

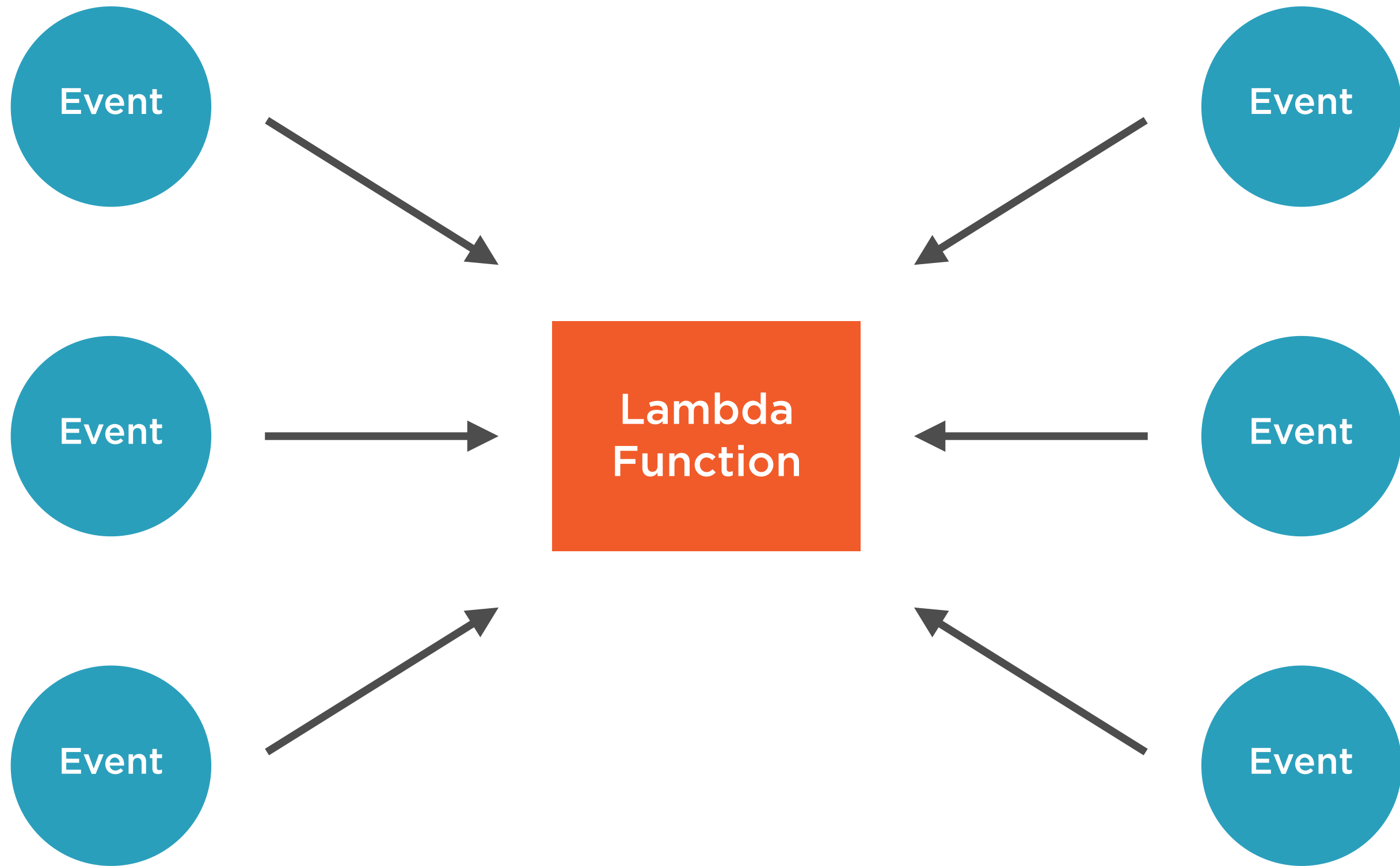
Sourcing Serverless Events in AWS with API Gateway and Kinesis



