Day-13

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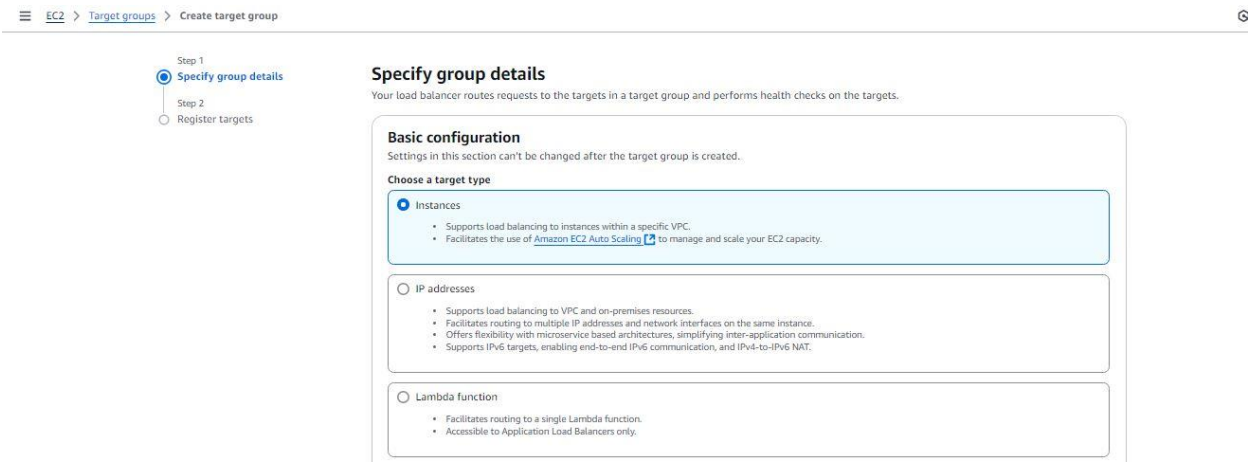
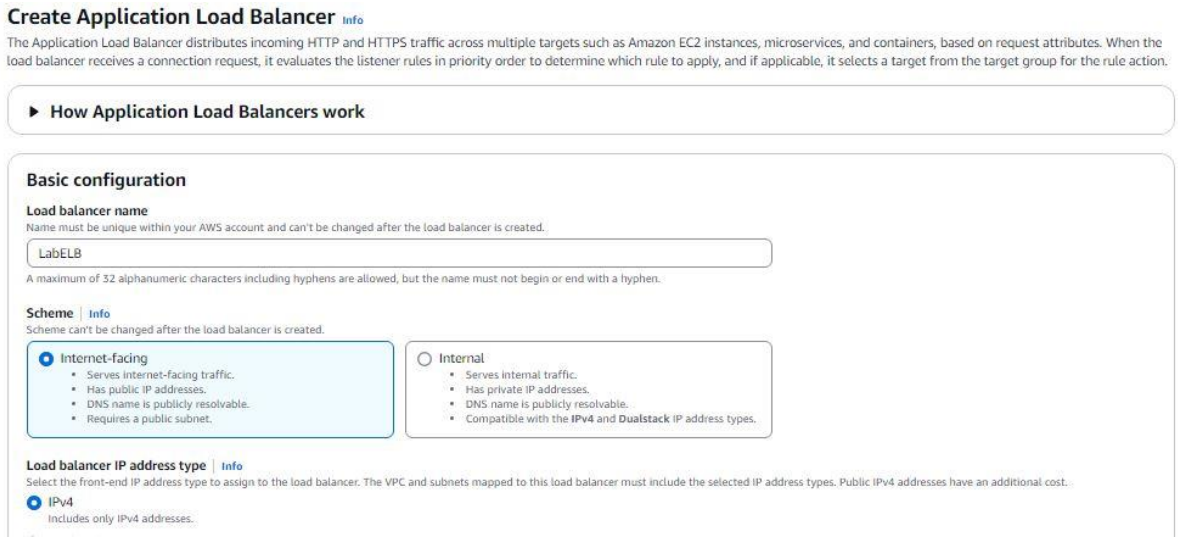
Today I learned about two very important services that work together to keep performance balanced and make AWS cost-effective. Autoscaling automatically adjusts the number of resources (like servers) based on demand. This prevents overload during high usage and saves costs by scaling down during low demand. Load balancing distributes traffic to multiple servers. This prevents any single server from being overload and keeps performance balanced and highly available. The process for integrating Autoscaling and Load balancing in an AWS are as follows:

