

DevOps Assignment - 2

Ansible Playbook Exercise

Set Up:

- Installing ansible.
- Creating a remote server using AWS EC2 Instance. Chosen platform: Red Hat Enterprise Linux with High Availability.
- Connected to the server using ssh client.

Step 1: Configuring Git login

Using username and security token.

- <https://user:token@github.com/path>

Also, creating nodejs application



```
MeghanaN-18bcs053-MacBook-Pro:~ harshitha$ cd Desktop
MeghanaN-18bcs053-MacBook-Pro:Desktop harshitha$ cd task2
-bash: cd: task2: No such file or directory
MeghanaN-18bcs053-MacBook-Pro:Desktop harshitha$ cd task2
MeghanaN-18bcs053-MacBook-Pro:task2 harshitha$ npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See 'npm help init' for definitive documentation on these fields
and exactly what they do.

Use 'npm install <pkg>' afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
(package name: (task2)
(version: (1.0.0)
(description:
(entry point: (index.js)
(test command:
(git repository:
(keywords:
(author:
(license: (ISC)
About to write to /Users/harshitha/Desktop/task2/package.json:

{
  "name": "task2",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "",
  "license": "ISC"
}

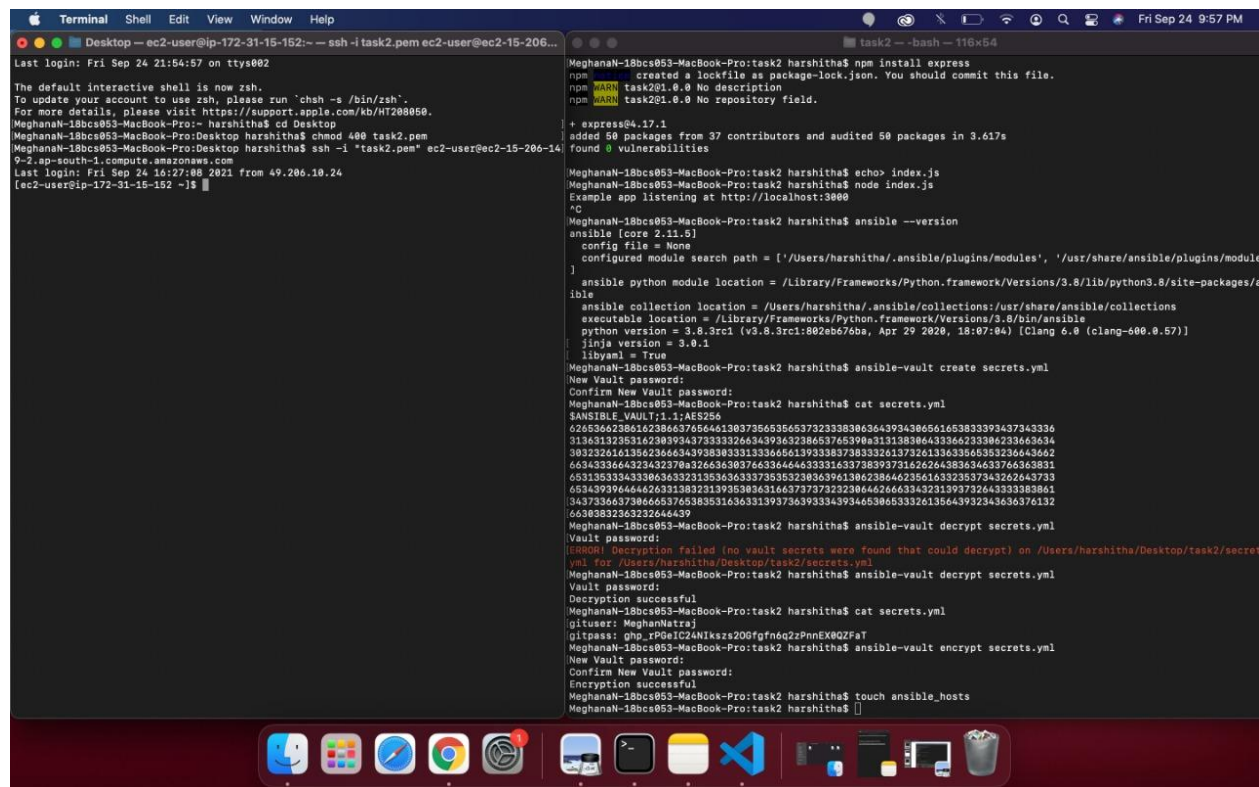
Is this OK? (yes)
MeghanaN-18bcs053-MacBook-Pro:task2 harshitha$ npm install express
npm WARN created a lockfile as package-lock.json. You should commit this file.
npm WARN task2@1.0.0 No description
npm WARN task2@1.0.0 No repository field.

+ express@4.17.1
added 59 packages from 37 contributors and audited 59 packages in 3.617s
found 0 vulnerabilities

MeghanaN-18bcs053-MacBook-Pro:task2 harshitha$ echo> index.js
MeghanaN-18bcs053-MacBook-Pro:task2 harshitha$ node index.js
Example app listening at http://localhost:3000
^C
MeghanaN-18bcs053-MacBook-Pro:task2 harshitha$ ansible --version
```

