CSAA Practice Test-4

	Interface Endpoint	**Gateway Endpoint**
What	Elastic Network Interface with a Private IP	A gateway that is a target for a specific route
How	Uses DNS entries to redirect traffic	Uses prefix lists in the route table to redirect traffic
Which services	API Gateway, CloudFormation, CloudWatch etc.	Amazon S3, DynamoDB
Security	Security Groups	VPC Endpoint Policies

AWS Region

Egress-VPC

Availability Zone 1

Egress-Public-AZ1

NAT gateway

Egress-Private-AZ1

Availability Zone 2

Egress-Public-AZ2

NAT gateway

Egress-Private-AZ2

IGW

192.168.0.0/16

App1-VPC

App1-Private-AZ

172.16.0.0
172.16.1.0
172.16.2.0

10.0.0.0/16

CIDR Range	Next Hop
10.0.0.0/16	local
0.0.0.0/0	TGW-Internet

TGW-Internet

Transit Gateway Route Tables

App-Route Table

CIDR Range	Next Hop
0.0.0.0/0	TGW-Attachment
RFC1918	Blackhole

Egress-Route Table

CIDR Range	Next Hop
10.0.0.0/16	App1-Attachment
10.1.0.0/16	App2-Attachment

App2-VPC

App2-Private-AZ

172.16.0.0
172.16.1.0
172.16.2.0

10.1.0.0/16

CIDR Range	Next Hop
10.1.0.0/16	local
0.0.0.0/0	TGW-Internet

172.16.0.0
172.16.1.0
172.16.2.0

CIDR Range	Next Hop
192.168.0.0/16	local
0.0.0.0/0	IGW
10.0.0.0/16	TGW-Internet
10.1.0.0/16	TGW-Internet

CIDR Range	Next Hop
192.168.0.0/16	local
0.0.0.0/0	NAT Gateway

Debugging and error handling

DLQ Resource Info
Choose the AWS service to send event payload to after exceeding maximum retries.

| SNS ▼ |
| --- |
| None |
| SNS |
| SQS |

Enable active tracing Info

☐

AWS Lambda will automatically retry failed executions for asynchronous invocations. You can additionally optionally configure Lambda to forward payloads that were not processed to a dead-letter queue (DLQ), such as an SQS queue or an SNS topic. Learn more about Lambda's retry policy and DLQs. **Please ensure your role has appropriate permissions to access the DLQ resource.**

Q-3

AWS IAM
role

role

AWS IAM
Policy

permissions

Amazon
SQS

AWS
Lambda

API calls
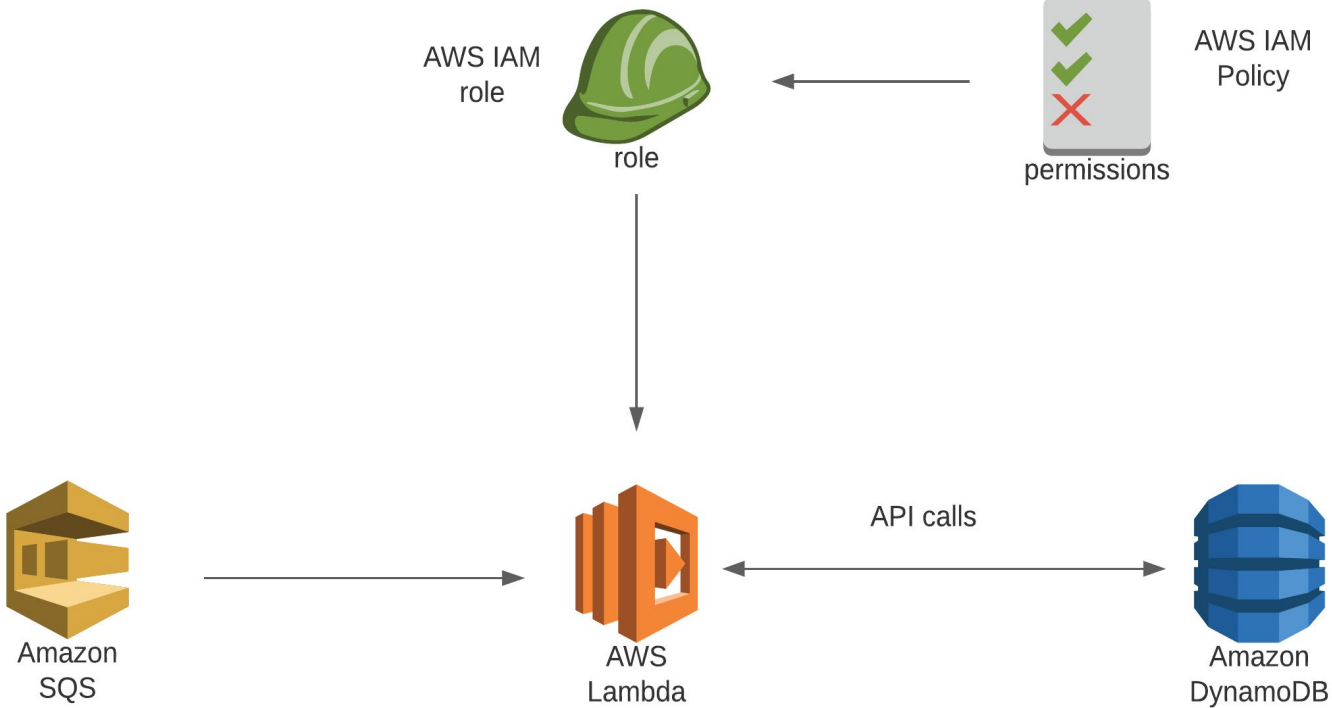
Amazon
DynamoDB

Create role

▾ Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy

Filter policies ⌄   🔍 SQS

		Policy name ▼
☐	▸	AmazonSQSFullAccess
☐	▸	AmazonSQSReadOnlyAccess
☐	▸	AWSLambdaSQSQueueExecutionRole

Q-4

5

Choose trail attributes

General details

A trail created in the console is a multi-region trail. Learn more ⤴

Trail name
Enter a display name for your trail.

```
clarusway
```

3-128 characters. Only letters, numbers, periods, underscores, and dashes are allowed.

☐ Enable for all accounts in my organization

To review accounts in your organization, open AWS Organizations. See all accounts ⤴

Storage location Info

◉ **Create new S3 bucket**
Create a bucket to store logs for the trail.

○ **Use existing S3 bucket**
Choose an existing bucket to store logs for this trail.

Trail log bucket and folder
Enter a new S3 bucket name and folder (prefix) to store your logs. Bucket names must be globally unique.

```
aws-cloudtrail-logs-827784331229-59a5cdbe
```

Logs will be stored in aws-cloudtrail-logs-827784331229-59a5cdbe/AWSLogs/827784331229

Log file SSE-KMS encryption Info
☑ Enabled

AWS KMS customer managed CMK
◉ New
○ Existing

AWS KMS alias

```
Enter KMS alias
```

KMS key and S3 bucket must be in the same region.

Step 1 — AWS KMS

Step 2 — POLICY

Step 3

CloudTrail

Encrypted CloudTrail log files

S3 Bucket

S3 GetObject API call

Decrypted CloudTrail log file

Q-5

6
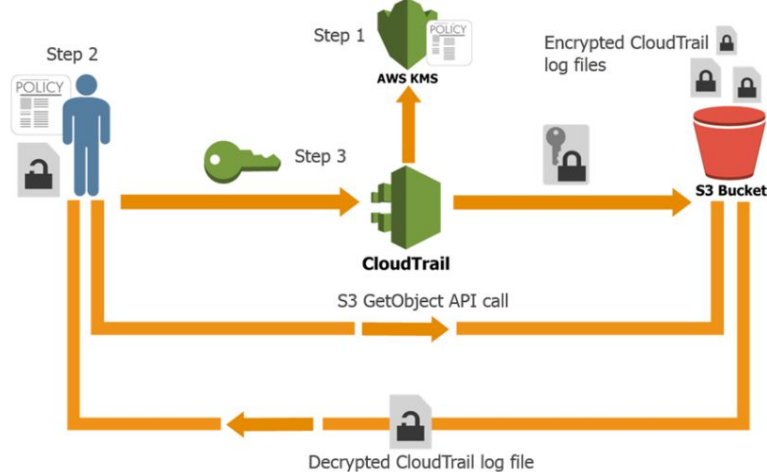
| S3 Data Consistency	
Strong read-after-write consistency	Eventual consistency
• **for PUTS of new objects.** • **when you need to read immediately an object after a write.** • **immediate visibility of a new object to all clients** • **example: in financial transactions.**	• for overwrite PUTS and DELETES • can be a slightly delay • the final action would take place **only after when all the copies** are replicated across all availability zone • example: in a shopping cart

- Cross-origin resource sharing (CORS) defines a way for client web applications that are loaded in one domain to interact with resources in a different domain.

- In certain cases, the developer of the original page might have legitimate reasons to write code that interacts with content or services at other locations. CORS provides the mechanism to allow the developer to tell the browser to allow this interaction.