Creating a Target group:

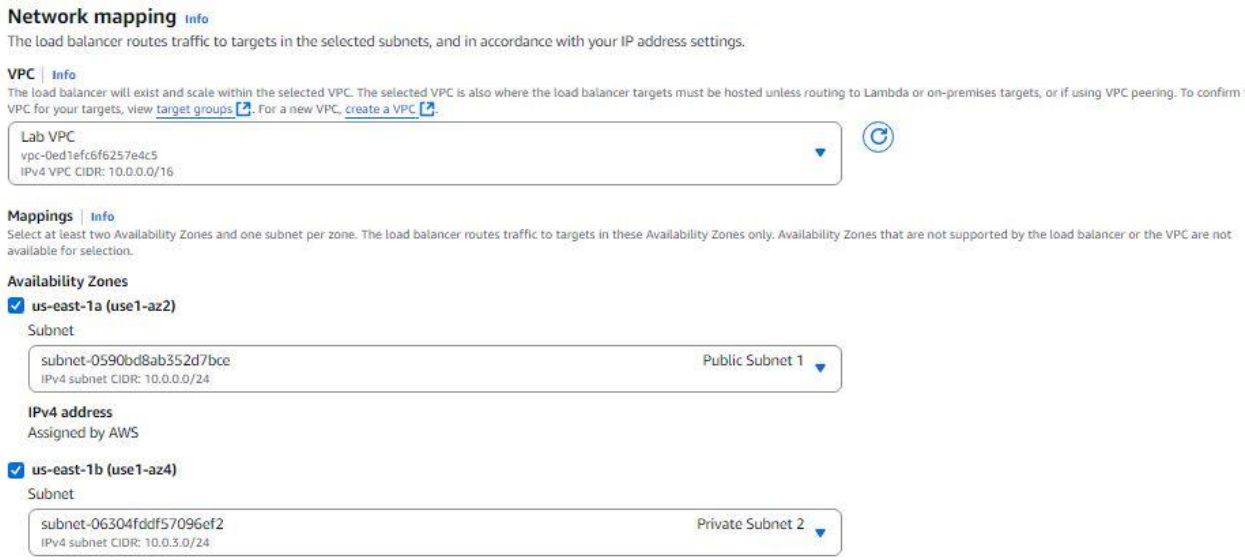


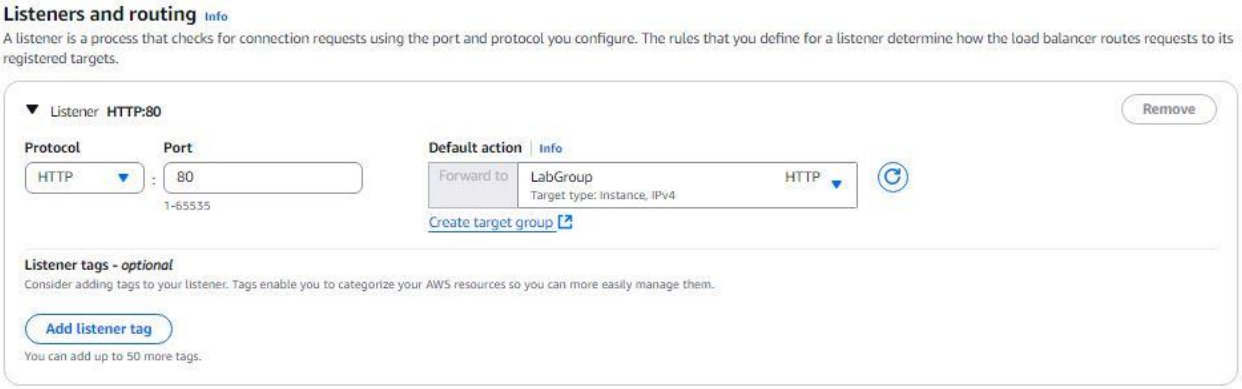
Eg: (Creating a target group here for instances**)**

