

Blackhawk Network

Lunch and Learn

AWS S3 Events + Lambda + DynamoDB

23-July-2015

Goals of the POC

- Learn about S3 events
- Learn about Lambda
- Explore the advantages of eliminating EC2

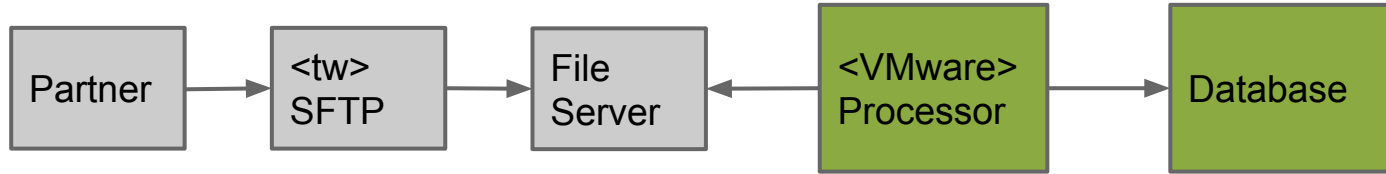
Anti-Goals of the POC

- Show off brilliant code
 - I'm not even an amateur JavaScript coder
 - First time I ever saw node.js and it was **not** love at first sight
- Replace Order Central
 - even though the incoming file processing technique might be applicable

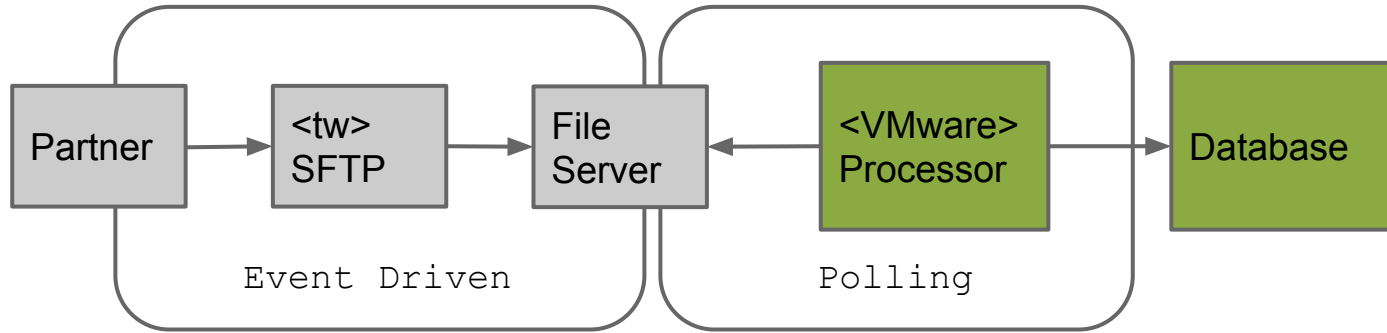
Motivation

- File-based interfaces are not going away
- File-server based interfaces are not easily scalable
- Batch processing benefits from event-based triggers
- Using EC2 for event handling is (relatively) costly