Q-8
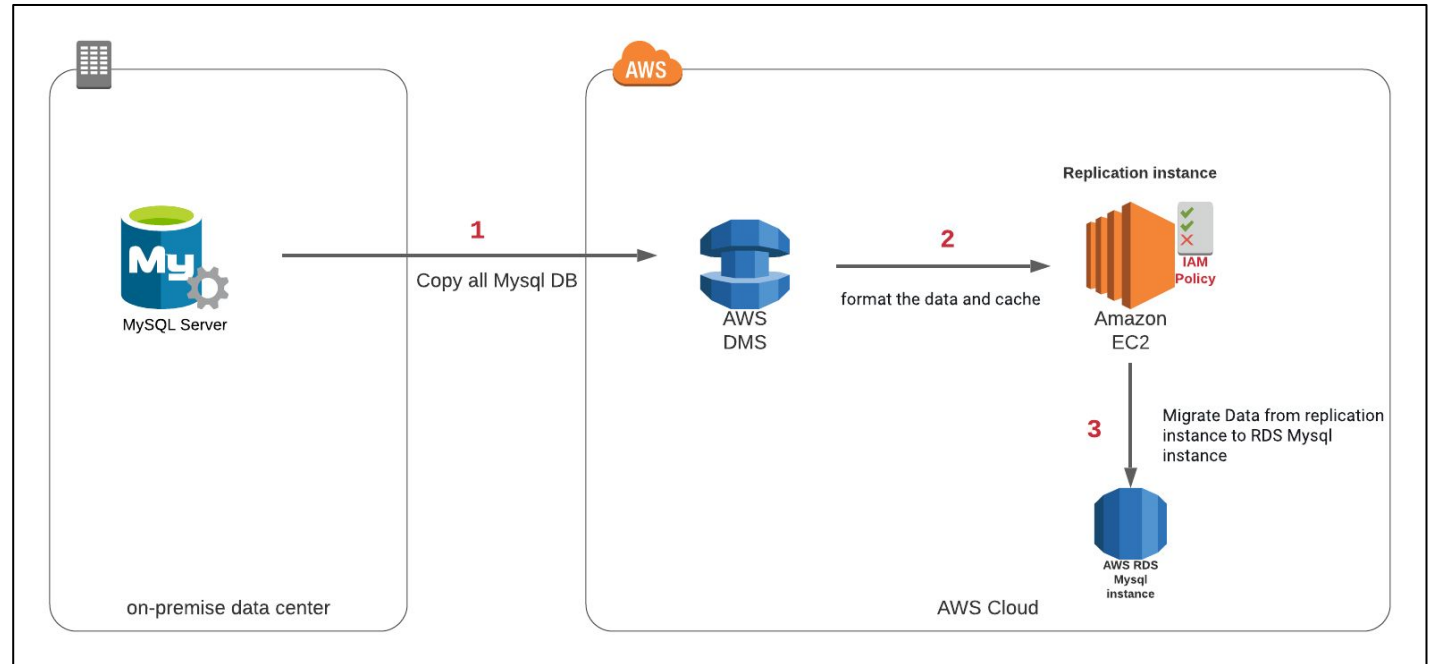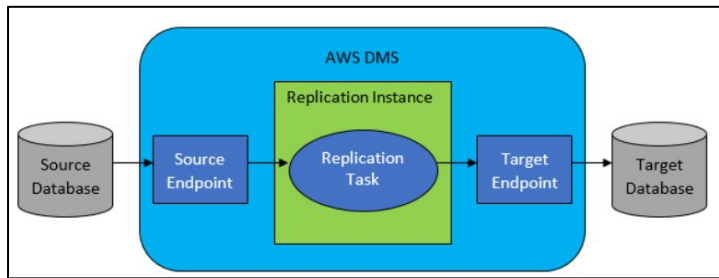
How does AWS DataSync work?

Simplifies, automates, and accelerates data transfer to or from AWS

signed URLs or signed cookies (https only)

Create Distribution

Origin Settings

Origin Domain Name	spring.broadcast.s3.amazonaws.com
Origin Path	
Enable Origin Shield	○ Yes ● No
Origin ID	S3-spring.broadcast
Restrict Bucket Access	● Yes ○ No
Origin Access Identity	● Create a New Identity ○ Use an Existing Identity

Enter a description for the origin. This value lets you distinguish multiple origins in the same distribution from one another. The description for each origin must be unique within the distribution.

If you want to require that users always access your Amazon S3 content using CloudFront URLs, not Amazon S3 URLs, click Yes. This is useful when you are using signed URLs or signed cookies to restrict access to your content. In the Help, see "Serving Private Content through CloudFront".

Q-10

Figure 9 - AWS Direct Connect and VPN

Client Applications

JDBC

ODBC

Leader Node

Compute Node 1

Node Slices

Compute Node n

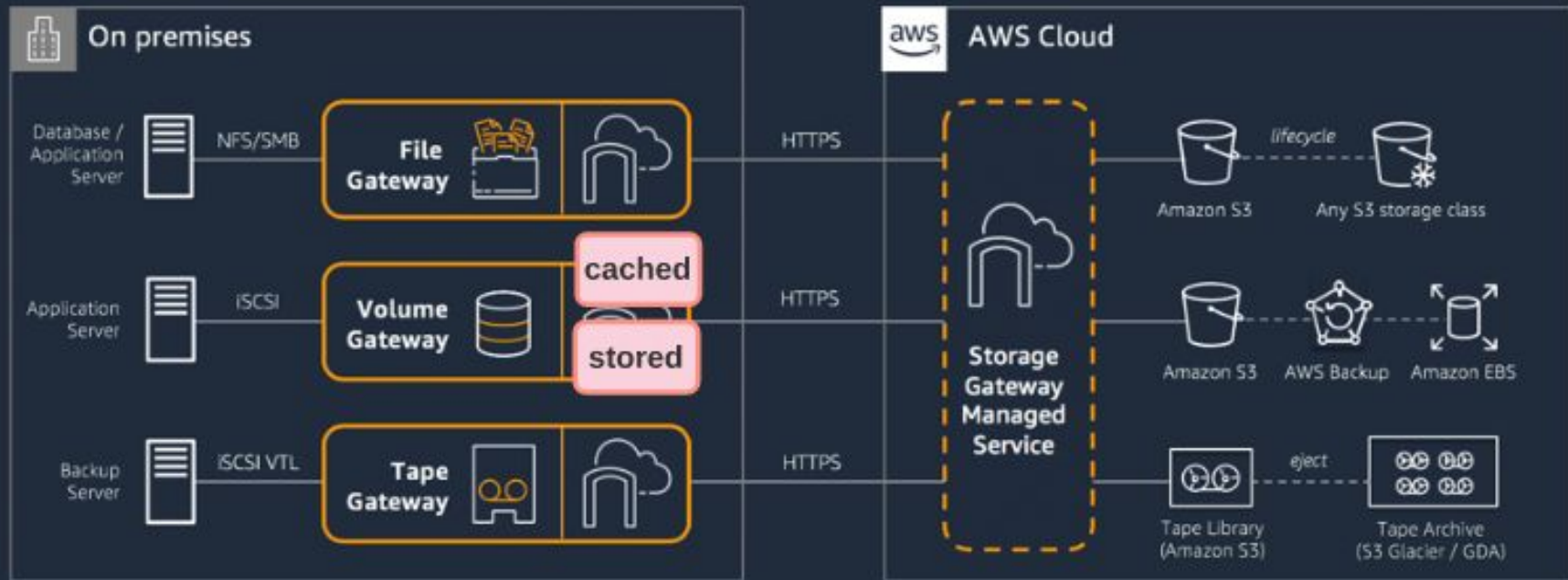Node Slices

Data Warehouse Cluster

Move on-premises backups to the cloud

Maintain your backup workflows while reducing your backup infrastructure on-premises

Data on the volumes is stored in Amazon S3 and you can take point in time copies of volumes which are stored in AWS as Amazon EBS snapshots.

XXX

(1)

Throttle

Configuration   Permissions   Monitoring

▼ **Designer**

λ xxx

≋ Layers   (0)

+ **Add trigger**

Add trigger

(2)

Trigger configuration

Select a trigger

🔍 |

API Gateway
api   application-services   aws   serverless

AWS IoT
aws   devices   iot

◯ Alexa Skills Kit
alexa   iot

◯ Alexa Smart Home
alexa   iot

Application Load Balancer
aws   load-balancing

CloudFront
aws   cdn   edge

CloudWatch Logs
aws   logging   management-tools

CodeCommit
aws   developer-tools   git

Cognito Sync Trigger
authentication   aws   identity   mobile-services   sync

DynamoDB
aws   database   nosql

EventBridge (CloudWatch Events)
aws   events   management-tools

Kinesis
analytics   aws   streaming

MQ
aws   messaging   multi-protocol

MSK

Add trigger

(3)

Trigger configuration

API Gateway
api   application-services   aws   serverless   ▼

Add an API to your Lambda function to create an HTTP endpoint that invokes your function. API Gateway supports two types of RESTful APIs: HTTP APIs and REST APIs. Learn more

API
Create a new API or attach an existing one.

Create an API   ▼

API type

● HTTP API   ◯ REST API
Create an HTTP API.   Create a REST API.

Security
Configure the security mechanism for your API endpoint.

▼

▼ **Additional settings**

API name
Choose a name for your API. API names don't need to be unique.

xxx-API

Deployment stage
The name of your API's deployment stage.

default

☑ **Cross-origin resource sharing (CORS)**
CORS is required to call your API from a webpage that isn't hosted on the same domain. This option enables cross-origin resource sharing (CORS) from any domain by adding the Access-Control-Allow-Origin header to all responses.
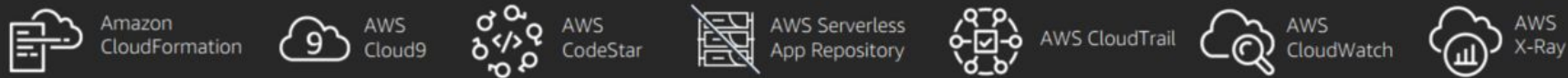
Q-18

The AWS modern application platform

SERVERLESS MICROSERVICES

AWS Lambda

AWS Fargate

Amazon API Gateway

Amazon SQS

Amazon SNS

Amazon MQ

AWS Step Functions

SERVERLESS DATASTORES

Amazon Aurora Serverless

Amazon S3

Amazon DynamoDB

AWS AppSync

DEVELOPER TOOLS

Amazon CloudFormation

AWS Cloud9

AWS CodeStar

AWS Serverless App Repository

AWS CloudTrail

AWS CloudWatch

AWS X-Ray

SECURITY AND COMPLIANCE

AWS Firewall Manager

AWS IAM

Amazon Cognito

Amazon VPC

Amazon Inspector

Amazon Macie

Amazon GuardDuty

AWS Config

Glacier Retrievals: Expedited and Bulk Retrievals

New!