Step 2: Creating Ansible vault to Store the Git username and token

Creating a vault and setting a vault password and creating a file called secrets.yml that stores the github username and security token. The secrets.yml file will be encrypted.



```
Desktop — ec2-user@ip-172-31-15-152:~ — ssh -i task2.pem ec2-user@ec2-15-206-14-9-2-ap-south-1-compute.amazonaws.com
Last login: Fri Sep 24 21:54:57 on ttys002
The default interactive shell is now zsh.
To update your account to use zsh, please run 'chsh -s /bin/zsh'.
For more details, please visit https://support.apple.com/kb/HT20060.
MeghanaN-18bce053-MacBook-Pro:~ harshitha$ cd Desktop
MeghanaN-18bce053-MacBook-Pro:Desktop harshitha$ chmod 400 task2.pem
MeghanaN-18bce053-MacBook-Pro:Desktop harshitha$ ssh -i "task2.pem" ec2-user@ec2-15-206-14-9-2-ap-south-1-compute.amazonaws.com
Last login: Fri Sep 24 16:27:08 2021 from 49.206.10.24
[ec2-user@ip-172-31-15-152 ~]$

MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ npm install express
npm WARN task2@1.0.0 No description
npm WARN task2@1.0.0 No repository field.

+ express@4.17.1
added 50 packages from 37 contributors and audited 50 packages in 3.617s
found 0 vulnerabilities

MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ echo index.js
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ node index.js
Example app listening at http://localhost:3000
^C
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ ansible --version
ansible [core 2.11.5]
  config file = None
  configured module search path = ['/Users/harshitha/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /Library/Frameworks/Python.framework/Versions/3.8/lib/python3.8/site-packages/ansible
  executable location = /Library/Frameworks/Python.framework/Versions/3.8/bin/ansible
  python version = 3.8.3rc1 (v3.8.3rc1:802eb670ba, Apr 29 2020, 18:07:04) [Clang 6.0 (clang-600.0.57)]
  Jinja2 version = 3.0.1
  libyaml = True
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ ansible-vault create secrets.yml
New Vault password:
Confirm New Vault password:
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ cat secrets.yml
$ANSIBLE_VAULT;1.1;AES256
62653662386162386637656461303735653565373233383063643934306561653833393437343336
3136313235316230393437333332663439363238653765390e313138306433366233306233663634
3032261613562366634393838333133366661393538373833326137326133633566353236643662
66343364323432370e326636303766336464633316397383937216264383034633766363031
65313633343330636332313536363337383532303639613062386462356163323537343262643733
65343939646462633138323139353036316637373732323064626663343231393732643333383861
34373366373866653765383531636331393736393334393465386533326135643932343636376132
66383833363232646439
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ ansible-vault decrypt secrets.yml
Vault password:
[ERROR] Decryption failed (no vault secrets were found that could decrypt) on /Users/harshitha/Desktop/task2/secrets.yml
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ ansible-vault decrypt secrets.yml
Vault password:
Decryption successful
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ cat secrets.yml
gituser: MeghanMatrzj
gitpass: ghp_rP0eIC24Niks200fgf6q2zPnnEX0QZFaT
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ ansible-vault encrypt secrets.yml
New Vault password:
Confirm New Vault password:
Encryption successful
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$ touch ansible_hosts
MeghanaN-18bce053-MacBook-Pro:task2 harshitha$
```

