

PROJECT-1

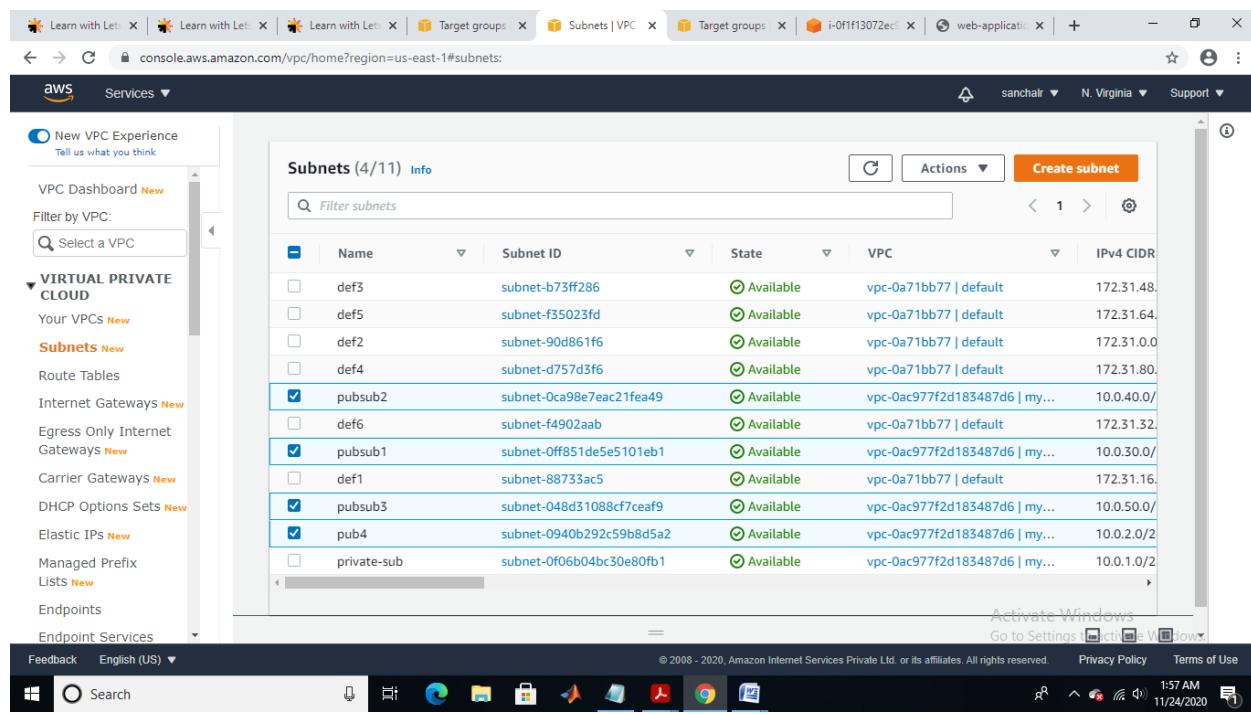
DEPLOYING A HIGHLY AVAILABLE WEB APPLICATION AND BASTION HOST IN AWS.

1. CREATE VPC NAMED AS MY-VPC WITH IPV4 ADDRESS 10.0.0.0/16 IN NORTH VIRGINIA REGION.

The screenshot shows the AWS VPC console interface. On the left, there's a sidebar with options like New VPC Experience, VPC Dashboard, Filter by VPC, and a list of VPC-related services. The main area displays a table titled "Your VPCs (1/2) Info". The table has columns for Name, VPC ID, State, IPv4 CIDR, and IPv6 CIDR. It lists two entries: "default" (VPC ID: vpc-0a71bb77, State: Available, IPv4 CIDR: 172.31.0.0/16) and "my-vpc" (VPC ID: vpc-0ac977f2d183487d6, State: Available, IPv4 CIDR: 10.0.0.0/16). Below the table, a specific VPC entry is expanded, showing its details: "vpc-0ac977f2d183487d6 / my-vpc". At the bottom of the page, there are links for Details, CIDRs, Flow logs, and Tags, along with standard footer links for Feedback, English (US), Privacy Policy, Terms of Use, and a note about activating Windows.

2. CREATE 3 PUBLIC SUBNETS WITH DIFFERENT AVAILABILITY ZONES(AZ'S).

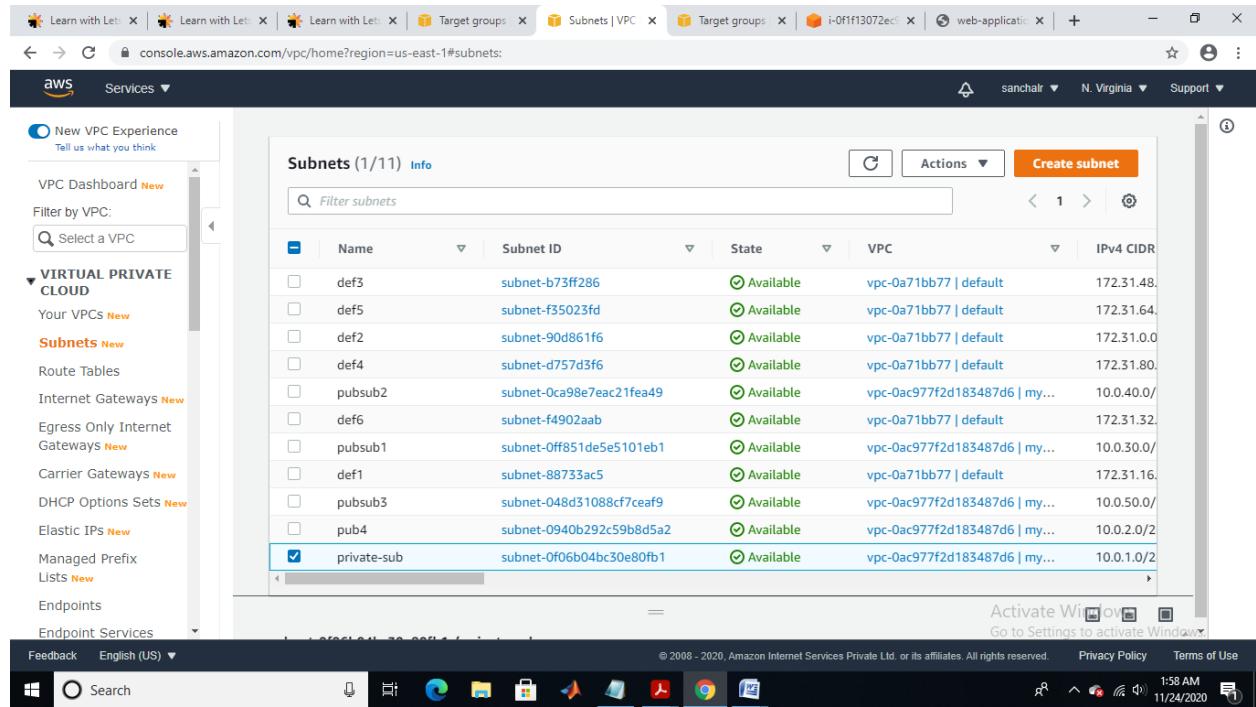
BELLOW IS THE LIST OF ALL PUBLIC SUBNETS CREATED.



The screenshot shows the AWS VPC Subnets page with a list of 11 subnets. The subnets are listed in a table with columns: Name, Subnet ID, State, VPC, and IPv4 CIDR. The subnets are: def3, def5, def2, def4, pubsub2, def6, pubsub1, def1, pubsub3, pub4, and private-sub. Most subnets are in an available state, except for pubsub2, pubsub1, pubsub3, and pub4 which are checked and also in an available state. The VPC column shows default VPCs like vpc-0a71bb77 and vpc-0ac977f2d183487d6. The IPv4 CIDR column shows ranges like 172.31.48.0/24, 172.31.64.0/24, 172.31.0.0/24, 172.31.80.0/24, 10.0.40.0/24, 172.31.32.0/24, 10.0.30.0/24, 172.31.16.0/24, 10.0.50.0/24, 10.0.2.0/24, and 10.0.1.0/24.