Creating a Load Balancer:



Mapping a network and Selecting Target group for load balancer:

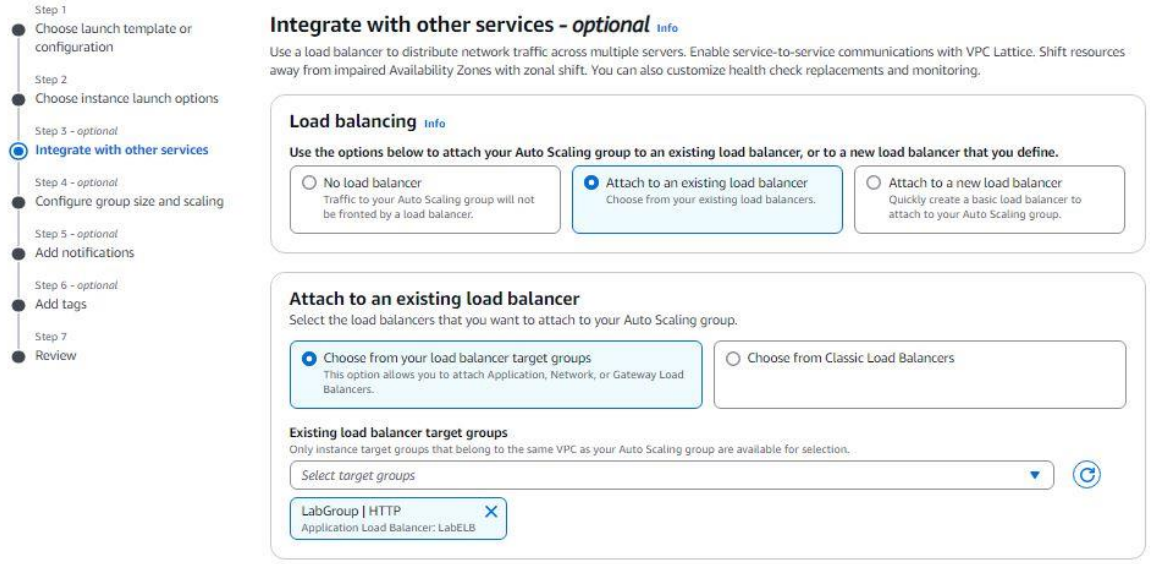




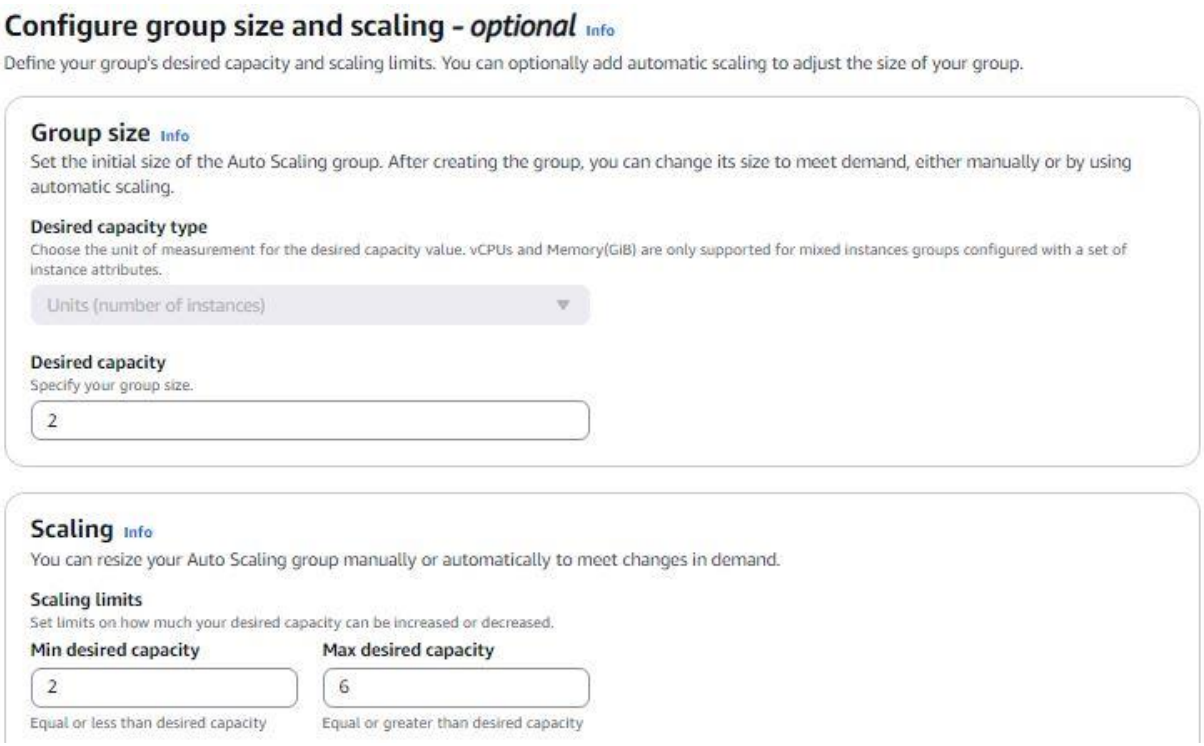
Creating Autoscaling group in template:

