

SSH

Experiment: 5

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

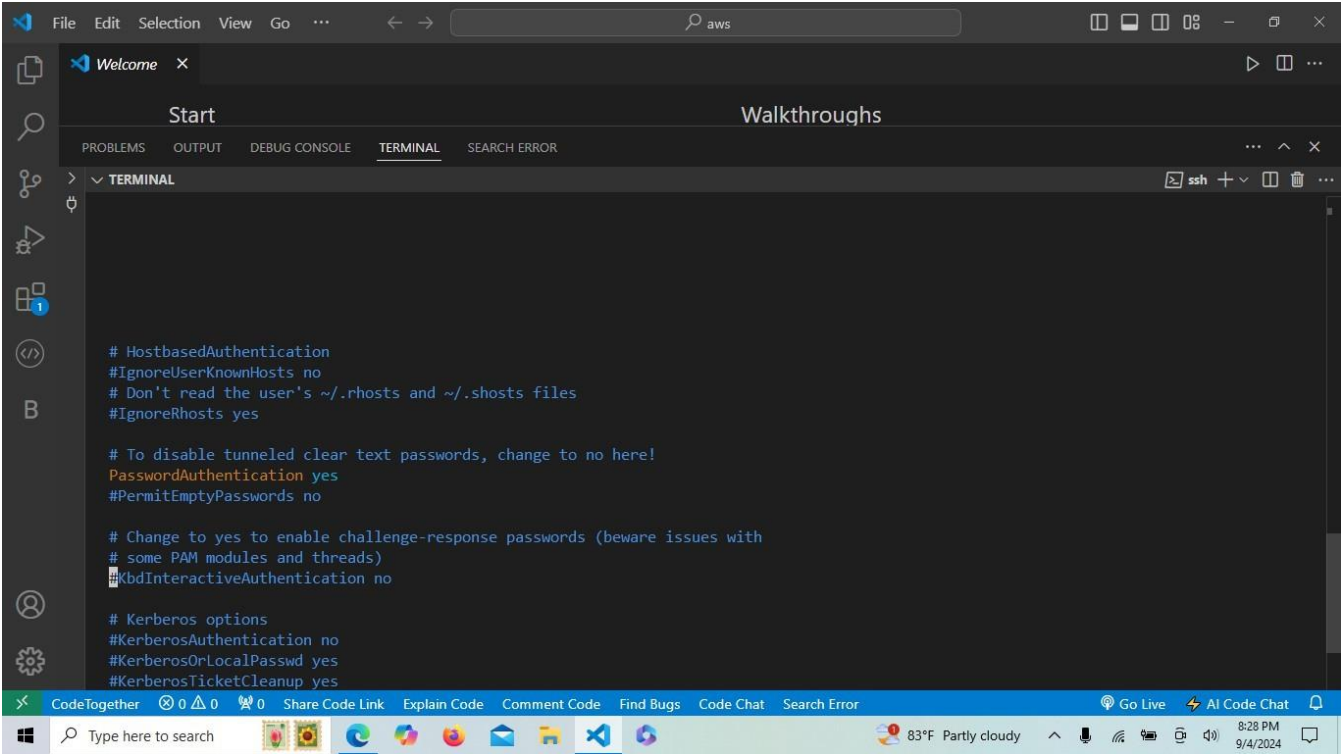
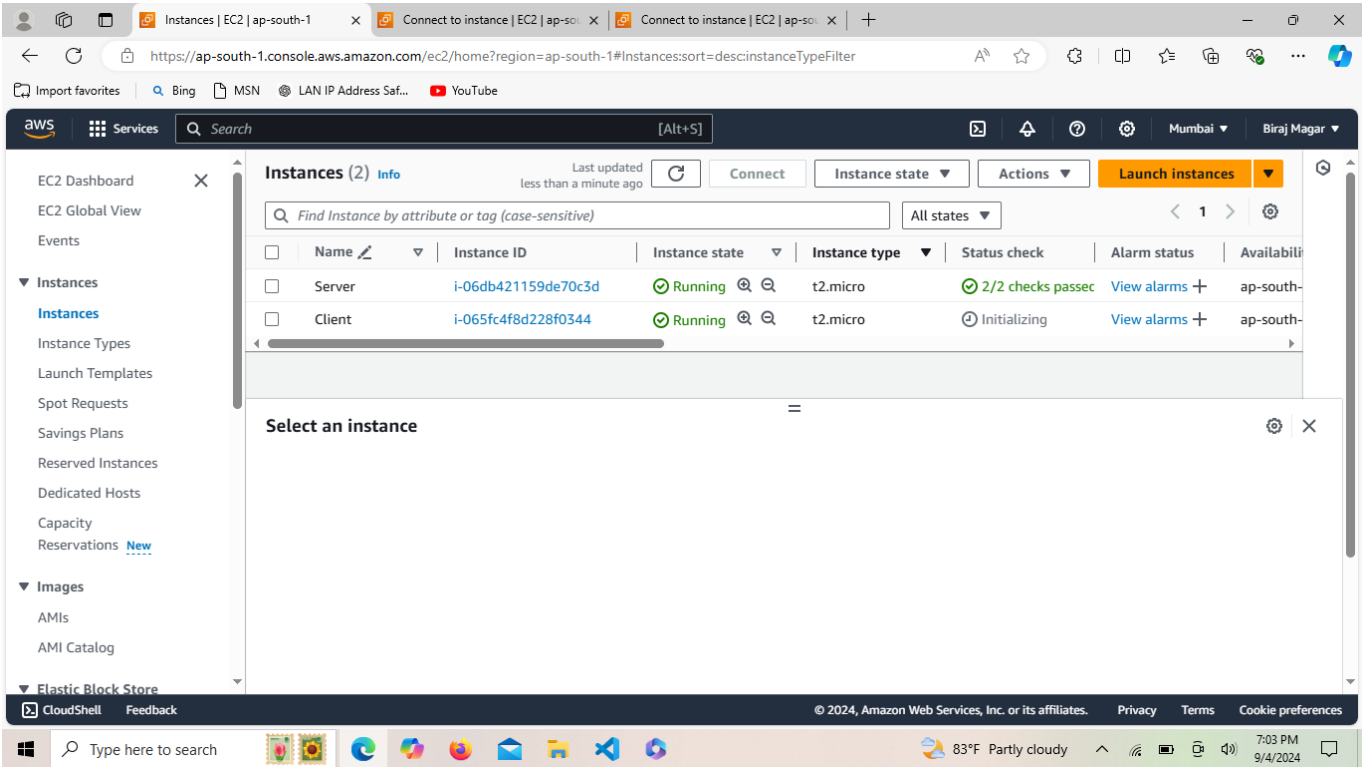
Package name: openssh-client

