model used by server to deploy your application on platform.
- `index.html` - this file contains the sample code for your application.

Feedback

English (UK)

recap

We just ran a precompiled binary (git) in AWS Lambda!

How were we able to do that!?

Poking around inside Lambda



```
import subprocess

def lambda_handler(event, context):
    print(subprocess.getoutput("whoami"))
```

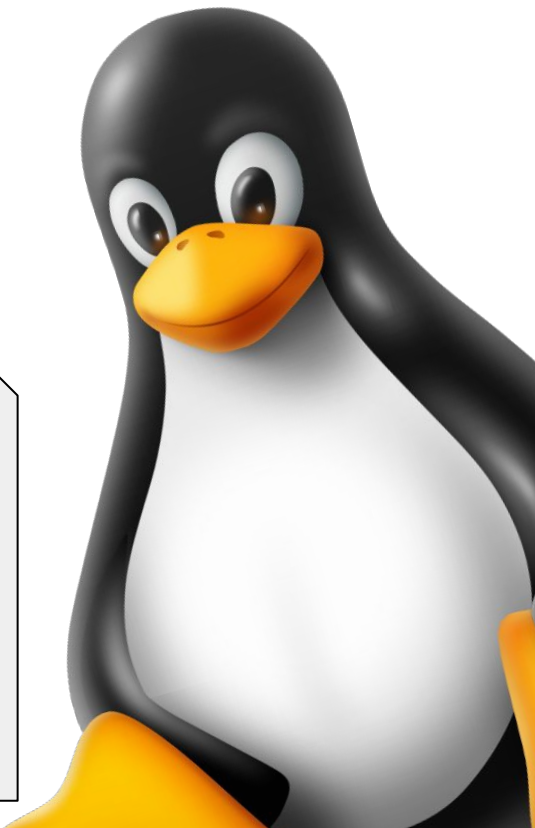
sbx_user1051

Poking around inside Lambda

```
import subprocess

def lambda_handler(event, context):
    print(subprocess.getoutput("ls -l /"))
```

```
dr-xr-xr-x  2 root          root 4096 May 14 11:55 bin
drwxr-xr-x 60 root          root 4096 May 14 11:55 etc
drwxr-xr-x  2 root          root 4096 Jan  6  2012 home
...
...
drwxr-xr-x  2 root          root 4096 Jan  6  2012 srv
drwx----- 2 sbx_user1051 495 4096 Jun  3 22:51 tmp
drwxr-xr-x 13 root          root 4096 May 14 11:53 usr
drwxr-xr-x 23 root          root 4096 May 14 11:55 var
```



Poking around inside Lambda



```
import subprocess

def lambda_handler(event, context):
    print(subprocess.getoutput("df -h"))
```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/root	5.9G	4.8G	1.1G	82%	/
/dev/vdb	1.9G	45M	1.9G	3%	/dev
/dev/loop0	526M	440K	514M	1%	/tmp

—

Problem 3:

Website Screenshots

Headless Chrome demo

bit.ly/devcondemo

Get back a lambda-generated
screenshot





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key takeaways

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*50MB zipped, 250 MB unzipped

**15 minutes

Cool stuff I didn't have time to demo!

sshing into a running lambda instance

<https://medium.com/clog/ssh-ing-into-your-aws-lambda-functions-c940cebf7646>

LibreOffice running in a lambda, converting any document type to pdf

<https://github.com/vladgolubev/serverless-libreoffice>

LibreOffice live demo

<https://vladholubiev.com/serverless-libreoffice/>

WebAssembly in Lambda

<https://blog.scottlogic.com/2018/10/18/serverless-rust.html>

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Thank you!

Further reading:

Peeking Behind the Curtains of Serverless Platforms – 2018 paper

<http://pages.cs.wisc.edu/~swift/papers/atc18-serverless.pdf>

Reverse engineering AWS Lambda – in-depth blog post

<https://www.denialof.services/lambda/>

Further playing:

My github page – code for all examples from today

<https://github.com/WhiteHotLoveTiger>

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