Enhancing Your App with AWS Databases and Application Services

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Summary

Elastic Beanstalk (EB)

DynamoDB

RedShift

Virtual Private Cloud (VPC)

CloudWatch

CloudFront

Elastic Beanstalk

Elastic Beanstalk (EB)

The solution for your application needs

Deploying Your App to EC2

Manual Configuration

Scale with AMIs

Manual Monitoring

Manual Code Deployment

Restricted Command Line Interface

Elastic Beanstalk Does it For You

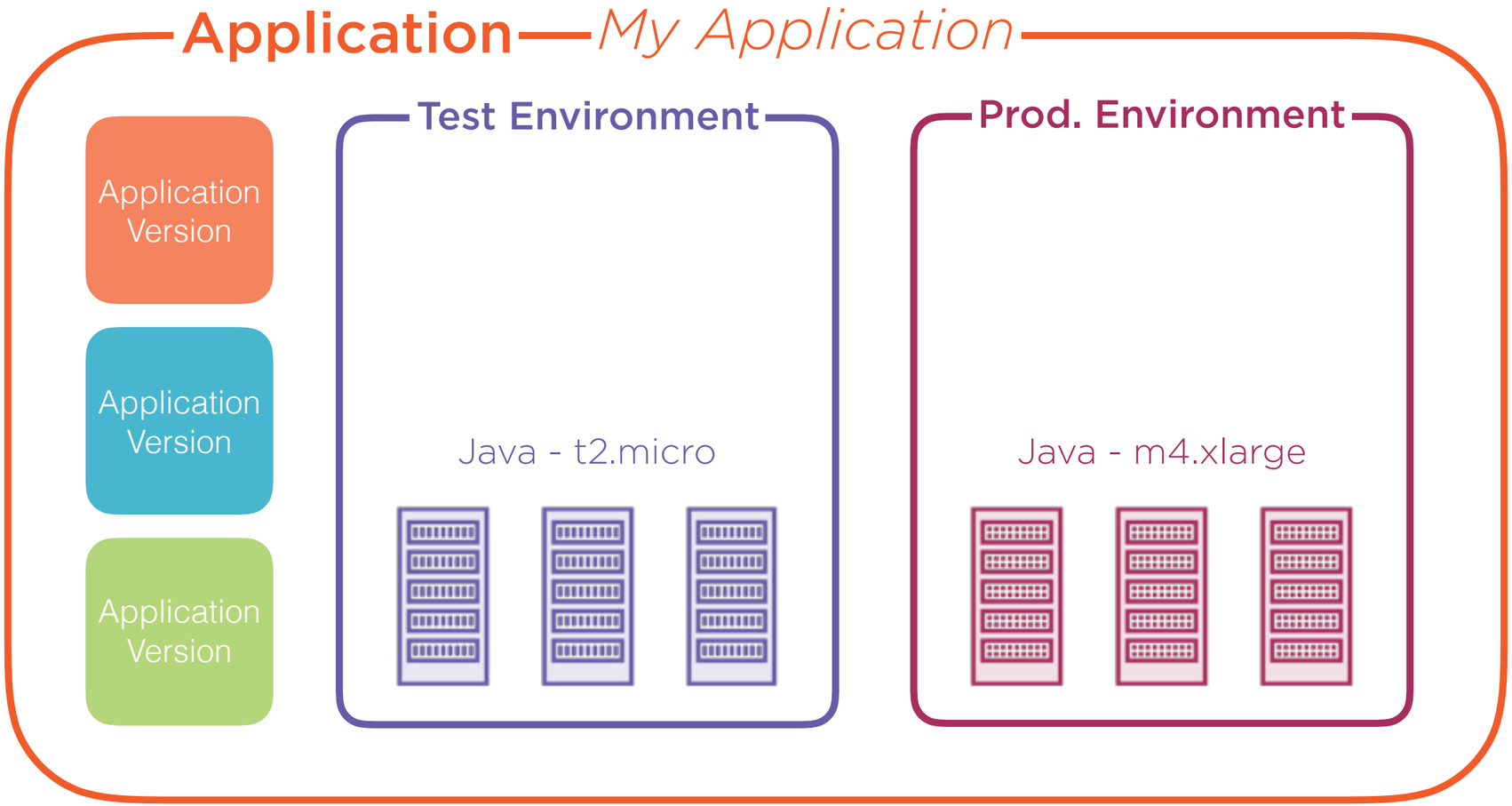
Deploying Your App with EB