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Overview

A Romance between VPC and Serverless

VPC Endpoints Save Our Services

The Event Source Seasonal Catalog

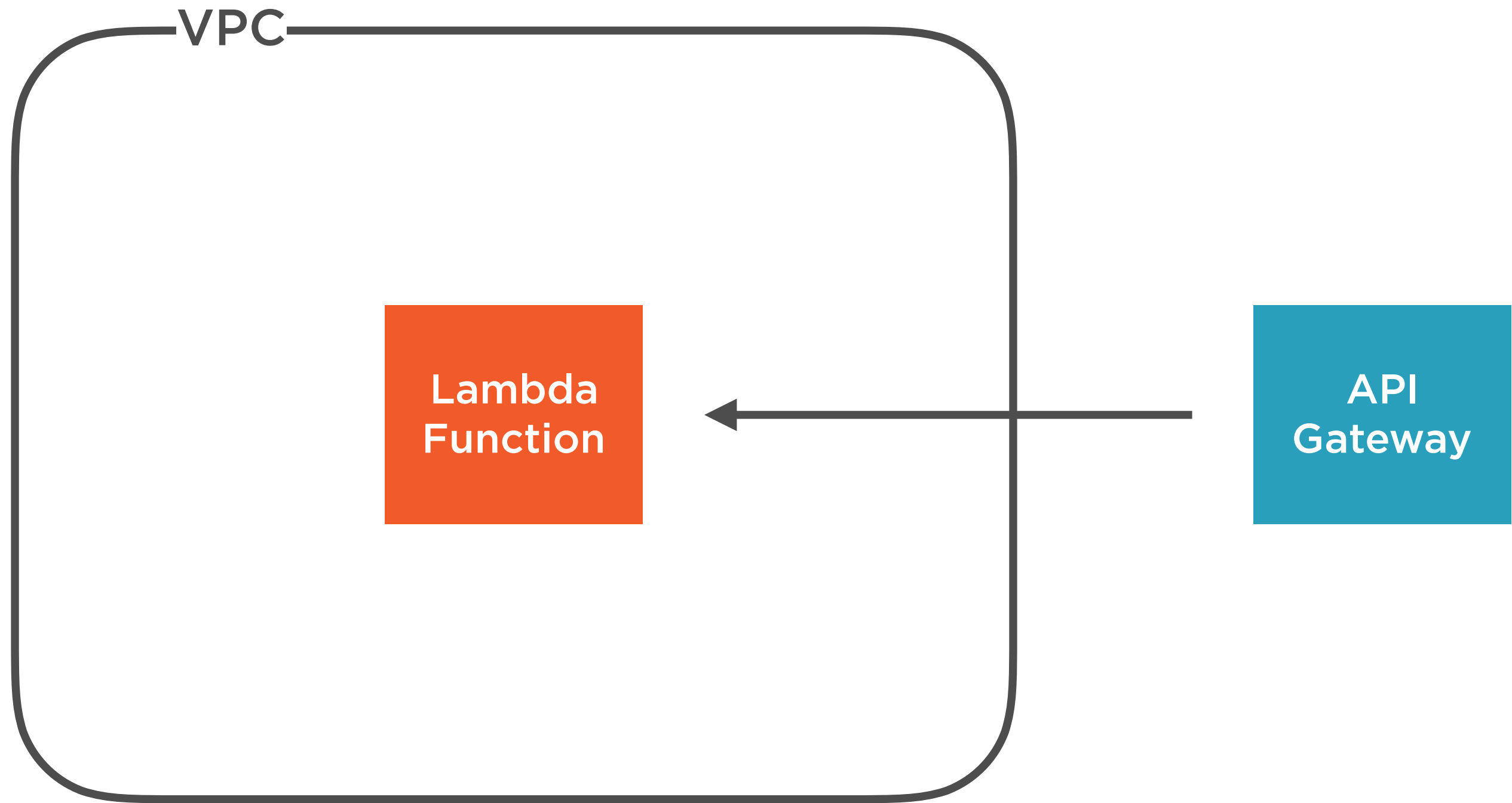
Building an Action-packed API

Locking the Door on Your API

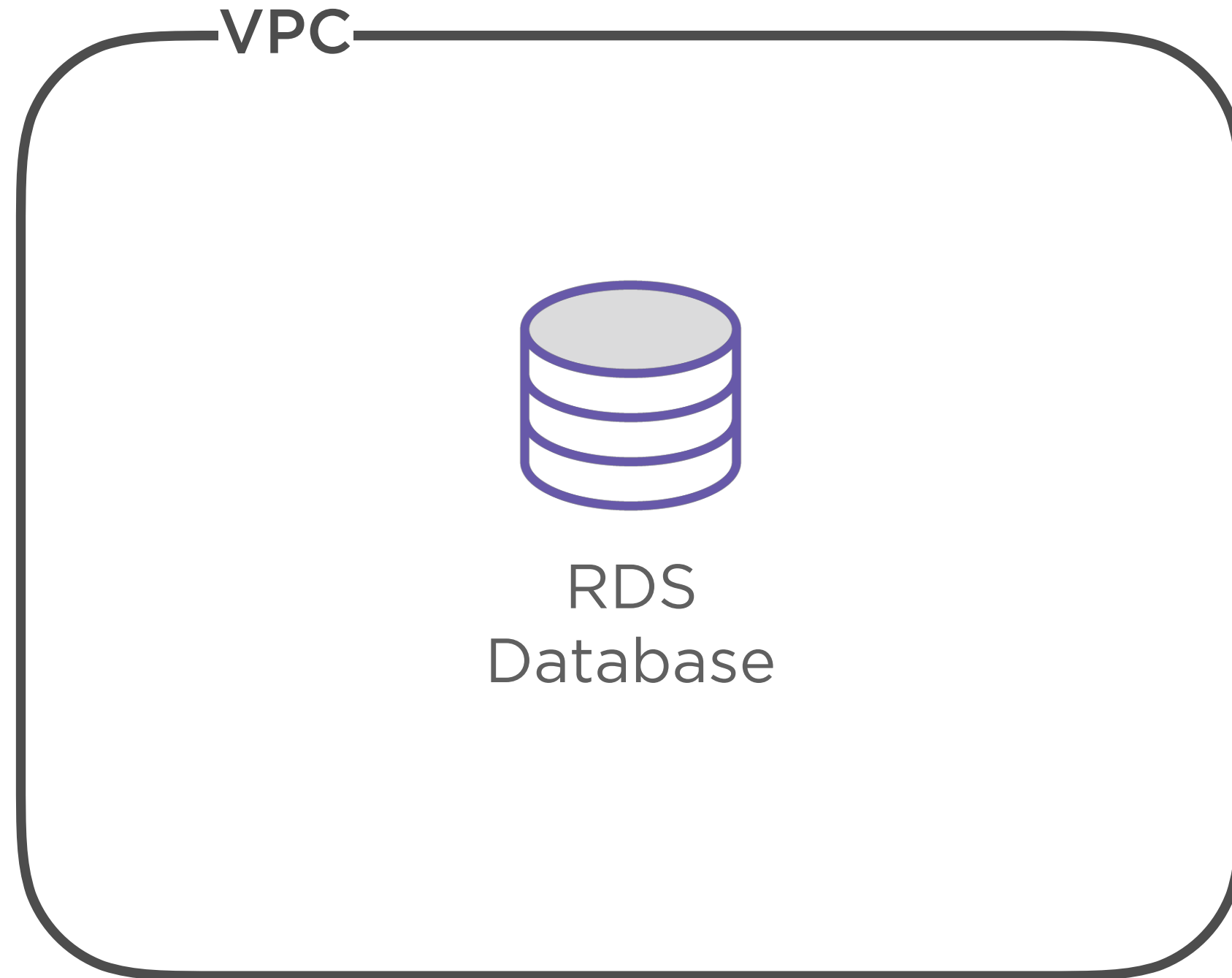
To Push or to Pull? That Is the Question

