Architecture Proposal

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Assumptions of the customer

SaaS for Gas station management

Just got Pre A round funding from a traditional Gas equipment company

They are interesting in AWS Activate Plan

Low operation and maintenance capability. High Dev capacity.

Busy with JAVA Spring cloud microservices

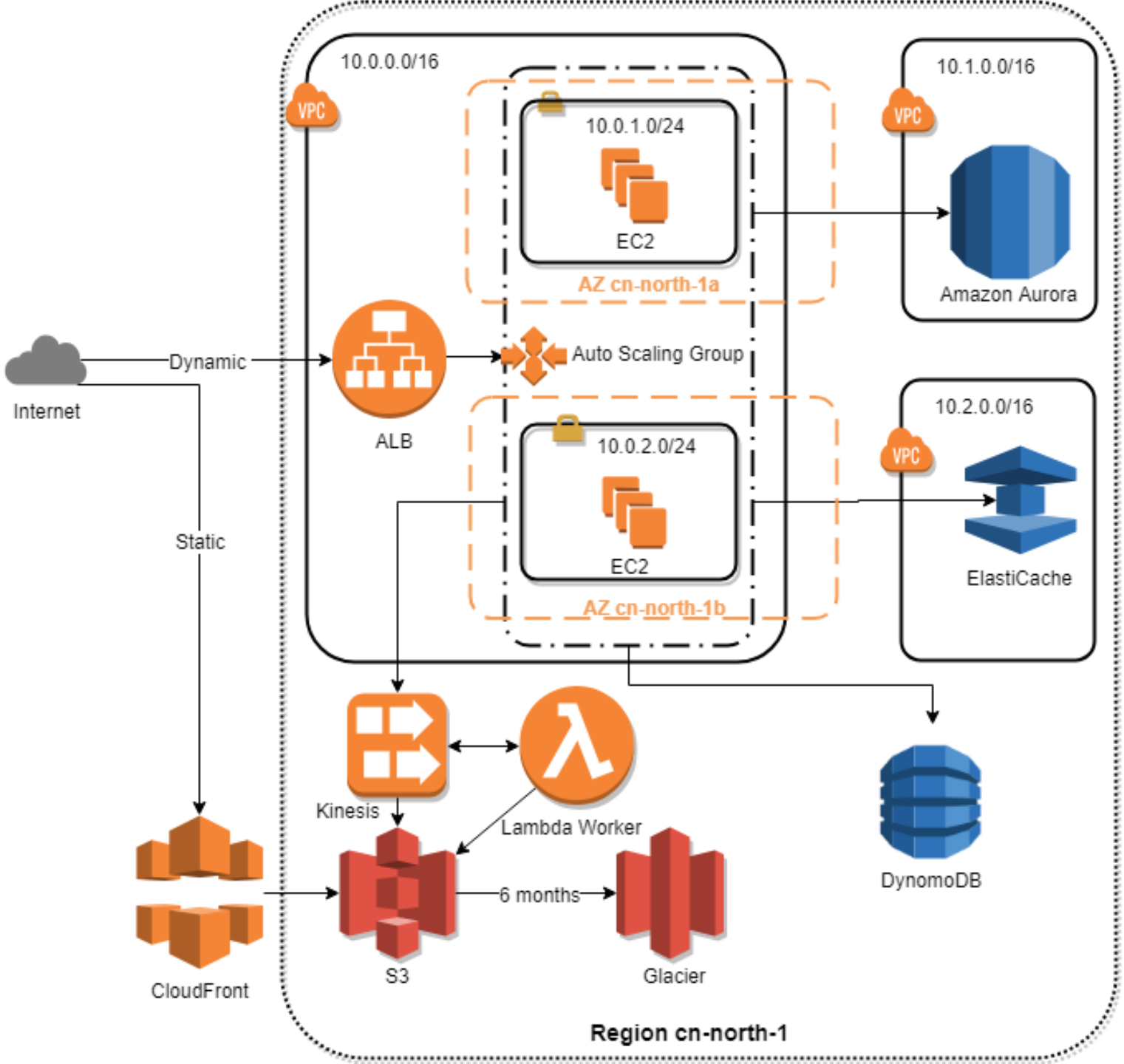
Runing LAMP stack on the IBM server within the machine room of their parent company

Requirements & problems

Security
- Security of data at rest and in transit
- Self-healing infrastructure that recovers from failed service instances
- Securing access to the environment as the delivery team expands
- Disaster recovery

Cost
- Efficiency: Scaling to meet the demand, but with uncertainty around when and how much this demand will be they are very concerned about buying too much infrastructure too soon or not enough too late
- Archival strategy for inactive objects greater than 6 months

Performance
- Ability to configure database and data access layer for high performance and throughput
- Making the user experience in the browser very low latency even though a large portion of their user base will be from far away
- Effective distribution of load
- Ability to easily manage and replicate multiple environments based on their blueprint architecture



