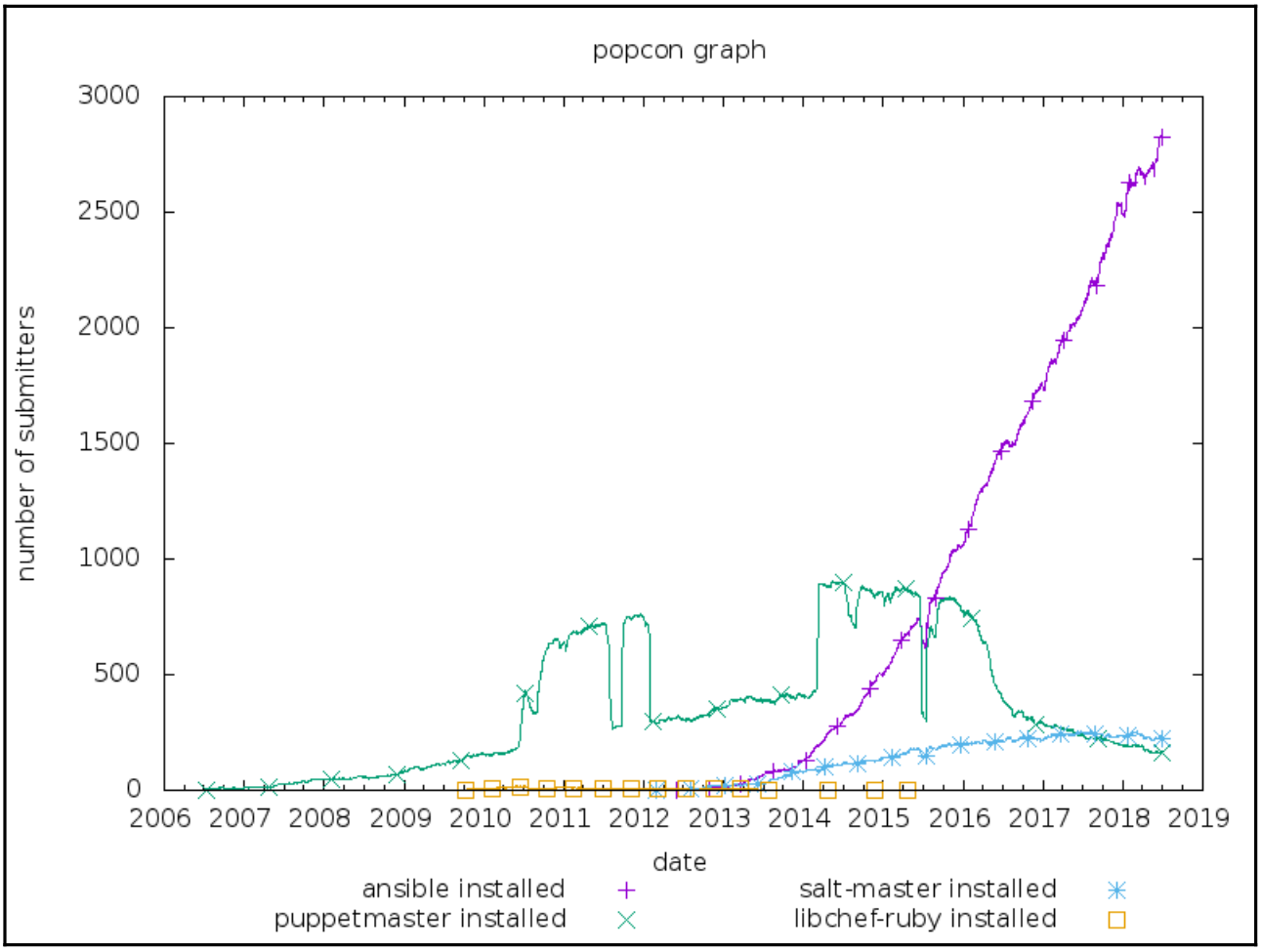
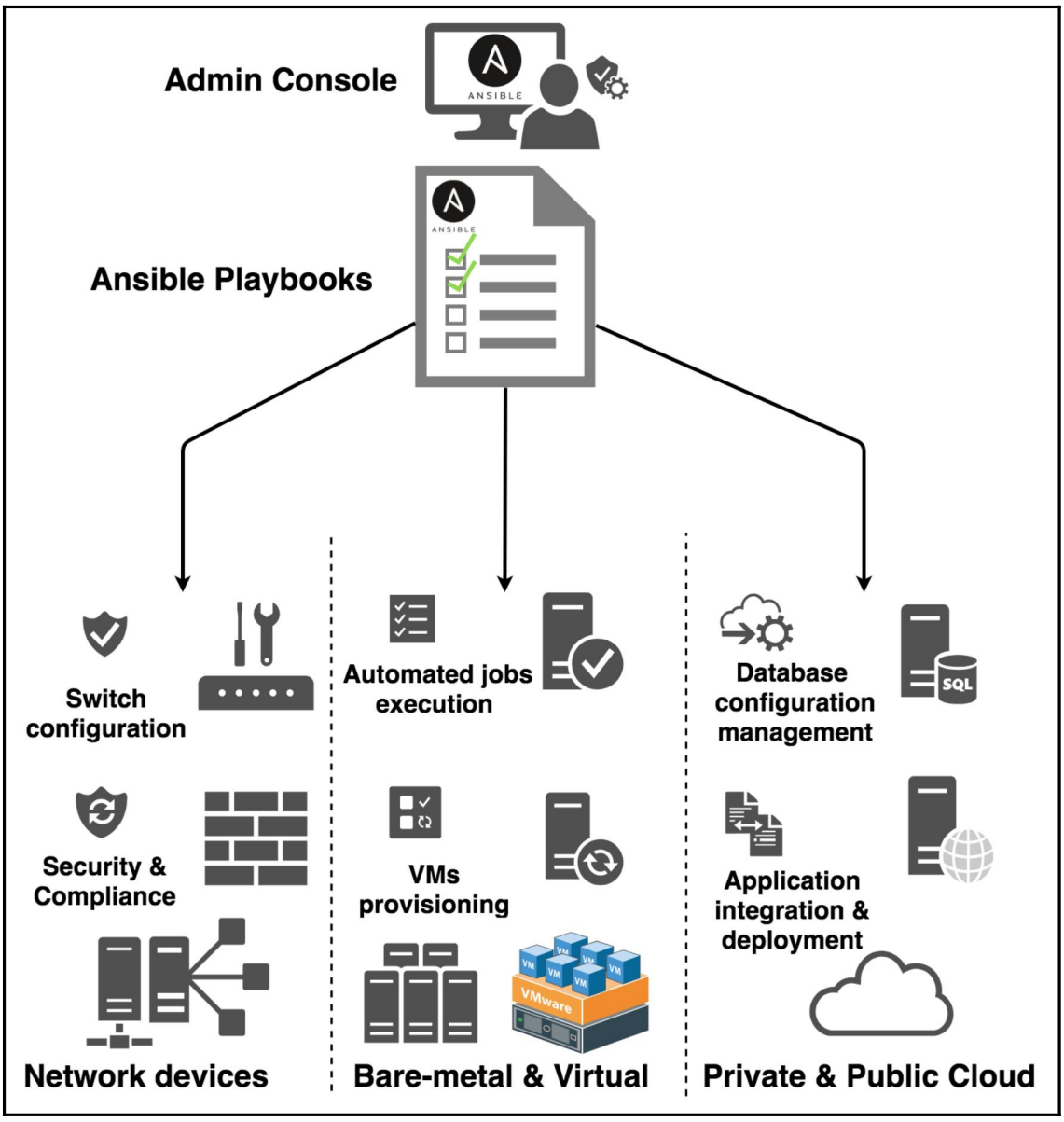
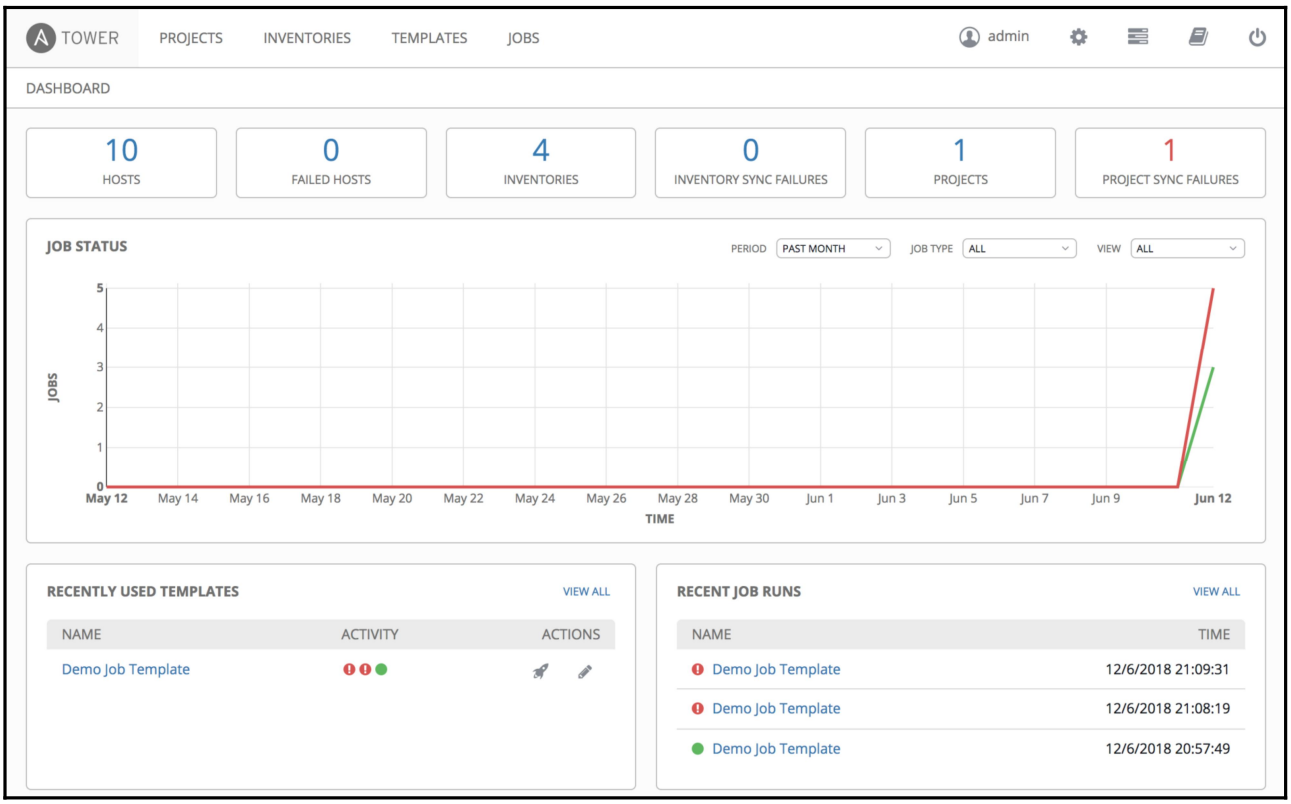
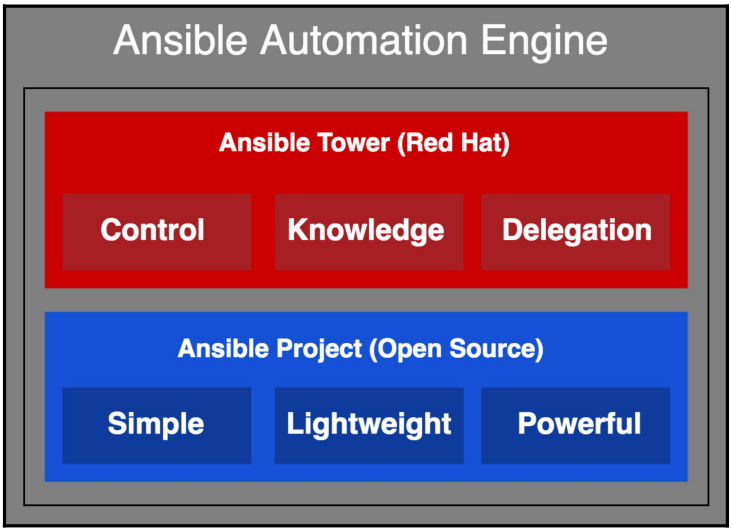
Chapter 1: What is Ansible?

