AWS Lab – Hosting Web Pages on Multiple EC2 Instances + Load Balancing

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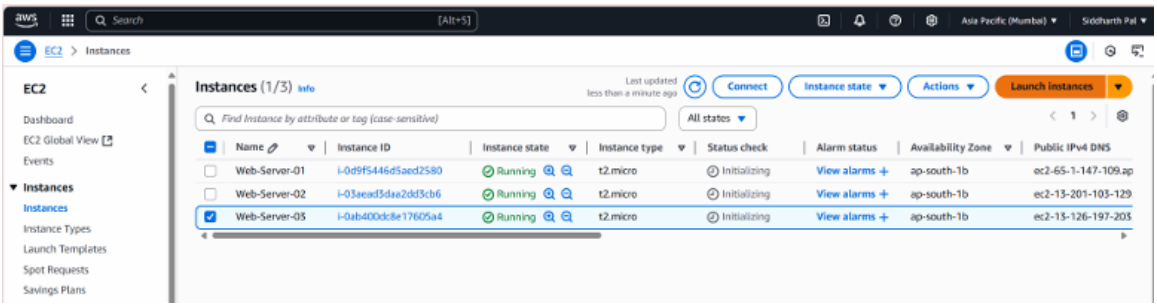
Step 1: Launch Web Server 1 (web-server-01)

- • Click Launch Instance
- • Instance Name: web-server-01
- • AMI: Amazon Linux 2 (Free Tier Eligible)
- • Instance Type: t2.micro
- • Key Pair: Choose existing or create new
- • Network Settings: Allow HTTP and HTTPS traffic (SSH is checked by default)
- • Leave all other settings default
- • Click Launch Instance

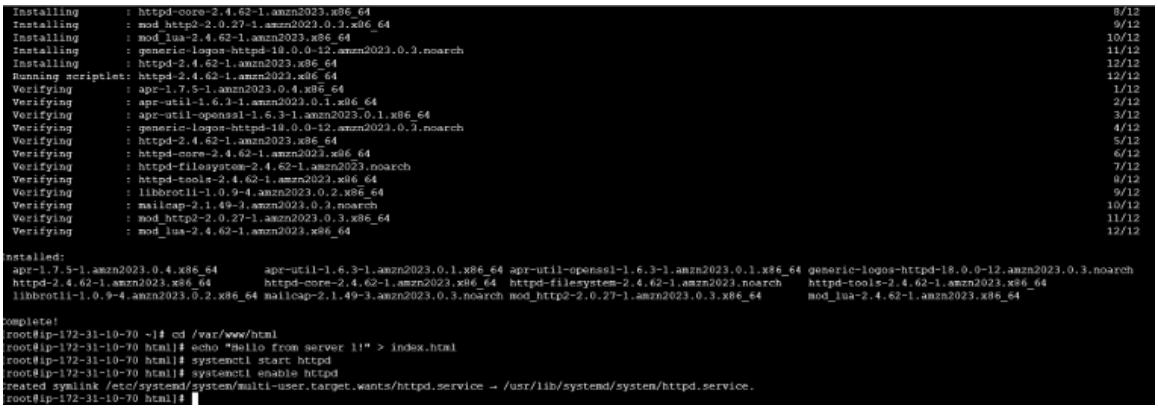


Step 2: Connect to web-server-01 via SSH

- • Use MobaXterm or terminal:
- • ssh -i <your-key.pem> ec2-user@<Public-IP-of-web-server-01>

Step 3: Install and Start Apache on web-server-01

- • sudo su
- • cd
- • yum install httpd -y
- • cd /var/www/html
- • echo "welcome to the webserver demo" > index.html
- • systemctl start httpd
- • systemctl enable httpd



Step 4: Access Web Page from Browser

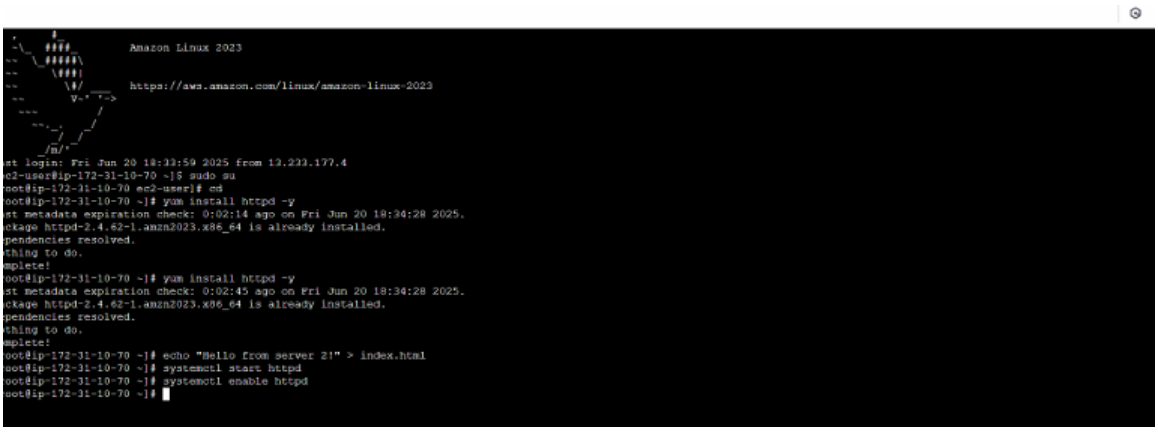
- • Open browser and visit: http://<Public-IP-of-web-server-01>

