

### e Testing Help

# Ansible Playbooks and amples

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d about to install e did also

ısing re

#### **Suggested Read => Learning Guide on**

#### **DevOps**



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time tasks using Modules, but what if you need to n them in a scripted way.

eployment steps, assign roles, perform multiple tasks. Itall packages, start services. So primarily playbooks are machines or servers and get them all to a certain

nl file extension. One needs to be very careful with the nsitive.

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nines on which the playbook should run. This is based on

can declare all the variables needed in the playbook. We

Il the tasks that should be executed on the target so. Every task has a name which is a small description of while the playbook is run.

#### וז we need το install and configure romeat it will consist of the following tasks:

- 1. Download and Install Tomcat
- 2. Configure Tomcat
- 3. Start Tomcat

### Similarly, another <u>Example</u> for usage of Tomcat used in the continuous delivery of DevOps, the tasks could be as follows:

- 1. Stop application
- 2. Uninstall application
- 3. Install a new version of the WAR file.
- 4. Start application

#### Sample Format of Playbook

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ting from the top and it has to be maintained else you

10 torrioat 0.0.0 htar. 62 acot-/ opt/manjan/ torrioat

and

tax-check

hosts

#### oles

3 of how to create playbooks which you might need to 2 created and run from the control machine.

Save all the below playbooks to a .yml file and run as shown below.

#### \$ ansible-playbook filename.yml

**Example 1:** Create the file on the target machines or servers as mentioned in the inventory file and the webserver's group, save the below code with .yml extension and run the playbook.

hosts: webservers become: true tasks:

- name: Create a file

file: path=/home/ansible/niranjan.txt state=touch

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	1 7 1	CII	ч

-directory mode=775 owner=ansible group=ansible

eate multiple directories with one single task you can you run the below playbook it is interpreted as 3

er module to create and delete users in the playbook.

- name: Create User

user: name=niranjan password=niranjan groups=ansible shell=/bin/bash

<u>Example 5:</u> Remove user. Removing a user is very easy and it will need the **state** to be set to **absent**. This is equivalent to the **userdel** command in Linux.

\_\_\_

- hosts: webservers become: true

tasks:

- name: Remove User

user:

name=niranjan state=absent remove=yes force=yes

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nes or servers use the **src** and **dest** in the copy module.

dest=/home/ansible/niranjan.txt

:/tmp/niranjan.txt

with another word. The replace module will need 3 ticular word) and 'replace' (providing another word for

replace: "world"

#### **Example 8:** Archive or ZIP files and Folders

Using the Ansible archive module you can compress files or folders to 'zip', '.gz', or 'bz2' format.

<u>Note</u>: The files or folders to be compressed should be available on the target servers and should have the packages for tar, bzip2, gzip, zip file installed on them. You can have a separate playbook task for installing these packages.

---

- hosts: all

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xt to niranjan.zip file

е

niranjan.zip file.

ome/ansible directory.

#### **Example 9:** Working with date and timestamp

Using the system date and timestamp helps in certain status or logging purposes. The Ansible facts provide access to remote or target servers date and time. So we can use the **debug module** to print the output along with the **var** attribute as shown below.

---

- hosts: webservers become: true

tasks:

- name: Date and Time Example in Ansible debug:

var=ansible\_date\_time.date

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le

mple \_time.date}}.log

e based on the current date for **E.g**. niranjan2018-07-

ow Example I am declaring the variable **name** with value

- name: Ansible Basic variable Example debug: msg: "{{ name }}"

We can also have an array or a list of variables as in the below **Example**.

- hosts: all vars: name:

- Vasudevamurthy
- Niranjan

tasks:

- name: Ansible Array Example debug:

msg: "{{ name[1] }}"

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o a register variable.
:ample
to capture any value use the var attribute in the – debug
d GIT on the target servers or machines.
ı <b>m</b> module to install the latest version of the software

**Example 13:** Install Apache server. Save the below code and run playbook as shown below.

---

 hosts: webservers become: true

tasks:

- name: Install Package

yum: name=httpd state=present

- name: Start httpd service

service: name=httpd state=started

Apart from the **yum** module, the **service** module is also used to start the httpd service. The tasks run from top to bottom synchronously.

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all JDK 8 on all target machines or servers. JDK is a pretages like Maven or Tomcat.

m/otn-pub/java/jdk/8u171-b11/512cd62ec5174c3487ac17c6

: --no-cookies --header 'Cookie: oraclelicense=accept-se 4.rpm"

#### Example 15: Install Maven

The tasks performed are to download the maven file from the URL using the **get\_url** module, extract the file downloaded, move it to a smaller directory, update and run the profile where the maven is added to the path.

 hosts: webservers become: true tasks:

- name: Download Maven

get\_url: url=http://www-us.apache.org/dist/maven/maven-3/3.5.3/binaries/apache-maven-3.5.3-k

- name: Extract Maven

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## ■ Menu '{H` : Tomcat 8 on to the target machines or servers. f the latest version of Tomcat 8. Click here for the URL in this playbook. list/tomcat/tomcat-8/v8.5.32/bin/apache-tomcat-8.5.32.t cat file 2.tar.gz smaller one mcat the Tomcat directory =ansible group=ansible mode=775 state=directory recurse - name: Start Tomcat command: nohup /home/ansible/tomcat/bin/startup.sh # Execute command even after you have become: true become\_user: ansible

Example 17: pre\_tasks, post\_tasks, and tags

You can use pre\_tasks and post\_tasks to run certain tasks before or after running the main task.