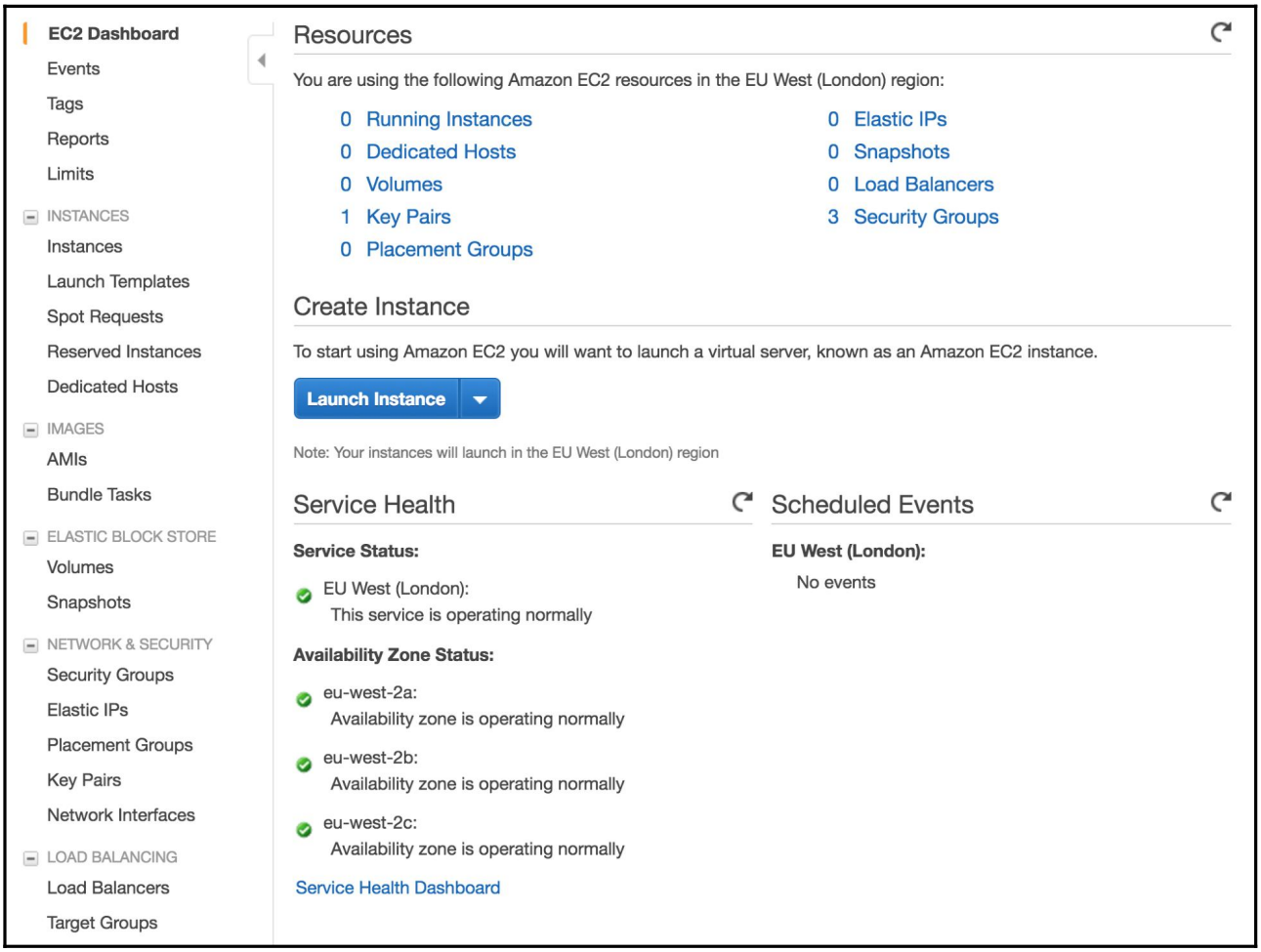


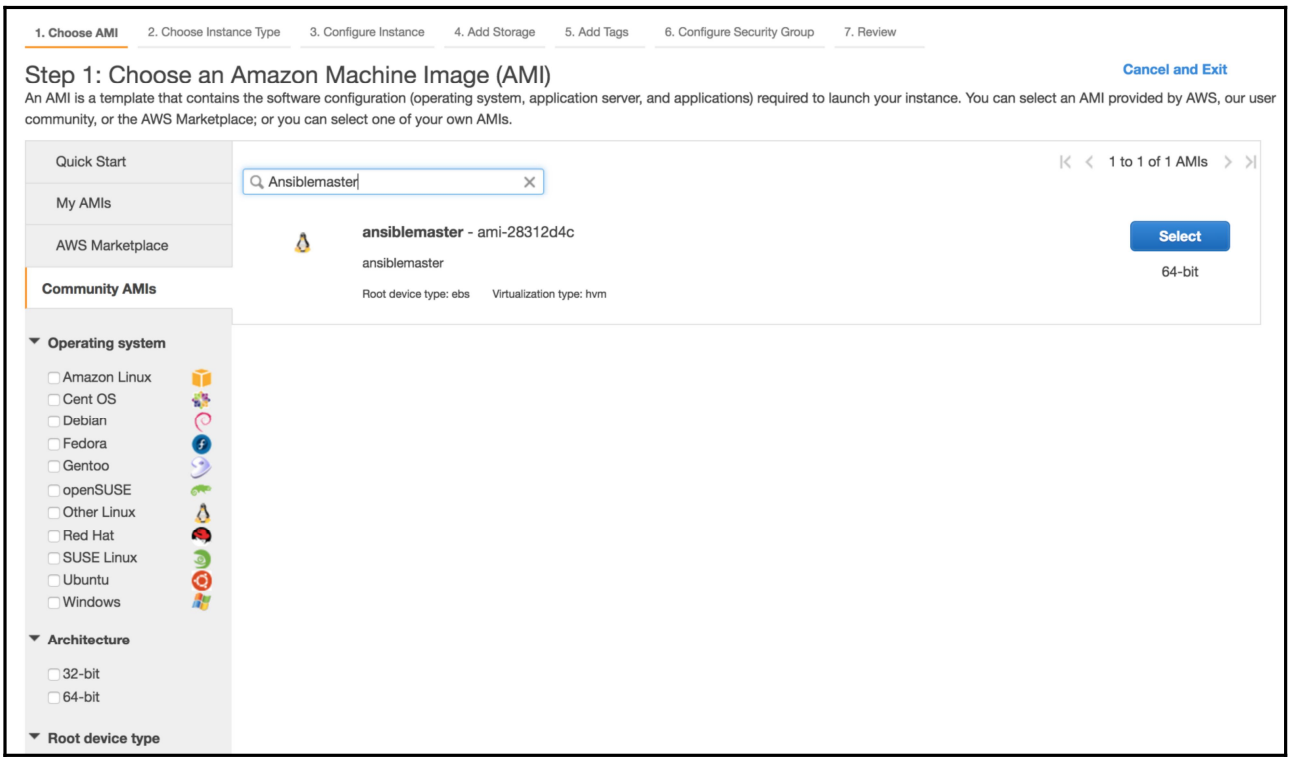

Admin Console
ANSIBLE
Ansible Playbooks
ANSIBLE
Switch configuration
Security & Compliance
Network devices
Automated jobs execution
VMs provisioning
VM
VMware
Bare-metal & Virtual
Database configuration management
SQL
Application integration & deployment
Private & Public Cloud

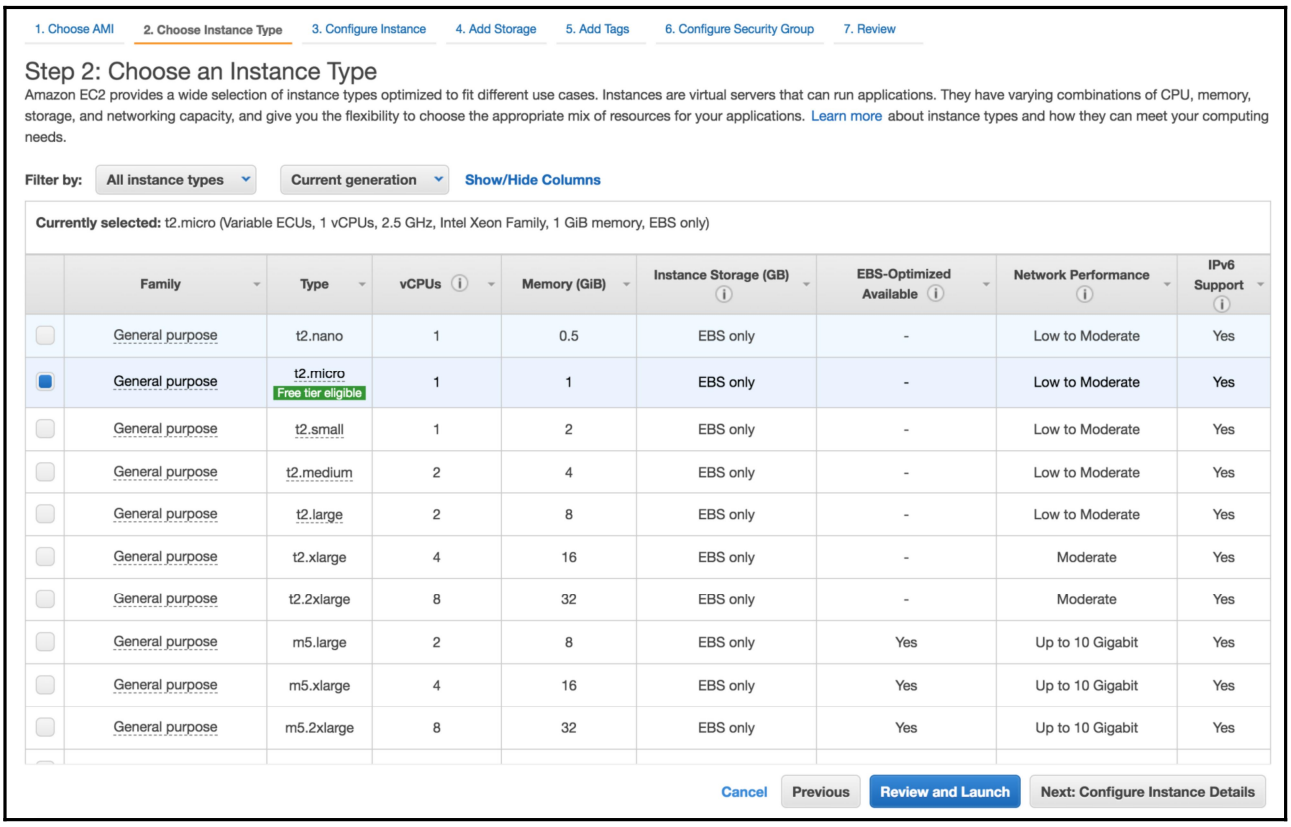

TOWER
PROJECTS
INVENTORIES
TEMPLATES
JOBS
admin
DASHBOARD
10
HOSTS
0
FAILED HOSTS
4
INVENTORIES
0
INVENTORY SYNC FAILURES
1
PROJECTS
1
PROJECT SYNC FAILURES
