

Group member:	Sisi Zhang, Harish Ram																																																																																										
<ul style="list-style-type: none">Reuse the VPC configuration you created in your VPC assignments	<div><div>VPC > Your VPCs > vpc-01e278157d7a9f202</div><div><div>vpc-01e278157d7a9f202 / Fall2021_</div><div>Actions</div></div><div><div>DetailsInfo</div><div><table><tr><td>VPC ID</td><td>State</td><td>DNS hostnames</td><td>DNS resolution</td></tr><tr><td> vpc-01e278157d7a9f202</td><td> Available</td><td>Enabled</td><td>Enabled</td></tr><tr><td>Tenancy</td><td>DHCP options set</td><td>Main route table</td><td>Main network ACL</td></tr><tr><td>Default</td><td>dopt-a86285d5</td><td>rtb-08e26f9590bc9433f</td><td>acl-01c8a79bee5f819aa</td></tr><tr><td>Default VPC</td><td>IPv4 CIDR</td><td>IPv6 pool</td><td>IPv6 CIDR (Network border group)</td></tr><tr><td>No</td><td>20.0.0.0/16</td><td>-</td><td>-</td></tr><tr><td>Route 53 Resolver DNS Firewall rule groups</td><td>Owner ID</td><td></td><td></td></tr><tr><td>-</td><td> 430782206656</td><td></td><td></td></tr></table></div></div></div>	VPC ID	State	DNS hostnames	DNS resolution	vpc-01e278157d7a9f202	Available	Enabled	Enabled	Tenancy	DHCP options set	Main route table	Main network ACL	Default	dopt-a86285d5	rtb-08e26f9590bc9433f	acl-01c8a79bee5f819aa	Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)	No	20.0.0.0/16	-	-	Route 53 Resolver DNS Firewall rule groups	Owner ID			-	430782206656																																																												
VPC ID	State	DNS hostnames	DNS resolution																																																																																								
vpc-01e278157d7a9f202	Available	Enabled	Enabled																																																																																								
Tenancy	DHCP options set	Main route table	Main network ACL																																																																																								
Default	dopt-a86285d5	rtb-08e26f9590bc9433f	acl-01c8a79bee5f819aa																																																																																								
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)																																																																																								
No	20.0.0.0/16	-	-																																																																																								
Route 53 Resolver DNS Firewall rule groups	Owner ID																																																																																										
-	430782206656																																																																																										
<ul style="list-style-type: none">Create another public subnet, PublicSubNet2	<div><div>Subnets (1/12)Info</div><div><div>Filter subnets</div><div><div>< 1 ></div><div></div><div>Actions</div><div>Create subnet</div></div></div><table><tr><th></th><th>Name</th><th>Subnet ID</th><th>State</th><th>VPC</th><th>IPv4 CIDR</th><th>IPv6 CIDR</th></tr><tr><td><input type="checkbox"/></td><td>PublicSubNet1</td><td>subnet-0c8d58ff5ec2de184</td><td> Available</td><td>vpc-01e278157d7a9f202 Fall...</td><td>20.0.0.0/24</td><td>-</td></tr><tr><td><input type="checkbox"/></td><td>Public subnet</td><td>subnet-01c0e9ce51ea9d611</td><td> Available</td><td>vpc-0575ba7c3931633da</td><td>10.0.0.0/24</td><td>-</td></tr><tr><td><input type="checkbox"/></td><td>-</td><td>subnet-9de7049c</td><td> Available</td><td>vpc-5a81fb27</td><td>172.31.64.0/20</td><td>-</td></tr><tr><td><input checked="" type="checkbox"/></td><td>PublicSubNet2</td><td>subnet-0686a6c86d127a055</td><td> Available</td><td>vpc-01e278157d7a9f202 Fall...</td><td>20.0.3.0/24</td><td>-</td></tr><tr><td><input type="checkbox"/></td><td>Private subnet</td><td>subnet-0fec78d781ccb62f3</td><td> Available</td><td>vpc-01e278157d7a9f202 Fall...</td><td>20.0.1.0/24</td><td>-</td></tr></table><div>VPC > Subnets > subnet-0686a6c86d127a055</div><div><div>subnet-0686a6c86d127a055 / PublicSubNet2</div><div>Actions</div></div><div><div>Details</div><div><table><tr><td>Subnet ID</td><td>Subnet ARN</td><td>State</td><td>IPv4 CIDR</td></tr><tr><td> subnet-0686a6c86d127a055</td><td> arn:aws:ec2:us-east-1:430782206656:subnet/subnet-0686a6c86d127a055</td><td> Available</td><td> 20.0.3.0/24</td></tr><tr><td>Available IPv4 addresses</td><td>Availability Zone</td><td>Availability Zone ID</td><td>Availability Zone ID</td></tr><tr><td> 249</td><td> us-east-1a</td><td> use1-az4</td><td> use1-az4</td></tr><tr><td>Network border group</td><td>Route table</td><td>Network ACL</td><td>Network ACL</td></tr><tr><td> us-east-1</td><td>rtb-07d4b4044b2498ed5</td><td>acl-01c8a79bee5f819aa</td><td>acl-01c8a79bee5f819aa</td></tr><tr><td>Default subnet</td><td>Auto-assign IPv6 address</td><td>Auto-assign customer-owned IPv4 address</td><td>Auto-assign customer-owned IPv4 address</td></tr><tr><td>No</td><td>No</td><td>No</td><td>No</td></tr><tr><td>Customer-owned IPv4 pool</td><td>IPv4 CIDR reservations</td><td>IPv6 CIDR reservations</td><td>IPv6 CIDR reservations</td></tr><tr><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Owner</td><td>Outpost ID</td><td></td><td></td></tr><tr><td> 430782206656</td><td>-</td><td></td><td></td></tr></table></div></div></div>		Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	<input type="checkbox"/>	PublicSubNet1	subnet-0c8d58ff5ec2de184	Available	vpc-01e278157d7a9f202 Fall...	20.0.0.0/24	-	<input type="checkbox"/>	Public subnet	subnet-01c0e9ce51ea9d611	Available	vpc-0575ba7c3931633da	10.0.0.0/24	-	<input type="checkbox"/>	-	subnet-9de7049c	Available	vpc-5a81fb27	