Easy Deployment with Various Tools

Set it and Forget it Configuration

Aggregated Monitoring and Logging

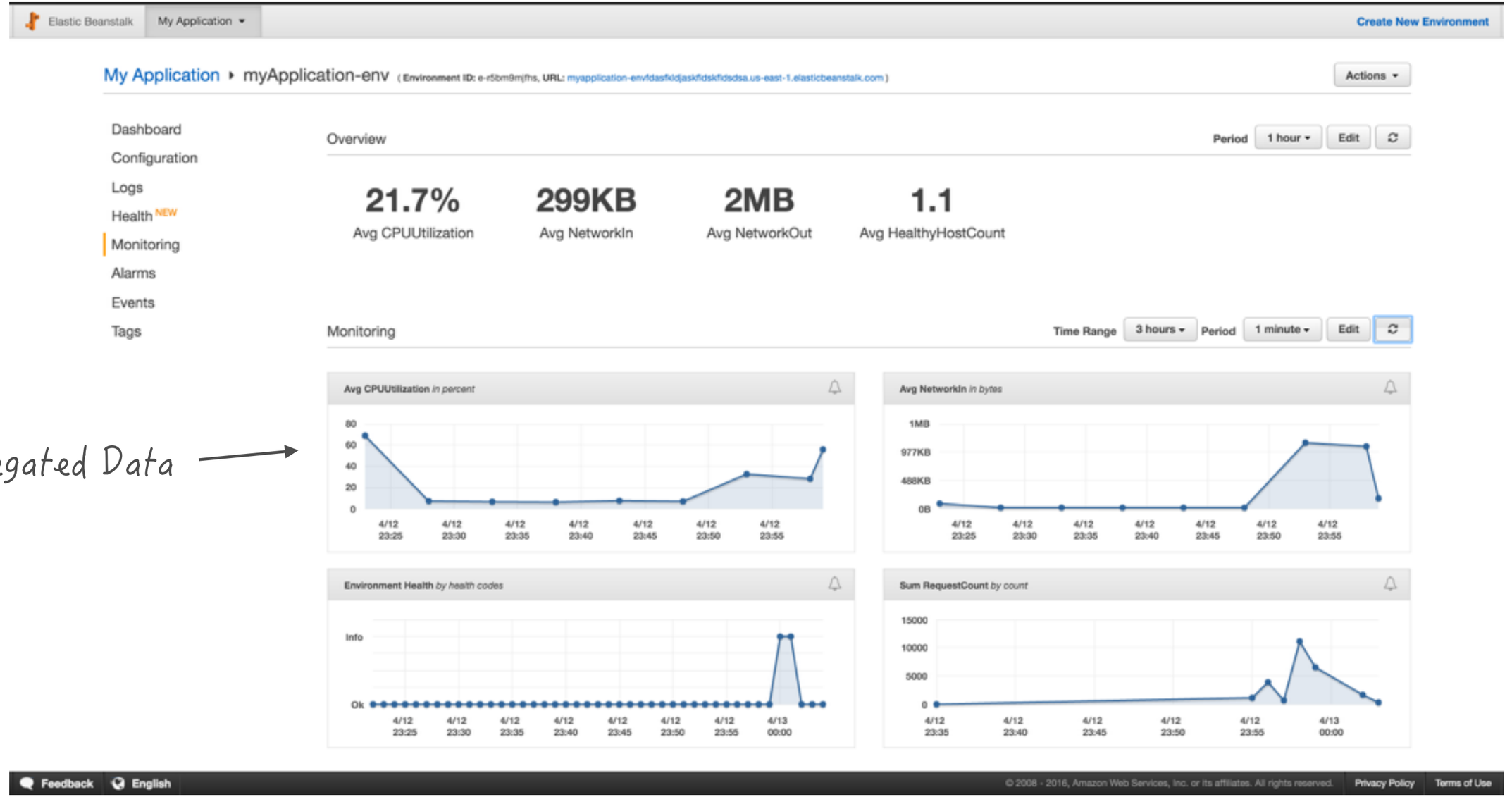
Elastic Beanstalk Structure



Application Versions are stored in S3

Each Application has a limit of 500

Elastic Beanstalk Monitoring Dashboard



Aggregated Data →

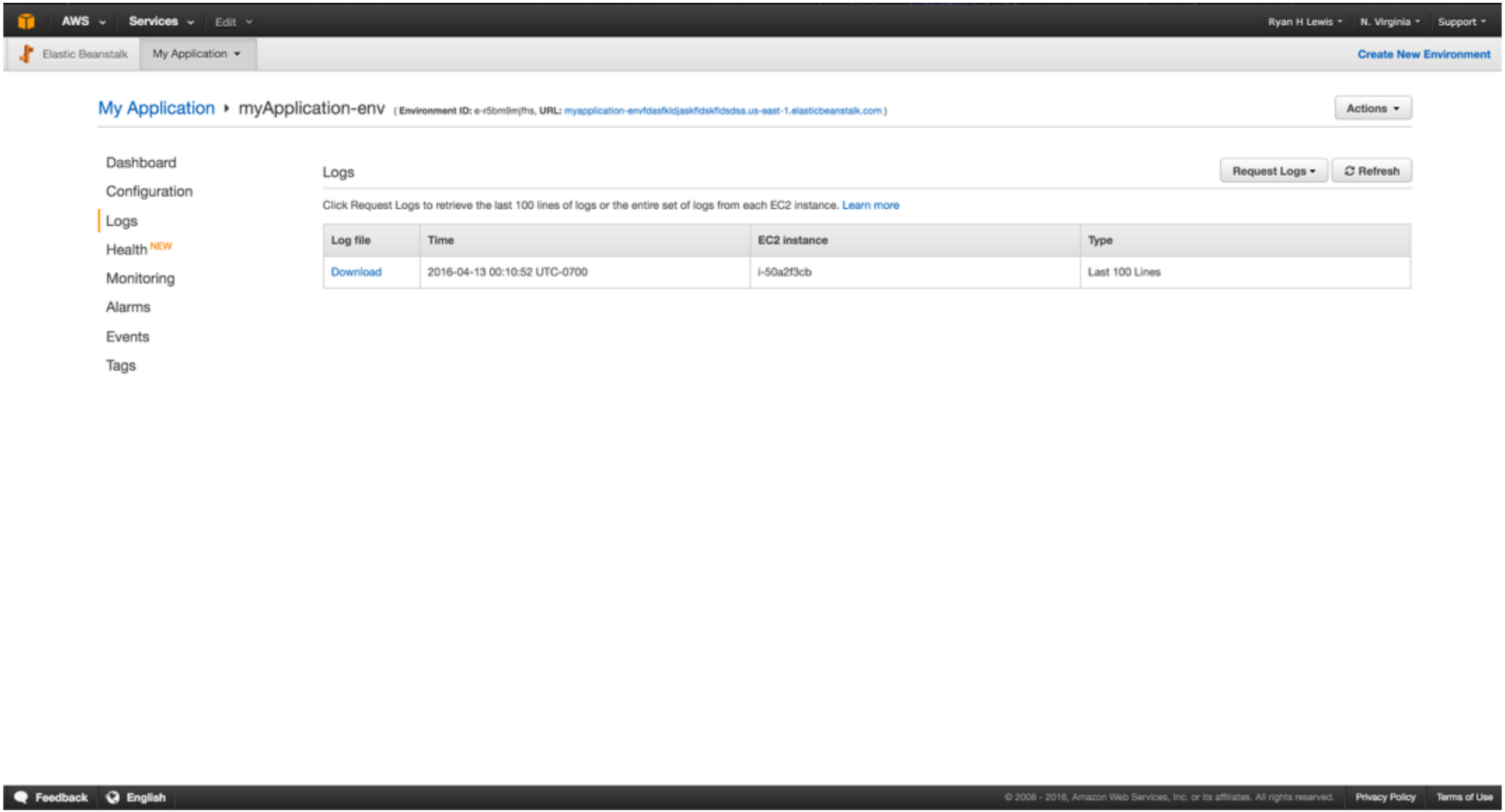
Monitoring Metric Examples

Number of Requests

CPU Utilization

Network Traffic

Elastic Beanstalk Logs Dashboard



Elastic Beanstalk Pricing

Free*

*You pay for the EC2 Instances,
Load Balancers, and S3 separately