Name	Subnet ID	State	VPC	IPv4 CIDR
def3	subnet-b73ff286	Available	vpc-0a71bb77 default	172.31.48.0/24
def5	subnet-f35023fd	Available	vpc-0a71bb77 default	172.31.64.0/24
def2	subnet-90d861f6	Available	vpc-0a71bb77 default	172.31.0.0/24
def4	subnet-d757d3f6	Available	vpc-0a71bb77 default	172.31.80.0/24
pubsub2	subnet-0ca98e7eac21fea49	Available	vpc-0ac977f2d183487d6 my...	10.0.40.0/24
def6	subnet-f4902aab	Available	vpc-0a71bb77 default	172.31.32.0/24
pubsub1	subnet-0ff851de5e5101eb1	Available	vpc-0ac977f2d183487d6 my...	10.0.30.0/24
def1	subnet-88733ac5	Available	vpc-0a71bb77 default	172.31.16.0/24
pubsub3	subnet-048d31088cf7ceaf9	Available	vpc-0ac977f2d183487d6 my...	10.0.50.0/24
pub4	subnet-0940b292c59b8d5a2	Available	vpc-0ac977f2d183487d6 my...	10.0.2.0/24
private-sub	subnet-0f06b04bc30e80fb1	Available	vpc-0ac977f2d183487d6 my...	10.0.1.0/24

**PRIVATE SUBNET NAMED AS PRIVATESUB AND IPV4 ADDRESS 10.0.1.0/24 IS
CREATED IN US-EAST-1D REGION.**



The screenshot shows the AWS VPC Subnets page. On the left, there's a sidebar with 'New VPC Experience' and a list of VPC-related services like Subnets, Route Tables, Internet Gateways, Egress Only Internet Gateways, Carrier Gateways, DHCP Options Sets, Elastic IPs, Managed Prefixes, Lists, Endpoints, and Endpoint Services. The main area is titled 'Subnets (1/11) Info'. It has a search bar and a table with columns: Name, Subnet ID, State, VPC, and IPv4 CIDR. The table lists 11 subnets, with 'private-sub' selected and highlighted in blue. The details for 'private-sub' are: Name: private-sub, Subnet ID: subnet-0f06b04bc30e80fb1, State: Available, VPC: vpc-0ac977f2d183487d6 | my..., and IPv4 CIDR: 10.0.1.0/24. The browser address bar shows 'console.aws.amazon.com/vpc/home?region=us-east-1#subnets'.

Name	Subnet ID	State	VPC	IPv4 CIDR
def3	subnet-b73ff286	Available	vpc-0a71bb77 default	172.31.48.
def5	subnet-f35023fd	Available	vpc-0a71bb77 default	172.31.64.
def2	subnet-90d861f6	Available	vpc-0a71bb77 default	172.31.0.0
def4	subnet-d757d3f6	Available	vpc-0a71bb77 default	172.31.80.
pubsub2	subnet-0ca98e7eac21fea49	Available	vpc-0ac977f2d183487d6 my...	10.0.40.0/
def6	subnet-f4902aab	Available	vpc-0a71bb77 default	172.31.32.
pubsub1	subnet-off851de5e5101eb1	Available	vpc-0ac977f2d183487d6 my...	10.0.30.0/
def1	subnet-88733ac5	Available	vpc-0a71bb77 default	172.31.16.
pubsub3	subnet-048d31088cf7ceaf9	Available	vpc-0ac977f2d183487d6 my...	10.0.50.0/
pub4	subnet-0940b292c59b8d5a2	Available	vpc-0ac977f2d183487d6 my...	10.0.2.0/2
private-sub	subnet-0f06b04bc30e80fb1	Available	vpc-0ac977f2d183487d6 my...	10.0.1.0/24

**PUBLIC SUBNET NAMED AS PUBSUB1 AND IPV4 ADDRESS 10.0.30.0/24 IS
CREATED IN US-EAST-1A REGION.**

4 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC Subnets page. On the left, there's a navigation sidebar for VPC services like Subnets, Route Tables, Internet Gateways, Egress Only Internet Gateways, Carrier Gateways, DHCP Options Sets, Elastic IPs, Managed Prefix Lists, Endpoints, and Endpoint Services. The main area displays a table titled "Subnets (1/11) Info" with columns for Name, Subnet ID, State, VPC, and IPv4 CIDR. The subnets listed are: def3 (subnet-b73ff286), def5 (subnet-f35023fd), def2 (subnet-90d861f6), def4 (subnet-d757d3f6), pubsub2 (subnet-0ca98e7eac21fea49), def6 (subnet-f4902aab), and pubsub1 (subnet-0ff851de5e5101eb1). The row for pubsub1 is highlighted with a blue selection bar. A detailed view panel on the right shows the subnet ID as subnet-0ff851de5e5101eb1, state as Available, VPC as vpc-0ac977f2d183487d6 | my-vpc, and IPv4 CIDR as 10.0.30.0/24. It also lists 248 available IPv4 addresses and the availability zone as us-east-1a.

PUBLIC SUBNET NAMED AS PUBSUB2 AND IPV4 ADDRESS 10.0.40.0/24 IS CREATED IN US-EAST-1B REGION.

This screenshot is identical to the one above, showing the AWS VPC Subnets page. The main difference is that the subnet 'pubsub2' is now selected, indicated by a blue selection bar around its row. The detailed view panel on the right provides specific information for pubsub2: Subnet ID is subnet-0ca98e7eac21fea49, State is Available, VPC is vpc-0ac977f2d183487d6 | my-vpc, and IPv4 CIDR is 10.0.40.0/24. It shows 250 available IPv4 addresses and the availability zone as us-east-1b.

PUBLIC SUBNET NAMED AS PUBSUB3 AND IPV4 ADDRESS 10.0.50.0/24 IS CREATED IN US-EAST-1C REGION.

4 | LET'S UPGRADE AWS ...

5 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC Subnets page. On the left, there's a sidebar with options like New VPC Experience, VPC Dashboard, and Subnets. The main area displays a table of subnets:

Subnet ID	Name	Status	VPC	CIDR Range
subnet-90d861fb	def2	Available	vpc-0a71bb77 default	172.31.0.0/24
subnet-d757d3f6	def4	Available	vpc-0a71bb77 default	172.31.80.0/24
subnet-0ca98e7eac21fea49	pubsub2	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.40.0/24
subnet-f4902aab	def6	Available	vpc-0a71bb77 default	172.31.32.0/24
subnet-0ff851de5e5101eb1	pubsub1	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.30.0/24
subnet-88733ac5	def1	Available	vpc-0a71bb77 default	172.31.16.0/24
subnet-048d31088cf7ceaf9	pubsub3	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.50.0/24
subnet-0940b292c59b8d5a2	pub4	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.2.0/24
subnet-0f06b04bc30e80fb1	private-sub	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.1.0/24

A tooltip for the pub4 subnet shows its details: IPv4 CIDR is 10.0.2.0/24, Availability Zone is us-east-1c, and it's part of the Route table.

PUBLIC SUBNET NAMED AS PUB4 AND IPV4 ADDRESS 10.0.2.0/24 IS CREATED IN US-EAST-1D REGION BECAUSE PRIVATE SUBNET WAS CREATED IN OTHER AVAILABILITY ZONE US-EAST-1D AND TO ACCESS INTERNET IN PRIVATE SUBNET, PUBLIC SUBNET IS NEEDED, HENCE.

This screenshot is identical to the one above, showing the AWS VPC Subnets page with the same list of subnets and the same tooltip for the pub4 subnet.

6 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC Subnets page. On the left, there's a navigation sidebar with options like 'New VPC Experience', 'VPC Dashboard', 'Subnets', 'Route Tables', 'Internet Gateways', 'Egress Only Internet Gateways', 'Carrier Gateways', 'DHCP Options Sets', 'Elastic IPs', 'Managed Prefix Lists', 'Endpoints', and 'Endpoint Services'. The main area displays a table titled 'Subnets (1/11) Info' with the following data:

Subnet ID	Name	Status	Associated VPC	CIDR Range
subnet-90d861fb	det2	Available	vpc-0a71bb77 default	172.31.0.0/16
subnet-d757d3f6	def4	Available	vpc-0a71bb77 default	172.31.80.0/16
subnet-0ca98e7eac21fea49	pubsub2	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.40.0/16
subnet-f4902aab	def6	Available	vpc-0a71bb77 default	172.31.32.0/16
subnet-0ff851de5e5101eb1	pubsub1	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.30.0/16
subnet-88733ac5	def1	Available	vpc-0a71bb77 default	172.31.16.0/16
subnet-048d31088cf7ceaf9	pubsub3	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.50.0/16
subnet-0940b292c59b8d5a2	pub4	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.2.0/16
subnet-0f06b04bc30e80fb1	private-sub	Available	vpc-0ac977f2d183487d6 my-vpc	10.0.1.0/24

A tooltip for the 'private-sub' subnet indicates it is associated with the 'my-vpc' VPC and has a CIDR range of 10.0.1.0/24.

3. CREATE INTERNET GATEWAY AND ASSOCIATE WITH PUBLIC SUBNETS.

INTERNET GATEWAY NAMED AS MY-IGW IS CREATED AND ATTACHED TO MY CREATED VPC CALLED AS MY-VPC.

7 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC Internet Gateways page. On the left, there's a sidebar with options like New VPC Experience, VPC Dashboard, and various VPC-related services. The main area displays a table of Internet Gateways:

Name	Internet gateway ID	State	VPC ID
my-igw	igw-0c4fd036b3b5253eb	Attached	vpc-0ac977f2d183487d6 my-vpc
def_igw	igw-bc94adc7	Attached	vpc-0a71bb77 default

Below the table, there's a detailed view for the 'my-igw' gateway, showing its ID as igw-0c4fd036b3b5253eb, it's attached to the 'my-vpc', and it's owned by user 618543464581.

4. CREATE NAT GATEWAY AND ASSOCIATE WITH PUBLIC SUBNET.

NAT GATEWAY IS CREATED NAMED AS MY-NAT.