JOB STATUS
PERIOD
PAST MONTH
JOB TYPE
ALL
VIEW
ALL
JOBS
TIME
May 12
May 14
May 16
May 18
May 20
May 22
May 24
May 26
May 28
May 30
Jun 1
Jun 3
Jun 5
Jun 7
Jun 9
Jun 12
RECENTLY USED TEMPLATES
VIEW ALL
NAME
ACTIVITY
ACTIONS
Demo Job Template
RECENT JOB RUNS
VIEW ALL
NAME
TIME
Demo Job Template
12/6/2018 21:09:31
Demo Job Template
12/6/2018 21:08:19
Demo Job Template
12/6/2018 20:57:49

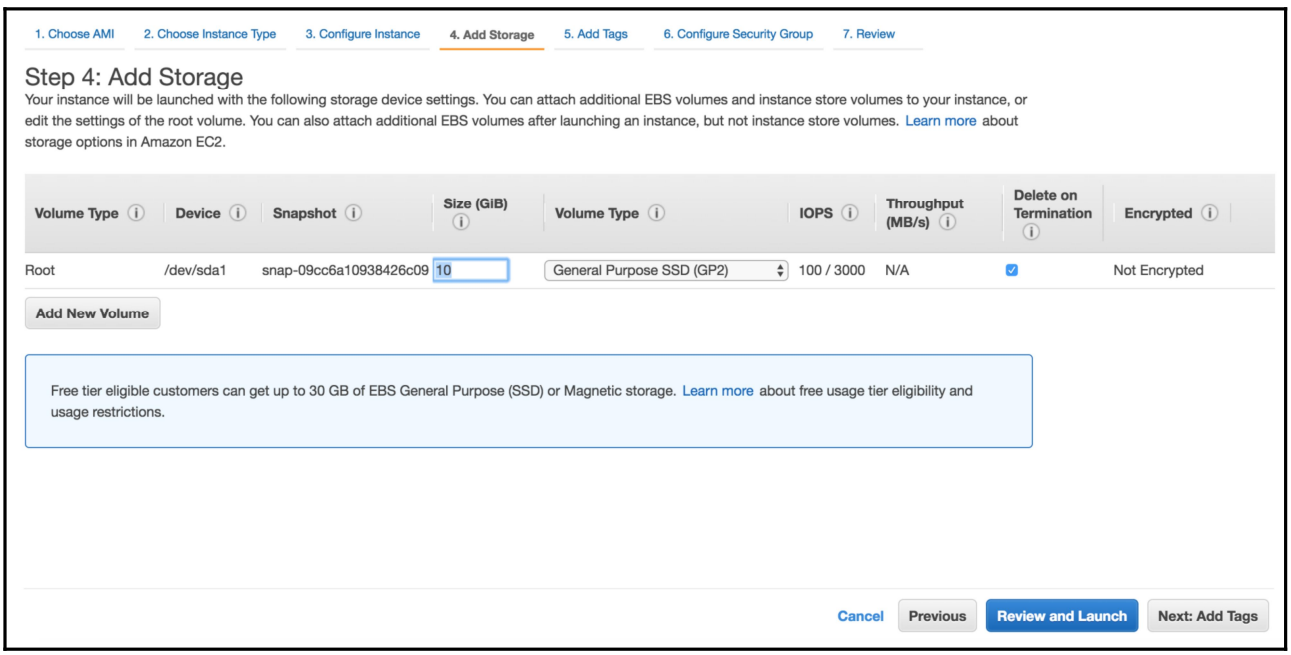

Ansible Automation Engine
Ansible Tower (Red Hat)
Control
Knowledge
Delegation
Ansible Project (Open Source)
Simple
Lightweight
Powerful