*** please see https://aws.amazon.com/elasticbeanstalk/pricing/ for current pricing

DynamoDB

DynamoDB

The solution for your NoSQL needs

DynamoDB Features

Unlimited, Elastic Storage

No Hardware Choices

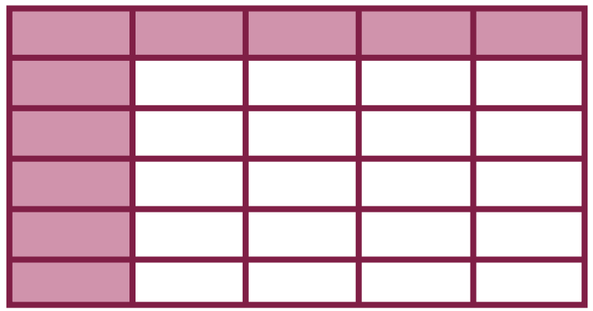
Pay Only For What You Use

DynamoDB Base Structure

Primary Key

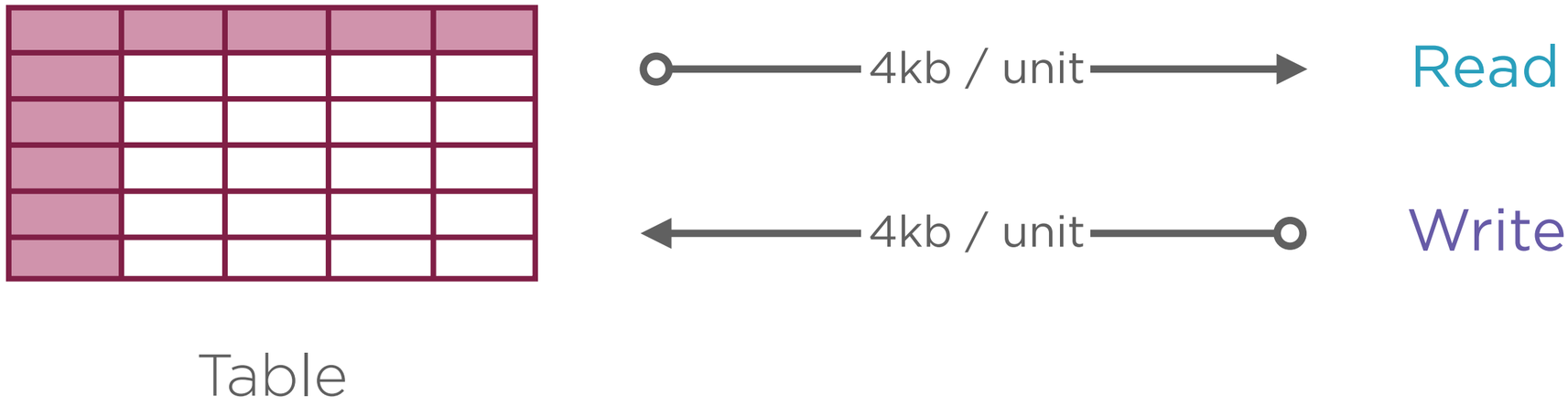
Indexing & Retrieval

Secondary Indexes



Table

Provisioned Throughput Capacity



Provisioned Throughput Capacity = Number of Read/Write Units per second

DynamoDB Pricing