- Expedited: designed for occasional urgent access to a small number of archives
- Standard: Low-cost option for retrieving data in just a few hours
- Bulk: Lowest cost option optimized for large retrievals, up to petabytes of data in 12 hours
- Three flexible and powerful retrieval options to access any of your Glacier data

	Expedited	Standard	Bulk
Data Access Time	1 - 5 minutes	3 - 5 hours	5 - 12 hours
Data Retrievals	$0.03 per GB	$0.01 per GB	$0.0025 per GB
Retrieval Requests	$0.01 per request	$0.05 per 1,000 requests	$0.025 per 1,000 requests

aws
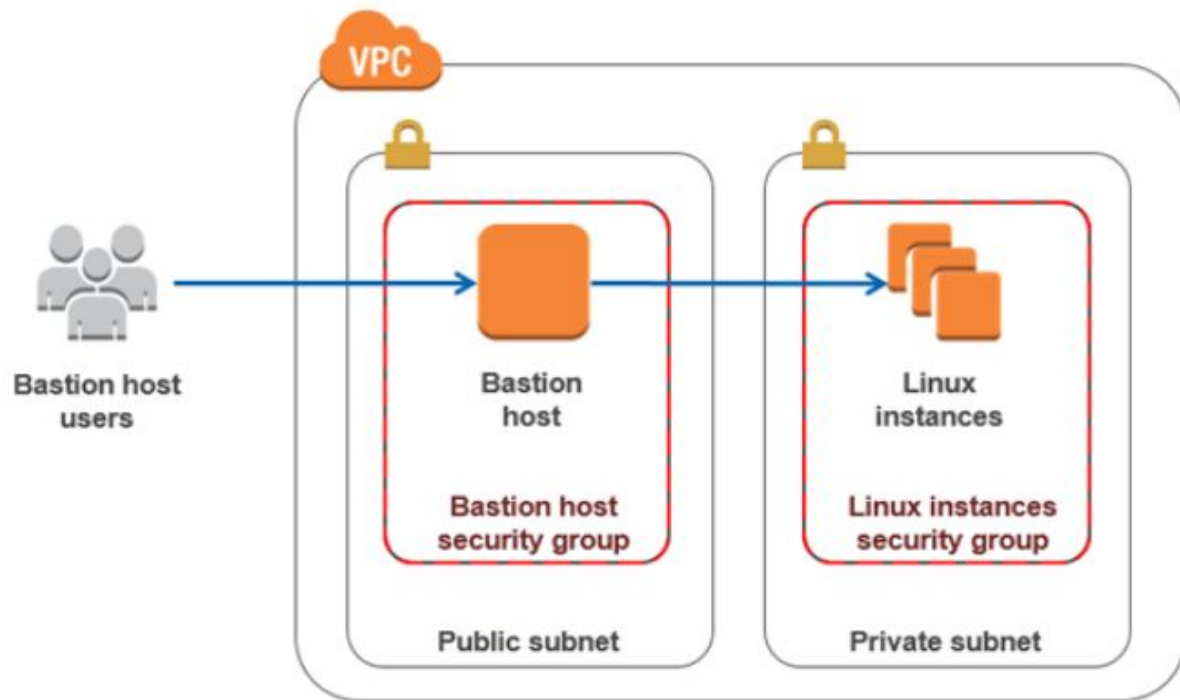
Types of Savings Plans

EC2 Instance Savings Plans

Provide the deepest discounts, up to 72% (same as Standard RIs) on the selected instance family (e.g. C5 or M5), in a specific AWS region

FLEXIBLE ACROSS

- ✓ Size: E.g. move from m5.xl to m5.4xl
- ✓ OS: E.g. change from m5.xl Windows to m5.xl Linux
- ✓ Tenancy: E.g. modify m5.xl Dedicated to m5.xl Default tenancy

Compute Savings Plans

Offer the greatest flexibility, up to 66% discounts (same discounts as Convertible RIs)

FLEXIBLE ACROSS

- ✓ Instance family: E.g. Move from C5 to M5
- ✓ Region: E.g. change from EU (Ireland) to EU (London)
- ✓ OS: E.g. Windows to Linux
- ✓ Tenancy: E.g. switch Dedicated tenancy to Default tenancy
- ✓ Compute options: E.g. move from EC2 to Fargate

Summary	Routes	Subnet Associations	Route Propagation	Tags

Edit ✓ Save Successful

View: All rules ▼

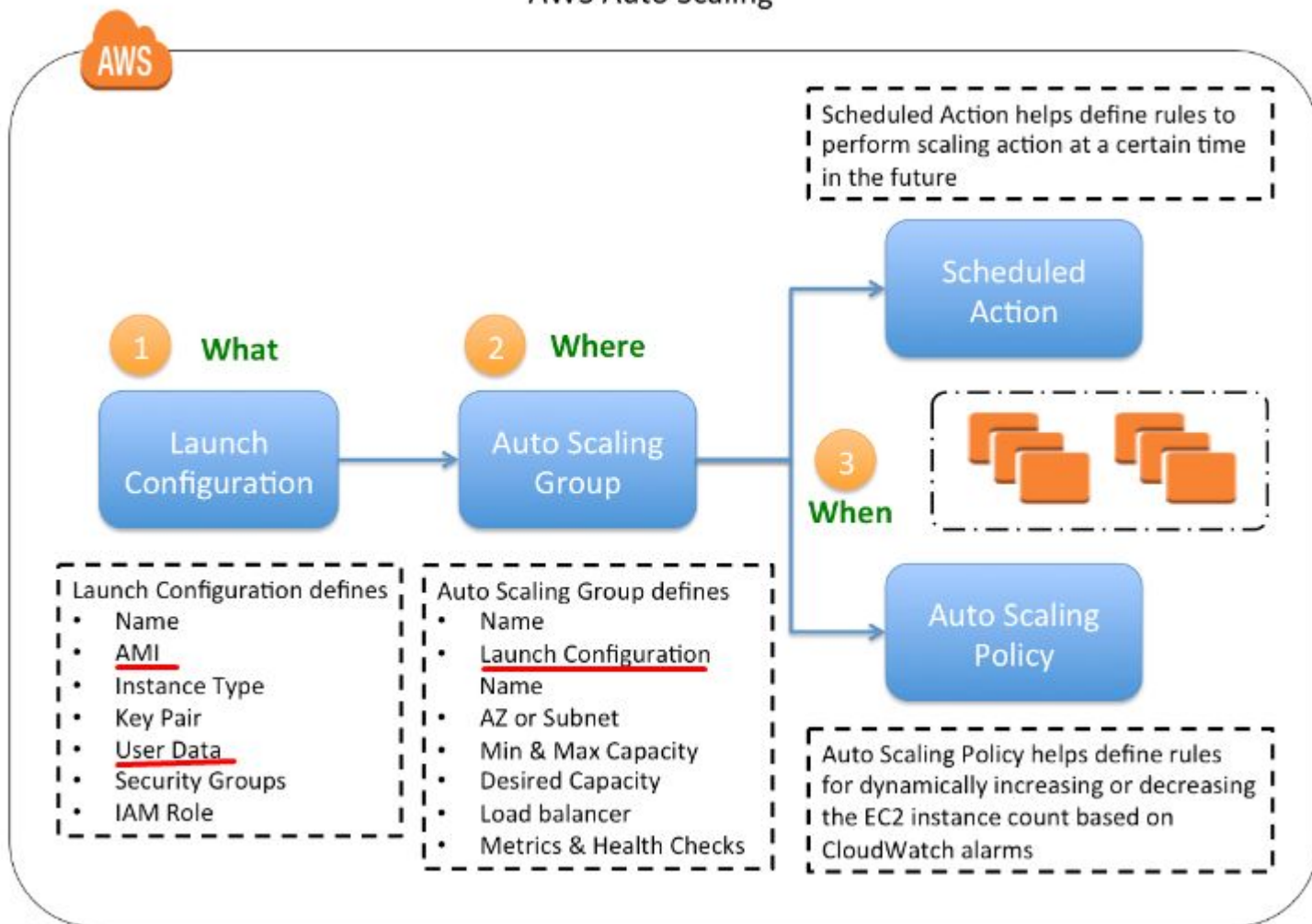| Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No
0.0.0.0/0	igw-a97272cc	Active	No

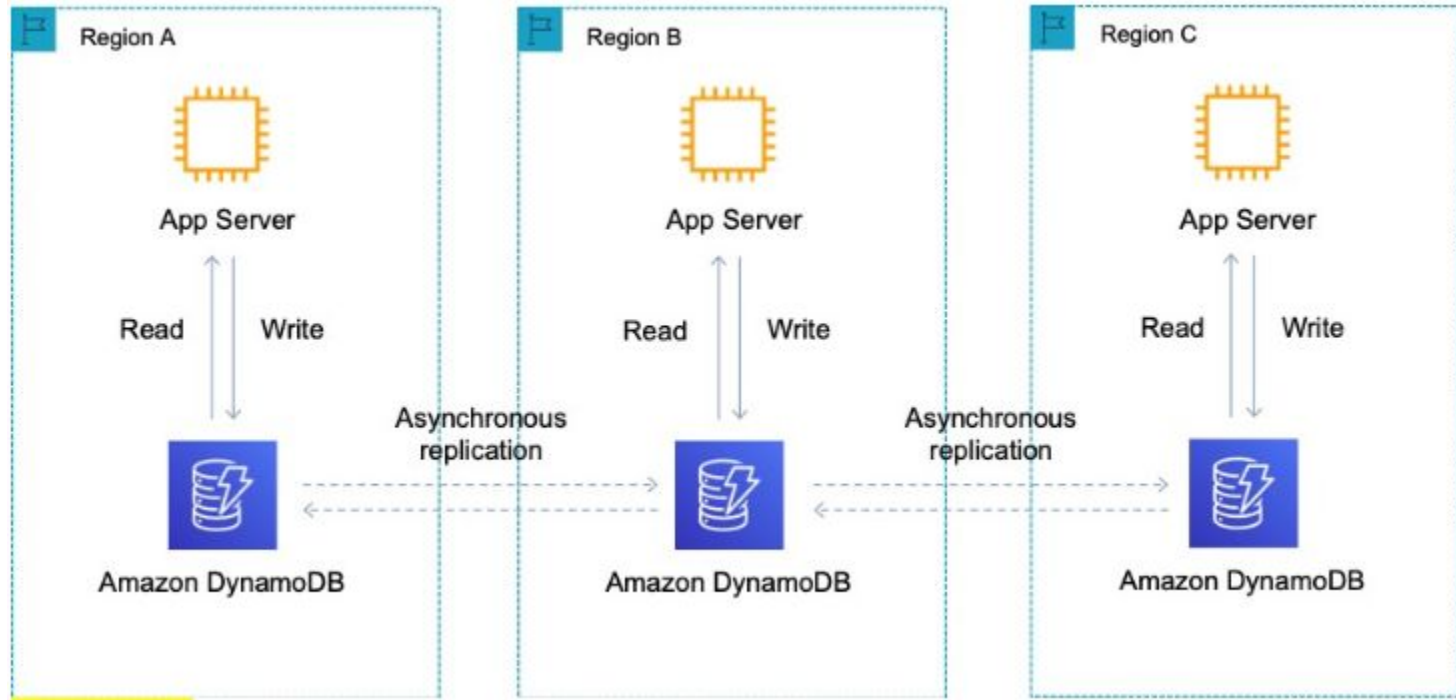The destination for the route is 0.0.0.0/0, which represents **all IPv4 addresses**. The target is the internet gateway that's attached to your VPC.