172.31.64.0/20	-	<input checked="" type="checkbox"/>	PublicSubNet2	subnet-0686a6c86d127a055	Available	vpc-01e278157d7a9f202 Fall...	20.0.3.0/24	-	<input type="checkbox"/>	Private subnet	subnet-0fec78d781ccb62f3	Available	vpc-01e278157d7a9f202 Fall...	20.0.1.0/24	-	Subnet ID	Subnet ARN	State	IPv4 CIDR	subnet-0686a6c86d127a055	arn:aws:ec2:us-east-1:430782206656:subnet/subnet-0686a6c86d127a055	Available	20.0.3.0/24	Available IPv4 addresses	Availability Zone	Availability Zone ID	Availability Zone ID	249	us-east-1a	use1-az4	use1-az4	Network border group	Route table	Network ACL	Network ACL	us-east-1	rtb-07d4b4044b2498ed5	acl-01c8a79bee5f819aa	acl-01c8a79bee5f819aa	Default subnet	Auto-assign IPv6 address	Auto-assign customer-owned IPv4 address	Auto-assign customer-owned IPv4 address	No	No	No	No	Customer-owned IPv4 pool	IPv4 CIDR reservations	IPv6 CIDR reservations	IPv6 CIDR reservations	-	-	-	-	Owner	Outpost ID			430782206656	-		
	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR																																																																																					
<input type="checkbox"/>	PublicSubNet1	subnet-0c8d58ff5ec2de184	Available	vpc-01e278157d7a9f202 Fall...	20.0.0.0/24	-																																																																																					
<input type="checkbox"/>	Public subnet	subnet-01c0e9ce51ea9d611	Available	vpc-0575ba7c3931633da	10.0.0.0/24	-																																																																																					
<input type="checkbox"/>	-	subnet-9de7049c	Available	vpc-5a81fb27	172.31.64.0/20	-																																																																																					
<input checked="" type="checkbox"/>	PublicSubNet2	subnet-0686a6c86d127a055	Available	vpc-01e278157d7a9f202 Fall...	20.0.3.0/24	-																																																																																					
<input type="checkbox"/>	Private subnet	subnet-0fec78d781ccb62f3	Available	vpc-01e278157d7a9f202 Fall...	20.0.1.0/24	-																																																																																					
Subnet ID	Subnet ARN	State	IPv4 CIDR																																																																																								
subnet-0686a6c86d127a055	arn:aws:ec2:us-east-1:430782206656:subnet/subnet-0686a6c86d127a055	Available	20.0.3.0/24																																																																																								
Available IPv4 addresses	Availability Zone	Availability Zone ID	Availability Zone ID																																																																																								
249	us-east-1a	use1-az4	use1-az4																																																																																								
Network border group	Route table	Network ACL	Network ACL																																																																																								
us-east-1	rtb-07d4b4044b2498ed5	acl-01c8a79bee5f819aa	acl-01c8a79bee5f819aa																																																																																								
Default subnet	Auto-assign IPv6 address	Auto-assign customer-owned IPv4 address	Auto-assign customer-owned IPv4 address																																																																																								
No	No	No	No																																																																																								
Customer-owned IPv4 pool	IPv4 CIDR reservations	IPv6 CIDR reservations	IPv6 CIDR reservations																																																																																								
-	-	-	-																																																																																								
Owner	Outpost ID																																																																																										
430782206656	-																																																																																										
<ul style="list-style-type: none">Launch 2 Ubuntu EC2s, i.e., Ubu1, and Ubu2, inside PublicSubNet1 and PublicSubNet2,	<div><div>Instances (1/2)Info</div><div><div>Filter instances</div><div><div>Instance state: running</div><div>Clear filters</div><div>Connect</div><div>Instance state</div><div>Actions</div><div>Launch instances</div></div></div><table><tr><th></th><th>Name</th><th>Instance ID</th><th>Instance state</th><th>Instance type</th><th>Status check</th><th>Alarm status</th><th>Availability Zone</th><th>Publ</th></tr><tr><td><input type="checkbox"/></td><td>Ubu2</td><td>i-0eb0badeddaf99e22</td><td> Running</td><td>t2.micro</td><td> 2/2 checks passed</td><td></td><td>us-east-1a</td><td>ec2-</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Ubu1</td><td>i-01b72ecfd99ca1671</td><td> Running</td><td>t2.micro</td><td> 2/2 checks passed</td><td></td><td>us-east-1f</td><td>ec2-</td></tr></table></div>		Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ	<input type="checkbox"/>	Ubu2	i-0eb0badeddaf99e22	Running	t2.micro	2/2 checks passed		us-east-1a	ec2-	<input checked="" type="checkbox"/>	Ubu1	i-01b72ecfd99ca1671	Running	t2.micro	2/2 checks passed		us-east-1f	ec2-																																																															
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ																																																																																			
<input type="checkbox"/>	Ubu2	i-0eb0badeddaf99e22	Running	t2.micro	2/2 checks passed		us-east-1a	ec2-																																																																																			
<input checked="" type="checkbox"/>	Ubu1	i-01b72ecfd99ca1671	Running	t2.micro	2/2 checks passed		us-east-1f	ec2-																																																																																			