Step 3: The Ansible Git Example Playbook

Here we have created a nodejs app and uploaded it in a private github repository. Then we create the Ansible playbook. (gitexample.yml) The github username and token we created in the secrets.yml file.

Step 4: Launch the Playbook with Ansible Git

Now we launch the playbook using the ansible-playbook command

```
ansible-playbook gitexample.yml --ask-vault-pass
```

Method: First we check if the hostgroup is reachable using the following command: (here, nodeserver is the name of our hostgroup)

Ansible_hosts is an inventory file that contains the name of the host group, public IP address of the host server etc.

Now we launch the playbook:

The playbook ran successfully. This means our github repository has been cloned to our server in the /apps/SampleNodeApp directory.

The server is running successfully!

The image shows a macOS desktop with three main windows open:

- Visual Studio Code:** Displays a file explorer on the left with a folder named 'path' containing a file 'BTP'.
- Terminal:** A dark-themed terminal window showing the following commands and outputs:


```
task2 -- -bash - 155x54
MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ rm -rf secrets.yml
MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ ansible-vault create secrets.yml
New Vault password:
Confirm New Vault password:
MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ cat secrets.yml
$ANSIBLE_VAULT;1.1;AES256
6135644646396380358037636164323831638063622932273326438643635644438393364131
37336238336637323834333238442344237380634663133893836444383063838623765394663
423392323835346585523761663430613261373939656265613866393464237386533333136623666
3132363966373834360831363661383266333565333937333395653236664663365323133393437
446846373649393372413861343833383864623761338338333634364462626380646538232633
3963386264386438386138636333666633563613365393333838336333938623832373136313661
4233386262623363646634366616164626462623261386161616136383731646563373365343433
3465396663864646365
MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ ansible-vault decrypt secrets.yml
Vault password:
Decryption successful
MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ ansible-playbook gitexample.yml --ask-vault-pass
Vault password:
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'
[WARNING]: Could not match supplied host pattern, ignoring: nodeserver

PLAY [Install and Launch the Simple NodeJS Application] *****
skipping: no hosts matched

PLAY RECAP *****

MeghanaN-18bcs063-MacBook-Pro:task2 harshitha$ ansible-playbook gitexample.yml -i ansible_hosts --ask-vault-pass
Vault password:

PLAY [Install and Launch the Simple NodeJS Application] *****
TASK [Gathering Facts] *****
ok: [15.206.149.2]

TASK [Install Node and NPM] *****
changed: [15.206.149.2]

TASK [Validate the nodejs installation] *****
ok: [15.206.149.2] =>
  "msg": "Installation of node is Successful"
}

TASK [Version of Node and NPM] *****
changed: [15.206.149.2]

TASK [Version Info] *****
ok: [15.206.149.2] => {
  "msg": "Version info {'6.11.1', 'v10.24.0'}"
}

TASK [Download the NodeJS code from the GitRepo] *****
```
- task2:** A terminal window showing the output of the Ansible playbook, which includes a list of hosts, a list of tasks, and a list of tasks.