Normally in a playbook, you have so many tasks that are executed. What if you need to execute only a certain task? Tags are the answer to it. Let's look at the below option which has all the 3 options. It has 2 tasks i.e. one with a TAG and one without a TAG.

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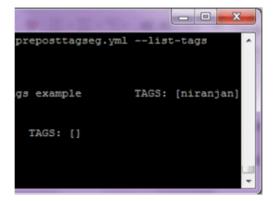
anjan.

rver"

- niranjan.

lybook with the -list-tags option

#### st-tags



The output above looks better and clear. Play#1 has a tag niranjan but Play#2 does not have any tags.

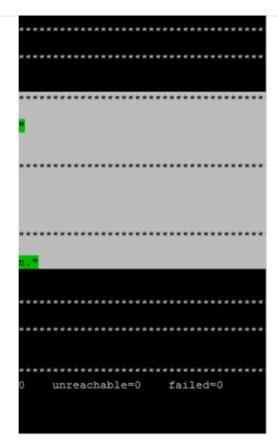
If you need to execute the tasks with the tag niranjan then the command to run would be:

#### \$ ansible-playbook preposttagseg.yml --tags niranjan

The second play is not executed and the file is not created.

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files and any changes to it will have effect only when the service set to restart. For **<u>E.g.</u>** In the below playbook start anyway irrespective of the changes done or not,

which is not correct.

. .

- hosts: webservers

tasks:

- name: Install the apache Package yum: name=httpd state=latest
- name: Copy httpd configuration file
  copy: src=/home/ansible/httpd.final dest=/etc/httpd/conf/httpd.conf
- name: Copy index.html file copy: src=/home/ansible/index.html dest=/var/www/html

#### # This service below is executed irrespective of changes done or not to any config files

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o have a **notify** option.

=/etc/httpd/conf/httpd.conf

=/var/www/html

ed=yes

stalled and started. Even if you re-run the playbook will not restart as it is already started.

if the HTML files are changed then once the playbook is ice. The name in the notify section and handlers should other task but is called only if there are changes.

#### Ansible Vault

Most of the times when sensitive or confidential data need to be protected in the playbook, then it can be encrypted rather than just keeping it in a text file which is readable by all. Ansible Vault allows you to encrypt the playbook to protect the confidential data.

For Example, consider the following task where a confidential job agreement is being copied.

In such cases, you would need an Ansible Vault.

---

 hosts: webservers become: true tasks:

- name: Conving Confidential Joh Agreement

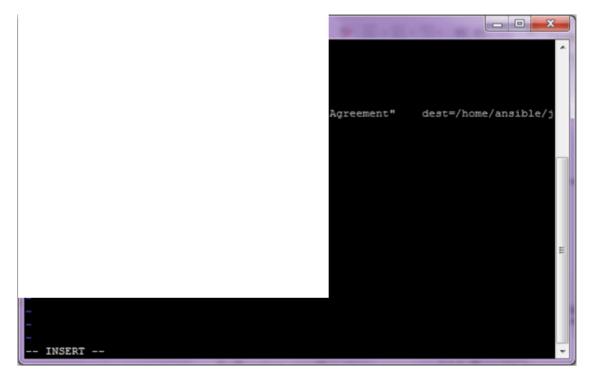
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the ansible-vault create command.



will open to add contents to the file.



Ansible will encrypt the contents when you close the file. Instead of seeing the actual contents you will see encrypted blocks.

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llowing

at the actual contents of the file.

#### \$ ansible-vault view jobagreement.yml

You will be asked for the password again to look at the contents of the file.

#### **#4) Editing encrypted files**

If you need to edit the file use the command ansible-vault edit

#### \$ ansible-vault edit users.yml

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ble-playbook command.
pass
mand.
portant aspects of configuration management which are ata using Ansible Vaults.
given you an idea as to how to automate various tasks
y.

In our upcoming tutorial, we will see how to modularize the Playbook using Ansible roles, integrate with Jenkins and the most important aspect to work with Ansible S3 and EC2 modules for managing the AWS instances (Create and Terminate EC2 instances).

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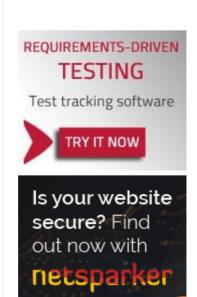
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