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 `$sudo vim /etc/ssh/sshd_config` and include the following changes `PasswordAuthentication yes , KbdInteractiveAuthenticationno ,KerberosGetAFSToken no`
5. Now check the status of the ssh server by the command `$sudo service sshstatus`
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:



The screenshot shows a Visual Studio Code (VS Code) interface with a terminal window open. The terminal is running on an Ubuntu instance with IP address 172.31.11.168. The user has executed the following commands:

```
ubuntu@ip-172-31-11-168:~$ sudo vim /etc/ssh/sshd_config
ubuntu@ip-172-31-11-168:~$ sudo passwd ubuntu
New password:
Retype new password:
passwd: password updated successfully
ubuntu@ip-172-31-11-168:~$
ubuntu@ip-172-31-11-168:~$ sudo service ssh
 * Usage: /etc/init.d/ssh {start|stop|reload|force-reload|restart|try-restart|status}
ubuntu@ip-172-31-11-168:~$ sudo service ssh status
```

The output of the `sudo service ssh status` command is as follows:

```
● ssh.service - OpenBSD 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 14:24:48 UTC; 39min ago
   TriggeredBy: ● ssh.socket
     Docs: man:sshd(8)
           man:sshd_config(5)
   Process: 1306 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
   Main PID: 1308 (sshd)
     Tasks: 1 (limit: 1130)
   Memory: 2.1M (peak: 18.8M)
     CPU: 244ms
   CGroup: /system.slice/ssh.service
```

The VS Code interface includes a sidebar with icons for Explorer, Search, Source Control, Run and Debug, and Extensions. The top bar shows the 'Welcome' tab and a search bar. The bottom status bar displays various icons and the current time, 8:34 PM on 9/4/2024.

