Dinas Komunikasi dan Informatika Kota Tangerang

HTTP Load Balancing with Nginx in Centos 8

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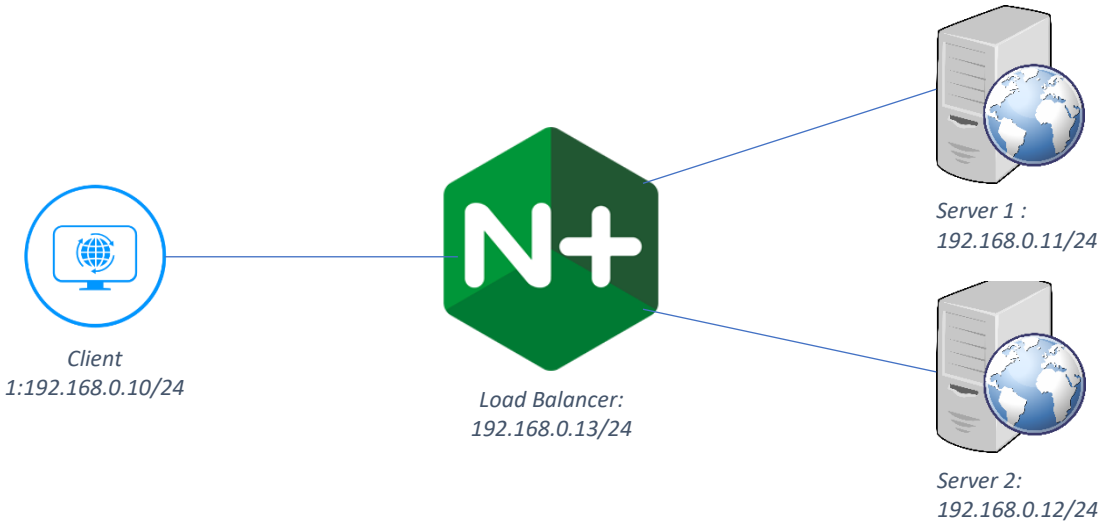
LOAD BALANCING WITH NGINX [NETWORK TOPOLOGY]



I am assuming that you have configured the IP address of each server as in the network topology above.

Requirements:

Server 1 (Webserver)

- **Operating System : Centos 8**
- **Webserver : Nginx**
- **Port Opened : 22 (ssh), 82 (http)**
- **IP Address : 192.168.0.11/24**
- **Gateway : 192.168.0.1**
- **DNS : 8.8.8.8**

Server 2 (Webserver)

- **Operating System : Centos 8**
- **Webserver : Nginx**
- **Port Opened : 22 (ssh), 8080 (http)**
- **IP Address : 192.168.0.12/24**
- **Gateway : 192.168.0.1**
- **DNS : 8.8.8.8**

Load Balancer

- **Operating System : Centos 8**
- **Load Balancer : Nginx**
- **Port Opened : 22 (ssh), 80 (http)**
- **IP Address : 192.168.0.13/24**
- **Gateway : 192.168.0.**
- **DNS : 8.8.8.8**

A. CONFIGURE SERVER 1

1. Update and Reboot

dnf update -y && dnf upgrade -y
reboot

2. Install and Configure Nginx

dnf install nginx -y
nano /etc/nginx/nginx.conf
Change nginx http default port to port 82

```
    server {
        listen       82 default_server;
        listen       [::]:82 default_server;
        server_name  _;
        root         /usr/share/nginx/html;
```

3. Allow HTTP Service to use port 82

firewall-cmd --perma --add-port=82/tcp
firewall-cmd --reload
yum install -y setroubleshoot-server selinux-policy-devel
semanage port -a -t http_port_t -p tcp 82