Tapping into a Kinesis Stream

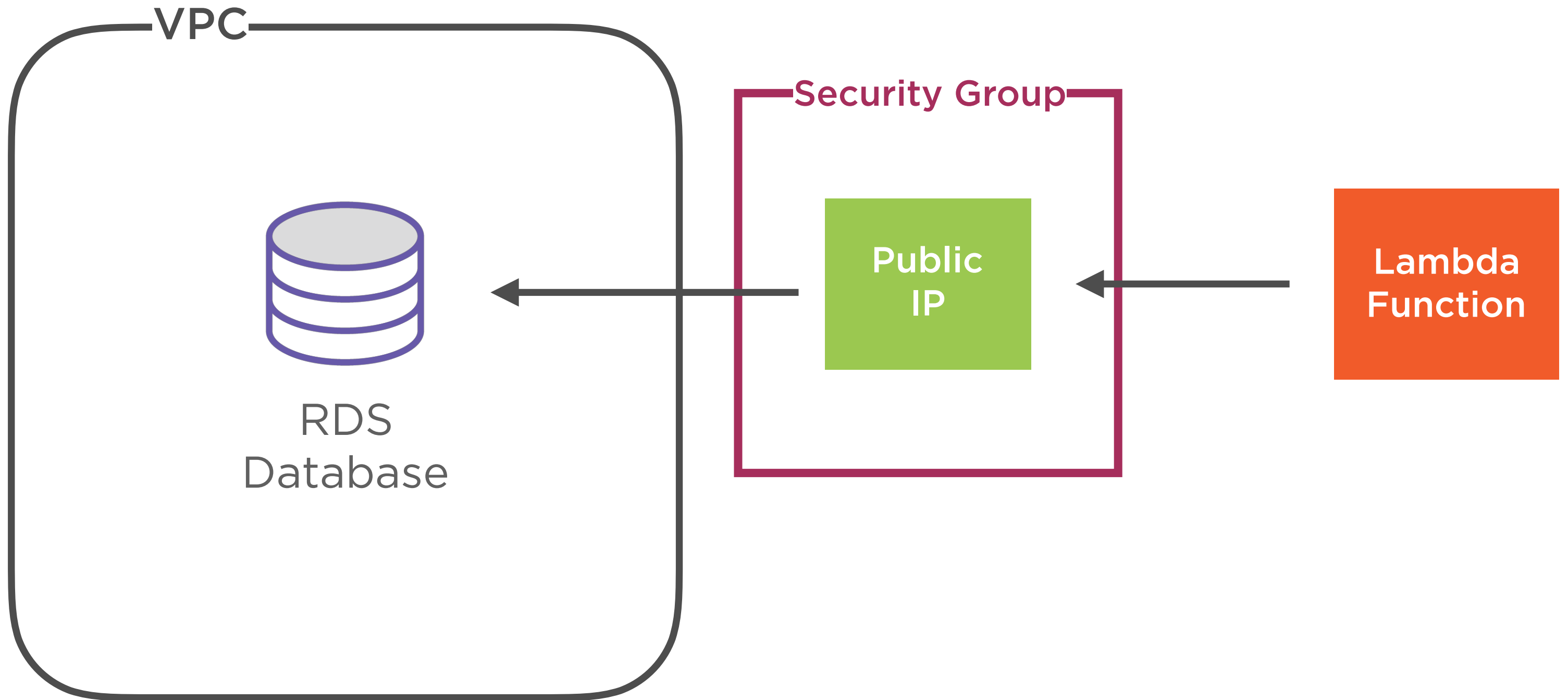
Serverless Architecture and VPC



