

Practice Lab Goals

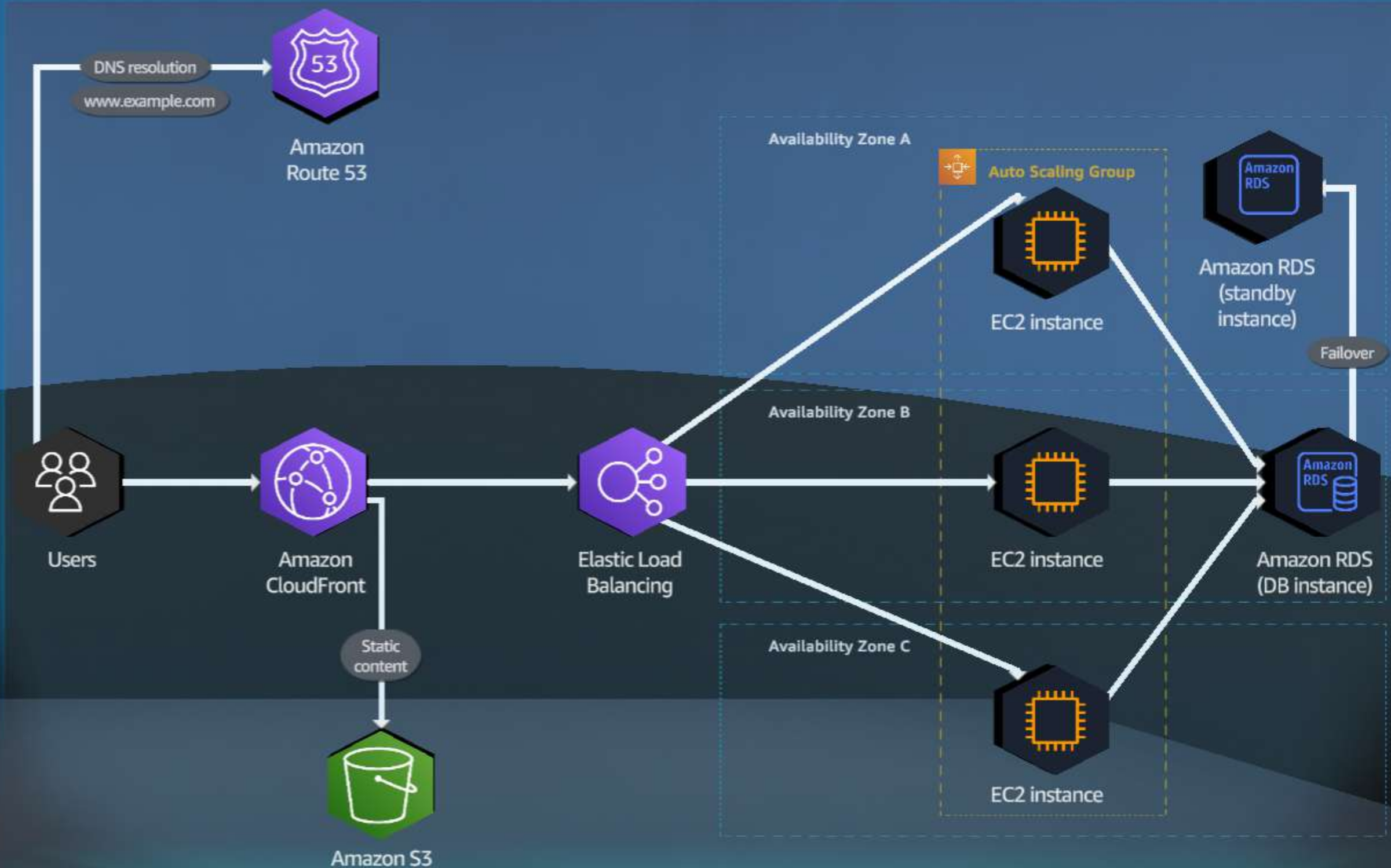
Step-by-step guided learning

- Migrate an Auto Scaling group behind an Application Load Balancer in one Availability Zone.
- Set up load balancer health monitoring for an Amazon EC2 Auto Scaling group.
- Add a second Availability Zone to the Amazon EC2 Auto Scaling group.

DIY

Build on what you have learned.

- Configure an Auto Scaling group to include a new EC2 instance in a third Availability Zone.





Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 2

1. In the top navigation bar search box, type:

ec2

2. In the search results, under Services, click EC2.

3. Go to the next step.

Concept

By placing your web servers in an Amazon EC2 Auto Scaling group behind a load balancer, you can achieve high availability for your application.

Navigate steps:
(click or use arrow keys)



Step 2/46



Services ▼

Q ec2



1. Type



AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▼

N. Virginia ▼

Support ▼

Search results for 'ec2'

Services (6)

Features (34)

Documentation (226,799)

Marketplace (1,254)

Services

See all 6 results ▶



EC2



2. Click

Virtual Servers in the Cloud



EC2 Image Builder

A managed service to automate build, customize and deploy OS images



AWS Compute Optimizer

Recommend optimal AWS Compute resources for your workloads



AWS Firewall Manager

Central management of firewall rules

Features

See all 34 results ▶

Export snapshots to EC2



Lightsail feature

Dashboard



EC2 feature

Feedback

English (US) ▼

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 3

1. In the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.
3. On the Details tab, review the current capacity details.
4. Go to the next step.

Concept

Minimum and maximum capacity define the boundaries for the number of instances allowed in the Auto Scaling group. The desired capacity is the initial capacity of the Auto Scaling group and the capacity it attempts to maintain. The Auto

Navigate steps:
(click or use arrow keys)

Auto Scaling groups (1/1) Info

Launch configurations Launch templates Actions

Create Auto Scaling group

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack-6GLhmyAPos6Eh4...	1

Auto Scaling group: TravelAgencyWebServers

Details Activity Automatic scaling Instance management Monitoring Ins

Group details Edit

Auto Scaling group name	Desired capacity	Desired capacity type	Amazon Resource Name (ARN)
TravelAgencyWebServers	1	Units (number of instances)	arn:aws:autoscaling:us-east-1:193827466412:autoScalingGroup:5754ed5c-6b39-42ed-ae98-873d27aeb172:autoScalingGroupName/TravelAgencyWebServers
Date created	Minimum capacity	Status	
Thu Nov 16 2023 16:08:07 GMT-0800 (Pacific Standard Time)	1	-	
	Maximum capacity		
	1		



Step 3/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 4

1. Click the Instance management tab.
2. Review to see that there is currently one instance in the Auto Scaling group.
3. Go to the next step.

Concept

An Auto Scaling group starts by launching enough instances to meet its desired capacity. It maintains this number of instances by performing periodic health checks on the instances in the group.

Navigate steps:
(click or use arrow keys)



Step 4/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-6GLhmyAPos6Eh4Kq9wm9X/exptools_session @ 193



Auto Scaling groups (1/1) Info



Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

< 1 >



<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack-6GLhmyAPos6Eh4...	1	-	1

Auto Scaling group: TravelAgencyWebServers

1. Click



Details

Activity

Automatic scaling

Instance management

Monitoring

Instance refresh

Instances (1)



Actions

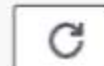
Filter instances

< 1 >



<input type="checkbox"/>	Instance ID	Lifecycle	Instanc...	Weight...	Launch...	Availab...	Health
<input type="checkbox"/>	i-07c1bcae6b4149ca...	InService	t3.micro	-	LabStack-...	us-east-1a	✓ Health

Lifecycle hooks (0) Info



Actions

Create lifecycle hook

Filter lifecycle hooks



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 5

1. Click the Details tab.
2. Scroll down to Network.
3. Go to the next step.

Concept

You must specify at least one Availability Zone when you create your Auto Scaling group. An Auto Scaling group can be configured across multiple Availability Zones for increased availability.

Navigate steps:
(click or use arrow keys)



Step 5/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90



EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info



Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

< 1 >

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack-a7fb7669-c423-435e-a90...	1	-	1

1. Click



Auto Scaling group: TravelAgencyWebServers

Details

Activity

Automatic scaling

Instance management

Monitoring

Instance refresh

Group details

Edit

Auto Scaling group name
TravelAgencyWebServers

Desired capacity
1

Desired capacity type
Units (number of instances)

Amazon Resource Name (ARN)
 arn:aws:autoscaling:us-east-1:480504058810:autoScalingGroup:2b286c09-e444-4fd0-9591-17ac064b114a:autoScalingGroupName/TravelAgencyWebServers

Date created
Thu Nov 16 2023 14:45:28 GMT-0800 (Pacific Standard Time)

Minimum capacity
1

Status
-

Maximum capacity

2. Scroll





Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 6

1. In the Network section, review to see that the Auto Scaling group is configured with a single subnet from one Availability Zone.
2. Scroll down to Load balancing.
3. Go to the next step.