Provisioned Throughput Capacity

10 x Write Units

$0.0065 per hour

50 x Read Units

$0.0065 per hour

Amount of Data Stored

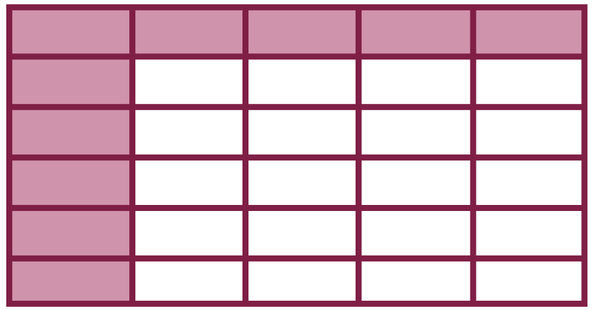
First 25 GB Free

Then $0.25 / GB per month

*** Prices differ based on Region

*** please see https://aws.amazon.com/dynamodb/pricing/ for current pricing

DynamoDB Pricing Example



10 x Write Units

50 x Read Units

$0.013
per hour

$9.36
per month

*** Prices differ based on Region

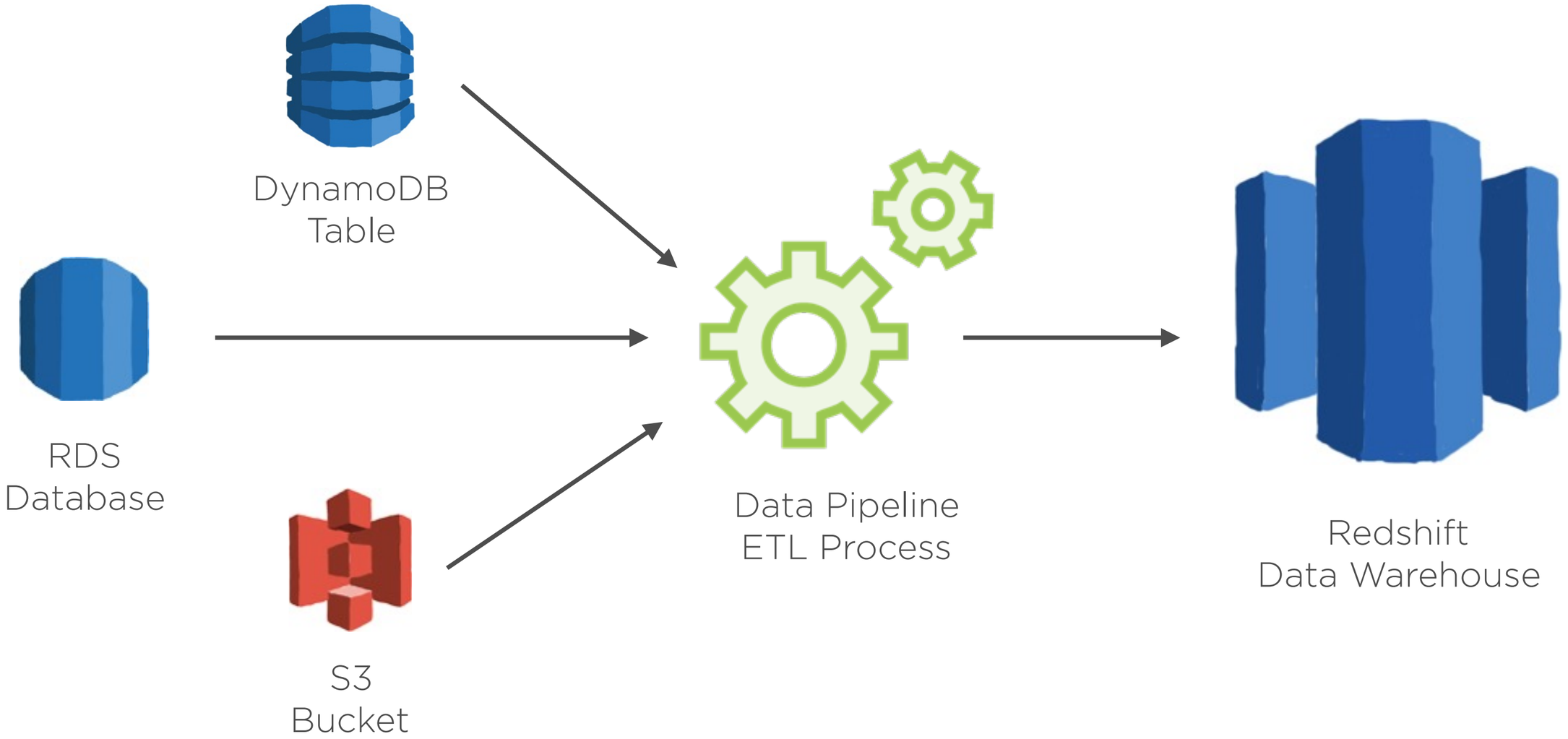
*** please see https://aws.amazon.com/dynamodb/pricing/ for current pricing