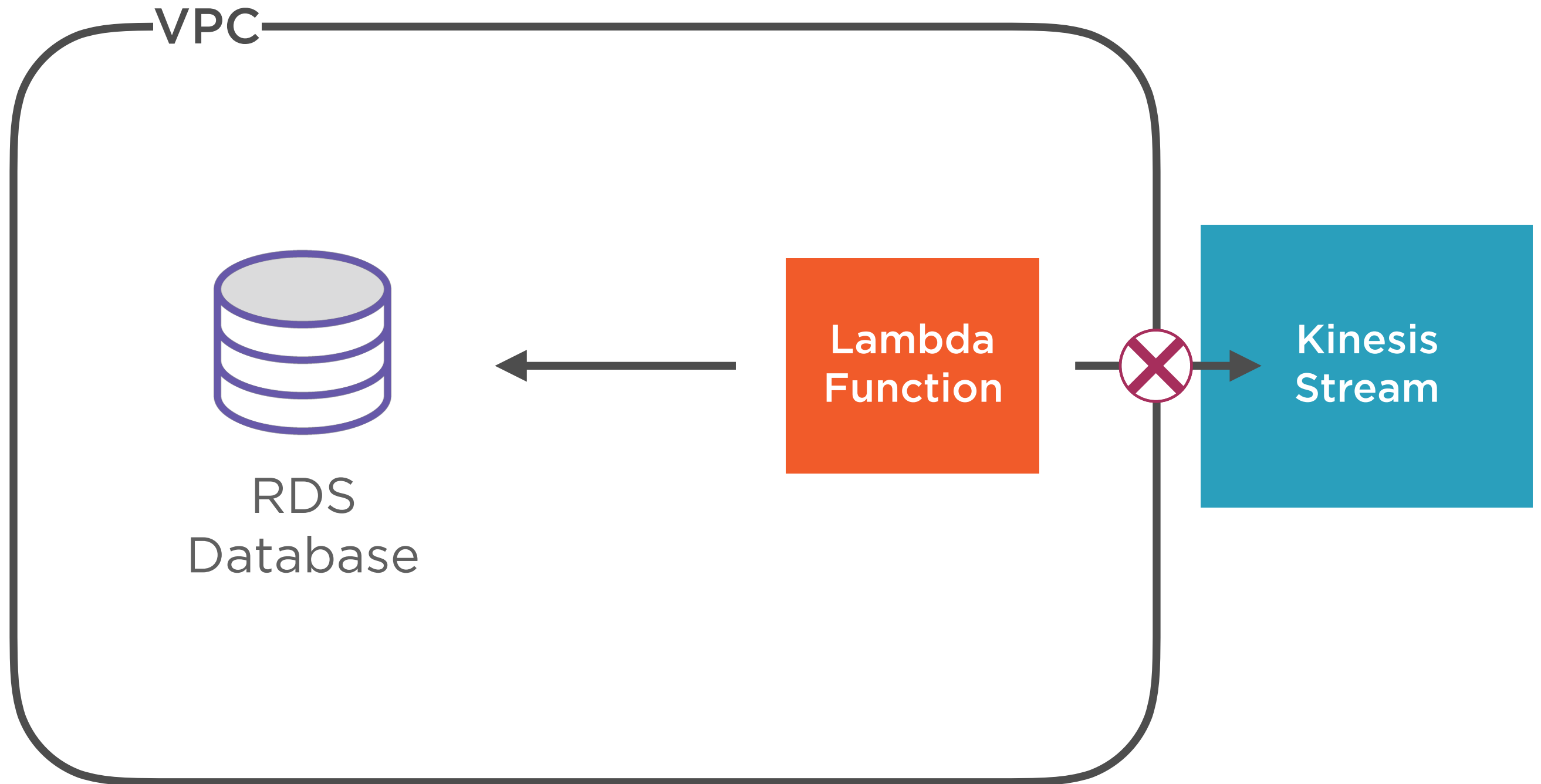
Keep Databases Safe



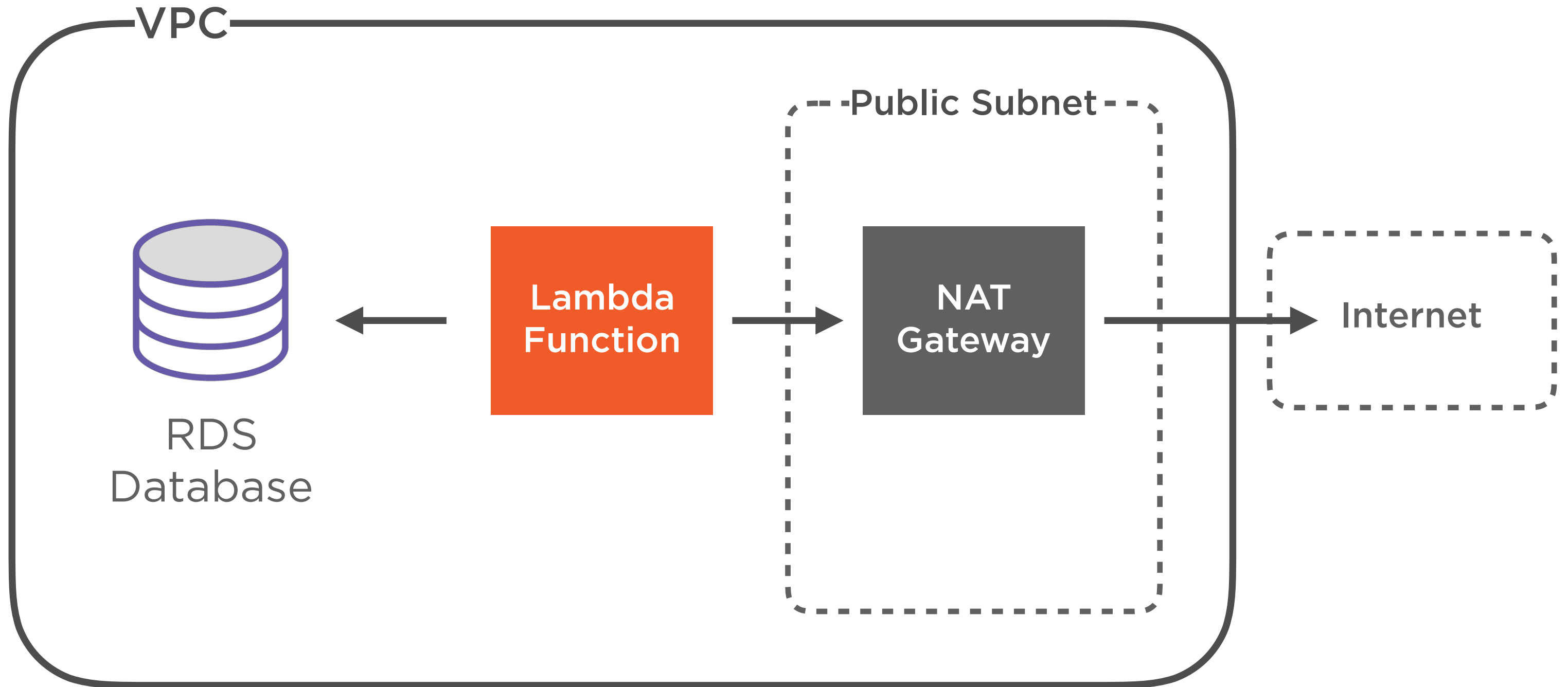
Opening RDS to the Public