Concept

You define which subnets, from one or more Availability Zones, are linked to the Auto Scaling group. This defines where your Amazon EC2 resources, linked to the Auto Scaling group, can reside.

Navigate steps:
(click or use arrow keys)



Step 6/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90



EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info



Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

< 1 >

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack-a7fb7669-c423-435e-a90...	1	-	1

Auto Scaling group: TravelAgencyWebServers

Network

Edit

1. Review

Availability Zones
us-east-1a

Subnet ID
subnet-082bdef9d40093e9a

2. Scroll

Instance type requirements

Edit

Settings not available unless you use a launch template.



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 7

1. Click Edit.
2. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 7/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90



EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info



Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

< 1 >



Name



Launch template/configuration



Instances



Status



Desired



TravelAgencyWebServers

LabStack-a7fb7669-c423-435e-a90...

1

-

1

Auto Scaling group: TravelAgencyWebServers



Load balancing

1. Click



Edit

Load balancer target groups

-

Classic Load Balancers

-

VPC Lattice integration options

Edit

VPC Lattice target groups

-



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 8

1. Click Add a new load balancer.
2. Go to the next step.

Concept

When you attach a load balancer to your Auto Scaling group, the load balancer registers with the group and acts as a single point of contact for all incoming web traffic to the group.

Navigate steps:
(click or use arrow keys)



Step 8/46



Services

Search for services, features, blogs [Option+S]



N. Virginia

AWSLabsUser-oiYBhUeuXakFaBBtUgqYef/exptools_session @ 1567-70...

Resource Groups & Tag Editor

New EC2 Experience
Tell us what you think

EC2 Dashboard
EC2 Global View
Events
Tags
Limits

Instances

Instances **New**
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances **New**
Dedicated Hosts
Scheduled Instances
Capacity Reservations

Images

AMIs **New**

Elastic Block Store

Volumes **New**

Edit TravelAgencyWebServers [Info](#)

Network

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

Availability Zones and subnets

Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.

Select Availability Zones and subnets

us-east-1a | subnet-06aac5f0db554311d
(lab/TravelAgencyVpc/PublicSubnet1)
10.0.0.0/19

[Create a subnet](#)

Load balancing - optional

Load balancers

- ☐ Application, Network or Gateway Load Balancer target groups
- ☐ Classic Load Balancers

Create and attach new load balancers

Add a new load balancer

1. Click

© 2022, Amazon Web Services, Inc. or its affiliates.

[Privacy](#)

[Terms](#)

[Cookie preferences](#)

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 9

1. For Load balancer type, choose Application Load Balancer.
2. For Load balancer scheme, choose Internet-facing.
3. Go to the next step.

Concept

Choose the Application Load Balancer to manage web-based applications that require HTTPS connectivity. The load balancer must be internet-facing if your web applications are for public access.

Navigate steps:
(click or use arrow keys)



Step 9/46



Services ▾

AWS Labs User-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▾

N. Virginia ▾

Support ▾

New EC2 Experience

[Tell us what you think](#)

EC2 Dashboard New

Events New

Tags

Limits

▼ INSTANCES

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts New

Scheduled Instances

Capacity Reservations

▼ IMAGES

AMIs

▼ ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

Edit TravelAgencyWebServers Info

Load balancing - optional

Load balancers

☐ Application, Network or Gateway Load Balancer target groups

☐ Classic Load Balancers

Create and attach new load balancers

▼ New load balancer: TravelAgencyWebServers-1

Remove

Load balancer type

Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, [visit the Load Balancing console](#).

☒ Application Load Balancer
HTTP, HTTPS

☐ Network Load Balancer
TCP, UDP, TLS

Load balancer name

Name cannot be changed after the load balancer is created.

TravelAgencyWebServers-1

Load balancer scheme

Scheme cannot be changed after the load balancer is created.

☐ Internal

2. Choose

☒ Internet-facing

Network mapping

Your new load balancer will be created using the same VPC and Availability Zone selections as your Auto Scaling group. You can select different subnets and add subnets from additional Availability Zones.

Feedback

English (US) ▾

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

[Privacy Policy](#)

[Terms of Use](#)

[Cookie preferences](#)

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 10

1. For Availability Zones and subnets, choose the three check boxes to select all three Availability Zones.

2. On each of the three dropdown menus, choose the available public subnet.

3. For Default routing (forward to), choose Create a target group.

- Keep the defaults.

4. To create the Application Load Balancer, click Update.

5. Go to the next step.

Concept

A load balancer takes requests

Navigate steps:
(click or use arrow keys)



Step 10/46



Feedback

English (US)

© 2022, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 11

1. In the left navigation pane, click Security Groups.
2. In the Security Groups section, click Create security group.
3. Go to the next step.

Concept

To customize the traffic flow between the load balancer and the web servers, you can create new security groups that define what traffic is allowed to the load balancer and what traffic is allowed to the web servers behind the load balancer.

Navigate steps:
(click or use arrow keys)



Step 11/46



Feedback

English (US) ▼

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

[Privacy Policy](#)

[Terms of Use](#)

[Cookie preferences](#)

« 2 Plan

4 DIY »

Exit

Services ▼

AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▼ N. Virginia ▼ Support ▼

Capacity Reservations

▼ Images

AMIs

▼ Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

▼ Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces New

▼ Load Balancing

Load Balancers

Target Groups New

▼ Auto Scaling

Launch Configurations

Auto Scaling Groups

Security Groups (3) [Info](#)

[Create security group](#)

1

2. Click

<input type="checkbox"/>	Name ▼	Security group ID ▼	Security group name ▼	VPC ID ▼	Desc
<input type="checkbox"/>	-	sg-02e19b520387e1839	TravelAgencyWebServer	vpc-0df044ae7537411a9	Secu
<input type="checkbox"/>	-	sg-065d6f09df30a0eb4	default	vpc-0df044ae7537411a9	defa
<input type="checkbox"/>	-	sg-a766a7bc	default	vpc-38593d45	defa



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 12

1. In the Basic details section, for Security group name, type:

TravelAgencyLoadBalancer

2. For Description, type a description that you like, such as Allow access to the travel agency load balancer from the internet.

3. For VPC, choose the VPC name that ends with lab/TravelAgencyVpc.

- To remove the existing VPC entry, you might need to click the X.

4. In the Inbound rules section,

Navigate steps:
(click or use arrow keys)



Step 12/46



Services ▾

Search for services, features [Option+S]



AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▾

N. Virginia ▾

Support ▾

EC2 > Security Groups > Create security group

Create security group [Info](#)

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name [Info](#)

TravelAgencyLoadBalancer

1. Type

Name cannot be edited after creation.

Description [Info](#)

Allow access to the Travel Agency Load Balancer from the Internet

2. Type

VPC [Info](#)

vpc-0df044ae7537411a9 (lab/TravelAgencyVpc)

3. Choose

Inbound rules [Info](#)

This security group has no inbound rules.

Add rule

4. Click

Feedback

English (US) ▾

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

[Privacy Policy](#)

[Terms of Use](#)

[Cookie preferences](#)

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 13

1. In the Inbound rules section, for Type, choose HTTP.
2. To allow all inbound traffic, for Source, in the Custom search box, choose 0.0.0.0/0.
3. Go to the next step.

Concept

For a public-facing load balancer, you specify 0.0.0.0/0 as a source to accept traffic from any address. By specifying a security group as an outbound destination, you can restrict traffic to be sent only to instances associated with the specified security group.

Navigate steps:
(click or use arrow keys)



Step 13/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services



Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90

vpc-08d37abb0f8ce1428 (lab/TravelAgencyVpc)

Inbound rules [Info](#)

Inbound rule 1

Delete

Type [Info](#)

1. Choose

HTTP

Protocol [Info](#)

TCP

Port range [Info](#)

80

Source type [Info](#)

Custom

Source [Info](#)



Description - optional [Info](#)

Add rule

CIDR blocks

0.0.0.0/0

2. Choose

0.0.0.0/8

0.0.0.0/16

0.0.0.0/24

0.0.0.0/32

::/0

::/16

Delete

Outbound rules [Info](#)

Outbound rule 1

Type [Info](#)

HTTP

TCP

80



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 14

1. In the Outbound rules section, for Type, choose HTTP.
2. For Destination, choose the TravelAgencyWebServer security group.
3. Remove the 0.0.0.0/0 destination (not shown).
4. Go to the next step.

