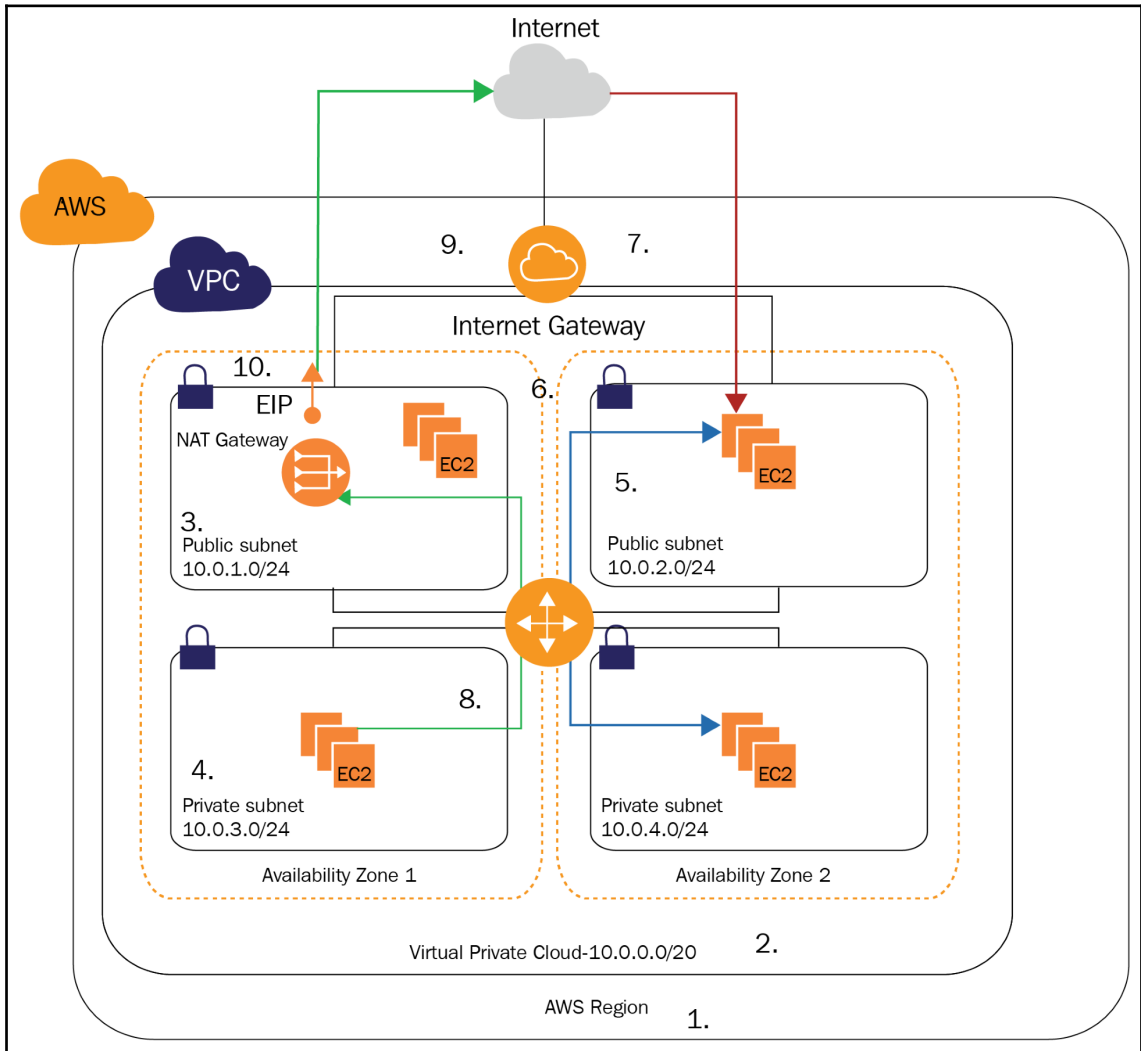


Chapter 2: Networking with the Virtual Private Cloud



VPC Dashboard

Filter by VPC:

Virtual Private Cloud

- Your VPCs
- Subnets
- Route Tables
- Internet Gateways
- Egress Only Internet Gateways
- DHCP Options Sets
- Elastic IPs
- Endpoints
- Endpoint Services
- NAT Gateways
- Peering Connections
- Security
 - Network ACLs
 - Security Groups

[Launch VPC Wizard](#) [Launch EC2 Instances](#)

Note: Your Instances will launch in the US East (Ohio) region.

Resources by Region [Refresh Resources](#)

You are using the following Amazon VPC resources

VPCs See all regions	Ohio 1	Nat Gateways See all regions	Ohio 0
Subnets See all regions	Ohio 3	VPC Peering Connections See all regions	Ohio 0
Route Tables See all regions	Ohio 1	Network ACLs See all regions	Ohio 1
Internet Gateways See all regions	Ohio 1	Security Groups See all regions	Ohio 1
Egress-only Internet Gateways See all regions	Ohio 0	Customer Gateways See all regions	Ohio 0
DHCP options sets See all regions	Ohio 1	Virtual Private Gateways See all regions	Ohio 0

Service Health

Current Status	Details
✔ Amazon EC2 - US East (Ohio)	Service is operating normally

[View complete service health details](#)

Account Attributes

[Resource ID length management](#)

Additional Information

[VPC Documentation](#)
[All VPC Resources](#)
[Forums](#)
[Report an Issue](#)

VPN Connections

Amazon VPC enables you to use your own isolated resources within the AWS cloud, and then connect those resources directly to your own datacenter using industry-standard encrypted IPsec VPN connections.

[Create VPN Connection](#)

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

- Your VPCs
- Subnets
- Route Tables
- Internet Gateways
- Egress Only Internet Gateways
- DHCP Options Sets
- Elastic IPs
- Endpoints
- Endpoint Services
- NAT Gateways
- Peering Connections

[Create VPC](#) [Actions](#)

<input type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>		vpc-f3b18e9b	available	172.31.0.0/16	

[Select a VPC above](#)

Create VPC ✕

A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances. You must specify an IPv4 address range for your VPC. Specify the IPv4 address range as a Classless Inter-Domain Routing (CIDR) block; for example, 10.0.0.0/16. You cannot specify an IPv4 CIDR block larger than /16. You can optionally associate an Amazon-provided IPv6 CIDR block with the VPC.

Name tag ⓘ

IPv4 CIDR block* ⓘ

IPv6 CIDR block* No IPv6 CIDR Block ⓘ Amazon provided IPv6 CIDR block

Tenancy ⓘ

[Cancel](#) [Yes, Create](#)

[Subnets](#) > Create subnet

Create subnet

Specify your subnet's IP address block in CIDR format; for example, 10.0.0.0/24. IPv4 block sizes must be between a /16 netmask and /28 netmask, and can be the same size as your VPC. An IPv6 CIDR block must be a /64 CIDR block.

Name tag ⓘ

VPC* ⓘ

VPC CIDRs	CIDR	Status	Status Reason
	10.0.0.0/16	associated	

Availability Zone ⓘ

IPv4 CIDR block* ⓘ

* Required [Cancel](#) [Create](#)

[Internet gateways](#) > Create internet gateway

Create internet gateway

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

Name tag ⓘ

* Required Cancel **Create**

Create internet gateway Actions ⌵

Filter by tags and attributes

<input type="checkbox"/>	Name	Name	State	VPC
<input checked="" type="checkbox"/>	my-new-igw	my-new-igw	detached	-
<input type="checkbox"/>		igw-d2bb63ba	attached	vpc-f3b18e9b

Delete internet gateway
 Attach to VPC
 Detach from VPC
 Add/Edit Tags

[Internet gateways](#) > Attach to VPC

Attach to VPC

Attach an internet gateway to a VPC to enable communication with the internet. Specify the VPC you would like to attach below.

VPC* ⓘ

▶ **AWS Command Line Interface command**

* Required Cancel **Attach**

[Create Route Table](#)
[Delete Route Table](#)
[Set As Main Table](#)
↻ ⚙️ ?

<< 1 to 2 of 2 Route Tables >>

<input type="checkbox"/>	Name	Route Table ID	Explicitly Associat	Main	VPC
<input type="checkbox"/>		rtb-a0cc0bcb	0 Subnets	Yes	vpc-f3b18e9b
<input checked="" type="checkbox"/>		rtb-0ede6a56f67ef5...	0 Subnets	Yes	vpc-0da86bd591e92d236 my-custo...

rtb-0ede6a56f67ef5d55
☰ ☰ ☰

[Summary](#)
[Routes](#)
[Subnet Associations](#)
[Route Propagation](#)
[Tags](#)

[Edit](#)

View:

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

Create Route Table ✕

A route table specifies how packets are forwarded between the subnets within your VPC, the Internet, and your VPN connection.

Name tag ⓘ

VPC ⓘ

[Cancel](#)
[Yes, Create](#)

rtb-0ede6a56f67ef5d55

Summary Routes Subnet Associations Route Propagation Tags

Cancel Save

View: All rules

Destination	Target	Status	Propagated	Remove
10.0.0.0/16	local	Active	No	
<input type="text" value="0.0.0.0/0"/>	<input type="text"/>		No	<input type="button" value="x"/>

Add another route

igw-0210059e60a99b7ad | my-new-igw
eigw-09e0d48f70cfb994f

rtb-04aa97a6b0b4ec7ba | public

Summary Routes Subnet Associations Route Propagation Tags

Cancel Save

Associate	Subnet	IPv4 CIDR	IPv6 CIDR	Current Route Table
<input checked="" type="checkbox"/>	subnet-020f3b9fc95a242a3 custom-subnet-1	10.0.1.0/24	-	Main
<input checked="" type="checkbox"/>	subnet-0de3f5a11ef9e3745 custom subnet2	10.0.2.0/24	-	Main
<input type="checkbox"/>	subnet-0a3fd50a1a407abe6 private-subnet-1	10.0.100.0/24	-	Main
<input type="checkbox"/>	subnet-0805e881e154a1c5a private-subnet-2	10.0.101.0/24	-	Main

[Create subnet](#)
Actions ^

<< < 1 to 7 of 7 > >>

<input type="checkbox"/>	Name	State	VPC	IPv4 CIDR
<input checked="" type="checkbox"/>	custom-subnet-3	available	vpc-0da86bd591e92d236 ...	10.0.1.0/24
<input type="checkbox"/>	private-subnet-5a	available	vpc-0da86bd591e92d236 ...	10.0.101.0/24
<input type="checkbox"/>	private-subnet-e6	available	vpc-0da86bd591e92d236 ...	10.0.100.0/24
<input type="checkbox"/>	custom subnet2	available	vpc-0da86bd591e92d236 ...	10.0.2.0/24
<input type="checkbox"/>	subnet-512bef1d	available	vpc-f3b18e9b	172.31.32.0/2
<input type="checkbox"/>	subnet-adf468d7	available	vpc-f3b18e9b	172.31.16.0/2
<input type="checkbox"/>	subnet-c06d4ba8	available	vpc-f3b18e9b	172.31.0.0/20

- Delete subnet
- Create flow log
- Modify auto-assign IP settings
- Edit IPv6 CIDRs
- Edit network ACL association
- Edit route table association
- Add/Edit Tags

Subnets > [Modify auto-assign IP settings](#)

Modify auto-assign IP settings

Enable the auto-assign IP address setting to automatically request a public IPv4 or IPv6 address for an instance launched in this subnet. You can override the auto-assign IP settings for an instance at launch time.

Subnet ID subnet-020f3b9fc95a242a3

Auto-assign IPv4 Enable auto-assign public IPv4 address ?

* Required
[Cancel](#)
[Save](#)

VPC Dashboard

[Create DHCP options set](#)
Actions v

<< < 1 to 1 of 1 > >>

<input checked="" type="checkbox"/>	Name	DHCP options set ID	Options	Owner
<input checked="" type="checkbox"/>		dopt-6efae806	domain-name = us-east-2.compute.internal; domain-name-servers ...	866117724370

DHCP Options Set: dopt-6efae806

Details **Tags**

DHCP options set ID dopt-6efae806

Options domain-name = us-east-2.compute.internal; domain-name-servers = AmazonProvidedDNS;

Owner 866117724370

Create DHCP options set

Dynamic Host Configuration Protocol (DHCP) provides a standard for passing configuration information to hosts on a TCP/IP network. The options field of a DHCP message contains configuration parameters.

Name ⓘ

DHCP options (configuration parameters)

Specify at least one of the following configuration parameters:

Domain name ⓘ

Domain name servers ⓘ

NTP servers ⓘ

NetBIOS name servers ⓘ

NetBIOS node type ⓘ

▶ AWS Command Line Interface command

* Required

Cancel [Create DHCP options set](#)

▼ AWS Command Line Interface command

You can perform the same actions on this page by using the AWS Command Line Interface (CLI) tools. Learn more about the [AWS CLI tools](#)

Platform ⓘ

CLI command

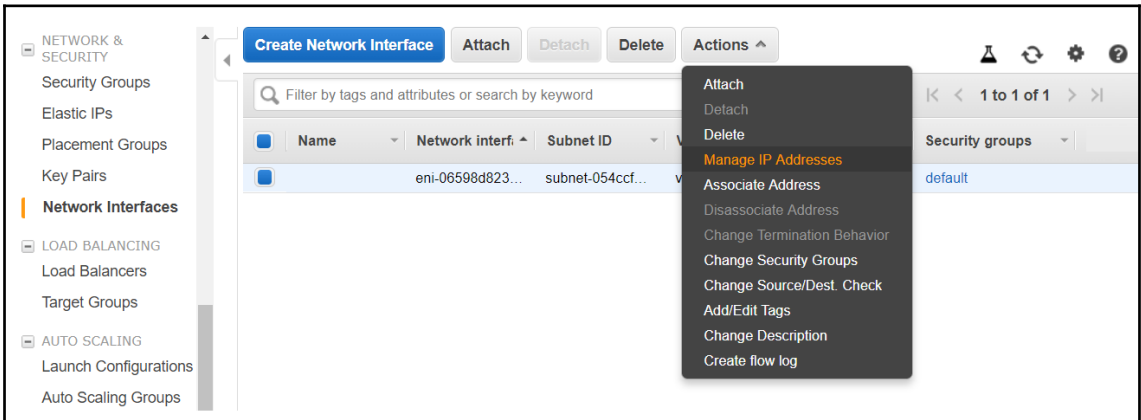
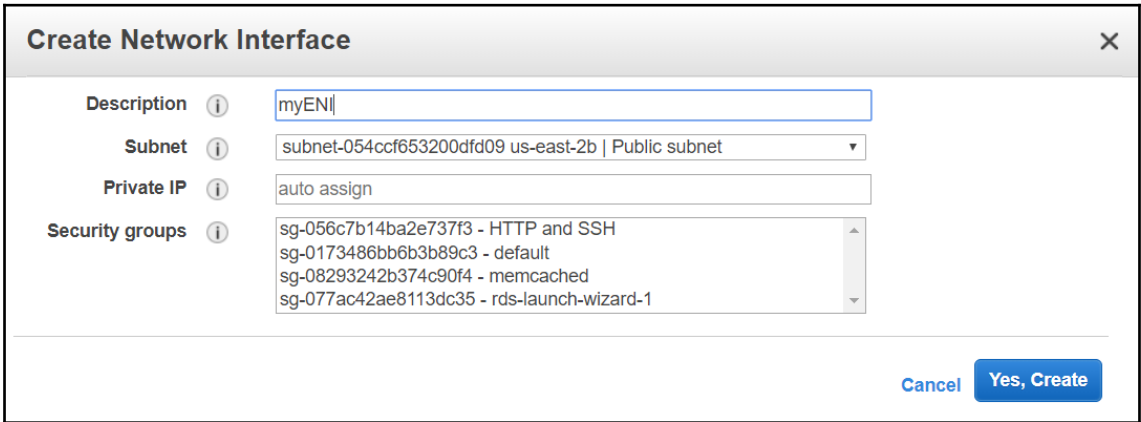
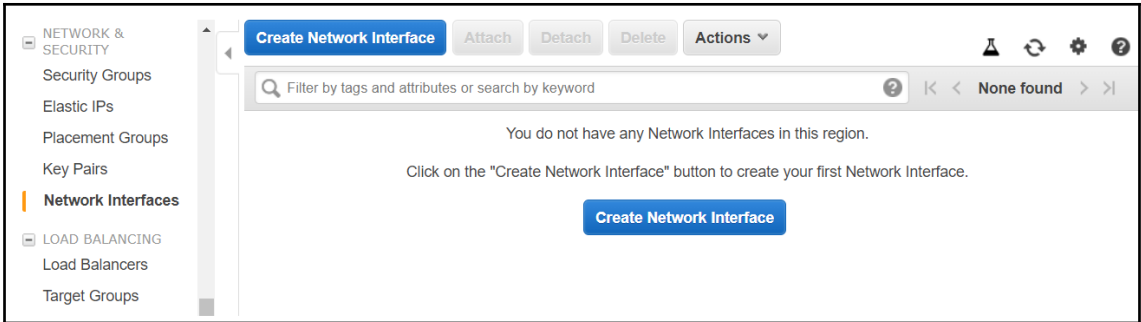
```
aws ec2 create-dhcp-options --dhcp-configurations [{"Key": "domain-name", "Values": ["mydomain.local"]} {"Key": "domain-name-servers", "Values": ["172.16.12.180", "10.12.45.80"]} {"Key": "ntp-servers", "Values": ["172.16.12.102", "10.12.45.81"]} {"Key": "netbios-name-servers", "Values": ["172.16.12.104", "10.12.45.82"]} {"Key": "netbios-node-type", "Values": ["2"]} --region us-east-2
```

 ⓘ

Copy to clipboard

* Required

Cancel [Create DHCP options set](#)



[Addresses](#) > Allocate new address

Allocate new address

Allocate a new Elastic IP address by selecting the scope in which it will be used

▼ **AWS Command Line Interface command**

You can perform the same actions on this page by using the AWS Command Line Interface (CLI) tools. Learn more about the [AWS CLI tools](#)

Platform Linux/Unix/OS X ⓘ

CLI command `aws ec2 allocate-address --domain "vpc" --region us-east-2` ⓘ

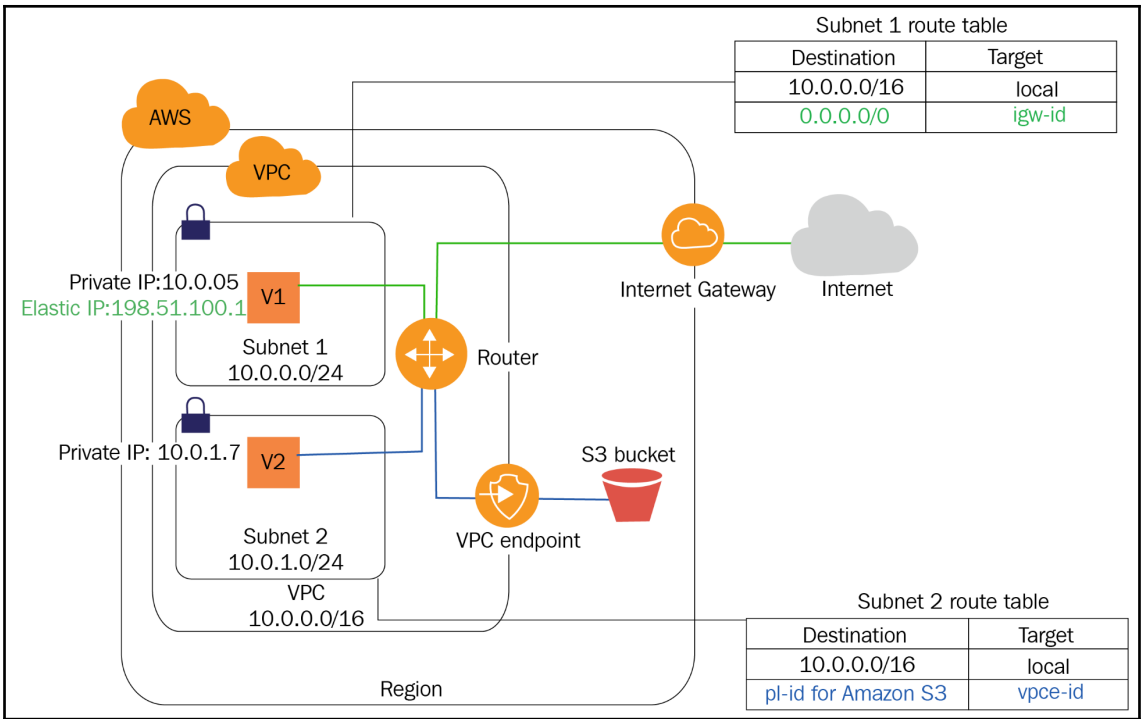
* Required

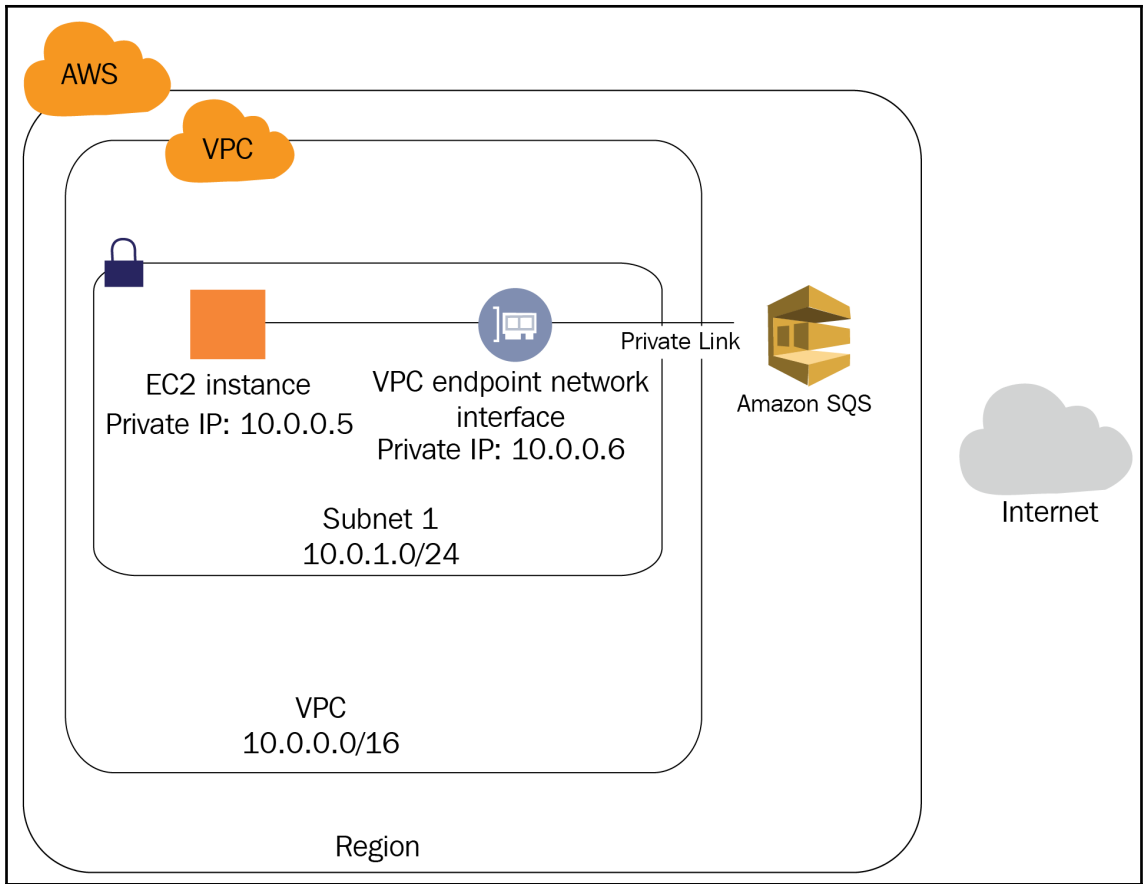
[Route Tables](#) > Edit routes

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="igw"/>	active	No <input type="button" value="✕"/>

* Required





Create Endpoint

A VPC endpoint allows you to securely connect your VPC to another service.

An interface endpoint is powered by PrivateLink, and uses an elastic network interface (ENI) as an entry point for traffic destined to the service.