RedShift

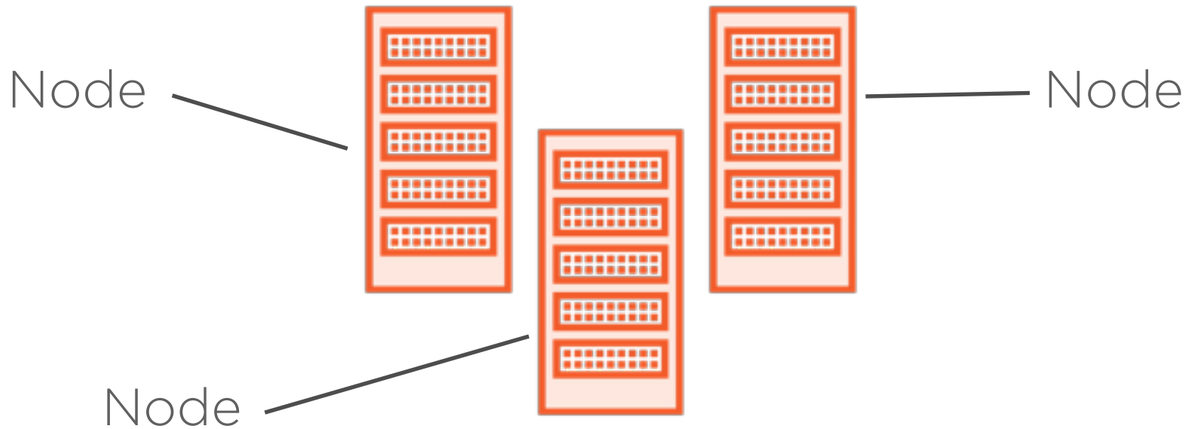
RedShift

The solution for your data warehousing needs

Moving Data to Redshift



RedShift Base Structure



Cluster

RedShift Node Type Examples

ds2.xlarge Type Node

13 EC2 Compute Units

31GB Memory

2TB HDD Storage

Moderate Network Performance

RedShift Security

VPC Protection

Data Warehouse Encryption

No Public IP

RedShift Pricing

RedShift Node Categories

Dense Storage

Expensive

More Storage

xlarge & 8xlarge sizes

Dense Compute

Cheaper

Less Storage

large & 8xlarge sizes

RedShift Pricing Example

1 x Dense Storage xlarge Node

$0.85 per hour

4 CPUs

31GB Memory

$612 per month

2TB Storage

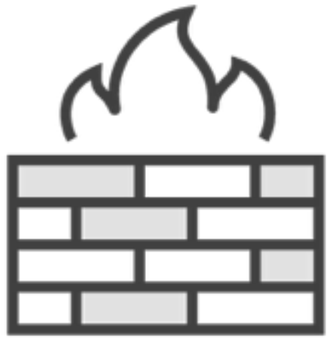