Navigate steps:
(click or use arrow keys)



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90

Add rule



Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.



Outbound rules [Info](#)

Outbound rule 1

Delete

Type [Info](#)

1. Choose

HTTP

Protocol [Info](#)

TCP

Port range [Info](#)

80

Destination type [Info](#)

Custom

Destination [Info](#)

sg-02a0828ad04ef0249



Description - optional [Info](#)

Add rule

CIDR blocks

Security Groups

TravelAgencyWebServer | sg-02a0828ad04ef0249

2. Choose

Prefix lists

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences



Step 14/46



<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 15

1. Scroll down to the bottom of the page.
2. Click Create security group.
3. Go to the next step.

Concept

Security groups are not active unless they are assigned to a resource.

Navigate steps:
(click or use arrow keys)



Step 15/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90

Outbound rule 1

Delete

Type [Info](#)

HTTP

Protocol [Info](#)

TCP

Port range [Info](#)

80

Destination type [Info](#)

Custom

Destination [Info](#)

sg-02a0828ad04ef0249

Description - optional [Info](#)

Add rule

1. Scroll



Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags

2. Click



Cancel

Create security group



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 16

1. In the left navigation pane, click Security Groups.
2. In the Security Groups section, choose the check box to select the TravelAgencyWebServer security group.
3. On the Actions dropdown menu, choose Edit inbound rules.
4. Go to the next step.

Concept

To increase security, you can edit the security group (used by EC2 instances behind the Application Load Balancer) to allow only inbound traffic from the load balancer.

Navigate steps:
(click or use arrow keys)

aws Services Search [Option+S] N. Virgin AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90

New

- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes
 - Snapshots
 - Lifecycle Manager
- Network & Security
 - Security Groups**
 - Elastic IPs
 - Placement Groups
 - Key Pairs
 - Network Interfaces
- Load Balancing
 - Load Balancers
 - Target Groups
- Auto Scaling
 - Auto Scaling Groups

Security group (sg-00010224cc9a162e9 | TravelAgencyLoadBalancer) was created successfully

Details

Security Groups (1/4) Info

Actions Actions Export security groups to CSV Create security group

View details

Find

Edit inbound rules Edit outbound rules Manage tags Manage stale rules Copy to new security group Delete security groups

group ID	Security group name
7be53a8066e89	default
0224cc9a162e9	TravelAgencyLoadBalancer
332bdf913e216	default
sg-02a0828ad04ef0249	TravelAgencyWebServer

sg-02a0828ad04ef0249 - TravelAgencyWebServer

Details Inbound rules Outbound rules Tags

CloudShell Feedback

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences



Step 16/46



<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 17

1. In the Inbound rules section, to remove the existing rule, click Delete.

- You must delete the existing rule to modify the rule type.

2. To add a new rule, click Add rule.

3. Go to the next step.

Concept

By removing the 0.0.0.0/0 source and replacing it with a security group, you can control which resources are allowed to send traffic to instances without having to input address ranges. Only traffic from the instances associated with the s

Navigate steps:
(click or use arrow keys)



Step 17/46



Services

Search for services, features, bl [Option+S]



N. Virginia

AWSLabsUser-6YDwXgVGgM2NttqYwnu1D2/exptools_session @ 7772-09...

Resource Groups & Tag Editor

EC2 > Security Groups > sg-02b7b2ecbf36faac - TravelAgencyWebServer > Edit inbound rules

Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0b09166e81a7bc880	HTTP	TCP	80	Custom	Allow HTTP inbound
				0.0.0.0/0	

Add rule

2. Click

1. Click

Delete

Cancel

Preview changes

Save rules

Feedback

English (US)

© 2022, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 18

1. For Type, choose HTTP.
2. For Source, choose the TravelAgencyLoadBalancer security group.
3. Go to the next step.

Navigate steps:
(click or use arrow keys)



Services

Search for services, features, bl. [Option+S]



N. Virginia

AWSLabsUser-6YDwXgVGgM2NttqYwnu1D2/exptools_session @ 7772-09...

Resource Groups & Tag Editor

EC2 > Security Groups > sg-02b7b2ecbf36faac - TravelAgencyWebServer > Edit inbound rules

Edit inbound rules

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
-	HTTP	TCP	80	Custom	
<div><div>Add rule</div><div><div>1. Choose</div></div><div><div>2. Choose</div></div><div><div>Preview changes</div><div>Save rules</div></div></div>					
<div><div>Security Groups</div><div><div>TravelAgencyWeb Serve... sg-02b7b2ecbf36faac</div><div>TravelAgencyLoa dBala... sg-0301f732c40978481</div><div>default sg-0b634c294842d6cda</div></div></div>					



Step 18/46



Feedback

English (US)

© 2022, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 19

1. Click Save rules.
2. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 19/46



Feedback

English (US) ▼

© 2022, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services

Search for services, features, bl [Option+S]



N. Virginia ▼

AWSLabsUser-6YDwXgVGgM2NttqYwnu1D2/exptools_session @ 7772-09... ▼



Resource Groups & Tag Editor

EC2 > Security Groups > sg-02b7b2ecbf36faac - TravelAgencyWebServer > Edit inbound rules

Edit inbound rules

Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules

Info

Security group rule ID	Type	Protocol	Port range	Source	Description - optional	
	Info	Info	Info	Info	Info	
-	HTTP	TCP	80	Custom		Delete
				sg-0301f732c40978481		
Add rule						

Cancel

Preview changes

Save rules



1. Click



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 20

1. In the left navigation pane, click Load Balancers.
2. In the Load balancers section, click TravelAgencyWebServers-1.
3. Go to the next step.

Concept

Custom security groups are active only after you assign them to an instance. You can assign multiple security groups to an instance.

Navigate steps:
(click or use arrow keys)



Step 20/46



Services

Search

[Option+S]



N. Virginia

AWSLabsUser-8EaomFeBcrC4E35FVJkwwQ/exptools_session @ 8600-08...

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Launch Configurations

Auto Scaling Groups

EC2 > Load balancers

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.



Actions

Create load balancer



Filter by property or value



1



Name



DNS name



State



VPC ID



Availa



TravelAgencyWebServers-1



TravelAgencyWebServers-1...



Active

vpc-05d8b13d43620e69a

3 Avail

2. Click

1. Click

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 21

1. Scroll down to the Security tab.
2. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 21/46



Services

Search

[Option+S]



N. Virginia

AWSLabsUser-8EaomFeBcrC4E35FVJkwwQ/exptools_session @ 8600-08...

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Launch Configurations

Auto Scaling Groups

TravelAgencyWebServers-1



Actions

Details

arn:aws:elasticloadbalancing:us-east-1:860008896607:loadbalancer/app/TravelAgencyWebServers-1/3a2f22e4f2c820ec

Load balancer type
Application

DNS name
TravelAgencyWebServers-1-342823481.us-east-1.elb.amazonaws.com
(A Record)

Status
Active

VPC
vpc-05d8b13d43620e69a

IP address type
IPv4

Scheme
Internet-facing

Availability Zones
subnet-06c9214086a2a0e7a us-east-1a (use1-az6)
subnet-0e626c8d16c5de6d0 us-east-1c (use1-az2)
subnet-0dab53c66c5295f8b us-east-1b (use1-az1)

Hosted zone
Z35SXDOTRQ7X7K

Date created
February 7, 2023, 10:01 (UTC-05:00)

1. Scroll



Listeners

Network mapping

Security

Monitoring

Integrations

Attributes

Tags

Feedback

Language

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 22

1. On the Security tab, click Edit.
2. Go to the next step.

Concept

The security groups that you associate with your load balancer determine your rules for controlling where traffic can come from and where it can be sent.

Navigate steps:
(click or use arrow keys)



Step 22/46



Services

Search

[Option+S]



N. Virginia

AWSLabsUser-8EaomFeBcrC4E35FVJkwwQ/exptools_session @ 8600-08...