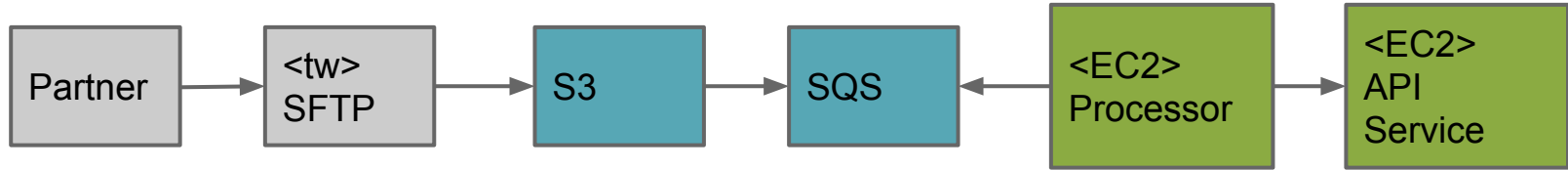
Yesterday's World



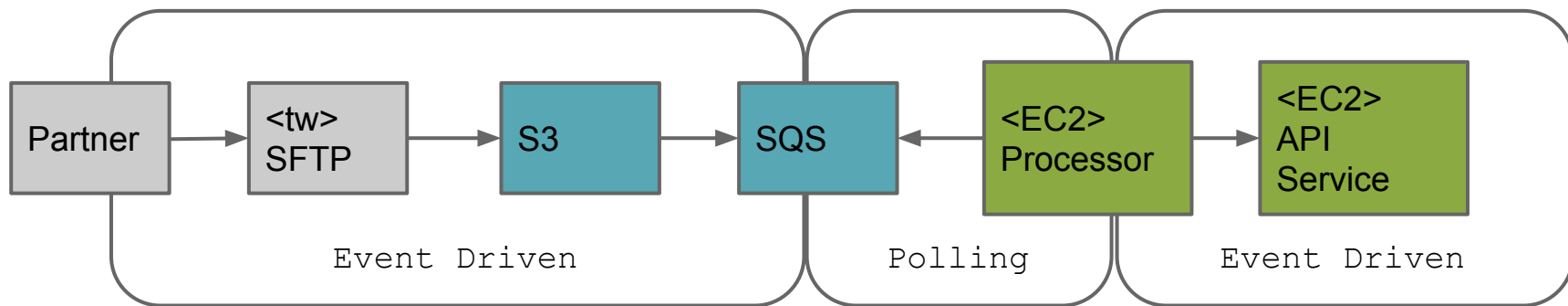
Yesterday's World



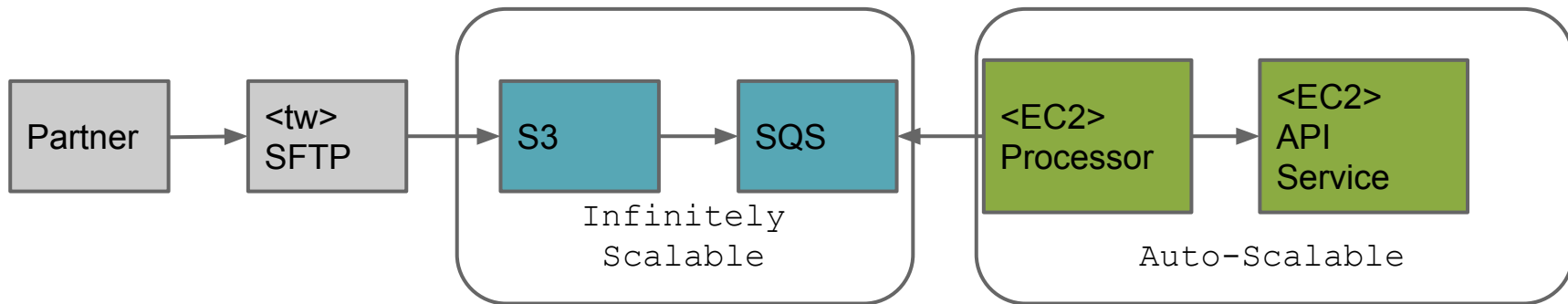
Today's World