A Better Way



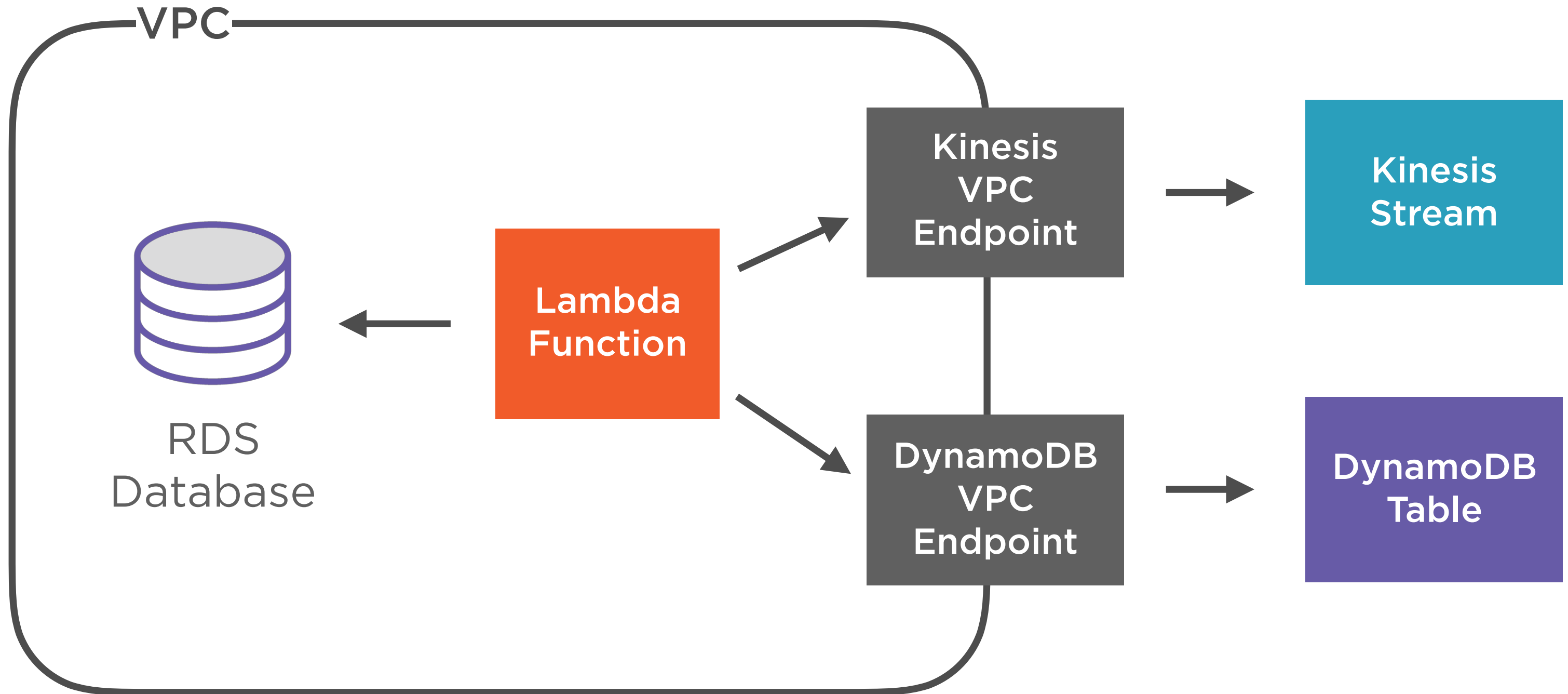
Giving VPC Resources Access to the Outside



