

Step 1: Create the main list of all tasks

tasks/stop_app.yml file

- name: Gather EC2 instance metadata

action: ec2_facts

- name: Stop application on {{ansible_hostname}}

command: wget

"http://{{tomcat_user}}:{{tomcat_pwd}}@{{ansible_ec2_public_ipv4}}:8080/manager/tx~~xt~~/stop?path=/HelloWorld-Maven" -O - -q

ii- tasks/uninstall_app.yml

- name: Gather EC2 instance metadata

action: ec2_facts

- name: Undeploy application on {{ansible_hostname}}

command: wget

"http://{{tomcat_user}}:{{tomcat_pwd}}@{{ansible_ec2_public_ipv4}}:8080/manager/tx~~xt~~/undeploy?path=/HelloWorld-Maven" -O - -q

iii-tasks/deploy_app.yml

- name: Deploy the new WAR file to target servers

copy: src=/var/lib/jenkins/workspace/Demo-Maven-Project/target/HelloWorld-Maven.war dest=/home/ansible/tomcat/webapps

iv-task/start_app.yml

- name: Gather EC2 instance metadata

action: ec2_facts

- name: Start application on {{ansible_hostname}}

command: wget

"http://{{tomcat_user}}:{{tomcat_pwd}}@{{ansible_ec2_public_ipv4}}:8080/manager/te
xt/start?path=/HelloWorld-Maven" -O - -q

Run playbook file site.yml

- ansible-playbook site.yml

```

[ansible@ip-172-31-18-176 ansible]$ pwd
/etc/ansible
[ansible@ip-172-31-18-176 ansible]$ ls
ansible.cfg  hosts  roles  site.yml
[ansible@ip-172-31-18-176 ansible]$ ansible-playbook site.yml

PLAY [webservers] *****

TASK [Gathering Facts] *****
ok: [172.31.27.39]

TASK [tomcat : Gather EC2 instance metadata] *****
[DEPRECATION WARNING]: The 'ec2_facts' module is being renamed '
by setting deprecation_warnings=False in ansible.cfg.
ok: [172.31.27.39]

TASK [tomcat : Stop application on ip-172-31-27-39] *****
[WARNING]: Consider using the get_url or uri module rather than
warn=False to this command task or set command_warnings=False in
changed: [172.31.27.39]

TASK [tomcat : Gather EC2 instance metadata] *****
ok: [172.31.27.39]

TASK [tomcat : Undeploy application on ip-172-31-27-39] *****
changed: [172.31.27.39]

TASK [tomcat : Gather EC2 instance metadata] *****
ok: [172.31.27.39]

TASK [tomcat : Deploy application on ip-172-31-27-39] *****
changed: [172.31.27.39]

TASK [tomcat : Gather EC2 instance metadata] *****
ok: [172.31.27.39]

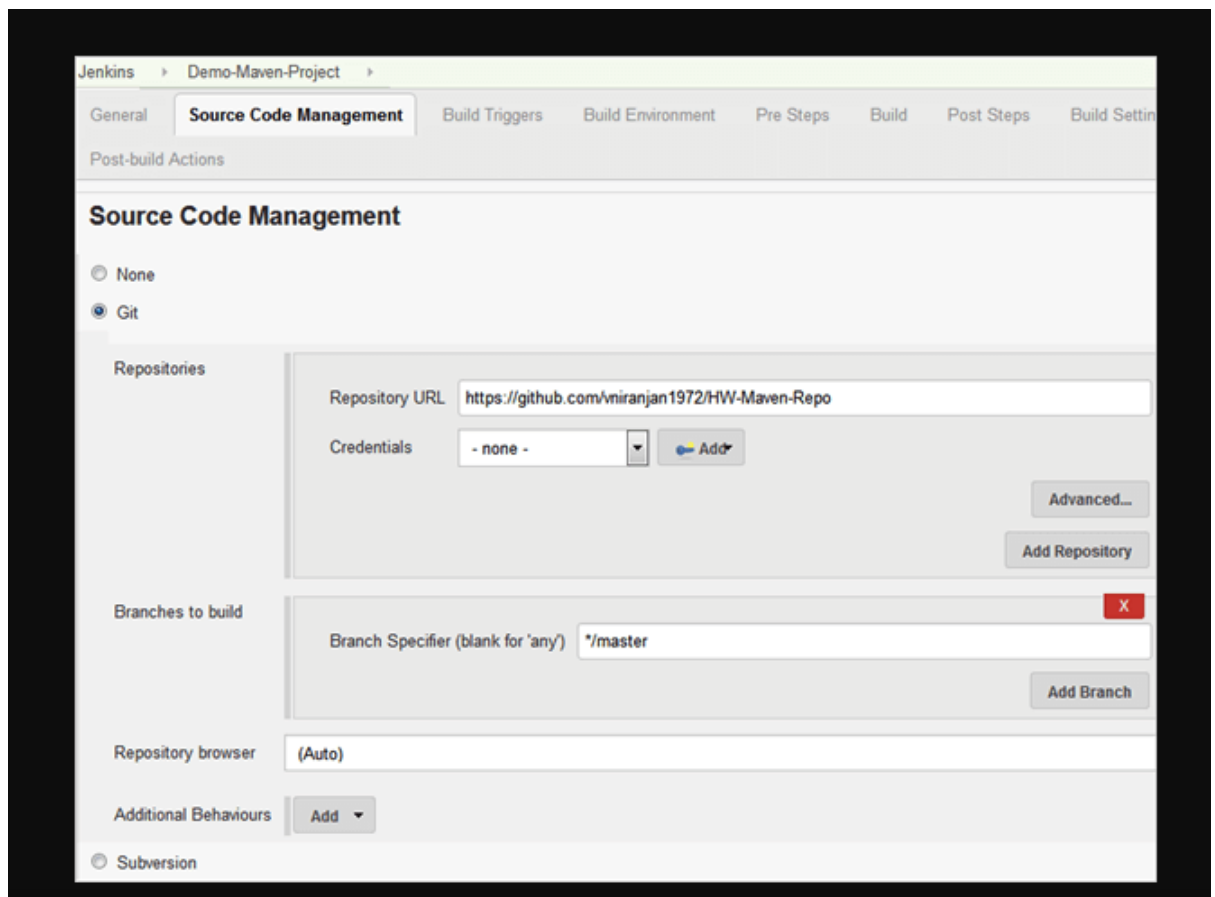
TASK [tomcat : Start application on ip-172-31-27-39] *****
changed: [172.31.27.39]

PLAY RECAP *****
172.31.27.39      : ok=9    changed=4    unreachable=0