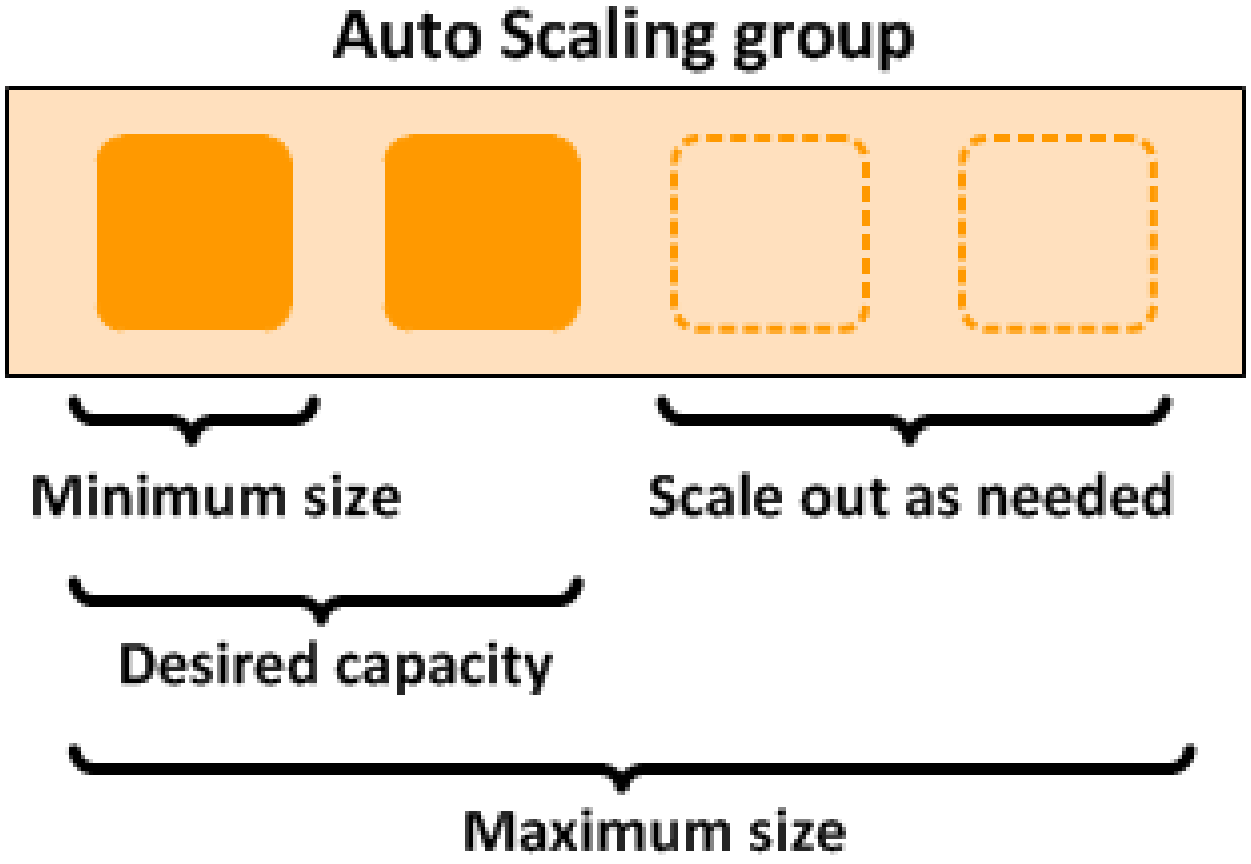
Architecture Proposal

Raise Goldfish, not sweat BMW

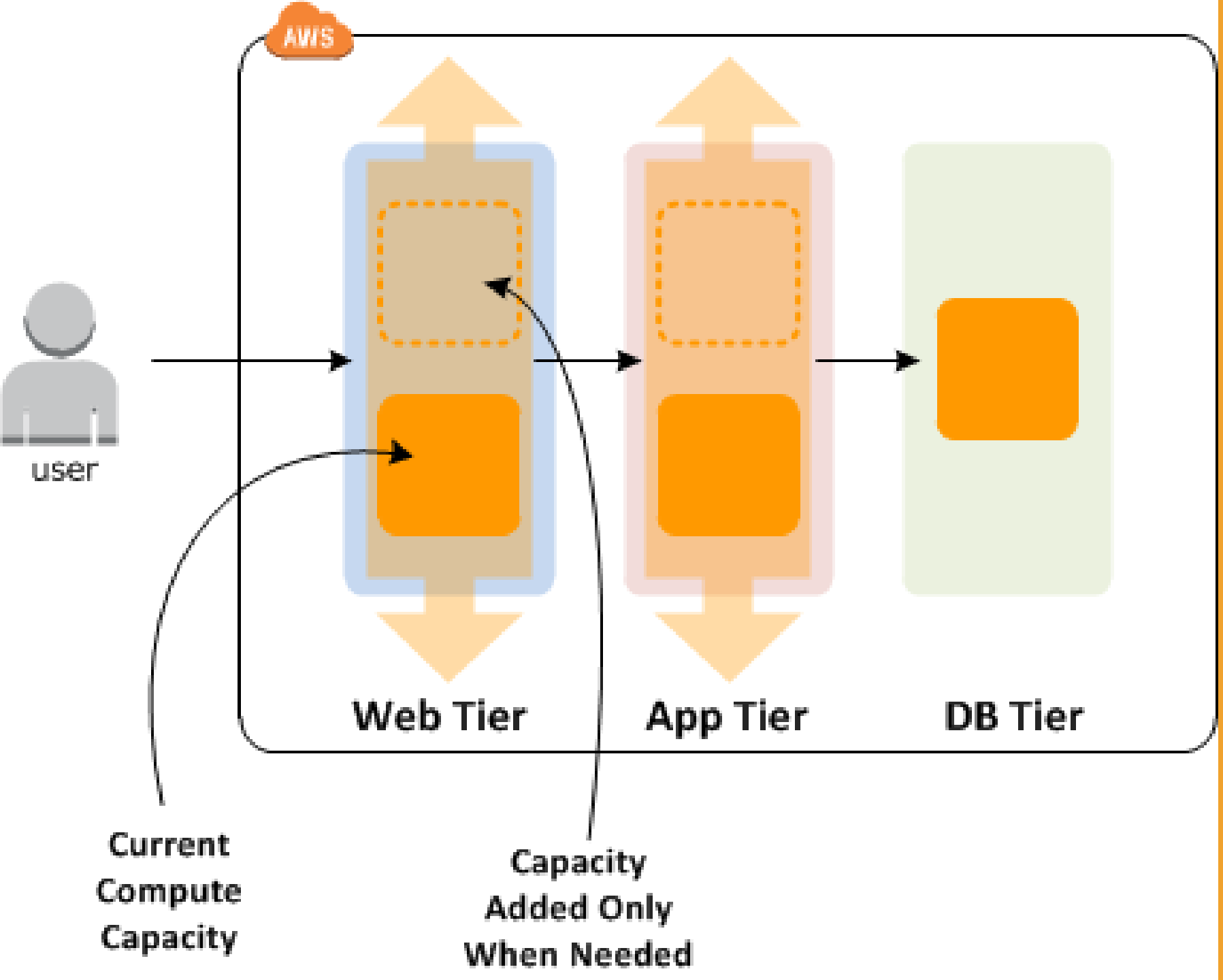
排行	云主机	配置	性能得分	单价（元/时）	性价比
1	AWS宁夏	1核1G	2035.4	0.0945	21538.3
2	AWS北京	1核1G	1890.8	0.1060	17838.1
3	AWS宁夏	2核4G	2991.2	0.3799	7873.7
4	阿里云	1核1G	1679.3	0.2340	7176.6
5	AWS北京	2核4G	2835.6	0.4260	6656.3
6	腾讯云	1核1G	1614.2	0.3200	5044.5
7	腾讯云	2核4G	2544.8	0.7200	3534.4
8	阿里云	2核4G	2501.5	0.9370	2669.7
9	AWS宁夏	4核16G	3457.9	1.6157	2140.2
10	腾讯云	4核16G	4155.0	2.0000	2077.5
11	阿里云	4核16G	3863.3	2.0580	1877.2
12	AWS北京	4核16G	3392.7	2.8150	1205.2
注：评测数据由CloudBest提供					

