ACCESSING MULTIPLE SERVERS REMOTELY.

Description:

This bash script automates the process of connecting to multiple EC2 instances, executing a series of commands on each server, and logging the output. It demonstrates how to use SSH to connect to remote servers and execute commands without manual intervention.

Features

- Connects to three different EC2 instances
- Switches to root user on each server
- Executes common Linux commands (cat /etc/passwd, date, hostname)
- Logs the output of each server to separate files

Usage:

1. Create the three instances and ensure that you have the necessary .pem files in the same directory as the script
2. Make the script executable:
   chmod +x script_name.sh
3. Run the script:
         ./script_name.sh

Script that automatically connects to multiple servers and executes commands on each server.

```
#!/bin/bash/

PUBLIC_DNS_1="your_public_dns"  # Enter your 1st server public ipaddress
SERVER_USERNAME_1="your_username" #Enter your 1st server username
KEY_FILE_1="/path/to/key_file_1" #Enter the path to your pem file of 1st server

PUBLIC_DNS_2="your_public_dns"  # Enter your 2nd server public ipaddress
SERVER_USERNAME_2="your_username" #Enter your 2nd server username
KEY_FILE_2="/path/to/key_file_2" #Enter the path to your pem file of 2nd server
```

```
PUBLIC_DNS_3="your_public_dns"  # Enter your 3rd server public ipaddress
SERVER_USERNAME_3="your_username" #Enter your 3rd server username
KEY_FILE_3="/path/to/key_file_3" #Enter the path to your pem file of 3rd server


echo -e "###########connecting to linux_server_1###############\n"

ssh -i "$KEY_FILE_1" $SERVER_USERNAME_1@$PUBLIC_DNS_1<<EOF

echo -e "\n"

echo -e "#################switching to root####################\n"

sudo -i

echo -e "####################listing the password file content####################\n"

cat /etc/passwd

echo -e "\n"

echo -e "##########################displaying the date#######################\n"

date

echo -e "\n"

echo -e "###########################displaying the
hostname####################\n"

hostname

EOF

echo -e "\n"

echo -e "#########connecting to linux_server_2###############\n"

ssh -i "$KEY_FILE_2" $SERVER_USERNAME_2@$PUBLIC_DNS_2<<EOF

echo -e "\n"
```

```
echo -e "################switching to root###################\n"

sudo -i

#echo -e "\n"

echo -e "####################listing the password file content###################\n"

cat /etc/passwd

echo -e "\n"

echo -e "##########################displaying the date#######################\n"

date

echo -e "\n"

echo -e "#########################displaying the
hostname#####################\n"

hostname
uname -n

EOF

echo -e "\n"

echo -e "##############connecting to linux_server_3####################\n"

ssh -i "$KEY_FILE_3" $SERVER_USERNAME_3@$PUBLIC_DNS_3<<EOF

#echo -e "\n"

echo -e "################switching to root##################\n"

sudo -i

echo -e "\n"

echo -e "##################listing the password file content#################\n"

cat /etc/passwd
```

```
echo -e "\n"

echo -e "#############################displaying the date##########################\n"

date

echo -e "\n"

echo -e "###########################displaying the hostname####################\n"

hostname


EOF
```