*** Prices differ based on Region

*** please see https://aws.amazon.com/redshift/pricing/ for current pricing

Virtual Private Cloud

Virtual Private Cloud

The solution for your networking needs



Security Groups secure single instances

VPCs secure groups of instances

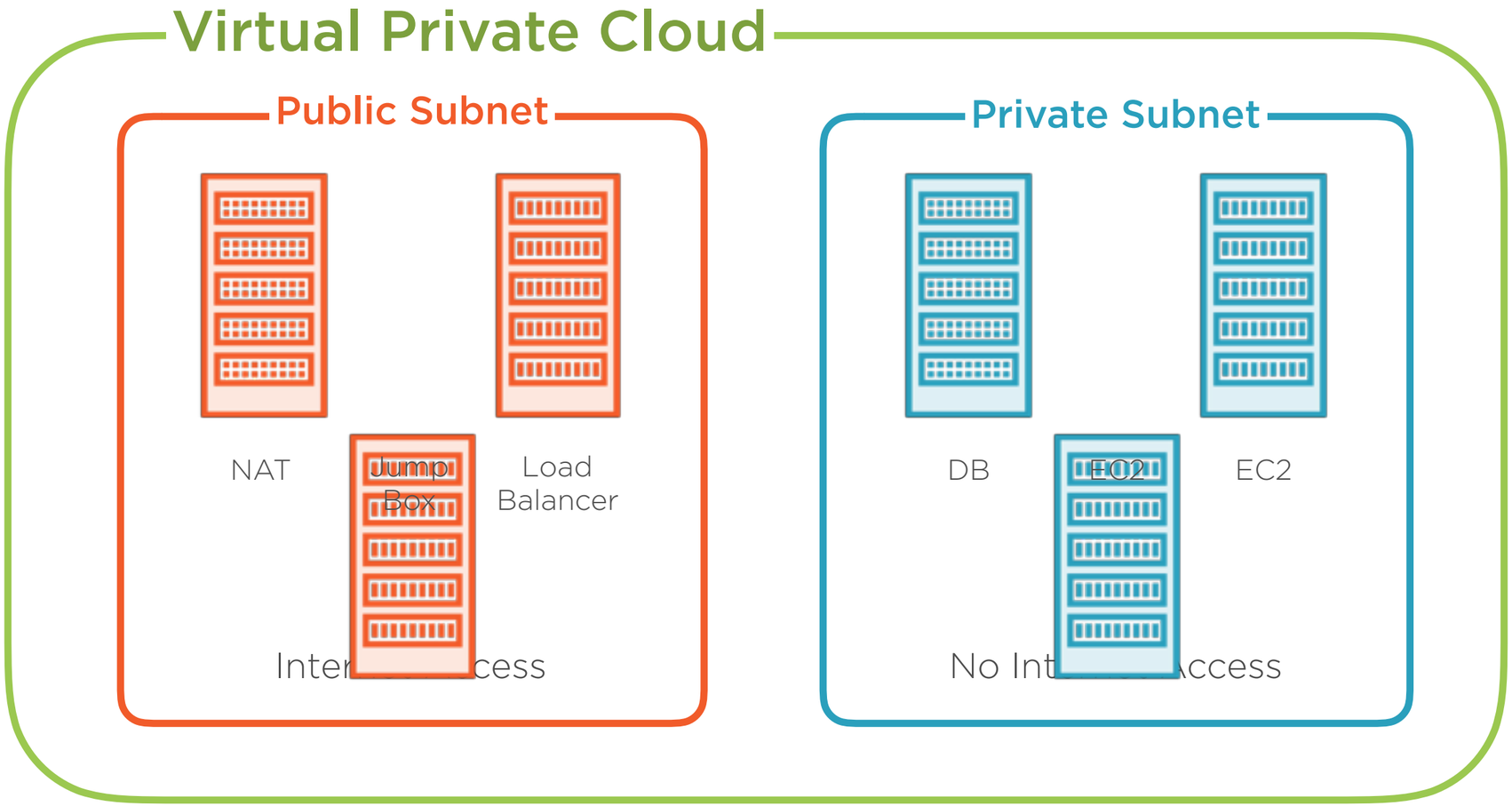
Virtual Private Cloud Features

Configure VPC Routing Tables

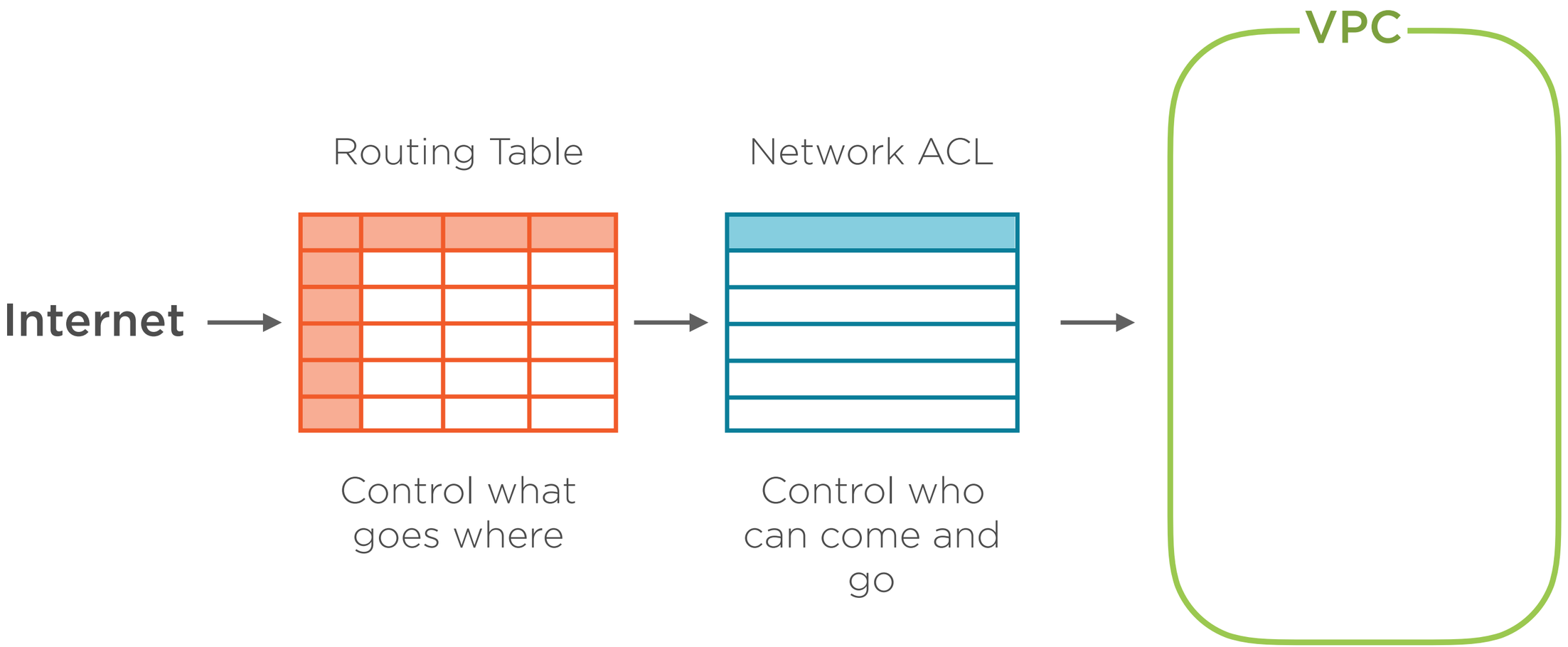
Use NAT Gateways for Outbound Traffic

Internal IP Address Allocation

Virtual Private Cloud Structure



Virtual Private Cloud Security



Virtual Private Cloud Pricing

Basic VPC Configuration is Free

*** please see https://aws.amazon.com/vpc/pricing/ for current pricing

CloudWatch