respectively

EC2 > Instances > i-01b72ecfd99ca1671

Instance summary for i-01b72ecfd99ca1671 (Ubu1) Info

Updated less than a minute ago

Instance ID: i-01b72ecfd99ca1671 (Ubu1)

Public IPv4 address: 3.238.28.184 | [open address](#)

Private IPv4 addresses: 20.0.0.154

Instance state: Running

Public IPv4 DNS: ec2-3-238-28-184.compute-1.amazonaws.com | [open address](#)

Private IPv6 address: -

Instance type: t2.micro

Elastic IP addresses: -

Private IPv4 DNS: ip-20-0-0-154.ec2.internal

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)

IAM Role: -

VPC ID: vpc-01e278157d7a9f202 (Fall2021_)

Subnet ID: subnet-0c8d58ff5ec2de184 (PublicSubNet1)

Instances (1/2) Info

Filter instances

Instance state: running X Clear filters

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
<input checked="" type="checkbox"/>	Ubu2	i-0eb0badeddaf99e22	Running	t2.micro	2/2 checks passed		us-east-1a	ec2-
<input type="checkbox"/>	Ubu1	i-01b72ecfd99ca1671	Running	t2.micro	2/2 checks passed		us-east-1f	ec2-

EC2 > Instances > i-0eb0badeddaf99e22

Instance summary for i-0eb0badeddaf99e22 (Ubu2) Info

Updated less than a minute ago

Instance ID: i-0eb0badeddaf99e22 (Ubu2)

Public IPv4 address: 3.82.36.244 | [open address](#)

Private IPv4 addresses: 20.0.3.168

Instance state: Running

Public IPv4 DNS: ec2-3-82-36-244.compute-1.amazonaws.com | [open address](#)

Private IPv6 address: -

Instance type: t2.micro

Elastic IP addresses: -

Private IPv4 DNS: ip-20-0-3-168.ec2.internal

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | [Learn more](#)

IAM Role: -

VPC ID: vpc-01e278157d7a9f202 (Fall2021_)

Subnet ID: subnet-0686a6c86d127a055 (PublicSubNet2)