Note: Here a template was pre-created by me to attach it with AutoScaling.

Integrating Load Balancer to AutoScaling:

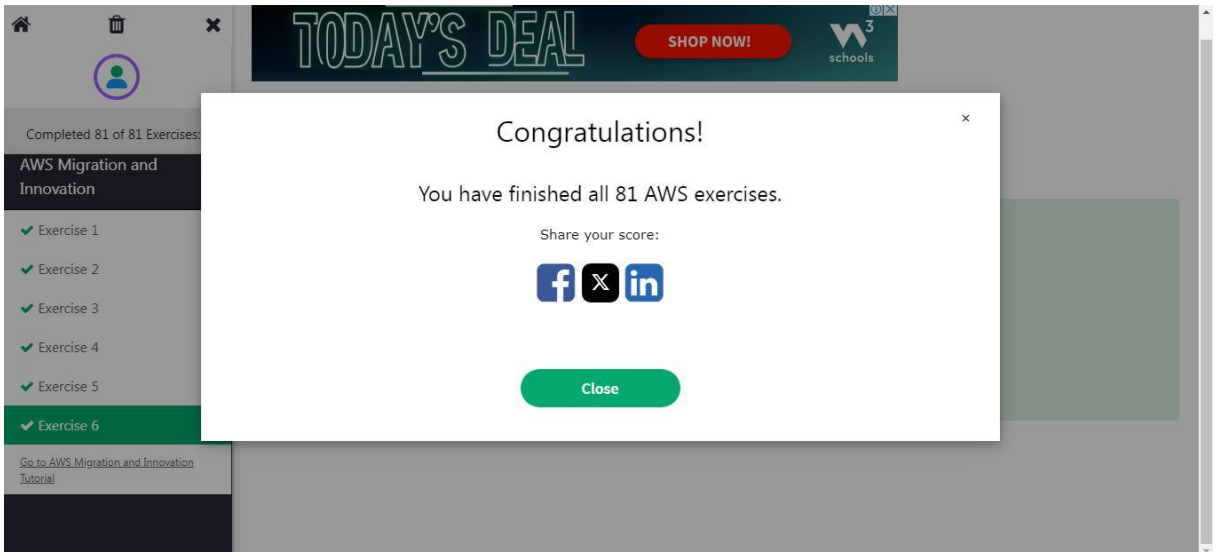


Configuring AutoScaling:



And this is how AutoScaling is created with the integration of Load Balancing.