8 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC NAT Gateways console. On the left, a navigation pane lists various services under 'Services'. Under 'AWS NETWORK FIREWALL', 'NAT Gateways' is selected. The main area displays a table titled 'NAT gateways (1/1)'. The table has columns: Name, NAT gateway ID, State, State message, and Elastic IP address. One row is shown for 'my-nat' with the following details:

Name	NAT gateway ID	State	State message	Elastic IP address
my-nat	nat-08e407c6638dbb4be	Available	-	52.87.84.146

Below the table, a 'Details' section provides more information:

NAT gateway ID nat-08e407c6638dbb4be	State Available	State message -	Elastic IP address 52.87.84.146
Private IP address 10.0.30.25	Network interface ID eni-02a4e341c8d6d9193	VPC vpc-0ac977f2d183487d6 / my-vpc	Subnet subnet-0ff851de5e5101eb1 / pubsub1
Created 2020/11/23 20:04 GMT+5:30	Deleted -	Activate Windows Go to Settings to activate Windows.	

ROUTE TABLE NAMED AS PUBLIC-RT IS CREATED AND ALL 4 SUBNETS ARE ASSOCIATED AND INTERNET GATEWAY ROUTE IS ADDED.

9 | LETS UPGRADE AWS ...

The screenshot shows the AWS VPC Route Tables page. On the left, there's a navigation sidebar with options like 'New VPC Experience', 'VPC Dashboard', 'Route Tables' (which is selected), and 'Subnets'. The main content area displays a table of route tables. One row is selected: 'public-rt' (Route Table ID: rtb-08b857a687ca037a1). Below the table, there are tabs for 'Summary', 'Routes' (which is selected), 'Subnet Associations', 'Edge Associations', 'Route Propagation', and 'Tags'. Under the 'Routes' tab, there's a table with columns 'Destination', 'Target', 'Status', and 'Propagated'. Two entries are listed: '10.0.0.0/16' (Target: local, Status: active, Propagated: No) and '0.0.0.0' (Target: igw-0c4fd036b305253eb, Status: active, Propagated: No). At the bottom right of the main content area, there's a message: 'Activate Windows Go to Settings to activate Windows.'

THE IPV4 ADDRESS OF ALL ASSOCIATED PUBLIC SUBNETS IS LISTED.

This screenshot is similar to the one above, showing the 'Subnet Associations' tab for the 'public-rt' route table. The table lists four subnets with their respective IPv4 CIDR ranges: 'subnet-0ca98e7eac21fea...' (10.0.40.0/24), 'subnet-0ff851de5e5101eb...' (10.0.30.0/24), 'subnet-048d31088cf7ceaf...' (10.0.50.0/24), and 'subnet-0940b292c59b8d5...' (10.0.2.0/24). The bottom right of the page still shows the 'Activate Windows' message.

9 | LET'S UPGRADE AWS ...

MAIN ROUTE-TABLE CREATED AFTER INTERNET GATEWAY CREATED HAS PUBLIC SUBNET ASSOCIATED AND NAT GATEWAY ROUTE IS ADDED.

The screenshot shows the AWS VPC Route Tables page. On the left, there's a navigation sidebar with options like 'New VPC Experience', 'VPC Dashboard', 'Route Tables', and 'Internet Gateways'. The 'Route Tables' section is expanded, showing three route tables: 'mainn' (selected), 'public-rt', and 'def1_rt'. The 'mainn' table has a single route entry:

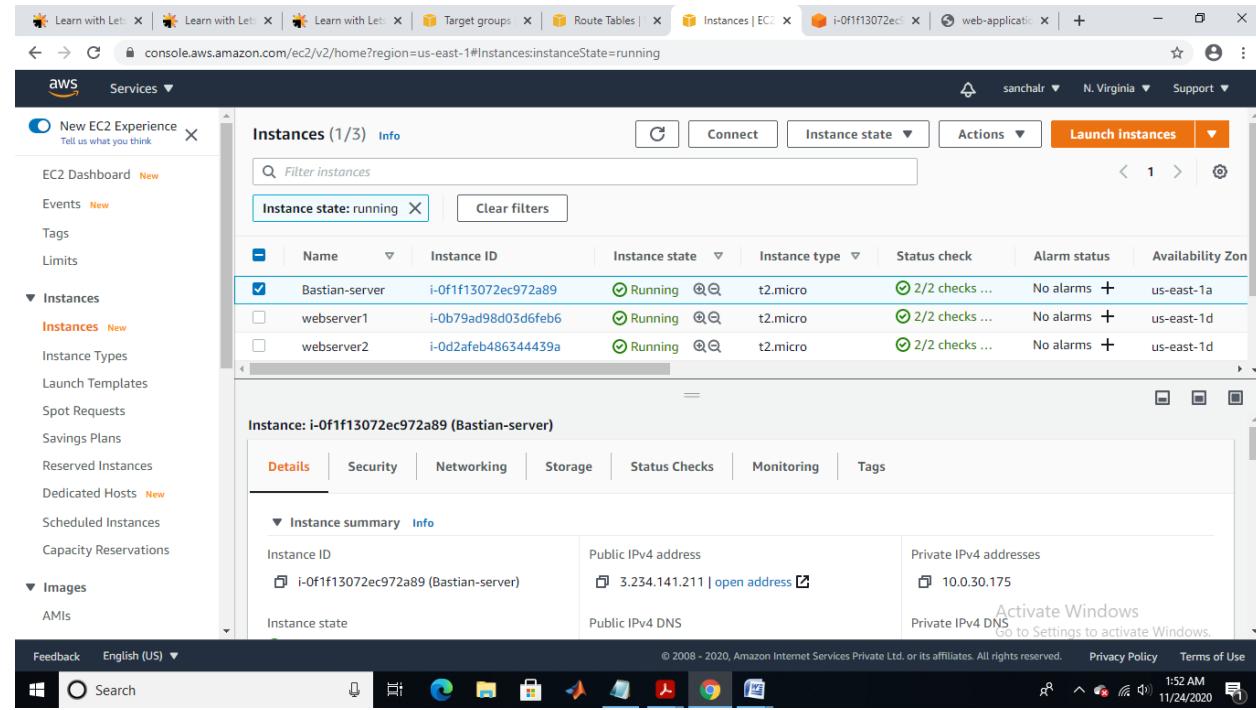
Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	nat-08e407c6638dbb4be	active	Activate Windows Go to Settings to activate Windows.

This screenshot shows the same AWS VPC Route Tables page, but the 'Subnet Associations' tab is selected for the 'mainn' route table. It lists one subnet association:

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0f06b04bc30e80fb...	10.0.1.0/24	-

A message at the bottom states: "The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table." Below the table, there's an 'Activate Windows' link.

5. LAUNCHED BASTIAN SERVER (LINUX AMI2) IN OWN VPC AND PUBSUB1 SUBNET WITH PUBLIC IPV4 ADDRESS.



The screenshot shows the AWS EC2 Instances page with the following details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Bastian-server	i-0f1f13072ec972a89	Running	t2.micro	2/2 checks ...	No alarms	us-east-1a
webserver1	i-0b79ad98d03d6feb6	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d
webserver2	i-0d2afeb486344439a	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d

Below the table, the details for the selected instance (Bastian-server) are shown:

Details	Security	Networking	Storage	Status Checks	Monitoring	Tags
Instance summary						
Instance ID i-0f1f13072ec972a89 (Bastian-server)	Public IPv4 address 3.234.141.211 open address	Private IPv4 addresses 10.0.30.175				
Instance state	Public IPv4 DNS	Private IPv4 DNS Activate Windows Go to Settings to activate Windows.				

LAUNCHED WEB SERVER1 (LINUX AMI2) IN OWN VPC AND PRIVATE SUBNET WITH PRIVATE IPV4 ADDRESS.

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The screenshot shows the AWS EC2 Instances page with three instances listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Bastian-server	i-0f1f13072ec972a89	Running	t2.micro	2/2 checks ...	No alarms	us-east-1a
webserver1	i-0b79ad98d03d6feb6	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d
webserver2	i-0d2afeb486344439a	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d

The instance details for webserver1 are expanded in a modal:

Details	Security	Networking	Storage	Status Checks	Monitoring	Tags
Instance summary						
Instance ID i-0b79ad98d03d6feb6 (webserver1)	Public IPv4 address -	Private IPv4 addresses 10.0.1.213				
Instance state	Public IPv4 DNS	Private IPv4 DNS				

LAUNCHED WEB SERVER2 (LINUX AMI2) IN OWN VPC AND PRIVATE SUBNET WITH PRIVATE IPV4 ADDRESS.

The screenshot shows the AWS EC2 Instances page with three instances listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Bastian-server	i-0f1f13072ec972a89	Running	t2.micro	2/2 checks ...	No alarms	us-east-1a
webserver1	i-0b79ad98d03d6feb6	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d
webserver2	i-0d2afeb486344439a	Running	t2.micro	2/2 checks ...	No alarms	us-east-1d

The instance details for webserver2 are expanded in a modal:

Details	Security	Networking	Storage	Status Checks	Monitoring	Tags
Instance summary						
Instance ID i-0d2afeb486344439a (webserver2)	Public IPv4 address -	Private IPv4 addresses 10.0.1.72				
Instance state	Public IPv4 DNS	Private IPv4 DNS				

LIST OF NAMES OF SECURITY GROUPS FOR LOAD BALANCER,WEBSERVER AND BASTIAN SERVER.