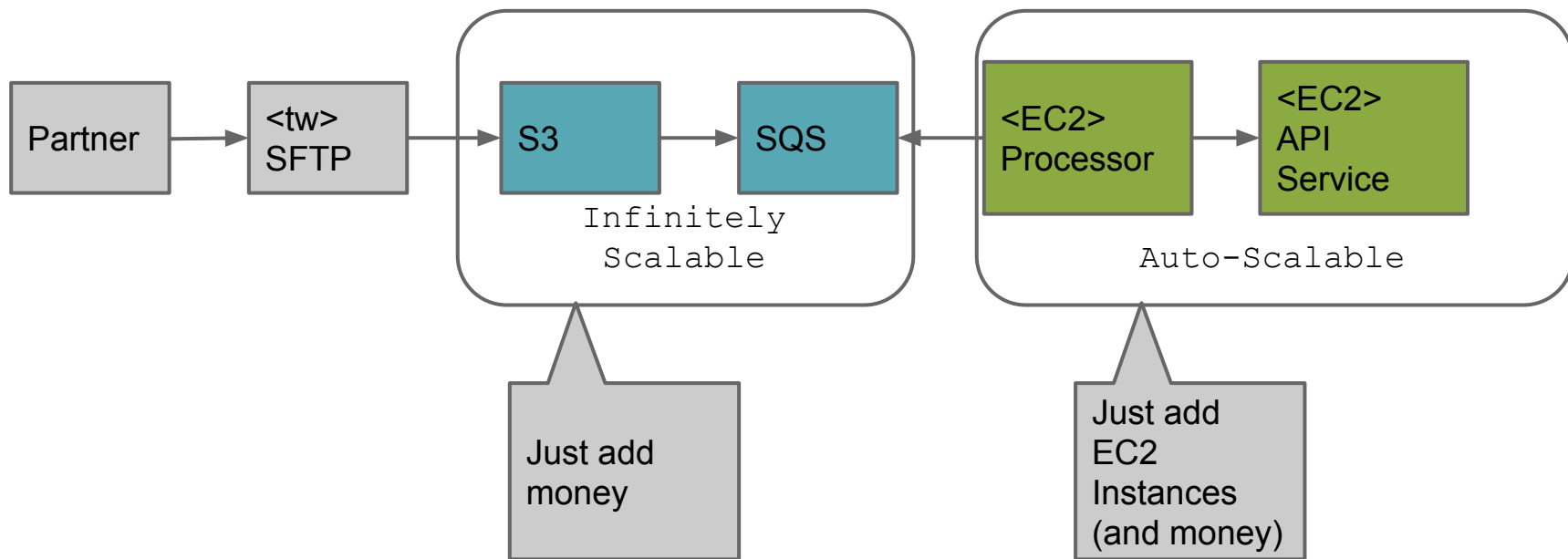
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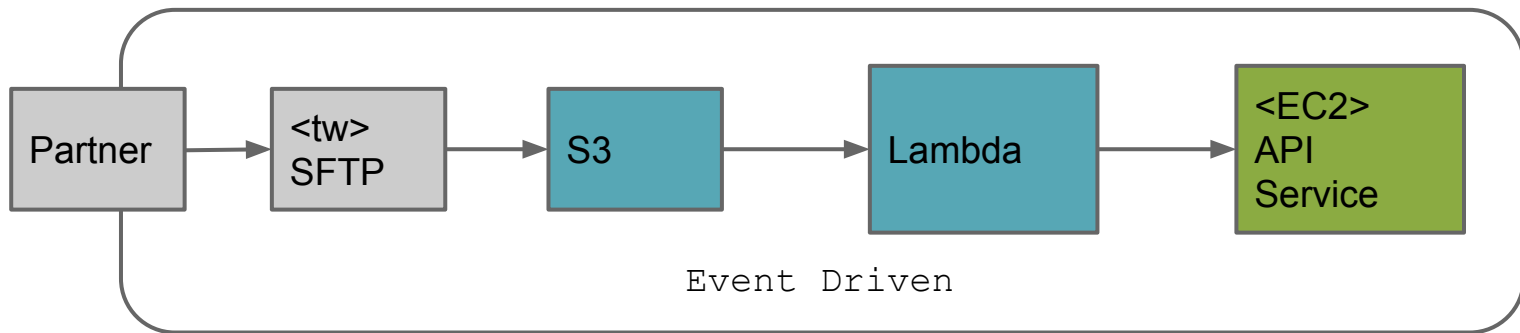
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