

SSH

Experiment: 6

Aim:

Installation of Open SSH between two ubuntu machines.

Description:

Remote File Sharing using SSH

OpenSSH is a powerful collection of tools for the remote control of, and transfer of data between, networked computers. You will also learn about some of the configuration settings possible with the OpenSSH server application and how to change them on your Ubuntu system.

OpenSSH is a freely available version of the Secure Shell (SSH) protocol family of tools for remotely controlling, or transferring files between computers. Traditional tools used to accomplish these functions, such as telnet or rcp, are insecure and transmit the user's password in cleartext when used. OpenSSH provides a server daemon and client tools to facilitate secure, encrypted remote control and file transfer operations, effectively replacing the legacy tools.

Port No: 22

Package name: openssh-client

Configuration file: /etc/ssh/sshd_config

Procedure:

1. Create two EC2 instance of ubuntu ssh client and ssh server
2. Create the password for the instance of ssh server by `$sudo passwd ubuntu`
3. Now check whether the ssh server is running by the command `$sudo service ssh status`
4. configure the sshd_config file by the following command `$sudo vim /etc/ssh/sshd_config` and include the following changes `PasswordAuthentication yes` , `KbdInteractiveAuthentication no` , `KerberosGetAFSToken no`
5. Now check the status of the ssh server by the command `$sudo service ssh status`
6. Now create a text file by the command `$touch text.txt`
7. Now log in to the ssh_client and create a ssh_keygen by the command `$ssh-keygen`
8. Now copy the ssh_keygen form the ssh_client `$ssh-copy-id ubuntu@privateip`
9. Now restart the client machine
10. Then connect to the ssh_server by ssh_client
11. then type `ls` you will be prompted with the screen with your text file which you have created

Result:

EC2 Dashboard

EC2 Global View

Events

Console-to-Code

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity

Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Instances (2)

Find Instance by attribute or tag (case-sensitive)

All states

Instance state: running

Clear filters

1

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
<input type="checkbox"/>	Server	i-0a0611cbe90031405	Running	t2.micro	Initializing	View alarms +	us-east-1a	ec2-54-145-252-181.co...	54.145.252.181	-
<input type="checkbox"/>	Client	i-0fd651cdad061538	Running	t2.micro	Initializing	View alarms +	us-east-1a	ec2-54-163-135-217.co...	54.163.135.217	-

Select an instance

CloudShell

Feedback

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Type here to search

30°C Partly sunny 1400 04-09-2024

ubuntu@ip-172-31-16-219:~\$ ssh -i "sshserver.pem" ubuntu@ec2-54-145-252-181.compute-1.amazonaws.com

The authenticity of host 'ec2-54-145-252-181.compute-1.amazonaws.com (54.145.252.181)' can't be established.

ECDSA key fingerprint is SHA256:QWwAOZycU100F-c0K5Kof30h4oK7f6G3h2u4ms.

Are you sure you want to continue connecting (yes/no/[fingerprint])? yes

Warning: Permanently added 'ec2-54-145-252-181.compute-1.amazonaws.com,54.145.252.181' (ECDSA) to the list of known hosts.

Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

* Documentation: https://help.ubuntu.com

* Management: https://landscape.canonical.com

* Support: https://ubuntu.com/pro

System information as of Wed Sep 4 09:24:05 UTC 2024

System load: 0.82 Processes: 111

Usage of /: 22.0% of 6.7GiB Users logged in: 0

Memory usage: 21% IP4 address for eno1: 172.31.16.219

Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.

See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.

To check for new updates run: sudo apt update

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.

To run a command as administrator (user "root"), use "sudo <command>".

See "man sudo_root" for details.

ubuntu@ip-172-31-16-219:~\$ sudo ssh -i "sshserver.pem" ubuntu@ec2-54-145-252-181.compute-1.amazonaws.com

ssh: Could not resolve hostname passed: Temporary failure in name resolution

ubuntu@ip-172-31-16-219:~\$ sudo ssh -i "sshserver.pem" ubuntu@ec2-54-145-252-181.compute-1.amazonaws.com

New password:

Retype new password:

password updated successfully

ubuntu@ip-172-31-16-219:~\$ sudo service ssh status

ssh.service - OpenSSH Secure Shell server

Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)

Drop-In: /usr/lib/systemd/system/ssh.service.d

→ ec2-instance-connect.conf

Active: active (running) since Wed 2024-09-04 09:24:05 UTC; 1min 25s ago

TriggeredBy: ● ssh.socket

Docs: man:ssh(8)

man:ssh_config(5)