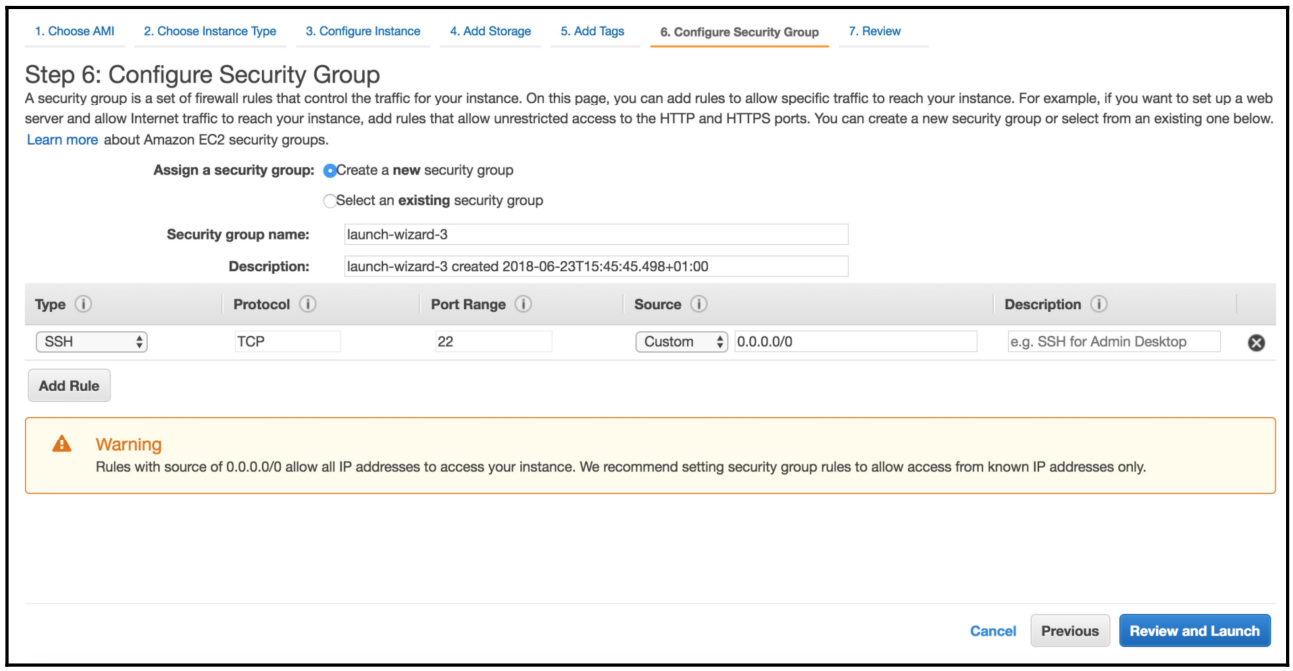
Chapter 2: Ansible Setup and Configuration

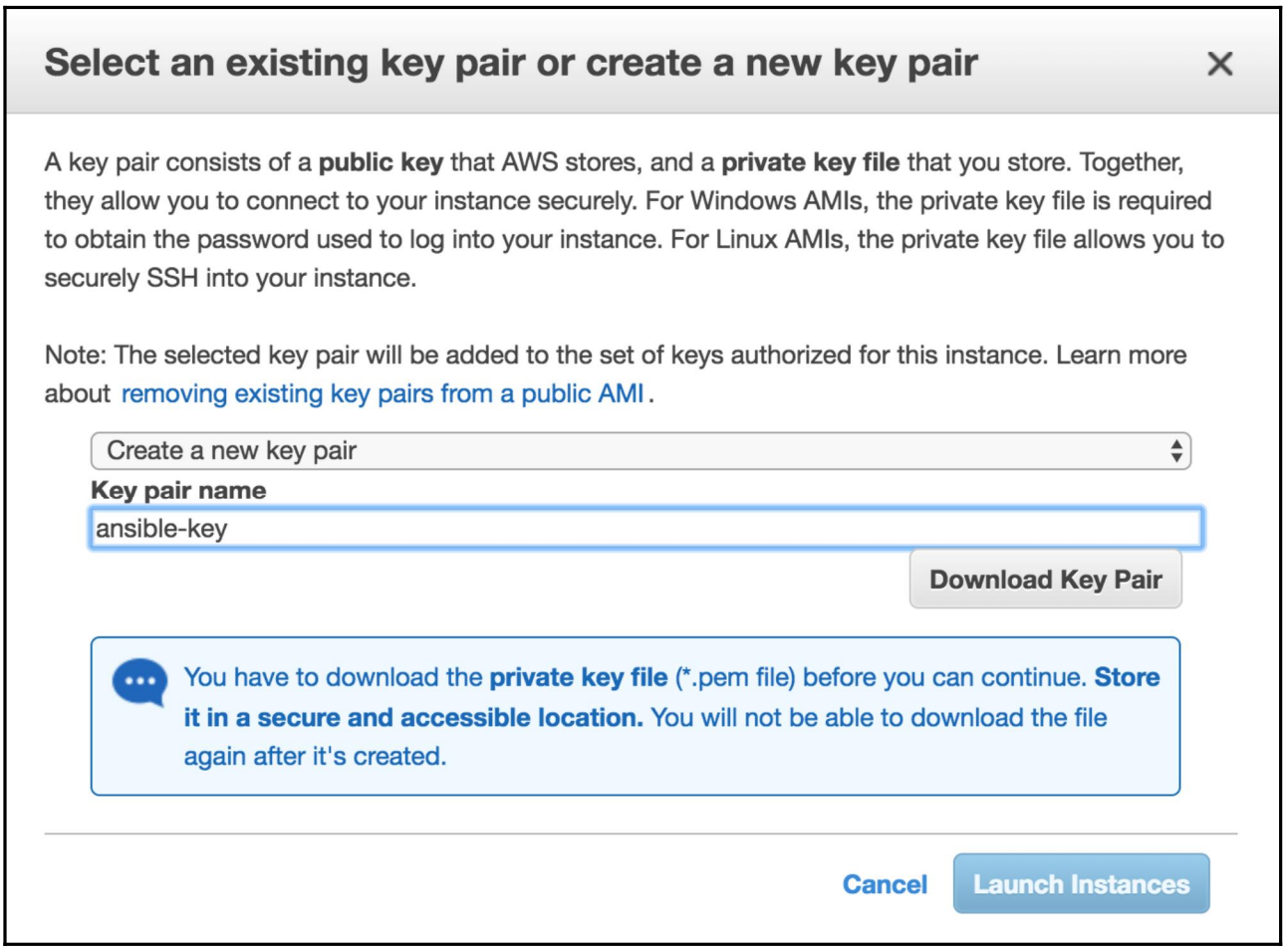



1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 1: Choose an Amazon Machine Image (AMI)
Cancel and Exit
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.
Quick Start
My AMIs
AWS Marketplace
Community AMIs
Ansiblemaster
1 to 1 of 1 AMIs
ansiblemaster - ami-28312d4c
ansiblemaster
Root device type: ebs
Virtualization type: hvm
Select
64-bit
Operating system
Amazon Linux
Cent OS
Debian
Fedora
Gentoo
openSUSE
Other Linux
Red Hat
SUSE Linux
Ubuntu
Windows
Architecture
32-bit
64-bit
Root device type


1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 2: Choose an Instance Type
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.
Filter by:
All instance types
Current generation
Show/Hide Columns
Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)
Family
Type
vCPUs
Memory (GiB)
Instance Storage (GB)
EBS-Optimized Available
Network Performance
IPv6 Support
General purpose t2.nano 1 0.5 EBS only - Low to Moderate Yes
General purpose t2.micro Free tier eligible 1 1 EBS only - Low to Moderate Yes
General purpose t2.small 1 2 EBS only - Low to Moderate Yes
General purpose t2.medium 2 4 EBS only - Low to Moderate Yes
General purpose t2.large 2 8 EBS only - Low to Moderate Yes
General purpose t2.xlarge 4 16 EBS only - Moderate Yes
General purpose t2.2xlarge 8 32 EBS only - Moderate Yes
General purpose m5.large 2 8 EBS only Yes Up to 10 Gigabit Yes
General purpose m5.xlarge 4 16 EBS only Yes Up to 10 Gigabit Yes
General purpose m5.2xlarge 8 32 EBS only Yes Up to 10 Gigabit Yes
Cancel
Previous
Review and Launch
Next: Configure Instance Details


1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.
Volume Type
Device
Snapshot
Size (GiB)
Volume Type
IOPS
Throughput (MB/s)
Delete on Termination
Encrypted
Root /dev/sda1 snap-09cc6a10938426c09 10 General Purpose SSD (GP2) 100 / 3000 N/A Not Encrypted
Add New Volume
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.
Cancel
Previous
Review and Launch
Next: Add Tags