Output:

```
###########connecting to linux_server_2################

Pseudo-terminal will not be allocated because stdin is not a terminal.
      ,        #_
    ~\_   ####_        Amazon Linux 2023
   ~~  \_#####\
   ~~     \###|
   ~~       \#/ ___    https://aws.amazon.com/linux/amazon-linux-2023
    ~~       V~' '->
     ~~~         /
       ~~._.   _/
         _/ _/
       _/m/'


#################switching to root####################

####################listing the password file content####################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin
systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin
systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin
systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin
systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin
chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash
```

```
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash


##########################displaying the date#######################

Mon Sep 16 13:39:09 UTC 2024


##########################displaying the hostname#####################

ip-172-31-8-163.ap-southeast-2.compute.internal


#########connecting to linux_server_3#################

Pseudo-terminal will not be allocated because stdin is not a terminal.
      ,        #_
     ~\_   ####_        Amazon Linux 2023
    ~~  \_#####\
    ~~      \###|
    ~~       \#/ ___    https://aws.amazon.com/linux/amazon-linux-2023
     ~~       V~' '->
      ~~~         /
        ~~._.   _/
          _/ _/
        _/m/'


################switching to root###################

####################listing the password file content###################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin
systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin
```

```
systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin
systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin
systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin
chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash


############################displaying the date#######################

Mon Sep 16 13:39:15 UTC 2024


############################displaying the hostname#####################

ip-172-31-9-147.ap-southeast-2.compute.internal
ip-172-31-9-147.ap-southeast-2.compute.internal


##############connecting to linux_server_4#####################

Pseudo-terminal will not be allocated because stdin is not a terminal.
         #_
    ,      #_
   ~\_   ####_         Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___     https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
     ~~._.   _/
        _/ _/
      _/m/'
################switching to root###################


####################listing the password file content###################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
```

```
        _/ _/
      _/m/'
#################switching to root####################


####################listing the password file content####################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin
systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin
systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin
systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin
systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin
chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash


############################displaying the date########################

Mon Sep 16 13:39:20 UTC 2024

############################displaying the hostname####################

ip-172-31-9-118.ap-southeast-2.compute.internal
```

This following script saves the details of each server into separate files, with each file named according to the server's IP address.

Script:

#!/bin/bash/

PUBLIC_DNS_1="your_public_dns" # Enter your 1st server public ipaddress
SERVER_USERNAME_1="your_username" #Enter your 1st server username
KEY_FILE_1="/path/to/key_file_1" #Enter the path to your pem file of 1st server

PUBLIC_DNS_2="your_public_dns" # Enter your 2nd server public ipaddress
SERVER_USERNAME_2="your_username" #Enter your 2nd server username
KEY_FILE_2="/path/to/key_file_2" #Enter the path to your pem file of 2nd server

```
PUBLIC_DNS_3="your_public_dns"  # Enter your 3rd server public ipaddress
SERVER_USERNAME_3="your_username" #Enter your 3rd server username
KEY_FILE_3="/path/to/key_file_3" #Enter the path to your pem file of 3rd server


echo -e "###########connecting to linux_server_1###############\n" >>file1 #instead of file1 give your server1 ip address as name of file that saves the details of server 1

ssh -i "$KEY_FILE_1" $SERVER_USERNAME_1@$PUBLIC_DNS_1<<EOF >> file1 #instead of file1 give your server1 ip address as name of file that saves the details of server 1


echo -e "\n"

echo -e "#################switching to root####################\n"

sudo -i

echo -e "####################listing the password file content####################\n"

cat /etc/passwd

echo -e "\n"

echo -e "###########################displaying the date########################\n"

date

echo -e "\n"

echo -e "##########################displaying the hostname####################\n"

hostname

EOF

echo -e "\n"

echo -e "#########connecting to linux_server_2###############\n" >> file2 #instead of file2 give your server2 ip address as name of file that saves the details of server 2
```

```
ssh -i "$KEY_FILE_2" $SERVER_USERNAME_2@$PUBLIC_DNS_2<<EOF >> file2 #instead
of file2 give your server2 ip address as name of file that saves the details of server 2

echo -e "\n"

echo -e "################switching to root###################\n"

sudo -i

#echo -e "\n"

echo -e "####################listing the password file content###################\n"

cat /etc/passwd

echo -e "\n"

echo -e "###########################displaying the date########################\n"

date

echo -e "\n"

echo -e "##########################displaying the
hostname####################\n"

hostname
uname -n

EOF

echo -e "\n"

echo -e "#############connecting to linux_server_3###################\n" >> file3
#instead of file3 give your server3 ip address as name of file that saves the details of server 3


ssh -i "$KEY_FILE_3" $SERVER_USERNAME_3@$PUBLIC_DNS_3<<EOF >> file3 #instead
of file3 give your server3 ip address as name of file that saves the details of server 3


#echo -e "\n"

echo -e "################switching to root###################\n"
```

```
sudo -i

echo -e "\n"

echo -e "####################listing the password file content####################\n"

cat /etc/passwd

echo -e "\n"

echo -e "###########################displaying the date#########################\n"

date

echo -e "\n"

echo -e "############################displaying the
hostname####################\n"

hostname


EOF
```
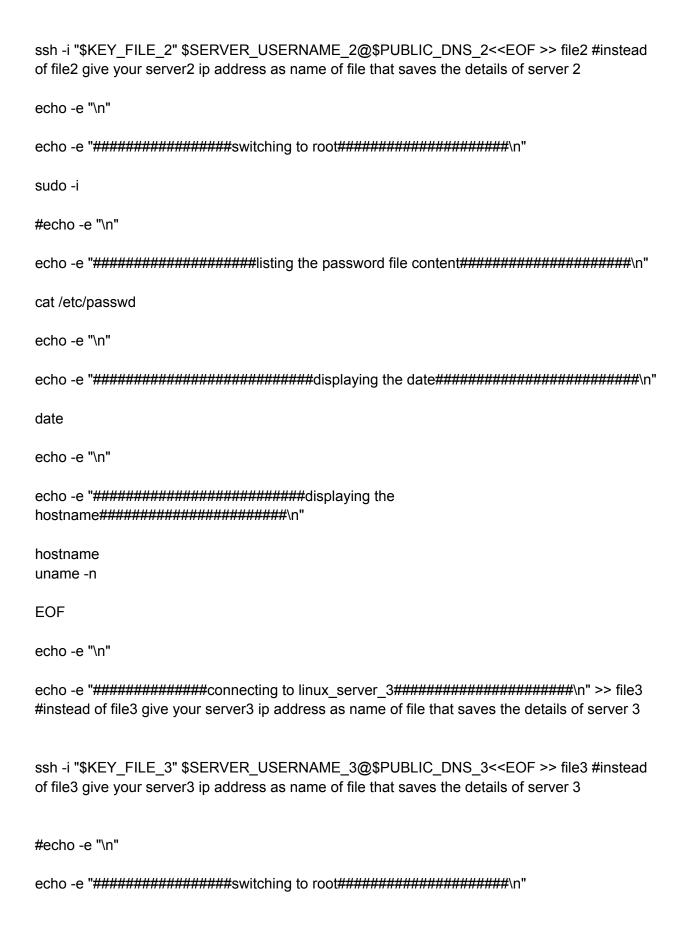
Output:
===================================

