HAProxy Server Configuration Using Ansible

By: Er. Vikas Nehra (M. Tech, B. Tech), Experience: 15 + Years

Session - 47 Agenda:

HAProxy Server Configuration Using Ansible:

To configure HAProxy server we would require 3 node machines; out of these three node machines one node is used as HAProxy server while the other two nodes will be used as load-balancer (using round robin appraoch) for balancing the load.

Lab Environment:

192.168.229.128 haproxy-server
192.168.229.129 nginx-node01
192.168.229.131 nginx-node02

Let's create an Ansible playbook to setup the HAProxy server at the managed node(s).

$ vim haproxy-server.yml

```
---
- name: HAProxy Server Configuration Playbook
  hosts: localhost
  become: true
  tasks:
    - name: Setting up the static hostname in the server machine.
      hostname:
        name: haproxy-server
        use: systemd

    - name: Making entries in the /etc/hosts file for the server hostnames & IP Addresses
      blockinfile:
        dest: /etc/hosts
        block: |
          192.168.229.128 haproxy-server
          192.168.229.129 nginx-node01
          192.168.229.131 nginx-node02
        insertafter: EOF

    - name: Installing HAProxy packages in the machine.
      dnf:
        name: haproxy
        state: latest

    - name: Copying the /etc/haproxy/haproxy.cfg file using ansible jinja template.
      template:
        src: haproxy.cfg.j2
        dest: /etc/haproxy/haproxy.cfg
        force: true

    - name: Making changes in the /etc/rsyslog.conf file.
      replace:
        dest: /etc/rsyslog.conf
        regexp: '^#module(load="imudp")'
        replace: 'module(load="imudp")'
```

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```
  - name: Making changes in the /etc/rsyslog.conf file.
    replace:
      dest: /etc/rsyslog.conf
      regexp: '^#input(type="imudp" port="514")'
      replace: 'input(type="imudp" port="514")'

  - name: Creating haproxy.conf file for the rsyslog.
    copy:
     dest: "/etc/rsyslog.d/haproxy.conf"
     content: |
        local2.=info /var/log/haproxy-access.log
        local2.notice /var/log/haproxy-info.log

  - name: Restarting & enabling the rsyslog service.
    service:
      name: rsyslog
      state: restarted
      enabled: yes

  - name: Turning on the haproxy_connect_any SELinux boolean.
    command: setsebool -P haproxy_connect_any 1

  - name: Allowing HTTP traffic in the firewall.
    firewalld:
      service: http
      zone: public
      permanent: true
      immediate: true
      state: enabled

  - name: Starting & enabling the haproxy service.
    service:
      name: haproxy
      state: started
      enabled: yes

- hosts: node1
  become: true
  tasks:
    - name: Setting up the static hostname in the node1 machine.
      hostname:
        name: nginx-node01
        use: systemd

    - name: Making entries in the /etc/hosts file for the server hostnames & IP Addresses
      blockinfile:
        dest: /etc/hosts
        block: |
          192.168.229.128 haproxy-server
          192.168.229.129 nginx-node01
```

```
    192.168.229.131 nginx-node02
  insertafter: EOF

- name: Installing nginx packages in the machine.
  dnf:
    name: nginx
    state: latest

- name: Copying the image file to the /usr/share/nginx/html/ directory.
  ansible.builtin.copy:
    src: /home/vikasnehra/NehraClassesLogo.png
    dest: /usr/share/nginx/html/NehraClassesLogo.png
    mode: '0644'

- name: Creating the index.html file for node1.
  copy:
    dest: "/usr/share/nginx/html/index.html"
    content: |
      <img src="/NehraClassesLogo.png" width="500" height="500" />
      <h1>Nehra Classes Are Awesome.</h1>
      <i>This page is hosted on node1 machine using nginx.</i>

- name: Allowing HTTP traffic in the firewall.
  firewalld:
    service: http
    zone: public
    permanent: true
    immediate: true
    state: enabled

