

ASSESSMENT - 20

Ansible 1

**TO
THE
NEW**™



1. Run Ansible Ad-hoc commands:

1.1 To execute a command in bash and see the result.

```
# Ex 1: Ungrouped hosts,
## green.example.com
## blue.example.com
## 192.168.100.1
## 192.168.100.10
ubuntu@54.85.126.111
```

Copy the public key in authorized key folder of your instance.

```
garima@garima:/etc/ansible$ ansible all -m shell -a "ls -la"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@54.85.126.111 | CHANGED | rc=0 >>
total 44
drwxr-xr-x 6 ubuntu ubuntu 4096 Mar 22 12:19 .
drwxr-xr-x 3 root root 4096 Mar 22 12:11 ..
drwx----- 3 ubuntu ubuntu 4096 Mar 22 12:19 .ansible
-rw----- 1 ubuntu ubuntu 43 Mar 22 12:17 .bash_history
-rw-r--r-- 1 ubuntu ubuntu 220 Apr 4 2018 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Apr 4 2018 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Mar 22 12:14 .cache
drwx----- 3 ubuntu ubuntu 4096 Mar 22 12:14 .gnupg
-rw-r--r-- 1 ubuntu ubuntu 807 Apr 4 2018 .profile
drwx----- 2 ubuntu ubuntu 4096 Mar 22 12:15 .ssh
-rw-r--r-- 1 ubuntu ubuntu 0 Mar 22 12:15 .sudo_as_admin_successful
-rw----- 1 root root 1151 Mar 22 12:15 .viminfo
```

1.2 To check all running processes on node.

```
garima@garima:/etc/ansible$ ansible all -m shell -a "ps -aux"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning
ted version!
  RequestsDependencyWarning)
ubuntu@54.85.126.111 | CHANGED | rc=0 >>
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.3  0.8 159780  9028 ?        Ss   12:11   0:02 /sbin/init
root           2  0.0  0.0      0     0 ?        S    12:11   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        I    12:11   0:00 [kworker/0:0]
root           4  0.0  0.0      0     0 ?        I<   12:11   0:00 [kworker/0:0H]
root           6  0.0  0.0      0     0 ?        I<   12:11   0:00 [mm_percpu_wq]
root           7  0.0  0.0      0     0 ?        S    12:11   0:00 [ksoftirqd/0]
root           8  0.0  0.0      0     0 ?        I    12:11   0:00 [rcu_sched]
root           9  0.0  0.0      0     0 ?        I    12:11   0:00 [rcu_bh]
root          10  0.0  0.0      0     0 ?        S    12:11   0:00 [migration/0]
root          11  0.0  0.0      0     0 ?        S    12:11   0:00 [watchdog/0]
root          12  0.0  0.0      0     0 ?        S    12:11   0:00 [cpuhp/0]
```

1.3 To copying files to multiple nodes concurrently.

```
# Ex 1: Ungrouped hosts, s
## green.example.com
## blue.example.com
## 192.168.100.1
## 192.168.100.10
ubuntu@54.85.126.111
ubuntu@18.212.200.30
```

```

garima@garima:/etc/ansible$ sudo vim hosts
garima@garima:/etc/ansible$ ansible all -m copy -a "src=/etc/hosts dest=/home/ubuntu/"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: ur
ted version!
  RequestsDependencyWarning)
ubuntu@54.85.126.111 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "checksum": "2781bf5b30ff8c8f7908ee62069b98cc8856a279",
  "dest": "/home/ubuntu/hosts",
  "gid": 1000,
  "group": "ubuntu",
  "md5sum": "787d2f6aa581478470b35e502142c83c",
  "mode": "0664",
  "owner": "ubuntu",
  "size": 355,
  "src": "/home/ubuntu/.ansible/tmp/ansible-tmp-1584881159.91-12302880036114/source",
  "state": "file",
  "uid": 1000
}
ubuntu@18.212.200.30 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "checksum": "2781bf5b30ff8c8f7908ee62069b98cc8856a279",
  "dest": "/home/ubuntu/hosts",

```

```

garima@garima:/etc/ansible$ ansible all -m shell -a "ls"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarn
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@18.212.200.30 | CHANGED | rc=0 >>
hosts
ubuntu@54.85.126.111 | CHANGED | rc=0 >>
hosts