A gateway endpoint serves as a target for a route in your route table for traffic destined for the service.

- Service category**
- AWS services
 - Find service by name
 - Your AWS Marketplace services

Service Name Select a service ⓘ

1 to 33 of 33

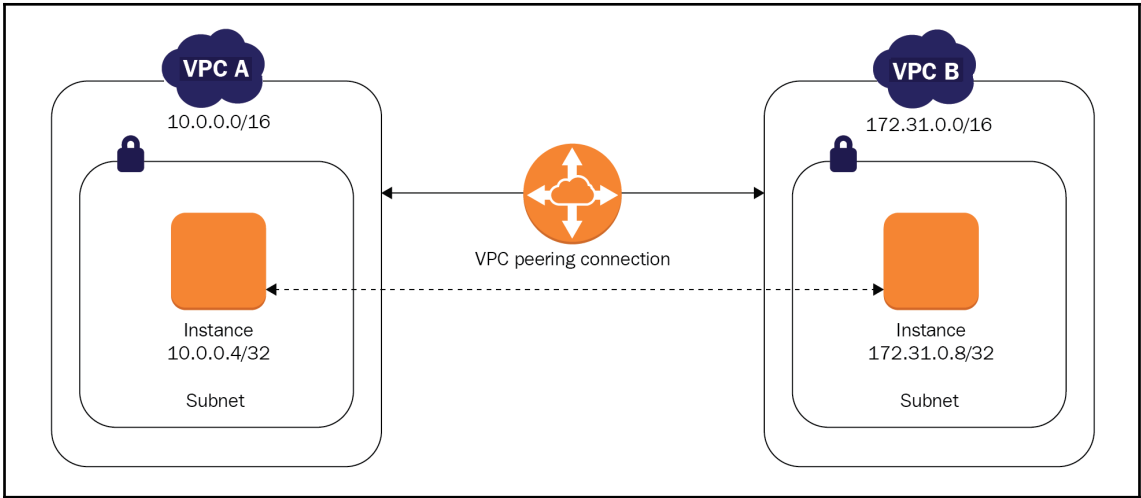
	Service Name	Owner	Type
<input type="radio"/>	com.amazonaws.us-east-2.kinesis-streams	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.kms	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.logs	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.monitoring	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.s3	amazon	Gateway
<input type="radio"/>	com.amazonaws.us-east-2.sagemaker.api	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sagemaker.run...	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sagemaker.run...	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.secretsmanager	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.servicecatalog	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sms	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sms-fips	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sns	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.sqs	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.ssm	amazon	Interface
<input type="radio"/>	com.amazonaws.us-east-2.ssmmessages	amazon	Interface

VPC* ⓘ

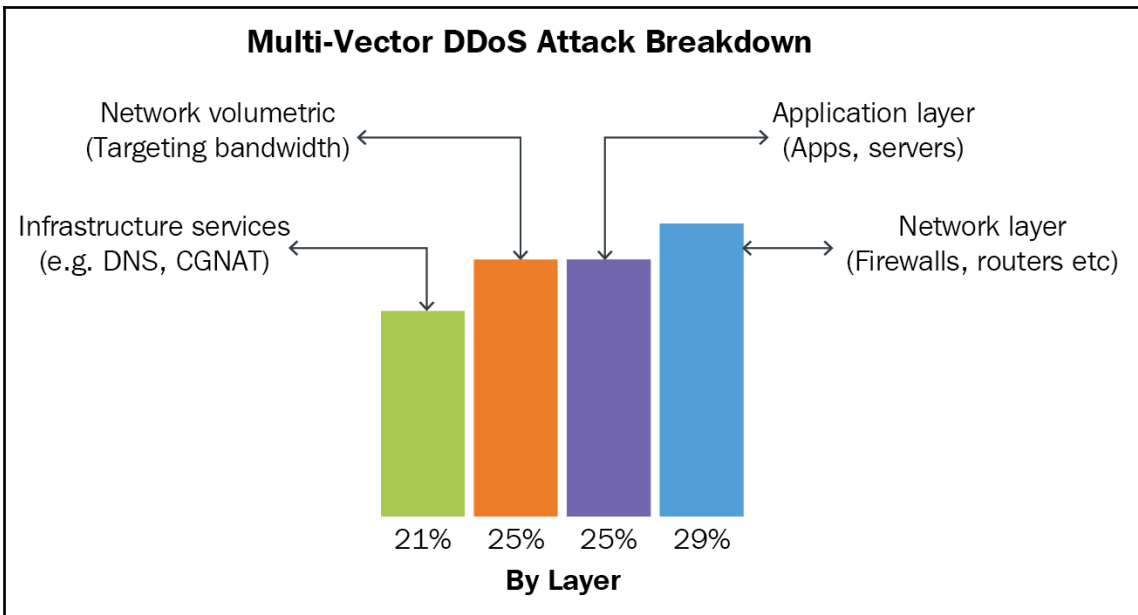
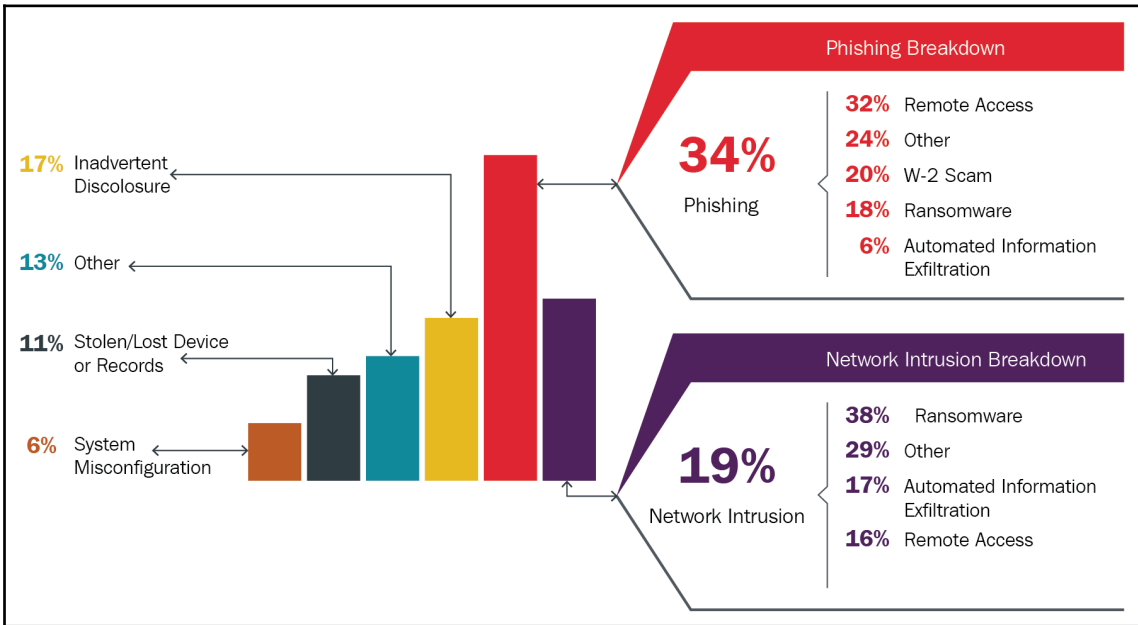
* Required

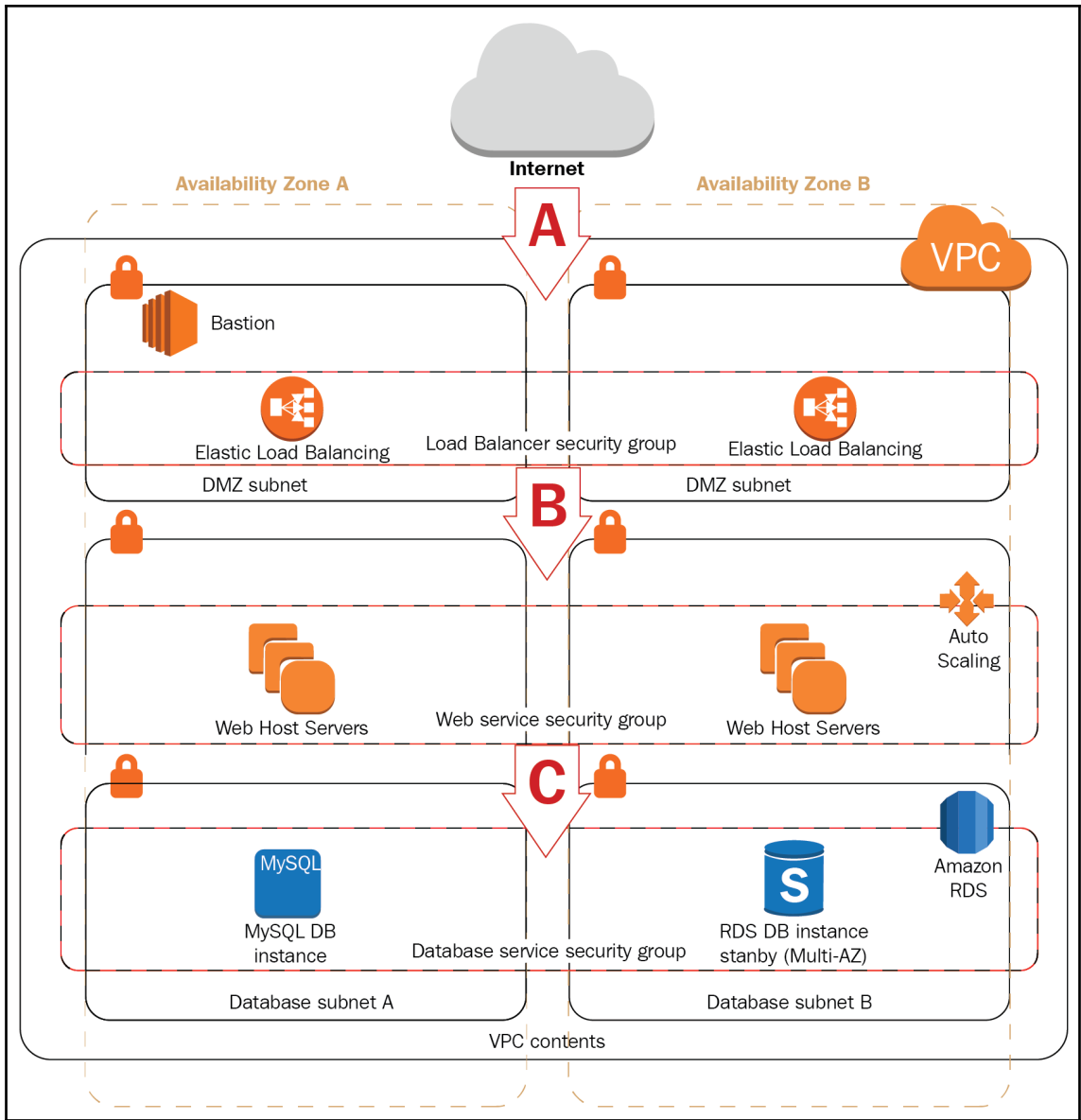
vpc-0ba124184a47a0bde	10.0.0.0/16	available	my-custom-vpc
-----------------------	-------------	-----------	---------------

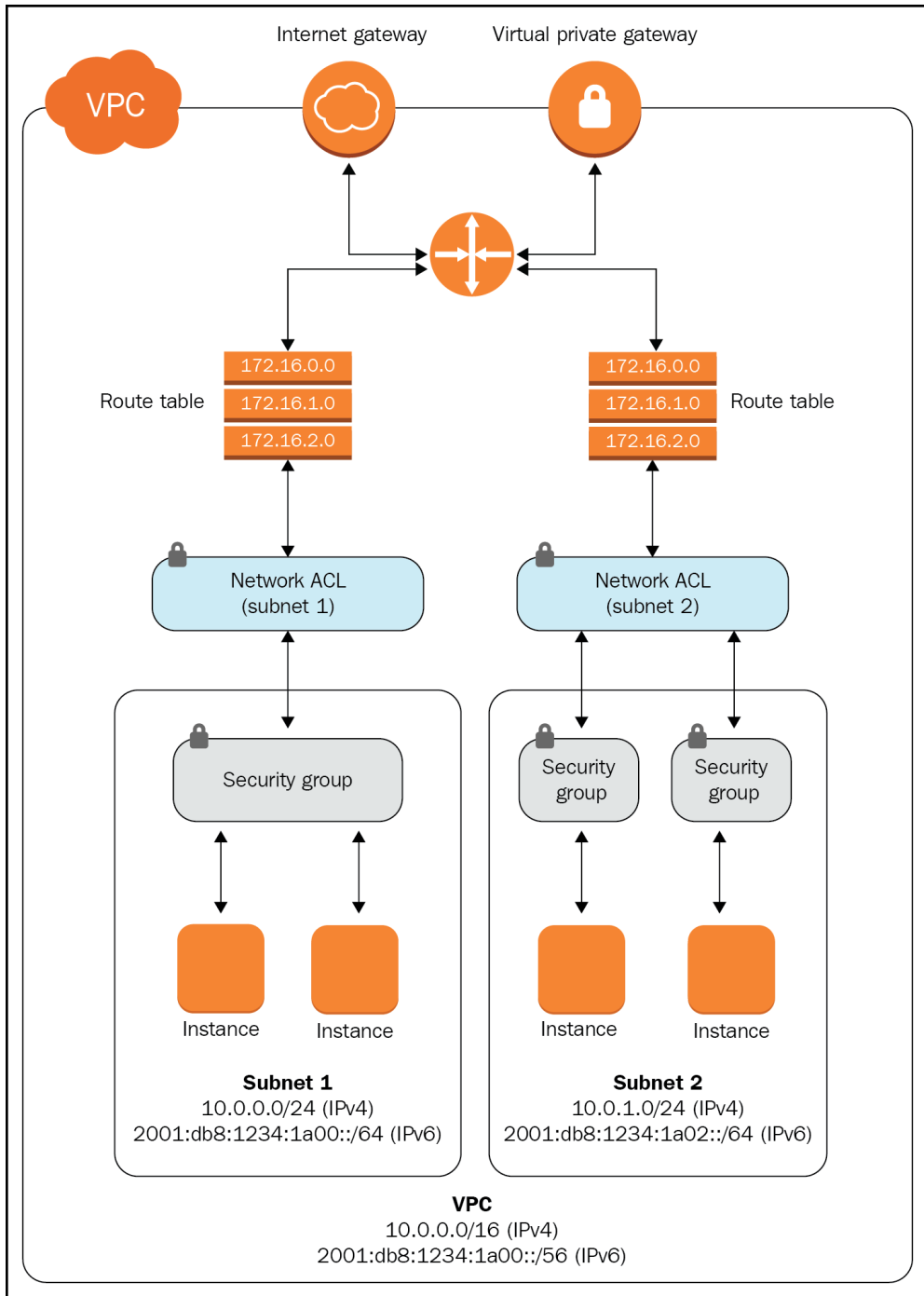
Cancel **Create endpoint**

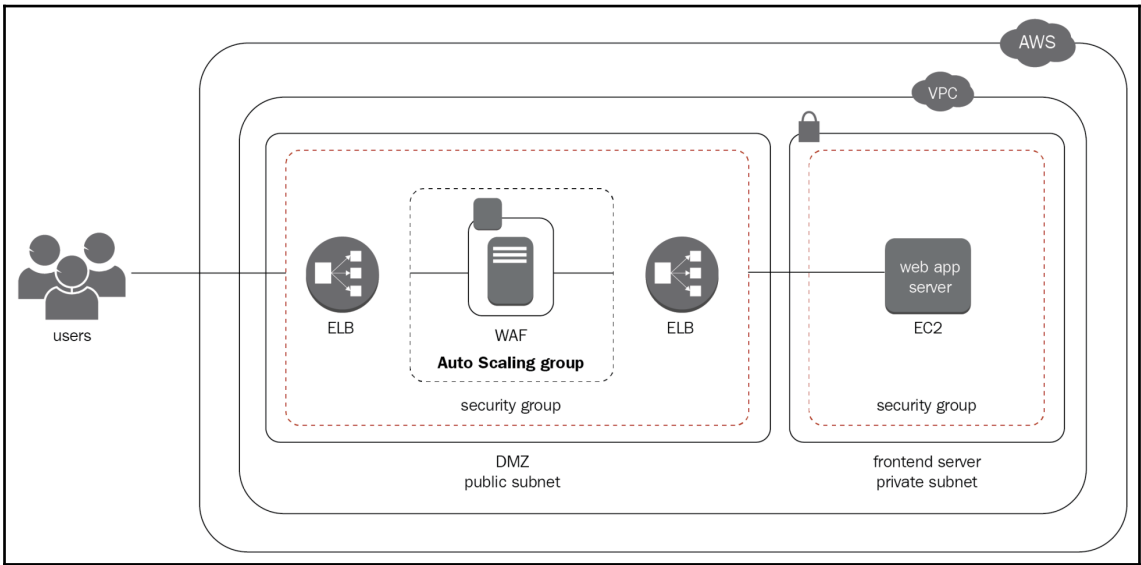
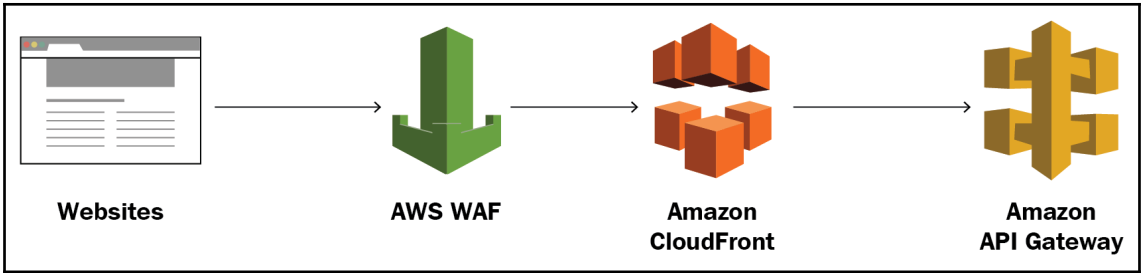


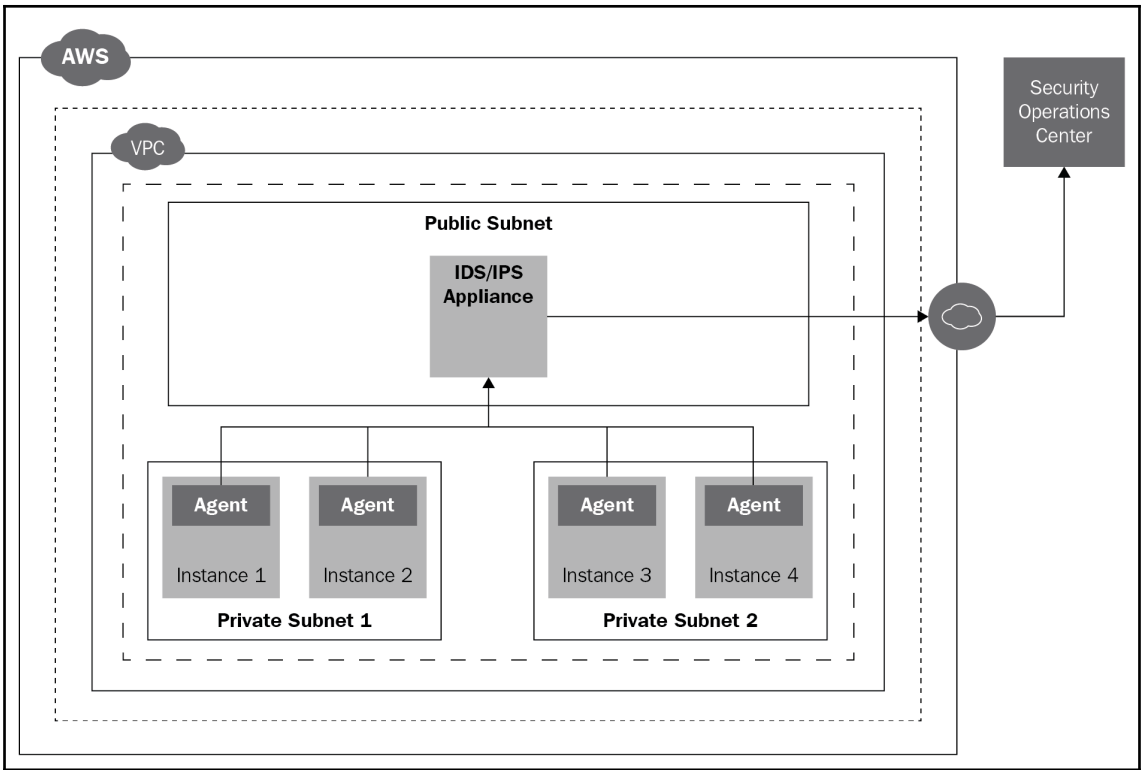
Chapter 3: VPC Network Security



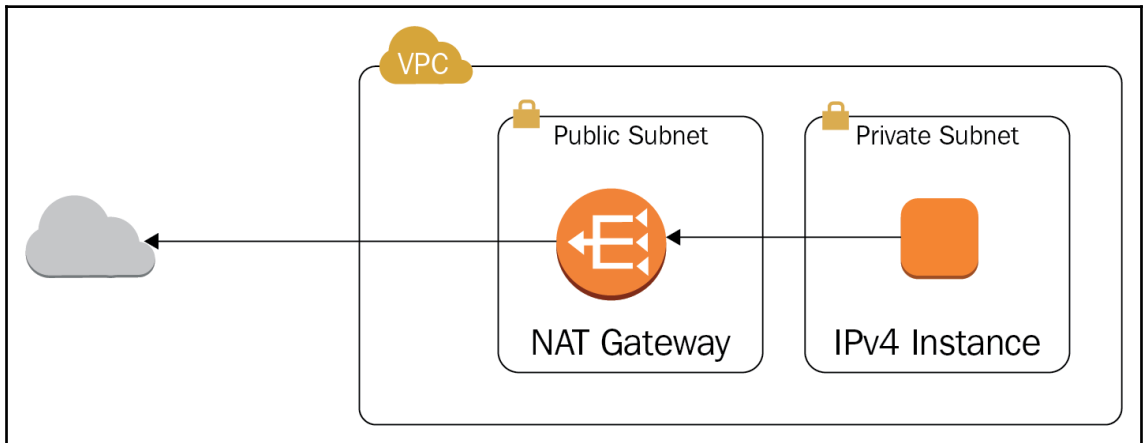
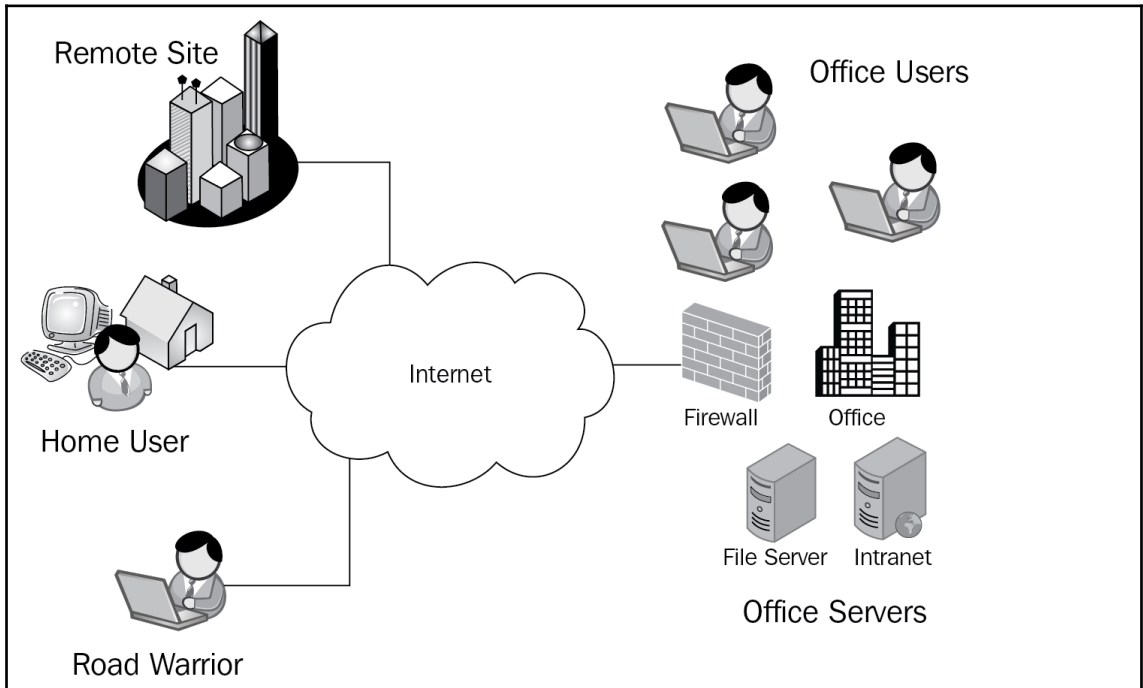