Three files will be created with their ip address:
To open that file run the following command:

cat filename
Or
cat ipaddress

```
[ec2-user@ip-172-31-8-163 ~]$ cat ip_172_31_8_163
###########connecting to linux_server_2###############

     ,        #_
   ~\_   ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'


################switching to root####################

####################listing the password file content###################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin
systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin
systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin
systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin
systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin
chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash
```

```
#########################displaying the date#####################

Mon Sep 16 15:55:44 UTC 2024


#########################displaying the hostname#####################

ip-172-31-8-163.ap-southeast-2.compute.internal
[ec2-user@ip-172-31-8-163 ~]$ |
```

```
ec2-user@ip-172-31-8-163:~
[ec2-user@ip-172-31-8-163 ~]$ cat ip_3_25_77_22
##############connecting to linux_server_4###################

      ,        #_
    ~\_   ####_        Amazon Linux 2023
   ~~  \_#####\
   ~~     \###|
   ~~       \#/ ___    https://aws.amazon.com/linux/amazon-linux-2023
    ~~       V~' '->
     ~~~         /
       ~~._.   _/
          _/ _/
        _/m/'
################switching to root###################



##################listing the password file content###################

root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin
systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin
systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin
systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin
systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin
chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin
ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
tcpdump:x:72:72::/:/sbin/nologin
ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash


#########################displaying the date#########################

Mon Sep 16 15:55:46 UTC 2024


#########################displaying the hostname#########################

ip-172-31-9-118.ap-southeast-2.compute.internal
[ec2-user@ip-172-31-8-163 ~]$ |
```

Output

The script generates three output files:
- ip_172_31_8_163: Contains output from the first server (13.211.219.173)
- ip_54_153_131_173: Contains output from the second server (54.153.131.173)
- ip_3_25_77_22: Contains output from the third server (3.25.77.22)

Each file contains the following information for its respective server:
- Contents of /etc/passwd file
- Current date and time
- Hostname