```


1.4 To add and delete users.

Adding users:

```
garima@garima:/etc/ansible$ ansible all -m user -b -a "name=garima"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version
  RequestsDependencyWarning)
ubuntu@18.212.200.30 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "comment": "",
  "create_home": true,
  "group": 1001,
  "home": "/home/garima",
  "name": "garima",
  "shell": "/bin/sh",
  "state": "present",
  "system": false,
  "uid": 1001
}
```

```
ubuntu@54.85.126.111 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "comment": "",
  "create_home": true,
  "group": 1001,
  "home": "/home/garima",
  "name": "garima",
  "shell": "/bin/sh",
  "state": "present",
  "system": false,
  "uid": 1001
}
```

```
garima@garima:/etc/ansible$ ansible all -m shell -a "grep garima /etc/passwd"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@18.212.200.30 | CHANGED | rc=0 >>
garima:x:1001:1001::/home/garima:/bin/sh
ubuntu@54.85.126.111 | CHANGED | rc=0 >>
garima:x:1001:1001::/home/garima:/bin/sh
```

Deleting users:

```
garima@garima:/etc/ansible$ ansible all -m user -b -a "name=garima state=absent remove=yes"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@18.212.200.30 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "force": false,
  "name": "garima",
  "remove": true,
  "state": "absent",
  "stderr": "userdel: garima mail spool (/var/mail/garima) not found\n",
  "stderr_lines": [
    "userdel: garima mail spool (/var/mail/garima) not found"
  ]
}
```

```
ubuntu@54.85.126.111 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "force": false,
  "name": "garima",
  "remove": true,
  "state": "absent",
  "stderr": "userdel: garima mail spool (/var/mail/garima) not found\n",
  "stderr_lines": [
    "userdel: garima mail spool (/var/mail/garima) not found"
  ]
}
```

```
garima@garima:/etc/ansible$ ansible all -m shell -a "grep garima /etc/passwd"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@54.85.126.111 | FAILED | rc=1 >>
non-zero return code
ubuntu@18.212.200.30 | FAILED | rc=1 >>
non-zero return code
```

2. Create nginx ansible-playbook and run the node, also check if nginx service and default page is running or not.

```
command_warnings = False

# set plugin path directories here, separate with colons
#action_plugins      = /usr/share/ansible/plugins/action
#become_plugins      = /usr/share/ansible/plugins/become
#cache_plugins       = /usr/share/ansible/plugins/cache
#callback_plugins    = /usr/share/ansible/plugins/callback
#connection_plugins  = /usr/share/ansible/plugins/connection
#lookup_plugins      = /usr/share/ansible/plugins/lookup
#inventory_plugins   = /usr/share/ansible/plugins/inventory
#vars_plugins        = /usr/share/ansible/plugins/vars
#filter_plugins      = /usr/share/ansible/plugins/filter
#test_plugins        = /usr/share/ansible/plugins/test
"ansible.cfg" 490L, 19983C
```

```
- name: Playbook for Installing Nginx
hosts: all
become: yes
gather_facts: no
tasks:
  - name: ensuring nginx is at the latest version
    apt:
      update_cache: yes

  - name: installing nginx
    apt:
      name: nginx
      state: latest

  - name: starting nginx
    service:
      name: nginx
      state: started

  - name: checking status
    command: service nginx status
    register: nginx_status

  - name: nginx status output
    debug:
      var: nginx_status
```

```
"nginx-play.yml" 26L, 655C
```



```
garima@garima:/etc/ansible$ ansible-playbook nginx-play.yml
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDepen
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported ver
RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDepen
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported ver
RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDepen
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported ver
RequestsDependencyWarning)

PLAY [Playbook for Installing Nginx] *****

TASK [ensuring nginx is at the latest version] *****
changed: [ubuntu@18.212.200.30]
changed: [ubuntu@54.85.126.111]

TASK [installing nginx] *****
changed: [ubuntu@54.85.126.111]
changed: [ubuntu@18.212.200.30]
```

```
TASK [starting nginx] *****
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDepen
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't ma
RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDepen
ing: urllib3 (1.25.8) or chardet (3.0.4) doesn't ma
RequestsDependencyWarning)
ok: [ubuntu@18.212.200.30]
ok: [ubuntu@54.85.126.111]
```

```

TASK [checking status] *****
changed: [ubuntu@54.85.126.111]
changed: [ubuntu@18.212.200.30]

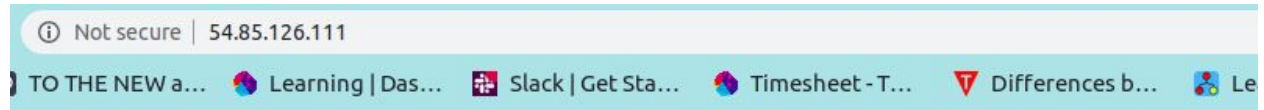
TASK [nginx status output] *****
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: Re
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: Re
ted version!
  RequestsDependencyWarning)
ok: [ubuntu@54.85.126.111] => {
  "nginx_status": {
    "changed": true,
    "cmd": [
      "service",
      "nginx",
      "status"
    ],
    "delta": "0:00:00.013155",
    "end": "2020-03-22 13:47:39.665152",
    "failed": false,
    "rc": 0,
    "start": "2020-03-22 13:47:39.651997",
    "stderr": "",
    "stderr_lines": [],
    "stdout": "●nginx.service - A high performance web