- Connect via ssh to each EC2 and install apache 2 (use instructions provided in the VPC assignment)
 - sudo apt-get update
 - sudo apt-get install apache2

```
[ubuntu@ip-20-0-0-154:~]$ sudo apt-get update
[ubuntu@ip-20-0-0-154:~]$ sudo apt-get install apache2
[ubuntu@ip-20-0-3-168:~]$ sudo apt-get update
[ubuntu@ip-20-0-3-168:~]$ sudo apt-get install apache2
```

- Create an ELB, i.e., MyElb, and make sure these 2 EC2s are part of the ELB target group

Successfully created target group: ELB-target-group

EC2 > Target groups

Target groups (1/1) info

Search or filter target groups

search: ELB-target-group X Clear filters

<input checked="" type="checkbox"/>	Name	ARN	Port	Protocol	Target type	Load balance
<input checked="" type="checkbox"/>	ELB-target-group	arn:aws:elasticloadbalancing...	80	HTTP	Instance	-

Details

Target type Instance	Protocol : Port HTTP: 80	Protocol version HTTP1	VPC vpc-01e27815d7a9f202
Load balancer -			

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
2	0	0	2	0	0

Targets Monitoring Health checks Attributes Tags

Registered targets (2)

Filter resources by property or value

<input type="checkbox"/>	Instance ID	Name	Port	Zone	Health status	Health status details
<input type="checkbox"/>	i-01b72ecfd99ca1671	Ubu1	80	us-east-1f	unused	Target group is not configured to receive traffic from the load balancer
<input type="checkbox"/>	i-0eb0badeddaf99e22	Ubu2	80	us-east-1a	unused	Target group is not configured to receive traffic from the load balancer

Create Load Balancer Actions

search: MyElb Add filter

<input checked="" type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type
<input checked="" type="checkbox"/>	MyElb	MyElb-1291402283.us-east-1.elb.amazonaws.com	Provisioning	vpc-01e27815d7a9f202	us-east-1a, us-east-1f	application

Load balancers: MyElb

Description Listeners Monitoring Integrated services Tags

Basic Configuration

Name MyElb

ARN arn:aws:elasticloadbalancing:us-east-1:430782206656:loadbalancer/app/MyElb/0049ef077cdbe80e

DNS name MyElb-1291402283.us-east-1.elb.amazonaws.com (A Record)

State Provisioning

Type application

Scheme internet-facing

IP address type ipv4

Edit IP address type

- Access the ELB via the web

Cloud-Computing: X Assignments - 2: X MITX-6.00.1Python: X EC2 Manager: X Target groups: X WhatsApp: X Spotify - Search: X Apache2 Ubuntu: X

Not Secure myelb-1291402283.us-east-1.elb.amazonaws.com

Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is fully documented in `/usr/share/doc/apache2/README.Debian.gz`. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

- Stop an EC2 and access again the ELB via the web

Successfully stopped i-01b72ecfd99ca1671

Instances (1/2) Info

Filter instances

Instance state: running X Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Ubu2	i-0eb0badedda99e22	Running	t2.micro	2/2 checks passed		us-east-1a	ec2-
Ubu1	i-01b72ecfd99ca1671	Stopped	t2.micro	2/2 checks passed		us-east-1f	-

Cloud-Comp... X Assignments X MTx-6.00.1p X EC2 Manage... X Instances | EC... X Instance deta... X WhatsApp X Spotify - Sea... X Apache2 Ubuntu X +

Not Secure | myelb-1291402283.us-east-1.elb.amazonaws.com

Apps 海外申请护照在线... Paraphrasing Tool... 网易云音乐 WhatsApp GroupMe OW data science R Python SQL Job Other Bookmarks Reading List

Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

- Stop the 2nd EC2 and access again the ELB via the web

Successfully stopped i-01b72ecfd99ca1671

Successfully stopped i-0eb0badedda99e22

Instances (1/2) Info

Filter instances

Instance state: running X Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Ubu2	i-0eb0badedda99e22	Stopped	t2.micro	2/2 checks passed		us-east-1a	-
Ubu1	i-01b72ecfd99ca1671	Stopped	t2.micro	2/2 checks passed		us-east-1f	-

Cloud-Comp... X Assignments X MTx-6.00.1p X EC2 Manage... X Instances | EC... X Instance deta... X WhatsApp X 503 Service - Ea... X +

Not Secure | myelb-1291402283.us-east-1.elb.amazonaws.com

Apps 海外申请护照在线... Paraphrasing Tool... 网易云音乐 WhatsApp GroupMe OW data science R Python SQL Job Other Bookmarks Reading List

503 Service Temporarily Unavailable

- Describe results

The web is running fine when one or two of the instances is connected. Then after stopping both instances we can't assess the web anymore.