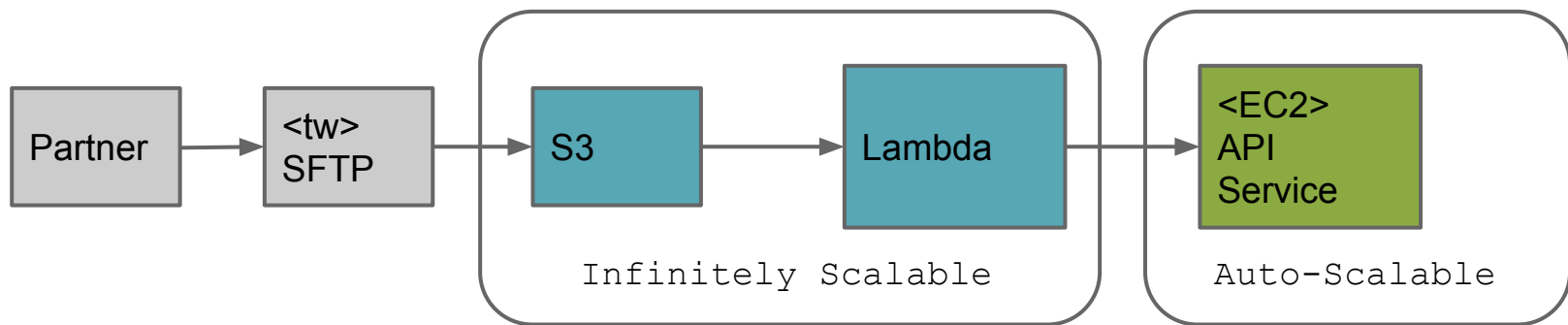
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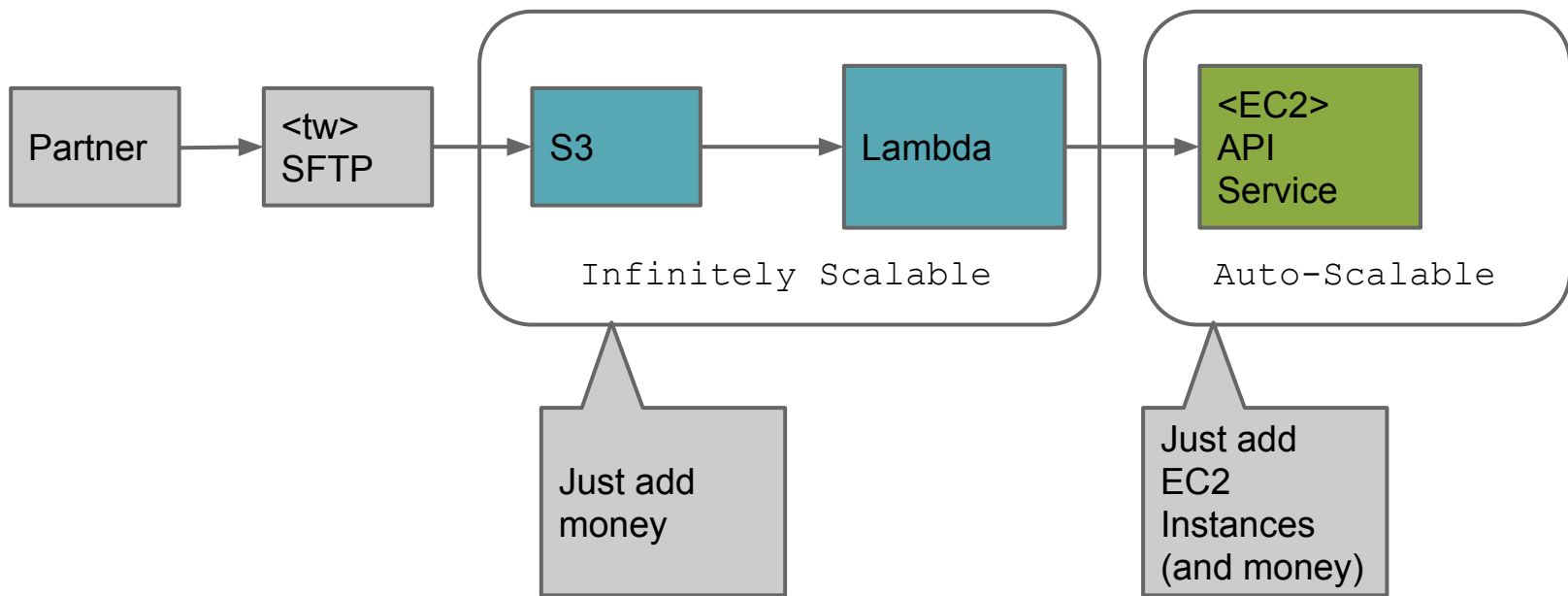
(The Day After) Tomorrow's World