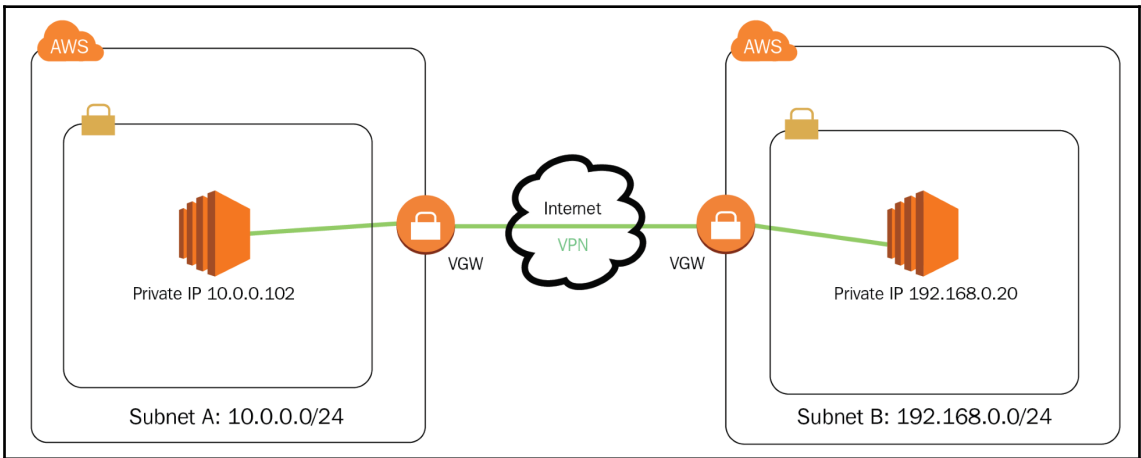
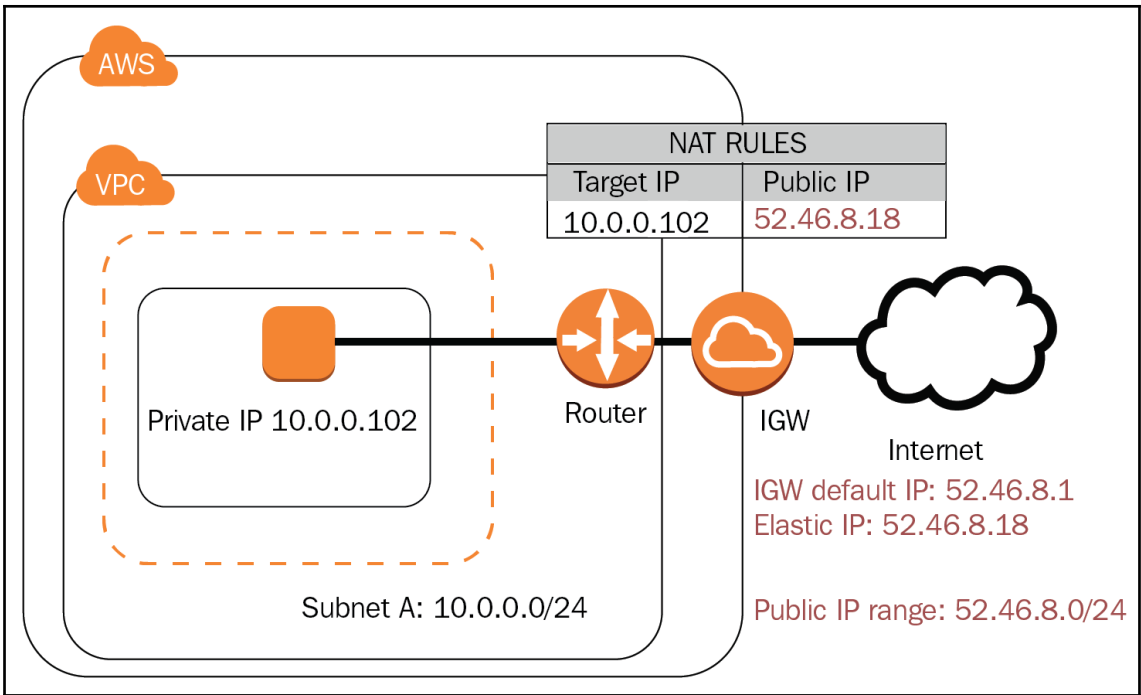


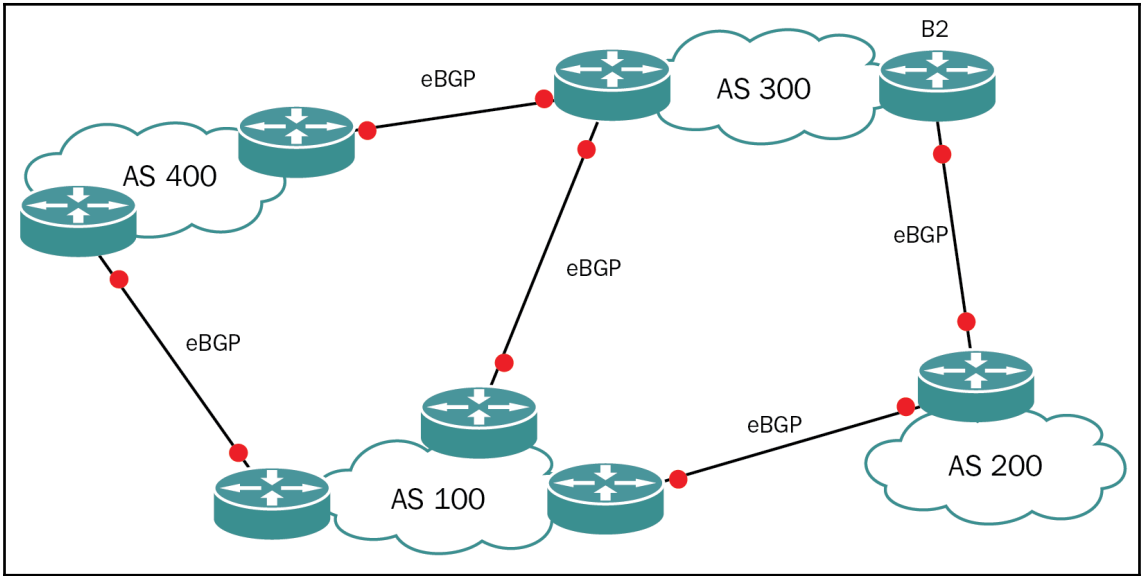


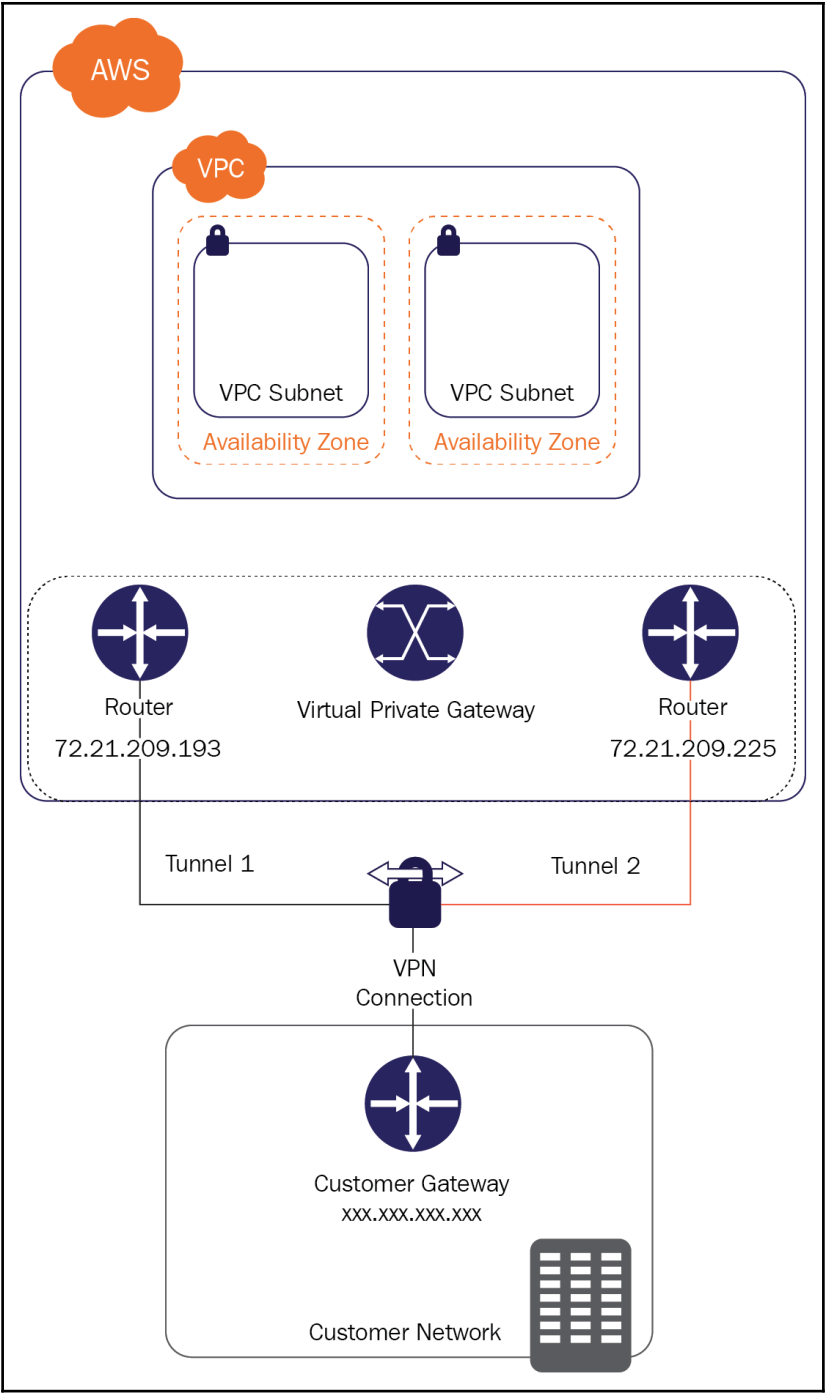


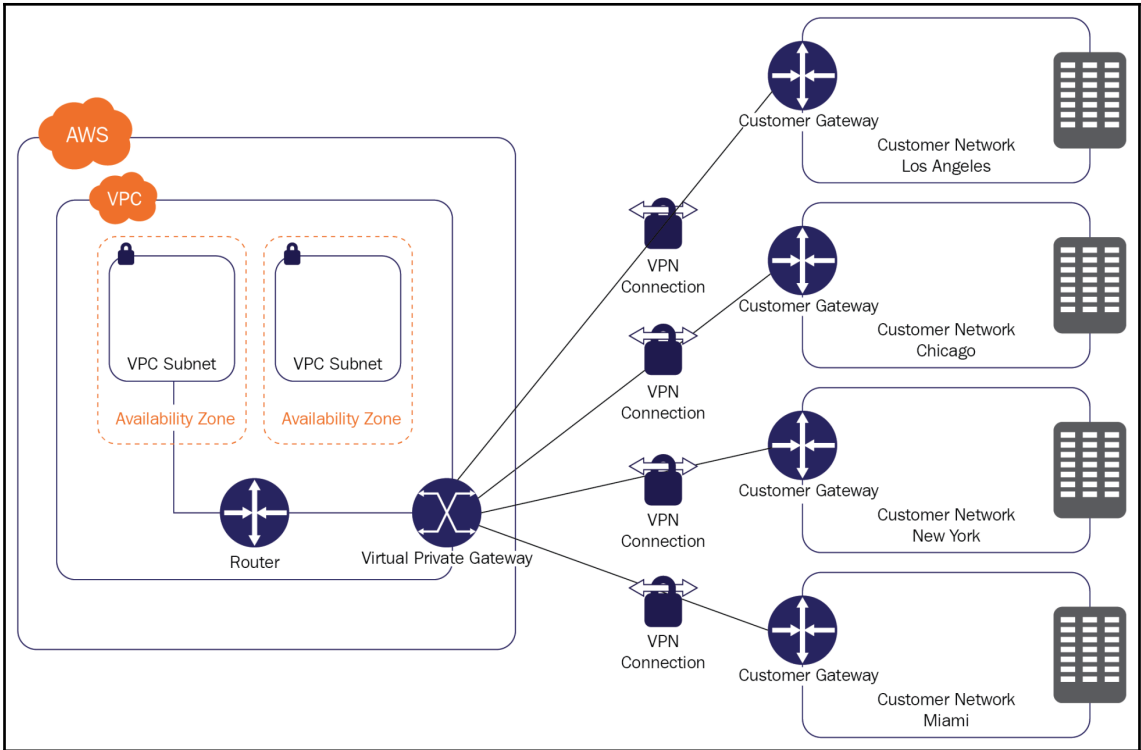
Chapter 4: Connecting On-Premises and AWS

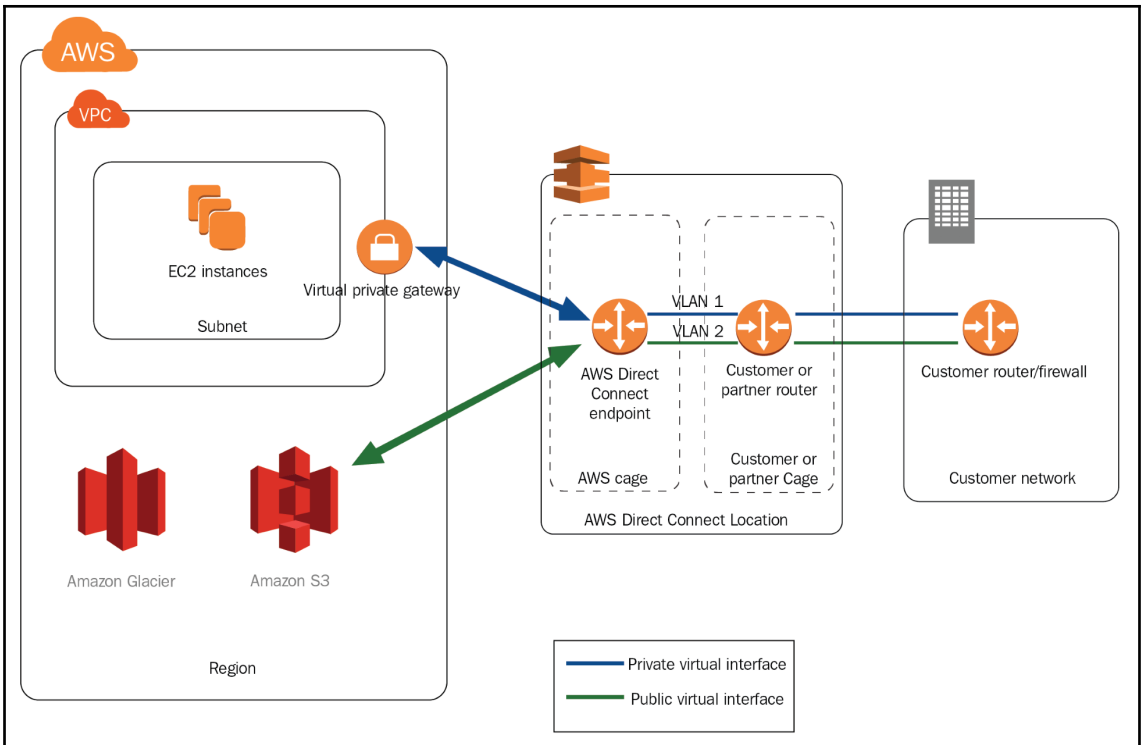


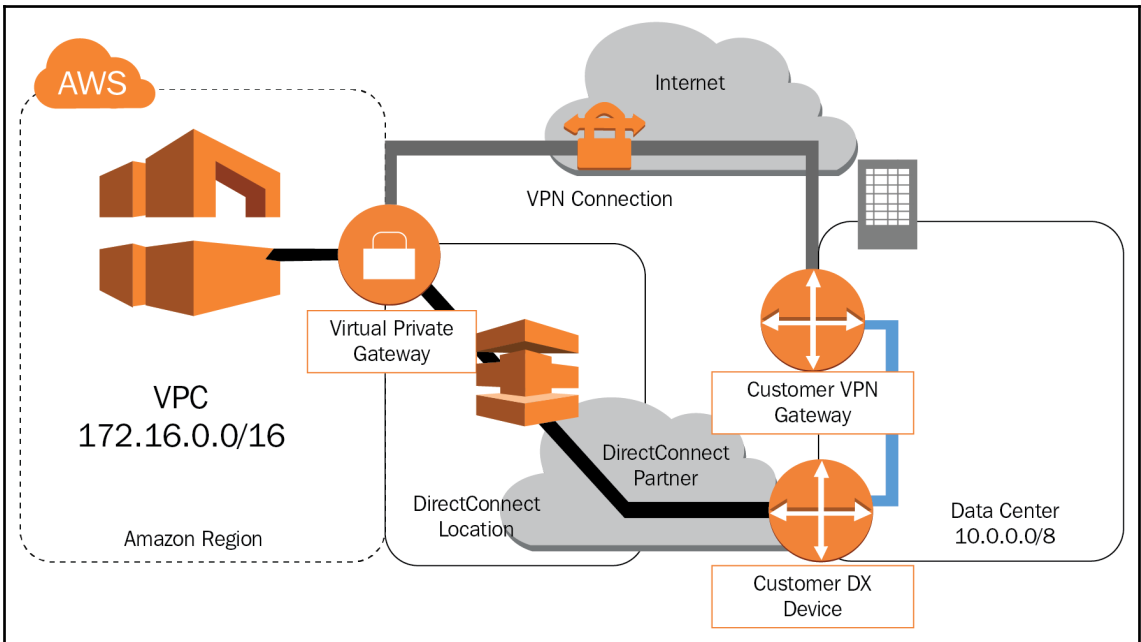
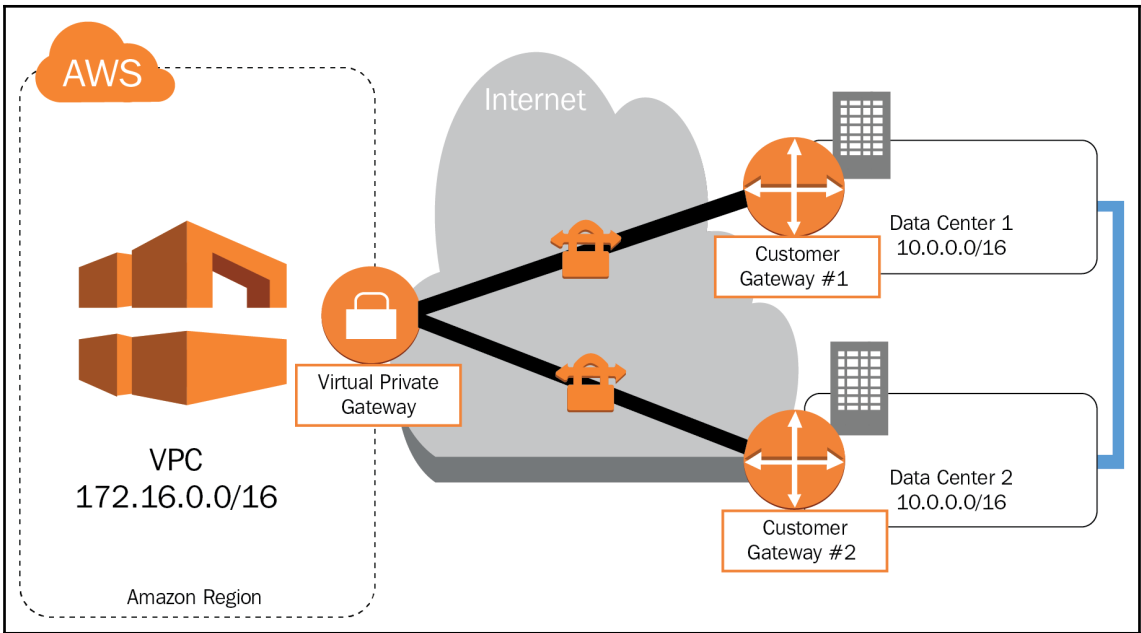