The screenshot shows the AWS Management Console with the URL <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#SecurityGroups>. The left sidebar is collapsed. The main content area displays a table titled "Security Groups (3/8) Info". The table has columns: Name, Security group ID, Security group name, VPC ID, and Description. The table lists the following security groups:

Name	Security group ID	Security group name	VPC ID	Description
sg-00c4ec67b6ae41fee	vpc-0a71bb77	SG-LBNo	sg-083fad97fc3b68a3b	security group for load balancer
sg-083fad97fc3b68a3b	vpc-0ac977f2d183487d6	SG-load-balancer1	sg-08ca7fe516e74b499	SG for load_balancer
sg-08ca7fe516e74b499	vpc-0a71bb77	load_balancer	sg-09491f8f17165fb74	SG for webserver1
sg-09491f8f17165fb74	vpc-0ac977f2d183487d6	webserver1	sg-0dcbf2821497f3867	SG for bastian-server1
sg-0dcbf2821497f3867	vpc-0ac977f2d183487d6	bastian-server1	sg-0dd564c49624e5af0	SG for load balancer
sg-0dd564c49624e5af0	vpc-0a71bb77	load-balancer	sg-0ee4e024e054d208a	default VPC security group
sg-0ee4e024e054d208a	vpc-0ac977f2d183487d6	default	sg-b8ef448a	default VPC security group
sg-b8ef448a	vpc-0a71bb77	default		

Below the table, a message says "Activate Windows Go to Settings to activate Windows." The bottom navigation bar includes links for Feedback, English (US), Privacy Policy, Terms of Use, and a date/time stamp (11/24/2020).

6. APPLICATION LOAD BALANCER NAMED WEB-APPLICATION-LB IS CREATED.

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The screenshot shows the AWS Management Console with the EC2 service selected. On the left, the navigation menu includes Network & Security, Load Balancing (Load Balancers), and Auto Scaling. The main pane displays a table of load balancers with one row selected: 'web-application-LB'. The details pane shows the following configuration:

Name	DNS name	State	VPC ID	Availability Zones	Type
web-application-LB	web-application-LB-241711398.us-east-1.elb.amazonaws.com	active	vpc-0ac977f2d183487d6	us-east-1c, us-east-1d, ...	application

Below the table, the 'Basic Configuration' section provides more details:

- Name: web-application-LB
- ARN: arn:aws:elasticloadbalancing:us-east-1:618543464581:loadbalancer/app/web-application-LB/4254c1a489b8930b
- DNS name: web-application-LB-241711398.us-east-1.elb.amazonaws.com (A Record)
- State: active
- Type: application
- Scheme: internet-facing
- IP address type: ipv4

At the bottom right of the browser window, there is a message: "Activate Windows Go to Settings to activate Windows."

TARGET GROUP WITH NAME WEB-APP-TRAGET-GROUP IS CREATED.

The screenshot shows the AWS Management Console with the EC2 service selected. On the left, the navigation menu includes Target Groups. The main pane displays a table of target groups with one row selected: 'web-app-Target-group'. The details pane shows the following configuration:

Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
web-app-Target-group	arn:aws:elasticload... arn:aws:elasticloadbalancing:us-east-1:618543464581:targetgroup/web-app-Target-group/4254c1a489b8930b	80	HTTP	Instance	web-application-LB	vpc-0ac977f2d183487d6

At the bottom right of the browser window, there is a message: "Activate Windows Go to Settings to activate Windows."

BOTH TARGETS WEB SERVER 1 AND 2 ARE IN **HEALTHY STATE.**

The screenshot shows the AWS Elastic Load Balancing Target Groups console. On the left, a navigation pane includes Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The main area displays a target group configuration with basic settings: Target type: instance, Protocol: HTTP : 80, VPC: vpc-0ac977f2d183487d6, and Load balancer: web-application-LB. Below this, the 'Targets' tab is selected, showing two registered targets: 'webserver1' (Instance ID: i-0b79ad98d03d6feb6) and 'webserver2' (Instance ID: i-0d2afeb486344439a), both in a healthy state. The status details for each target indicate they are healthy.

LIST OF SERVERS AVAILABLE TO REGISTER TARGETS IN OWN LOAD BALANCER.

The screenshot shows the AWS Create Load Balancer wizard at Step 5: Register Targets. The top navigation bar shows the steps: 1. Configure Load Balancer, 2. Configure Security Settings, 3. Configure Security Groups, 4. Configure Routing, 5. Register Targets (which is highlighted), and 6. Review. The main content area is titled 'Step 5: Register Targets' and shows a table of available instances. The table has columns: Instance, Name, Port, State, Security groups, and Zone. It lists three instances: 'Bastian-server' (Instance ID: i-0ff1f13072ec972a89), 'webserver1' (Instance ID: i-0b79ad98d03d6feb6), and 'webserver2' (Instance ID: i-0d2afeb486344439a). All three instances are running and belong to the 'bastian-server1' security group, located in the 'us-east-1a' zone. A note at the bottom of the table says 'No instances available.' Below the table, there's a search bar labeled 'Search Instances' and a button 'Add to registered' followed by 'on port 80'. At the bottom right, there are 'Cancel', 'Previous', 'Next: Review', and 'Activate Windows' buttons. The status bar at the bottom indicates the date as 11/23/2020 and the time as 8:59 PM.

WEBSERVER1 AND WEBSERVER2 IS REGISTERED WITHIN OWN LB.

The screenshot shows the AWS Create Load Balancer wizard at Step 5: Register Targets. The interface includes a header with tabs for 1. Configure Load Balancer, 2. Configure Security Settings, 3. Configure Security Groups, 4. Configure Routing, 5. Register Targets (which is highlighted), and 6. Review. Below the tabs is a table titled "Step 5: Register Targets" showing two registered instances:

Instance	Name	Port	State	Security groups	Zone
i-0b79ad98d03d6feb6	webserver1	80	running	webserver1	us-east-1d
i-0d2afeb486344439a	webserver2	80	running	webserver1	us-east-1d

Below the table is a section titled "Instances" with a note: "To register additional instances, select one or more running instances, specify a port, and then click Add. The default port is the port specified for the target group. If the instance is already registered on the specified port, you must specify a different port." A button labeled "Add to registered" is shown, followed by a dropdown menu set to "on port 80". A search bar labeled "Search Instances" is also present. At the bottom right of the wizard are buttons for "Cancel", "Previous", "Next: Review", and "Activate Windows". The status bar at the bottom indicates "Feedback English (US)" and "© 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use". The system tray shows the date and time as "9:01 PM 11/23/2020".

7. INSTALL APACHE TOMCAT AND EDIT INDEX.HTML IN WEBSERVER1 THROUGH THE BASTION HOST.

TO SSH INTO WEB SERVERS VIA BASTION SERVER, WE NEED THE WEB SERVER KEY THAT WE USED TO LAUNCH THE PREVIOUS WEB SERVER1 and 2. GIVE SAME NAME AS THAT OF PEM FILE IN LOCAL SYSTEM AND COPY PASTE VIA VI EDITOR.

```
48kURN3ob7rU4Ig8RNSlcJrkzUxZ6547e1SNNVndoulxDgnlkQhSE/yWqs+IkEoD
0am0/vNj1kjgDwkSw662b4Xmwhi4pq0DTc/PyAc+FHX3BQUm5tg0G/mBzVdY
EIJ/J3pFXW0TsxGmTQ0782xBMCPRFvE5JHJ5X5ordfwnILF69VCMlD2n+57FBq6m
HljSRfm1xvA04+b+jXgRgR/K1UPAKLnxo4w1Bgd4Z36cIS6g50i9AUfNjnzAcI
cEFGiaGV1EHpJbs90g3/1YHRy4PCBjBN4YevhKlaWgJ2cc0+juggpuN321Yu81
10v2ScKgYBx+Bqxs210mJxWhcAx1LMAlghLvK87HLCpLCpR4QS1bIZeaOdsT40
5E/Pupyqy04SY9z//XZoy0eWWMog00kTfkFxJCSirDLA+d1wVnLXPPh63/VE0VPoP
CttxAdUpiz+fngNeUfi4x8IDROXkkveX/8h0dkqCHeJhg7tFb1lGNHSMcgYEat3/Y
+65Rp2UhLDIn1lQ0QHKoweyzoBsXHwaqUPWnLD3lxsu1Sp1wf0tcgKKA5NLqbK
PD0U8y/qSsYCbfaPR39n+Si0U3NjmPHoePuKbqFYDF/uKd+1Bqgi8+1nq98fN
M1jxbabD8bjZPKaLzd1fE8d85RYohcGgLxkY6k8CgYAKPI6fhfE0I/w25gclq30K
s6zsTAyXV0TTBrb7vRGIIoRFg/4m5JmKjtWPrHq+0L+Ca6o10AnT9KLzBIS
kneI-TSVgXA0Ei6SGK5Dqd0Dgts15tYhz220zC0g31Q8n0NzkVNLIQUY6faqHyNA
SbQuqJDuNsm/1xaq2k3I0KbgJ1Td/kcG25ji0M/Pd4Ac3j1HF5zND+sTvqUg0
9PhnSXukJpo9uoAkfknEWgbzWeHE69b+jy1oxCTHF9YnQYX2umjaeo6chumQg
JR0AuLAETsko9kdd5hShsSCNPd7eac/60SrNj/PdlIfsd+j1Ym0bZqQJTWN12T+5a
3cB1aOGAum1ZCz2+9XxWjfAb/F2VwqIj/z2J+rXoidHvpw2VCvk5VwPkACMP9+0
N5AKWqfU5A069k1meAGoxqIEkgz0LnsKf4hAvaDy9hJJPfSpUhmPM61+odWlg7GU
kqbNDZFL1KSuPc70ouEREfL+3MCnBP/a/ogxG3DN6kjr4b8IQSC4=
-----END RSA PRIVATE KEY-----
```

i-0f1f13072ec972a89 (Bastian-server)

Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows
Go to Settings to activate Windows.

