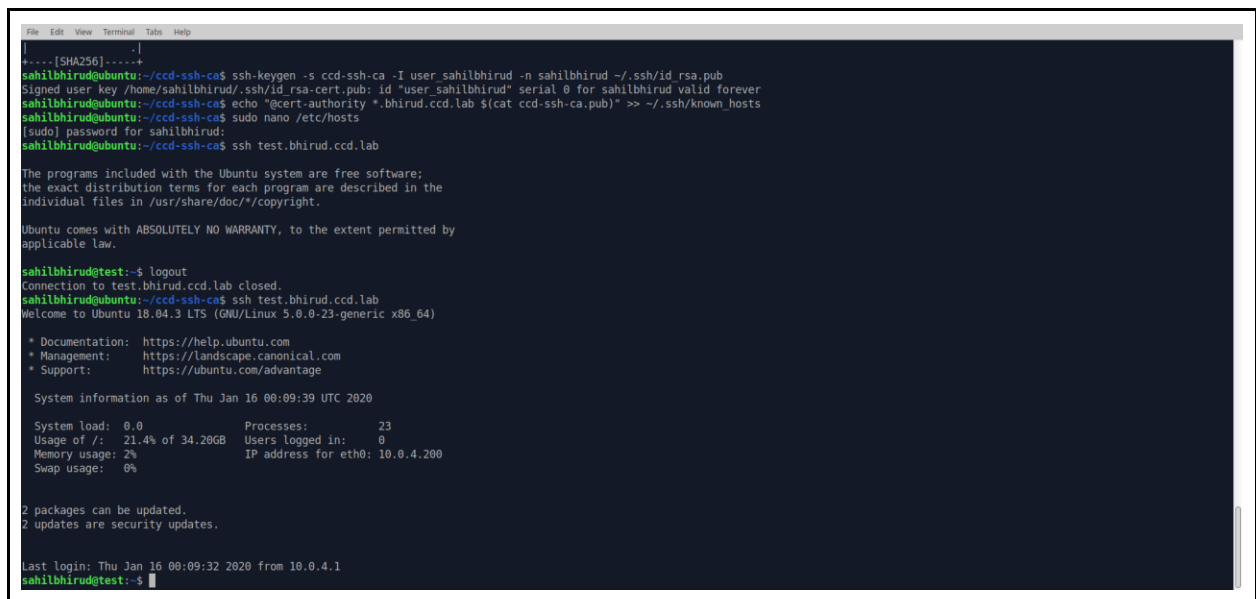


Containers and Configuration Management

Name	Sahil Yuvraj Bhirud
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Configuration Overview

1. Include a screenshot of your console window after running these commands.



```
File Edit View Terminal Tabs Help
|-----|
|-----[SHA256]-----|
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh-keygen -s ccd-ssh-ca -I user sahilbhirud -n sahilbhirud ~/.ssh/id_rsa.pub
Signed user key /home/sahilbhirud/.ssh/id_rsa-cert.pub: id "user_sahilbhirud" serial 0 for sahilbhirud valid forever
sahilbhirud@ubuntu:~/ccd-ssh-ca$ echo "@cert-authority *.bhirud.ccd.lab $(cat ccd-ssh-ca.pub)" >> ~/.ssh/known_hosts
sahilbhirud@ubuntu:~/ccd-ssh-ca$ sudo nano /etc/hosts
[sudo] password for sahilbhirud:
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh test.bhirud.ccd.lab

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

sahilbhirud@test:~$ logout
Connection to test.bhirud.ccd.lab closed.
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh test.bhirud.ccd.lab
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 5.0.0-23-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu Jan 16 00:09:39 UTC 2020

System load:  0.0          Processes:    23
Usage of /:   21.4% of 34.20GB   Users logged in:  0
Memory usage: 2%             IP address for eth0: 10.0.4.200
Swap usage:   0%

2 packages can be updated.
2 updates are security updates.

Last login: Thu Jan 16 00:09:32 2020 from 10.0.4.1
sahilbhirud@test:~$
```