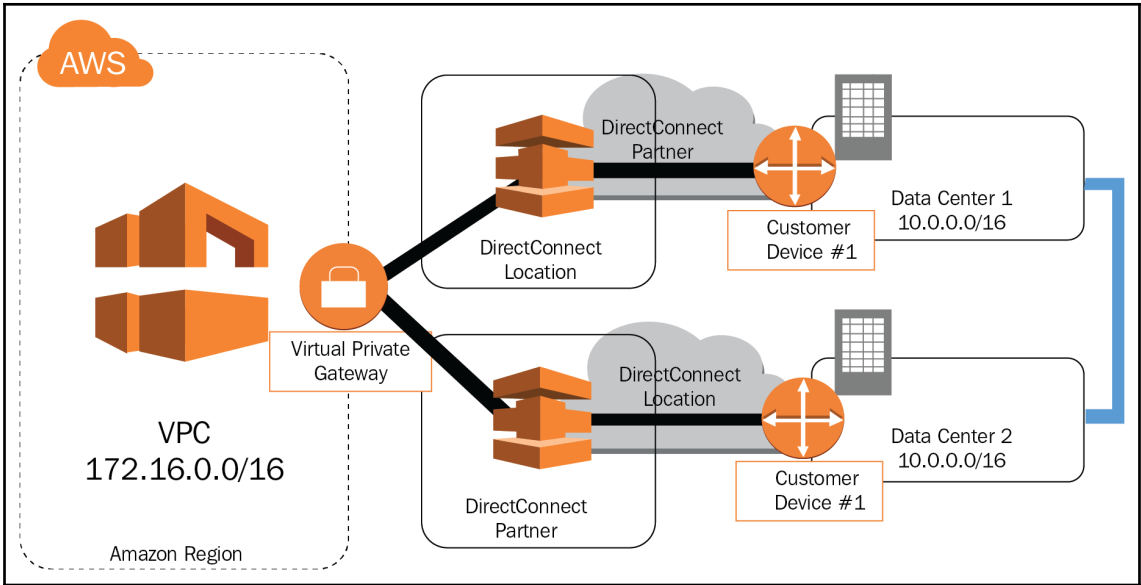




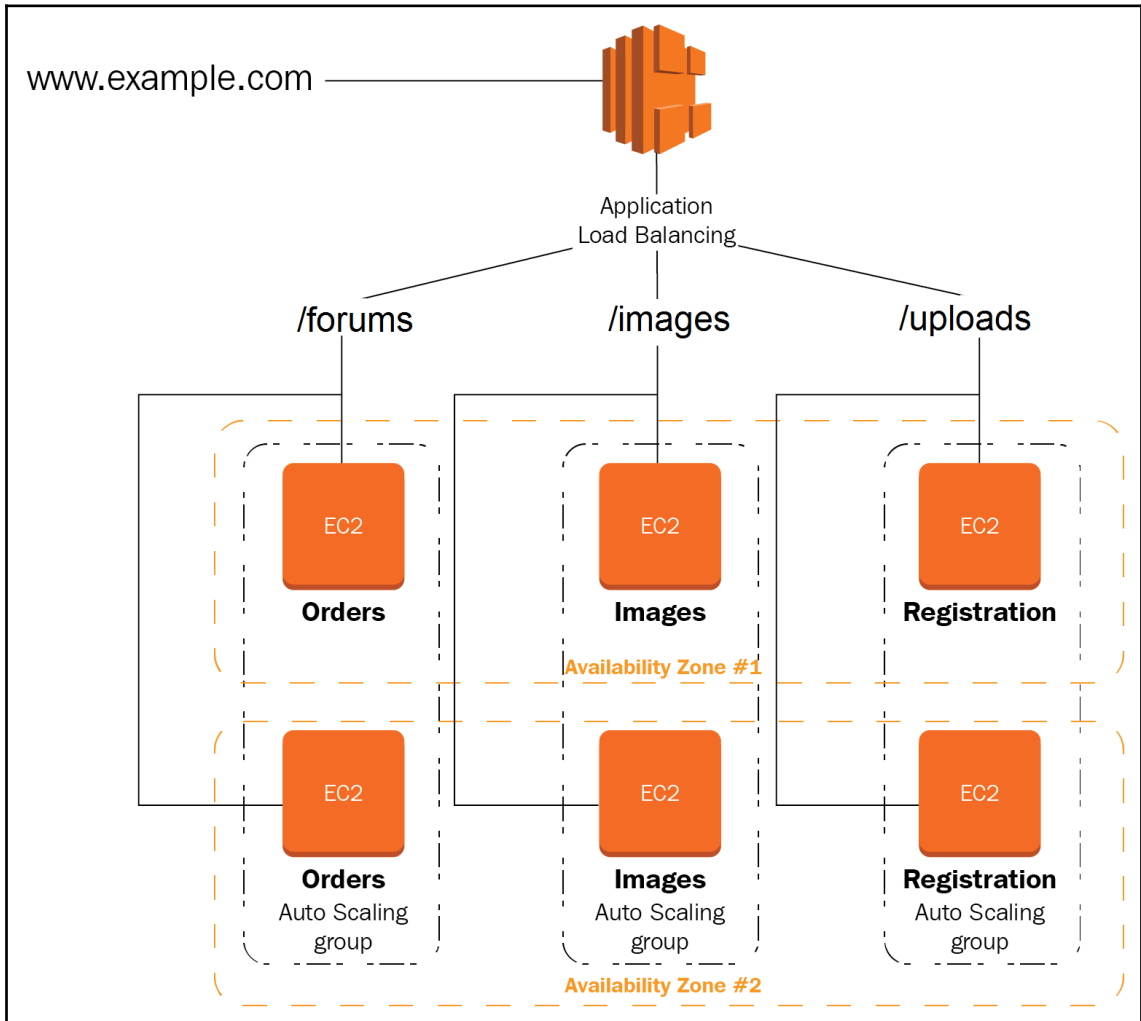


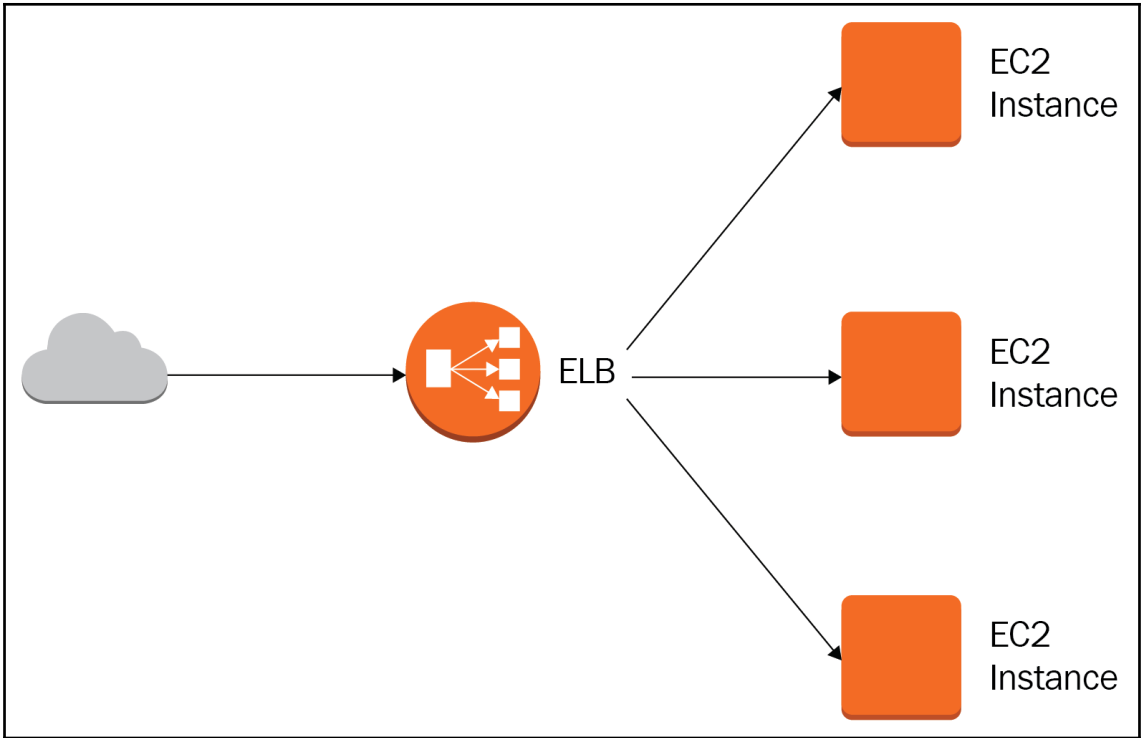


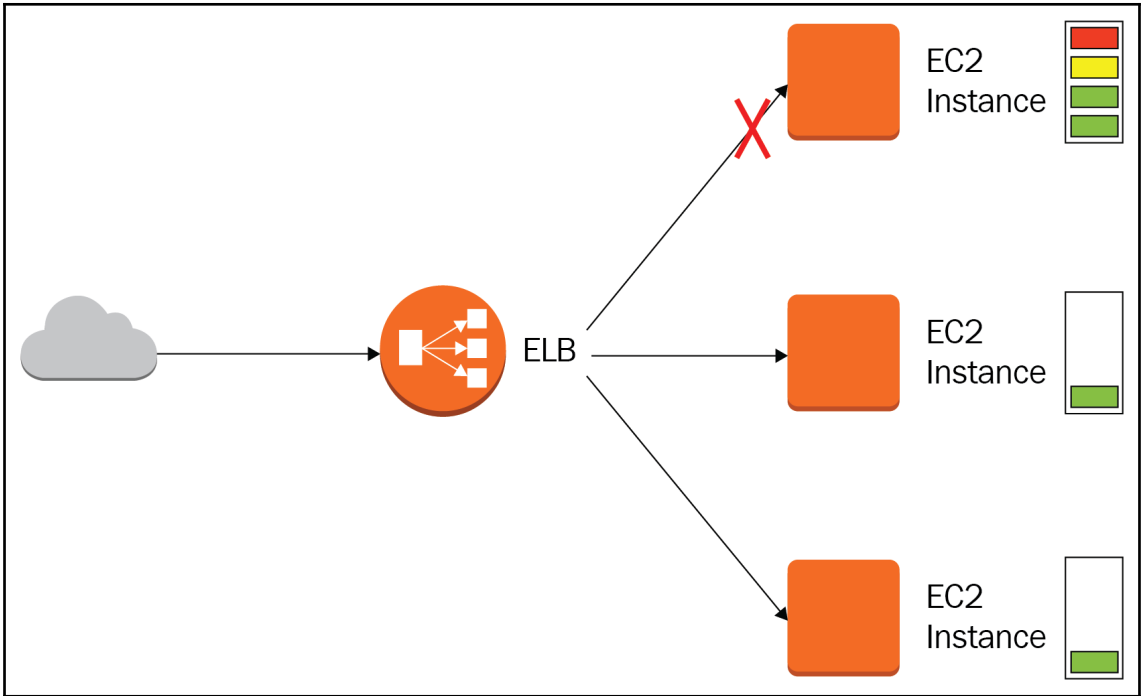


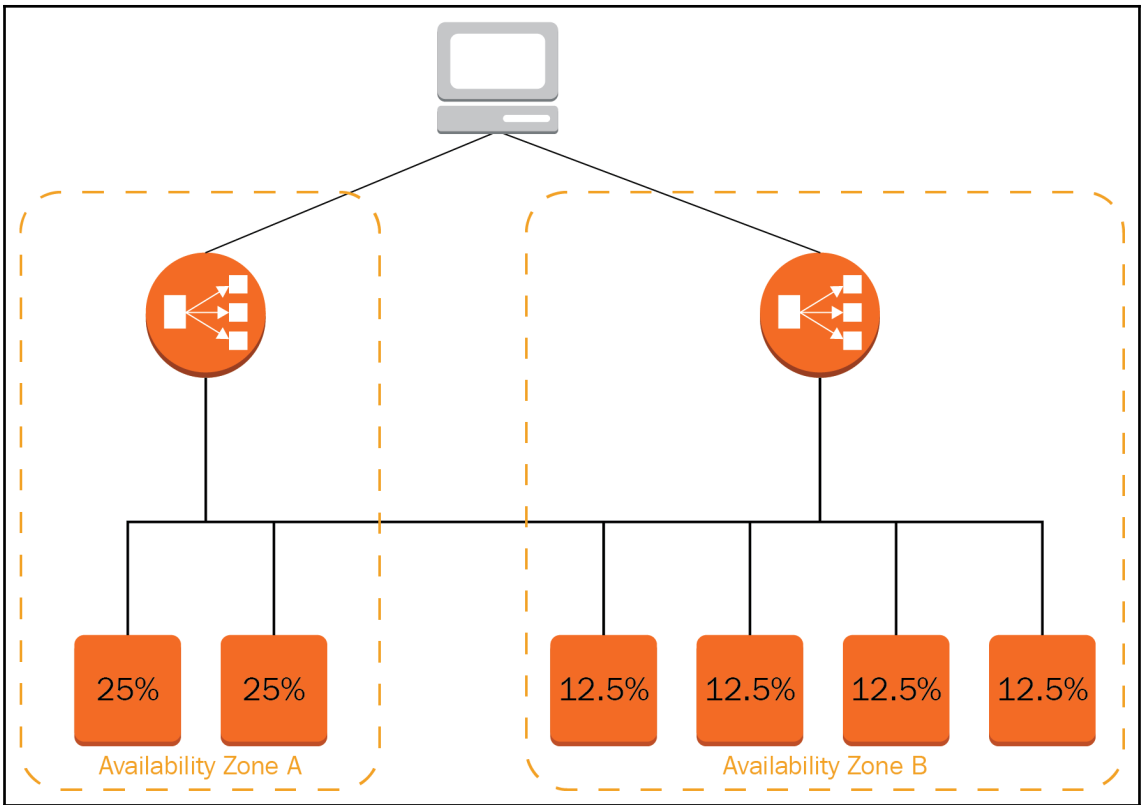


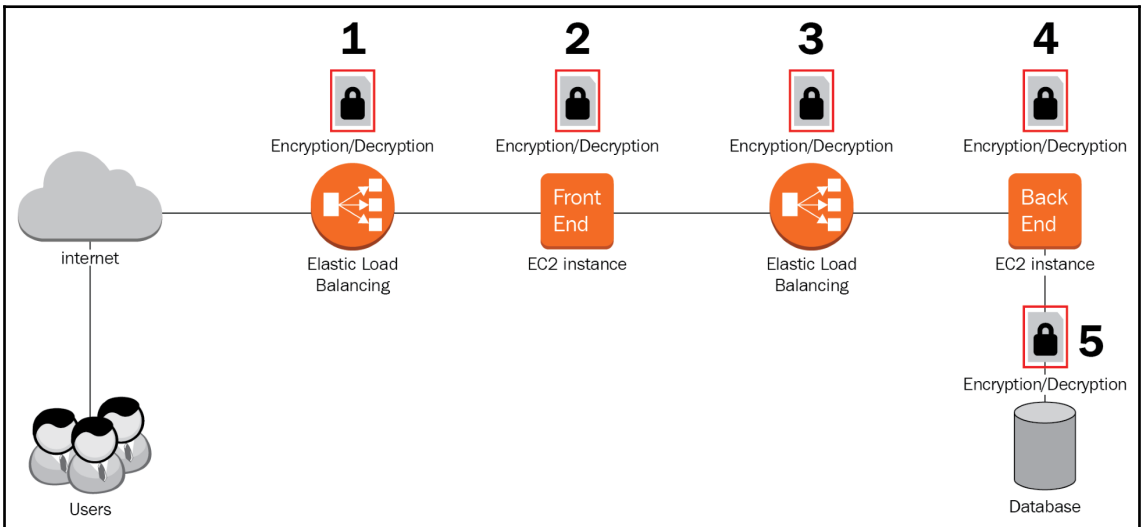
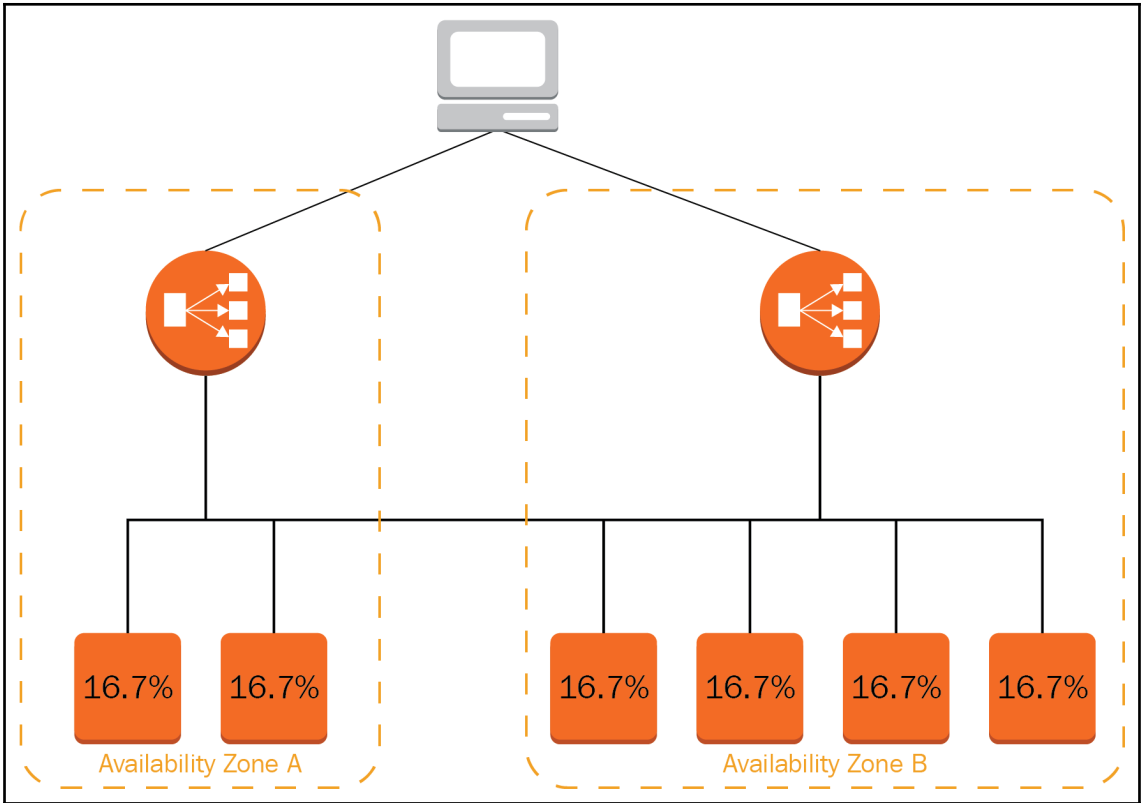
Chapter 5: Managing and Securing Servers with ELB

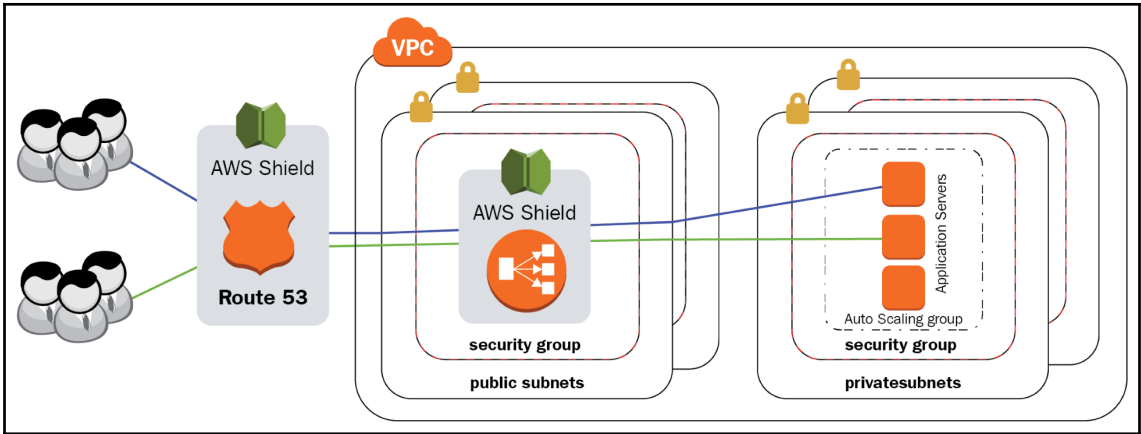




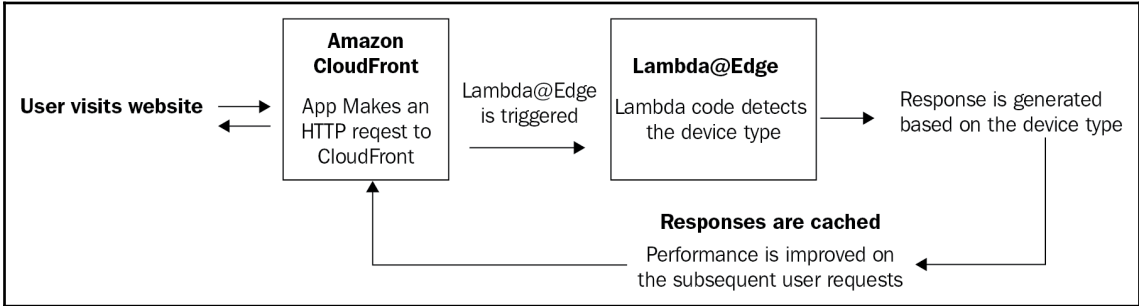
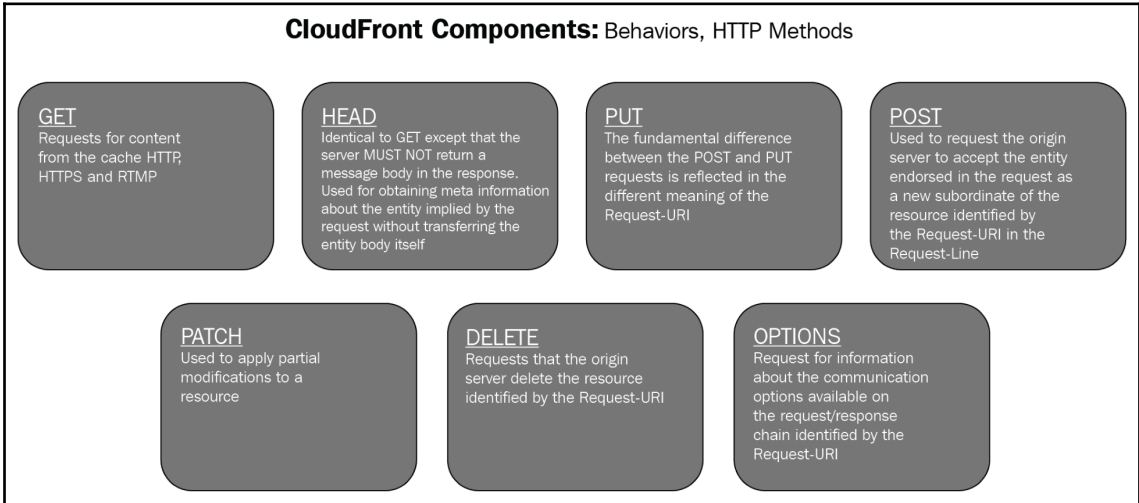


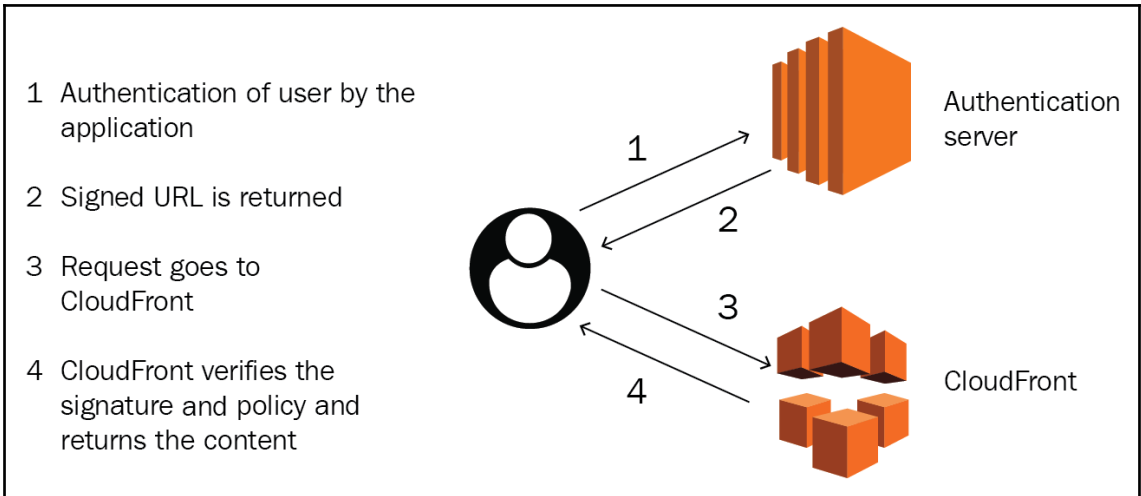
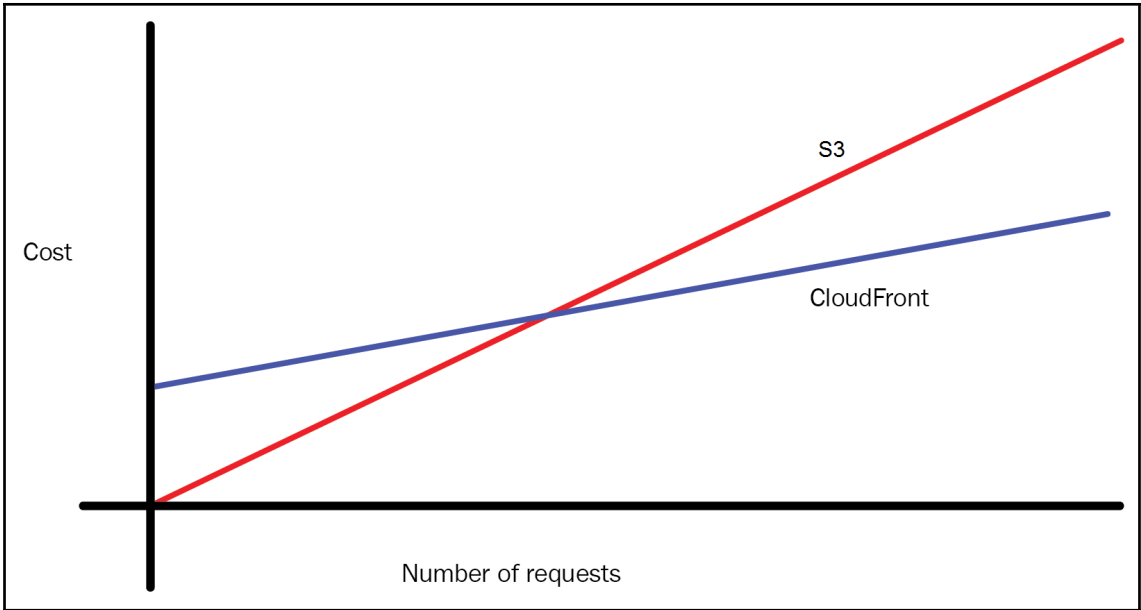


