Ansible Exercise

Problem Statement: A user want to install tomcat using ansible. The user check the documentation available in internet

Steps required:

1. Update and upgrade apt packages
2. Download Open JDK
3. Check if Java is Installed
4. Create Group
5. Create User
6. Create a Directory /opt/tomcat
7. Download Tomcat using unarchive
8. Change ownership of tomcat directory
9. Creating a service file
10. Reload the SystemD to re-read configurations
11. Enable the tomcat service and start
12. Connect to Tomcat server on port 8080

tomcat-installation.yaml

```yaml
---
- name: Install Tomcat to remote server
  hosts: all
  become: yes
  vars:
    download_url: https://dlcdn.apache.org/tomcat/tomcat-10/v10.0.27/bin/apache-tomcat-10.0.27.tar.gz
  tasks:
   - name: Update and upgrade apt packages
     apt:
       upgrade: yes
       update_cache: yes

   - name: Download Open JDK
     apt:
       name: default-jdk
       update_cache: yes
```

```yaml
    state: present

- name: Check if Java is Installed
  shell:
    java -version

- name: Create Group
  group:
   name: tomcat
   state: present

- name: Create User
  user:
      name: tomcat
      state: present

- name: Create a Directory /opt/tomcat
  file:
   path: /opt/tomcat
   state: directory
   mode: 0755
   owner: tomcat
   group: tomcat

- name: Download Tomcat using unarchive
  unarchive:
   src: "{{download_url}}"
   dest: /opt/tomcat
   remote_src: yes
   extra_opts: [--strip-components=1]
- name: Change ownership of tomcat directory
  file:
   path: /opt/tomcat
   owner: tomcat
   group: tomcat
   mode: "u+rwx,g+rx,o=rx"
   recurse: yes
   state: directory
```

```yaml
    - name: Creating a service file
      copy:
       content: |-
          [Unit]
          Description=Tomcat Service
          Requires=network.target
          After=network.target

          [Service]
          Type=forking
          User=tomcat
          Group=tomcat

          Environment="JAVA_HOME=/usr/lib/jvm/java-1.11.0-
openjdk-amd64"
          Environment="JAVA_OPTS=-
Djava.security.egd=file:///dev/urandom"
          Environment="CATALINA_PID=/opt/tomcat/logs/tomcat.pi
d"
          Environment="CATALINA_BASE=/opt/tomcat"
          Environment="CATALINA_HOME=/opt/tomcat"
          Environment="CATALINA_OPTS=-Xms512M -Xmx1024M -
server -XX:+UseParallelGC"

          ExecStart=/opt/tomcat/bin/startup.sh
          ExecStop=/opt/tomcat/bin/shutdown.sh
          Restart=always
          RestartSec=10

          [Install]
          WantedBy=multi-user.target
        dest: /etc/systemd/system/tomcat.service

    - name: Reload the SystemD to re-read configurations
      systemd:
        daemon-reload: yes
```
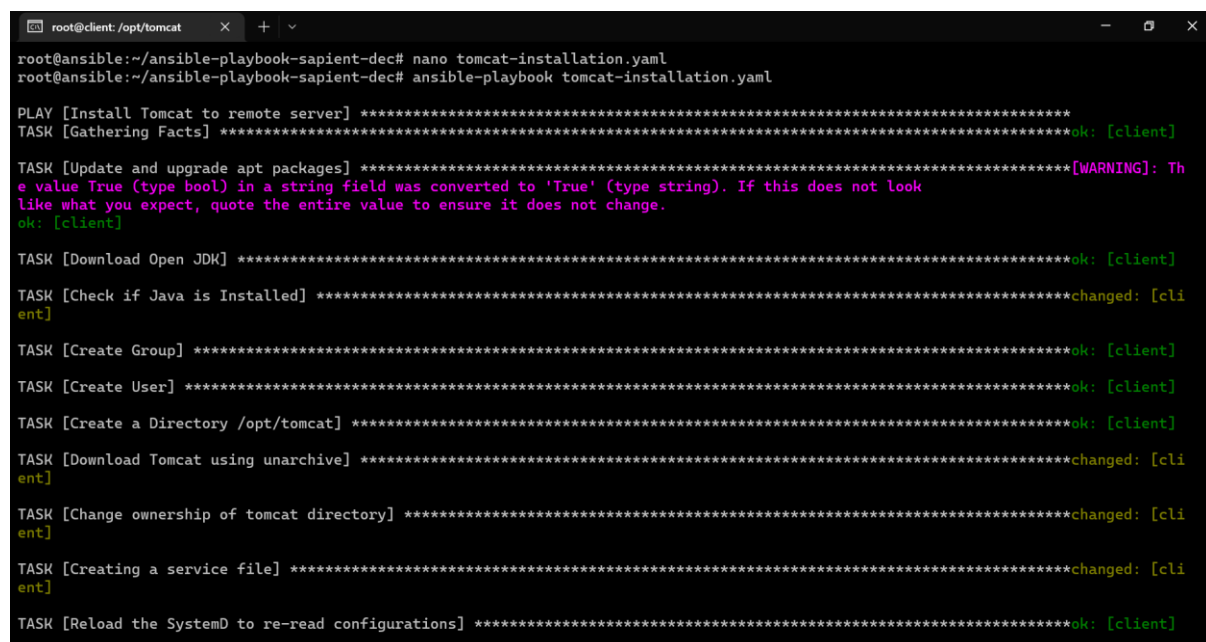
```yaml
    - name: Enable the tomcat service and start
      systemd:
        name: tomcat
        enabled: yes
        state: started


    - name: Connect to Tomcat server on port 8080 and check
status 200 - Try 5 times
      tags: test
      uri:
        url: http://localhost:8080
      register: result
      until: "result.status == 200"
      retries: 5
      delay: 10
```