Reasonable price

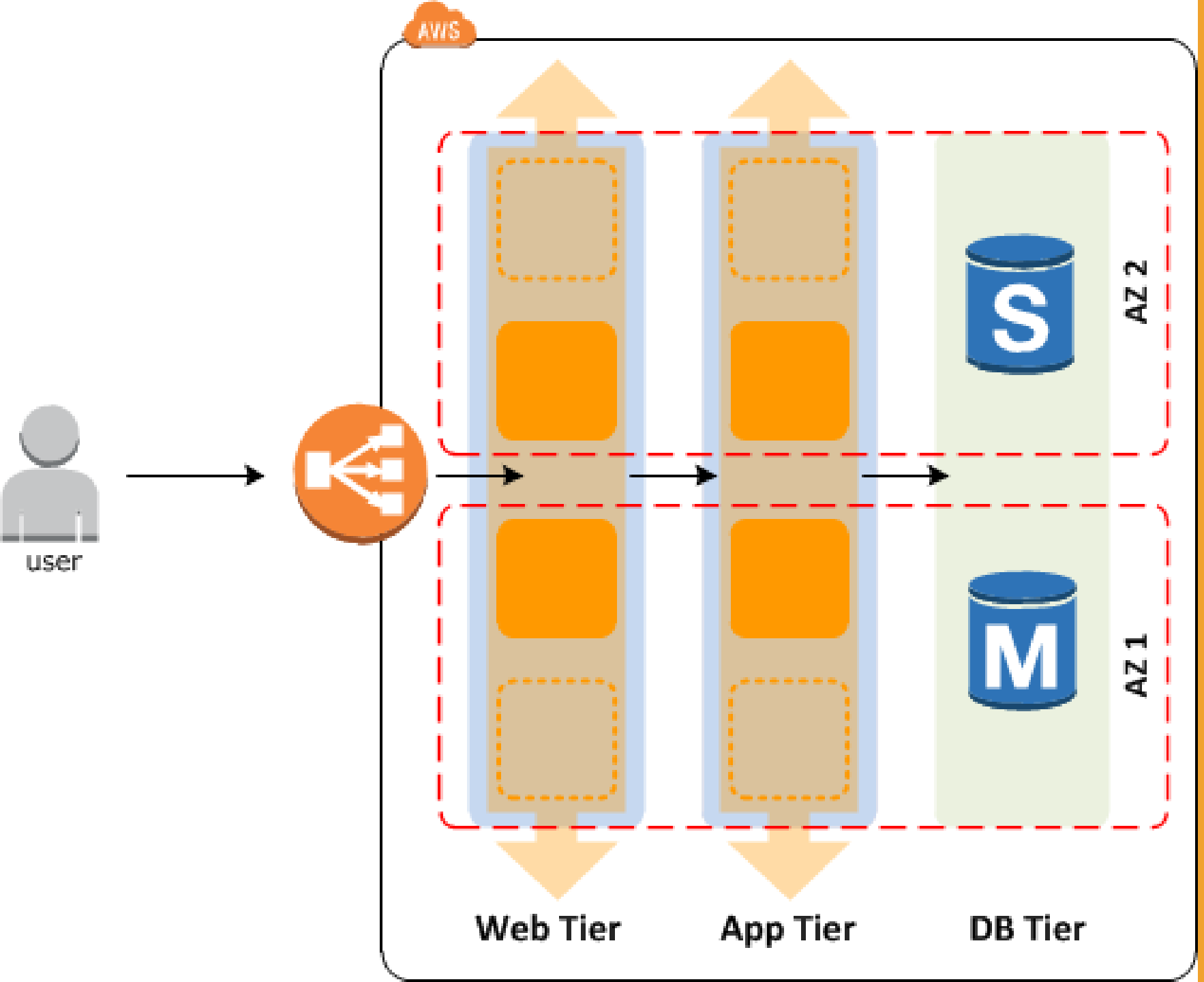
http://cloud.idcquan.com/yjs/134551.shtml



Save money in the long run by Auto Scaling



Save money in the long run at different tier

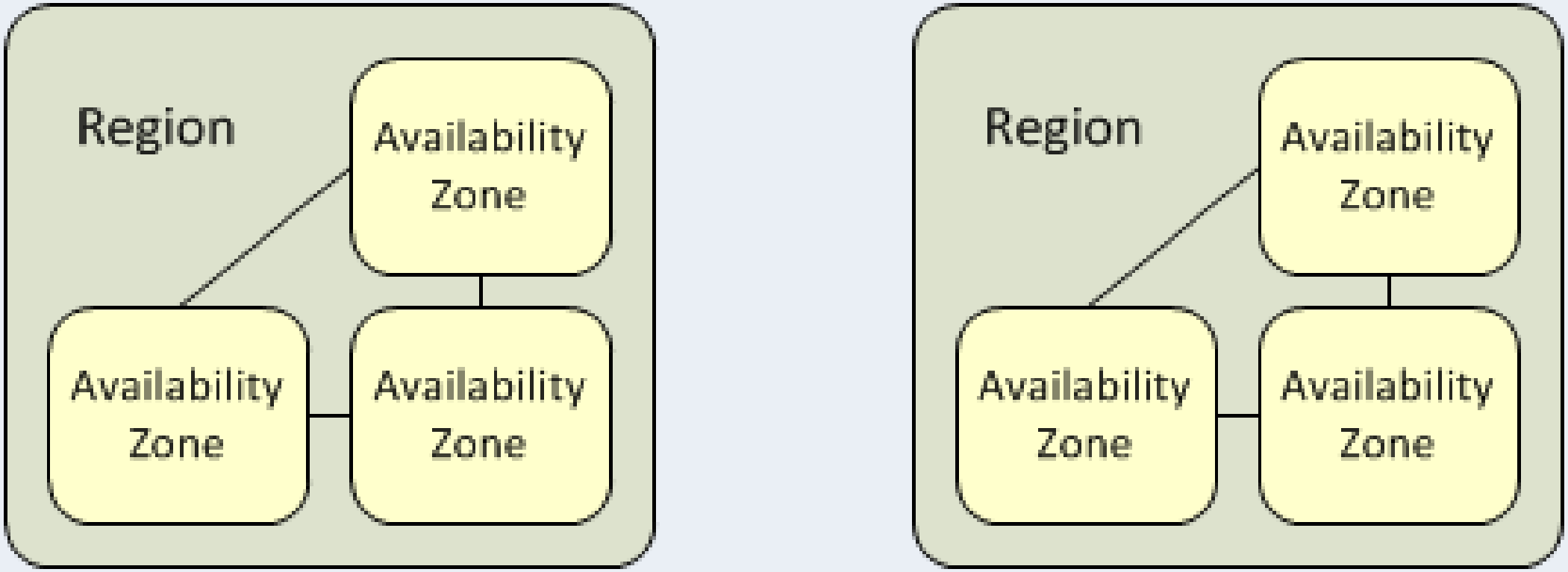


Disaster recovery by Availability zones

Availability zones — Two are used. If one availability zone (AZ) suffers from an outage, we still have EC2 instances running in the other AZ.

EC2 instances — We have multi-redundancy for EC2 instances. We have multiple instances in one subnet (AZ), and we have instances in two subnets (AZs).

