

Lab Assignment – 03

Create an Application Load Balancer to distribute the load of 2 application webserver. In addition to this, add one more webserver to the existing Load Balancer.

Note:

Load Balancing automatically distributes incoming traffic load.

VPC works at Region level.

Subnet works at Availability Zone level.

Load Balancer works at Region level.

The target groups can be established at the availability zone level.

Task-1: Launch 2 AWS Window R2 base server in different availability zones.

EC2 Windows Server 1 → ap-south-1b

Launch instance wizard | EC2 M... x

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	1	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-a827d6c3 (default)	Create new VPC
Subnet	subnet-29074865 Default in ap-south-1b 4091 IP Addresses available	Create new subnet
Auto-assign Public IP	Use subnet setting (Enable)	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	Open	
Domain join directory	No directory	Create new directory
IAM role	None	Create new IAM role

Cancel Previous **Review and Launch** Next: Add Storage

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EC2 Windows Server 2 → ap-south-1a

Launch instance wizard | EC2 Management Console

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:

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Number of Instances: 1 [Launch into Auto Scaling Group](#)

Purchasing option: ☐ Request Spot instances

Network: vpc-a827d6c3 (default) [Create new VPC](#)

Subnet: subnet-4e061826 | Default in ap-south-1a [Create new subnet](#)
4091 IP Addresses available

Auto-assign Public IP: Use subnet setting (Enable)

Placement group: ☐ Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory [Create new directory](#)

IAM role: None [Create new IAM role](#)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

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Task-2: Configure both the EC2 webserver.

Instances | EC2 Management Console

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#Instances:sort=tag:Name

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New EC2 Experience Tell us what you think

EC2 Dashboard **Events** Tags Limits

▼ Instances **Instances** Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances

Instances (2) Info [Refresh](#) [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

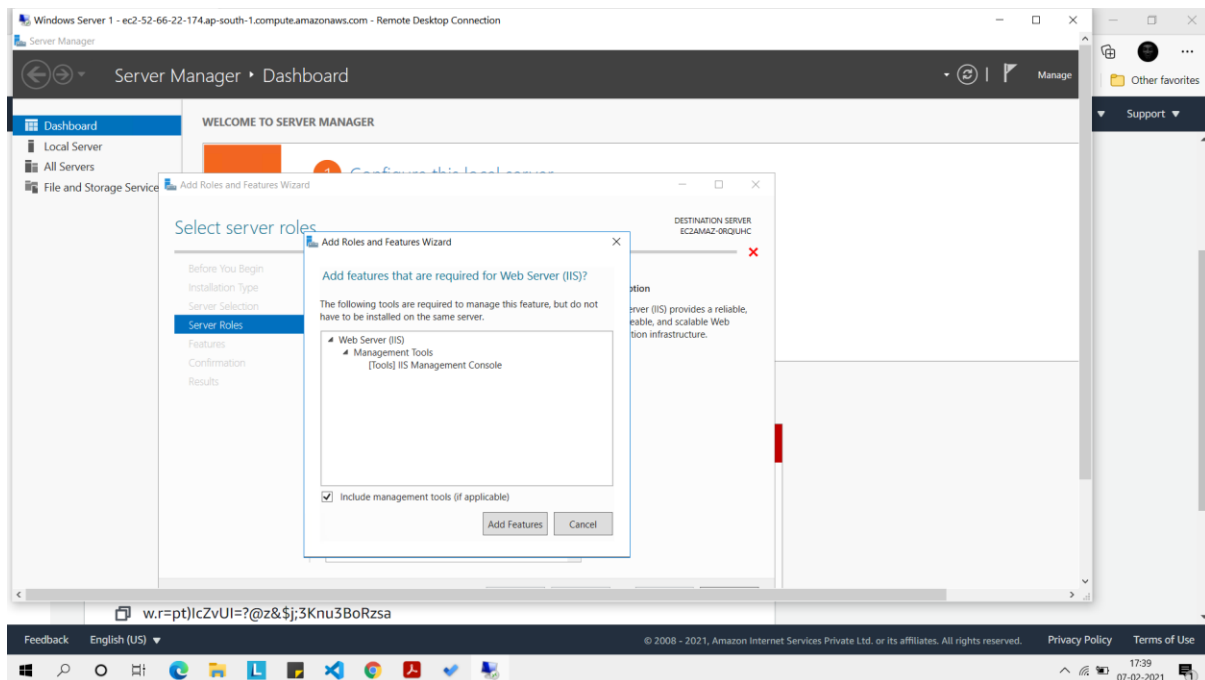
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check
<input type="checkbox"/>	Windows Server 1	i-029959c8d361ae1ce	Running	t2.micro	Initializing
<input type="checkbox"/>	Windows Server 2	i-0aac7ad6f1bcc2302	Running	t2.micro	-