Process: 876 ExecStartPre=/usr/sbin/ssh -t (code=exited, status=0/SUCCESS)

Main PID: 877 (sshd)

Tasks: 1 (limit: 1130)


```
ubuntu@ip-172-31-16-219:~$ ssh -i "sshserver.pem" ubuntu@ec2-50-19-14-45.compute-1.amazonaws.com
Microsoft Windows [Version 10.0.19045.4780]
(c) Microsoft Corporation. All rights reserved.

C:\Users\PC>cd Downloads

C:\Users\PC\Downloads>ssh -i "sshserver.pem" ubuntu@ec2-50-19-14-45.compute-1.amazonaws.com
The authenticity of host 'ec2-50-19-14-45.compute-1.amazonaws.com (50.19.14.45)' can't be established.
ECDSA key fingerprint is SHA256:QWwAOC/yCULj00FcoK9CknF8DhaqCFKd3u2mLMB.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-50-19-14-45.compute-1.amazonaws.com,50.19.14.45' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

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

System information as of Wed Sep  4 09:24:05 UTC 2024

System load: 0.82          Processes: 111
Usage of /: 22.8% of 6.7GiB Users logged in: 0
Memory usage: 21%         IPv4 address for eno1: 172.31.16.219
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-16-219:~$ sudo sshd
ssh: Could not resolve hostname passed: Temporary failure in name resolution
ubuntu@ip-172-31-16-219:~$ sudo service ssh status
 * ssh.service - OpenSSH Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Drop-In: /usr/lib/systemd/system/ssh.service.d
            └─ec2-instance-connect.conf
   Active: active (running) since Wed 2024-09-04 09:24:02 UTC; 1min 25s ago
   TriggeredBy: * ssh.socket
   Docs: man:sshd(8)
          man:sshd_config(5)
   Process: 976 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 977 (sshd)
   Tasks: 1 (limit: 1130)
   CPU: 27ms
   CGroup: /system.slice/ssh.service
           └─977 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/ec2_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-connect [listener] 0 of 10-100 startups"

Sep 04 09:24:01 ip-172-31-16-219 systemd[1]: Starting ssh.service - OpenSSH Secure Shell server...
Sep 04 09:24:02 ip-172-31-16-219 sshd[977]: Server listening on :: port 22.
Sep 04 09:24:02 ip-172-31-16-219 systemd[1]: Started ssh.service - OpenSSH Secure Shell server.
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: Accepted publickey for ubuntu from 103.135.95.46 port 54493 ssh2: RSA SHA256:131FNgwLQwFAZpK24DVW+3hmz9NS+g3JUUSBS7nKM
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ sudo service ssh status
 * ssh.service - OpenSSH Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Drop-In: /usr/lib/systemd/system/ssh.service.d
            └─ec2-instance-connect.conf
   Active: active (running) since Wed 2024-09-04 09:24:02 UTC; 4min 5s ago
   TriggeredBy: * ssh.socket
   Docs: man:sshd(8)
          man:sshd_config(5)
   Process: 976 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 977 (sshd)
   Tasks: 1 (limit: 1130)
   Memory: 3.9M (peak: 4.4M)
   CPU: 27ms
   CGroup: /system.slice/ssh.service
           └─977 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/ec2_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-connect [listener] 0 of 10-100 startups"

Sep 04 09:24:01 ip-172-31-16-219 systemd[1]: Starting ssh.service - OpenSSH Secure Shell server...
Sep 04 09:24:02 ip-172-31-16-219 sshd[977]: Server listening on :: port 22.
Sep 04 09:24:02 ip-172-31-16-219 systemd[1]: Started ssh.service - OpenSSH Secure Shell server.
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: Accepted publickey for ubuntu from 103.135.95.46 port 54493 ssh2: RSA SHA256:131FNgwLQwFAZpK24DVW+3hmz9NS+g3JUUSBS7nKM
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
ubuntu@ip-172-31-16-219:~$ touch text.txt
ubuntu@ip-172-31-16-219:~$
```



```
ubuntu@ip-172-31-16-219:~$ ssh-copy-id ubuntu@ip-172-31-16-219:
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ubuntu@ip-172-31-16-219:~$ ssh-copy-id ubuntu@ip-172-31-16-219:
ssh-copy-id: command not found
ubuntu@ip-172-31-16-219:~$ ssh-copy-id ubuntu@ip-172-31-16-219:
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
The authenticity of host 'ip-172-31-16-219 (172.31.16.219)' can't be established.
ED25519 key fingerprint is SHA256:Ne17Q8svfXsp4Ap3Zm0QC3lprclodSHf1+02ok1A.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