4. Change the index.html file to distinguish page views from other servers

nano /usr/share/nginx/html/index.html

5. Start Nginx Service

systemctl start nginx
systemctl enable nginx

B. CONFIGURE SERVER 2

1. Update and Reboot

dnf update -y && dnf upgrade -y
reboot

2. Install and Configure Nginx

dnf install nginx -y
nano /etc/nginx/nginx.conf
Change nginx http default port to port 8080

```
server {
    listen       8080 default_server;
    listen       [::]:8080 default_server;
    server_name  _;
    root         /usr/share/nginx/html;
```

3. **Open port 8080 in firewall**
   # firewall-cmd --perma --add-port=8080/tcp
   # firewall-cmd --reload

4. **Change the index.html file to distinguish page views from other servers**
   # nano /usr/share/nginx/html/index.html

5. **Start Nginx Service**
   # systemctl start nginx
   # systemctl enable nginx

C. CONFIGURE LOAD BALANCER

1. **Update and Reboot**

   # dnf update -y && dnf upgrade -y
   # reboot

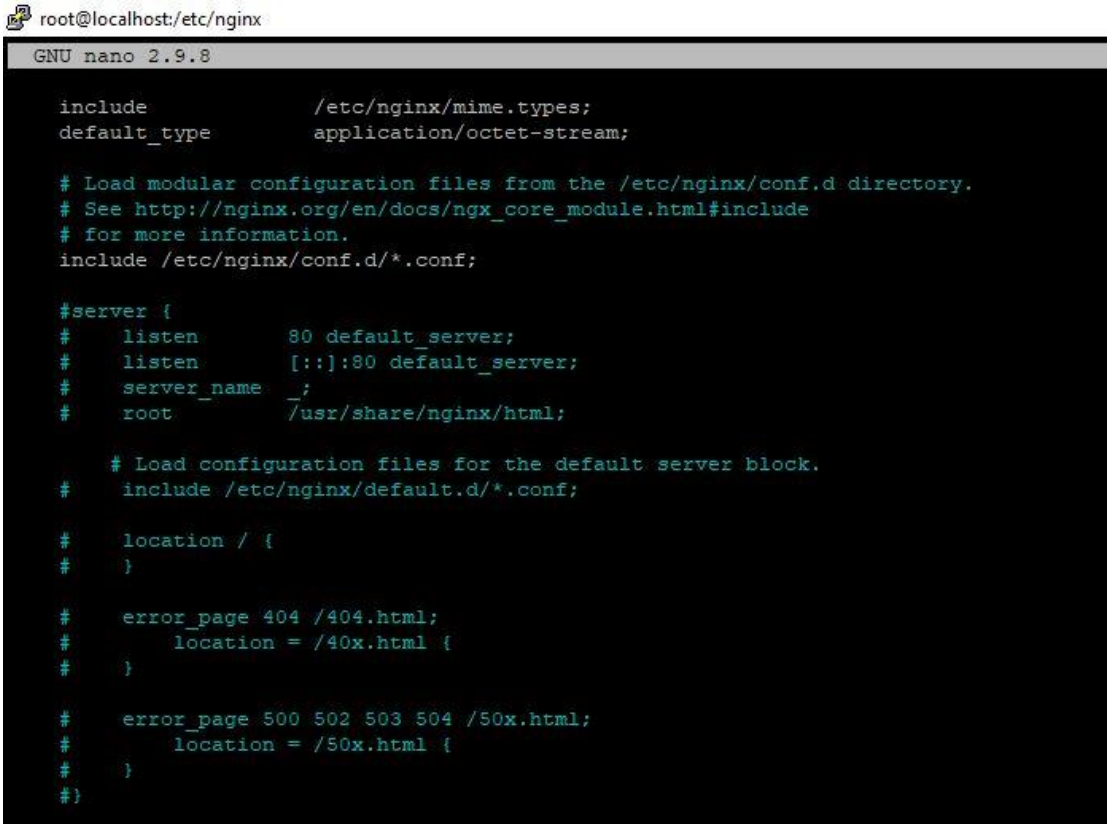
2. **Install and Configure Nginx**
   # dnf install nginx -y
   # nano /etc/nginx/nginx.conf
   Create new configuration file in /etc/nginx/conf.d/
   # nano /etc/nginx/conf.d/load-balancing.conf

```
upstream backend {
   least_conn;
   server 192.168.0.11:82;
   server 192.168.0.12:8080;
}

server {
   listen 80;

   location / {
       proxy_pass http://backend;
   }
}
```