2. Include a screenshot showing the following:
 - Successful login to test.<lastname>.ccd.lab
 - a. No password prompt
 - b. No host key warning
 - Contents of ~/.ssh/known_hosts

```
File Edit View Terminal Tabs Help
|
|-----[SHA256]-----+
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh-keygen -s ccd-ssh-ca -I user_sahilbhirud -n sahilbhirud ~/.ssh/id_rsa.pub
Signed user key /home/sahilbhirud/.ssh/id_rsa-cert.pub: id "user_sahilbhirud" serial 0 for sahilbhirud valid forever
sahilbhirud@ubuntu:~/ccd-ssh-ca$ echo "@cert-authority *.bhirud.ccd.lab $(cat ccd-ssh-ca.pub)" >> ~/.ssh/known_hosts
sahilbhirud@ubuntu:~/ccd-ssh-ca$ sudo nano /etc/hosts
[sudo] password for sahilbhirud:
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh test.bhirud.ccd.lab

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

sahilbhirud@test:~$ logout
Connection to test.bhirud.ccd.lab closed.
sahilbhirud@ubuntu:~/ccd-ssh-ca$ ssh test.bhirud.ccd.lab
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 5.0.0-23-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu Jan 16 00:09:39 UTC 2020

System load: 0.0          Processes: 23
Usage of /: 21.4% of 34.2GB Users logged in: 0
Memory usage: 2%         IP address for eth0: 10.0.4.200
Swap usage: 0%

2 packages can be updated.
2 updates are security updates.

Last login: Thu Jan 16 00:09:32 2020 from 10.0.4.1
sahilbhirud@test:~$
```

```
15 Jan 17:02
Terminal - sahilbhirud@ubuntu: ~
File Edit View Terminal Tabs Help
sahilbhirud@ubuntu:~$ cat ~/.ssh/known_hosts
@cert-authority *.bhirud.ccd.lab ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDDshgCNRgjD5WLhE0aGKR/DCc2ldStsw5e/1BwjhC15/gdME2zfXuNwjoraTZFcMBoVY6x/+JFi8J098Rs3vY0xWgFMzLGV0R3SD0o1GnUPNvDYH3+wNe
Q4d0sSyyL5CzD6DVOL77/Xy0bwPfekFsn8+v/OKszEsgWgVhkeT8CxnFoIXbmsNiCsHGrFnIJrL3yt19Ah9Te+HADTA/Su6MTB6T0u5qD6p/U575rn1Es5N7YxwAdp606KCyv75htclzme1dddyFZ1mztAhyDtTyq6Zwc6sIEs8nBhw/f951Agou5CZGIM
b2MegCWUSULoRkQyTpc0+diEY5VsUcDF sahilbhirud@ubuntu
sahilbhirud@ubuntu:~$
```

3. Include a screenshot of the following command
`ssh test-ansible.<lastname>.ccd.lab`

ansible_ssh_host acts as SSH host alias for the host domain.

This can be removed by using -n option while configuring the host (in this case test.bhirud.ccd.lab) to use root access while connecting.

7. Include a screenshot showing the command's output (only the last bits of it to show it successfully running).

```
File Edit View Terminal Tabs Help

TASK [nginxinc.nginx : (Setup: All OSs) Configure NGINX Controller Agent API Hostname] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Debian/Ubuntu) Add NGINX Unit Repository] *****
skipping: [test.bhirud.ccd.lab] => (item=deb https://packages.nginx.org/unit/ubuntu/ bionic unit)
skipping: [test.bhirud.ccd.lab] => (item=deb-src https://packages.nginx.org/unit/ubuntu/ bionic unit)

TASK [nginxinc.nginx : (Install: CentOS/RedHat) Add NGINX Unit Repository] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Amazon Linux) Add NGINX Unit Repository] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Fetch Ports] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Extract Ports] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Debian/Ubuntu/CentOS/RedHat) Install NGINX Unit] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Install NGINX Unit] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Debian/Ubuntu/CentOS/RedHat) Install NGINX Unit Modules] *****
skipping: [test.bhirud.ccd.lab] => (item=None)

TASK [nginxinc.nginx : (Install: FreeBSD) Install NGINX Unit Modules] *****
skipping: [test.bhirud.ccd.lab] => (item=None)

RUNNING HANDLER [nginxinc.nginx : (Handler: All OSs) Start NGINX] *****
changed: [test.bhirud.ccd.lab]

PLAY RECAP *****
test.bhirud.ccd.lab : ok=10 changed=5 unreachable=0 failed=0 skipped=138 rescued=0 ignored=0

sahilbhirud@ubuntu:~/ccd-ansible$
```