In addition to that, I also completed series of exercises form the “W3Schools” platform on AWS cloud, its services and its properties. It helped me a lot to enhance my understanding of cloud and its services. I have attached the image of completion below:



I was also given a set of question to solve by myself. I got a score of 15 out of 20 and after a detailed evaluation by Sir, I was told to focus more on the S3 service. Also Read and understand the question carefully. I have attached the set of questions below:

Sr. No.	Subject	Question	Option A	Option B	Option C	Option D	Correct Answer	My Answer
1	AWS EC2	What are the key features of Amazon EC2?	Scalable compute capacity	Managed database services	Data analytics services	Content delivery network	A	Option A
2	AWS EC2	Which statement is true about security groups in EC2?	Security groups allow all traffic by default	Security groups act as virtual firewalls	Security groups block all traffic by default	Security groups allow only inbound traffic	B	Option B
3	AWS S3	What are the storage classes available in S3?	Standard, Intelligent-Tiering	Infrequent Access, Glacier	One Zone-IA, Cold Archive	Temporary Storage, Long-Term Storage	A	Option D
4	AWS S3	How does S3 ensure data durability?	Through encryption	Replication across regions	Automatic backups	Through user-defined configurations	B	Option C
5	AWS VPC	What is the primary purpose of a VPC?	Connect isolated cloud resources	Store backup data	Improve app performance	Automate application deployment	A	Option A
6	AWS VPC	What is a characteristic of subnets in a VPC?	Subnets can span multiple Availability Zones	Subnets are restricted to a single AZ	Subnets are shared across accounts	Subnets require manual configuration	B	Option A
7	AWS EBS	What is the key difference between SSD and HDD EBS volumes?	SSD offers higher throughput	HDD is more expensive	HDD offers lower latency	SSD is less durable	A	Option A
8	AWS EBS	How can you back up data from an EBS volume?	Use AWS Backup	Create a snapshot	Clone the volume	Use Elastic Block Store Vault	B	Option B
9	AWS Instance Type	What are the main categories of EC2 instance types?	General Purpose, Compute Optimized	Memory Optimized, Storage Optimized	Burstable Performance	GPU Instances	B	Option B
10	AWS Instance Type	Which factor is important when choosing an EC2 instance type?	Number of vCPUs only	Network bandwidth	Instance pricing model	Region location	B	Option A
11	AWS EC2	What is an AMI in EC2?	A virtual server	A pre-configured virtual machine image	A storage service	An EC2 configuration file	B	Option B
12	AWS EC2	How does EC2 Auto Scaling improve performance?	By reducing latency	By dynamically adjusting instances	By providing backups	By managing security groups	B	Option B
13	AWS S3	What is S3 bucket versioning?	Allows bucket replication	Tracks changes to objects	Enables faster data transfer	Deletes old versions automatically	B	Option D
14	AWS S3	How can you restrict access to an S3 bucket?	Using IAM policies	Through bucket policies	Using S3 Access Points	Through CloudFront policies	B	Option B
15	AWS VPC	What is an Internet Gateway in a VPC?	Routes private IPs to the internet	Connects a VPC to the internet	Allows external apps to connect to VPCs	Facilitates internal VPC communication	B	Option B
16	AWS VPC	How is a NAT Gateway used in a VPC?	Allows instances in private subnets to access the internet	For routing traffic between VPCs	To enforce access restrictions	To connect multiple subnets	A	Option A
17	AWS EBS	What is the maximum size of an EBS volume?	1 TB	16 TB	64 TB	32 TB	C	Option D
18	AWS EBS	What happens when you delete an EBS volume?	It is archived	It is permanently deleted	It is backed up automatically	It is detached	B	Option B
19	AWS Instance Type	What is the purpose of burstable performance instances?	For consistent workloads	For spiky workloads	For web servers	For GPU processing	B	Option B
20	AWS Instance Type	Which workload is best suited for Compute Optimized instances?	Batch processing	High-performance computing	Data analytics	Streaming applications	B	Option B
								15/20
								75%