1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 6: Configure Security Group
A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below.
Learn more about Amazon EC2 security groups.
Assign a security group:
Create a new security group
Select an existing security group
Security group name:
launch-wizard-3
Description:
launch-wizard-3 created 2018-06-23T15:45:45.498+01:00
Type
Protocol
Port Range
Source
Description
SSH
TCP
22
Custom
0.0.0.0/0
e.g. SSH for Admin Desktop
Add Rule
Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Cancel
Previous
Review and Launch




```
alibi@alibi-ml ~/Downloads> chmod 400 ansible-key.pem
alibi@alibi-ml ~/Downloads> ssh -i "ansible-key.pem" ec2-user@ec2-35-176-45-90.eu-west-2.compute.amazonaws.com
The authenticity of host 'ec2-35-176-45-90.eu-west-2.compute.amazonaws.com (35.176.45.90)' can't be established.
ECDSA key fingerprint is SHA256:YtL0yzKvOsQlYX9LJ1VxyRNwtSX+5NzRCUAgPFw/HKc.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-35-176-45-90.eu-west-2.compute.amazonaws.com,35.176.45.90' (ECDSA) to the list of known hosts.
Last login: Sun Nov  5 07:31:30 2017 from 117.195.202.115
[ec2-user@ip-172-31-28-161 ~]$
```

```
[ec2-user@ip-172-31-28-161 ~]$ ansible --version
ansible 2.4.1.0
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/home/ec2-user/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.5 (default, May  3 2017, 07:55:04) [GCC 4.8.5 20150623 (Red Hat 4.8.5-14)]
[ec2-user@ip-172-31-28-161 ~]$
```

```
[ec2-user@ip-172-31-28-161 ~]$ sudo su
[root@ip-172-31-28-161 ec2-user]# yum update -y
Loaded plugins: amazon-id, rhui-lb, search-disabled-repos
epel/x86_64/metalink                                                    |  31 kB  00:00:00
epel                                                                    | 3.2 kB  00:00:00
rhui-REGION-client-config-server-7                                      | 2.9 kB  00:00:00
rhui-REGION-rhel-server-releases                                        | 3.5 kB  00:00:00
rhui-REGION-rhel-server-rh-common                                       | 3.8 kB  00:00:00
(1/8): epel/x86_64/group_gz                                             |  88 kB  00:00:00
(2/8): epel/x86_64/primary                                              | 3.5 MB  00:00:00
(3/8): rhui-REGION-rhel-server-releases/7Server/x86_64/group            | 855 kB  00:00:00
(4/8): epel/x86_64/updateinfo                                           | 932 kB  00:00:00
(5/8): rhui-REGION-rhel-server-rh-common/7Server/x86_64/primary_db      | 121 kB  00:00:00
(6/8): rhui-REGION-rhel-server-rh-common/7Server/x86_64/updateinfo      |  33 kB  00:00:00
(7/8): rhui-REGION-rhel-server-releases/7Server/x86_64/updateinfo       | 2.8 MB  00:00:00
(8/8): rhui-REGION-rhel-server-releases/7Server/x86_64/primary_db       |  53 MB  00:00:01
epel                                                                               12592/12592
```

```
  ncurses.x86_64 0:5.9-14.20130511.el7_4                ncurses-base.noarch 0:5.9-14.20130511.el7_4
  ncurses-libs.x86_64 0:5.9-14.20130511.el7_4           nspr.x86_64 0:4.19.0-1.el7_5
  nss.x86_64 0:3.36.0-5.el7_5                           nss-softokn.x86_64 0:3.36.0-5.el7_5
  nss-softokn-freebl.x86_64 0:3.36.0-5.el7_5            nss-sysinit.x86_64 0:3.36.0-5.el7_5
  nss-tools.x86_64 0:3.36.0-5.el7_5                     nss-util.x86_64 0:3.36.0-1.el7_5
  numactl-libs.x86_64 0:2.0.9-7.el7                     openldap.x86_64 0:2.4.44-15.el7_5
  openssh.x86_64 0:7.4p1-16.el7                         openssh-clients.x86_64 0:7.4p1-16.el7
  openssh-server.x86_64 0:7.4p1-16.el7                  openssl.x86_64 1:1.0.2k-12.el7
  openssl-libs.x86_64 1:1.0.2k-12.el7                   pam.x86_64 0:1.1.8-22.el7
  parted.x86_64 0:3.1-29.el7                            pciutils-libs.x86_64 0:3.5.1-3.el7
  policycoreutils.x86_64 0:2.5-22.el7                   policycoreutils-python.x86_64 0:2.5-22.el7
  polkit.x86_64 0:0.112-14.el7                          procps-ng.x86_64 0:3.3.10-17.el7_5.2
  python.x86_64 0:2.7.5-68.el7                          python-backports-ssl_match_hostname.noarch 0:3.5.0.1-1.el7
  python-dmidecode.x86_64 0:3.12.2-2.el7                python-gobject-base.x86_64 0:3.22.0-1.el7_4.1
  python-libs.x86_64 0:2.7.5-68.el7                     python-perf.x86_64 0:3.10.0-862.3.3.el7
  python-urllib3.noarch 0:1.10.2-5.el7                  python2-cryptography.x86_64 0:1.7.2-2.el7
  redhat-release-server.x86_64 0:7.5-8.el7              redhat-support-tool.noarch 0:0.9.10-1.el7
  rh-amazon-rhui-client.noarch 0:2.2.141-1.el7          rhn-check.noarch 0:2.0.2-21.el7
  rhn-client-tools.noarch 0:2.0.2-21.el7                rhn-setup.noarch 0:2.0.2-21.el7
  rhnlib.noarch 0:2.5.65-7.el7                          rhnsd.x86_64 0:5.0.13-10.el7
  rpm.x86_64 0:4.11.3-32.el7                            rpm-build-libs.x86_64 0:4.11.3-32.el7
  rpm-libs.x86_64 0:4.11.3-32.el7                       rpm-python.x86_64 0:4.11.3-32.el7
  rsync.x86_64 0:3.1.2-4.el7                            rsyslog.x86_64 0:8.24.0-16.el7_5.4
  selinux-policy.noarch 0:3.13.1-192.el7_5.3            selinux-policy-targeted.noarch 0:3.13.1-192.el7_5.3
  setools-libs.x86_64 0:3.3.8-2.el7                     setup.noarch 0:2.8.71-9.el7
  shared-mime-info.x86_64 0:1.8-4.el7                   subscription-manager.x86_64 0:1.20.11-1.el7_5
  sudo.x86_64 0:1.8.19p2-13.el7                         systemd.x86_64 0:219-57.el7
  systemd-libs.x86_64 0:219-57.el7                      systemd-sysv.x86_64 0:219-57.el7
  tar.x86_64 2:1.26-34.el7                              teamd.x86_64 0:1.27-4.el7
  tuned.noarch 0:2.9.0-1.el7                            tzdata.noarch 0:2018e-3.el7
  util-linux.x86_64 0:2.23.2-52.el7                     vim-minimal.x86_64 2:7.4.160-4.el7
  virt-what.x86_64 0:1.18-4.el7                         wpa_supplicant.x86_64 1:2.6-9.el7
  xfsprogs.x86_64 0:4.5.0-15.el7                        yum.noarch 0:3.4.3-158.el7
  yum-rhn-plugin.noarch 0:2.0.1-10.el7                  yum-utils.noarch 0:1.1.31-45.el7

Replaced:
  grub2.x86_64 1:2.02-0.64.el7                    grub2-tools.x86_64 1:2.02-0.64.el7    python-rhsm.x86_64 0:1.19.9-1.el7
  python-rhsm-certificates.x86_64 0:1.19.9-1.el7

Complete!
[root@ip-172-31-28-161 ec2-user]# ansible --version
ansible 2.5.5
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/root/.ansible/plugins/modules', u'/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/site-packages/ansible
  executable location = /bin/ansible
  python version = 2.7.5 (default, Feb 20 2018, 09:19:12) [GCC 4.8.5 20150623 (Red Hat 4.8.5-28)]
```