CHANGING THE PERMISSIONS THROUGH CHMOD AND THAT IS ONLY READ-1, WRITE-0, EXECUTE-0.

i-0f1f13072ec972a89 (Bastian-server)

Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows
Go to Settings to activate Windows.



BELOW IS THE CONNECTION PROCESS.

```
[S ctl_path] [-W host:port] [-w local_tun[:remote_tun]]  
[user@]hostname [command]  
[root@ip-10-0-30-175 ec2-user]# web-serverkey.pem ec2-user@<Web-server-1 private  
bash: Web-server-1: No such file or directory  
[root@ip-10-0-30-175 ec2-user]# ssh -i webserver1-key.pem ec2-user@10.0.1.213  
The authenticity of host '10.0.1.213 (10.0.1.213)' can't be established.  
ECDSA key fingerprint is SHA256:Ugdn6d3sRLeI2VzVHPimjDtizkut1HH13T8k6Zeryg8.  
ECDSA key fingerprint is MD5:3b:16:e1:08:72:73:fb:57:51:27:48:55:32:e1:05:58.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '10.0.1.213' (ECDSA) to the list of known hosts.  
_ _ | _ / Amazon Linux 2 AMI  
_ \_ | _ |  
https://aws.amazon.com/amazon-linux-2/  
No packages needed for security; 3 packages available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-10-0-1-213 ~]$ sudo su  
[root@ip-10-0-1-213 ec2-user]# yum update -y  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
amzn2-core  
Resolving Dependencies  
--> Running transaction check  
--> Package ec2-instance-connect.noarch 0:1.1-12.amzn2 will be updated  
--> Package ec2-instance-connect.noarch 0:1.1-13.amzn2 will be an update
```

i-0f1f13072ec972a89 (Bastian-server)

Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows

Go to Settings to activate Windows.

```
Verifying : ec2-instance-connect-1.1-12.amzn2.noarch 5/6  
Verifying : iptables-1.8.4-10.amzn2.1.1.x86_64 6/6  
Updated:  
ec2-instance-connect.noarch 0:1.1-13.amzn2 iptables.x86_64 0:1.8.4-10.amzn2.1.2  
iptables-libs.x86_64 0:1.8.4-10.amzn2.1.2  
Complete!  
[root@ip-10-0-1-213 ec2-user]# yum install httpd -y  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Resolving Dependencies  
--> Running transaction check  
--> Package httpd.x86_64 0:2.4.46-1.amzn2 will be installed  
--> Processing Dependency: httpd-tools = 2.4.46-1.amzn2 for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: httpd-filesystem = 2.4.46-1.amzn2 for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: system-logos-httpd for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: mod_http2 for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: httpd-filesystem for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: /etc/mime.types for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.4.46-1.amzn2.x86_64  
--> Processing Dependency: libapr-1.so()(64bit) for package: httpd-2.4.46-1.amzn2.x86_64  
--> Running transaction check  
--> Package apr.x86_64 0:1.6.3-5.amzn2.0.2 will be installed  
--> Package apr-util.x86_64 0:1.6.1-5.amzn2.0.2 will be installed  
--> Processing Dependency: apr-util-bdb(x86-64) = 1.6.1-5.amzn2.0.2 for package: apr-util-1.6.1-5.amzn2.0.2.x86_64  
--> Package generic-logos-httpd.noarch 0:18.0.0-4.amzn2 will be installed
```

i-0f1f13072ec972a89 (Bastian-server)

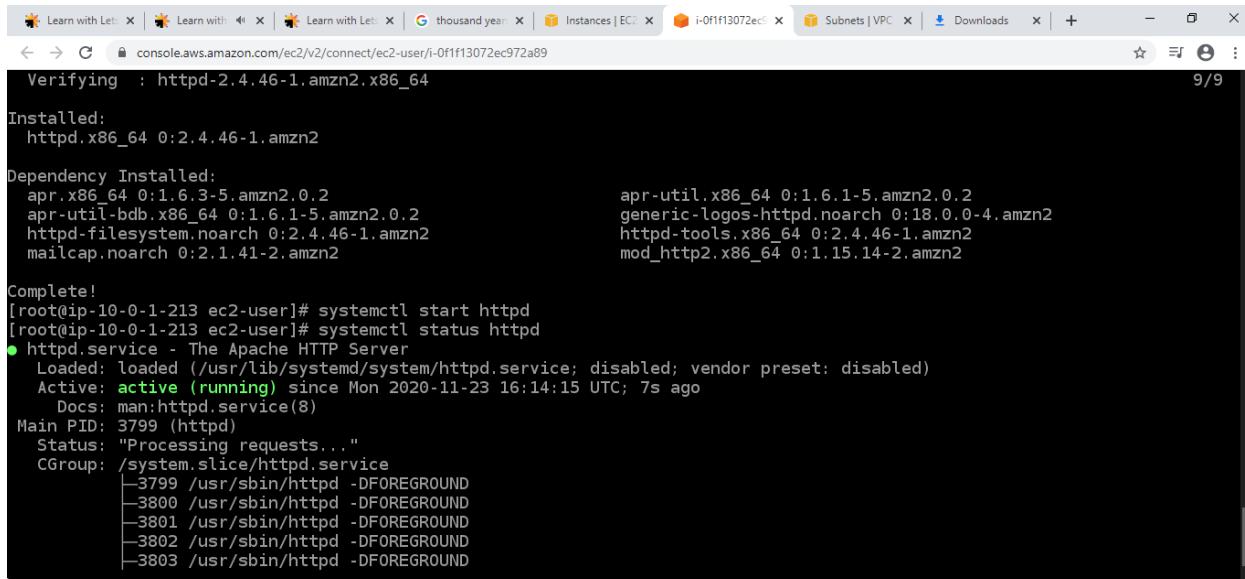
Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows

Go to Settings to activate Windows.



THE STATUS OF APACHE IS ACTIVE AND RUNNING AND IS CHECKED THROUGH SYSTEMCTL HTTPD STATUS COMMAND.



```
Verifying : httpd-2.4.46-1.amzn2.x86_64
9/9

Installed:
httpd.x86_64 0:2.4.46-1.amzn2

Dependency Installed:
apr.x86_64 0:1.6.3-5.amzn2.0.2
apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
httpd-filesystem.noarch 0:2.4.46-1.amzn2
mailcap.noarch 0:2.1.41-2.amzn2

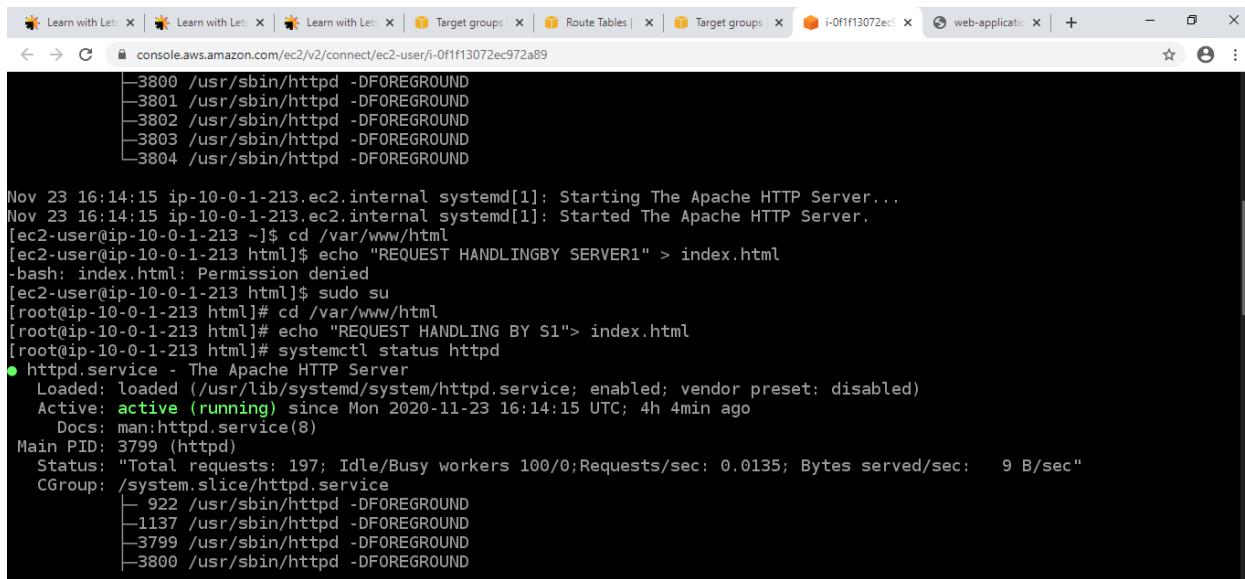
apr-util.x86_64 0:1.6.1-5.amzn2.0.2
generic-logos-httpd.noarch 0:18.0.0-4.amzn2
httpd-tools.x86_64 0:2.4.46-1.amzn2
mod_http2.x86_64 0:1.15.14-2.amzn2

Complete!
[root@ip-10-0-1-213 ec2-user]# systemctl start httpd
[root@ip-10-0-1-213 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)
     Active: active (running) since Mon 2020-11-23 16:14:15 UTC; 7s ago
       Docs: man:httpd.service(8)
     Main PID: 3799 (httpd)
        Status: "Processing requests..."
      CGroup: /system.slice/httpd.service
              └─3799 /usr/sbin/httpd -DFOREGROUND
                  ├─3800 /usr/sbin/httpd -DFOREGROUND
                  ├─3801 /usr/sbin/httpd -DFOREGROUND
                  ├─3802 /usr/sbin/httpd -DFOREGROUND
                  ├─3803 /usr/sbin/httpd -DFOREGROUND
                  ├─3804 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Started The Apache HTTP Server.
[ec2-user@ip-10-0-1-213 ~]$ cd /var/www/html
[ec2-user@ip-10-0-1-213 html]$ echo "REQUEST HANDLING BY SERVER1" > index.html
-bash: index.html: Permission denied
[ec2-user@ip-10-0-1-213 html]$ sudo su
[root@ip-10-0-1-213 html]# cd /var/www/html
[root@ip-10-0-1-213 html]# echo "REQUEST HANDLING BY S1"> index.html
[root@ip-10-0-1-213 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
     Active: active (running) since Mon 2020-11-23 16:14:15 UTC; 4h 4min ago
       Docs: man:httpd.service(8)
     Main PID: 3799 (httpd)
        Status: "Total requests: 197; Idle/Busy workers 100/0;Requests/sec: 0.0135; Bytes served/sec: 9 B/sec"
      CGroup: /system.slice/httpd.service
              ├─922 /usr/sbin/httpd -DFOREGROUND
              ├─1137 /usr/sbin/httpd -DFOREGROUND
              ├─3799 /usr/sbin/httpd -DFOREGROUND
              ├─3800 /usr/sbin/httpd -DFOREGROUND
```