PrivateLink

VPC Endpoints that connect directly to AWS resources without leaving the AWS infrastructure

VPC Endpoints with PrivateLink



Configuring VPC Endpoints for Serverless Applications

VPC Endpoints are
configured per service and
per region

VPC Endpoints Aren't Free

Lowest cost is \$0.01 / hour

Lowest monthly cost is \$8 / month

Lambda Event Sources in AWS

Invoke a Lambda from an IOT button press

Invoke a Lambda from an IOT rule

Invoke a Lambda from a REST endpoint

Invoke a Lambda from an Amazon Echo

Invoke a Lambda from an Amazon Smart Home device

Invoke a Lambda from a CloudFront distribution

Invoke a Lambda when an event happens

Invoke a Lambda when a log matches a pattern

Invoke a Lambda when a table is modified

Invoke a Lambda from a Kinesis Stream

**Invoke a Lambda when an object is modified
in an S3 bucket**

Invoke a Lambda from an SNS topic

Invoke a Lambda from an SQS queue

AWS Lambda Event Sources

IOT

API
Gateway

Alexa

CloudFront

CloudWatch
Events &
Logs

DynamoDB
Streams &
Kinesis
Streams

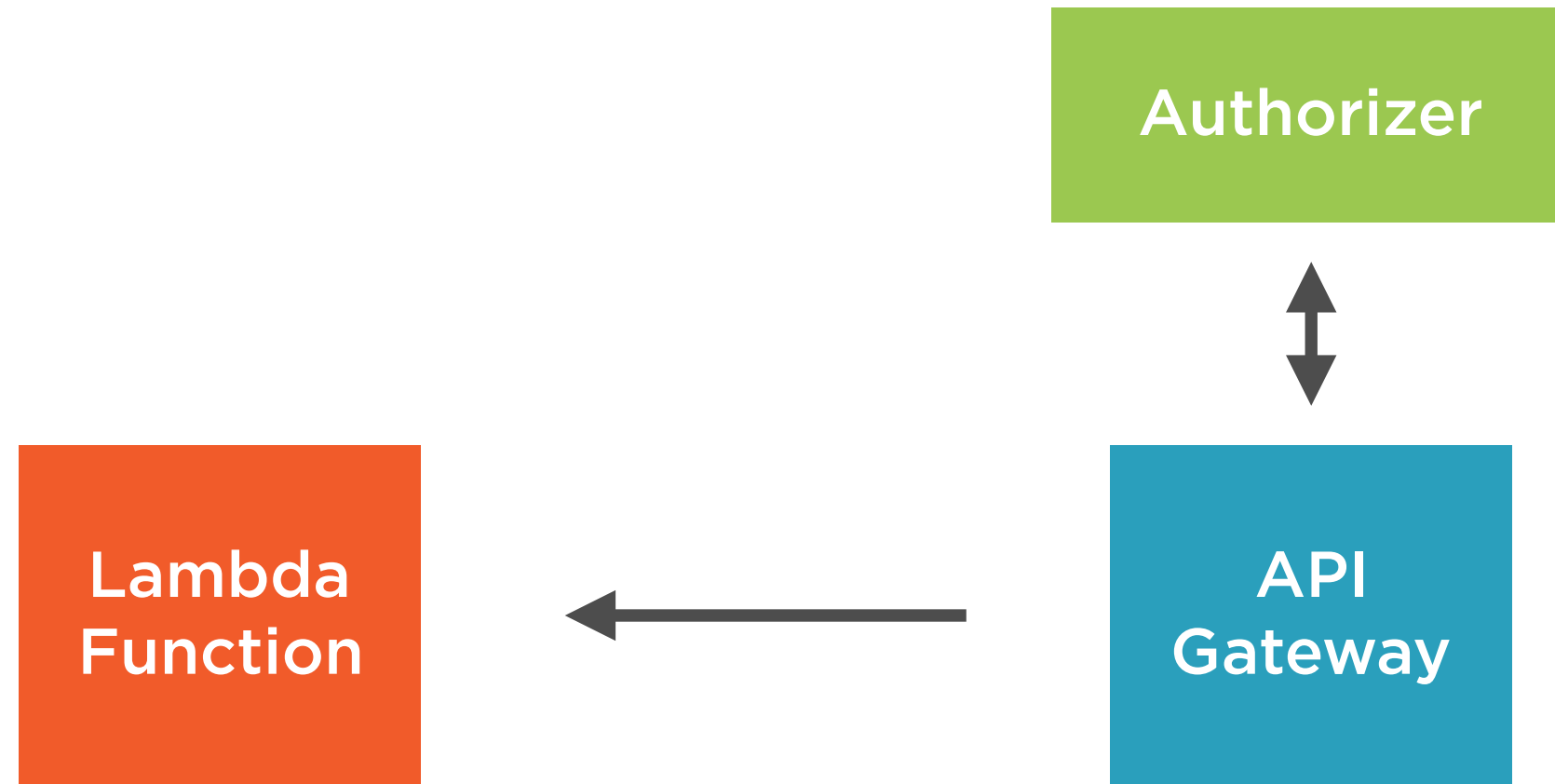
S3
Buckets

SNS &
SQS

Configuring API Gateway

API Gateway Security

API Gateway Authorizers



API Gateway Authorizer Types

Cognito

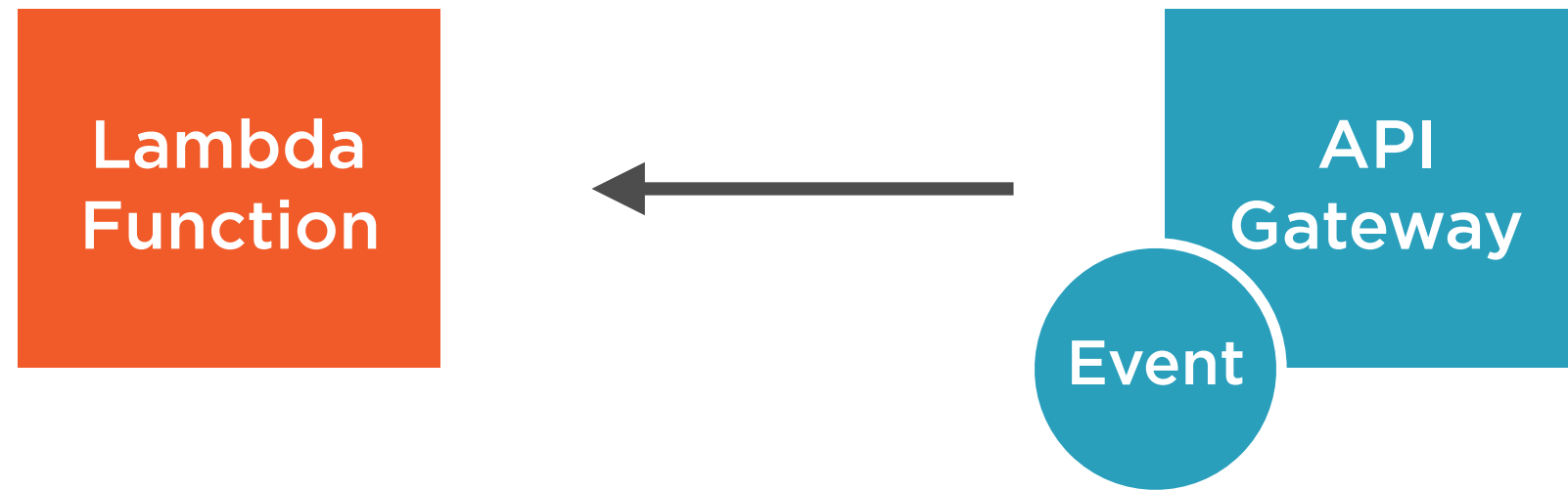
Custom
Lambda
Function

IAM

An API Gateway Authorizer
returns an IAM policy with
ALLOW or DENY
permissions

Push and Pull Event Source Types

Lambda Push Event Source



Lambda Push Event Sources

IOT

API
Gateway

Alexa

CloudFront