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Launch Configurations

Auto Scaling Groups

amazonaws.com
(A Record)

IP address type
IPv4

Scheme
Internet-facing

Availability Zones
subnet-06c9214086a2a0e7a us-east-1a (use1-az6)
subnet-0e626c8d16c5de6d0 us-east-1c (use1-az2)
subnet-0dab53c66c5295f8b us-east-1b (use1-az1)

Hosted zone
Z35SXDOTRQ7X7K

Date created
February 7, 2023, 10:01 (UTC-05:00)

Listeners

Network mapping

Security

Monitoring

Integrations

Attributes

Tags

1. Click



Edit

Security groups (1)

A security group is a set of firewall rules that control the traffic to your load balancer.

Security Group ID	Name	Description
sg-0c10502783c94bda0	TravelAgency...	Security Group used by the Travel Agency Web Servers

Feedback

Language

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 23

1. For Security groups, click the X icon to deselect the TravelAgencyWebServer security group.
2. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 23/46



Services

Search

[Option+S]



N. Virginia

AWSLabsUser-8EaomFeBcrC4E35FVJkwwQ/exptools_session @ 8600-08...

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Launch Configurations

Auto Scaling Groups

EC2 > Load balancers > TravelAgencyWebServers-1 > Edit security groups

Edit security groups

Details

arn:aws:elasticloadbalancing:us-east-1:860008896607:loadbalancer/app/TravelAgencyWebServers-1/3a2f22e4f2c820ec

Security groups

A security group is a set of firewall rules that control the traffic to your load balancer.

Security groups

Select up to 5 security groups



Create new security group

TravelAgencyWebServer sg-0c10502783c94bda0

VPC: vpc-05d8b13d43620e69a



1. Click

Cancel

Save changes

Feedback

Language

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 24

1. Choose TravelAgencyLoadBalancer.
2. Click Save changes.
3. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 24/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90



EC2 > Load balancers > TravelAgencyWebServers-1 > Edit security groups

Edit security groups

► Load balancer details: TravelAgencyWebServers-1

Security groups

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

Security groups

Select up to 5 security groups

Q |

- ☐ default
sg-003b7be53a8066e89 VPC: vpc-08d37abb0f8ce1428
- ☐ TravelAgencyWebServer
sg-02a0828ad04ef0249 VPC: vpc-08d37abb0f8ce1428
- ☐ TravelAgencyLoadBalancer
sg-06020224cc9a162e9 VPC: vpc-08d37abb0f8ce1428

1. Choose



2. Click



Cancel

Save changes



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 25

1. In the success alert, review the message.
2. For the Application Load Balancer, under DNS name, click the copy icon to copy the provided name.
3. Go to the next step.

Concept

To test access to your application through the load balancer, you can copy the DNS name into a browser tab (or window).

Navigate steps:
(click or use arrow keys)



Step 25/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-b3vf5SWBpJoG2EYEUIGszA/a7fb7669-c423-435e-a90



Successfully modified security groups.



1. Review



EC2 > Load balancers > TravelAgencyWebServers-1

TravelAgencyWebServers-1



Actions

Details

Load balancer type

Application

Scheme

Internet-facing

Status

Active

Hosted zone

Z35SXDOTRQ7X7K

VPC

[vpc-08d37abb0f8ce1428](#)

Availability Zones

[subnet-082bdef9d40093e9a](#)

us-east-1a (use1-az2)

[subnet-0a18779dac063a1e7](#)

us-east-1b (use1-az4)

[subnet-092dcc5ba15485091](#)

us-east-1c (use1-az6)

IP address type

IPv4

Date created

November 16, 2023, 15:03 (UTC-08:00)

Load balancer ARN

[arn:aws:elasticloadbalancing:us-east-1:480504058810:app/TravelAgencyWebServers-1/dac7f8e4b3d607b7](#)

2. Click

DNS name Info

[TravelAgencyWebServers-1-1068593208.us-east-1.elb.amazonaws.com \(A Record\)](#)

Listeners and rules

Network mapping

Security

Monitoring

Integrations

Attributes

Tags



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 26

1. In a new browser tab (or window) address bar, paste the DNS name that you just copied, and then add `http://` to the beginning and press Enter.

- The website is hosted only with HTTP.
- The final address should look similar to what is displayed in the screenshot example.

- Congratulations! You have moved the travel agency website behind an Application Load Balancer.

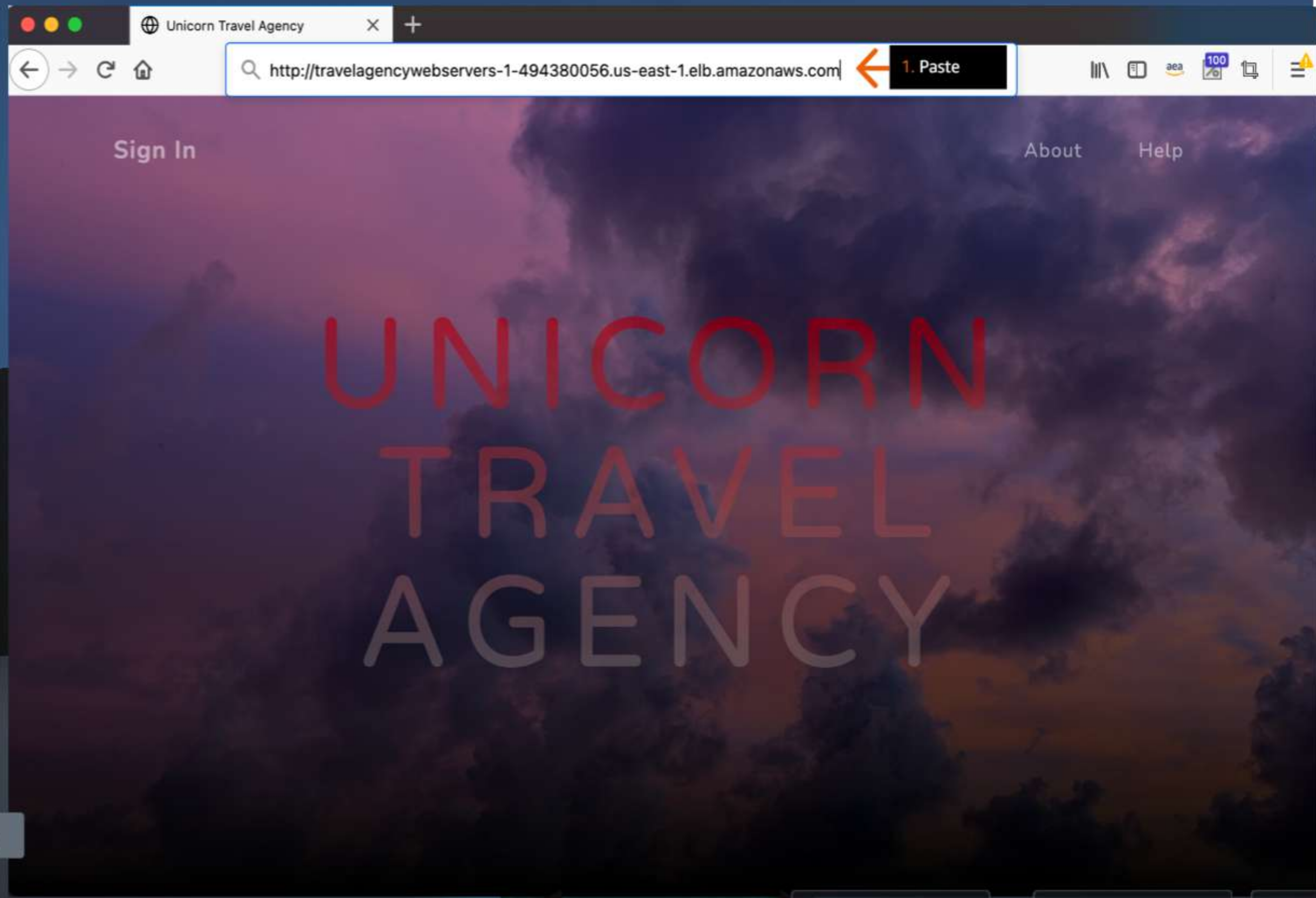
2. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 26/46



« 2 Plan

4 DIY »

Exit

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 27

1. In the same browser tab, at the end of the address that you just edited, type:

/health

and press Enter.

2. Review the short message that loads, stating that the instance is healthy.

- Keep this browser tab open for additional health checks later.