i-0ff1f13072ec972a89 (Bastian-server)

Activate Windows
Go to Settings to activate Windows.



```
3800 /usr/sbin/httpd -DFOREGROUND
3801 /usr/sbin/httpd -DFOREGROUND
3802 /usr/sbin/httpd -DFOREGROUND
3803 /usr/sbin/httpd -DFOREGROUND
3804 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Started The Apache HTTP Server.
[ec2-user@ip-10-0-1-213 ~]$ cd /var/www/html
[ec2-user@ip-10-0-1-213 html]$ echo "REQUEST HANDLING BY SERVER1" > index.html
-bash: index.html: Permission denied
[ec2-user@ip-10-0-1-213 html]$ sudo su
[root@ip-10-0-1-213 html]# cd /var/www/html
[root@ip-10-0-1-213 html]# echo "REQUEST HANDLING BY S1"> index.html
[root@ip-10-0-1-213 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
     Active: active (running) since Mon 2020-11-23 16:14:15 UTC; 4h 4min ago
       Docs: man:httpd.service(8)
     Main PID: 3799 (httpd)
        Status: "Total requests: 197; Idle/Busy workers 100/0;Requests/sec: 0.0135; Bytes served/sec: 9 B/sec"
      CGroup: /system.slice/httpd.service
              ├─922 /usr/sbin/httpd -DFOREGROUND
              ├─1137 /usr/sbin/httpd -DFOREGROUND
              ├─3799 /usr/sbin/httpd -DFOREGROUND
              ├─3800 /usr/sbin/httpd -DFOREGROUND
```

i-0ff1f13072ec972a89 (Bastian-server)

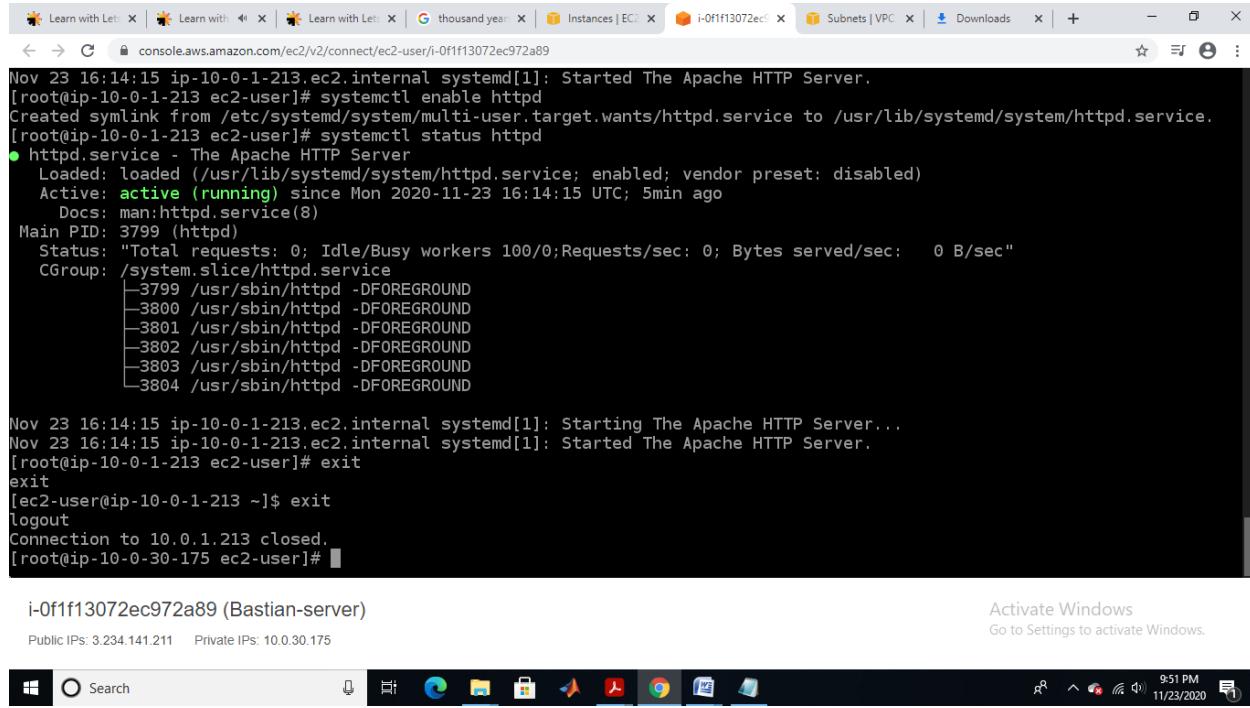
Activate Windows
Go to Settings to activate Windows.



CHANGED TO /VAR/WWW/HTML AS FILE WASN'T BEING COPIED DIRECTLY AND OUTPUT WAS BLANK WITH APACHE WEBPAGE DISPLAYED.

AFTER WRITING WHAT TO DISPLAY IN INDEX.HTML FILE VIA ECHO COMMAND LOGOUT FROM WEB SERVER 2 BACK TO BASTIAN SERVER.

TO LOGOUT OF WEB SERVER 1, 2 TIMES EXIT IS REQUIRED BECAUSE 1ST EXIT
MEANS EXIT FROM SUDO USER TO NORMAL USER AND 2ND EXIT IS EXITING
FROM WEB SERVER 1 CONNECTION BACK TO BASTIAN SERVER.



```
Learn with Let's ... Learn with ... Learn with ... Instances | EC2 i-0f1f13072ec972a89 Subnets | VPC Downloads ...
< → C console.aws.amazon.com/ec2/v2/connect/ec2-user/i-0f1f13072ec972a89
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-10-0-1-213 ec2-user]# systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
[root@ip-10-0-1-213 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
    Active: active (running) since Mon 2020-11-23 16:14:15 UTC; 5min ago
      Docs: man:httpd.service(8)
   Main PID: 3799 (httpd)
  Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
  CGroup: /system.slice/httpd.service
          └─3799 /usr/sbin/httpd -DFOREGROUND
              ├─3800 /usr/sbin/httpd -DFOREGROUND
              ├─3801 /usr/sbin/httpd -DFOREGROUND
              ├─3802 /usr/sbin/httpd -DFOREGROUND
              ├─3803 /usr/sbin/httpd -DFOREGROUND
              └─3804 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-10-0-1-213 ec2-user]# exit
exit
[ec2-user@ip-10-0-1-213 ~]$ exit
logout
Connection to 10.0.1.213 closed.
[root@ip-10-0-30-175 ec2-user]#
```

i-0f1f13072ec972a89 (Bastian-server)
Activate Windows
Go to Settings to activate Windows.
Public IPs: 3.234.141.211 Private IPs: 10.0.30.175



SAME PROCESS IS FOLLOWED FOR WEB SERVER 2.