Running Playbook:

```
TASK [Check if Java is Installed] ***************************************************************changed: [cli
ent]

TASK [Create Group] ****************************************************************************ok: [client]

TASK [Create User] *****************************************************************************ok: [client]

TASK [Create a Directory /opt/tomcat] **********************************************************ok: [client]

TASK [Download Tomcat using unarchive] *********************************************************changed: [cli
ent]

TASK [Change ownership of tomcat directory] ****************************************************changed: [cli
ent]

TASK [Creating a service file] *****************************************************************changed: [cli
ent]

TASK [Reload the SystemD to re-read configurations] ********************************************ok: [client]

TASK [Enable the tomcat service and start] *****************************************************changed: [cli
ent]

TASK [Connect to Tomcat server on port 8080 and check status 200 - Try 5 times] ****************FAILED - RETR
YING: Connect to Tomcat server on port 8080 and check status 200 - Try 5 times (5 retries left).
ok: [client]

PLAY RECAP ************************************************************************************client
                : ok=13   changed=5   unreachable=0   failed=0   skipped=0   rescued=0   ignored=0

root@ansible:~/ansible-playbook-sapient-dec# nano tomcat-installation.yaml
```

```
   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

0 updates can be applied immediately.

New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


Welcome to Ubuntu Linux
Last login: Wed Dec 28 18:01:14 2022 from 10.0.0.4
root@client:~# cd /opt
root@client:/opt# ls
cni  containerd  tomcat
root@client:/opt# cd tomcat/
root@client:/opt/tomcat# ls
BUILDING.txt     LICENSE   README.md      RUNNING.txt   conf  logs  webapps
CONTRIBUTING.md  NOTICE    RELEASE-NOTES  bin           lib   temp  work
root@client:/opt/tomcat# systemctl status tomcat
● tomcat.service - Tomcat Service
     Loaded: loaded (/etc/systemd/system/tomcat.service; enabled; vendor preset: enabled)
     Active: active (running) since Wed 2022-12-28 18:01:02 UTC; 10min ago
    Process: 52040 ExecStart=/opt/tomcat/bin/startup.sh (code=exited, status=0/SUCCESS)
   Main PID: 52047 (java)
      Tasks: 30 (limit: 9530)
     Memory: 268.3M
     CGroup: /system.slice/tomcat.service
             └─52047 /usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -Djava.util.logging.config.file=/opt/tomcat/conf/logging.proper

Dec 28 18:01:02 client systemd[1]: Starting Tomcat Service...
Dec 28 18:01:02 client startup.sh[52040]: Tomcat started.
Dec 28 18:01:02 client systemd[1]: Started Tomcat Service.
lines 1-13/13 (END)
```

Home   Documentation   Configuration   Examples   Wiki   Mailing Lists   Find Help

Apache Tomcat/10.0.27

APACHE SOFTWARE FOUNDATION
http://www.apache.org/

If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

Security Considerations How-To

Manager Application How-To

Clustering/Session Replication How-To

| Server Status |
| Manager App |
| Host Manager |

Developer Quick Start

| Tomcat Setup | Realms & AAA | Examples | Servlet Specifications |
| First Web Application | JDBC DataSources | | Tomcat Versions |

Managing Tomcat

For security, access to the manager webapp is restricted. Users are defined in:

`$CATALINA_HOME/conf/tomcat-users.xml`

In Tomcat 10.0 access to the manager application is split between different users.
Read more

Documentation

Tomcat 10.0 Documentation

Tomcat 10.0 Configuration

Tomcat Wiki

Find additional important configuration information in:

Getting Help

FAQ and **Mailing Lists**

The following mailing lists are available:

tomcat-announce
Important announcements, releases, security vulnerability notifications. (Low volume).

tomcat-users