Amazon Web Services



Don‘t put eggs in one basket – Region & Availability Zone

Global Infrastructure

Amazon Aurora | PostgreSQL | MySQL | MariaDB | ORACLE | Microsoft SQL Server

AWS RDS

轻松管理

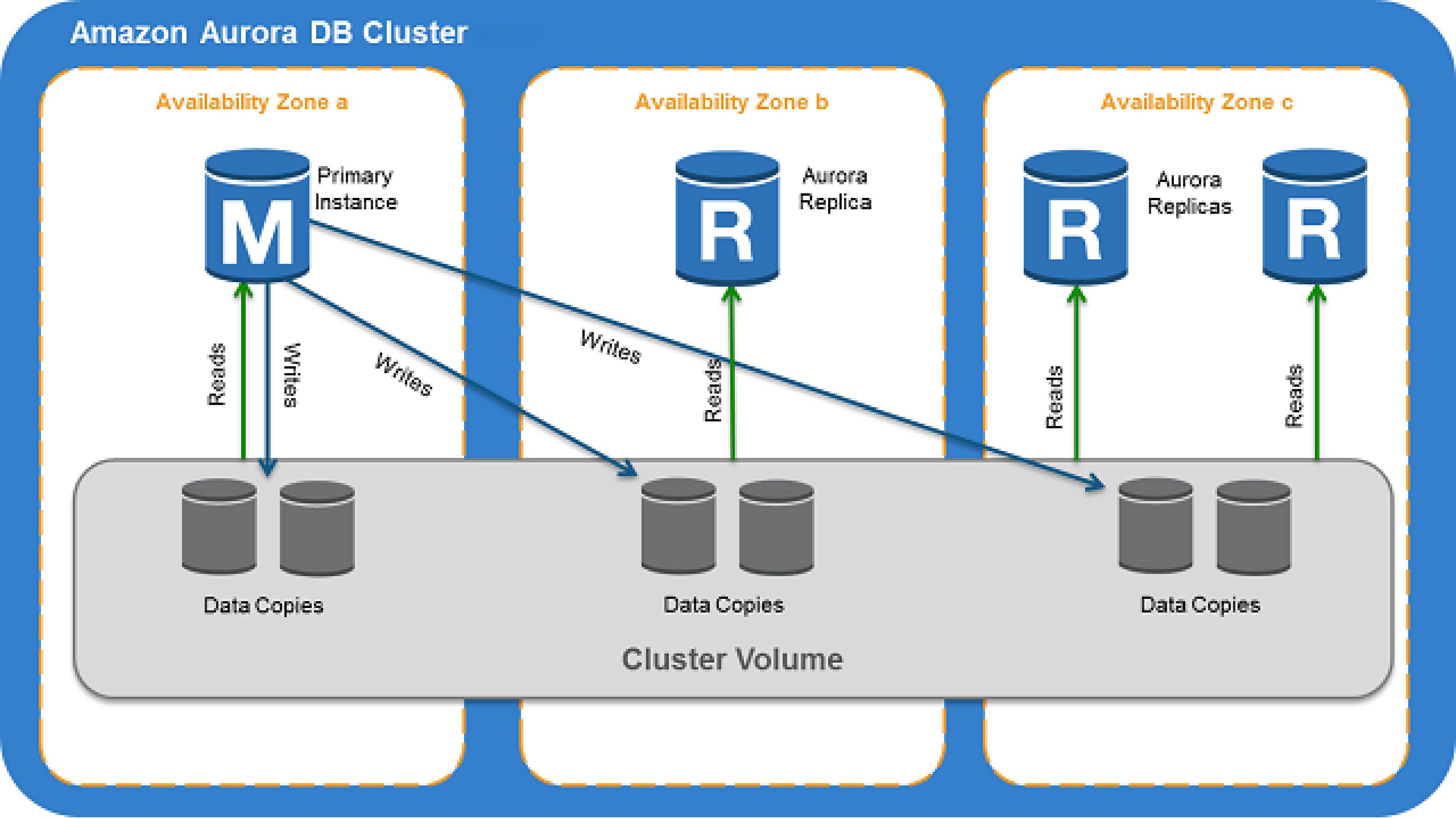
高度可扩展

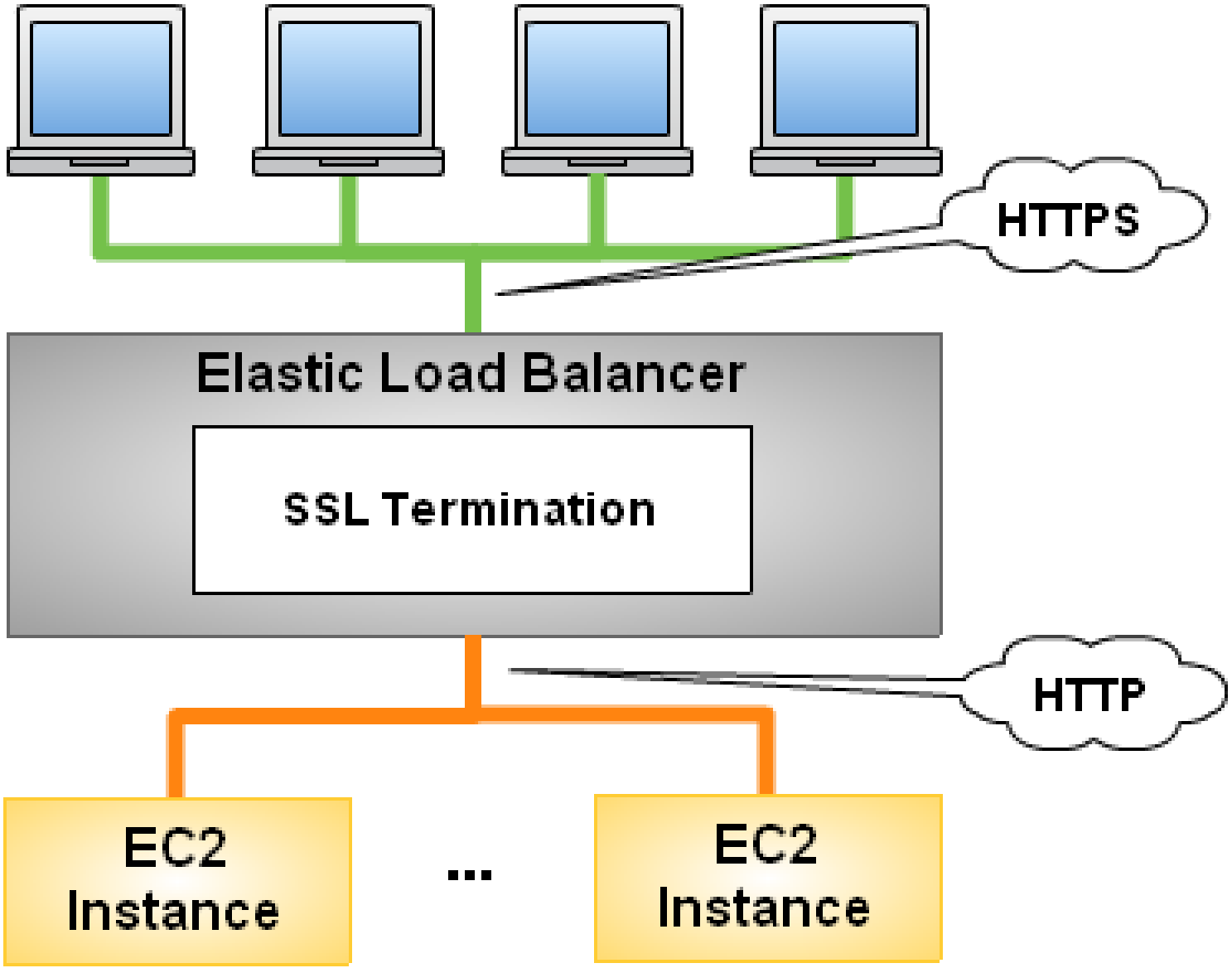
可用且持久

快速

安全

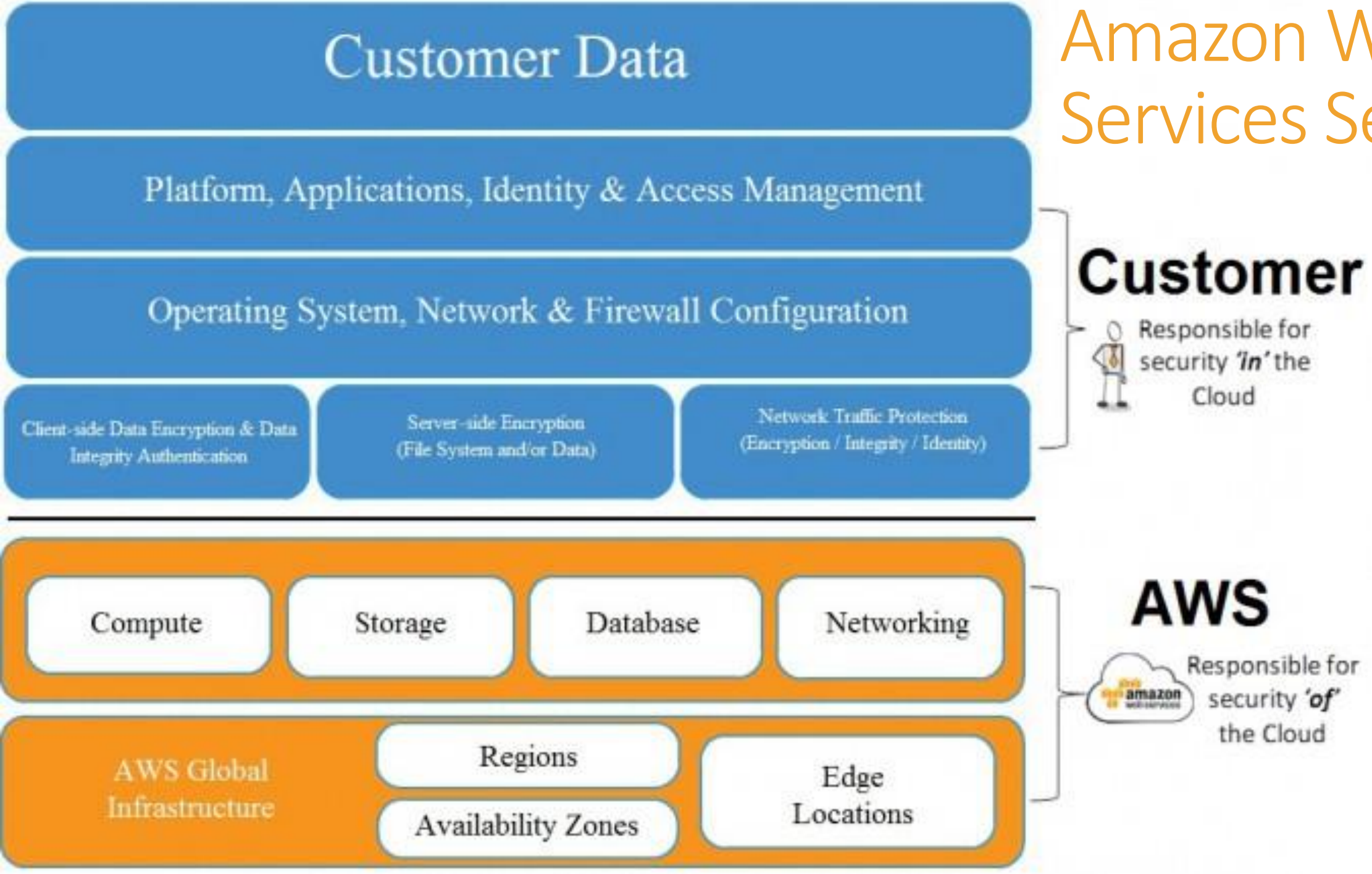
便宜

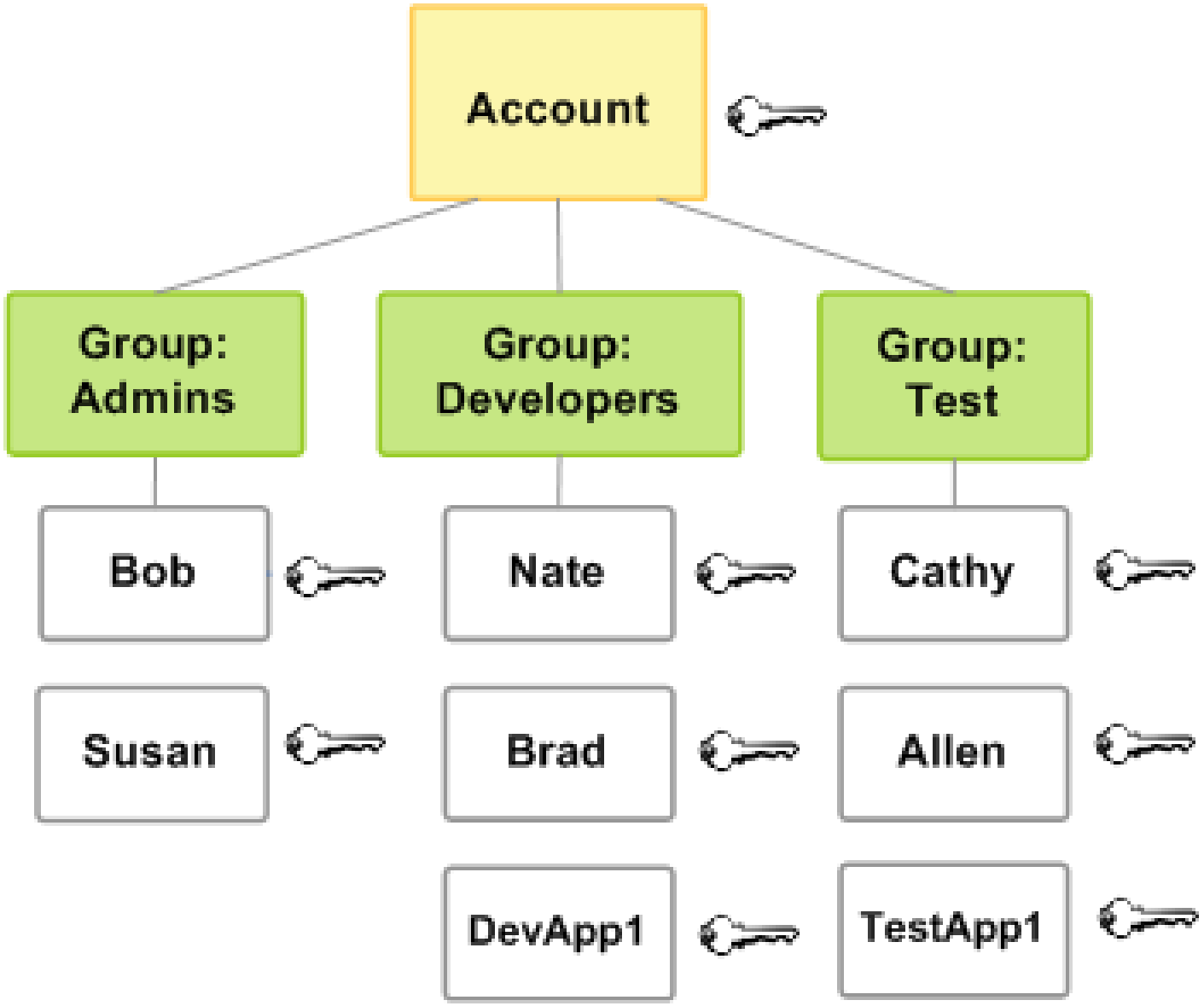