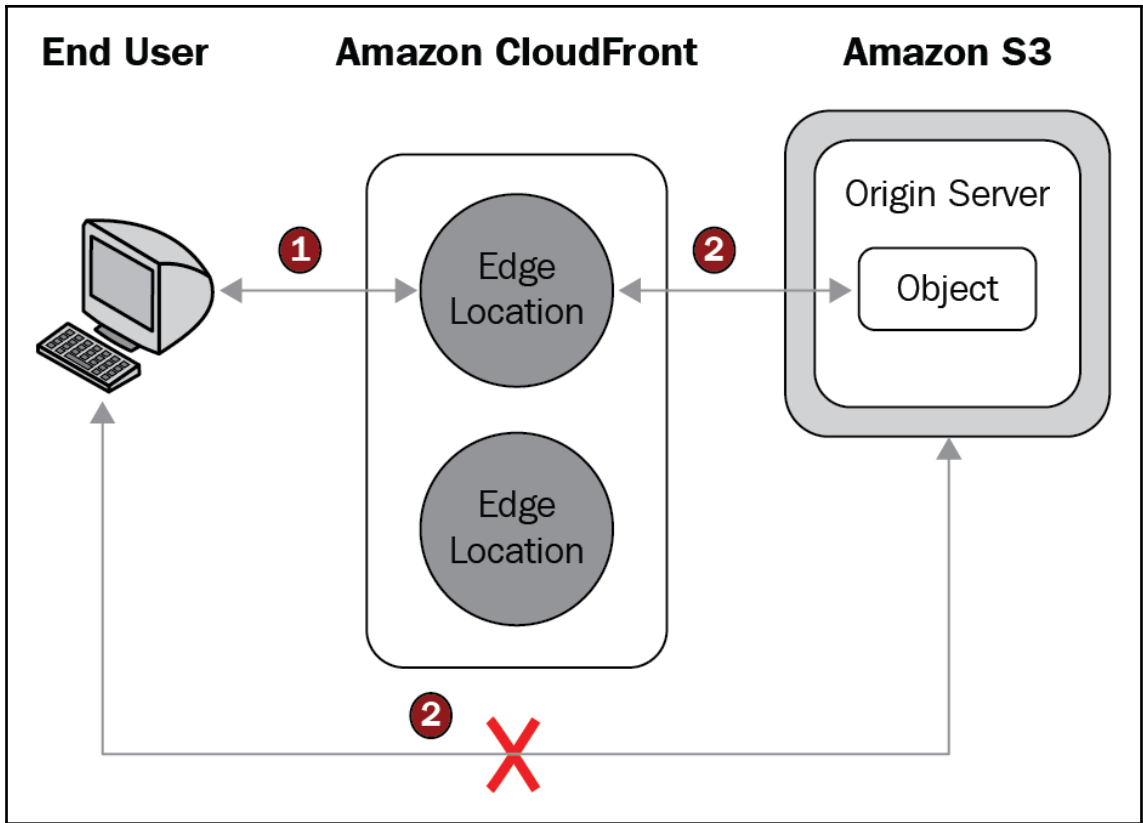


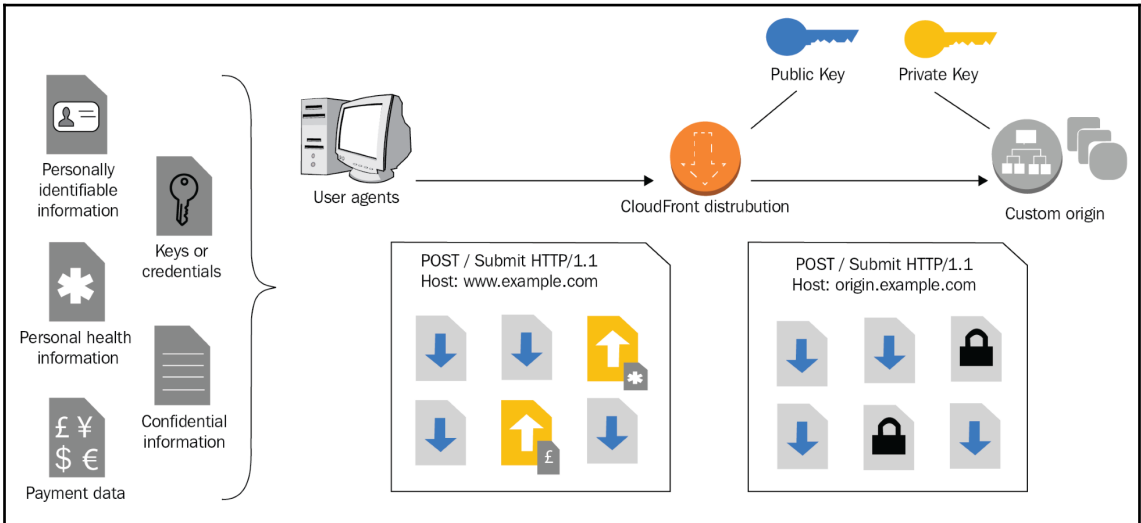
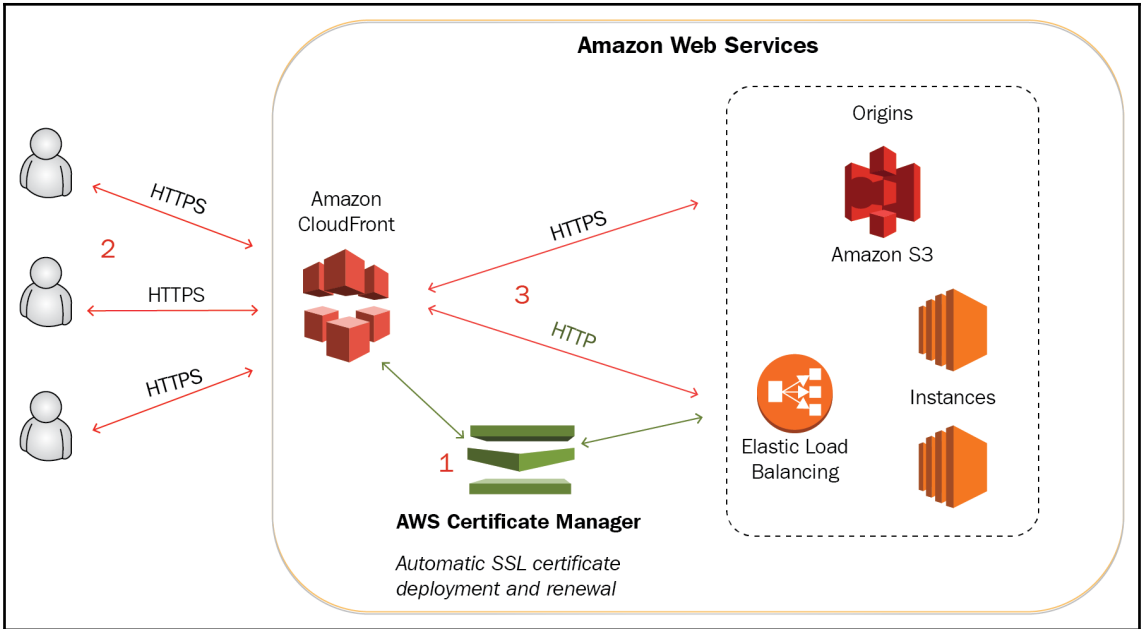


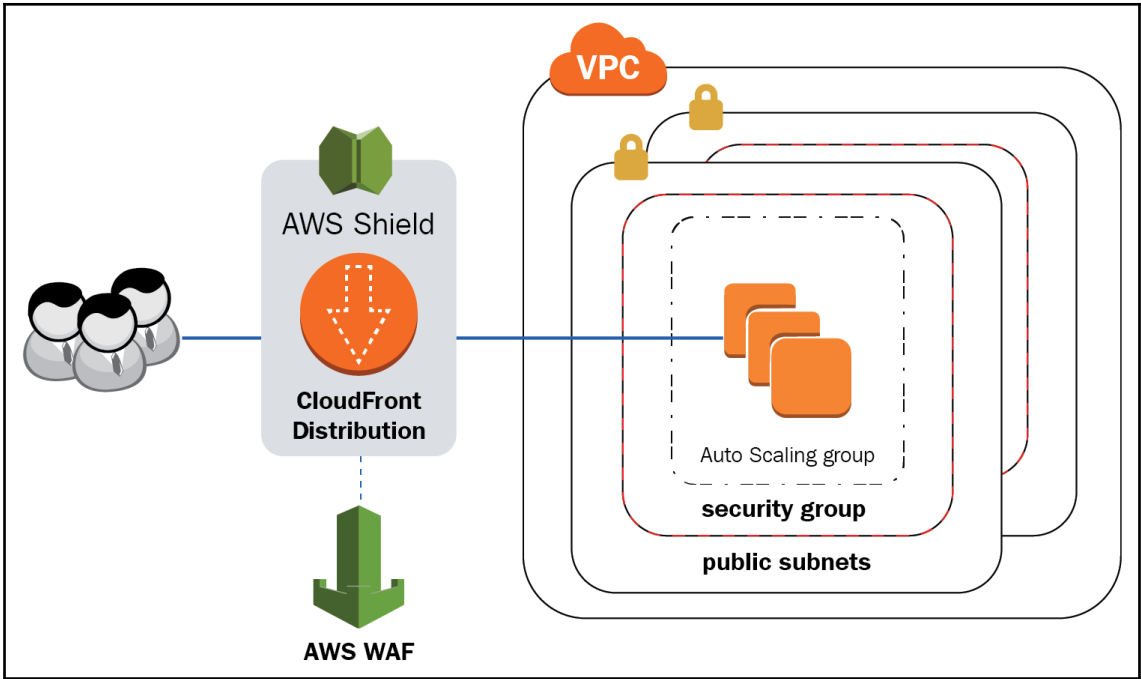
Chapter 6: Managing and Securing Content Distribution with CloudFront



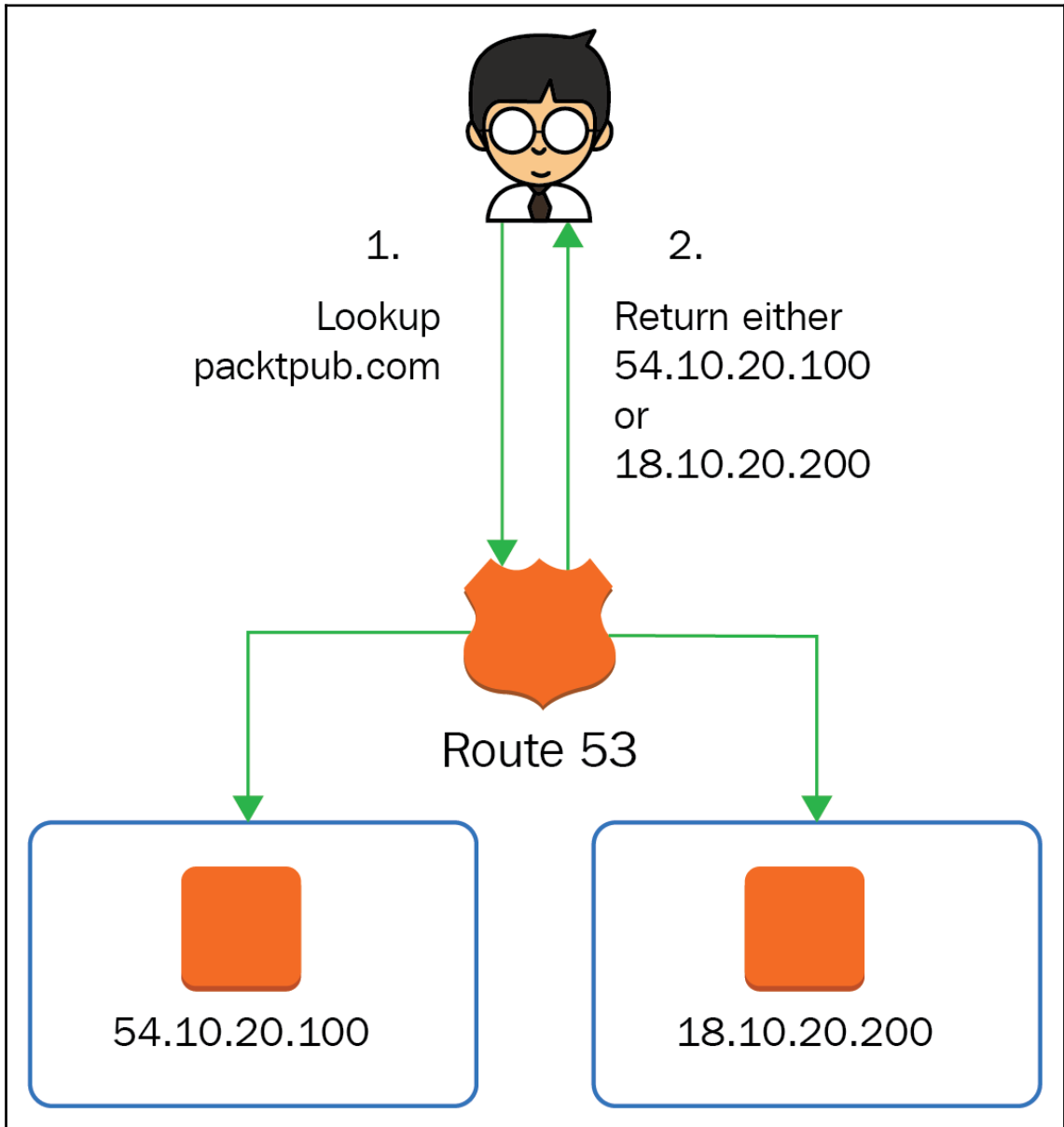


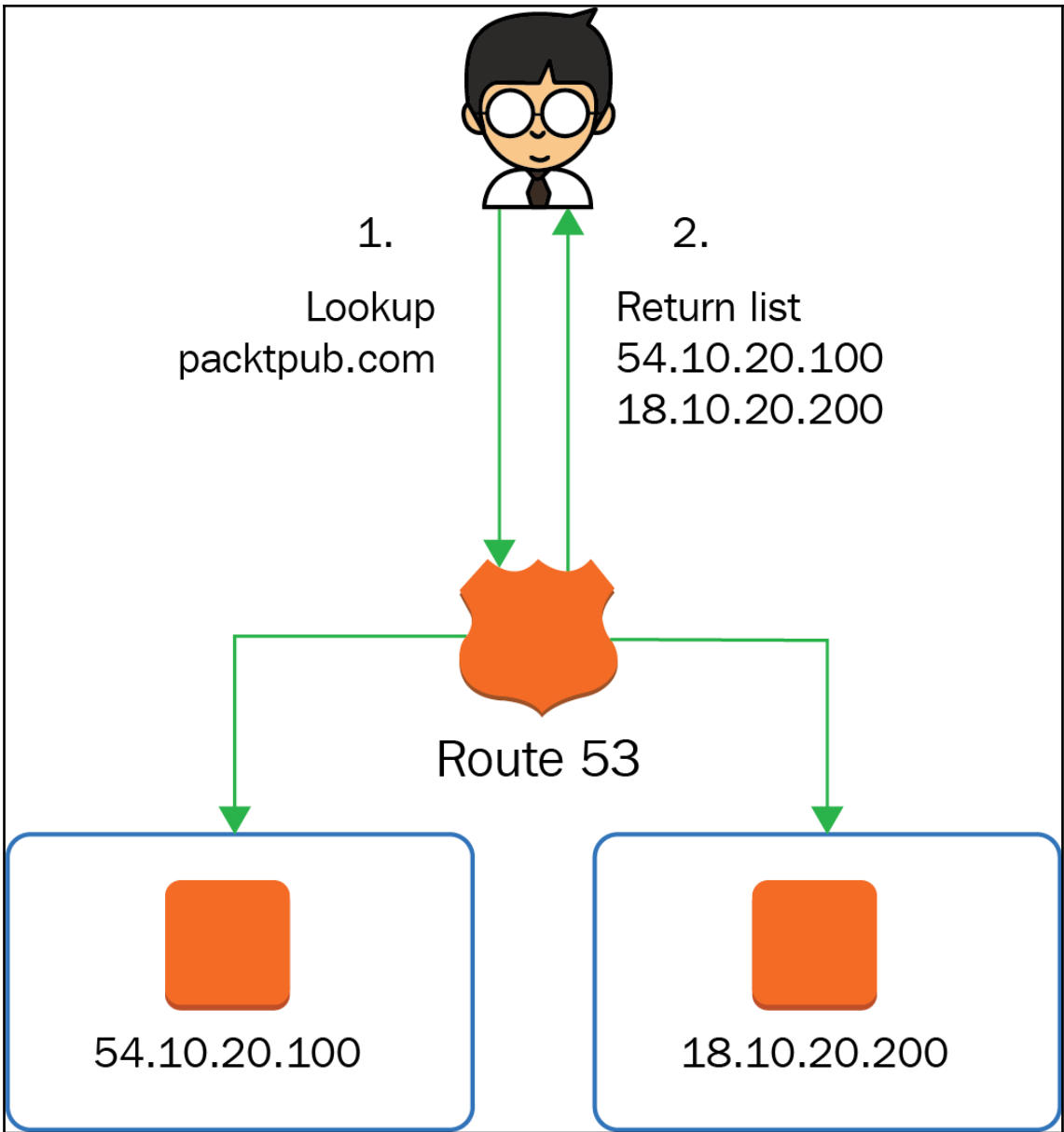


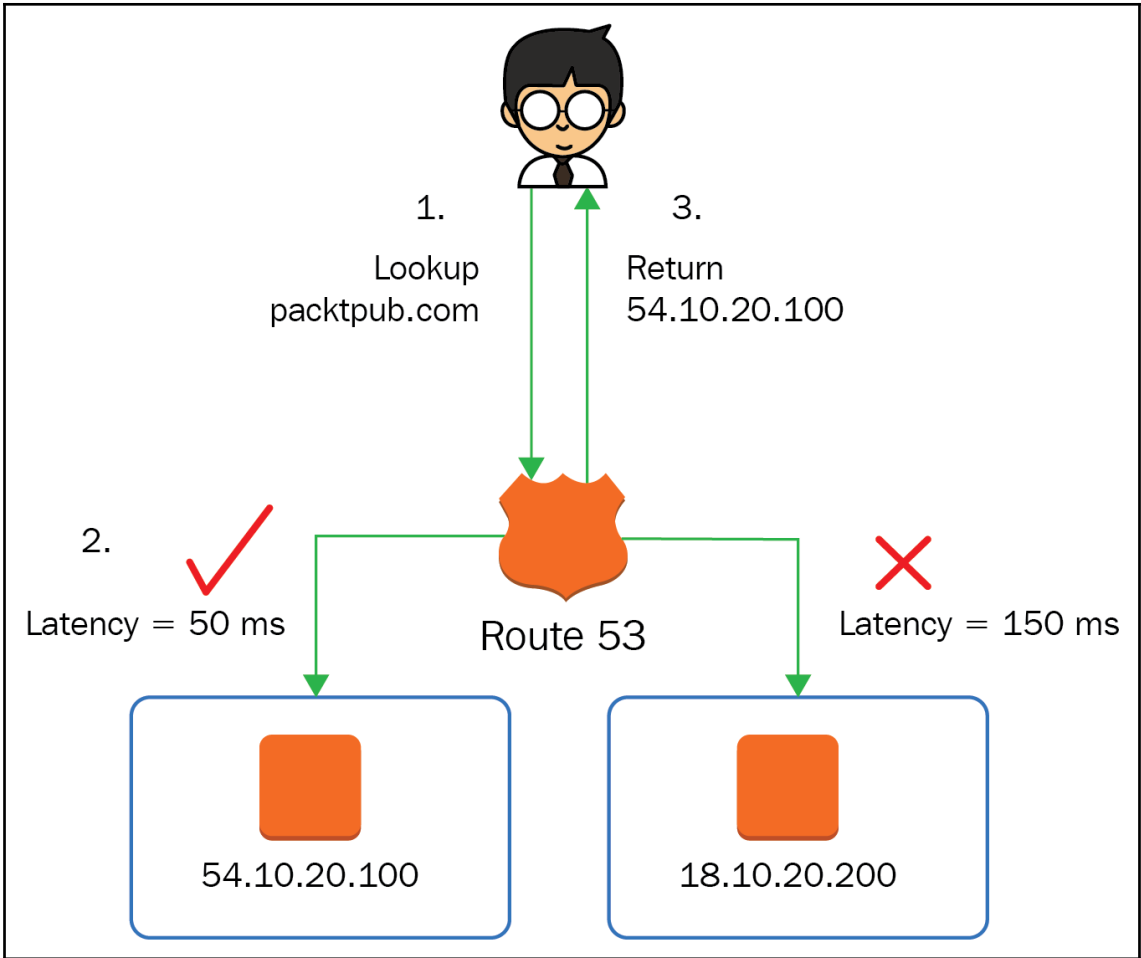


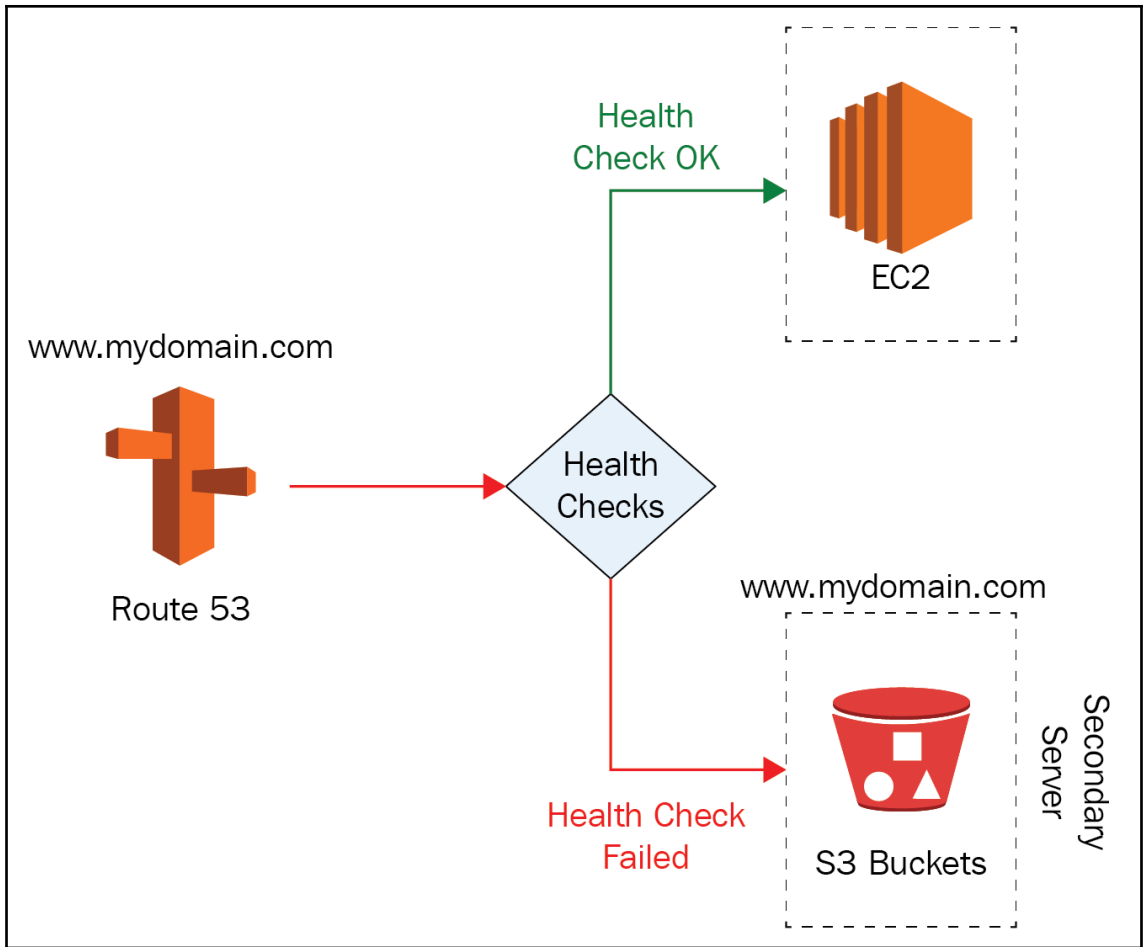


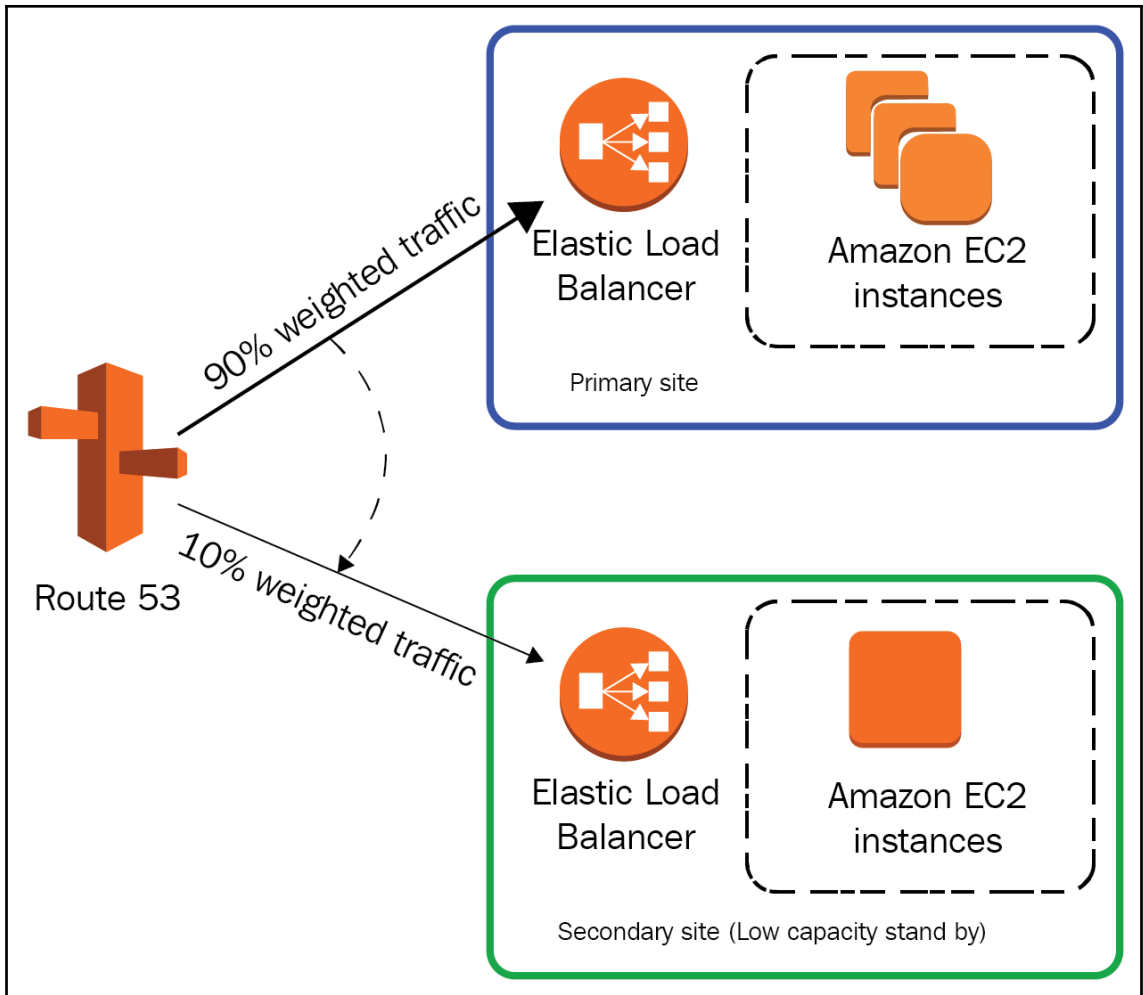
Chapter 7: Managing and Securing the Route 53 Domain Name System