ENI ──────────────→ ENA ──────────────→ EFA

- Upto 10 GBPS
- VMDq
- TCP/IP
- Multiple ENI/instance
- Traffic can traverse across subnets
- VPC Networking, General purpose
- Default

- Upto 25 GBPS
- SR-IOV
- TCP/IP
- Single setting/per instance
- Traffic can traverses across subnets
- Low latency apps
- Optional on supported instance type

- Upto 100 GBPS
- OS-Bypass
- SRD
- One EFA per instance
- OS Bypass traffic is limited to single subnet and is not routable
- HPC and ML Apps
- Optional on supported instance type

AWS Auto Scaling

Scheduled Action helps define rules to perform scaling action at a certain time in the future

1 **What**

2 **Where**

Scheduled Action

Launch Configuration

Auto Scaling Group

3

When

Auto Scaling Policy

Launch Configuration defines
- Name
- AMI
- Instance Type
- Key Pair
- User Data
- Security Groups
- IAM Role

Auto Scaling Group defines
- Name
- Launch Configuration Name
- AZ or Subnet
- Min & Max Capacity
- Desired Capacity
- Load balancer
- Metrics & Health Checks

Auto Scaling Policy helps define rules for dynamically increasing or decreasing the EC2 instance count based on CloudWatch alarms

* If your application requires strongly consistent reads, it must perform all of its strongly consistent reads and writes in the same Region. DynamoDB does not support strongly consistent reads across Regions.

Amazon EMR

Easily Run Spark, Hadoop, Hive, Presto, HBase, and more big data apps on AWS

Latest versions

Updated with latest open source frameworks within 30 days

Low cost
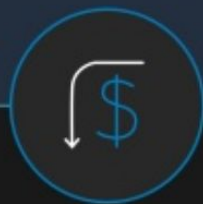
50–80% reduction in costs with EC2 Spot and Reserved Instances

Per-second billing for flexibility

Use S3 storage

Process data in S3 securely with high performance using the EMRFS connector

Easy
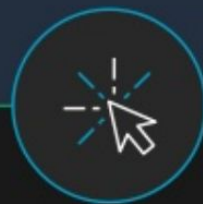
Fully managed no cluster setup, node provisioning, cluster tuning

S3 cross-region replication *New*

Automated, fast, and reliable asynchronous replication of data across AWS regions

Use cases

Compliance - store data hundreds of miles apart

Lower latency - distribute data to regional customers)

Security - create remote replicas managed by separate AWS accounts

Destination
(Oregon)

Source
(Virginia)

- Only replicates new PUTs. Once S3 is configured, all new uploads into a source bucket will be replicated
- Entire bucket or prefix based
- 1:1 replication between any 2 regions
- Versioning required

Details on Cross-Region Replication

Versioning - Need to enable S3 versioning for the source and destination buckets.

Lifecycle Rules - You can choose to use Lifecyle Rules on the destination bucket to manage older versions by deleting them or migrating them to Amazon Glacier.

Determining Replication Status - Use the HEAD operation on a source object to determine its replication status.

Region-to-Region - Replication always takes place between a pair of AWS regions. You cannot use this feature to replicate content to two buckets that are in the same region.

New Objects - Replicates new objects and changes to existing objects. Use S3 COPY to replicate existing objects

Amazon Route 53 is a highly available and scalable Domain Name System (DNS) web service.

Domain Registration

DNS Routing

Health Checking

Amazon Route 53
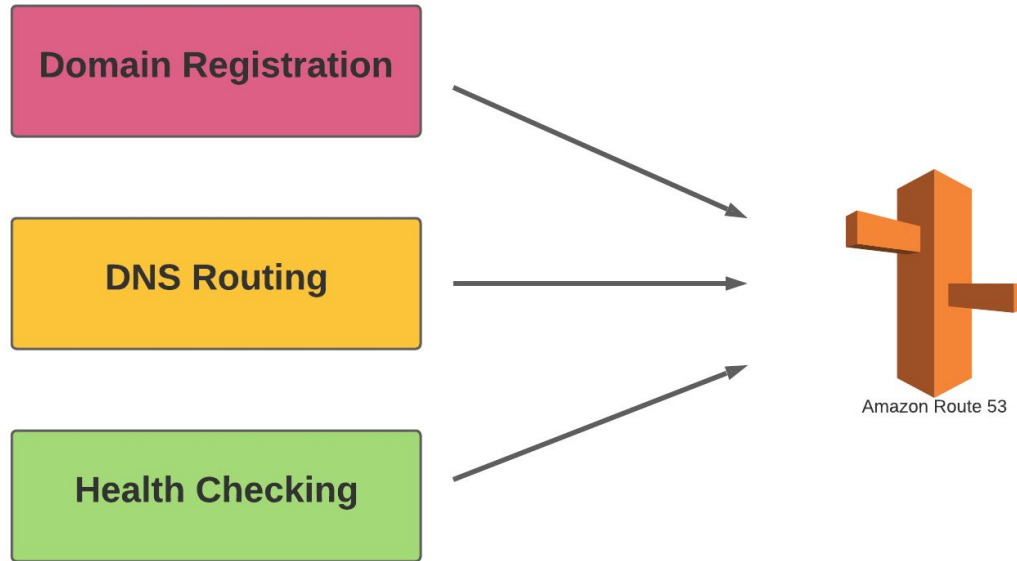
Object lifecycle management

Transition actions—Define when objects transition to another storage class

Expiration actions—Define when objects expire. Amazon S3 deletes expired objects on your behalf.

Trails

Name ▲	Home region ▽	Multi-region trail ▽	Insights ▽	Organization trail ▽	S3 bucket ▽	Log file prefix ▽	CloudWatch Logs log group ▽	Status ▽
CloudTrail-event-log-files	US East (N. Virginia)	Yes	Disabled	No	aws-cloudtrail-logs-827784331229-b8c157f7			⊘ Logging

Delete   **Create trail**

Trail name
Enter a display name for your trail.

`CloudTrail event log files`

3-128 characters. Only letters, numbers, periods, underscores, and dashes are allowed.

☐ Enable for all accounts in my organization
To review accounts in your organization, open AWS Organizations. See all accounts ☐

Storage location Info

● **Create new S3 bucket**
  Create a bucket to store logs for the trail.

○ **Use existing S3 bucket**
  Choose an existing bucket to store logs for this trail.

Trail log bucket and folder
Enter a new S3 bucket name and folder (prefix) to store your logs. Bucket names must be globally unique.

`aws-cloudtrail-logs-827784331229-b8c157f7`

Logs will be stored in aws-cloudtrail-logs-827784331229-b8c157f7/AWSLogs/827784331229

Log file SSE-KMS encryption Info
☑ Enabled

AWS KMS customer managed CMK
● New
○ Existing

AWS KMS alias

`Enter KMS alias`

KMS key and S3 bucket must be in the same region.

▼ **Additional settings**
Log file validation Info
☑ Enabled

Amazon S3 > aws-cloudtrail-logs-827784331229-b8c157f7 > AWSLogs/ > 827784331229/

827784331229/

Objects   Folder properties

Objects (2)
Objects are the fundamental entities stored in Amazon S3. For others to access your objects, you'll need to explicitly grant them permissions.
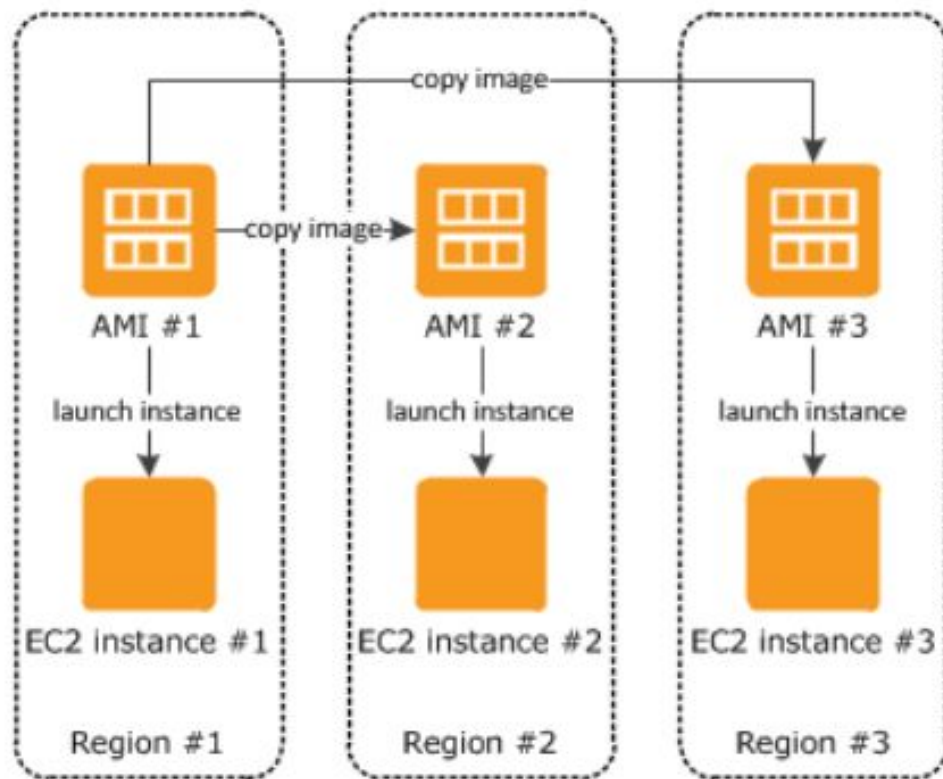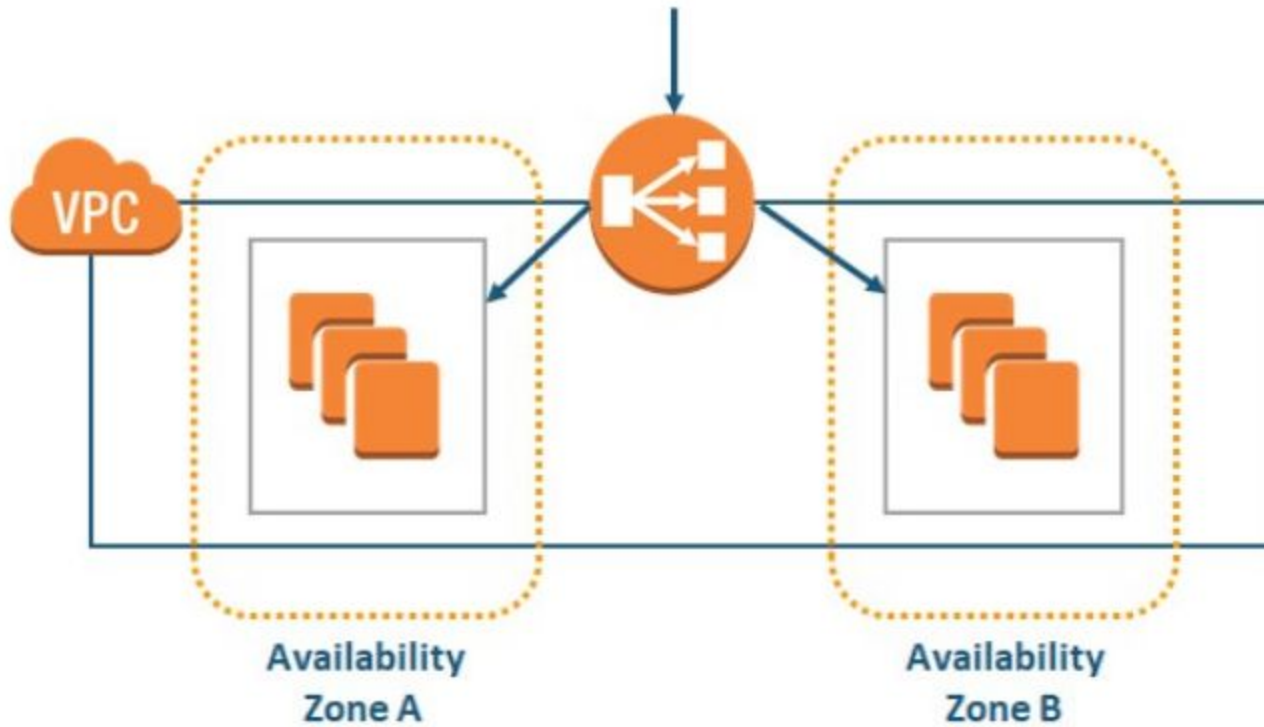
↻   Delete   Actions ▼   Create folder   **Upload**