```

```

ok: [ubuntu@18.212.200.30] => {
  "nginx_status": {
    "changed": true,
    "cmd": [
      "service",
      "nginx",
      "status"
    ],
    "delta": "0:00:00.013409",
    "end": "2020-03-22 13:47:41.078846",
    "failed": false,
    "rc": 0,
    "start": "2020-03-22 13:47:41.065437",
    "stderr": "",
    "stderr_lines": [],
    "stdout": "●nginx.service - A high performance web

```

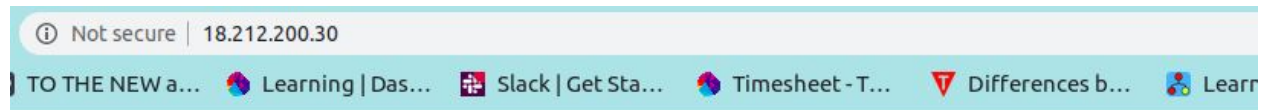


Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

3. Create the roles for the same playbook and use custom conf file and index.html.

```
garima@garima:/etc/ansible$ sudo ansible-galaxy init /etc/ansible/custom
- Role /etc/ansible/custom was created successfully
garima@garima:/etc/ansible$ tree custom/
custom/
├── defaults
│   └── main.yml
├── files
├── handlers
│   └── main.yml
├── meta
│   └── main.yml
├── README.md
├── tasks
│   └── main.yml
├── templates
├── tests
│   ├── inventory
│   └── test.yml
└── vars
    └── main.yml

8 directories, 8 files
```

```
garima@garima:/etc/ansible$ cat custom/files/index.html
WELCOME TO NGINX'S CUSTOM PAGE
garima@garima:/etc/ansible$ cat custom/templates/temp1.j2
server{
    listen 80;
    server_name {{ ansible_hostname }};
    index index.html;
    root /var/www/html;
}

garima@garima:/etc/ansible$
```



```
garima@garima:/etc/ansible$ tree custom/
custom/
├── defaults
│   └── main.yml
├── files
│   └── index.html
├── handlers
│   └── main.yml
├── meta
│   └── main.yml
├── README.md
├── tasks
│   └── main.yml
├── templates
│   └── temp1.j2
├── tests
│   ├── inventory
│   └── test.yml
└── vars
    └── main.yml
```

```
garima@garima:/etc/ansible$ sudo vim roles-play.yml
garima@garima:/etc/ansible$ cat roles-play.yml
- name: example playbook for roles
  hosts: all
  become: yes
  gather_facts: yes
  roles:
    - custom
```

```

garima@garima:/etc/ansible/custom/tasks$ cat main.yml
---
# tasks file for /etc/ansible/custom
- name: updating
  apt:
    update_cache: yes
- name: installing nginx
  apt:
    name: nginx
    state: latest
- name: using template
  template:
    src: temp1.j2
    dest: /etc/nginx/sites-enabled/default
- name: copying custom index file
  copy:
    src: index.html
    dest: /var/www/html/
- name: restarting nginx
  command: service nginx reload

```

```

garima@garima:/etc/ansible$ ansible-playbook roles-play.yml
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: Requests
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: Requests
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: Requests
ted version!
  RequestsDependencyWarning)

PLAY [example playbook for roles] *****

TASK [Gathering Facts] *****
ok: [ubuntu@54.85.126.111]
ok: [ubuntu@18.212.200.30]

```

```

TASK [custom : updating] *****
changed: [ubuntu@18.212.200.30]
changed: [ubuntu@54.85.126.111]

TASK [custom : installing nginx] *****
ok: [ubuntu@18.212.200.30]
ok: [ubuntu@54.85.126.111]

TASK [custom : using template] *****
/usr/lib/python2.7/dist-packages/requests/__in
ted version!
RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__in
ted version!
RequestsDependencyWarning)
changed: [ubuntu@54.85.126.111]
changed: [ubuntu@18.212.200.30]