The screenshot shows a terminal session on an Amazon Linux 2 AMI. The user logs out and connects via SSH to another instance. They run an 'ssh -i' command to connect to 'webserver1-key.pem' at 'ec2-user@10.0.1.72'. The terminal shows the authenticity of the host and asks if they want to continue connecting. The user responds 'yes'. The terminal then displays the Apache HTTP Server startup logs, showing it starting and then exiting. It also shows the user navigating to the URL <https://aws.amazon.com/amazon-linux-2/>, which indicates no packages are needed for security.

```
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:14:15 ip-10-0-1-213.ec2.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-10-0-1-213 ec2-user]# exit
exit
[ec2-user@ip-10-0-1-213 ~]$ exit
logout
Connection to 10.0.1.213 closed.
[root@ip-10-0-30-175 ec2-user]# ssh -i webserver1-key.pem ec2-user@10.0.1.72
The authenticity of host '10.0.1.72 (10.0.1.72)' can't be established.
ECDSA key fingerprint is SHA256:mfS9RPDnHkB0WYq4wyXWuVai4GV7ezF/MC59uvCka4Q.
ECDSA key fingerprint is MD5:a6:49:f7:ec:bb:3d:5b:31:ec:d1:6b:55:f6:97:aa:56.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.0.1.72' (ECDSA) to the list of known hosts.

_|_(_|_) / Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
No packages needed for security; 3 packages available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-0-1-72 ~]$
```

i-0f1f13072ec972a89 (Bastian-server)
Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows
Go to Settings to activate Windows.

8:52 PM 11/23/2020

COPY PASTE PEM FILE USING VI EDITOR AND INSTALL APACHE USING SUDO COMMAND.

The screenshot shows a terminal session on an Amazon Linux 2 AMI. The user runs 'apt-get update' and then installs the Apache package using 'apt-get install apache2'. After installation, they start the Apache service with 'systemctl start httpd' and enable it with 'systemctl enable httpd'. The terminal then shows the Apache startup logs, indicating it has started and is active. The user logs out.

```
apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
httpd-filesystem.noarch 0:2.4.46-1.amzn2
mailcap.noarch 0:2.1.41-2.amzn2
generic-logos-httpd.noarch 0:18.0.0-4.amzn2
httpd-tools.x86_64 0:2.4.46-1.amzn2
mod_http2.x86_64 0:1.15.14-2.amzn2

Complete!
[root@ip-10-0-1-72 ec2-user]# systemctl start httpd
[root@ip-10-0-1-72 ec2-user]# systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
[root@ip-10-0-1-72 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
     Active: active (running) since Mon 2020-11-23 16:24:31 UTC; 28s ago
       Docs: man:httpd.service(8)
   Main PID: 32531 (httpd)
      Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
    CGroup: /system.slice/httpd.service
            └─32531 /usr/sbin/httpd -DFOREGROUND
            ├─32532 /usr/sbin/httpd -DFOREGROUND
            ├─32533 /usr/sbin/httpd -DFOREGROUND
            ├─32534 /usr/sbin/httpd -DFOREGROUND
            ├─32535 /usr/sbin/httpd -DFOREGROUND
            └─32536 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-10-0-1-72 ec2-user]#
```

i-0f1f13072ec972a89 (Bastian-server)
Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows
Go to Settings to activate Windows.

9:55 PM 11/23/2020

AFTER WRITING WHAT TO DISPLAY IN INDEX.HTML FILE VIA ECHO COMMAND LOGOUT (EXIT) FROM WEB SERVER 2 BACK TO BASTIAN SERVER.

```
32531 /usr/sbin/httpd -DFOREGROUND
32532 /usr/sbin/httpd -DFOREGROUND
32533 /usr/sbin/httpd -DFOREGROUND
32534 /usr/sbin/httpd -DFOREGROUND
32535 /usr/sbin/httpd -DFOREGROUND
32536 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Started The Apache HTTP Server.
[ec2-user@ip-10-0-1-72 ~]$ sudo su
[root@ip-10-0-1-72 ec2-user]# cd /var/www/html
[root@ip-10-0-1-72 html]# echo "REQUEST HANDLING BY S2" > index.html
[root@ip-10-0-1-72 html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
  Active: active (running) since Mon 2020-11-23 16:24:31 UTC; 3h 55min ago
    Docs: man:httpd.service(8)
 Main PID: 32531 (httpd)
 Status: "Total requests: 197; Idle/Busy workers 100/0;Requests/sec: 0.014; Bytes served/sec: 8 B/sec"
 CGroup: /system.slice/httpd.service
         └─ 873 /usr/sbin/httpd -DFOREGROUND
             ├─32531 /usr/sbin/httpd -DFOREGROUND
             ├─32532 /usr/sbin/httpd -DFOREGROUND
             ├─32533 /usr/sbin/httpd -DFOREGROUND
             ├─32534 /usr/sbin/httpd -DFOREGROUND
             ├─32535 /usr/sbin/httpd -DFOREGROUND
```

i-0f1f13072ec972a89 (Bastian-server)

Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows

Go to Settings to activate Windows.

```
[root@ip-10-0-1-72 ec2-user]# systemctl start httpd
[root@ip-10-0-1-72 ec2-user]# systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
[root@ip-10-0-1-72 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
  Active: active (running) since Mon 2020-11-23 16:24:31 UTC; 28s ago
    Docs: man:httpd.service(8)
 Main PID: 32531 (httpd)
 Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
 CGroup: /system.slice/httpd.service
         └─32531 /usr/sbin/httpd -DFOREGROUND
             ├─32532 /usr/sbin/httpd -DFOREGROUND
             ├─32533 /usr/sbin/httpd -DFOREGROUND
             ├─32534 /usr/sbin/httpd -DFOREGROUND
             ├─32535 /usr/sbin/httpd -DFOREGROUND
             └─32536 /usr/sbin/httpd -DFOREGROUND

Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Starting The Apache HTTP Server...
Nov 23 16:24:31 ip-10-0-1-72.ec2.internal systemd[1]: Started The Apache HTTP Server.
[root@ip-10-0-1-72 ec2-user]# exit
exit
[ec2-user@ip-10-0-1-72 ~]$ exit
logout
Connection to 10.0.1.72 closed.
[root@ip-10-0-30-175 ec2-user]#
```

i-0f1f13072ec972a89 (Bastian-server)

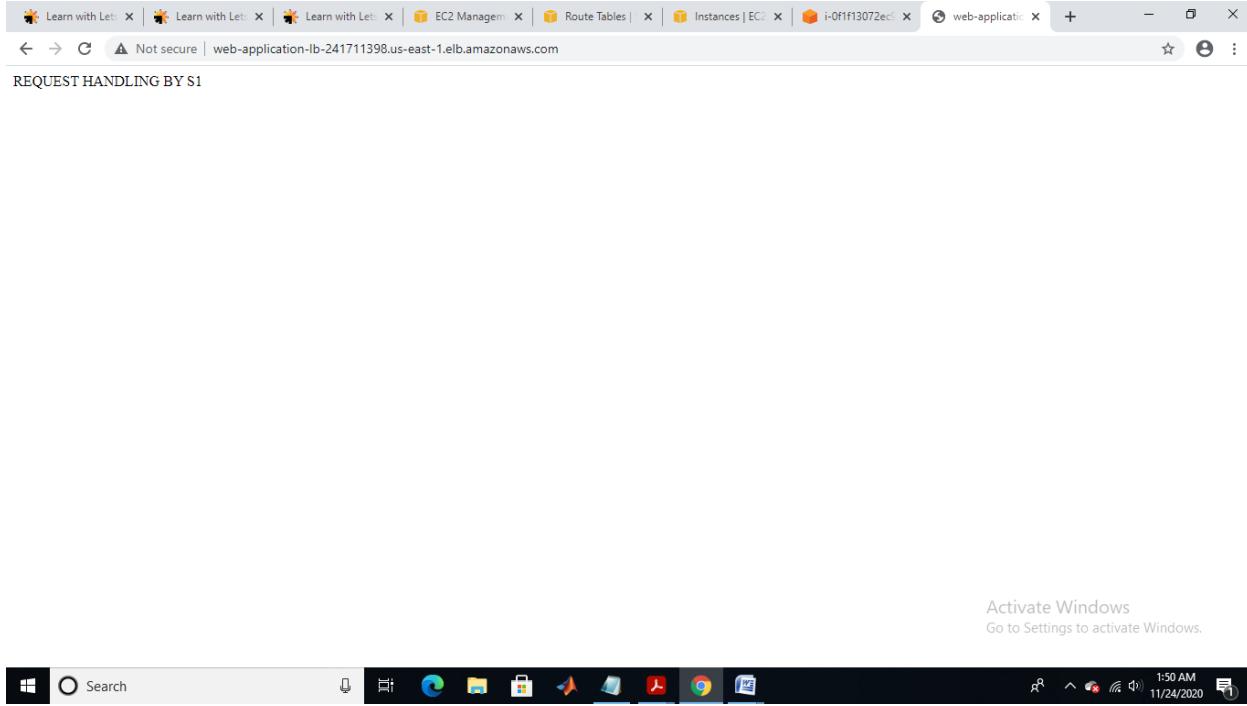
Public IPs: 3.234.141.211 Private IPs: 10.0.30.175