CloudWatch

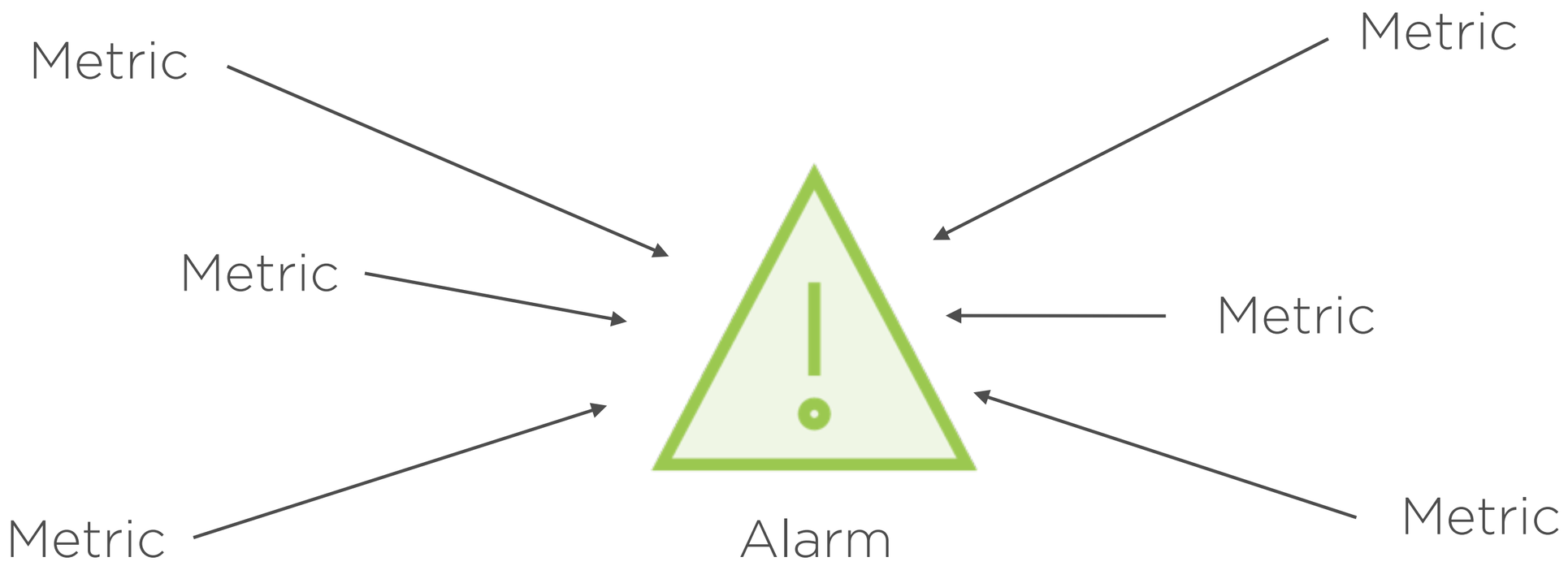
The solution for your monitoring needs

CloudWatch Key Functionality

Monitoring Resources

Acting on Alerts

CloudWatch Alarms



Metric Examples

EC2 - CPUUtilization

DynamoDB - ConsumedReadCapacityUnits

S3 - NumberOfObjects

Route53 - HealthCheckStatus

RedShift - DatabaseConnections

Alarm

+ **METRIC** =

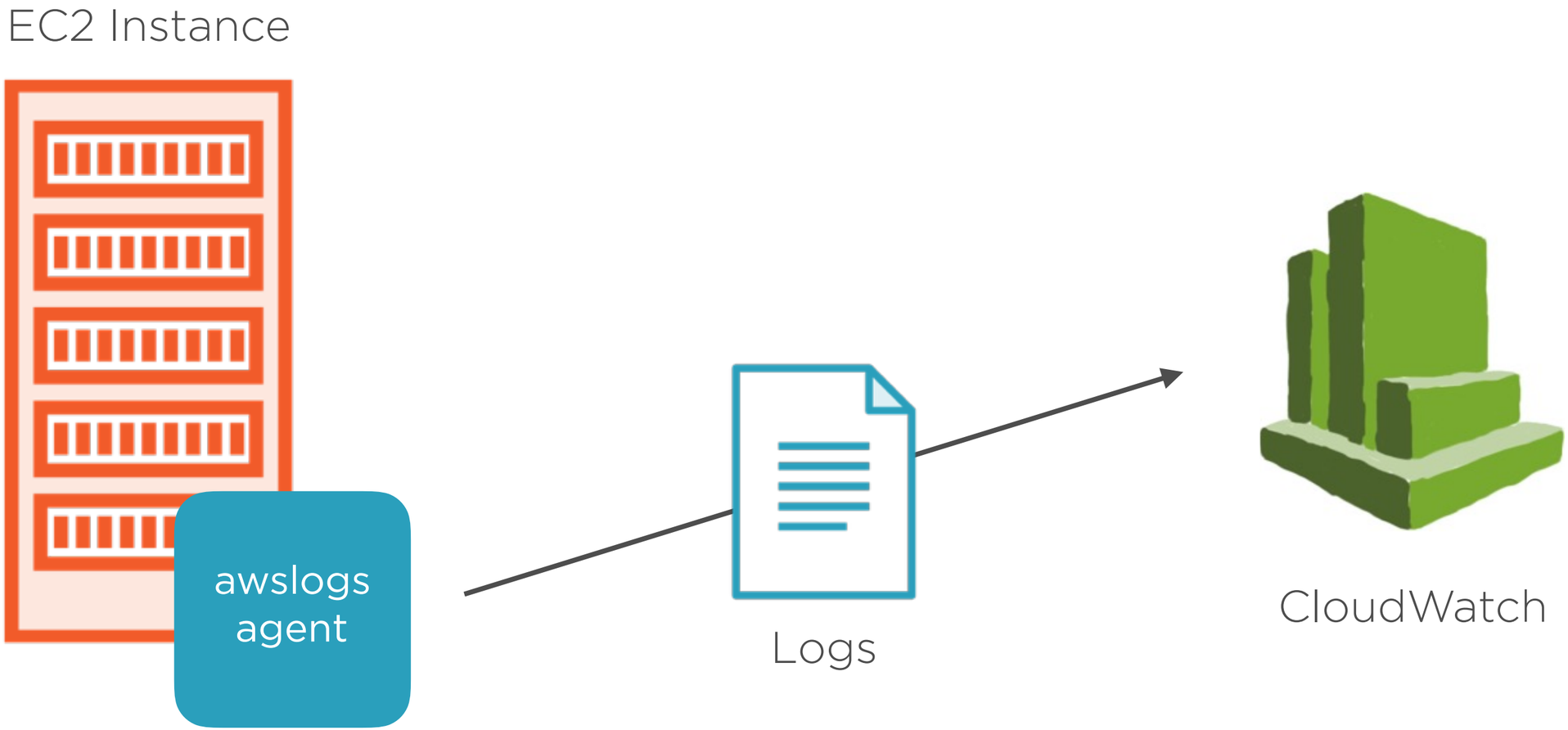
ACTION

SMS Notification

Autoscale EC2 Instances

CloudWatch can monitor your

Logs


EC2 Instance
awslogs
agent
Logs
CloudWatch

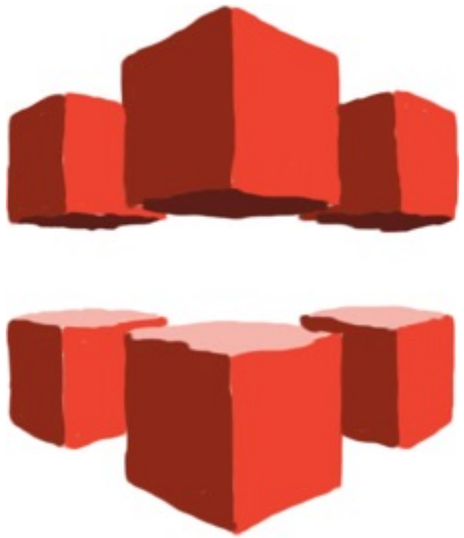
CloudWatch Pricing

Alarms	Ingesting Logs	Archived Logs	Dashboards
$0.10 each per month	$0.50 per GB	$0.03 per GB	$3.00 each per month