🔍 Find objects by prefix

☐	Name ▲	Type ▽	Last modified
☐	📁 CloudTrail-Digest/	Folder	-
☐	📁 CloudTrail/	Folder	-

Availability Zone A

Availability Zone B

- Each AZ consists of **one or more** physical data centers.

http://d111111abcdef8.cloudfront.net/images/image.jpg**?color=red&size=large**

Select a delivery method for your content.

Web

Create a web distribution if you want to:

- Speed up distribution of static and dynamic content, for example, .html, .css, .php, and graphics files.
- Distribute media files using HTTP or HTTPS.
- Add, update, or delete objects, and submit data from web forms.
- Use live streaming to stream an event in real time.

You store your files in an origin - either an Amazon S3 bucket or a web server. After you create the distribution, you can add more origins to the distribution.

Get Started

RTMP

CloudFront is discontinuing support for RTMP distributions on December 31, 2020. For more information, please read the announcement.

Create an RTMP distribution to speed up distribution of your streaming media files using Adobe Flash Media Server's RTMP protocol. An RTMP distribution allows an end user to begin playing a media file before the file has finished downloading from a CloudFront edge location. Note the following:

- To create an RTMP distribution, you must store the media files in an Amazon S3 bucket.
- To use CloudFront live streaming, create a web distribution.

Get Started

Producers

- EC2 instances
- Client
- Mobile client
- Traditional server

Amazon Kinesis stream

- Shard 1
- Shard 2
- Shard N

Consumers

- EC2 instance
- EC2 instance
- EC2 instance
- EC2 instance

- Amazon S3
- DynamoDB
- Amazon Redshift
- Amazon EMR
- Amazon Kinesis Firehose

Q-40

STANDARD QUEUE

- **Unlimited Throughput:** Support a nearly unlimited number of transactions per second (TPS) per API action.
- **At-Least-Once Delivery:** A message is delivered at least once, but occasionally more than one copy of a message is delivered.
- **Best-Effort Ordering:** Occasionally, messages might be delivered in an order different from which they were sent.

FIFO QUEUE

- **High Throughput:** By default, FIFO queues support up to 300 messages per second
- **Exactly-Once Processing:** A message is delivered once and remains available until a consumer processes and deletes it. Duplicates aren't introduced into the queue.
- **First-In-First-Out Delivery:** The order in which messages are sent and received is strictly preserved

STANDARD MESSAGE QUEUE — M5, M1, M3, M2, M6

FIFO MESSAGE QUEUE — M4, M3, M2, M1

SQS – Short vs Long Polling

Polling is the method in which we retrieve messages from the queues.

Short polling (default) returns messages immediately, even if the message queue being polled is empty.

When you need a message **right away**. shorting polling is what you want to use.

Long polling waits until message **arrives in the queue**, or the **long poll timeout expires**.

Long polling makes it **inexpensive to retrieve messages** from your queue as soon as the messages are available.

Using long polling will reduce the cost because you can **reduce the number of empty receives**.

Most use-cases you want to use Long Polling

You can enable long polling when receiving a message by setting the wait time in seconds on the **ReceiveMessageRequest**

```
1   ReceiveMessageRequest receive_request = new ReceiveMessageRequest()
2       .withQueueUrl(queue_url)
3       .withWaitTimeSeconds(40);
4   sqs.receiveMessage(receive_request);
```