(ubuntu@ip-172-31-16-219) Password:
Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'ubuntu@ip-172-31-16-219'"
and check to make sure that only the key(s) you wanted were added.

ubuntu@ip-172-31-16-219:~$ ls
ubuntu@ip-172-31-16-219:~$ ls
ubuntu@ip-172-31-16-219:~$ ls
ubuntu@ip-172-31-16-219:~$ ssh-copy-id ubuntu@ip-172-31-16-219
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: WARNING: All keys were skipped because they already exist on the remote system.
(if you think this is a mistake, you may want to use -f option)

ubuntu@ip-172-31-16-219:~$ ls
ubuntu@ip-172-31-16-219:~$ ssh ubuntu@ip-172-31-16-219
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

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

System information as of Wed Sep  4 10:30:30 UTC 2024

System load:  0.0          Processes:      122
Usage of /:   23.1% of 6.71GB   Users logged in:
Memory usage: 3.5%          IPv4 address for enx0: 172.31.16.219
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Wed Sep  4 10:15:15 2024 from 103.135.95.46
ubuntu@ip-172-31-16-219:~$ ls
restart.txt.txt.txt.txt
ubuntu@ip-172-31-16-219:~$

Select ubuntu@ip-172-31-16-219:~$
ubuntu@ip-172-31-16-219:~$ sudo service ssh status
Unit ssh.service could not be found.
ubuntu@ip-172-31-16-219:~$ sudo service ssh status
* ssh.service - OpenSSH Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
   Drop-In: /usr/lib/systemd/system/ssh.service.d
           -ec2-instance-connect.conf
   Active: active (running) since Wed 2024-09-04 09:24:02 UTC; 52min ago
   TriggeredBy: * ssh.socket
   Docs: man:sshd(8)
          man:sshd_config(5)
   Process: 976 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 977 (sshd)
   Tasks: 1 (limit: 1130)
   Memory: 3.0M (peak: 4.0M)
   CGroup: /system.slice/ssh.service
           └─77 "sshd: /usr/sbin/sshd -D -o AuthorizedKeysCommand /usr/share/ec2-instance-connect/ec2_run_authorized_keys %u %f -o AuthorizedKeysCommandUser ec2-instance-connect [listener] 0 of 10-100 startups"

Sep 04 09:24:01 ip-172-31-16-219 systemd[1]: Starting ssh.service - OpenSSH Secure Shell server...
Sep 04 09:24:02 ip-172-31-16-219 sshd[977]: Server listening on :: port 22.
Sep 04 09:24:02 ip-172-31-16-219 systemd[1]: Started ssh.service - OpenSSH Secure Shell server.
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: Accepted publickey for ubuntu from 103.135.95.46 port 54493 ssh2: RSA SHA256:13fPMw1GwpFAZpN24DVH+3Nmz9W5+gJJU5BS3TnKM
Sep 04 09:24:05 ip-172-31-16-219 sshd[979]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
Sep 04 10:06:44 ip-172-31-16-219 sshd[1223]: banner exchange: Connection from 64.62.197.221 port 27571: Invalid format
Sep 04 10:15:14 ip-172-31-16-219 sshd[1244]: Accepted publickey for ubuntu from 103.135.95.46 port 55258 ssh2: RSA SHA256:13fPMw1GwpFAZpN24DVH+3Nmz9W5+gJJU5BS3TnKM
Sep 04 10:15:14 ip-172-31-16-219 sshd[1244]: pam_unix(sshd:session): session opened for user ubuntu(uid=1000) by ubuntu(uid=0)
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/ssh_config
[1]: Stopped          sudo vim /etc/ssh/ssh_config
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/ssh_config
[2]: Stopped          sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ sudo vim restart service
2 files to edit
[3]: Stopped          sudo vim restart service
ubuntu@ip-172-31-16-219:~$ sudo restart service
sudo: restart: command not found
ubuntu@ip-172-31-16-219:~$ sudo restart ssh service
sudo: restart: command not found
ubuntu@ip-172-31-16-219:~$ sudo service ssh restart
ubuntu@ip-172-31-16-219:~$ sudo vim restart service
2 files to edit
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/sshd_config
[4]: Stopped          sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/sshd_config
[4]: Stopped          sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ ls
restart.txt.txt
ubuntu@ip-172-31-16-219:~$ touch txt.txt
ubuntu@ip-172-31-16-219:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-16-219:~$ sudo service ssh restart
ubuntu@ip-172-31-16-219:~$ ls
restart.txt.txt.txt.txt
ubuntu@ip-172-31-16-219:~$
```

All the commands have been executed and the output has been obtained successfull