*** Prices differ based on Region

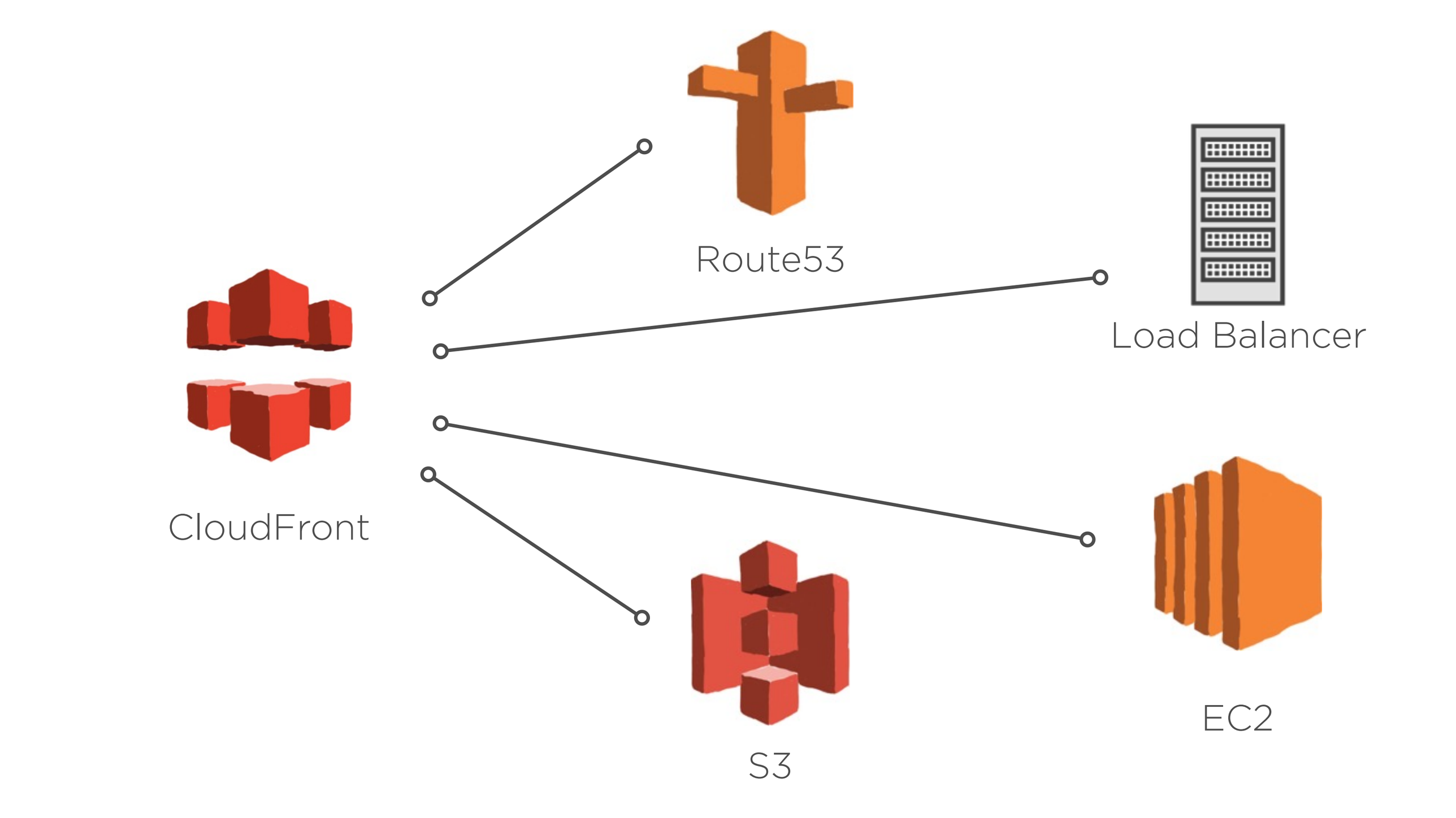
*** please see https://aws.amazon.com/cloudwatch/pricing/ for current pricing

CloudFront



CloudFront

The solution for your CDN needs


Route53
Load Balancer
CloudFront
EC2
S3

CloudFront Structure

Original Content

Distribution

CloudFront URL Example

https://d3nwl6hikok169.cloudfront.net

CloudFront Configuration Options

SSL Certificates

Allowed HTTP Methods

Edge Locations

CloudFront Pricing Example

United States Outgoing Data	$0.085 per GB
Australia Outgoing Data	$0.14 per GB

*** Prices differ based on Edge Location

*** please see https://aws.amazon.com/cloudfront/pricing/ for current pricing

CloudFront Free Tier

50GB Outgoing Data per Month

2 Million Requests per Month

*** please see https://aws.amazon.com/cloudfront/pricing/ for current pricing

Conclusion

Summary

EB for applications

DynamoDB for NoSQL

RedShift for Data Warehousing

VPC for networking

CloudWatch for monitoring

CloudFront for edging

Up Next:

Harnessing the Power of AWS from the Command Line to Code

AWS Access Methods

Command Line

SDK

Web Console