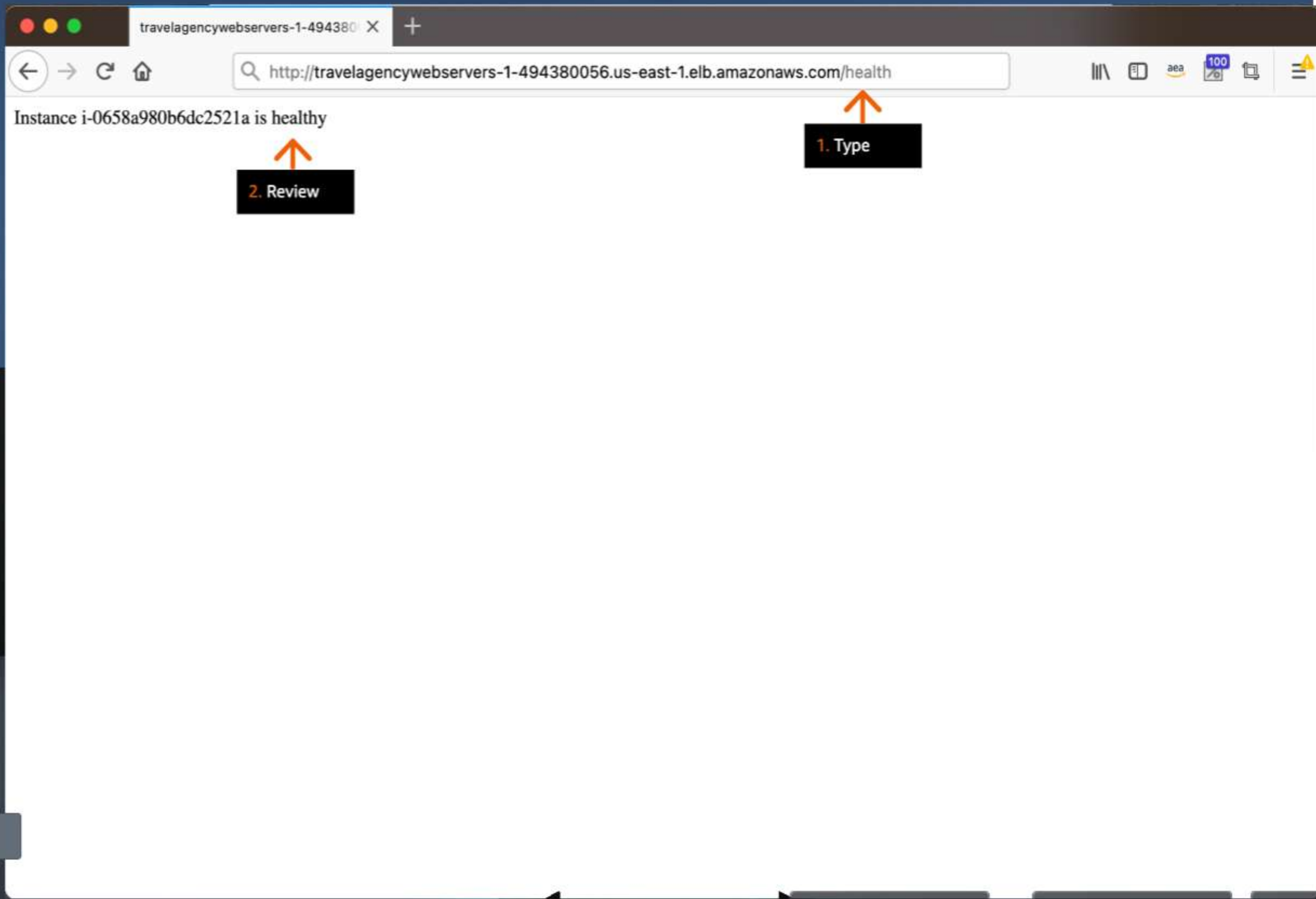
3. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 27/46



<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 28

1. In the previous browser tab, in the left navigation pane, click Target Groups.
2. In the Target groups section, choose the check box to select TravelAgencyWebServers-1.
3. Click the Health checks tab.
4. In the Health check settings section, click Edit.
5. Go to the next step.

Concept

You can modify load balancer health check settings to match your performance requirements.

Navigate steps:
(click or use arrow keys)

aws

Services ▾

Search for services, features [Option+S]

AWS Labs User-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▾

N. Virginia ▾

Support ▾

Capacity Reservations

▼ Images

AMIs

▼ Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

▼ Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces New

▼ Load Balancing

Load Balancers

Target Groups

▼ Auto Scaling

Launch Configurations

Auto Scaling Groups

EC2 > Target groups

Target groups (1/1) [info](#)

↻

Actions ▾

Create target group

Q

Search or filter target groups

< 1 >

⚙

<input checked="" type="checkbox"/>	Name ▾	ARN ▾	Port ▾	Protocol ▾	Target type
<input checked="" type="checkbox"/>	TravelAgencyWebServers-1	arn:aws:elasticloadbalancing:us-east-1:102545056910:targetgroup/TravelAgencyWebServers-1/502db9e2ac7ab5b2	80	HTTP	Instance

TravelAgencyWebServers-1

arn:aws:elasticloadbalancing:us-east-1:102545056910:targetgroup/TravelAgencyWebServers-1/502db9e2ac7ab5b2

Details

Targets

Monitoring

Health checks

Attributes

Tags

Health check settings

Protocol

HTTP

Path

/

Port

80

Unhealthy threshold

5 consecutive health check failures

Timeout

5 seconds

Interval

30 seconds

Healthy threshold

5 consecutive health check successes

Success codes

200

4. Click

Edit

Feedback

English (US) ▾

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences



Step 28/46



« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 29

1. For Health check path, type:

/health

2. Click to expand Advanced health check settings.

3. Go to the next step.

Concept

After your target is registered, it must pass one health check to be considered healthy. After each health check is completed, the load balancer node closes the connection that was established for the health check.

Navigate steps:
(click or use arrow keys)



Step 29/46



Services ▼

Search for services, features [Option+S]



AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▼

N. Virginia ▼

Support ▼

EC2 > Target groups > TravelAgencyWebServers-1 > Edit health check settings

Edit health check settings

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP ▼

Health check path

Use the default path of "/" to ping the root, or specify a custom path if preferred.

/health

1. Type

Up to 1024 characters allowed.

▶ Advanced health check settings

2. Click

Cancel

Save changes

Feedback

English (US) ▼

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 30

1. For Unhealthy threshold, type:

2

2. For Timeout, type:

2

3. For Interval, type:

5

4. Click Save changes.

5. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 30/46



Services ▼

Search for services, features [Option+S]



AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... ▼

N. Virginia ▼

Support ▼

80

1-65535

Healthy threshold

The number of consecutive health checks successes required before considering an unhealthy target healthy.

5

2-10

Unhealthy threshold

The number of consecutive health check failures required before considering a target unhealthy.

2

2-10

Timeout

The amount of time, in seconds, during which no response means a failed health check.

2

seconds

2-120

Interval

The approximate amount of time between health checks of an individual target

5

seconds

5-300

Success codes

The HTTP codes to use when checking for a successful response from a target. You can specify multiple values (for example, "200,202") or a range of values (for example, "200-299").

200

Cancel

4. Click

Save changes

Feedback

English (US) ▼

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 31

1. In the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.

- The bottom window might be empty if the check box is already chosen. If so, to refresh the page so that the bottom window appears, clear the check box to deselect it, and then choose the check box again.

3. Scroll down to Network.
4. Click Edit.
5. Go to the next step.

Navigate steps:
(click or use arrow keys)



Step 31/46



Feedback English (US) ▼

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit

aws Services ▼ Search for services, features [Option+S] AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... N. Virginia Support ▼

Capacity Reservations

▼ IMAGES

AMIs

▼ ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

▼ NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

▼ LOAD BALANCING

Load Balancers

Target Groups New

▼ AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Refresh] [Edit] [Delete] **Create an Auto Scaling group**

Search your Auto Scaling groups < 1 > [Settings]

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack-ndycmm-nzXNwnr1LTqPe...	1	-

3. Scroll

4. Click [Edit]

2. Choose

1. Click

Network

Availability Zones: us-east-1a Subnet ID: subnet-0c0b8701db2bbf3a7

Load balancing [Edit]

Load balancer target groups: TravelAgencyWebServers-1 Classic Load Balancers: -

Health checks [Edit]



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 32

1. For Subnets, choose the lab/TravelAgencyVpc/PrivateSubnet1 subnet.

- This should be the only subnet selected.