Activate Windows

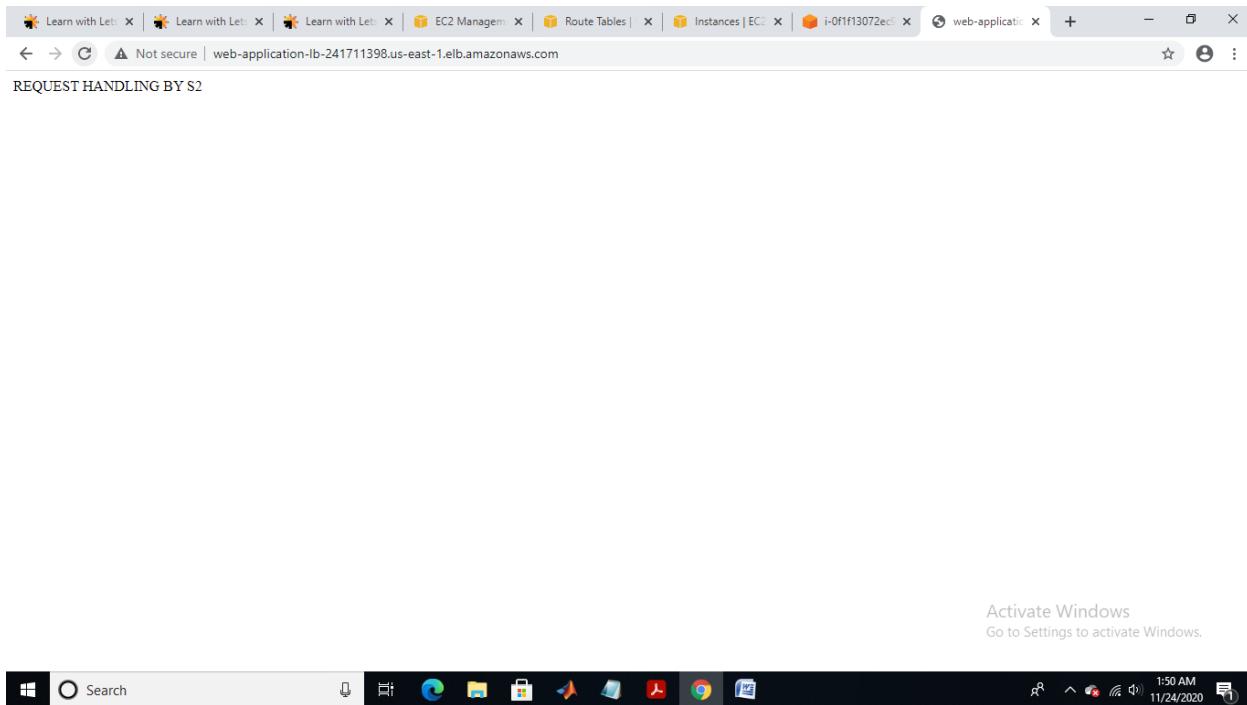
Go to Settings to activate Windows.

8. COPY PASTE DNS OF ALB IN BROWSER AND CHECK THE OUTPUT.

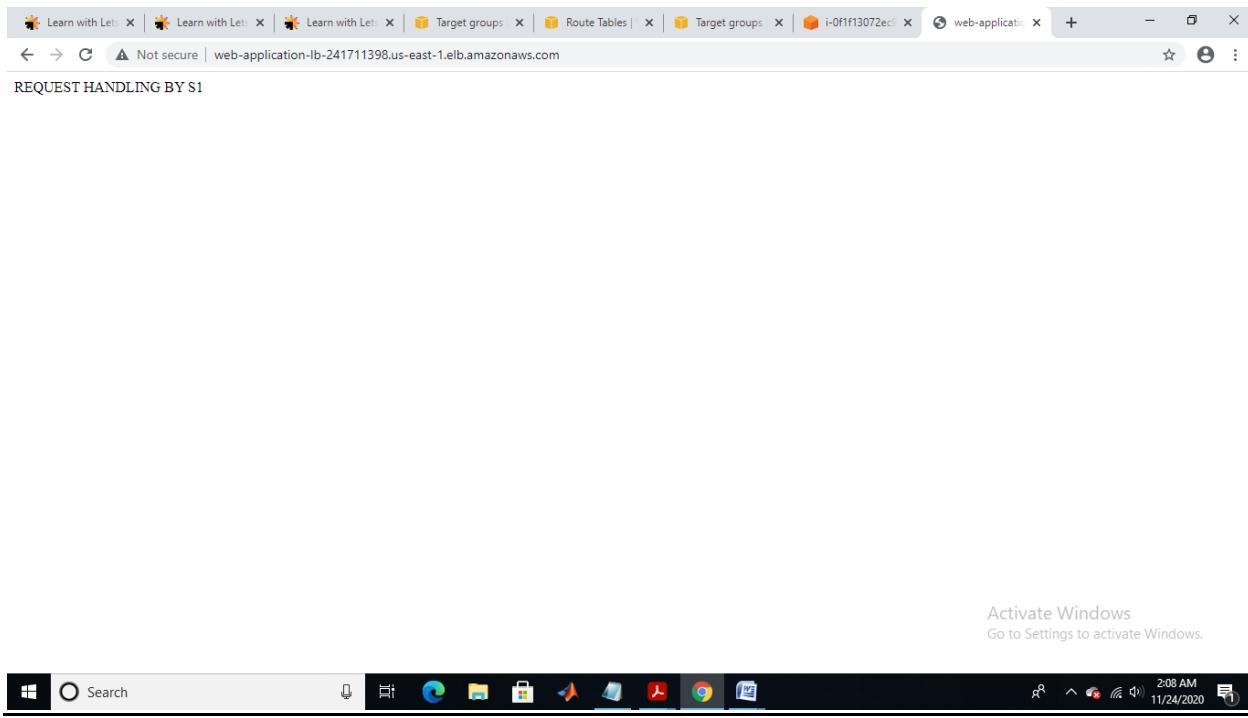
HERE, WE GOT OUTPUT OF WEB SERVER1 DEPENDING ON LOAD.



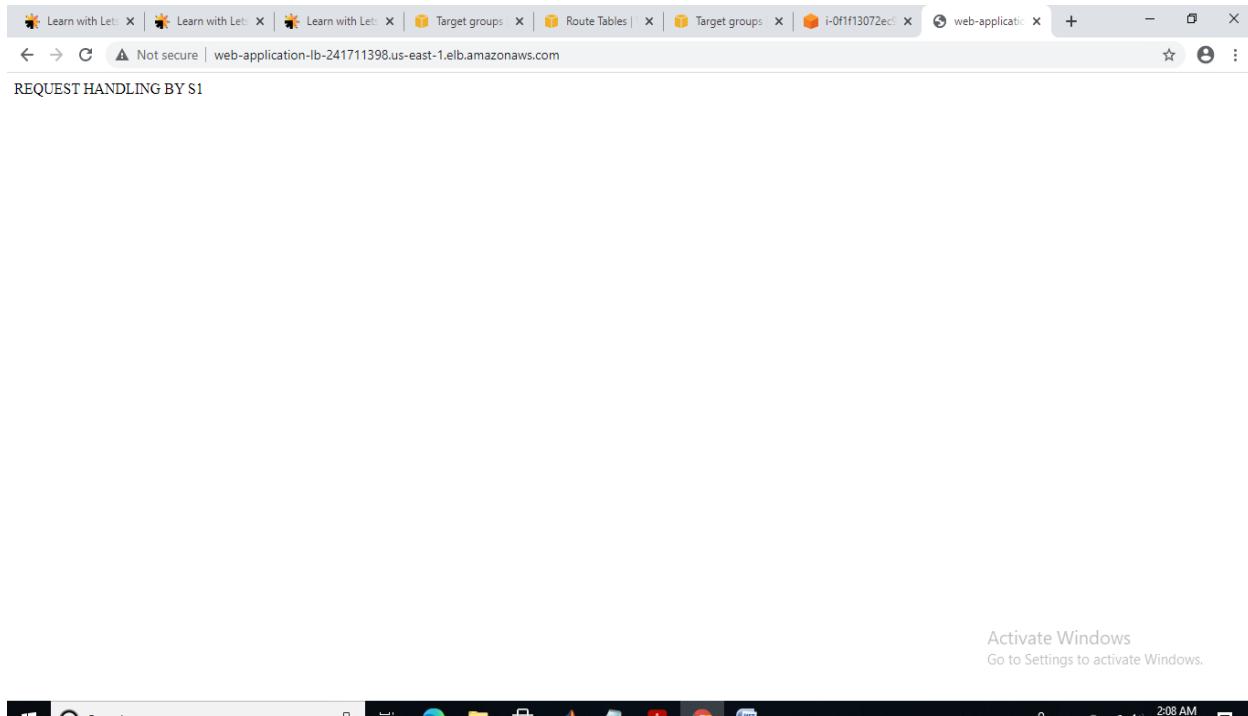
HERE, WE GOT OUTPUT OF WEB SERVER2 DEPENDING ON LOAD.



HERE IN BELOW SCREENSHOT, WE GOT OUTPUT OF WEB SERVER1 DEPENDING ON LOAD.



BELLOW SCREENSHOT SHOWS OUTPUT OF WEB SERVER1 DEPENDING ON LOAD.



***HENCE, PROJECT1 IS
IMPLEMENTED
SUCCESSFULLY.***