Chapter 3: Ansible Inventory and Playbook

```
alibi@alibi-ml ~> ansible localhost -m ping
localhost | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
```

```
alibi@alibi-ml ~> ansible localhost -a "echo 'Hello Automated World'"
localhost | SUCCESS | rc=0 >>
Hello Automated World
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible 192.168.10.10 -a "uname -a" -u setup
192.168.10.10 | SUCCESS | rc=0 >>
Linux node0 4.4.0-128-generic #154-Ubuntu SMP Fri May 25 14:15:18 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible 192.168.10.10 -a "apt update" -u setup --become
192.168.10.10 | SUCCESS | rc=0 >>
Hit:1 http://archive.ubuntu.com/ubuntu xenial InRelease
Get:2 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:3 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:4 http://security.ubuntu.com/ubuntu xenial-security InRelease [107 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-updates/main Sources [310 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-updates/universe Sources [206 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [796 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [640 kB]
Get:9 http://archive.ubuntu.com/ubuntu xenial-updates/universe Translation-en [257 kB]
Fetched 2,532 kB in 0s (2,867 kB/s)
Reading package lists...
Building dependency tree...
Reading state information...
3 packages can be upgraded. Run 'apt list --upgradable' to see them.
WARNING: apt does not have a stable CLI interface. Use with caution in scripts.
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible 192.168.10.10 -a "apt update" -u setup
192.168.10.10 | FAILED | rc=100 >>
Reading package lists...
WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

W: chmod 0700 of directory /var/lib/apt/lists/partial failed - SetupAPTPartialDirectory (1: Operation not permitted)
E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)
E: Unable to lock directory /var/lib/apt/lists/
W: Problem unlinking the file /var/cache/apt/pkgcache.bin - RemoveCaches (13: Permission denied)
W: Problem unlinking the file /var/cache/apt/srcpkgcache.bin - RemoveCaches (13: Permission denied)non-zero return code
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible 192.168.10.10 -m apt -a "update_cache=yes" -u setup --become
192.168.10.10 | SUCCESS => {
    "cache_update_time": 1530214785,
    "cache_updated": true,
    "changed": true
}
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/apt-cache.yml

PLAY [servers] *****************************************************************

TASK [apt] *********************************************************************
changed: [192.168.10.10]
changed: [192.168.10.11]
changed: [192.168.10.12]

PLAY RECAP *********************************************************************
192.168.10.10              : ok=1    changed=1    unreachable=0    failed=0
192.168.10.11              : ok=1    changed=1    unreachable=0    failed=0
192.168.10.12              : ok=1    changed=1    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/apt-cache.yml

PLAY [servers] ***************************************************************

TASK [apt] *******************************************************************
changed: [192.168.10.10]
changed: [192.168.10.11]
changed: [192.168.10.12]

PLAY RECAP *******************************************************************
192.168.10.10              : ok=1    changed=1    unreachable=0    failed=0
192.168.10.11              : ok=1    changed=1    unreachable=0    failed=0
192.168.10.12              : ok=1    changed=1    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/apt-cache.yml

PLAY [playbook to update Debian Linux package cache] *************************

TASK [use apt to update its cache] *******************************************
changed: [192.168.10.10]
changed: [192.168.10.11]
changed: [192.168.10.12]

RUNNING HANDLER [pkg_installable] ********************************************
changed: [192.168.10.11]
changed: [192.168.10.10]
changed: [192.168.10.12]

PLAY RECAP *******************************************************************
192.168.10.10              : ok=2    changed=2    unreachable=0    failed=0
192.168.10.11              : ok=2    changed=2    unreachable=0    failed=0
192.168.10.12              : ok=2    changed=2    unreachable=0    failed=0
```

Chapter 4: Ansible Modules

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible servers -m ping
node0 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
node2 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
node1 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/ping_playbook.yml

PLAY [Ping module playbook usage] **********************************************

TASK [ping the local servers] **************************************************
ok: [node1]
ok: [node0]
ok: [node2]

PLAY RECAP *********************************************************************
node0                      : ok=1    changed=0    unreachable=0    failed=0
node1                      : ok=1    changed=0    unreachable=0    failed=0
node2                      : ok=1    changed=0    unreachable=0    failed=0
```

```
alibi@AnsibleServ:~$ ansible windows -m win_reboot --args="msg='Reboot initiated by remote admin' pre_reboot_delay=5"
winnode1 | SUCCESS => {
    "changed": true,
    "elapsed": 178,
    "rebooted": true
}
winnode3 | SUCCESS => {
    "changed": true,
    "elapsed": 178,
    "rebooted": true
}
winnode0 | SUCCESS => {
    "changed": true,
    "elapsed": 182,
    "rebooted": true
}
```

```
alibi@AnsibleServ:~$ ansible-playbook playbook/win_reboot_playbook.yml

PLAY [Reboot Windows hosts] ************************************************

TASK [restart Windows hosts with default settings] *************************
changed: [winnode0]
changed: [winnode1]
changed: [winnode3]

TASK [restart Windows hosts with personalized settings] ********************
changed: [winnode1]
changed: [winnode0]
changed: [winnode3]

PLAY RECAP *****************************************************************
winnode0                   : ok=2    changed=2    unreachable=0    failed=0
winnode1                   : ok=2    changed=2    unreachable=0    failed=0
winnode3                   : ok=2    changed=2    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible servers -m copy --args="src=./file1.txt dest=~/file1.txt"
node1 | SUCCESS => {
    "changed": false,
    "checksum": "86378c673fa5acc9f9c99aaadc08e565be15babe",
    "dest": "/home/vagrant/file1.txt",
    "gid": 1000,
    "group": "vagrant",
    "mode": "0664",
    "owner": "vagrant",
    "path": "/home/vagrant/file1.txt",
    "size": 3249,
    "state": "file",
    "uid": 1000
}
node0 | SUCCESS => {
    "changed": false,
    "checksum": "86378c673fa5acc9f9c99aaadc08e565be15babe",
    "dest": "/home/vagrant/file1.txt",
    "gid": 1000,
    "group": "vagrant",
    "mode": "0664",
    "owner": "vagrant",
    "path": "/home/vagrant/file1.txt",
    "size": 3249,
    "state": "file",
    "uid": 1000
}
node2 | SUCCESS => {
    "changed": false,
    "checksum": "86378c673fa5acc9f9c99aaadc08e565be15babe",
    "dest": "/home/vagrant/file1.txt",
    "gid": 1000,
    "group": "vagrant",
    "mode": "0664",
    "owner": "vagrant",
    "path": "/home/vagrant/file1.txt",
    "size": 3249,
    "state": "file",
    "uid": 1000
}
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/return_value_playbook.yml

PLAY [Restart Linux hosts if reboot is required after updates] ****************************

TASK [check for updates] ******************************************************************
changed: [node2]
changed: [node1]
changed: [node0]

TASK [apply updates] **********************************************************************
 [WARNING]: Could not find aptitude. Using apt-get instead.

changed: [node2]
changed: [node1]
changed: [node0]

TASK [check if reboot is required] ********************************************************
ok: [node2]
ok: [node1]
ok: [node0]

PLAY RECAP ********************************************************************************
node0                      : ok=3    changed=2    unreachable=0    failed=0
node1                      : ok=3    changed=2    unreachable=0    failed=0
node2                      : ok=3    changed=2    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook  playbooks/modules_playbook.yml

PLAY [Linux Module running] ****************************************************************

TASK [create a system user to be used by Ansible] ******************************************
changed: [node1]
changed: [node2]
changed: [node0]

PLAY RECAP *********************************************************************************
node0                      : ok=1    changed=1    unreachable=0    failed=0
node1                      : ok=1    changed=1    unreachable=0    failed=0
node2                      : ok=1    changed=1    unreachable=0    failed=0

alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook  playbooks/modules_playbook.yml -v
Using /etc/ansible/ansible.cfg as config file

PLAY [Linux Module running] ****************************************************************

TASK [create a system user to be used by Ansible] ******************************************
ok: [node1] => {"append": false, "changed": false, "comment": "", "group": 27, "home": "/home/inst
all", "move_home": false, "name": "install", "shell": "/bin/bash", "state": "present", "uid": 999}
ok: [node0] => {"append": false, "changed": false, "comment": "", "group": 27, "home": "/home/inst
all", "move_home": false, "name": "install", "shell": "/bin/bash", "state": "present", "uid": 999}
ok: [node2] => {"append": false, "changed": false, "comment": "", "group": 27, "home": "/home/inst
all", "move_home": false, "name": "install", "shell": "/bin/bash", "state": "present", "uid": 999}

PLAY RECAP *********************************************************************************
node0                      : ok=1    changed=0    unreachable=0    failed=0
node1                      : ok=1    changed=0    unreachable=0    failed=0
node2                      : ok=1    changed=0    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible -m shell -a hostname servers
server1 | SUCCESS | rc=0 >>
server1

server2 | SUCCESS | rc=0 >>
server2

server0 | SUCCESS | rc=0 >>
server0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook  playbooks/modules_playbook.yml

PLAY [Linux Module running] ****************************************************

TASK [start and enable ntp service using systemd] ******************************
ok: [server1]
ok: [server0]
ok: [server2]

TASK [debug] *******************************************************************
ok: [server0] => {
    "systemd.status.Description": "LSB: Start NTP daemon"
}
ok: [server1] => {
    "systemd.status.Description": "LSB: Start NTP daemon"
}
ok: [server2] => {
    "systemd.status.Description": "LSB: Start NTP daemon"
}

PLAY RECAP *********************************************************************
server0                    : ok=2    changed=0    unreachable=0    failed=0
server1                    : ok=2    changed=0    unreachable=0    failed=0
server2                    : ok=2    changed=0    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook  playbooks/modules_playbook.yml -v
Using /etc/ansible/ansible.cfg as config file

PLAY [Linux Module running] ****************************************************

TASK [clone Ansible from github] ***********************************************
changed: [server1] => {"after": "27b4d7ed31b6688253fc4089b7a6b97f2d548167", "before": null, "chang
ed": true}
changed: [server2] => {"after": "27b4d7ed31b6688253fc4089b7a6b97f2d548167", "before": null, "chang
ed": true}
changed: [server0] => {"after": "27b4d7ed31b6688253fc4089b7a6b97f2d548167", "before": null, "chang
ed": true}