2. For any other subnet that might be selected, click to deselect it.

3. Click Update.

4. Go to the next step.

Concept

If you add or remove a subnet, you are defining where the Auto Scaling group resources can reside.

Navigate steps:
(click or use arrow keys)



Step 32/46



Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Services

Search for services, features [Option+S]



AWS Labs User - nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45...

N. Virginia

Support

Capacity Reservations

IMAGES

AMIs

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups

AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups > TravelAgencyWebServers

Edit TravelAgencyWebServers

Network

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

Subnets

Select subnets



vpc-0df044ae7537411a9 (lab/TravelAgencyVpc)

us-east-1a | subnet-0c0b8701db2bbf3a7
(lab/TravelAgencyVpc/PublicSubnet1)
10.0.0.0/19

us-east-1a | subnet-0f0567f7ddab9120e
(lab/TravelAgencyVpc/PrivateSubnet1)
10.0.96.0/19

us-east-1b | subnet-067bbfe6b12b8db0f
(lab/TravelAgencyVpc/PrivateSubnet2)
10.0.128.0/19

us-east-1b | subnet-016d94c2f22cdde06
(lab/TravelAgencyVpc/PublicSubnet2)
10.0.32.0/19

us-east-1c | subnet-05c10134bfd23f5dc



2. Deselect

1. Choose

Cancel

Update

3. Click



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 33

1. In the left navigation pane, click Instances.
2. In the Instances section, choose the check box to select lab/TravelAgencyWebServers.
3. Click the Networking tab.
4. Under Subnet ID, review to see that the old instance is in the subnet, lab/TravelAgencyVpc/PublicSubnet1.
5. At the top of the page, click Instance state to expand the dropdown menu.
6. Choose Terminate instance.
7. In the pop-up box (not shown), click Terminate.
8. Go to the next step.

Concept

Changing the subnet will not a

Navigate steps:
(click or use arrow keys)

aws Services Search [Option+S] N. Virgin AWSLabsUser-6GLhmyAPos6Eh4Kq9wm9X/exptools_session @ 193

EC2 Dashboard X

EC2 Global View

Events

Instances 1. Click

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Instances (1/1) Info

Find Instance by attribute or tag (case-sensitive)

5. Click

Instance state

Stop instance

Start instance

Reboot instance

Hibernate instance

6. Choose

Terminate instance

Instance: i-07c1bcae6b4149caf (lab/TravelAgencyWebServers)

Details Security Networking Storage Status checks Monitoring Tags

3. Click

Networking details

Public IPv4 address 3.88.101.108 |open address

Private IPv4 addresses 10.0.19.188

VPC ID vpc-04ce071b5245be9ff (lab/TravelAgencyVpc)

Public IPv4 DNS ec2-3-88-101-108.compute-1.amazonaws.com |open address

Private IP DNS name (IPv4 only) ip-10-0-19-188.ec2.internal

Subnet ID subnet-0ede50ff932332298 (lab/TravelAgencyVpc/PublicSubnet1)

4. Review

IPV6 addresses

Carrier IP addresses (ephemeral)

Outpost ID

CloudShell Feedback

© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Step 33/46



<< 2 Plan

4 DIY >>

Exit

3Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab FilesSteps

Highly Available Web Applications

Step 34

1. After a few minutes, in the Instances section, click the refresh icon.

- The Instances list should show that a new instance was created.

2. Choose the check box to select the new instance.

3. Click the Networking tab.

4. Under Subnet ID, review to see that the new instance is in the subnet, lab/TravelAgencyVpc/PrivateSubnet1.

5. Under Instance ID, review the new instance's unique ID.

6. Go to the next step.

awsServicesSearch[Option+S]

N. VirginAWS Labs User-6GLhmyAPos6Eh4Kq9wm9X/exptools_session @ 193

EC2 Dashboard

EC2 Global View

Events

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Instances (1)

1. Click

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status
<input type="checkbox"/>	lab/TravelAgencyWebServers	i-07c1bcae6b4149caf	Terminated	t3.micro	-
<input checked="" type="checkbox"/>	lab/TravelAgencyWebServers	i-0f49d791e2bc626e3	Running	t3.micro	Initi...

2. Choose

3. Click

5. Review

Instance: i-0f49d791e2bc626e3 (lab/TravelAgencyWebServers)

Details

Security

Networking

Storage

Status checks

Monitoring

Tags

Networking details

Public IPv4 address

Private IPv4 addresses

VPC ID

Public IPv4 DNS

Private IP DNS name (IPv4 only)

Subnet ID

IPV6 addresses

Availability zone

Carrier IP addresses (ephemeral)

Outpost ID

4. Review

CloudShellFeedback

© 2023, Amazon Web Services, Inc. or its affiliates.

PrivacyTermsCookie preferences

2Plan

4DIY

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 35

1. In the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.

- The bottom window might be empty if the check box is already chosen. If so, to refresh the page so that the bottom window appears, clear the check box to deselect it, and then choose the check box again.

3. Click on the Activity tab.
4. Scroll down to Activity history.
5. Go to the next step.

Navigate steps:
(click or use arrow keys)

aws Services Search for services, featur [Option+S] AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... N. Virginia Support

Capacity Reservations

▼ IMAGES

AMIs

▼ ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

▼ NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

▼ LOAD BALANCING

Load Balancers

Target Groups New

▼ AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Refresh] [Edit] [Delete] [Create an Auto Scaling group]

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack- -nzXNwnr1LTqPe...	2	-

Details Activity Automatic scaling Instance management Monitoring Instance refresh

Activity history (0) [Refresh] [Actions] [Create notification]

Filter notifications

Send to On instance action

No notifications are currently specified

Create notification

Activity history (4) [Refresh]



Step 35/46



© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 36

1. In the Activity history section, review to see that the old instance was terminated.
2. Review to see that the Auto Scaling group responded by creating a new instance.
3. Go to the next step.

Concept

Each item in Activity history lists an Auto Scaling action and the cause of the action.

Navigate steps:
(click or use arrow keys)

aws

Services

Search for services, features [Option+S]

AWS Labs User-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45...

N. Virginia

Support

Capacity Reservations

IMAGES

AMIs

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups New

AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1)

Search your Auto Scaling groups

☒

Name

Launch template/configuration

Instances

Status

☒

TravelAgencyWebServers

LabStack-...-nzXNwnr1LTqPe...

2

-

Activity history (4)

Filter activity history

Status

Description

Cause

Successful

Launching a new EC2 instance: i-0f5725538db2cc8f8

At 2021-07-06T21:54:27Z an instance was started in response to a difference between actual capacity, increasing the capacity from 0 to 1.

WaitingForELBConnectionDraining

Terminating EC2 instance: i-03bdcbl...
Waiting For ELB Connection Draining.

At 2021-07-06T21:54:07Z an instance was taken out of service in response to an EC2 instance indicating it has been terminated or stopped.

Updating load balancers/target groups: Successful. Status: ...

Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

2. Review

1. Review

<< 2 Plan

4 DIY >>

Exit

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 37

1. In the other browser tab, to refresh the health check page, click the refresh icon.
2. Review the message.

- In the message, Instance i-XXXXXX is healthy, the Instance ID value should be the value of the new instance.