Step 5: Launch Two More Web Servers (web-server-02 and web-server-03)

- • Click Launch Instance
- • Number of Instances: 2
- • Instance Names: web-server-02, web-server-03
- • AMI: Amazon Linux 2
- • Instance Type: t2.micro
- • Network Settings: Allow HTTP and HTTPS traffic
- • Launch the instances
- • Rename instances via "Actions > Manage Tags" on the EC2 dashboard if needed

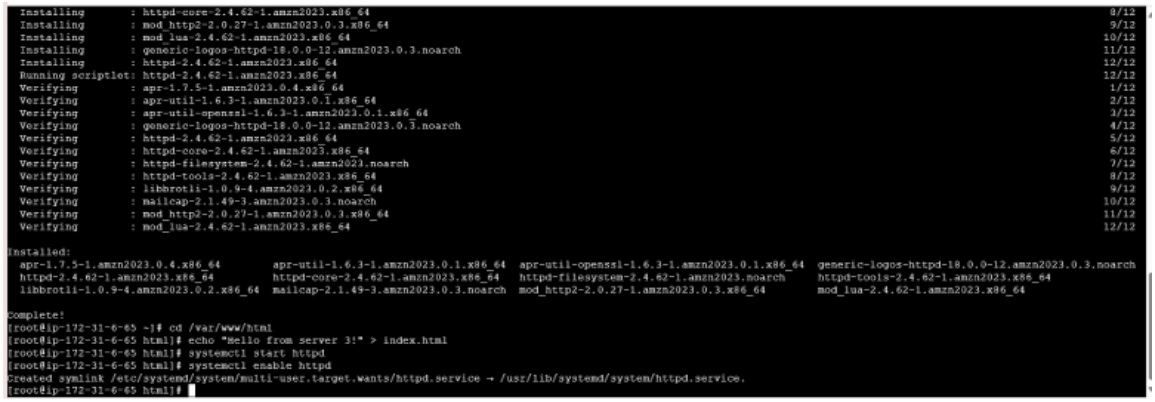
Step 6: Configure web-server-02

- • Connect via SSH: ssh -i <your-key.pem> ec2-user@<Public-IP-of-web-server-02>
- • sudo su
- • cd
- • yum install httpd -y
- • cd /var/www/html
- • echo "Hello from server 2!" > index.html
- • systemctl start httpd
- • systemctl enable httpd



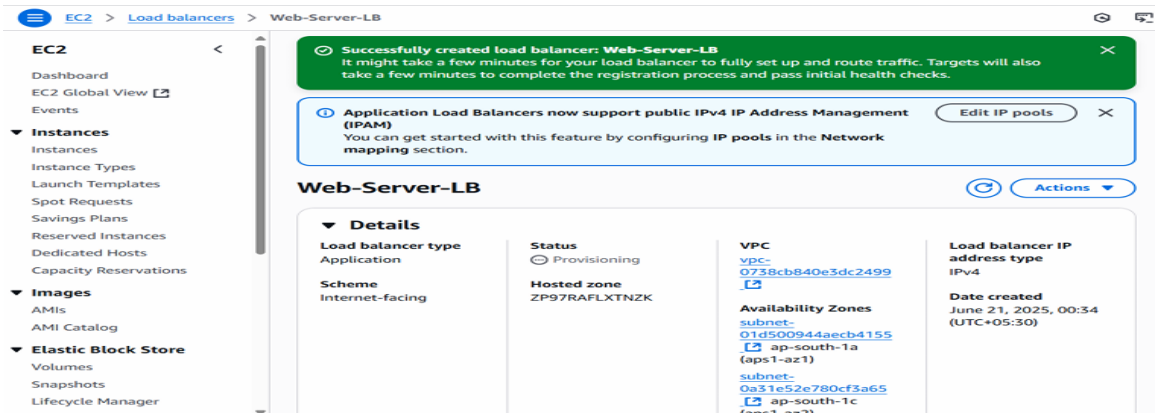
Step 7: Configure web-server-03

- • Connect via SSH: ssh -i <your-key.pem> ec2-user@<Public-IP-of-web-server-03>
- • sudo su
- • cd
- • yum install httpd -y
- • cd /var/www/html
- • echo "Hello from server 3!" > index.html
- • systemctl start httpd
- • systemctl enable httpd