PLAY RECAP *********************************************************************
server0                    : ok=1    changed=1    unreachable=0    failed=0
server1                    : ok=1    changed=1    unreachable=0    failed=0
server2                    : ok=1    changed=1    unreachable=0    failed=0
```

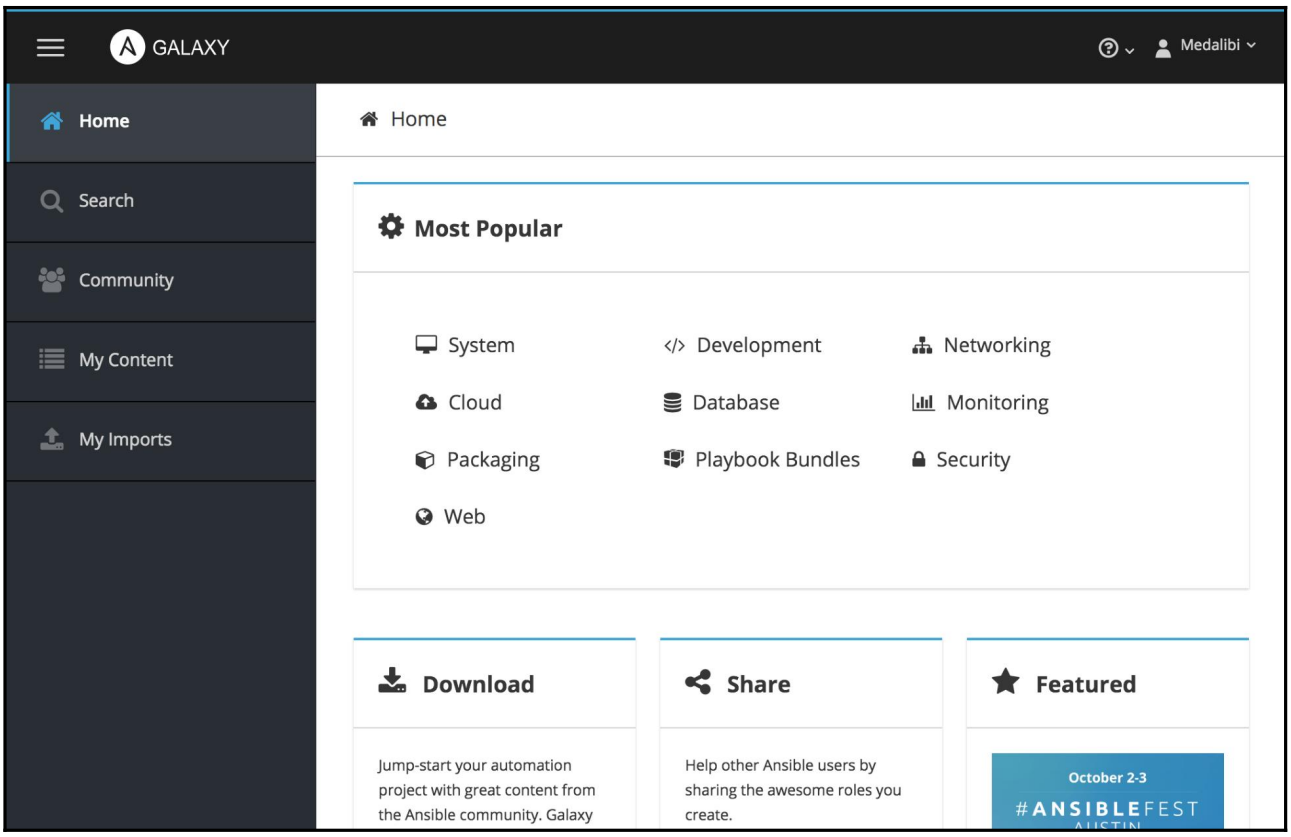
```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook  playbooks/modules_playbook.yml -v
Using /etc/ansible/ansible.cfg as config file

PLAY [Linux Module running] ****************************************************************

TASK [run a simple command] ****************************************************************
changed: [server2] => {"changed": true, "cmd": ["cat", "~/raw.txt"], "delta": "0:00:00.004157", "e
nd": "2018-07-15 17:06:25.883214", "rc": 0, "start": "2018-07-15 17:06:25.879057", "stderr": "", "
stderr_lines": [], "stdout": "this was written by a raw Ansible module!!", "stdout_lines": ["this
was written by a raw Ansible module!!"]}
changed: [server0] => {"changed": true, "cmd": ["cat", "~/raw.txt"], "delta": "0:00:00.003778", "e
nd": "2018-07-15 17:06:25.898959", "rc": 0, "start": "2018-07-15 17:06:25.895181", "stderr": "", "
stderr_lines": [], "stdout": "this was written by a raw Ansible module!!", "stdout_lines": ["this
was written by a raw Ansible module!!"]}
changed: [server1] => {"changed": true, "cmd": ["cat", "~/raw.txt"], "delta": "0:00:00.004177", "e
nd": "2018-07-15 17:06:25.899544", "rc": 0, "start": "2018-07-15 17:06:25.895367", "stderr": "", "
stderr_lines": [], "stdout": "this was written by a raw Ansible module!!", "stdout_lines": ["this
was written by a raw Ansible module!!"]}

TASK [debug] *******************************************************************************
ok: [server0] => {
    "rawtxt.stdout": "this was written by a raw Ansible module!!"
}
ok: [server1] => {
    "rawtxt.stdout": "this was written by a raw Ansible module!!"
}
ok: [server2] => {
    "rawtxt.stdout": "this was written by a raw Ansible module!!"
}

PLAY RECAP *********************************************************************************
server0                    : ok=2    changed=1    unreachable=0    failed=0
server1                    : ok=2    changed=1    unreachable=0    failed=0
server2                    : ok=2    changed=1    unreachable=0    failed=0
```

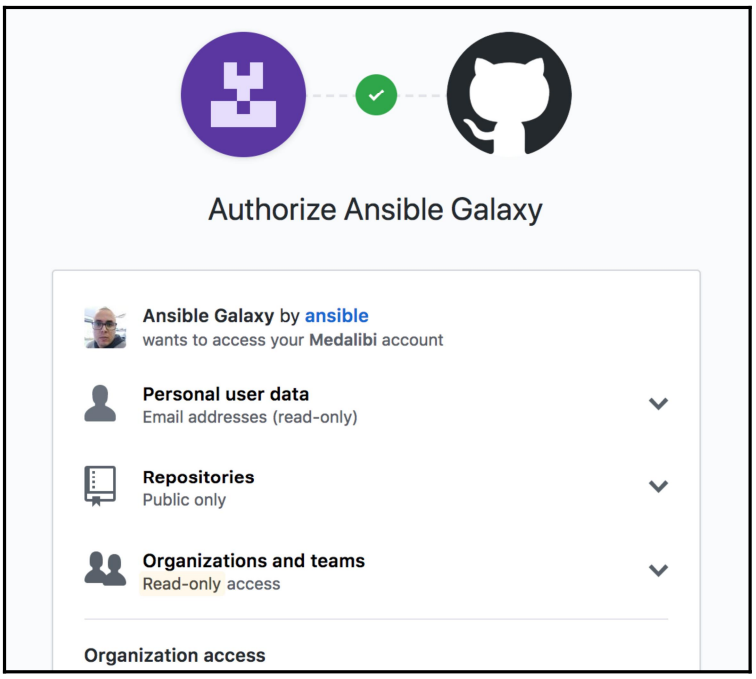
Chapter 6:
Ansible Coding for Configuration Management

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/sample-playbook.yml

PLAY [servers] ***************************************************************

TASK [apt] *******************************************************************
changed: [server2]
changed: [server0]
changed: [server1]

TASK [apt] *******************************************************************
changed: [server2]
changed: [server1]
changed: [server0]

TASK [file] ******************************************************************
changed: [server1]
changed: [server2]
changed: [server0]

PLAY RECAP *******************************************************************
server0                    : ok=3    changed=3    unreachable=0    failed=0
server1                    : ok=3    changed=3    unreachable=0    failed=0
server2                    : ok=3    changed=3    unreachable=0    failed=0
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-playbook playbooks/sample-playbook.yml

PLAY [Setup users projects workspace with a file manager] ***************************

TASK [Update Pakcage manager repo index] ********************************************
changed: [server1]
changed: [server2]
changed: [server0]

TASK [Install Midnight Commander as a terminal file manager] ************************
ok: [server0]
ok: [server2]
ok: [server1]

TASK [Create the projects workspace folder with sticky bit] *************************
changed: [server1]
changed: [server2]
changed: [server0]

PLAY RECAP **************************************************************************
server0                    : ok=3    changed=2    unreachable=0    failed=0
server1                    : ok=3    changed=2    unreachable=0    failed=0
server2                    : ok=3    changed=2    unreachable=0    failed=0
```

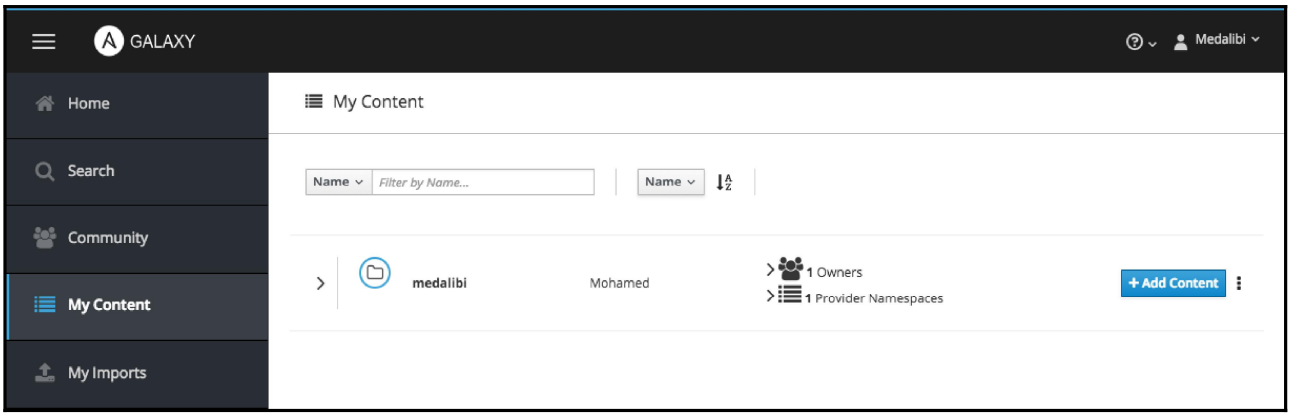
Chapter 7:
Ansible Galaxy and Community Roles