3. **Comment server block in nginx main configuration file**
   # nano /etc/nginx/nginx.conf



4. **Open Port 80 in firewall**
   # firewall-cmd --perma --add-port=80/tcp
   # firewall-cmd --reload

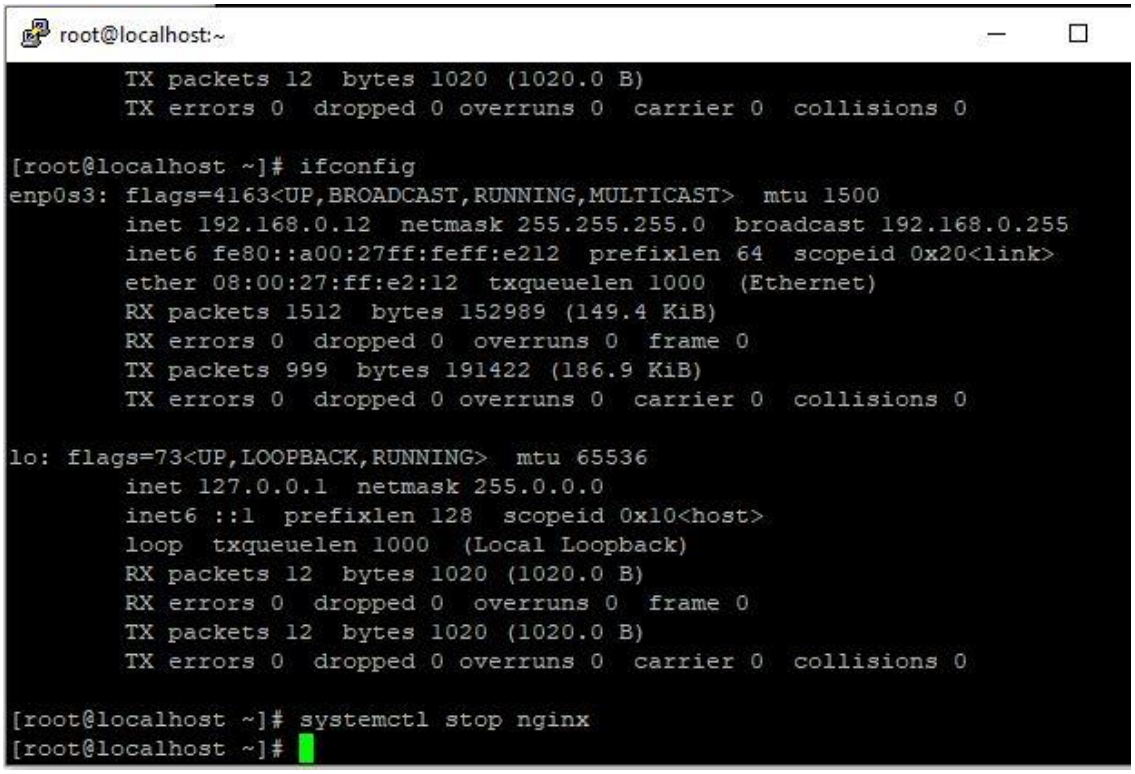
5. **Enable Selinux Permission for HTTP Load Balancing**
   # setsebool -P httpd_can_network_connect 1

6. **Start Nginx Service**
   # systemctl start nginx
   # systemctl enable nginx

D. TESTING

Try to access http://192.168.0.13 from browser's client. If the configuration is correct and success, your client can access Server 1 page or Server 2 page.

Now, try to disable nginx server in Server 2 (192.168.0.12/24), and refresh the browser or access http://192.168.0.13.



Load Balancing will redirect your client to Server 1 (192.168.0.11/24).