- name: Starting & enabling the nginx service.
  service:
    name: nginx
    state: started
    enabled: yes

- hosts: node3
  become: true
  tasks:
    - name: Setting up the static hostname in the node3 machine.
      hostname:
        name: nginx-node02
        use: systemd

    - name: Making entries in the /etc/hosts file for the server hostnames & IP Addresses
      blockinfile:
        dest: /etc/hosts
        block: |
          192.168.229.128 haproxy-server
          192.168.229.129 nginx-node01
```

```
    192.168.229.131 nginx-node02
  insertafter: EOF

- name: Installing nginx packages in the machine.
  dnf:
    name: nginx
    state: latest

- name: Copying the image file to the /usr/share/nginx/html/ directory.
  ansible.builtin.copy:
    src: /home/vikasnehra/NehraClassesLogo.png
    dest: /usr/share/nginx/html/NehraClassesLogo.png
    mode: '0644'

- name: Creating the index.html file for node2.
  copy:
    dest: "/usr/share/nginx/html/index.html"
    content: |
      <img src="/NehraClassesLogo.png" width="500" height="500" />
      <h1>Nehra Classes Are Awesome.</h1>
      <i>This page is hosted on node2 machine using nginx.</i>

- name: Allowing HTTP traffic in the firewall.
  firewalld:
    service: http
    zone: public
    permanent: true
    immediate: true
    state: enabled