Dead Letter Queue

RETRY POLICY 5 TIMES

1 PRODUCER — MESSAGE

2 PRODUCER — MESSAGE

3 PRODUCER — MESSAGE

SIMPLE MESSAGE QUEUE

1 CONSUMER

MESSAGE → 2 CONSUMER

KILL/DELETE MESSAGE

DEAD LETTER MESSAGE QUEUE

ADDS UPTO THE DLQ
AFTER RETRY POLICY

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```
Create          Update Version
Application  →  Upload    →  Launch      →  Manage
                Version      Environment     Environment
                        Deploy New Version
```
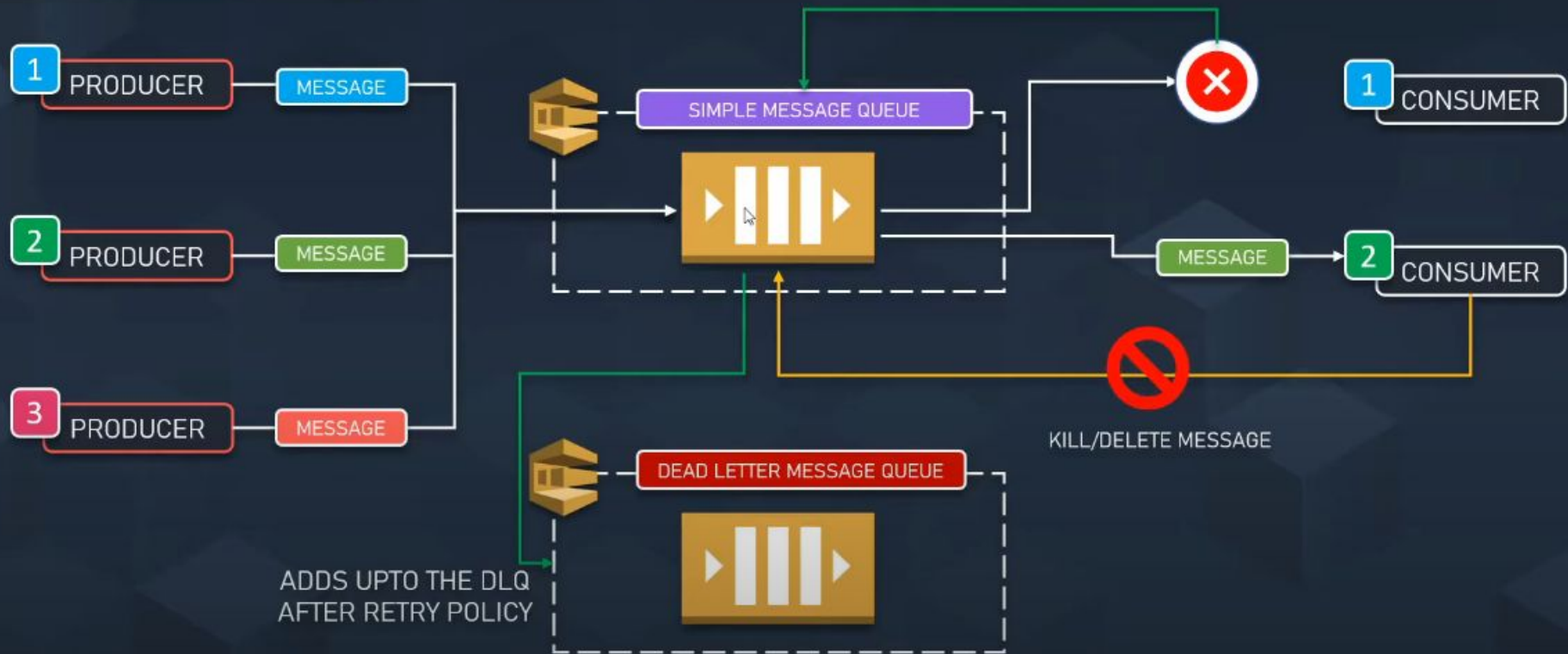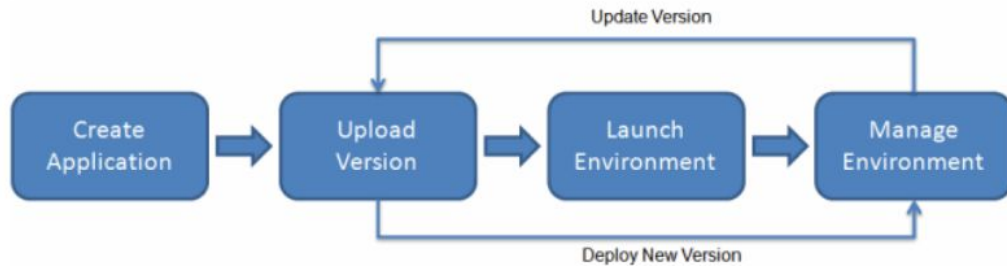
Java,
.NET,
PHP,
Node.js,
Python,
Ruby,
Go,
and Docker

Application information

Application name

new-app

Up to 100 Unicode characters, not including forward slash (/).

Application tags

Apply up to 50 tags. You can use tags to group and filter your resources. A tag is a key-value pair. The key must be unique within the resource and is case-sensitive. Learn more

Key

Value

Add tag

50 remaining

Platform

Platform

Python

Platform branch

Python 3.7 running on 64bit Amazon Linux 2

Platform version

3.1.4 (Recommended)

Application code

○ Sample application
Get started right away with sample code.

○ Upload your code
Upload a source bundle from your computer or copy one from Amazon S3.

Cancel   Configure more options   Create application

With Elastic Beanstalk, you can quickly deploy and manage applications in the AWS Cloud without having to learn about the infrastructure that runs those applications.

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Simple routing policy – basic routing policy defined using an A record to resolve to a single resource always without any specific rules.

Multivalue answer routing policy – Use when you want Route 53 to respond to DNS queries with up to eight healthy records selected at **random**.

Latency routing policy – is used when there are multiple resources (multiple AWS Regions) for the same functionality and you want Route 53 to respond to DNS queries with answers that provide the best latency.
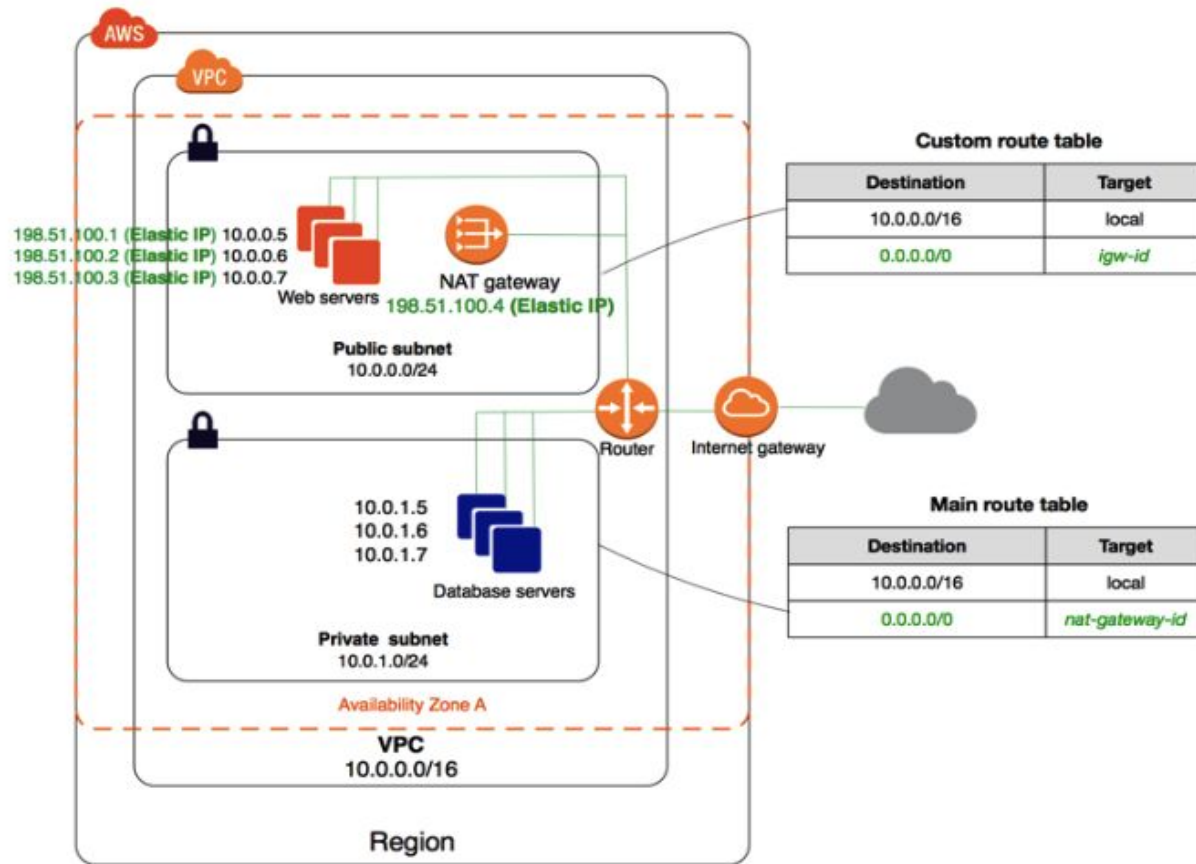
Weighted routing policy – is good for testing new versions of the software. Also, It is the ideal approach for **Blue-Green** deployments.

	Solid State Drives (SSD)					Hard Disk Drives (HDD)	
Volume Type	EBS Provisioned IOPS SSD (io2 Block Express)	EBS Provisioned IOPS SSD (io2)	EBS Provisioned IOPS SSD (io1)	EBS General Purpose SSD (gp3) **announced Dec 1, 2020**	EBS General Purpose SSD (gp2)*	Throughput Optimized HDD (st1)	Cold HDD (sc1)
Short Description	Highest performance SSD volume designed for business-critical latency-sensitive **transactional workloads**	**Highest performance** and highest durability SSD volume designed for **latency-sensitive transactional workloads**	Highest performance SSD volume designed for **latency-sensitive transactional workloads**	**Lowest cost SSD volume that balances price performance for a wide variety of transactional workloads**	General Purpose SSD volume that **balances price performance for a wide variety of transactional workloads**	**Low cost** HDD volume designed for **frequently** accessed, **throughput intensive workloads**	**Lowest cost** HDD volume designed for **less frequently accessed workloads**
Durability	99.999%		99.8% - 99.9% durability			99.8% - 99.9% durability	
Use Cases	Largest, most I/O intensive, mission critical deployments of NoSQL and relational **databases** such as Oracle, SAP HANA, Microsoft SQL Server, and SAS Analytics	I/O-intensive NoSQL and relational **databases**	I/O-intensive NoSQL and relational **databases**	Virtual desktops, medium sized single instance **databases** such as Microsoft SQL Server and Oracle, latency sensitive interactive applications, boot volumes, and dev/test environments	Virtual desktops, medium sized single instance **databases** such as Microsoft SQL Server and Oracle, latency sensitive interactive applications, boot volumes, and dev/test environments	**Big data, data warehouses, log processing**	**Colder data requiring fewer scans per day**

Volume Type	Solid State Drives (SSD)					Hard Disk Drives (HDD)	
	EBS Provisioned IOPS SSD (io2 Block Express)	EBS Provisioned IOPS SSD (io2)	EBS Provisioned IOPS SSD (io1)	EBS General Purpose SSD (gp3)	EBS General Purpose SSD (gp2)*	Throughput Optimized HDD (st1)	Cold HDD (sc1)
API Name	io2	io2	io1	gp3	gp2	st1	sc1
Volume Size	4 GB – 64 TB			1 GB - 16 TB		125 GB - 16 TB	
Max IOPS**/Volume	256,000	64,000	64,000	16,000	16,000	500	250
Max Throughput***/Volume	4,000 MB/s	1,000 MB/s	1,000 MB/s	1,000 MB/s	250 MB/s	500 MB/s	250 MB/s
Max IOPS/Instance	260,000	160,000**	260,000	260,000	260,000	260,000	260,000
Max Throughput/Instance	7,500 MB/s	4,750 MB/s**	7,500 MB/s	7,500 MB/s	7,500 MB/s	7,500 MB/s	7,500 MB/s
Latency	sub-millisecond	single digit millisecond					
Price	$0.125/GB-month $0.065/provisioned IOPS-month up to 32,000 IOPS $0.046/provisioned IOPS-month from 32,001 to 64,000 $0.032/provisioned IOPS-month for greater than 64,000 IOPS		$0.125/GB-month $0.065/provisioned IOPS-month	$0.08/GB-month 3,000 IOPS free and $0.005/provisioned IOPS-month over 3,000; 125 MB/s free and $0.04/provisioned MB/s-month over 125	$0.10/GB-month	$0.045/GB-month	$0.015/GB-month
Dominant Performance Attribute	IOPS, throughput, latency, capacity, and volume durability	IOPS and volume durability	IOPS	IOPS	IOPS	MB/s	MB/s

AWS

VPC

198.51.100.1 (Elastic IP) 10.0.0.5
198.51.100.2 (Elastic IP) 10.0.0.6
198.51.100.3 (Elastic IP) 10.0.0.7

Web servers

NAT gateway
198.51.100.4 (Elastic IP)

Public subnet
10.0.0.0/24

10.0.1.5
10.0.1.6
10.0.1.7

Database servers

Private subnet
10.0.1.0/24

Availability Zone A

VPC
10.0.0.0/16

Router

Internet gateway

Region

Custom route table

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	igw-id

Main route table

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	nat-gateway-id

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partition key

Music

GenreAlbumTitle

```
{
    "Artist": "No One You Know",
    "SongTitle": "My Dog Spot",          → sort key
    "AlbumTitle": "Hey Now",
    "Price": 1.98,
    "Genre": "Country",
    "CriticRating": 8.4
}
```