8. Your Ansible playbook was supposed to have installed Nginx, a web server. Include a screenshot of the command, showing that Nginx is running.

```
File Edit View Terminal Tabs Help

skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Amazon Linux) Add NGINX Unit Repository] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Fetch Ports] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Extract Ports] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Debian/Ubuntu/CentOS/RedHat) Install NGINX Unit] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: FreeBSD) Install NGINX Unit] *****
skipping: [test.bhirud.ccd.lab]

TASK [nginxinc.nginx : (Install: Debian/Ubuntu/CentOS/RedHat) Install NGINX Unit Modules] *****
skipping: [test.bhirud.ccd.lab] => (item=None)

TASK [nginxinc.nginx : (Install: FreeBSD) Install NGINX Unit Modules] *****
skipping: [test.bhirud.ccd.lab] => (item=None)

RUNNING HANDLER [nginxinc.nginx : (Handler: All OSs) Start NGINX] *****
changed: [test.bhirud.ccd.lab]

PLAY RECAP *****
test.bhirud.ccd.lab : ok=10 changed=5 unreachable=0 failed=0 skipped=138 rescued=0 ignored=0

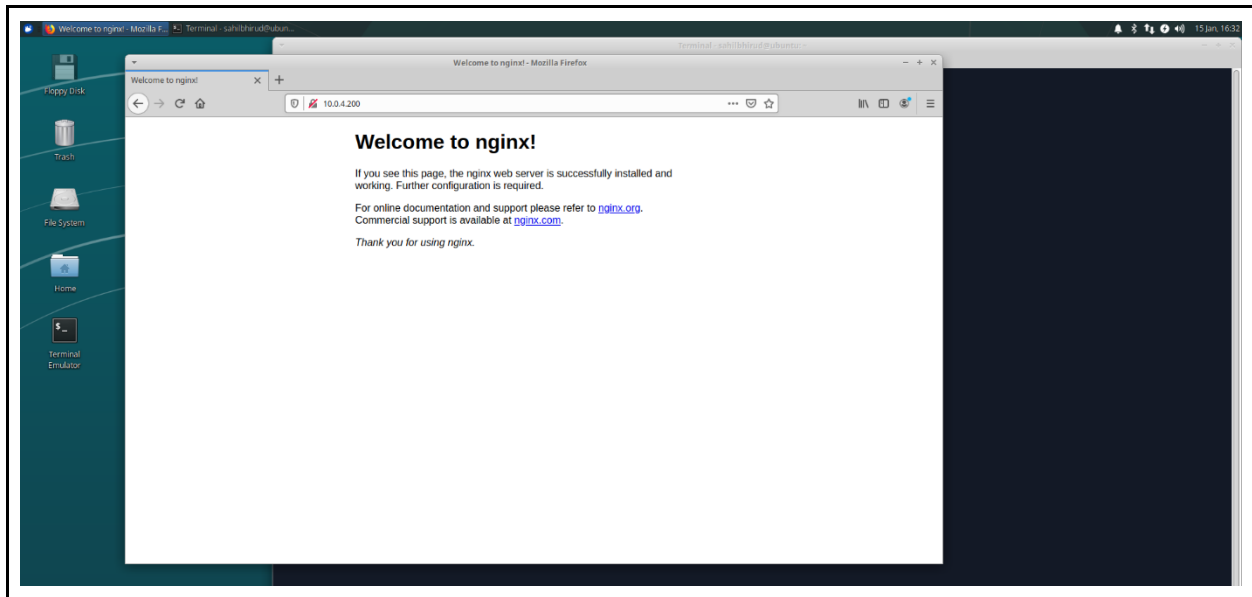
sahilbhirud@ubuntu:~/ccd-ansible$ lxc exec test -- netstat -plant
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:80             0.0.0.0:*               LISTEN      2744/nginx: master
tcp        0      0 127.0.0.53:53          0.0.0.0:*               LISTEN      178/systemd-resolve
tcp        0      0 0.0.0.0:22             0.0.0.0:*               LISTEN      235/sshd
tcp        0      0 10.0.4.200:22          10.0.4.1:45272          ESTABLISHED 730/sshd: root@nott
tcp        0      0 10.0.4.200:42820       62.210.92.35:443        TIME_WAIT   -
tcp6       0      0 :::22                  :::*                   LISTEN      235/sshd

sahilbhirud@ubuntu:~/ccd-ansible$
```

9. How do you know Nginx is running?

```
systemctl is-active nginx
```

10. Open Firefox in your VM and navigate to <http://10.0.4.200>. Include a screenshot of the default Nginx landing page.



References:

1. openbsd - <https://man.openbsd.org/ssh-keygen.1>