Amazon Aurora DB Cluster
Availability Zone a
Availability Zone b
Availability Zone c
M
Primary Instance
R
Aurora Replica
R
R
Aurora Replicas
Reads
Writes
Writes
Writes
Reads
Reads
Reads
Data Copies
Data Copies
Data Copies
Cluster Volume



Security of data in transit using HTTPS

Amazon Web Services Security

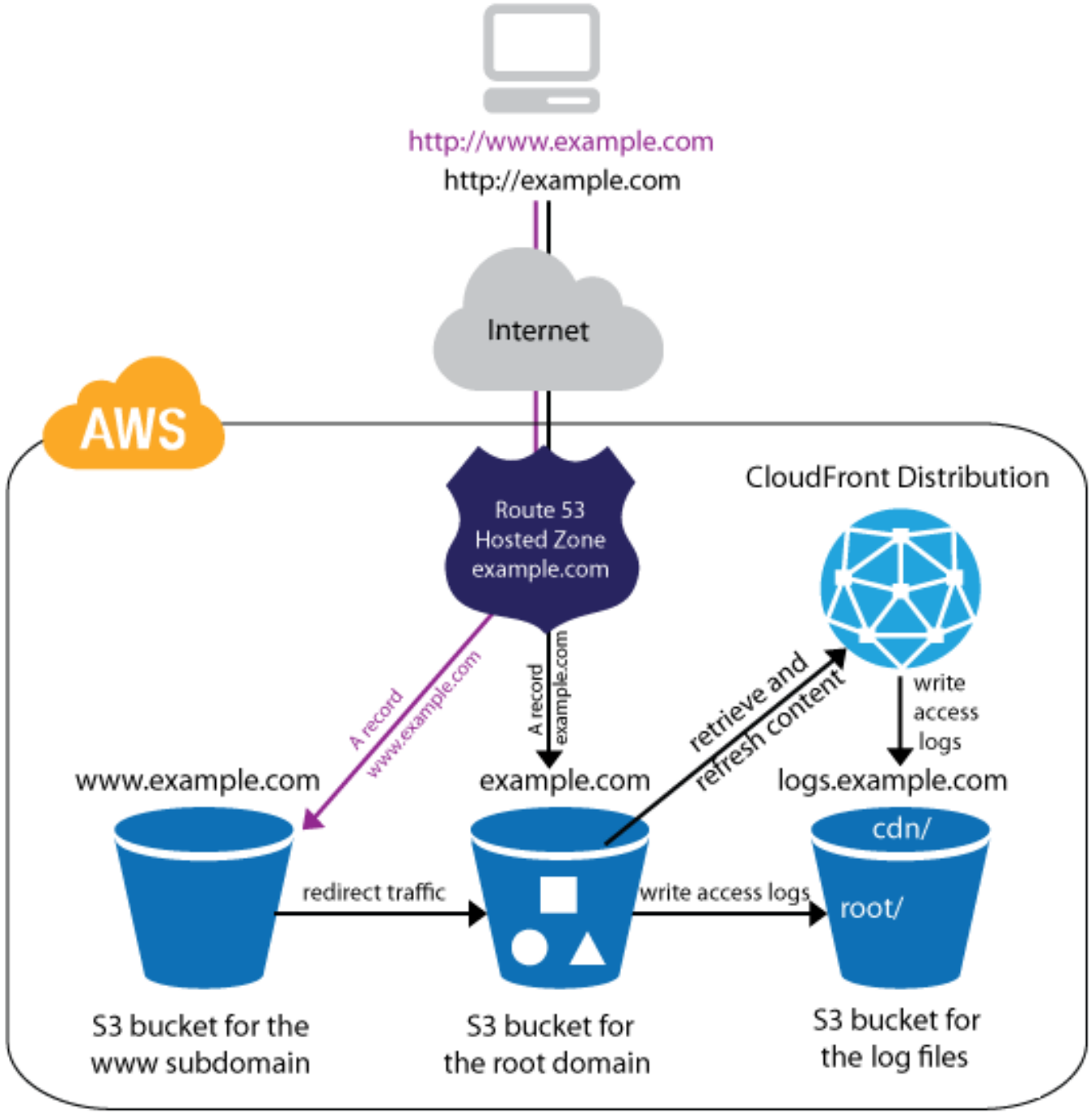




AWS Identity and Access Management (IAM)

Protect your network with security groups

Network administrators are no longer needed

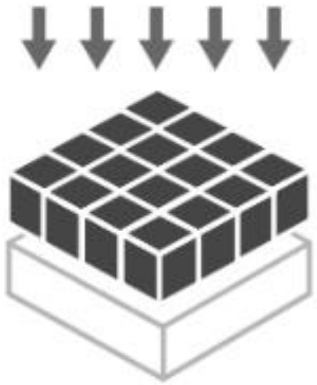


Use S3 & CloudFront to deliver the static web content

Support any application

AWS OpsWorks Stacks supports a wide variety of architectures, from simple web applications to highly complex custom applications running on Linux or Windows.