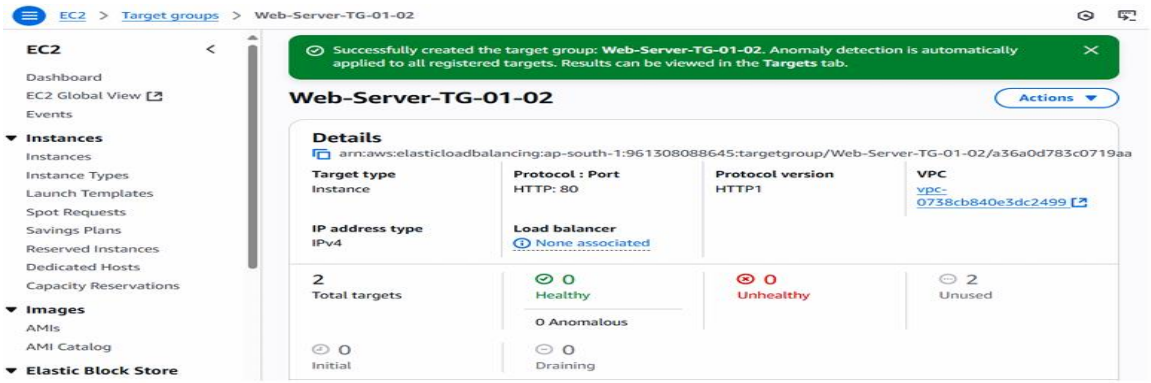
Step 8: Set Up Application Load Balancer (ALB)

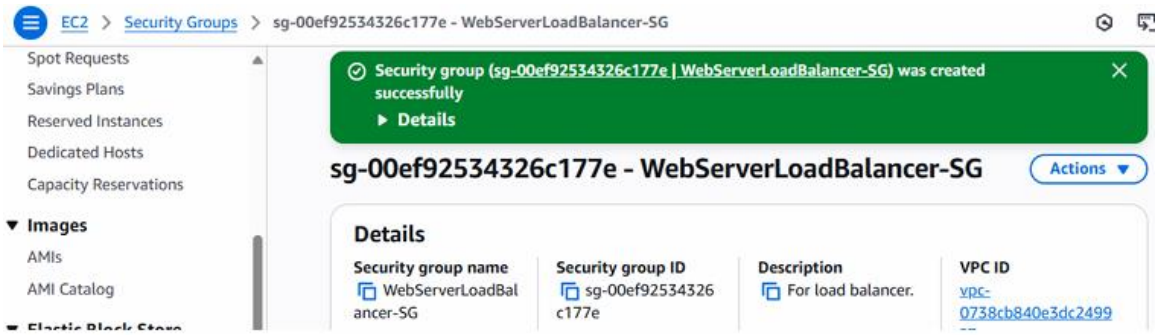
- • Create Application Load Balancer
- • Name: Web-Server-LB, Scheme: Internet-facing, IP type: IPv4
- • Choose VPC used by web servers
- • Select 2–3 subnets from different Availability Zones



Step 9: Create a Target Group

- • Target Type: Instances
- • Name: Web-Server-TG-01-02
- • VPC: Same as web servers
- • Select instances: web-server-01, web-server-02
- • Click Include as Pending, then Create Target Group

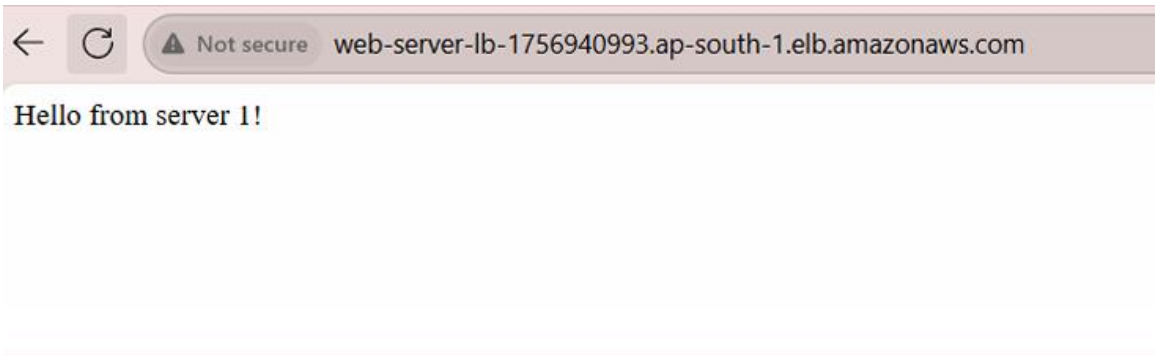




Step 10: Access Website via Load Balancer DNS

- • Go to EC2 Dashboard > Load Balancers

- • Copy Load Balancer DNS name
- • Paste in browser: http://<Load-Balancer-DNS>



Step 11: Setup SSL Certificate via ACM

- • Request Public Certificate in ACM
- • Enter domain: *.yourdomain.com and yourdomain.com
- • Validate via Route 53 by adding CNAME records

Step 12: Add HTTPS Listener to Load Balancer

- • Go to Load Balancer settings → Add Listener
- • Protocol: HTTPS, Port: 443
- • Forward to: Web-Server-TG-01-02
- • Use SSL Certificate from ACM

Step 13: (Optional) Redirect HTTP to HTTPS

- • Edit HTTP Listener rules (port 80)
- • Change action to Redirect to HTTPS (port 443) with status code HTTP_301