```

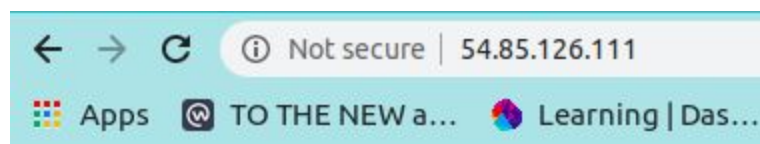
```

TASK [custom : copying custom index file] *****
changed: [ubuntu@18.212.200.30]
changed: [ubuntu@54.85.126.111]

TASK [custom : restarting nginx] *****
changed: [ubuntu@54.85.126.111]
changed: [ubuntu@18.212.200.30]

PLAY RECAP *****
ubuntu@18.212.200.30      : ok=6    changed=4
ubuntu@54.85.126.111    : ok=6    changed=4

```



WELCOME TO NGINX'S CUSTOM PAGE



4. Using loops, copy multiple files from ansible machine to remote node.

```
garima@garima:/etc/ansible$ sudo vim first
garima@garima:/etc/ansible$ cat first
hello
garima@garima:/etc/ansible$ sudo vim second
garima@garima:/etc/ansible$ cat second
hi
```

```
- name: Copying multiple files using loops
  hosts: all
  gather_facts: false
  tasks:
    - name: using module loops and copy
      copy:
        src: "{{ item }}"
        dest: /home/ubuntu
      loop:
        - first
        - second
```

```
"plays.yml" 12L, 304C
```



```

garima@garima:/etc/ansible$ ansible-playbook plays.yml
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)

PLAY [Copying multiple files using loops] *****

TASK [using module loops and copy] *****
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
changed: [ubuntu@54.85.126.111] => (item=first)
changed: [ubuntu@54.85.126.111] => (item=second)

PLAY RECAP *****
ubuntu@54.85.126.111      : ok=1    changed=1    unreachable=0    failed=0
kipped=0    rescued=0    ignored=0

```

```

garima@garima:/etc/ansible$ ansible all -m shell -a "ls"
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsDependencyWarning: urllib3 (1.25.8) or chardet (3.0.4) doesn't match a supported version!
  RequestsDependencyWarning)
ubuntu@54.85.126.111 | CHANGED | rc=0 >>
first
hosts
second

```

5. Write a playbook to demonstrate the precedence of default and var file, override them from CLI.

```
garima@garima:/etc/ansible/roles$ sudo ansible-galaxy init precedence_role
- Role precedence_role was created successfully
garima@garima:/etc/ansible/roles$ tree precedence_role/
precedence_role/
├── defaults
│   └── main.yml
├── files
├── handlers
│   └── main.yml
├── meta
│   └── main.yml
├── README.md
├── tasks
│   └── main.yml
├── templates
├── tests
│   ├── inventory
│   └── test.yml
└── vars
    └── main.yml
```

```
garima@garima:/etc/ansible/roles$ sudo vim example-play.yml
garima@garima:/etc/ansible/roles$ cat example-play.yml
- name: to show the precedence
  hosts: all
  gather_facts: no
  roles:
    - precedence_role
```

```

garima@garima:/etc/ansible/roles/precedence_role$ cat tasks/main.yml
---
# tasks file for precedence_role
- name: checking for precedence
  debug:
    msg: "version is {{ version }}"
garima@garima:/etc/ansible/roles/precedence_role$ cat defaults/main.yml
---
# defaults file for precedence_role
version: 2
garima@garima:/etc/ansible/roles/precedence_role$ cat vars/main.yml
---
# vars file for precedence_role
version: 1

```

```

garima@garima:/etc/ansible/roles$ ansible-playbook example-play.yml
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsD
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsD
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsD
ted version!
  RequestsDependencyWarning)

PLAY [to show the precedence] *****

TASK [precedence_role : checking for precedence] *****
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsD
ted version!
  RequestsDependencyWarning)
/usr/lib/python2.7/dist-packages/requests/__init__.py:80: RequestsD
ted version!
  RequestsDependencyWarning)
ok: [ubuntu@54.85.126.111] => {
  "msg": "version is 1"
}
ok: [ubuntu@18.212.200.30] => {
  "msg": "version is 1"
}

PLAY RECAP *****
ubuntu@18.212.200.30      : ok=1    changed=0    unreachable=0
ubuntu@54.85.126.111     : ok=1    changed=0    unreachable=0

```

