Demo Project: Automate Nexus Deployment

Project Description

This project automates the deployment of **Nexus Repository Manager** on a DigitalOcean server using **Ansible**. The playbook will:

- Create a Linux user for Nexus.
- Install necessary dependencies.
- Download and configure Nexus.
- Start the Nexus service.
- Verify that Nexus is running successfully.

Step 1: Create Server on DigitalOcean

1. Go to **DigitalOcean**.
2. Create a new **Droplet**.
3. Select the **Region** closest to you.
4. Choose the **Ubuntu** distribution.
5. **Shared CPU Basic**:
    - Regular Disk type: **SSD**

- **2 GB / 2 CPU**

6. **Authentication Method**:
   - Use your existing **SSH key**.
7. Click **Create Droplet**.
8. Copy the new **Public IP Address**.

Step 2: Configure Ansible Inventory

Create a file called `hosts` and add the following content:

```
[nexus_server]
<your-public-ip> ansible_ssh_private_key_file=~/.ssh/id_rsa ansible_user=root
```

Replace `<your-public-ip>` with your DigitalOcean Droplet's public IP address.

Step 3: Write Ansible Playbook

Create a new file called **deploy-nexus.yaml.**

The playbook automates the following steps:

```
apt-get update
apt install openjdk-8-jre-headless
apt install net-tools

cd /opt
wget https://download.sonatype.com/nexus/3/latest-unix.tar.gz
tar -zxvf latest-unix.tar.gz

adduser nexus
chown -R nexus:nexus nexus-3.65.0-02
chown -R nexus:nexus sonatype-work

vim nexus-3.65.0-02/bin/nexus.rc
```

```
run_as_user="nexus"

su - nexus
/opt/nexus-3.65.0-02/bin/nexus start

ps aux | grep nexus
netstat -lnpt
```

These steps have also been saved as reference in the **nexus.sh** file in the project repository.

Example of the `deploy-nexus.yaml`:

```
---
- name: Install java and net-tools
hosts: nexus_server
tasks:
- name: Update apt repo and cache
apt: update_cache=yes force_apt_get=yes cache_valid_time=3600
- name: Install Java 8
apt: name=openjdk-8-jre-headless
- name: Install net-tools
apt: name=net-tools

- name: Download and unpack Nexus installer
hosts: nexus_server
tasks:
- name: Check nexus folder stats
stat:
path: /opt/nexus
register: stat_result
- name: Download Nexus
get_url:
url: https://download.sonatype.com/nexus/3/latest-unix.tar.gz
dest: /opt/
```

```
register: download_result
- name: Untar Nexus installer
unarchive:
src: "{{download_result.dest}}"
dest: /opt/
remote_src: yes
when: not stat_result.stat.exists
- name: Find nexus folder
find:
paths: /opt
pattern: "nexus-*"
file_type: directory
register: find_result
- name: Rename nexus folder
shell: mv {{find_result.files[0].path}} /opt/nexus
when: not stat_result.stat.exists

- name: Create nexus user to own nexus folder
hosts: nexus_server
tasks:
- name: Ensure group nexus exists
group:
name: nexus
state: present
- name: Create nexus user
user:
name: nexus
group: nexus
- name: Make nexus user owner of nexus folder
file:
path: /opt/nexus
state: directory
owner: nexus
group: nexus
recurse: yes
- name: Make nexus user owner of sonatype-work folder
```

```
file:
path: /opt/sonatype-work
state: directory
owner: nexus
group: nexus
recurse: yes

- name: Start nexus with nexus user
hosts: nexus_server
become: True
become_user: nexus
tasks:
- name: Set run_as_user nexus
lineinfile:
path: /opt/nexus/bin/nexus.rc
regexp: '^#run_as_user=""'
line: run_as_user="nexus"
- name: Start nexus
command: /opt/nexus/bin/nexus start

- name: Verify nexus running
hosts: nexus_server
tasks:
- name: Check with ps
shell: ps aux | grep nexus
register: app_status
- debug: msg={{app_status.stdout_lines}}
- name: Wait one minute
pause:
minutes: 1
- name: Check with netstat
shell: netstat -plnt
register: app_status
- debug: msg={{app_status.stdout_lines}}
```

Step 4: Run the Ansible Playbook

To execute the playbook, run the following command:

`ansible-playbook -i hosts deploy-nexus.yaml`

Step 5: Verify Deployment

SSH into the server: `ssh root@<your-public-ip>`

List the files in the nexus application directory: `ls /opt/`

Expected Output:

- Nexus tar file should be downloaded.
- Nexus directory should be extracted.

Step 6: Configure Ansible Defaults

To avoid specifying the inventory file every time, create a file **ansible.cfg** with the following content:

```
[defaults]
host_key_checking = False
inventory = hosts
```

Now you can run the playbook with: `ansible-playbook deploy-nexus.yaml`

Step 7: Clean Up

Delete the server from the DigitalOcean dashboard.