3. Go to the next step.

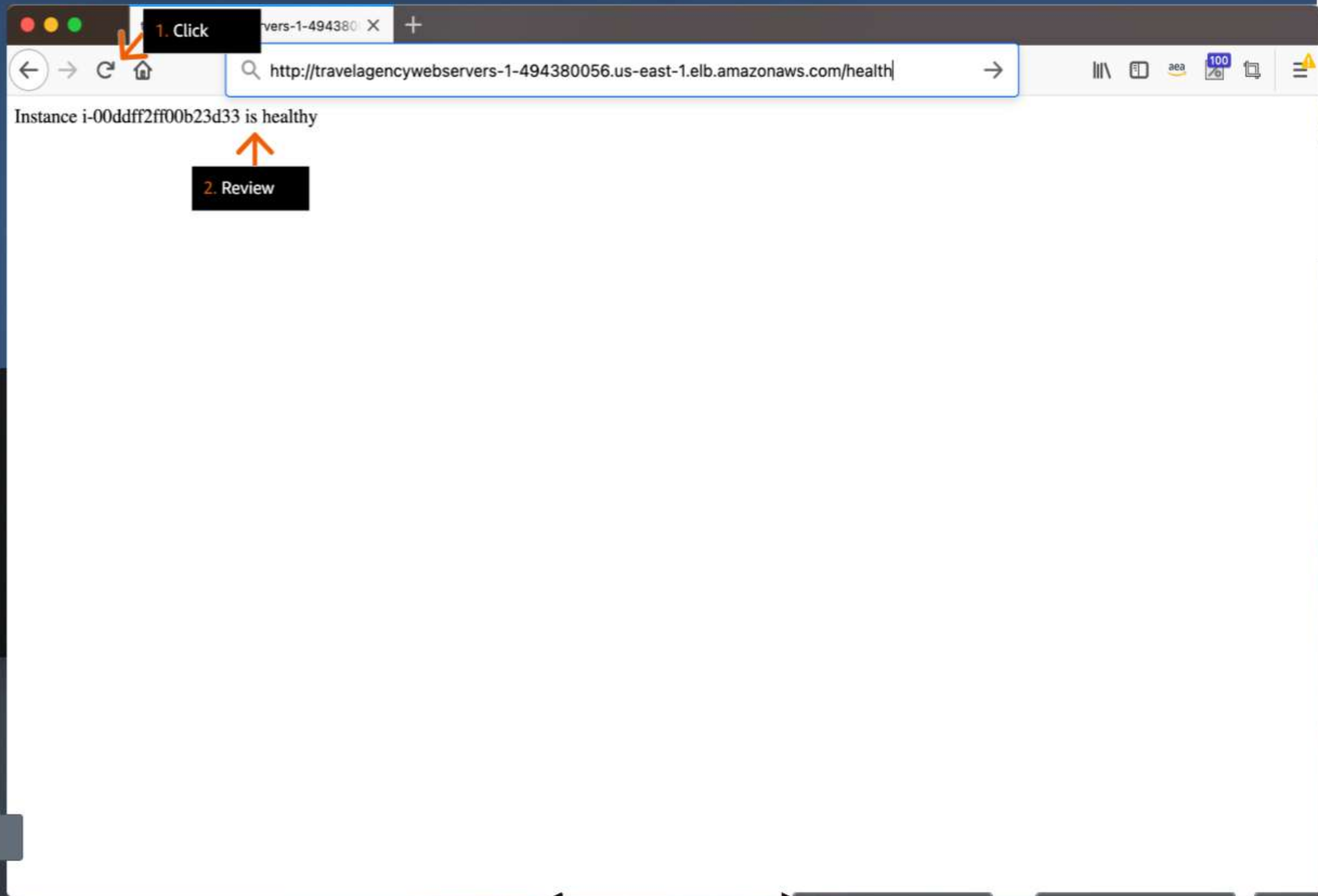
Concept

Be sure to get verification, by the load balancer, that your new instances are running and considered healthy.

Navigate steps:
(click or use arrow keys)



Step 37/46



<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 38

1. In the previous browser tab, in the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.

- The bottom window might be empty if the check box is already chosen. If so, to refresh the page so that the bottom window appears, clear the check box to deselect it, and then choose the check box again.

3. In the Network section, click Edit.
4. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 38/46



Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

<< 2 Plan

4 DIY >>

Exit

aws Services Search for services, featur [Option+S] AWSLabsUser-nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45... N. Virginia Support

Capacity Reservations

▼ IMAGES

AMIs

▼ ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

▼ NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

▼ LOAD BALANCING

Load Balancers

Target Groups New

▼ AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Refresh] [Edit] [Delete] [Create an Auto Scaling group]

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack- -nzXNwnr1LTqPe...	1	-

Settings not available unless you use a launch template.

Network [Edit]

Availability Zones: us-east-1a Subnet ID: subnet-0f0567f7ddab9120e

Load balancing [Edit]

Load balancer target groups: TravelAgencyWebServers-1 Classic Load Balancers: -

1. Click

2. Choose

3. Click



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 39

1. For Subnets, choose the subnet, lab/TravelAgencyVpc/PrivateSubnet2.

- Both lab/TravelAgencyVpc/PrivateSubnet1 and lab/TravelAgencyVpc/PrivateSubnet2 should now be selected.

2. Click Update.

3. Go to the next step.

Concept

When one Availability Zone becomes unhealthy or unavailable, Amazon EC2 Auto Scaling launches a new instance in an unaffected Availability Zone. Auto scaling attempts to launch new instances in an unaffected Availability Zone.

Navigate steps:
(click or use arrow keys)



Step 39/46



Services

Search for services, features [Option+S]



AWS Labs User - nzXNwnr1LTqPeCo3QnFS3j/exptools_session @ 1025-45...

N. Virginia

Support

Capacity Reservations

IMAGES

AMIs

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups **New**

Elastic IPs **New**

Placement Groups **New**

Key Pairs **New**

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups **New**

AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups > TravelAgencyWebServers

Edit TravelAgencyWebServers **Info**

Network

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

Subnets

Select subnets



vpc-0df044ae7537411a9 (lab/TravelAgencyVpc)

us-east-1a | subnet-0c0b8701db2bbf3a7
(lab/TravelAgencyVpc/PublicSubnet1)
10.0.0.0/19

us-east-1a | subnet-0f0567f7ddab9120e
(lab/TravelAgencyVpc/PrivateSubnet1)
10.0.96.0/19

us-east-1b | subnet-067bbfe6b12b8db0f
(lab/TravelAgencyVpc/PrivateSubnet2)
10.0.128.0/19

us-east-1b | subnet-016d94c2f22cdde06
(lab/TravelAgencyVpc/PublicSubnet2)
10.0.32.0/19

us-east-1c | subnet-05e10174b9fd27f5dc

1. Choose

Cancel

Update



2. Click

Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 40

1. In the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.

- The bottom window might be empty if the check box is already chosen. If so, to refresh the page so that the bottom window appears, clear the check box to deselect it, and then choose the check box again.

3. On the Details tab, click Edit.
4. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 40/46



aws

Services

Search for services, featu [Option+S]

AWSLabsUser-bZHuu2qT5JCPFGvHEbDJyW/exptools_session @ 3714-62...

N. Virginia

Support

Capacity Reservations

IMAGES

AMIs

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups New

AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1)

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack- -bZHuu2qT5JCPF...	1	-

Details

Activity

Automatic scaling

Instance management

Monitoring

Instance refresh

Group details

Desired capacity
1

Minimum capacity
1

Maximum capacity
1

Auto Scaling group name
TravelAgencyWebServers

Date created
Tue Jul 13 2021 08:21:01 GMT-0700
(Pacific Daylight Time)

Amazon Resource Name (ARN)
arn:aws:autoscaling:us-east-1:371462772231:autoScalingGroup:784

2. Choose

3. Click

1. Click

Edit

Feedback English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

<< 2 Plan

4 DIY >>

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 41

1. In the pop-up box, for Desired capacity, type:

2

2. For Max desired capacity, type:

2

3. Click Update.

4. Go to the next step.

Concept

By changing desired capacity manually, you can test your Auto Scaling group behavior. Increasing the desired capacity

Navigate steps:
(click or use arrow keys)



Step 41/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-6GLhmyAPos6Eh4Koq9wm9X/exptools_session @ 193

EC2 Dashboard



EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

New

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

EC2 > Auto Scaling groups

Auto Scaling





Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 42

1. In the left navigation pane, click Auto Scaling Groups.
2. In the Auto Scaling groups section, choose the check box to select TravelAgencyWebServers.

- The bottom window might be empty if the check box is already chosen. If so, to refresh the page so that the bottom window appears, clear the check box to deselect it, and then choose the check box again.

3. Click the Activity tab.
4. Scroll down to Activity history.
5. Go to the next step.

Navigate steps:
(click or use arrow keys)

aws Services Search for services, featu [Option+S] AWSLabsUser-bh3g7ruRo3bZdwMMgv25fX/exptools_session @ 3714-62... N. Virginia Support

Capacity Reservations

▼ IMAGES

AMIs

▼ ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

▼ NETWORK & SECURITY

Security Groups New

Elastic IPs New

Placement Groups New

Key Pairs New

Network Interfaces

▼ LOAD BALANCING

Load Balancers

Target Groups New

▼ AUTO SCALING

Launch Configurations

Auto Scaling Groups

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) [Refresh] [Edit] [Delete] **Create an Auto Scaling group**

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status
<input checked="" type="checkbox"/>	TravelAgencyWebServers	LabStack- -bh3g7ruRo3bZd...	2	-

Details **Activity** Automatic scaling Instance management Monitoring Instance refresh

Activity notifications (0) [Refresh] [Actions] [Create notification]

Filter notifications

☐ Send to On instance action

No notifications are currently specified

[Create notification]



Step 42/46



© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Cookie preferences

« 2 Plan

4 DIY »

Exit



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 43

1. In the Activity history section, review to see that a new instance is launching.
2. Under Description, review the new instance ID.
3. Go to the next step.