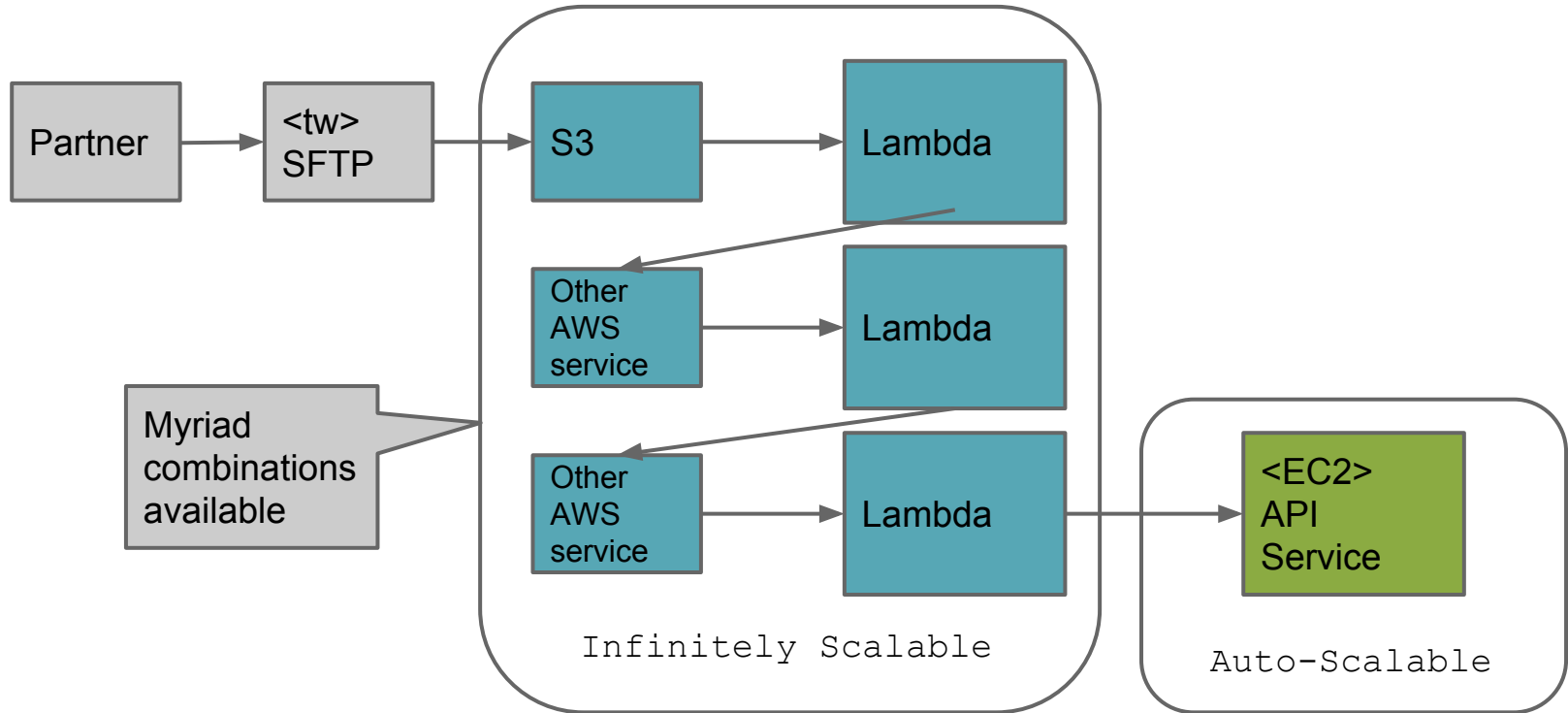
(The Day After) Tomorrow's World



(The Day After) Tomorrow's World



Later that same afternoon

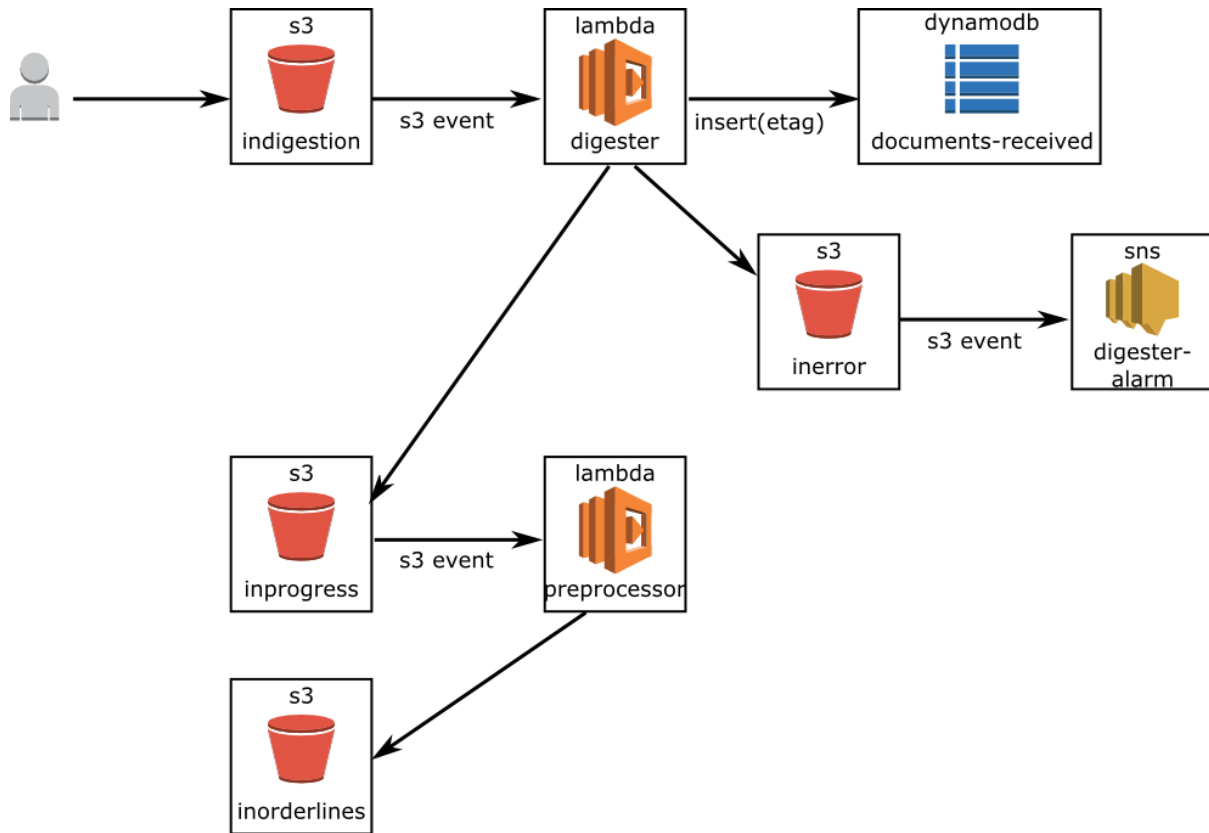


The POC Design

```
// when an S3 object arrives in the bucket
// trigger a handler

// get event data
// perform an idempotency check - only process a file once
// if (file is a duplicate) {
//   move the file to an error bucket
//   send an SNS notification
// } else {
//   move the file to the in-progress bucket
//   where another lambda function actually processes it,
//     creating more S3 objects as input to another
//     processing step, etc.
// }
```

The POC Design



The POC Components

- S3 buckets:
 - indigestion - configured with events
 - inerror - where bad things go
 - inprogress - configured with events
 - inorderlines - where good things go
- Lambda function
 - digester - handler for s3 ObjectCreated:All event from indigestion
 - preprocessor - handler for s3 ObjectCreated:All event from inprogress
- IAM
 - Of course

The POC Components

- DynamoDB
 - documents-received table
 - primary key: eTag of S3 object
 - receivedDateTime
 - fileName
- SNS
 - digester-alarm

Walkthrough

- S3
 - <https://console.aws.amazon.com/s3/home?region=us-west-2#>

Walkthrough

- Lambda

- <https://us-west-2.console.aws.amazon.com/lambda/home?region=us-west-2#/functions>

Walkthrough

- IAM
 - https://console.aws.amazon.com/iam/home?#roles/lambda_s3_exec_role

Walkthrough

- DynamoDB

- <https://us-west-2.console.aws.amazon.com/dynamodb/home?region=us-west-2#table:name=documents-received>

Walkthrough

- SNS

- <https://us-west-2.console.aws.amazon.com/sns/v2/home?region=us-west-2#/topics/arn:aws:sns:us-west-2:134529390395:digester-alarm>

Demo

- . . .

Q and A

Questions?

Thanks

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