```

Jenkins Integration with Ansible

Step 1: Create a Jenkins job and configure the SCM repo using the code in GitHub



Configure the build

Create roles directory within the Jenkins workspace

```
[ansible@ip-172-31-3-21 roles]$ pwd
/var/lib/jenkins/workspace/Demo-Maven-Project/roles
[ansible@ip-172-31-3-21 roles]$
```

Create the tomcat role in the Jenkins workspace location using the command shown below

sudo ansible-galaxy init tomcat --offline

```
[ansible@ip-172-31-3-21 roles]$ pwd
/var/lib/jenkins/workspace/Demo-Maven-Project/roles
[ansible@ip-172-31-3-21 roles]$ sudo ansible-galaxy init tomcat --offline
- tomcat was created successfully
[ansible@ip-172-31-3-21 roles]$ ls
tomcat
[ansible@ip-172-31-3-21 roles]$ cd tomcat/
[ansible@ip-172-31-3-21 tomcat]$ tree
-bash: tree: command not found
[ansible@ip-172-31-3-21 tomcat]$ ls
defaults  files  handlers  meta  README.md  tasks  templates  tests  vars
```

Trigger the build job and launch the Tomcat URL to verify if the application is deployed correctly.

```
[JENKINS] Archiving /var/lib/jenkins/workspace/Demo-Maven-Project/pom.xml to HelloWorld-M
Maven-0.0.1-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/Demo-Maven-Project/target/HelloWorld-Maven
SNAPSHOT/HelloWorld-Maven-0.0.1-SNAPSHOT.war
channel stopped
[Demo-Maven-Project] $ /bin/ansible-playbook site.yml -f 5

PLAY [webservers] *****

TASK [Gathering Facts] *****
ok: [172.31.7.21]

TASK [tomcat : Gather EC2 instance metadata] *****
[DEPRECATION WARNING]: The 'ec2_facts' module is being renamed
'ec2_metadata_facts'. This feature will be removed in version 2.7. Deprecation
warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.
ok: [172.31.7.21]

TASK [tomcat : Stop application on ip-172-31-7-21] *****
[WARNING]: Consider using the get_url or uri module rather than running wget.
If you need to use command because get_url or uri is insufficient you can add
warn=False to this command task or set command_warnings=False in ansible.cfg to
get rid of this message.
changed: [172.31.7.21]

TASK [tomcat : Gather EC2 instance metadata] *****
ok: [172.31.7.21]

TASK [tomcat : Undeploy application on ip-172-31-7-21] *****
changed: [172.31.7.21]

TASK [tomcat : Deploy the new WAR file to target servers] *****
changed: [172.31.7.21]

TASK [tomcat : Gather EC2 instance metadata] *****
ok: [172.31.7.21]

TASK [tomcat : Start application on ip-172-31-7-21] *****
changed: [172.31.7.21]

PLAY RECAP *****
172.31.7.21          : ok=8    changed=4    unreachable=0    failed=0

Finished: SUCCESS
```

Manage ec2 instance with Ansible

ensure to export the user “AWS_ACCESS_KEY_ID” and “AWS_SECRET_ACCESS_KEY”.