```
{
    "Genre": "Country",
    "AlbumTitle": "Hey Now",
    "Artist": "No One You Know",
    "SongTitle": "My Dog Spot"
}
```
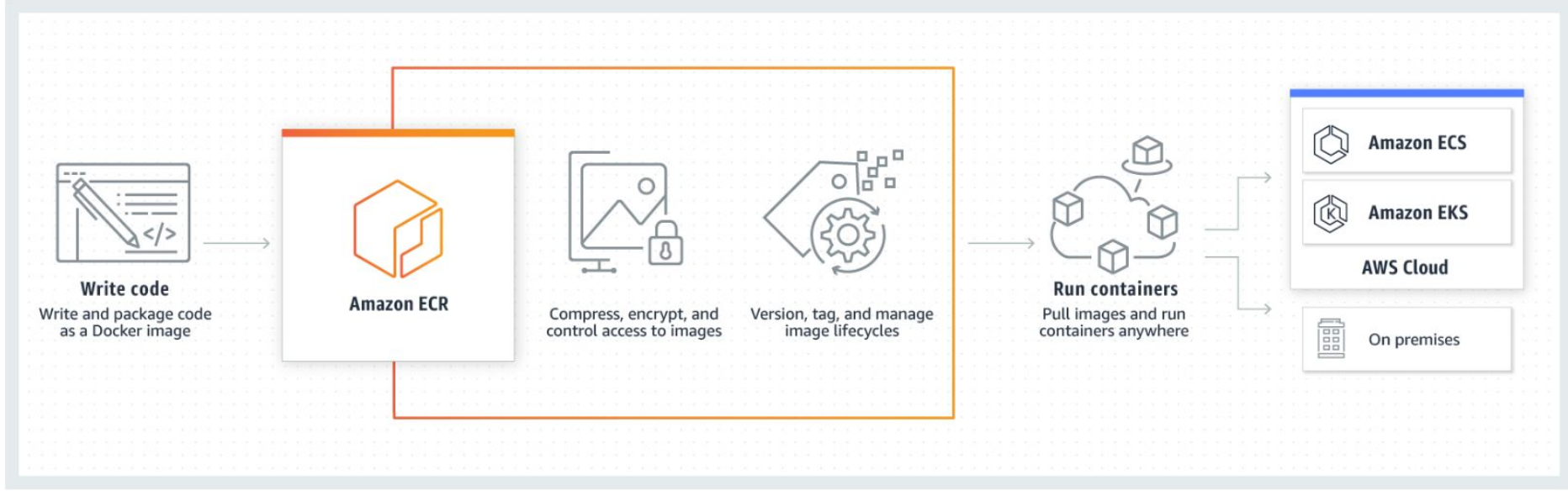
```
{
    "Artist": "No One You Know",
    "SongTitle": "Somewhere Down The Road",
    "AlbumTitle": "Somewhat Famous",
    "Genre": "Country",
    "CriticRating": 8.4,
    "Year": 1984
}
```
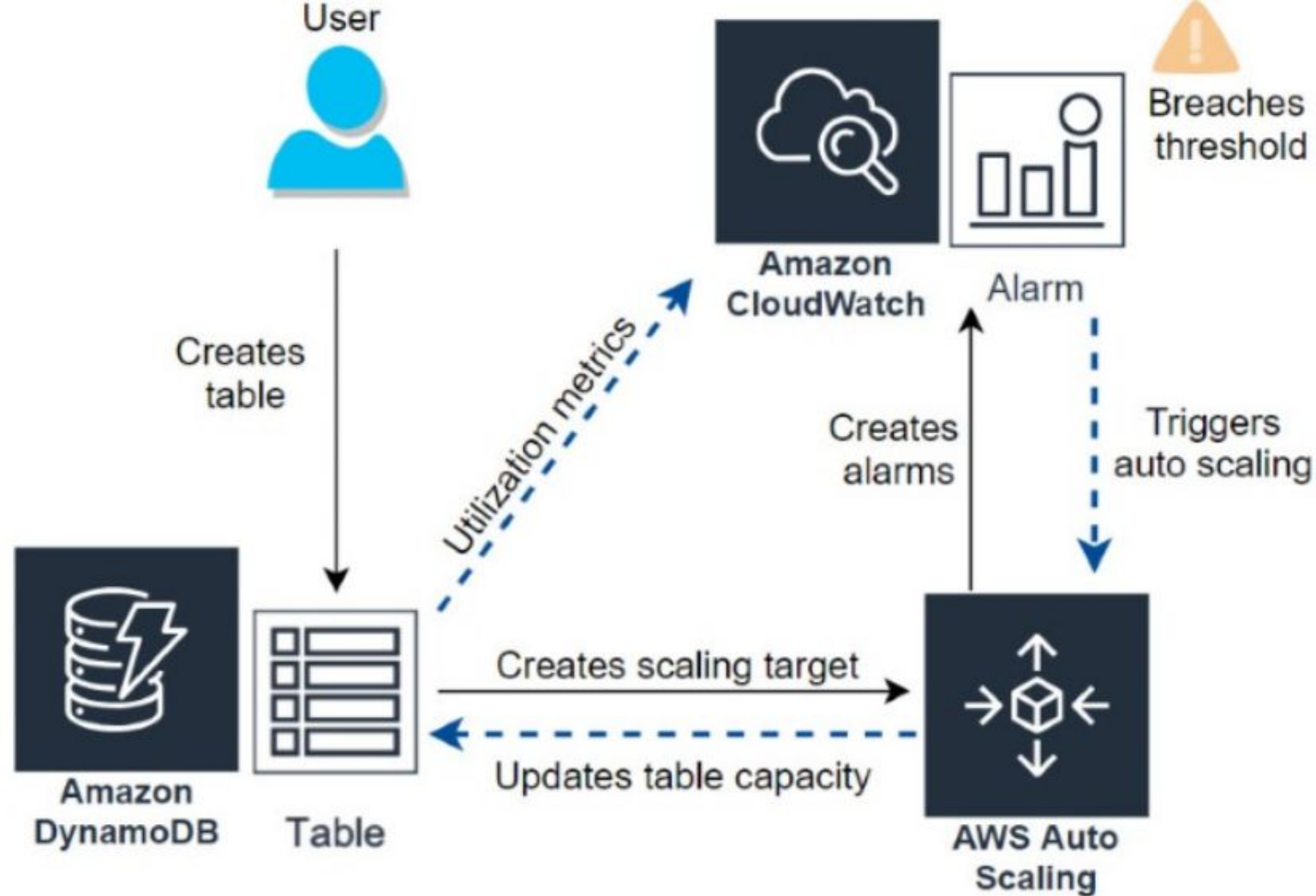
```
{
    "Genre": "Country",
    "AlbumTitle": "Somewhat Famous",
    "Artist": "No One You Know",
    "SongTitle": "Somewhere Down The Road"
}
```

Write code
Write and package code as a Docker image

Amazon ECR

Compress, encrypt, and control access to images

Version, tag, and manage image lifecycles

Run containers
Pull images and run containers anywhere

Amazon ECS

Amazon EKS

AWS Cloud

On premises

User

Creates table

Utilization metrics

Amazon CloudWatch

Breaches threshold

Alarm

Creates alarms

Triggers auto scaling

Amazon DynamoDB

Table

Creates scaling target

Updates table capacity

AWS Auto Scaling

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Create Distribution

Origin Settings

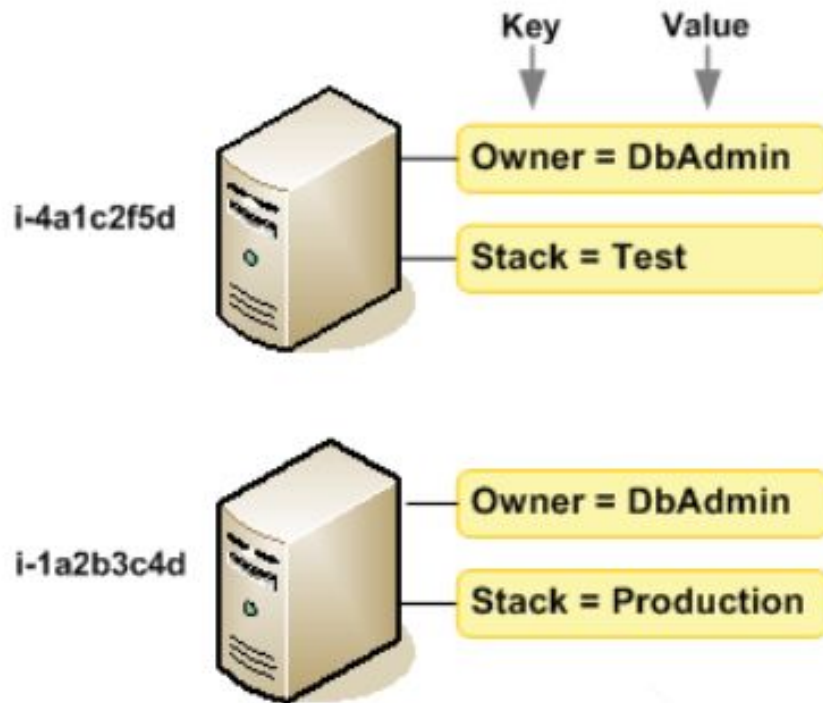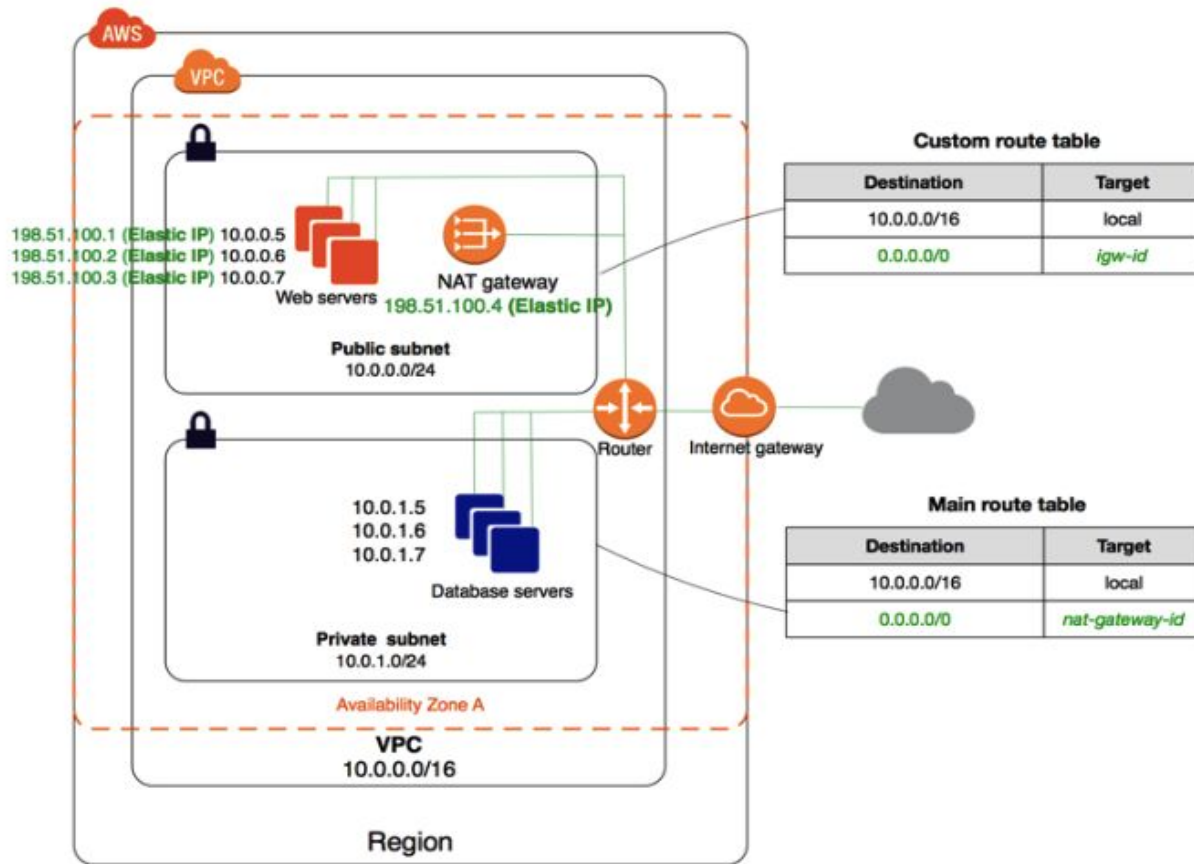|	
Origin Domain Name	spring.broadcast.s3.amazonaws.com
Origin Path	
Enable Origin Shield	○ Yes ● No
Origin ID	S3-spring.broadcast
Restrict Bucket Access	● Yes ○ No
Origin Access Identity	● Create a New Identity ○ Use an Existing Identity

signed URLs or signed cookies (https only)

Enter a description for the origin. This value lets you distinguish multiple origins in the same distribution from one another. The description for each origin must be unique within the distribution.
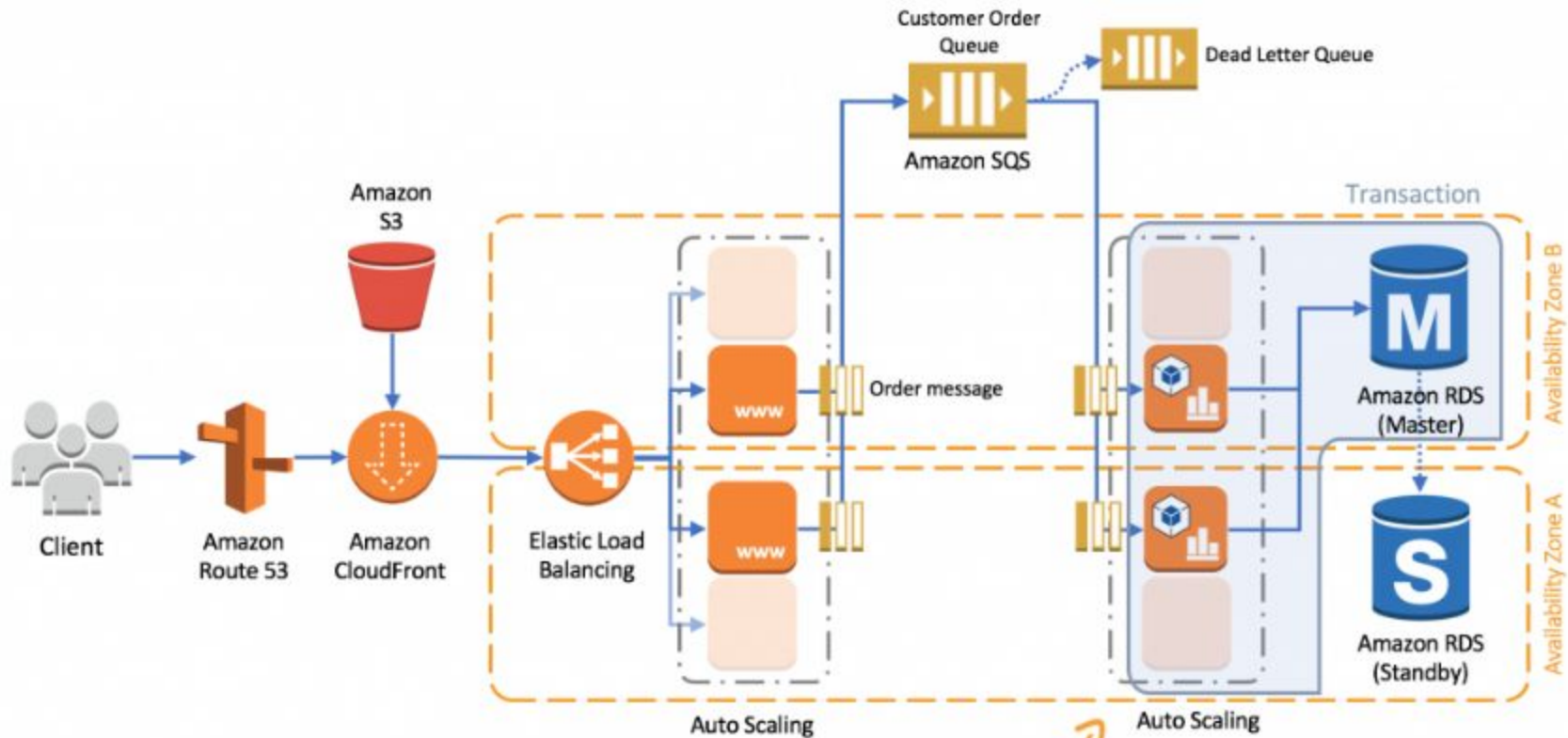
If you want to require that users always access your Amazon S3 content using CloudFront URLs, not Amazon S3 URLs, click Yes. This is useful when you are using signed URLs or signed cookies to restrict access to your content. In the Help, see "Serving Private Content through CloudFront".

Key   Value

i-4a1c2f5d
Owner = DbAdmin

Stack = Test

i-1a2b3c4d
Owner = DbAdmin

Stack = Production

AWS

VPC

198.51.100.1 (Elastic IP) 10.0.0.5
198.51.100.2 (Elastic IP) 10.0.0.6
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NAT gateway
198.51.100.4 (Elastic IP)

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10.0.0.0/24

10.0.1.5
10.0.1.6
10.0.1.7

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10.0.1.0/24

Availability Zone A

VPC
10.0.0.0/16

Region

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Internet gateway

Custom route table

Destination	Target
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0.0.0.0/0	igw~id

Main route table

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	nat-gateway~id

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Amazon Elastic Container Registry
Build images and store using ECR or any other repository