- name: Starting & enabling the nginx service.
  service:
    name: nginx
    state: started
    enabled: yes
...
```

We would require the ansible.posix collection which we can install from Ansible Galaxy.
$ ansible-galaxy collection install ansible.posix

We would also require the community.general collection which we can install from Ansible Galaxy.
$ ansible-galaxy collection install community.general

Now, we can execute the ansible playbook to setup the HAProxy server at the managed node(s).
$ ansible-playbook haproxy-server.yml

Login to haproxy server and run the curl command couple of times to see whether traffic is distributed in round-robin way.
$ curl 192.168.229.128

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$ curl 192.168.229.128
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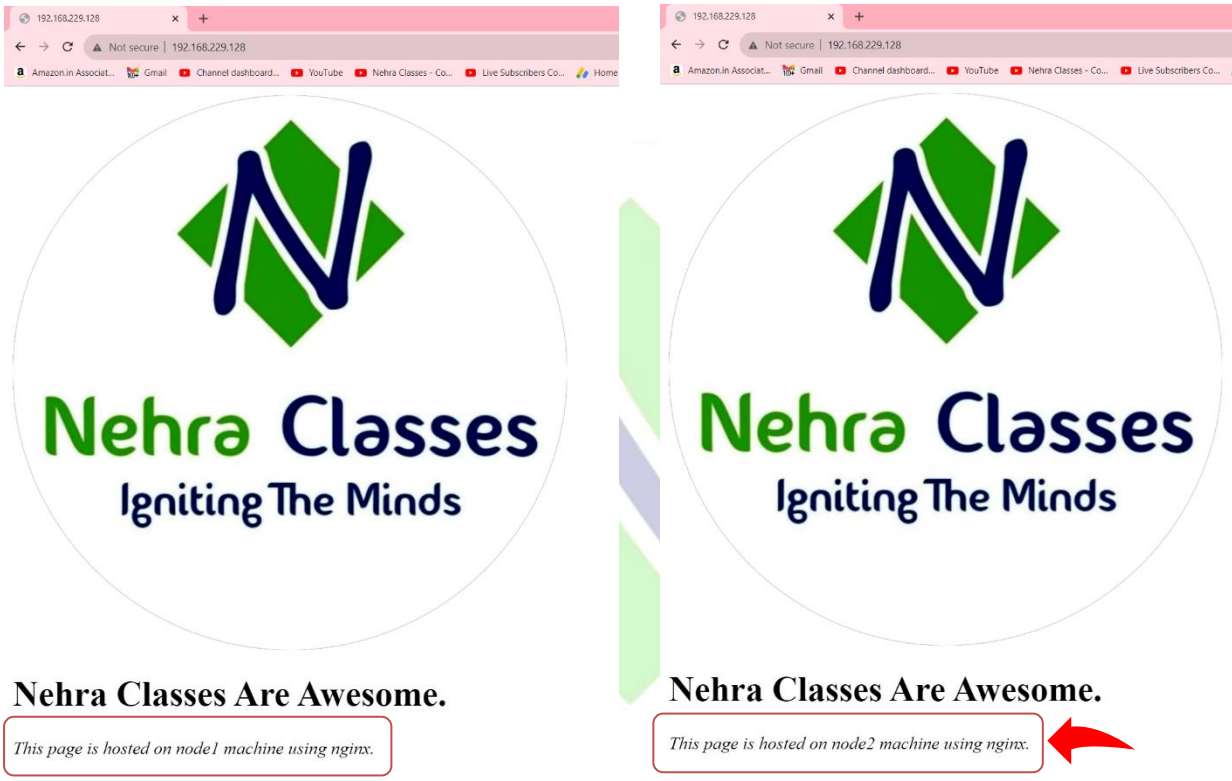
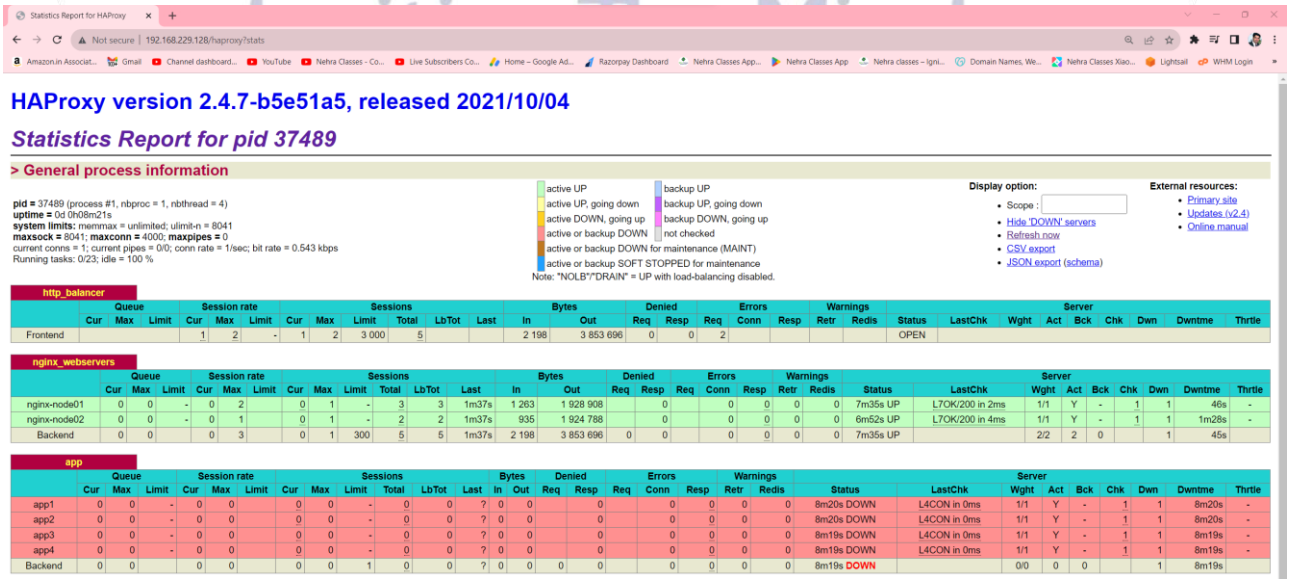
You can verify the same using any web browser as well.



Perfect, this confirms HAProxy is working properly as it is distributing traffic between two nodes. Above confirms that HAProxy has configured successfully on RHEL9.

You can view the status of your haproxy via web browser, type URL will be http://192.168.229.128/haproxy?stats



HAProxy server is working as expected.

Thank You