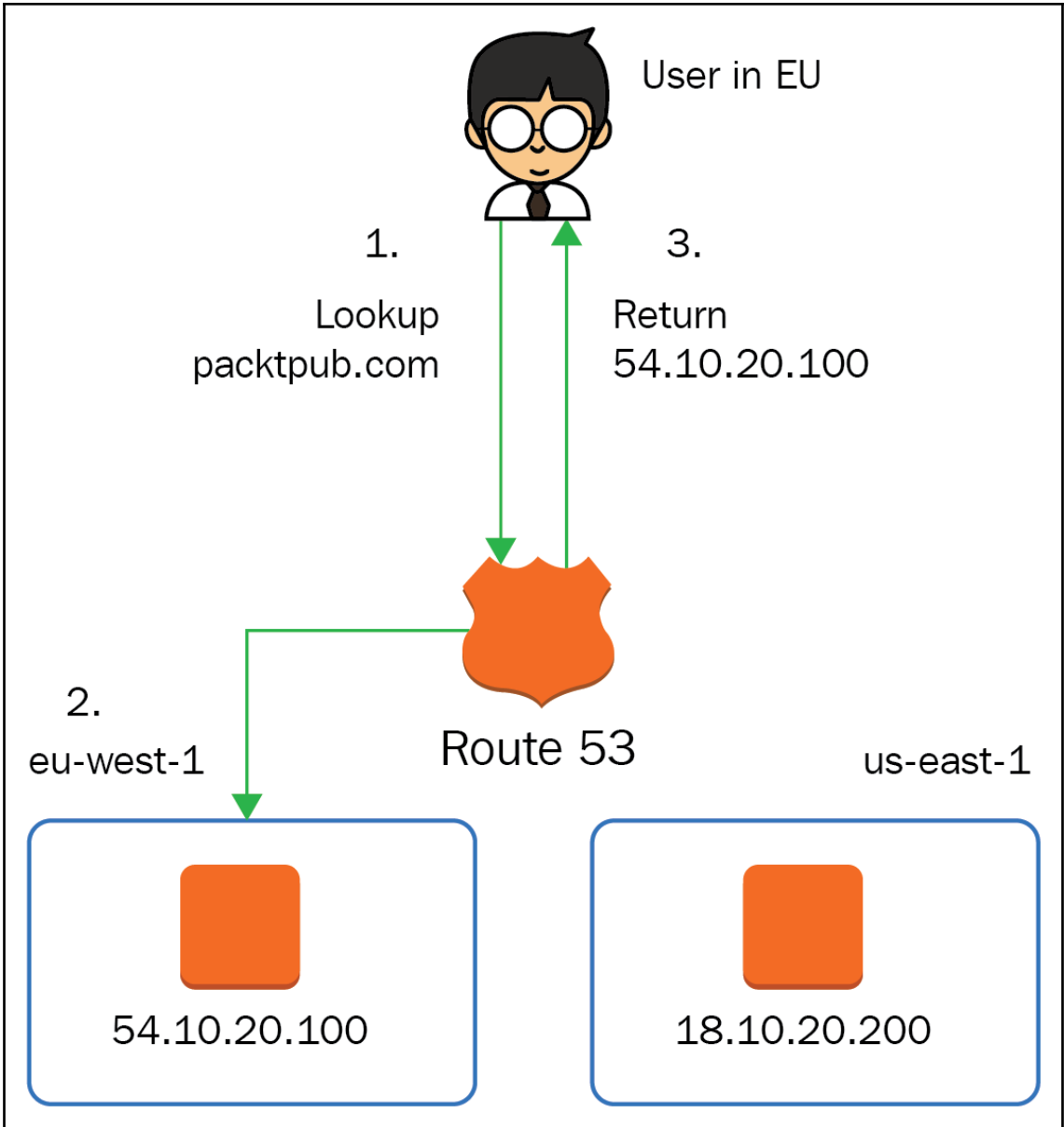






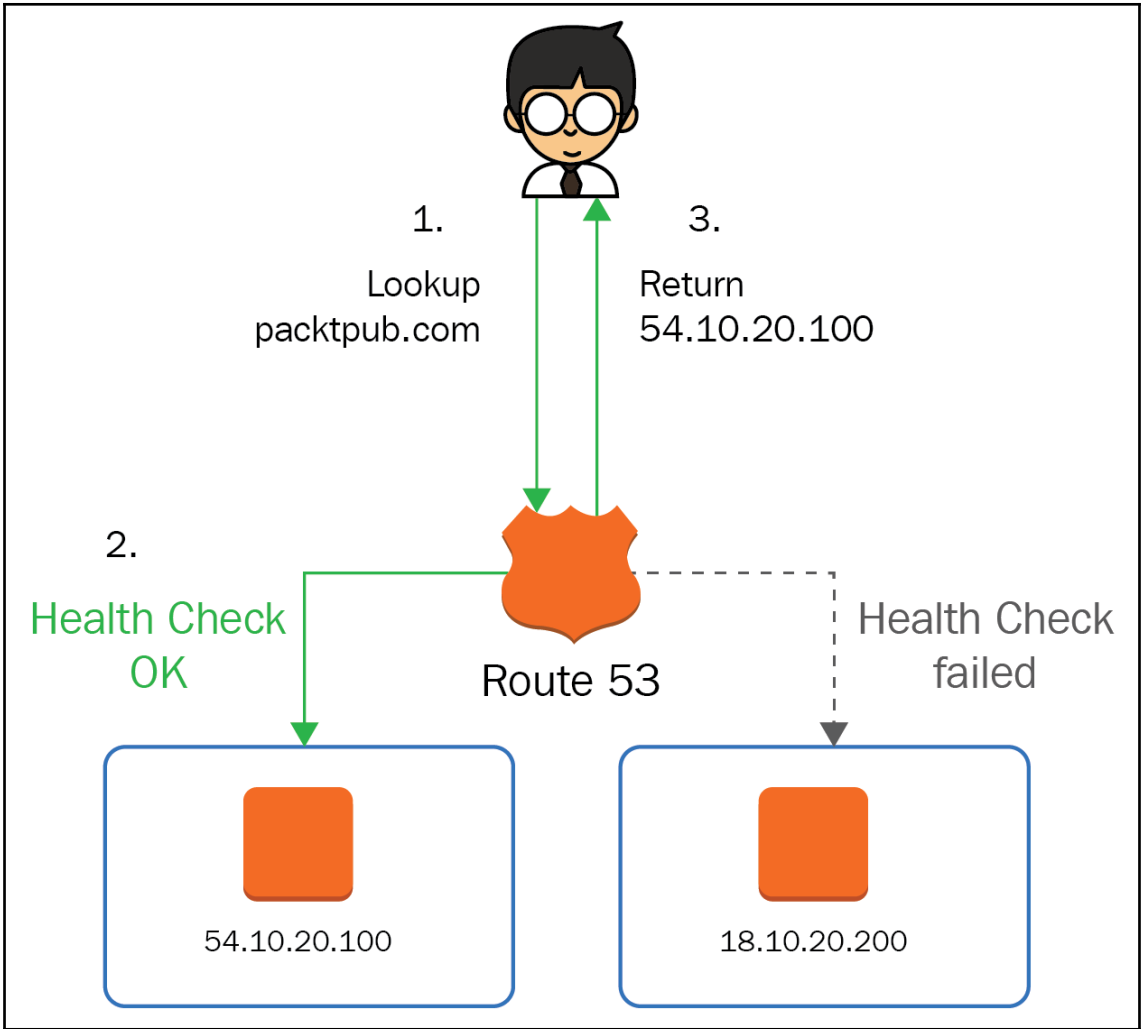






Geoproximity bias illustrated







Amazon Route 53

You can use Amazon Route 53 to register new domains, transfer existing domains, route traffic for your domains to your AWS and external resources, and monitor the health of your resources.



DNS management

If you already have a domain name, such as example.com, Route 53 can tell the Domain Name System (DNS) where on the Internet to find web servers, mail servers, and other resources for your domain.

[Learn More](#)

[Get started now](#)



Traffic management

Route 53 traffic flow provides a visual tool that you can use to create and update sophisticated routing policies to route end users to multiple endpoints for your application.

[Learn More](#)

[Get started now](#)



Availability monitoring

Route 53 can monitor the health and performance of your application as well as your web servers and other resources. Route 53 can also redirect traffic to healthy resources.

[Learn More](#)

[Get started now](#)



Domain registration

If you need a domain name, you can find an available name and register it by using Route 53. You can also make Route 53 the registrar for existing domains that you registered with other registrars.

[Learn More](#)

[Get started now](#)

- Dashboard
- Hosted zones
- Health checks
- Traffic flow
- Traffic policies
- Policy records
- Domains
 - Registered domains
 - Pending requests
- Resolver
- VPCs
- Inbound endpoints
- Outbound endpoints
- Rules

Register Domain

Transfer Domain

Domain Billing Report

↻
?

⏪ < No domains to display > ⏩

Domain Name	Privacy Protection	Expiration Date	Auto Renew	Transfer Lock
No domains to display				

- 1: Domain Search
- 2: Contact Details
- 3: Verify & Purchase

Choose a domain name

Check

Availability for 'awsdemo.com'

Domain Name	Status	Price /1 Year	Action
awsdemo.com	✘	Unavailable	

Related domain suggestions

Domain Name	Status	Price /1 Year	Action
4awsdemo.com	✔	Available	\$12.00 Add to cart
awsdemo.ninja	✔	Available	\$18.00 Add to cart
awsdemo.org	✔	Available	\$12.00 Add to cart
awsdemo.tv	✔	Available	\$32.00 Add to cart
awsdemodesign.com	✔	Available	\$12.00 Add to cart
awsdemodesign.net	✔	Available	\$11.00 Add to cart
awsdemogroup.com	✔	Available	\$12.00 Add to cart
awsdemogroup.net	✔	Available	\$11.00 Add to cart

Shopping cart


- 1: Domain Search
- 2: Contact Details**
- 3: Verify & Purchase

Contact Details for Your 1 Domain

Enter the details for your Registrant, Administrative and Technical contacts below. All fields are required unless specified otherwise. [Learn more.](#)


My Registrant, Administrative and Technical Contacts are all the same: Yes No

Registrant Contact

Contact Type  Person

First Name

Last Name

Organization  Not applicable

Email

Phone + -

Enter country calling code and phone number

Address 1

Street address, P.O. box

Address 2


Apt, suite, unit, building, floor, etc.

Country

State

City

Postal/Zip Code

Privacy Protection  When the contact type is Person:

- Privacy protection hides **some** contact details for .mobi domains.

Shopping cart

One-time fees

awsdemo.mobi
Register for year \$12.00

SUBTOTAL \$12.00

Monthly Fees for DNS Management

[View pricing details](#) for Route 53 queries and for the hosted zone that we create for each new domain.

Dashboard

Hosted zones

Health checks

Traffic flow

Traffic policies

Policy records

Domains

Registered domains

Pending requests

Resolver


VPCs

Inbound endpoints

Outbound endpoints

Rules

Create Hosted Zone Go to Record Sets Delete Hosted Zone



Amazon Route 53 is an authoritative Domain Name System (DNS) service. DNS is the system that translates human-readable domain names (example.com) into IP addresses (192.0.2.0). With authoritative name servers in data centers all over the world, Route 53 is reliable, scalable, and fast.

If you already have a domain name, such as example.com, Route 53 can tell the Domain Name System (DNS) where on the Internet to find web servers, mail servers, and other resources for your domain.
[Learn More](#)

Create Hosted Zone

Route 53 documentation and support
[Getting started guide](#) | [Route 53 documentation](#)

DNS is the system that translates human-readable domain names (example.com) into IP addresses (192.0.2.8).

Dashboard

Hosted zones

Health checks

Traffic flow

Traffic policies

Policy records

Domains

Registered domains

Pending requests

Resolver

VPCs

Inbound endpoints

Outbound endpoints

Rules

Create Hosted Zone Go to Record Sets Delete Hosted Zone

Search all fields All Types

<< No Hosted Zones to display >>

Domain Name	Type	Record Set Count	Comment	Hosted Zone ID
You have no hosted zones				

Create Hosted Zone

A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

Domain Name:

Comment:

Type:

A public hosted zone determines how traffic is routed on the Internet.

Create

Dashboard

Hosted zones

Health checks

Traffic flow

Traffic policies

Policy records

Domains

Registered domains

Pending requests

Resolver

VPCs

Inbound endpoints

Outbound endpoints

Rules

Back to Hosted Zones Create Record Set Import Zone File Delete Record Set Test Record Set

Record Set Name X Any Type Aliases Only Weighted

Only

Displaying 1 to 2 out of 2 Record Sets

Name	Type	Value	Evaluate Target
<input type="checkbox"/> aws.demo.com.	NS	ns-1533.awsdns-63.org. ns-107.awsdns-13.com. ns-1691.awsdns-19.co.uk. ns-606.awsdns-11.net.	-
<input type="checkbox"/> aws.demo.com.	SOA	ns-1533.awsdns-63.org. awsdns-hostmaster.amazon.com.	-

To get started, click Create Record Set button or click an existing record set.

Dashboard

Hosted zones

Health checks

Traffic flow

Traffic policies

Policy records

Domains

Registered domains

Pending requests

Resolver

VPCs

Inbound endpoints

Outbound endpoints

Rules

Back to Hosted Zones Create Record Set Import Zone File Delete Record Set Test Record Set

Record Set Name X Any Type Aliases Only Weighted

Only

Displaying 1 to 2 out of 2 Record Sets

Name	Type	Value	Evaluate Target
<input type="checkbox"/> aws.demo.com.	NS	ns-1533.awsdns-63.org. ns-107.awsdns-13.com. ns-1691.awsdns-19.co.uk. ns-606.awsdns-11.net.	-
<input type="checkbox"/> aws.demo.com.	SOA	ns-1533.awsdns-63.org. awsdns-hostmaster.amazon.com.	-

Create Record Set

Name: test .aws.demo.com.

Type: A - IPv4 address

Alias: Yes No

TTL (Seconds): 300 1m 5m 1h 1d

Value: 1.2.3.4

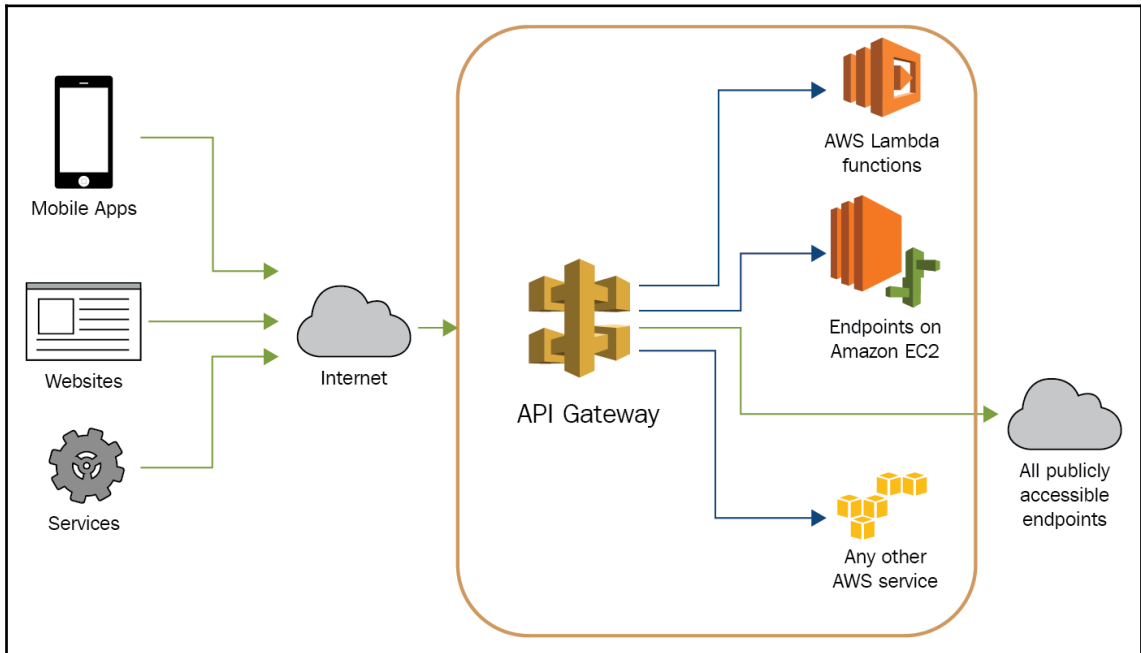
IPv4 address. Enter multiple addresses on separate lines.
Example:
192.0.2.235
198.51.100.234

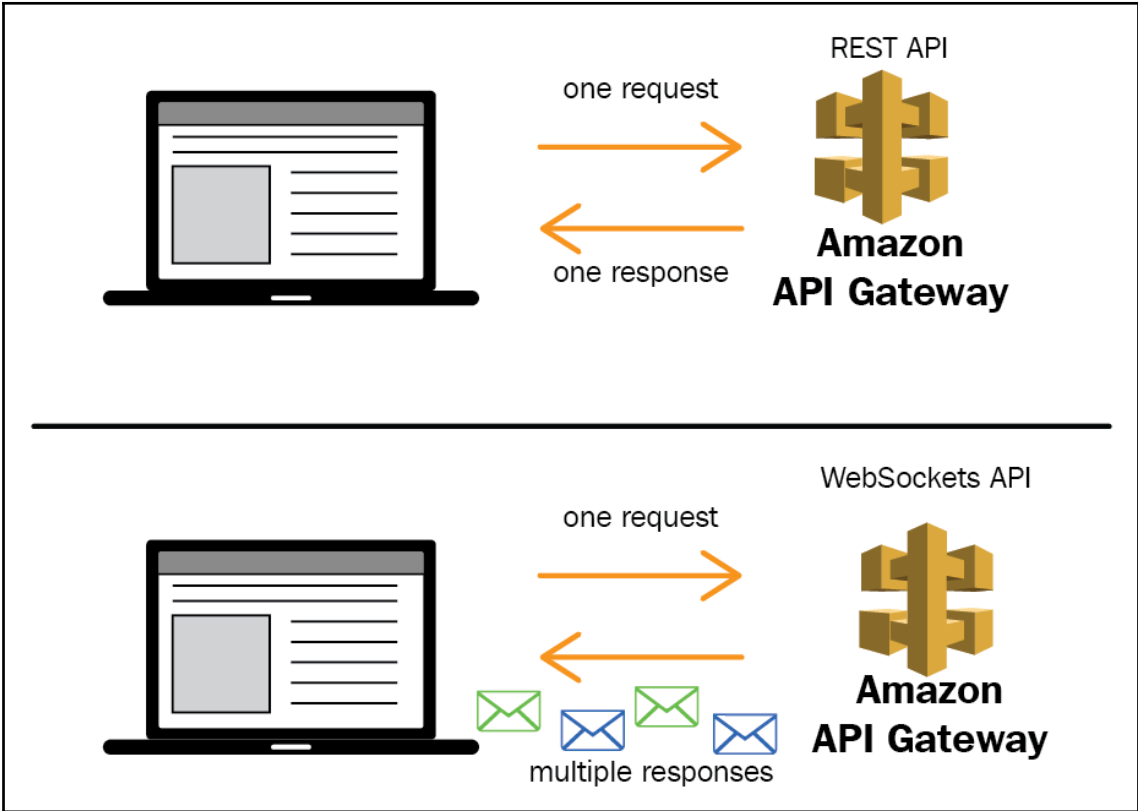
Routing Policy: Simple

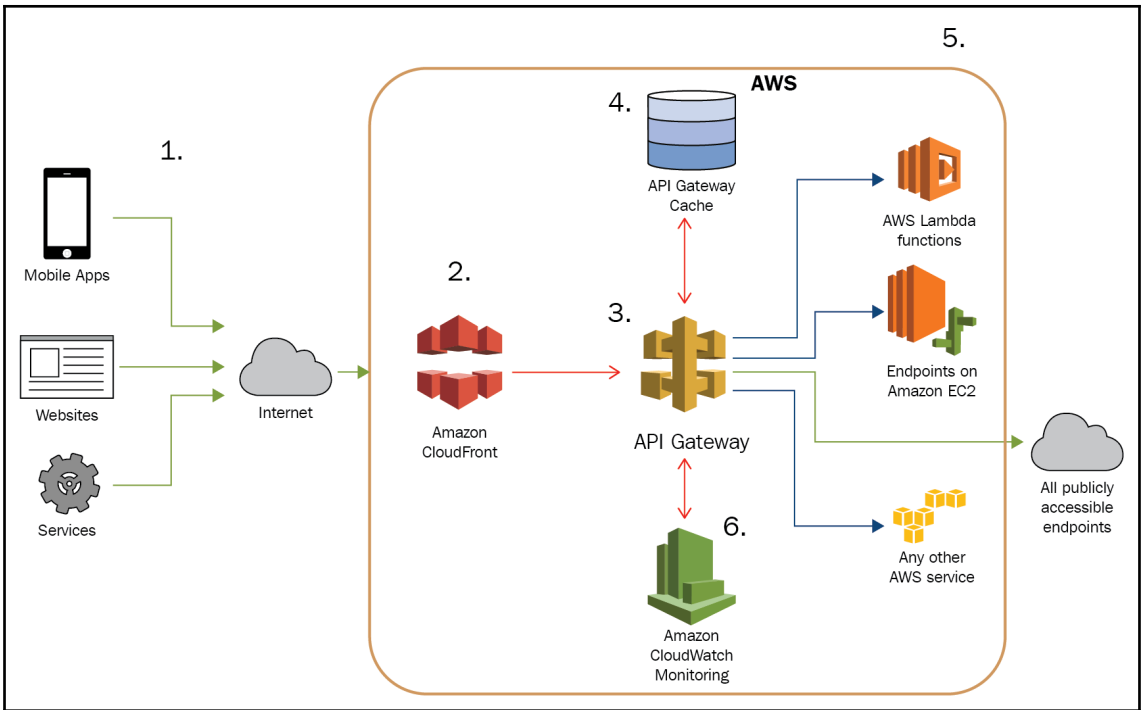
Route 53 responds to queries based only on the values in this record. [Learn More](#)

