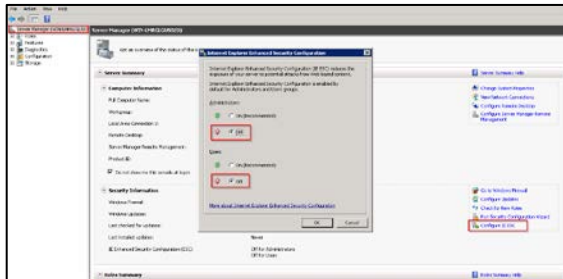


# Getting Started with AWS - Network Load Balancers

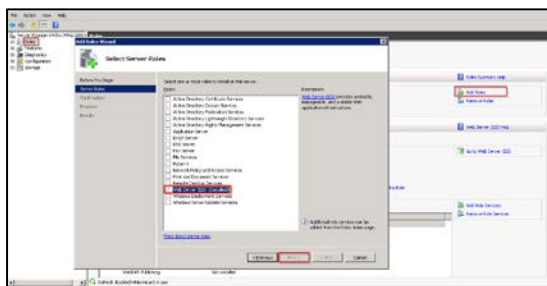
**Step 1: Configure one windows server instance to check Network Load Balancer and a Listener**  
(While creating an Instance for windows in security group please allow the inbound port "21" and port "80" "443")

**Step 2: Decrypt the password using .pem file to get the access of windows system using RDP.**

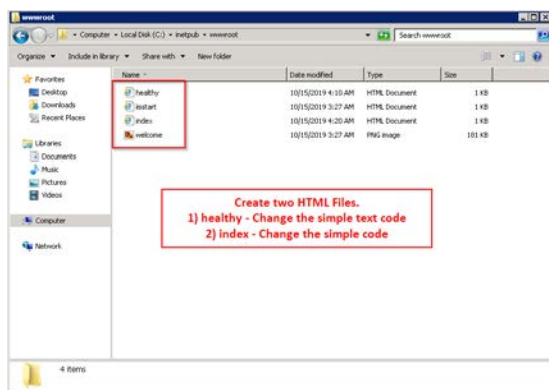
**Step 3: Once you get the RDP access of Server hit the Server Manager Icon beside on the taskbar.**



**Step 4: Setup the IIS server by adding server roles.**

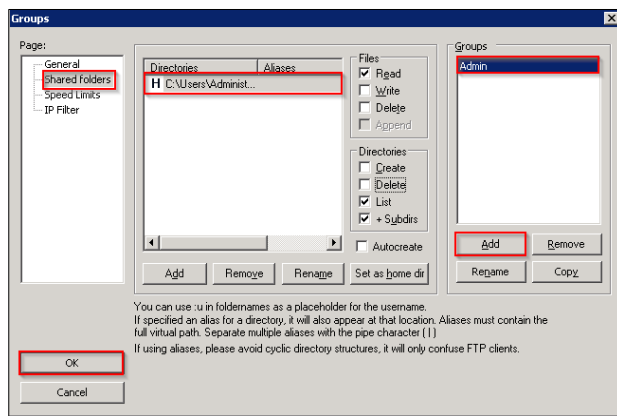


**Step 5: Once IIS is done go to. `C:\inetpub\wwwroot`**

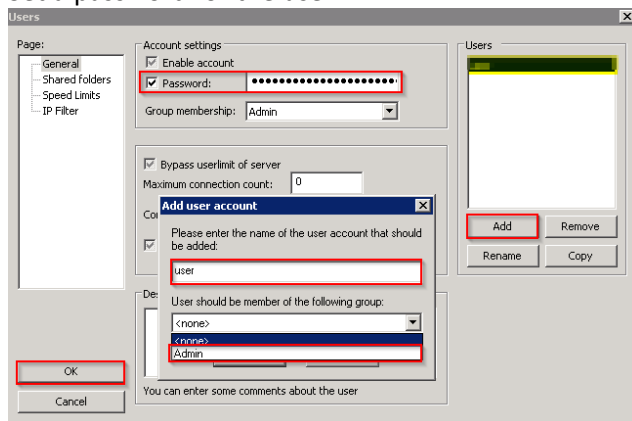


**Step 6: Download and install FileZilla server from <http://filezilla-project.org/download.php?type=server>**  
Use default settings for ports for now, we'll configure everything using the admin interface.