Amazon Elastic Container Service

Define your application
Select container images and resources needed for your application

AWS Fargate

AWS Regions

AWS Local Zones

AWS Wavelength

AWS Outposts

ECS Anywhere

Compute Options
Launch containers on supporting compute services

Manage containers
Amazon ECS scales your application and manages your containers for availability

Customer Order Queue → Dead Letter Queue

Amazon SQS

Transaction

Availability Zone B

Availability Zone A

Amazon S3

Client → Amazon Route 53 → Amazon CloudFront → Elastic Load Balancing

www — Order message

www

Amazon RDS (Master) — M

Amazon RDS (Standby) — S

Auto Scaling

Auto Scaling

New processing nodes scaling independently, using
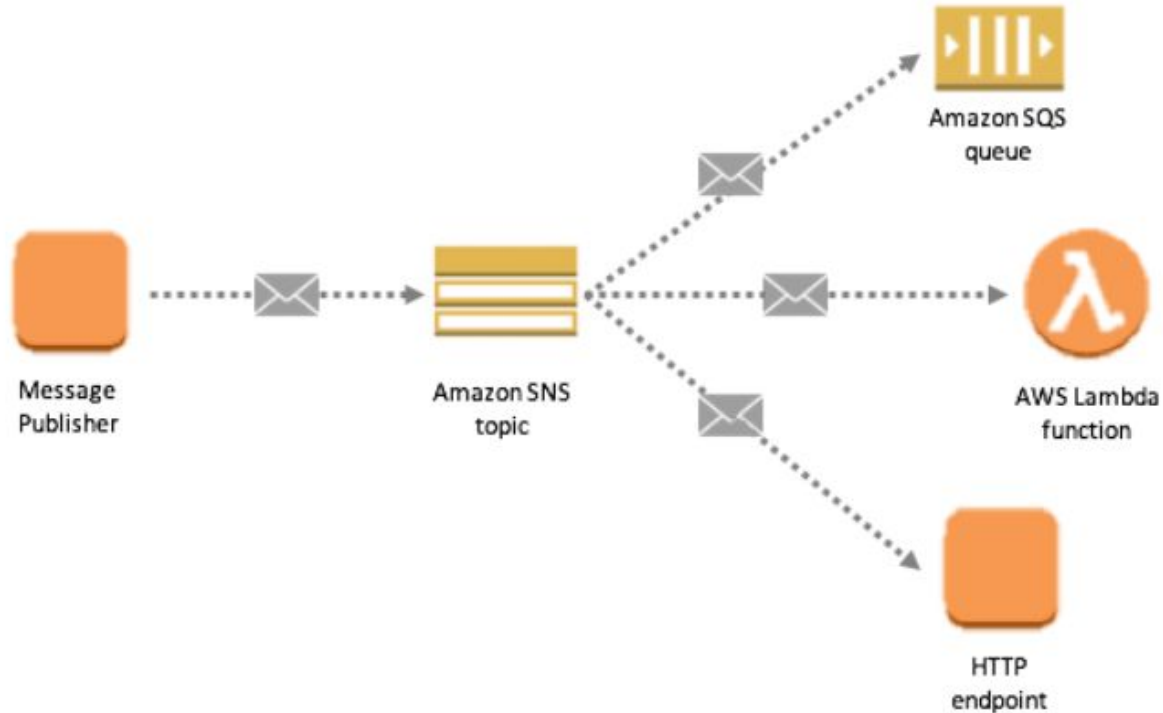- ApproximateNumberOfMessagesVisible
- ApproximateAgeOfOldestMessage

a	b	c	d	e	f	Total	
3	3	3	3			12	
16						16	
2	2	2	2	2		10	
4	4	4				12	

SNS is a distributed **publish-subscribe** system. Messages are pushed to subscribers when they are sent by publishers to SNS. AWS SNS is able to push notifications to the related **SQS endpoints**.

Bucket overview

Region	Amazon resource name (ARN)	Creation date
US East (N. Virginia) us-east-1	arn:aws:s3:::deneme	September 19, 2020, 22:21:02 (UTC+03:00)

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. Learn more 🗗

[Edit]

Bucket Versioning
Suspended

Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. Learn more 🗗
Disabled

Object Lock

[Edit]

Store objects using a write-once-read-many (WORM) model to help you prevent objects from being deleted or overwritten for a fixed amount of time or indefinitely. Learn more 🗗

Object Lock
Disabled

ⓘ Amazon S3 currently does not support enabling Object Lock after a bucket has been created. To enable Object Lock for this bucket, contact Customer Support 🗗

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Comparing the Amazon S3 storage classes

The following table compares the storage classes.

Storage class	Designed for	Durability (designed for)	Availability (designed for)	Availability Zones	Min storage duration
S3 Standard	Frequently accessed data	99.999999999%	99.99%	>= 3	None
S3 Standard-IA	Long-lived, infrequently accessed data	99.999999999%	99.9%	>= 3	30 days
S3 Intelligent-Tiering	Long-lived data with changing or unknown access patterns	99.999999999%	99.9%	>= 3	30 days
S3 One Zone-IA	Long-lived, infrequently accessed, non-critical data	99.999999999%	99.5%	1	30 days
S3 Glacier	Long-term data archiving with retrieval times ranging from minutes to hours	99.999999999%	99.99% (after you restore objects)	>= 3	90 days
S3 Glacier Deep Archive	Archiving rarely accessed data with a default retrieval time of 12 hours	99.999999999%	99.99% (after you restore objects)	>= 3	180 days
RRS (Not recommended)	Frequently accessed, non-critical data	99.99%	99.99%	>= 3	None