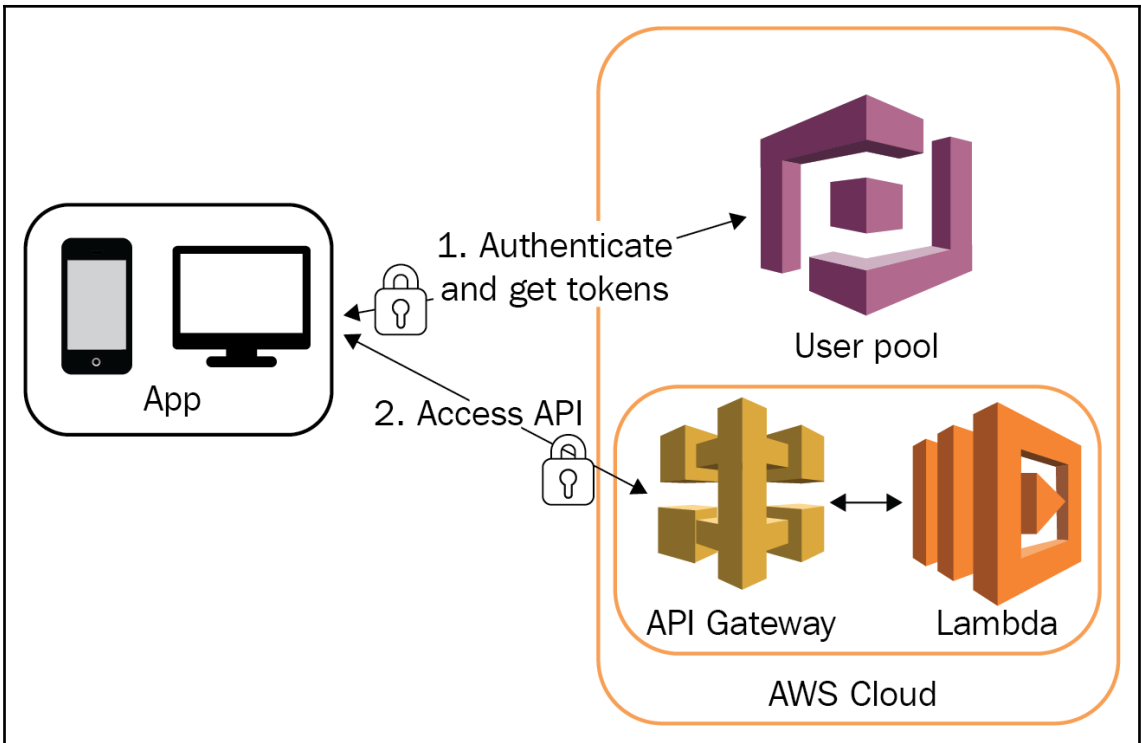
Create

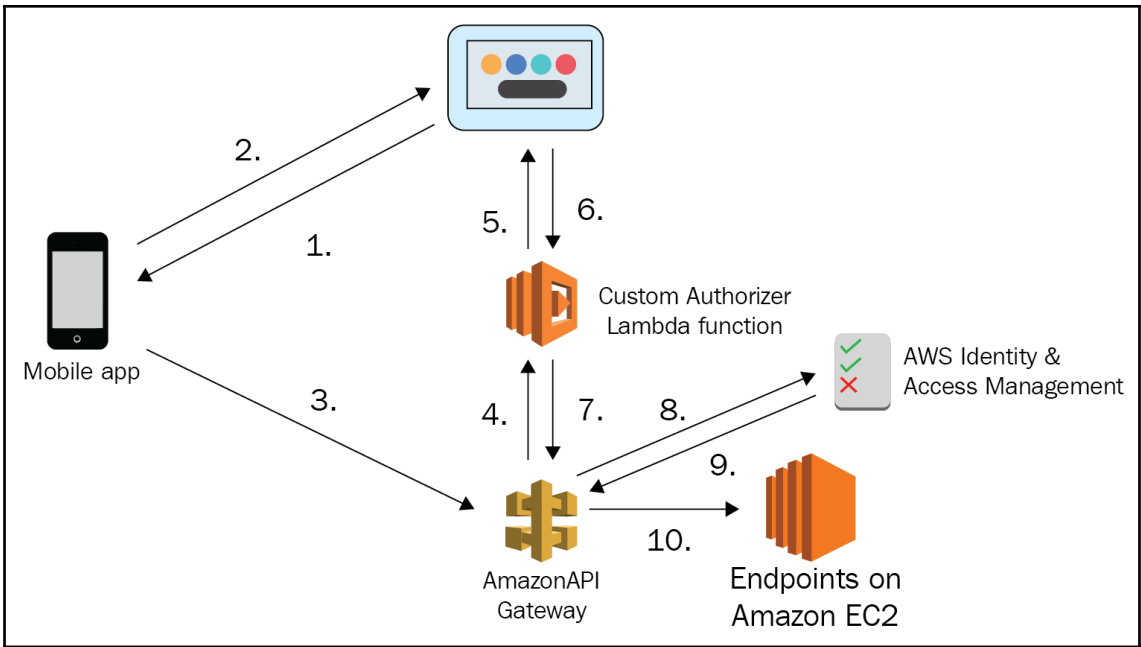
Chapter 8: Managing and Securing API Gateway











Premium user



API key X



API key Y

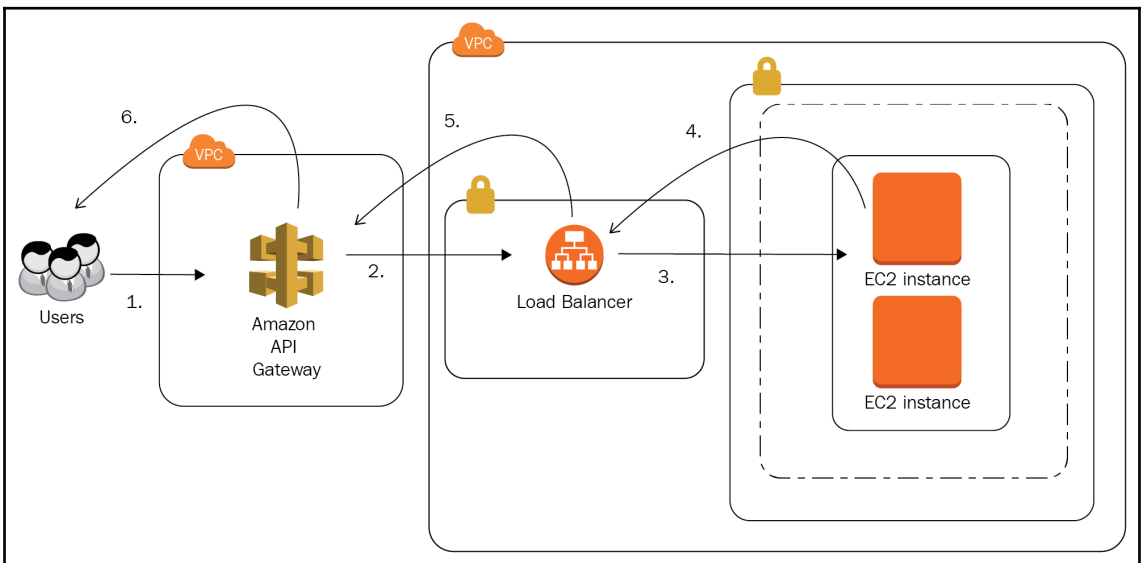


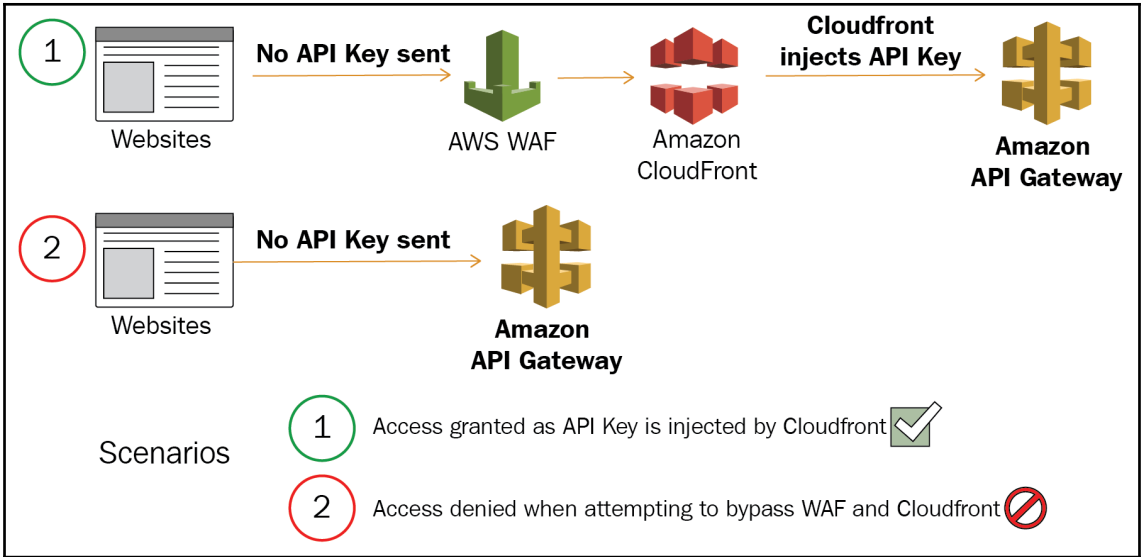
Amazon API Gateway



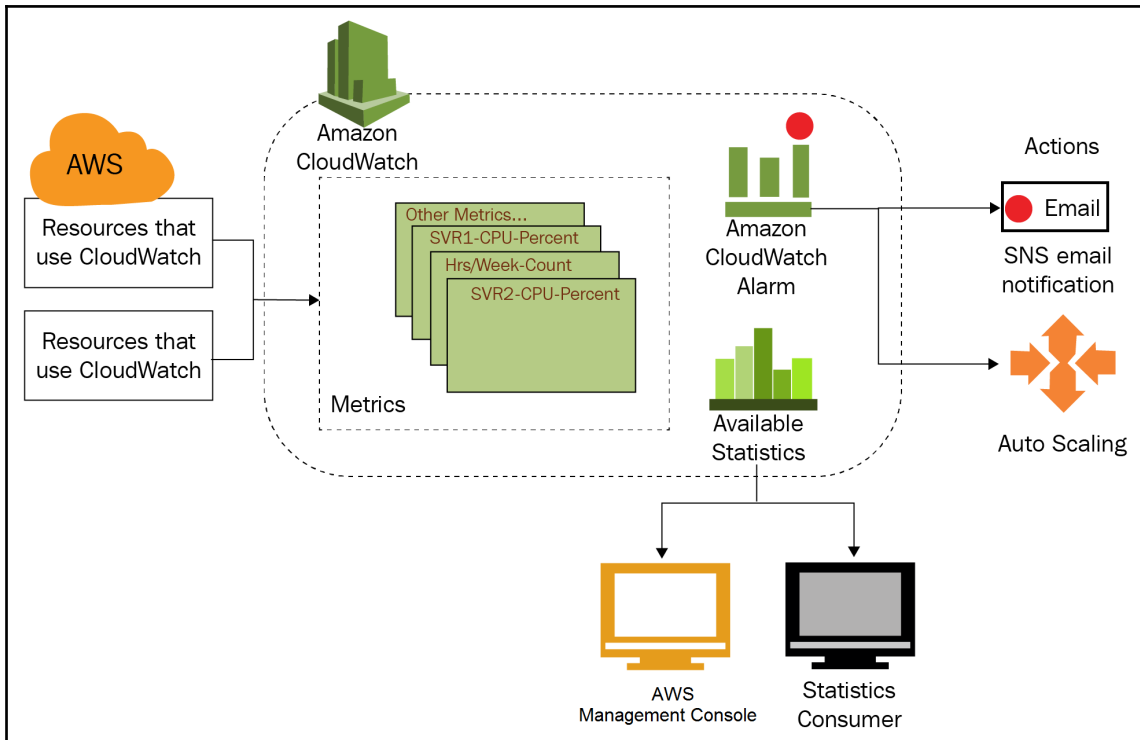
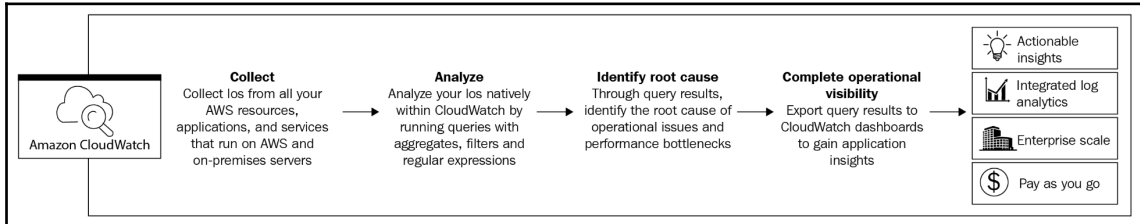
Lambda

Standard user





Chapter 9: Monitoring and Troubleshooting Networks in AWS



CloudWatch: Overview

Time range 1h 3h 12h 1d 3d 1w custom -

Actions [Refresh]

Alarms by Services

Services	Alarm	Insufficient	OK
API Gateway	-	-	-
Application ELB	-	-	-
EC2	-	-	-
Elastic Block Store	-	-	-
S3	-	-	-

Recent alarms

Recent alarms will appear here. Learn more about CloudWatch Alarms.

Default dashboard

Cross service dashboard

Application ELB [View Application ELB dashboard](#)

No alarms configured

Request Count Sum

HTTP 5XX Count

CloudWatch Dashboards

Alarms

ALARM 0

INSUFFICIENT 0

OK 0

Billing

Events

Rules

Event Buses

Logs

Insights

Metrics

Favorites

+ Add a dashboard

Untitled graph

1h 3h 12h 1d 3d 1w custom -

Line

Actions [Refresh] [Info]

Your CloudWatch graph is empty. Select some metrics to appear here.

All metrics Graphed metrics Graph options Source

Search for any metric, dimension or resource id

Graph search

116 Metrics

ApiGateway 16 Metrics	ApplicationELB 42 Metrics	EBS 18 Metrics	EC2 32 Metrics
S3 8 Metrics			

CloudWatch > Log Groups

Filter: Log Group Name Prefix

Log Groups	Insights	Expire Events After	Metric Filters	Subscriptions
/aws/lambda/ECSSlisterner	Explore	Never Expire	0 filters	None
/aws/rds/cluster/markocloud/error	Explore	Never Expire	0 filters	None
RDSOSMetrics	Explore	1 month (30 days)	0 filters	None

CloudWatch > /aws/lambda/ECSSlisterner

2018-12-01 (00:00:00) - 2019-03-26 (23:59:59)

fileLog @timestamp, @message
| sort @timestamp desc
| limit 20

Run query Actions Sample queries Have feedback? Email us

Logs Visualization

Distribution of log events over time

0 records matched | 385 records (246.0 kB) scanned in 3.0s @ 127 records/s (81.7 kB/s)

#	@timestamp	@message
1	2018-12-11T11:26:33.882-05:00	REPORT RequestId: 8617298d-f061-11e8-9959-85c7728b0242 Duration...
2	2018-12-11T11:26:33.882-05:00	END RequestId: 8617298d-f061-11e8-9959-85c7728b0242
3	2018-12-11T11:26:33.881-05:00	{"account": "86617724378", "region": "us-east-2", "detail": {"l...
4	2018-12-11T11:26:33.881-05:00	Here is the event:
5	2018-12-11T11:26:33.880-05:00	START RequestId: 8617298d-f061-11e8-9959-85c7728b0242 Version: SLATEST...
6	2018-12-11T11:26:33.697-05:00	REPORT RequestId: 85e8c6bd-f061-11e8-9186-3018e8d170b2 Duration: 0.53...
7	2018-12-11T11:26:33.697-05:00	END RequestId: 85e8c6bd-f061-11e8-9186-3018e8d170b2
8	2018-12-11T11:26:33.696-05:00	{"account": "86617724378", "region": "us-east-2", "detail": "...
9	2018-12-11T11:26:33.696-05:00	Here is the event:
10	2018-12-11T11:26:33.694-05:00	START RequestId: 85e8c6bd-f061-11e8-9186-3018e8d170b2 Version: SLATEST...
11	2018-12-11T11:26:27.736-05:00	END RequestId: 826fa5e9-f061-11e8-8abd-2590f4f17a07
12	2018-12-11T11:26:27.736-05:00	REPORT RequestId: 826fa5e9-f061-11e8-8abd-2590f4f17a07 Duration: 0.44...
13	2018-12-11T11:26:27.735-05:00	{"account": "86617724378", "region": "us-east-2", "detail": "...

Commands: filter, stats, sort, limit, parse

Discovered fields: @logStream (100%), @message (100%), @timestamp (100%), @requestId (50%), @type (50%), @billedDuration (18%), @duration (18%), @maxMemoryUsed (18%), @memorySize (18%), account (18%), detail-type (18%), detail clusterArn (18%), detail containerInstanceArn (18%), detail updatedAt (18%), detail version (18%), id (18%), region (18%), resources.0 (18%)

CloudWatch > Alarms

Filter: All alarms

Search Alarms Hide all AutoScaling alarms

State	Name	Threshold
OK	BillingAlarm	EstimatedCharges > 50 for 1 datapoints within 6 hours

0 Alarms selected

Select an alarm above

CloudWatch

Dashboards

- markocloud

Alarms

- ALARM (0)
- INSUFFICIENT (0)
- OK (0)

Billing

Events

- Rules
- Event Buses

Logs

- Insights

Metrics

Favorites

[Add a dashboard](#)

Create Alarm Add to Dashboard Actions

Filter: All alarms Search Alarms Hide all AutoScaling alarms

State	Name	Threshold	Config Status
No records found.			

0 Alarms selected

Select an alarm above

Create new alarm

Metric

Select a metric to alarm on.

Select metric

Alarm details

Provide the details and threshold for your alarm. Use the graph to help set the appropriate threshold.

Name:

Description:

[Cancel](#) [Create Alarm](#)

Select metric ✕

Markocloud CPU usage ✎ 1h **3h** 12h 1d 3d 1w custom ▾ Line ▾ ↻ ▾

Percent

19.3
10.0
0.731

17:45 18:00 18:15 18:30 18:45 19:00 19:15 19:30 19:45 20:00 20:15

■ CPUUtilization

All metrics
Graphed metrics (1)
Graph options
Source

All > EC2 > Per-Instance Metrics 🔍 Search for any metric, dimension or resource id

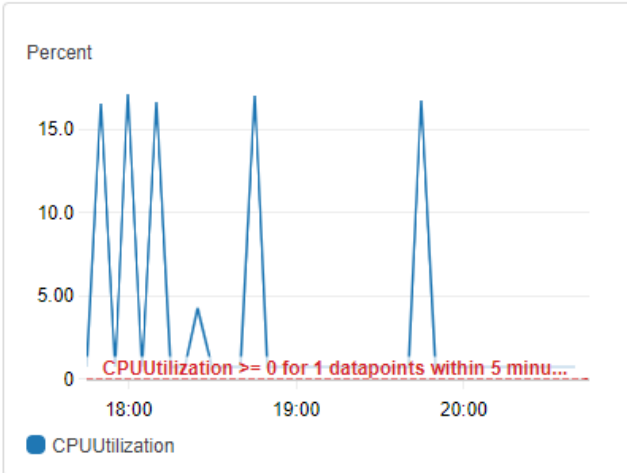
	Instance Name (32) ▲	Instanceld	Metric Name
<input checked="" type="checkbox"/>	Markocloud-env	i-0412ecc8be43bbee5	CPUUtilization
<input type="checkbox"/>	Markocloud-env	i-0412ecc8be43bbee5	NetworkPacketsIn
<input type="checkbox"/>	Markocloud-env	i-0412ecc8be43bbee5	NetworkOut

Cancel Select metric

Create new alarm

Metric [Edit](#)

This alarm will trigger when the blue line goes up to or above the red line for 1 datapoints within 5 minutes



Namespace: AWS/EC2
Metric Name: CPUUtilization
InstanceId: i-0412ecc8be43bbee5
InstanceName: Markocloud-env
Period: 5 Minutes
Statistic: Average

Alarm details

Provide the details and threshold for your alarm. Use the graph to help set the appropriate threshold.

Name:

Description:


Whenever: CPUUtilization

is:

for: out of datapoints 

Additional settings

Provide additional configuration for your alarm.

Treat missing data as: 

Actions

Define what actions are taken when your alarm changes state.