Concept

The load balancer can use connection draining to complete in-flight requests made to instances that are deregistering, or unhealthy, before stopping traffic flow from the load balancer.

Navigate steps:
(click or use arrow keys)



Step 43/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

« 2 Plan

4 DIY »

Exit



Services

Search

[Option+S]



N. Virgin

AWSLabsUser-6GLhmyAPos6Eh4Kq9wm9X/exptools_session @ 193

EC2 Dashboard



EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

New

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info



Launch configurations

Launch templates

Actions

Create Auto Scaling group

Search your Auto Scaling groups

< 1 >



Name



Launch template/configuration



Instances



St



TravelAgencyWebServers

LabStack-6GLhmyAPos6Eh4...

3

-

Auto Scaling group: TravelAgencyWebServers



Activity history (7)



Filter activity

2. Review

< 1 >



Status



Description



Cause

✓ Successful

Launching a new EC2 instance: i-0861427b280b84c71

At 2023-11-17T01:05:03Z a user request update of AutoScalingGroup desired: 2 changing the desired capacity from 1 to 2. At 2023-11-17T01:05:03Z in response to a difference between desired and actual capacity, it



Practice

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 44

1. In the left navigation pane, click Instances.
2. In the Instances section, choose the check box to select the instance that corresponds with the new instance ID that you reviewed in the previous step.
3. Click the Networking tab.
4. Under Subnet ID, review to see that the new instance is in the subnet, lab/TravelAgencyVpc/PrivateSubnet2.
5. Go to the next step.

Concept

When auto scaling launches a new instance, you can verify the subnet ID to ensure that your instance was deployed to the correct subnet.

Navigate steps:
(click or use arrow keys)



Step 44/46



CloudShell

Feedback

© 2023, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

Cookie preferences

<< 2 Plan

4 DIY >>

Exit

The screenshot shows the AWS Management Console interface. On the left, the navigation pane is open with 'Instances' selected. The main content area displays the 'Instances (1/4)' page. A table lists four instances, all of type 't3.micro'. The instance 'lab/TravelAgencyWebServers' with ID 'i-0861427b280b84c71' is highlighted. Below the table, the 'Networking' tab is selected, showing details for the selected instance. The 'Subnet ID' is 'subnet-0a68abe4080a605e5' (lab/TravelAgencyVpc/PrivateSubnet2). Red arrows and numbered boxes indicate the steps: 1. Click 'Instances' in the left pane, 2. Choose the instance 'lab/TravelAgencyWebServers', 3. Click the 'Networking' tab, and 4. Review the 'Subnet ID'.

Name	Instance ID	Instance state	Instance type	Status
lab/TravelAgencyWebServers	i-07c1bcae6b4149caf	Terminated	t3.micro	-
lab/TravelAgencyWebServers	i-0f49d791e2bc626e3	Running	t3.micro	2/2
lab/TravelAgencyWebServers	i-0861427b280b84c71	Running	t3.micro	Initi.
lab/TravelAgencyWebServers	i-01ae2c36893113a71	Running	t3.micro	2/2

Instance: i-0861427b280b84c71 (lab/TravelAgencyWebServers)

Details | Security | **Networking** | Storage | Status checks | Monitoring | Tags

Networking details

Public IPv4 address	Private IPv4 addresses	VPC ID
-	10.0.150.219	vpc-04ce071b5245be9ff (lab/TravelAgencyVpc)
Public IPv4 DNS	Private IP DNS name (IPv4 only)	
-	ip-10-0-150-219.ec2.internal	
Subnet ID	IPv6 addresses	Secondary private IPv4 addresses
subnet-0a68abe4080a605e5 (lab/TravelAgencyVpc/PrivateSubnet2)		-

In the Cloud Practitioner Edition, launching a lab for an assignment that has already been validated is disabled.

Lab Files

Steps

Highly Available Web Applications

Step 45

1. In the other browser tab, to refresh the health check page, click the refresh icon.
2. Review the message.

- The page should load with the message, Instance i-XXXX is healthy. The Instance ID value should be the value of the new instance.

- Congratulations! You successfully migrated the travel agency website to a highly available architecture.

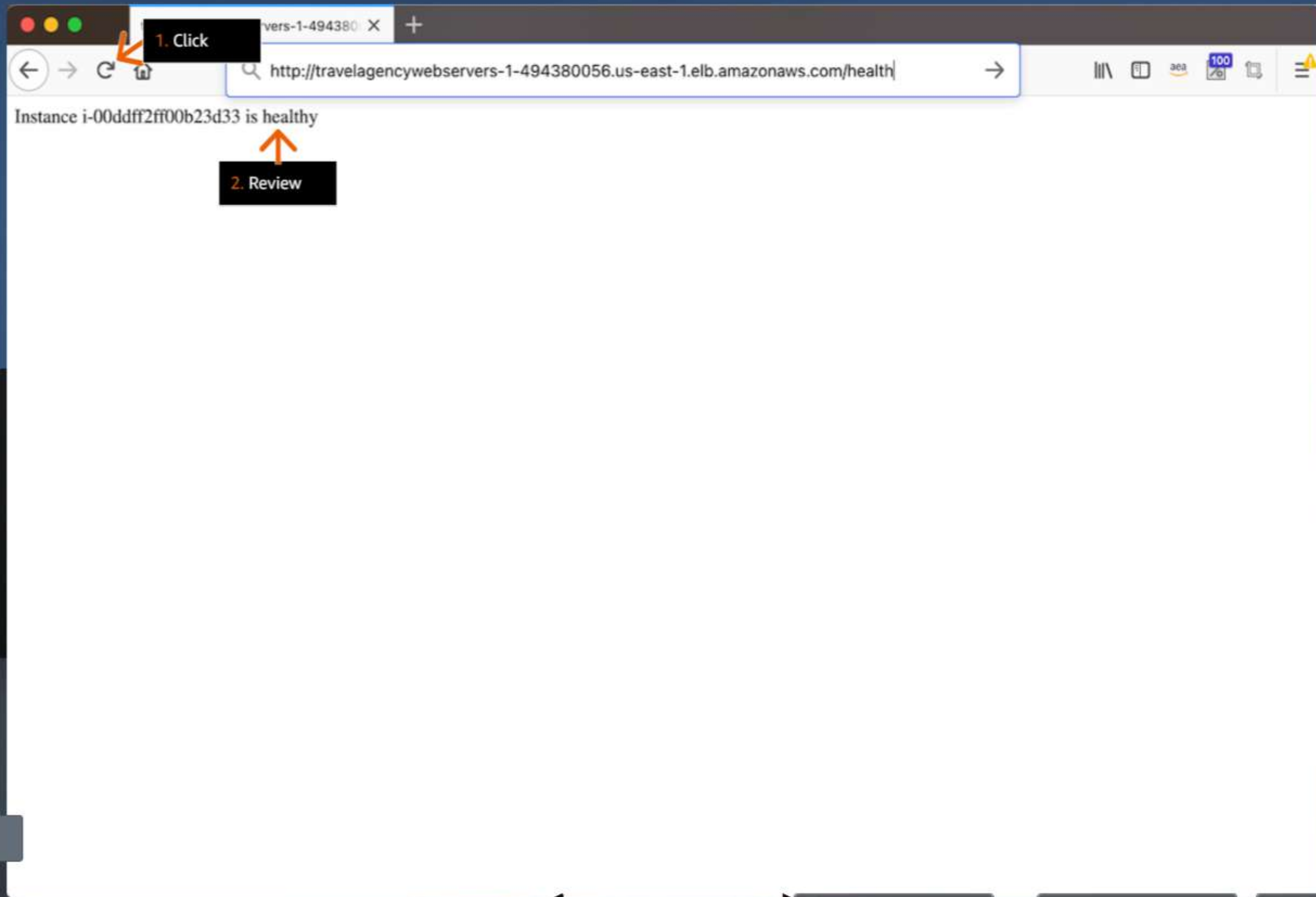
3. Go to the next step.

Concept

Navigate steps:
(click or use arrow keys)



Step 45/46



<< 2 Plan

4 DIY >>

Exit