Select an instance above

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Task-3: Create static website in the EC2 instances

In the Server Manager, in the “add roles and features”, add the Web IIS Server.



Code for the Static Website:

```
<!DOCTYPE html>
<head>
  <title> Web Server 1 </title>
</head>

<body bgcolor = "yellow">
  <center><h1> Windows Web Server - 1 </h1></center>
  <center><h1> Region: ap-south-1b </h1></center>
</body>
</html>
```

Task-4: Create Load Balancer and attach both the EC2 server to it.

Create Load Balancer | EC2 Mani x +

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#SelectCreateELBWizard:

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Select load balancer type

Elastic Load Balancing supports three types of load balancers: Application Load Balancers, Network Load Balancers (new), and Classic Load Balancers. Choose the load balancer type that meets your needs. [Learn more about which load balancer is right for you](#)

Application Load Balancer

HTTP
HTTPS

Create

Choose an Application Load Balancer when you need a flexible feature set for your web applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers. [Learn more >](#)

Network Load Balancer

TCP
TLS
UDP

Create

Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your application. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies. [Learn more >](#)

Classic Load Balancer

PREVIOUS GENERATION
for HTTP, HTTPS, and TCP

Create

Choose a Classic Load Balancer when you have an existing application running in the EC2-Classical network. [Learn more >](#)

Cancel

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Create Load Balancer | EC2 Mani x +

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#V2CreateELBWizard?type=application:

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1. Configure Load Balancer 2. Configure Security Settings 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review

Step 1: Configure Load Balancer

Basic Configuration

To configure your load balancer, provide a name, select a scheme, specify one or more listeners, and select a network. The default configuration is an Internet-facing load balancer in the selected network with a listener that receives HTTP traffic on port 80.

Name

Scheme ☒ internet-facing ☐ internal

IP address type

Listeners

A listener is a process that checks for connection requests, using the protocol and port that you configured.

Load Balancer Protocol	Load Balancer Port
HTTP	80

Next Listener

Cancel Next: Configure Security Settings

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Task-5: Register EC2 servers and set the target group Configure and review.

Create Load Balancer | EC2 Man... X

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1. Configure Load Balancer 2. Configure Security Settings 3. Configure Security Groups 4. Configure Routing 5. Register Targets 6. Review

Step 5: Register Targets

Remove

Instance	Name	Port	State	Security groups	Zone
No instances available.					

Instances

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.

Add to registered on port 80

Search Instances X

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input type="checkbox"/>	i-0aac7ad6f1bcc2302	running	SG_ELB	ap-south-1a	subnet-4e061826	172.31.32.0/20
<input type="checkbox"/>	i-029959c8d361ae1ce	running	SG_ELB	ap-south-1b	subnet-29074865	172.31.0.0/20

Cancel Previous Next: Review

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Create Load Balancer | EC2 Man... X

https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#V2CreateELBWizard:type=application:

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Load Balancer Creation Status

✓ **Successfully created load balancer**

Load balancer **ELB-1** was successfully created.

Note: It might take a few minutes for your load balancer to be fully set up and ready to route traffic, and for the targets to complete the registration process and pass the initial health checks.

Suggested next steps

- Discover other services that you can integrate with your load balancer. Visit the **Integrated services** tab within **ELB-1**
- Consider using AWS Global Accelerator to further improve the availability and performance of your applications. [AWS Global Accelerator console](#)

Close

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Task-6: Check the working of the Load Balancing.