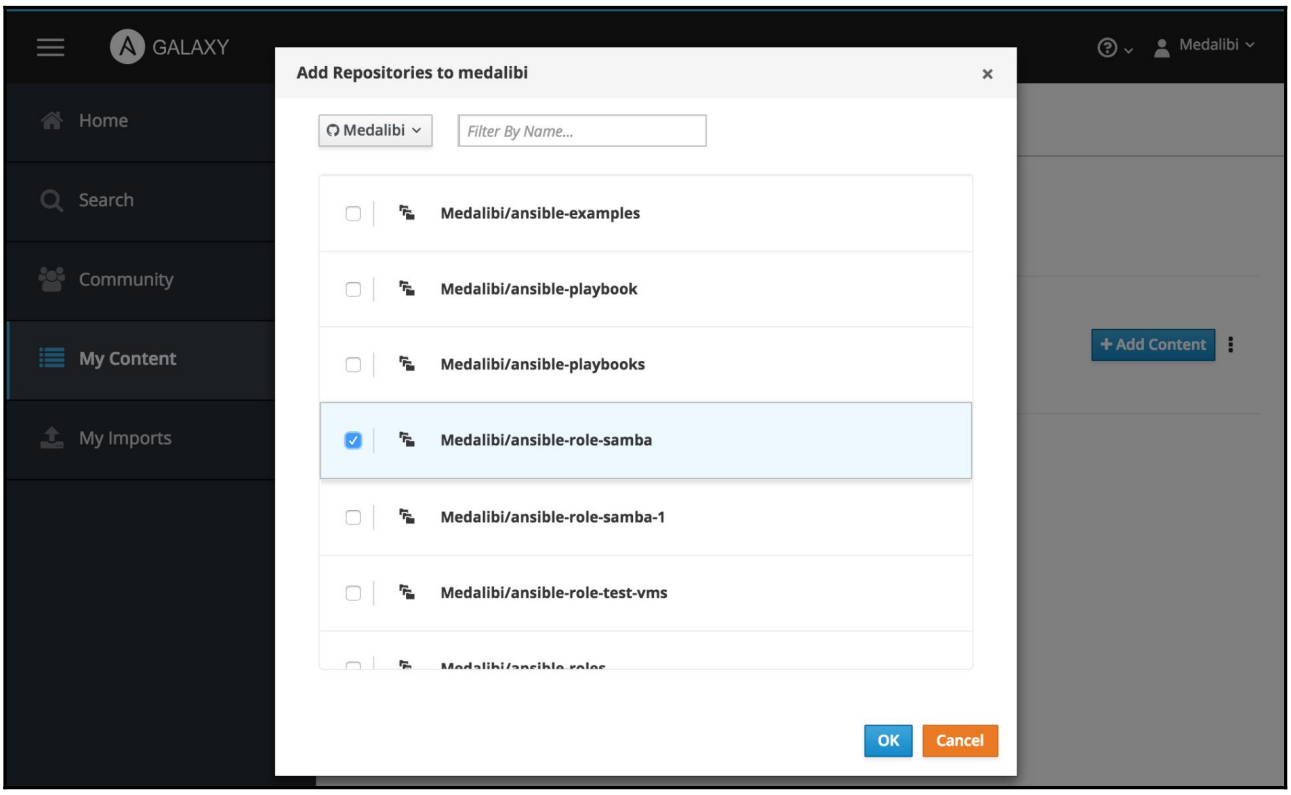


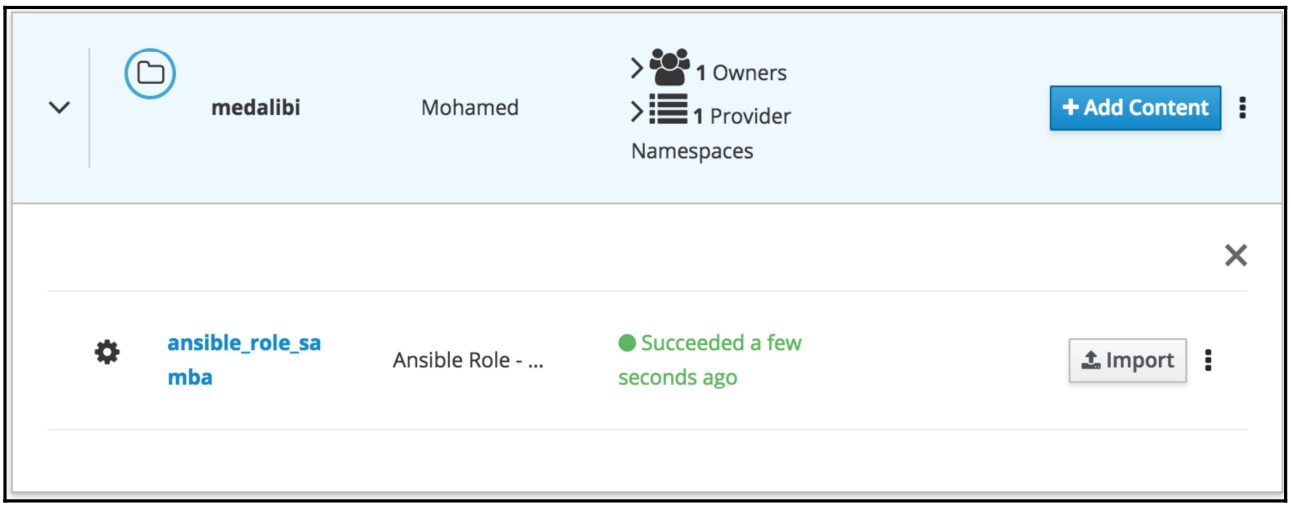



```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-galaxy info geerlingguy.ntp

Role: geerlingguy.ntp
        description: NTP installation and configuration for Linux.
        active: True
        commit: ff09dda458223e2d82ed5a6bfae30dace8b19b3b
        commit_message: PR #46 follow-up: Bump minimum Ansible requirement to 2.4. [ci skip]
        commit_url: https://api.github.com/repos/geerlingguy/ansible-role-ntp/git/commits/ff09dda458223e2d82ed5a6bfae30dace8b19b3b
        company: Midwestern Mac, LLC
        created: 2014-03-05T15:50:12.955490Z
        download_count: 106374
        forks_count: 99
        github_branch: master
        github_repo: ansible-role-ntp
        github_user: geerlingguy
        id: 464
        imported: 2018-08-18T08:04:34.188979-04:00
        is_valid: True
        issue_tracker_url: https://github.com/geerlingguy/ansible-role-ntp/issues
        license: license (BSD, MIT)
        min_ansible_version: 2.4
        modified: 2018-08-18T12:04:34.189259Z
        open_issues_count: 15
        path: [u'/Users/alibi/ansible/roles']
        role_type: ANS
        stargazers_count: 109
        travis_status_url: https://travis-ci.org/geerlingguy/ansible-role-ntp.svg?branch=master
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-galaxy install geerlingguy.ntp
- downloading role 'ntp', owned by geerlingguy
- downloading role from https://github.com/geerlingguy/ansible-role-ntp/archive/1.6.0.tar.gz
- extracting geerlingguy.ntp to /Users/alibi/ansible/roles/geerlingguy.ntp
- geerlingguy.ntp (1.6.0) was installed successfully
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-galaxy list
- geerlingguy.ntp, 1.6.0
- samba.lab.edu, (unknown version)
```






medalibi
Mohamed
1 Owners
1 Provider Namespaces
+ Add Content
ansible_role_samba
Ansible Role - ...
Succeeded a few seconds ago
Import

Chapter 8: Ansible Advanced Features

```
alibi@alibi-ml ~/vagrant-ansible-lab> cat vault.yml
$ANSIBLE_VAULT;1.1;AES256
61656634663339323035356464663031633930326164356237346465646230383631623165393230
65383464373866313035623461303665396633313733376306a356132346238393539613631323065
33656332333935333731356630656636646232633933353864646561313139613931393333663935
38663836431633763 0a353362353132353864663562333462383362643633393262623335326236
64343035353035343061623430373036616666313039646163366232633463623530643166386638
626439643737303465663433333561653331626637653166636 1
```

```
alibi@alibi-ml ~/vagrant-ansible-lab> ansible-vault view vault.yml
Vault password:
vault_user_pass: P@55w0rd
```