Configuration as code



AWS OpsWorks Stacks lets you define and maintain configurations for your entire environment in code and lets you provision your instances with Chef.

Automation to run at scale

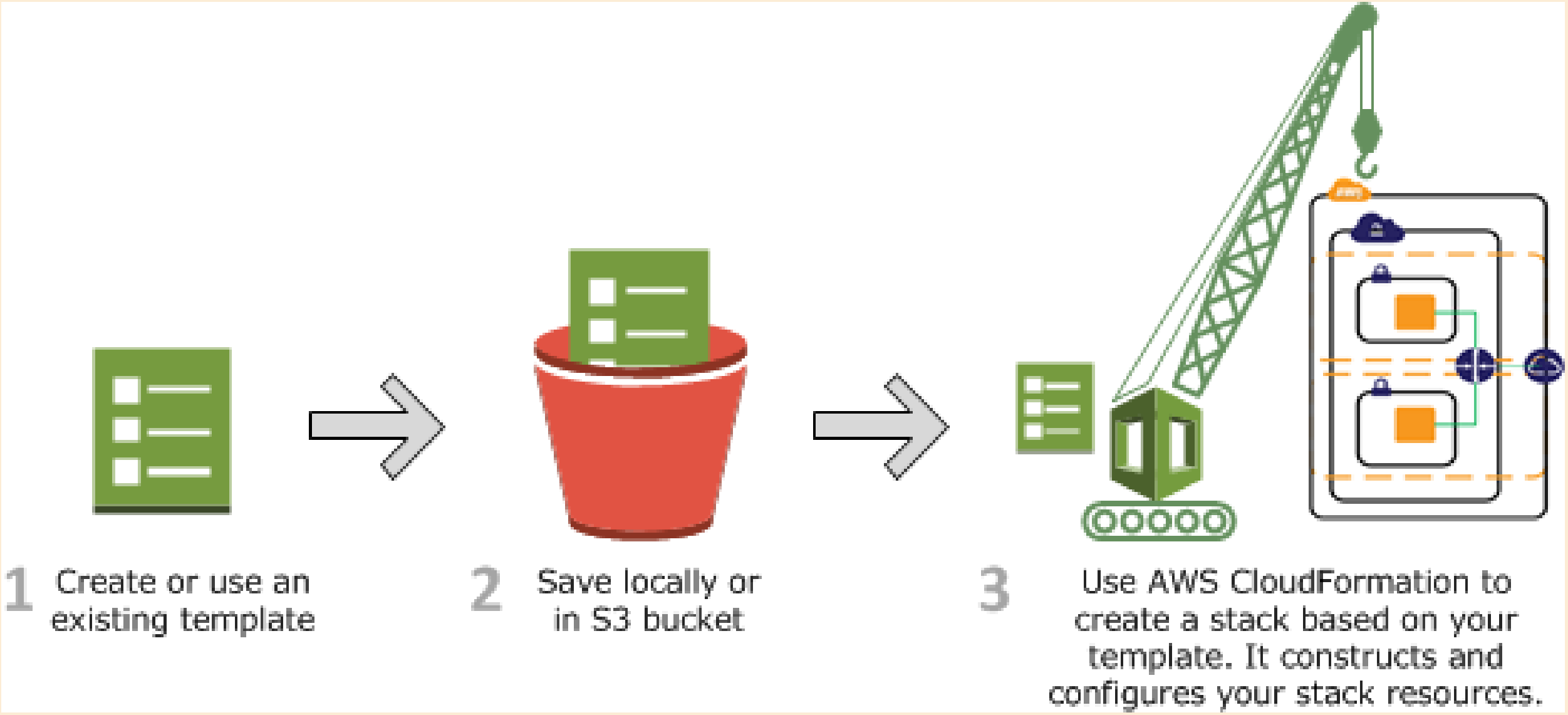
AWS OpsWorks Stacks enables you to efficiently manage your applications over their lifetime, including support for automatic instance scaling and auto healing.

Resource organization

AWS OpsWorks Stacks lets you model and visualize your application using concepts such as stacks, layers, and apps. You can also manage your users and resource access on all your instances using AWS IAM.

OpsWorks Stacks

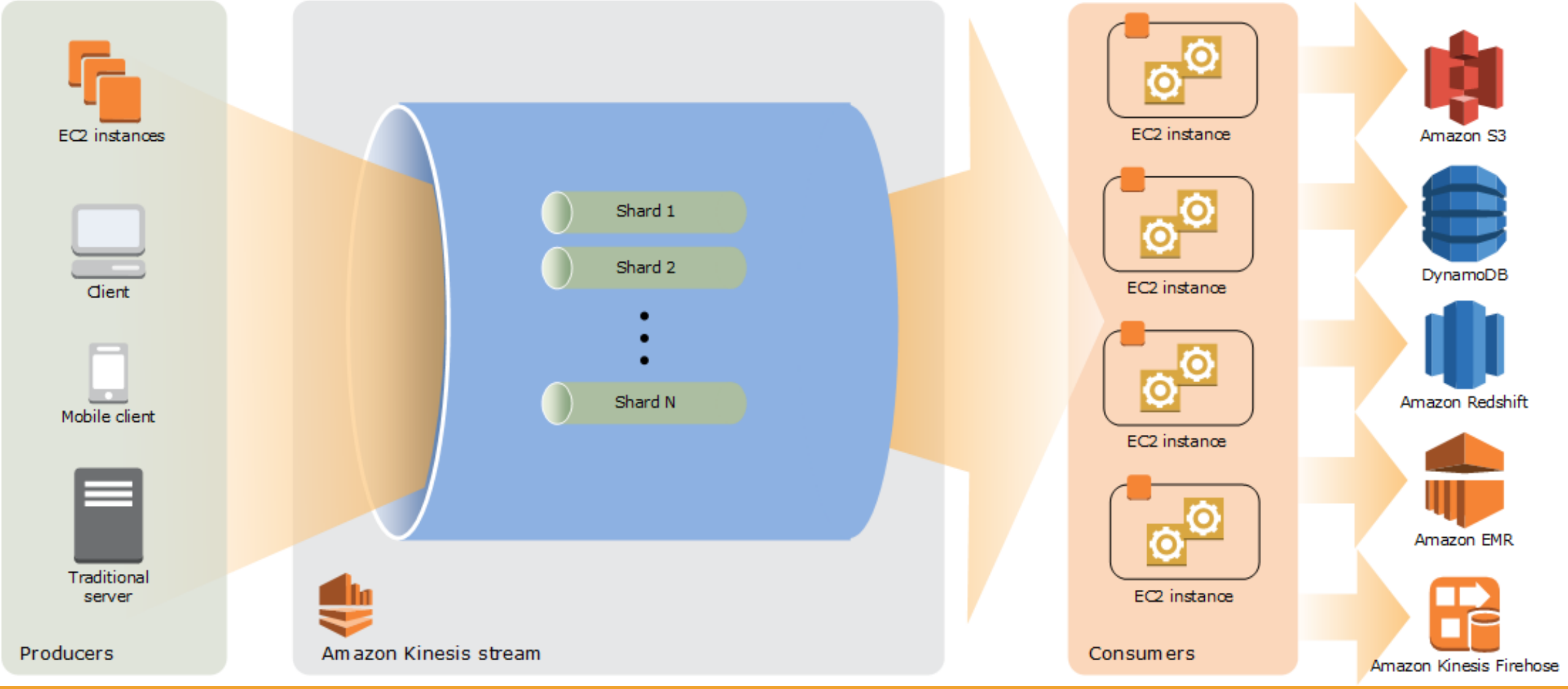
Easily manage and replicate multiple environments based on your blueprint architecture