1. Create a folder for your FTP home directories  
Create a new folder using windows explorer `c:\shared`
2. Once FileZilla server is installed, run the admin interface to create ftp group and user:
3. Create a new group "Admin"
4. Set the shared directory to the directory you created above `c:\shared` and set as home directory



5. Create a new user "user"
6. User should be member of the "Admin" group
7. Set a password for the user



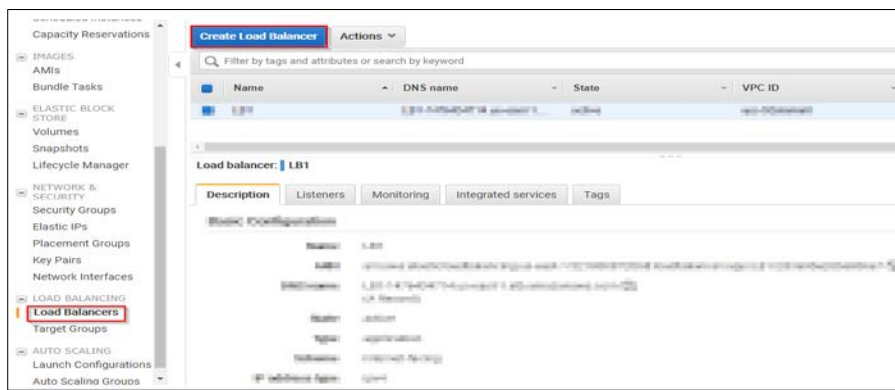
**Step 7: Go to your local windows system and open the command prompt "cmd" and check FTP login successfully.**

```
C:\Users\user>ftp 1
ftp> o 54.174.24.26 2
Connected to 54.174.24.26.
220-FileZilla Server 0.9.60 beta
220-written by Tim Kosse (tim.kosse@filezilla-project.org)
220 Please visit https://filezilla-project.org/
202 UTF8 mode is always enabled. No need to send this command.
User (54.174.24.26:(none)): user 3
331 Password required for user
Password: 4
230 Logged on
ftp> dir 5
200 Port command successful
150 Opening data channel for directory listing of "/"
226 Successfully transferred "/"
ftp>
```

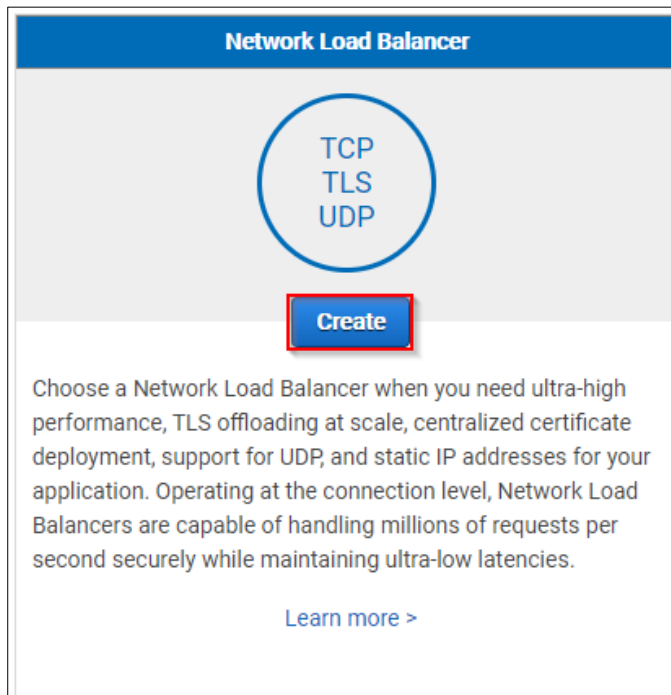
## Step 8: Create the Load Balancer

After creating your load balancer, you can verify that your targets have passed the initial health check and then test that the load balancer is sending traffic to your targets.