The screenshot shows a VS Code terminal window with the following content:

```
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 14:05:05 2024 from 103.135.95.46
ubuntu@ip-172-31-4-149:~$ ssh ubuntu@172.31.11.168
(ubuntu@172.31.11.168) Password:
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 15:06:45 UTC 2024

System load:  0.0      Processes:      113
Usage of /:   23.0% of 6.71GB Users logged in: 1
Memory usage: 21%     IPv4 address for enX0: 172.31.11.168
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.
```

The terminal window is titled "Terminal" and has a tab for "ssh". The status bar at the bottom shows "CodeTogether", "0 0 0", "Share Code Link", "Explain Code", "Comment Code", "Find Bugs", "Code Chat", "Search Error", "Go Live", "AI Code Chat", and a search bar.

The screenshot shows a VS Code terminal window with the following content:

```
System information as of Wed Sep  4 15:06:45 UTC 2024

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Memory usage: 21%     IPv4 address for enX0: 172.31.11.168
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 14:49:53 2024 from 103.135.95.46
ubuntu@ip-172-31-11-168:~$ ls
biraj.txt  text.txt
ubuntu@ip-172-31-11-168:~$
```

The terminal window is titled "Terminal" and has a tab for "ssh". The status bar at the bottom shows "CodeTogether", "0 0 0", "Share Code Link", "Explain Code", "Comment Code", "Find Bugs", "Code Chat", "Search Error", "Go Live", "AI Code Chat", and a search bar.

```
File Edit Selection View Go ... aws
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SEARCH ERROR
TERMINAL
/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@172.31.4.149: Permission denied (publickey).
ubuntu@ip-172-31-11-168:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
/home/ubuntu/.ssh/id_ed25519 already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_ed25519
Your public key has been saved in /home/ubuntu/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:cd77c3NgFWYRfnpYeERbLetjLAHi4Ed6P6GN8S0mEqQ ubuntu@ip-172-31-11-168
The key's randomart image is:
+--[ED25519 256]--+
| . o . . +B|
| . = . +*+|
| . + * . +B=|
| o * O . +=o|
| E . S * Boo..|
| . o . +*..|
| . . .o o|
| . . .o|
| .oo|
+----[SHA256]-----+
ubuntu@ip-172-31-11-168:~$ ssh-copy-id ubuntu@172.31.4.149
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.ssh/id_ed25519.pub"
CodeTogether 0 0 0 Share Code Link Explain Code Comment Code Find Bugs Code Chat Search Error Go Live AI Code Chat
Type here to search USD/EUR -0.34% 9:43 PM 9/4/2024
```

```
File Edit Selection View Go ... aws
Welcome x
Start Walkthroughs
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SEARCH ERROR
TERMINAL
+----[SHA256]-----+
ubuntu@ip-172-31-11-168:~$ ssh-copy-id ubuntu@172.31.11.168
/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: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
(ubuntu@172.31.11.168) Password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'ubuntu@172.31.11.168'"
and check to make sure that only the key(s) you wanted were added.

ubuntu@ip-172-31-11-168:~$ ssh ubuntu@172.31.11.168
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 15:37:50 UTC 2024

System load:  0.0          Processes:    117
Usage of /:   23.0% of 6.71GB Users logged in: 1
CodeTogether 0 0 0 Share Code Link Explain Code Comment Code Find Bugs Code Chat Search Error Go Live AI Code Chat
Type here to search 82°F Partly cloudy 9:09 PM 9/4/2024
```

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