Easily manage and replicate multiple environments based on your blueprint architecture by CloudFormation

```
AWSTemplateFormatVersion: 2010-09-09
Description: AWS CloudFormation template to create a new ECS First Run stack
Parameters:
  EcsAmiId:
    Type: String
    Description: ECS AMI Id
  EcsInstanceType:
    Type: String
    Description: ECS EC2 instance type
    Default: t2.micro
    ConstraintDescription: must be a valid EC2 instance type.
  KeyName:
    Type: String
    Description: >-
      Optional - Name of an existing EC2 KeyPair to enable SSH access to the
      instances
```

Easily manage and replicate multiple environments based on your blueprint architecture by CloudFormation



Effective distribution of load asynchronously by Kinesis

Data stored in S3 can be configured by a lifecycle rule to move objects to Glacier automatically

```
1  exports.handler = (event, context, callback) => {
2      // 字符串“Hello world!”已成功。
3      callback(null, 'Hello world!');
4  };
```

Serverless by lambda

ElastiCache

A in-memory database
Compatible with redis and memcached

DynamoDB

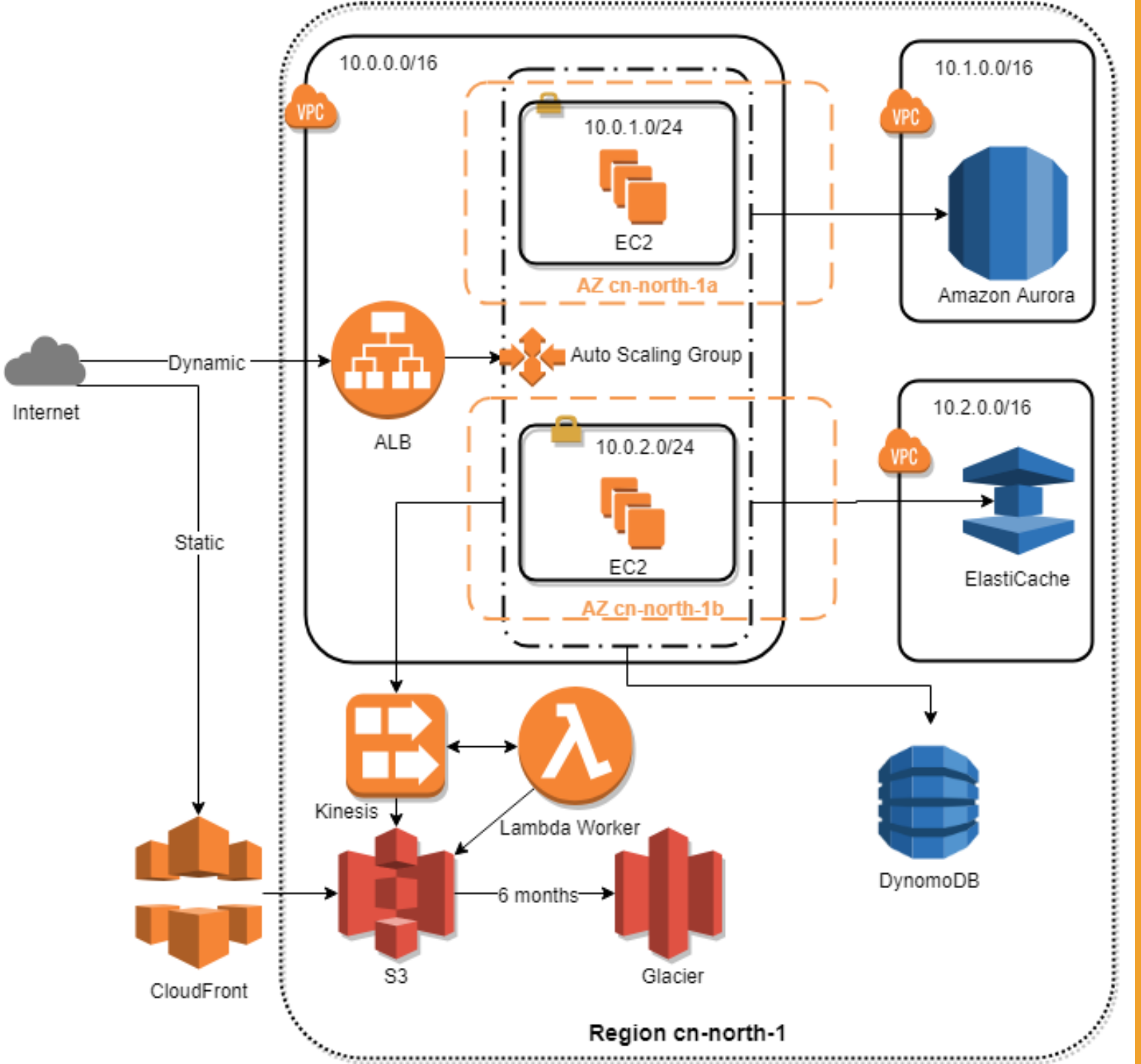
A key-value store with document support (NoSQL).

Just remember that AWS Help you

Save money in the long run

Easier to perform better

Your strong support


10.0.0.0/16
VPC
10.0.1.0/24
EC2
AZ cn-north-1a
10.1.0.0/16
VPC
Amazon Aurora
Internet
Dynamic
ALB
Auto Scaling Group
10.0.2.0/24
EC2
AZ cn-north-1b
10.2.0.0/16
VPC
ElastiCache
Static
Kinesis
Lambda Worker
DynomoDB
CloudFront
S3
6 months
Glacier
Region cn-north-1

Q&A