### To create the load balancer



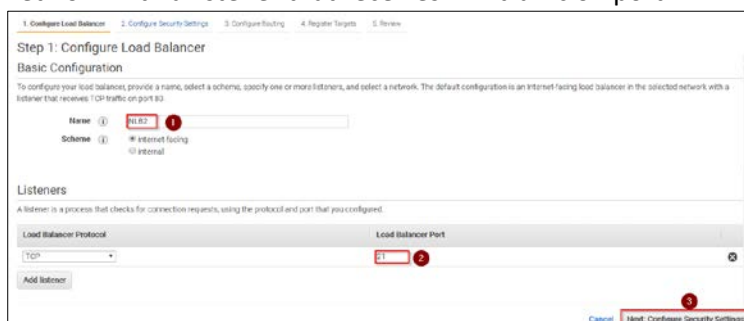
## Step 9: Select load balancer type



## Step 11: 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 **FTP** traffic on port **21**.



## Step 12: Availability Zones

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

### Step 1: Configure Load Balancer

**Availability Zones**  
Specify the Availability Zones to enable for your load balancer. The load balancer routes traffic to the targets in these Availability Zones only. You can specify only one subnet per Availability Zone. You may also add one Elastic IP per Availability Zone if you wish to have specific addresses for your load balancer.

Create and manage Elastic IPs in the VPC console.

VPC: vpc-42a3e5ef (172.31.0.0/16) (default)

**Availability Zones**

- ☒ us-east-1a subnet-c0d8eab0
  - IPv4 address: (Assigned by AWS)
- ☒ us-east-1b subnet-91599a07
  - IPv4 address: (Assigned by AWS)
- ☐ us-east-1c subnet-19f23b22
- ☐ us-east-1d subnet-b759e8d3
- ☐ us-east-1e subnet-07704d38

Cancel Next: Configure Security Settings

## Step 13: Configure Routing

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

### Step 3: Configure Routing

Your load balancer routes requests to the targets in this target group using the protocol and port that you specify, and performs health checks on the targets using those health check settings. Note that each target group can be associated with only one load balancer.

**Target group**

Target group: New target group

Name: TG1

Target type: ☒ instance ☐ ip

Protocol: TCP

Port: 21

**Health checks**

Protocol: TCP

**Advanced health check settings**

Port: ☒ traffic port ☐ override

Healthy threshold: 3

Unhealthy threshold: 1

Timeout: 10 seconds

Interval: 10 seconds

Cancel Previous Next: Register Target

## Step 14: Register Target for TG1

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

### Step 4: Register Targets

**Configure Security Groups**  
The security groups for your instances must allow traffic from the VPC CIDR on the health check port.

Register targets with your target group. If you register a target in an enabled Availability Zone, the load balancer starts routing requests to the targets as soon as the registration process completes and the target passes the initial health checks.

**Registered targets**  
To deregister instances, select one or more registered instances and then click Remove.

Instance	Name	Port	State	Security groups	Zone
<input type="checkbox"/> i-85d31a27f9f8480b	Windows	21	running	sg-1 windows	us-east-1b

**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 21

Instance	Name	State	Security groups	Zone	Subnet ID	Subnet CIDR
<input type="checkbox"/> i-85d31a27f9f8480b	Windows	running	sg-1 windows	us-east-1b	subnet-91599a07	172.31.80.0/20
<input type="checkbox"/> i-8893a76c0d02e...	EC2 Linux	running	sg-1	us-east-1b	subnet-91599a07	172.31.80.0/20

Cancel Previous Next: Review

Done

**Load Balancer Creation Status**

Successfully created load balancer  
Load balancer NLB2 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 NLB2.
- Consider using AWS Global Accelerator to improve the availability of your application. [AWS Global Accelerator Developer Guide](#)

Close

## Step 15: Add listener

A listener checks for connection requests using its configured protocol and port, and the load balancer uses the listener rules to route requests to targets. You can add, remove, or update listeners and listener rules.

Select the load balancer and choose **Listeners**.

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones	Type
NLB	NLB-8ddc08d46741a1df.elb....	active	vpc-92a5e5e8	us-east-1b, us-east-1a	network

Load balancer: NLB

Description Listeners Monitoring Integrated services Tags

A listener checks for connection requests using its configured protocol and port, and the load balancer uses the listener rules to route requests to targets. You can add, remove, or update listeners and listener rules.