- Create a security group
- Create key pair and the PEM file
- Create EC2 instance
- Save the EC2 instance IP address to the ansible inventory file

Code—

- hosts: localhost

become: true

gather_facts: False

vars:

region: ap-northeast-1

instance_type: t2.micro

ami: ami-5b673c34 # RedHat Linux 7.5

hosts_file: /etc/ansible/hosts

tasks:

- name: Create security group

ec2_group:

aws_access_key: <AKIAZ64X6ZCI4PFK550D>

aws_secret_key: <uOyvPhBZZJBrYn9S526BNhPtol+09qvmI0V6qUPi>

name: "vniranjan"

description: "V Niranjan Security Group"

region: "{{ ap-northeast-1 }}"

rules:

- proto: tcp

from_port: 22

to_port: 22

cidr_ip: 0.0.0.0/0

- name: Create an EC2 key

ec2_key:

aws_access_key: <AKIAZ64X6ZCI4PFK55OD>

aws_secret_key: <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>

name: "vniranjan"

region: "{{ ap-northeast-1 }}"

register: ec2_key

- name: Save private key (PEM file)

copy: content="{{ ec2_key.key.private_key }}" dest="/home/ansible/vniranjan.pem
mode=0600

when: ec2_key.changed

- name: Create an ec2 instance

ec2:

aws_access_key: <AKIAZ64X6ZCI4PFK55OD>

aws_secret_key: < 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 >

key_name: vniranjan

group: vniranjan # security group name

instance_type: "{{ instance_type }}"

image: "{{ ami }}"

wait: true

region: "{{ ap-northeast-1 }}"

count: 1 # default

count_tag:

 Name: Demo

instance_tags:

 Name: Demo

register: ec2

- name: Save IP to inventory file

lineinfile:

 dest: "{{ hosts_file }}"

 insertafter: '\[webserver\]

 line: "{{ item.private_ip }}"

with_items: "{{ ec2.instances }}"

Run the playbook


```
[ansible@ip-172-31-0-138 ~]$ ansible-playbook createec2ins.yml

PLAY [localhost] *****

TASK [Create security group] *****
changed: [localhost]

TASK [Create an EC2 key] *****
changed: [localhost]

TASK [Save private key (PEM file)] *****
changed: [localhost]

TASK [Create an ec2 instance] *****
changed: [localhost]

TASK [Save IP to inventory file] *****
changed: [localhost] => (item={u'kernel': None, u'root_device_type': u'ebs', u'p
.30.207', u'private_ip': u'172.31.12.15', u'id': u'i-0a8998c269bc8d9d9', u'ebs_c
me': u'/dev/sda1', u'ramdisk': None, u'block_device_mapping': {u'/dev/sda1': {u'
7bc'}}), u'key_name': u'vniranjan', u'image_id': u'ami-5b673c34', u'tenancy': u'd
6-30-207.ap-south-1.compute.amazonaws.com', u'state_code': 16, u'tags': {u'Name': u'D
6-30-207.ap-south-1.compute.amazonaws.com', u'region': u'ap-south-1', u'launch_t
_64', u'hypervisor': u'xen'}})

PLAY RECAP *****
localhost : ok=5 changed=5 unreachable=0 failed=0

[ansible@ip-172-31-0-138 ~]$
```

Ec2 instance—

[see us what you think](#)

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

▼ Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

▼ Images

AMIs

AMI Catalog

Instance summary for i-03ae5543ac5bdbb5f (ca4 11911060) [Info](#)

[Connect](#) [Instance state ▼](#) [Actions ▼](#)

Updated less than a minute ago

Instance ID

[i-03ae5543ac5bdbb5f \(ca4 11911060\)](#)

IPv6 address

—

Hostname type

IP name: ip-172-31-11-13.ap-northeast-1.compute.internal

Answer private resource DNS name

IPv4 (A)

Auto-assigned IP address

[18.183.62.226 \[Public IP\]](#)

IAM Role

—

IMDSv2

Optional

Public IPv4 address

[18.183.62.226 | \[open address\]\(#\)](#)

Instance state

[Running](#)

Private IP DNS name (IPv4 only)

[ip-172-31-11-13.ap-northeast-1.compute.internal](#)

Instance type

t2.micro

VPC ID

[vpc-0e6966c326d36658b](#)

Subnet ID

[subnet-07aa3398cd9247e77](#)

Private IPv4 addresses

[172.31.11.13](#)

Public IPv4 DNS

[ec2-18-183-62-226.ap-northeast-1.compute.amazonaws.com | \[open address\]\(#\)](#)

Elastic IP addresses

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AWS Compute Optimizer finding

[Opt-in to AWS Compute Optimizer for recommendations.](#)
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Auto Scaling Group name

—

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

▼ Instances

| <input type="checkbox"/> | Name ▾ | Instance ID | Instance state ▾ | Instance type ▾ | Status check | Alarm status | Availability Zone ▾ | Publ |
|--------------------------|--------------|---------------------|----------------------|-----------------|--------------|--------------------|---------------------|------|
| <input type="checkbox"/> | ca4-11911060 | i-03ae5543ac5bdbb5f | Running | t2.micro | Initializing | No alarms + | ap-northeast-1c | ec2- |
| | | | | | | | | |

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