Notification Delete

Whenever this alarm: State is ALARM

Send notification to: Notifications-us-west-2 New list Enter list ⓘ

Email list: aws@markocloud.com

+ Notification + AutoScaling Action + EC2 Action

Cancel Create Alarm

CloudWatch Dashboards

Alarms

- ALARM 0
- INSUFFICIENT 0
- OK 1
- Billing
- Events
- Rules
- Event Buses
- Logs
- Insights
- Metrics
- Favorites
- Add a dashboard

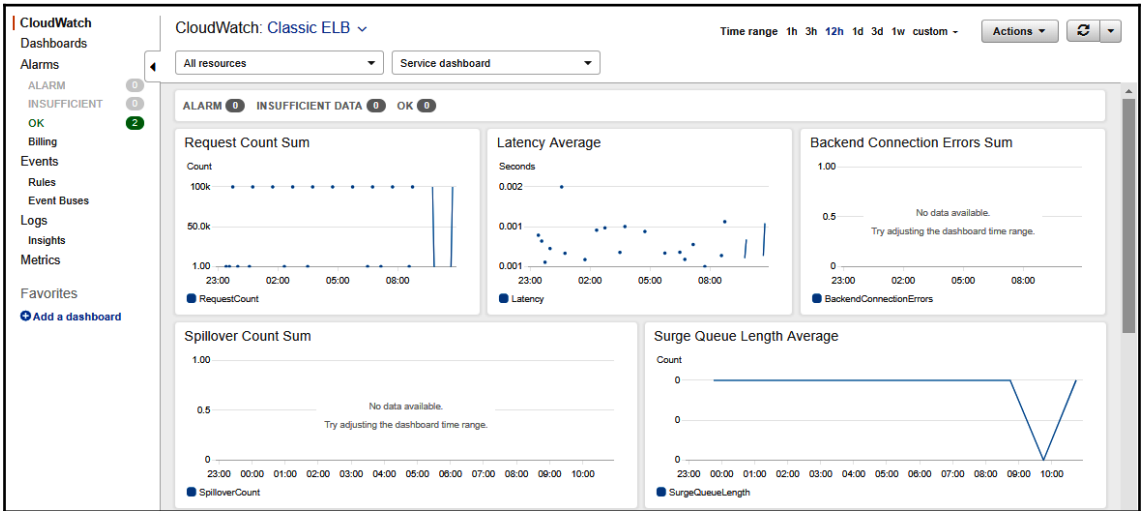
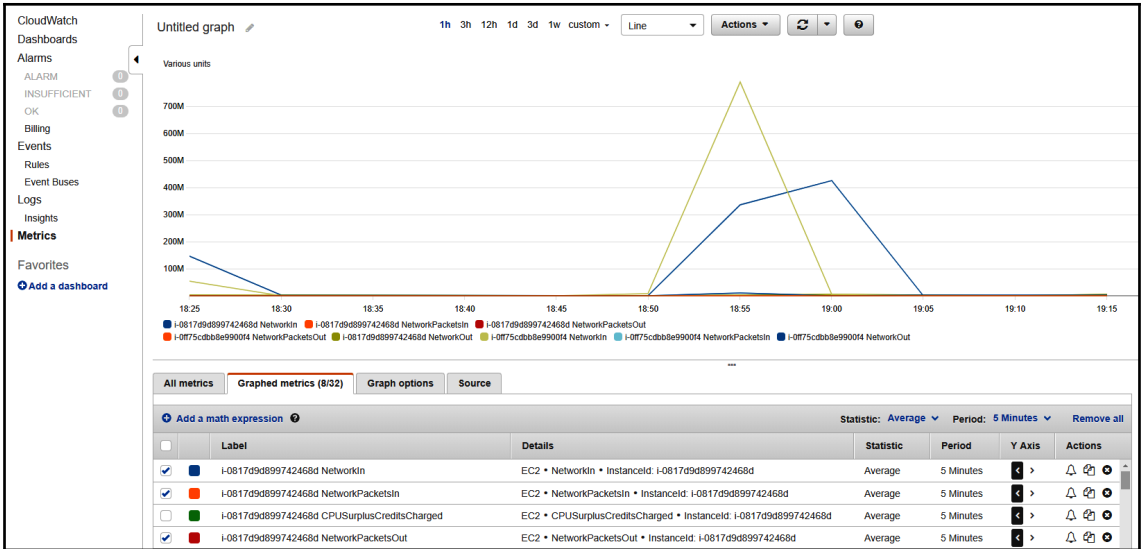
Create Alarm Add to Dashboard Actions

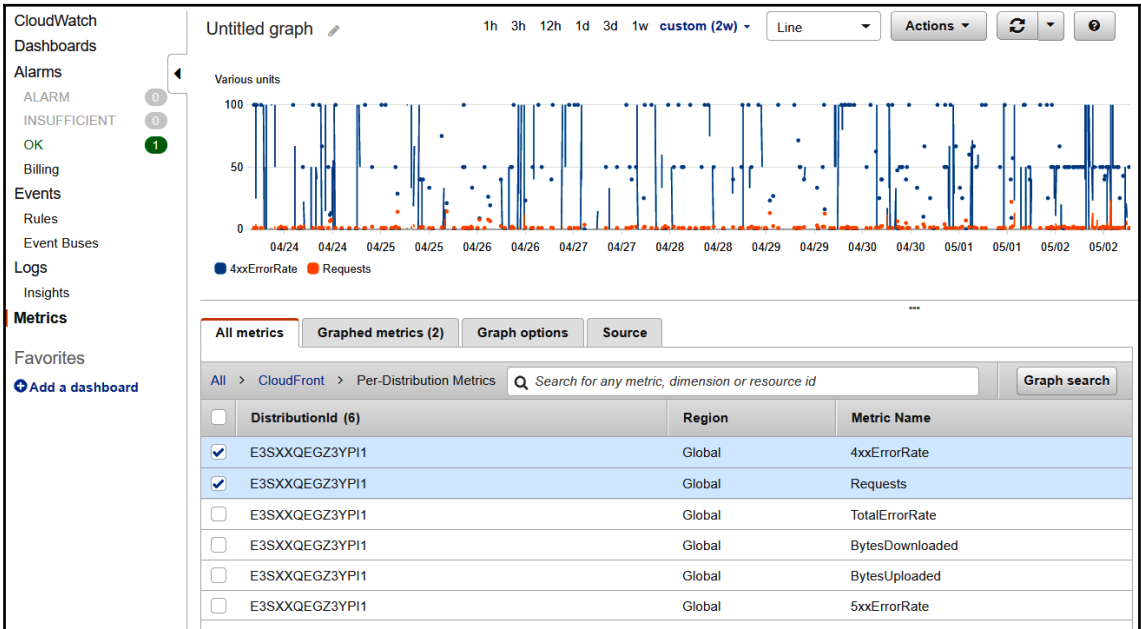
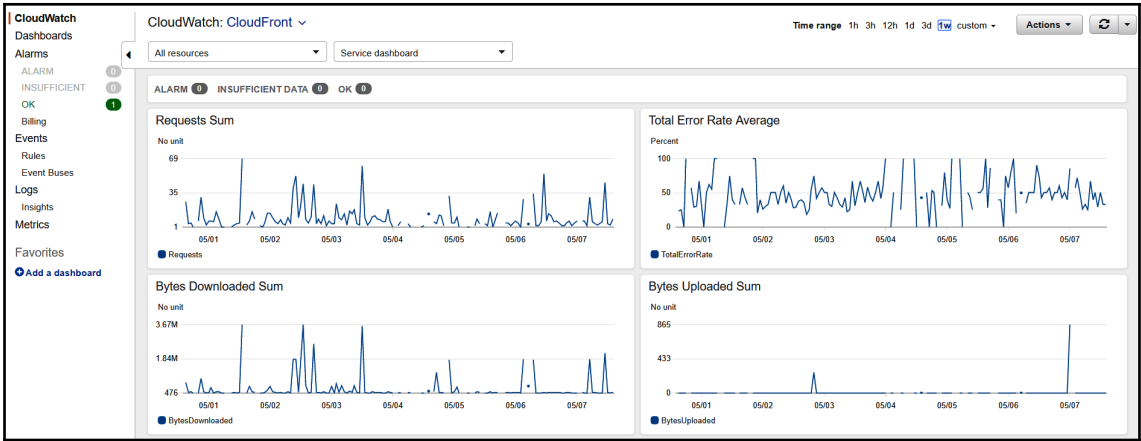
Filter: All alarms Search Alarms Hide all AutoScaling alarms 1 to 1 of 1 alarms

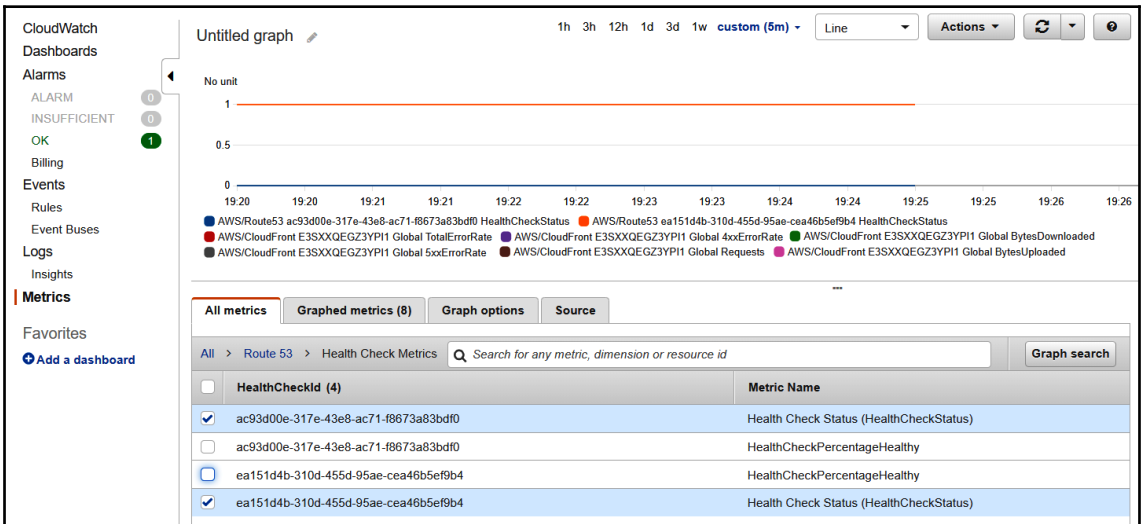
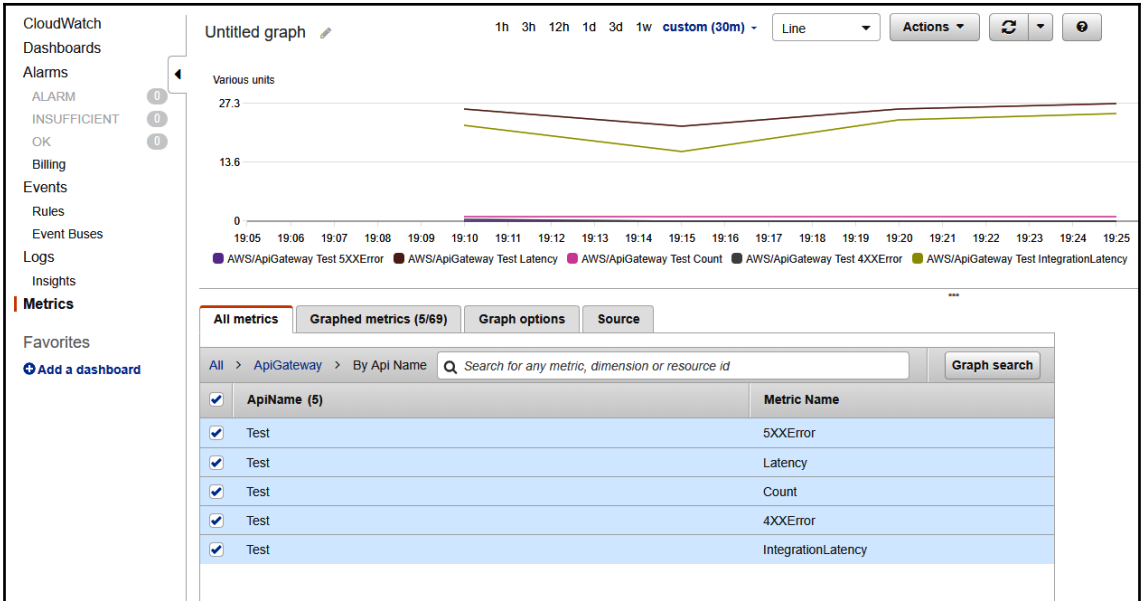
State	Name	Threshold	Config Status
OK	cpu	CPUUtilization >= 80 for 1 datapoints within 5 minutes	

0 Alarms selected

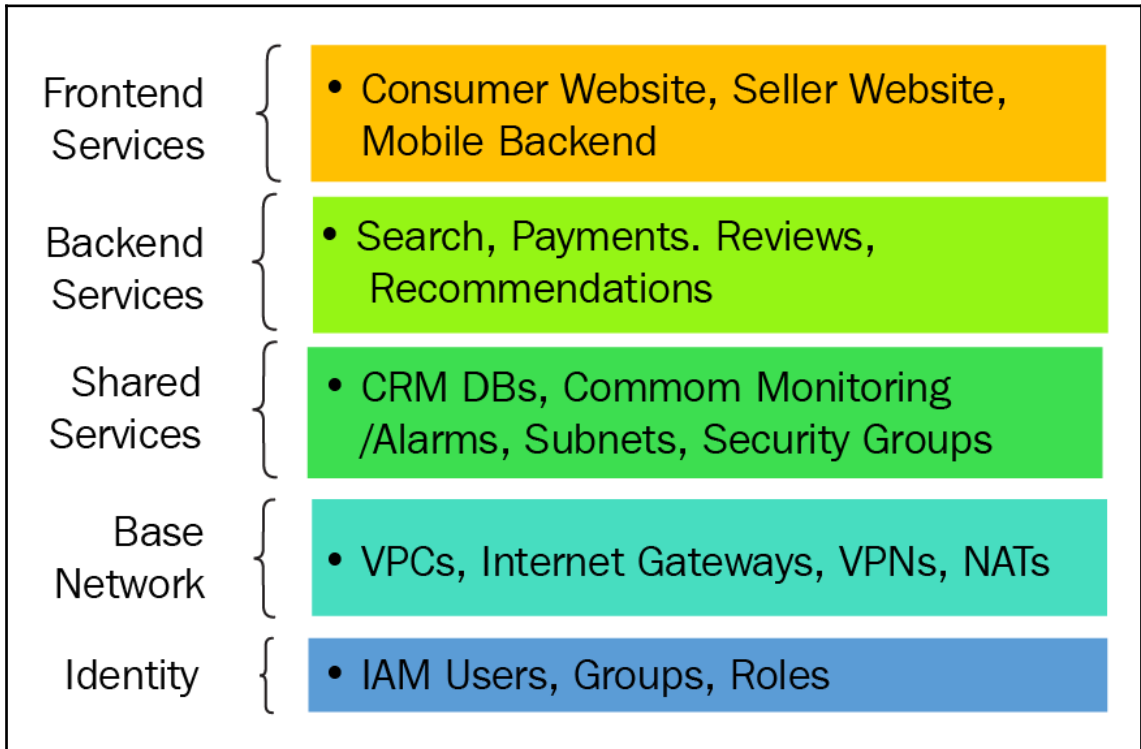
Select an alarm above

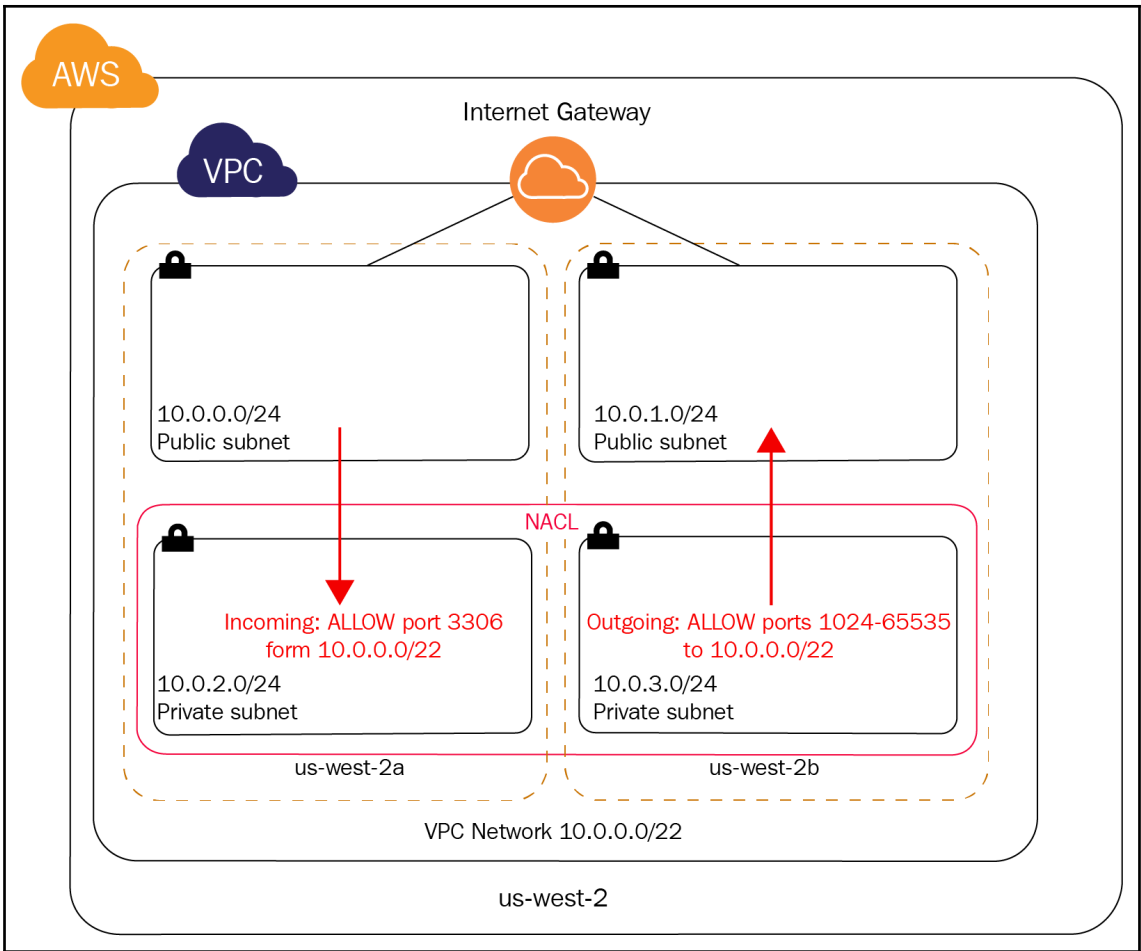






Chapter 10: Network Automation with CloudFormation





CloudFormation > Stacks > Create Stack

Create stack

Select Template

Specify Details
Options
Review

Select the template that describes the stack that you want to create. A stack is a group of related resources that you manage as a single unit.

Design a template Use AWS CloudFormation Designer to create or modify an existing template. [Learn more.](#)

Design template

Choose a template A template is a JSON/YAML-formatted text file that describes your stack's resources and their properties. [Learn more.](#)

Select a sample template

Upload a template to Amazon S3

Choose file No file chosen

Specify an Amazon S3 template URL

Cancel Next

CloudFormation > Stacks > Create Stack

Create stack

[Select Template](#)

Specify Details

Options
Review

Specify a stack name and parameter values. You can use or change the default parameter values, which are defined in the AWS CloudFormation template. [Learn more.](#)

Stack name simpleVPC

Cancel Previous Next

CloudFormation > Stacks > Create Stack

Create stack

Select Template
Specify Details
Options
Review

Options

Tags

You can specify tags (key-value pairs) for resources in your stack. You can add up to 50 unique key-value pairs for each stack. [Learn more.](#)

	Key (127 characters maximum)	Value (255 characters maximum)	
1	<input type="text"/>	<input type="text"/>	+

Permissions

You can choose an IAM role that CloudFormation uses to create, modify, or delete resources in the stack. If you don't choose a role, CloudFormation uses the permissions defined in your account. [Learn more.](#)

IAM Role:
 Enter role arn:

Rollback Triggers

Rollback triggers enable you to have AWS CloudFormation monitor the state of your application during stack creation and updating, and to rollback that operation if the application breaches the threshold of any of the alarms you've specified. [Learn more](#)

Monitoring Time: Minutes
 Minimum value of 0. Maximum value of 180.

			Available triggers remaining: 5
	Type	ARN (Amazon Resource Name)	
1	AWS::CloudWatch::Alarm	<input type="text"/>	+

Advanced

You can set additional options for your stack, like notification options and a stack policy. [Learn more.](#)

CloudFormation > Stacks > Create Stack

Create stack

- Select Template
- Specify Details
- Options
- Review**

Review

Template

Template URL	https://s3.us-east-2.amazonaws.com/cf-templates-1b8lrbele2rx2-us-east-2/2019129tGE-test.txt
Description	Example Chapter 10: A Simple VPC template with two public and two private VPCs. A NACL permits only MySQL traffic in and out of the private networks
Estimate cost	Cost

Details

Stack name: simpleVPC

Options

Tags

No tags provided

Rollback Triggers

No monitoring time provided
No rollback triggers provided

Advanced

Notification	
Termination Protection	Disabled
Timeout	none
Rollback on failure	Yes

[Quick Create Stack](#) (Create stacks similar to this one, with most details auto-populated)

Cancel Previous **Create**

CloudFormation ▾ Stacks

Create Stack ▾ Actions ▾ Design template

Filter: Active ▾ By Stack Name

	Stack Name	Created Time	Status
<input checked="" type="checkbox"/>	simpleVPC	2019-05-09 15:27:00 UTC-0400	CREATE_COMPLETE

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

- Your VPCs
- Subnets
- Route Tables
- Internet Gateways
- Egress Only Internet Gateways

Create VPC Actions ▾

Add filter

<input type="checkbox"/>	Name ▾	VPC ID	State ▾	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/>		vpc-0a9120cc64795a0d3	available	10.0.0.0/22	-

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

Security

Network ACLs

Security Groups

Create subnet Actions

purpose: demo Add filter

Name	Subnet ID	State	VPC	IPv4 CIDR	Available IPv4	IPv6 CIDR
<input checked="" type="checkbox"/>	subnet-013d321f9d280d298	available	vpc-0764fe1e15eee62b4	10.0.0.0/24	251	-
<input type="checkbox"/>	subnet-0510f5ad9922eed14	available	vpc-0764fe1e15eee62b4	10.0.3.0/24	251	-
<input type="checkbox"/>	subnet-0e6c6e0673ca24fb2	available	vpc-0764fe1e15eee62b4	10.0.1.0/24	251	-
<input type="checkbox"/>	subnet-0e7ef311528debc4d	available	vpc-0764fe1e15eee62b4	10.0.2.0/24	251	-

Subnet: subnet-013d321f9d280d298

Description Flow Logs Route Table Network ACL Tags Sharing

Edit route table association

Route Table: rtb-06690bbe4e1762261

Destination	Target
10.0.0.0/22	local
0.0.0.0/0	igw-0184fc97aec98ad0e

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

Security

Network ACLs

Security Groups

Virtual Private Network (VPN)

Create route table Actions

purpose: demo Add filter

Name	Route Table ID	Explicitly Associated with	Main	VPC ID	Owner
<input checked="" type="checkbox"/>	rtb-06690bbe4e1762261	2 subnets	No	vpc-0764fe1e15eee62b4	866117724370

Route Table: rtb-06690bbe4e1762261

Summary Routes Subnet Associations Route Propagation Tags

Edit subnet associations

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0e6c6e0673ca24fb2	10.0.1.0/24	-
subnet-013d321f9d280d298	10.0.0.0/24	-

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0e7ef311528debc4d	10.0.2.0/24	-
subnet-0510f5ad9922eed14	10.0.3.0/24	-

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Create internet gateway Actions

purpose : demo Add filter

Name	ID	State	VPC	Owner
	igw-0184fc97aec9...	attached	vpc-0764fe1e15e...	866117724370

VPC Dashboard

Filter by VPC:

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

Create network ACL Actions

purpose : demo Add filter

Name	Network ACL ID	Associated with	Default	VPC	Owner
	acl-043cc7b95427...	2 Subnets	No	vpc-01d6d626bf0c15bb7	866117724370

Network ACL: acl-043cc7b95427dbb1c

Details Inbound Rules Outbound Rules Subnet associations Tags

Edit inbound rules

View All rules

Rule #	Type	Protocol	Port Range	Source	Allow / Deny
10	MySQL/Aurora (3306)	TCP (6)	3306	10.0.0.0/22	ALLOW
*	ALL Traffic	ALL	ALL	0.0.0.0/0	DENY

VPC Dashboard Create network ACL Actions

Filter by VPC: Add filter

Name	Network ACL ID	Associated with	Default	VPC	Owner
<input checked="" type="checkbox"/>	acl-043cc7b95427...	2 Subnets	No	vpc-01d6d626bf0c15bb7	866117724370

Network ACL: acl-043cc7b95427dbb1c

Details Inbound Rules **Outbound Rules** Subnet associations Tags

Edit outbound rules

View:

Rule #	Type	Protocol	Port Range	Destination	Allow / Deny
10	Custom TCP Rule	TCP (6)	1024 - 65535	10.0.0.0/22	ALLOW
*	ALL Traffic	ALL	ALL	0.0.0.0/0	DENY

VPC Dashboard Create network ACL Actions

Filter by VPC: Add filter

Name	Network ACL ID	Associated with	Default	VPC	Owner
<input checked="" type="checkbox"/>	acl-0718081185a5...	2 Subnets	No	vpc-0764fe1e15eee62b4	866117724370

Network ACL: acl-0718081185a581e60

Details Inbound Rules Outbound Rules **Subnet associations** Tags

Edit subnet associations

Filter by tags and attributes or search by keyword

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0e7ef31152...	10.0.2.0/24	-
subnet-0510f5ad99...	10.0.3.0/24	-

CloudFormation Stacks

Create Stack Actions Design template

Filter: By Stack Name

	Stack Name	Created Time	Status	Drift Status	Description
<input checked="" type="checkbox"/>	simpleVPC	2019-05-09 15:52:01 UTC-0400	DELETE_IN_PROGRESS	NOT_CHECKED	