Add listener Edit Delete

Listener ID Security policy SSL Certificate Default action

TCP : 21  
arn...dc3c759d38242cb6 N/A N/A Forward to TG1

## Listeners settings:

Listeners NLB | TCP:80

View/edit listener. Each listener must include one action of type forward. Update

NLB | TCP : 80

Listeners belonging to Network Load Balancers check for connection requests using the protocol and port you configure. Each listener must include a default action to ensure all requests are routed. [Learn more](#)

ARN  
arn:aws:elasticloadbalancing:us-east-1:521800872068:listener/net/NLB/8ddc08d46741a1df/3f228760da69847a

Protocol : port  
Select the protocol for connections from the client to your load balancer, and enter a port number from which to listen for traffic.

TCP 80

Default action(s)  
Indicate how this listener will route traffic

1. Forward to...  
TG2

Add one of the following actions: To add a forward action, choose **Add action**, **Forward to** and choose a target group **TG2**. To save the action, choose the checkmark icon.

Choose **Save**. New rule was created successfully.

## Now you can check the status for Health Checks for Your Target Group TG1 (port 21) Service

Create target group Actions

Filter by tags and attributes or search by keyword

Name	Port	Protocol	Target type	Load Balanc	VPC ID	Monitoring
TG1	21	TCP	instance	NLB	vpc-92a5e5e8	
TG2	80	TCP	instance	NLB	vpc-92a5e5e8	
TG3	80	HTTP	instance		vpc-92a5e5e8	

Description Targets Health checks Monitoring Tags

The load balancer starts routing requests to a newly registered target as soon as the registration process completes and the target passes the initial health checks. If demand on your targets increases, you can register additional targets. If demand on your targets decreases, you can deregister targets.

Edit

Registered targets

Instance ID	Name	Port	Availability Zone	Status
i-05d3c1a27f79bfd0b	Windows	21	us-east-1b	healthy

## Step 16: Register target TG2 group for port "80" TCP

**Registered targets**  
To deregister instances, select one or more registered instances and then click Remove.

Remove

Instance	Name	Port	State	Security groups	Zone
I-05d3c1a27f79bfd0b	Windows	80	running	SG1-Windows	us-east-1b

**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.

1 Add to registered on port 80

Search Instances

Instance	Name	State	Security	Zone	Subnet ID	Subnet CIDR
I-05d3c1a27f7...	Windows	running	SG1-Windows	us-east-1b	subnet-99596bb7	172.31.80.0/20
I-0393a7609ed...	EC2-Linux	running	SG-1	us-east-1b	subnet-99596bb7	172.31.80.0/20

2

3 Cancel Save

For testing you can create new TG3 group to check the HTTP protocol over the port “80”

Step 17: Click on load balancer – Description – copy the DNS name and check in your browser if default web page is loading or not.

Create Load Balancer Actions

Filter by tags and attributes or search by keyword

Name	DNS name	State	VPC ID	Availability Zones	Type
NLB	NLB-8ddc08d46741a1df.elb...	active	vpc-92a5e5e8	us-east-1b, us-east-1a	network

Load balancer: NLB

Description Listeners Monitoring Integrated services Tags

**Basic Configuration**

Name: NLB

ARN: [arn:aws:elasticloadbalancing:us-east-1:521800872068:loadbalancer/net/NLB/8ddc08d46741a1df](#)

DNS name: [NLB-8ddc08d46741a1df.elb.us-east-1.amazonaws.com](#) (A Record)

State: active

Type: network

Scheme: Internet-facing

IP address type: ipv4

Try 1 – TCP Service using port “80” Network Load Balancer for Web application (OSI Layer 7)

<http://nlb-8ddc08d46741a1df.elb.us-east-1.amazonaws.com/>



Try 2 – FTP Network Service using port “21” Network Load Balancer for Network application (OSI Layer 4)

```

C:\Users\user>ftp
ftp> o 54.174.24.26
Connected to 54.174.24.26.
220-FileZilla Server 0.9.60 beta
220-written by Tim Kosse (tim.kosse@filezilla-project.org)
220 Please visit https://filezilla-project.org/
202 UTF8 mode is always enabled. No need to send this command.
User (54.174.24.26:(none)): user
331 Password required for user
Password:
230 Logged on
ftp> dir
200 Port command successful
150 Opening data channel for directory listing of "/"
226 Successfully transferred "/"
ftp> by
421 No-transfer-time exceeded. Closing control connection.

```