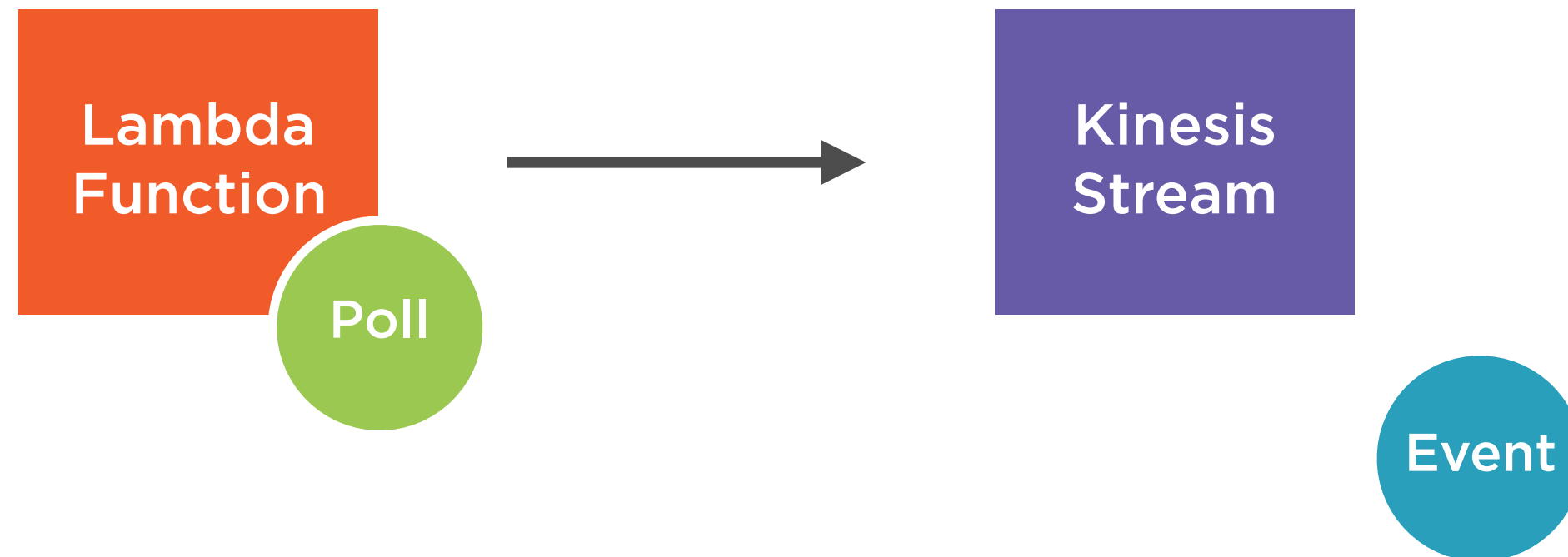
CloudWatch
Events

CloudWatch
Logs

S3
Buckets

SNS
Topics

Lambda Pull Event Source



For pull event sources,
Lambda functions require
IAM permissions for access

Lambda Pull Event Sources

**DynamoDB
Streams**

**Kinesis
Streams**

**SQS
Queues**

Lambda Pull Event Sources PollingFrequency

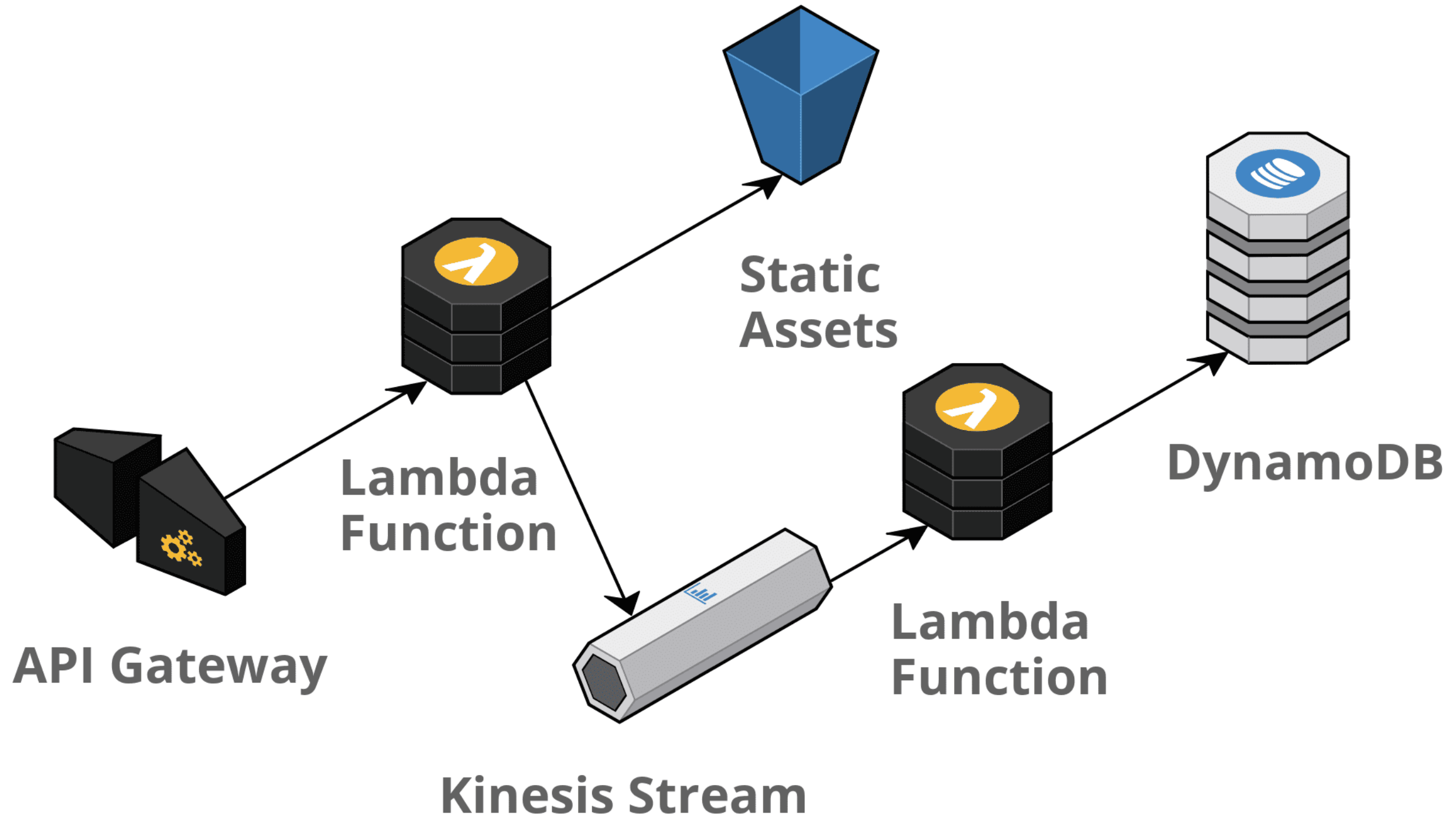
DynamoDB Streams - 4 times per second

Kinesis Streams - 1 time per second

SQS Queues - based on queue configuration

Consuming Records from Kinesis Streams

Conclusion



Summary

Getting the VPC Hookup with Endpoints

Too Many Event Source Options

API Gateway Gives You Wings

A Bouncer for the API Nightclub

Kinesis Can't Stop, Won't Stop

Up Next

Application Monitoring

with X-Ray and CloudWatch