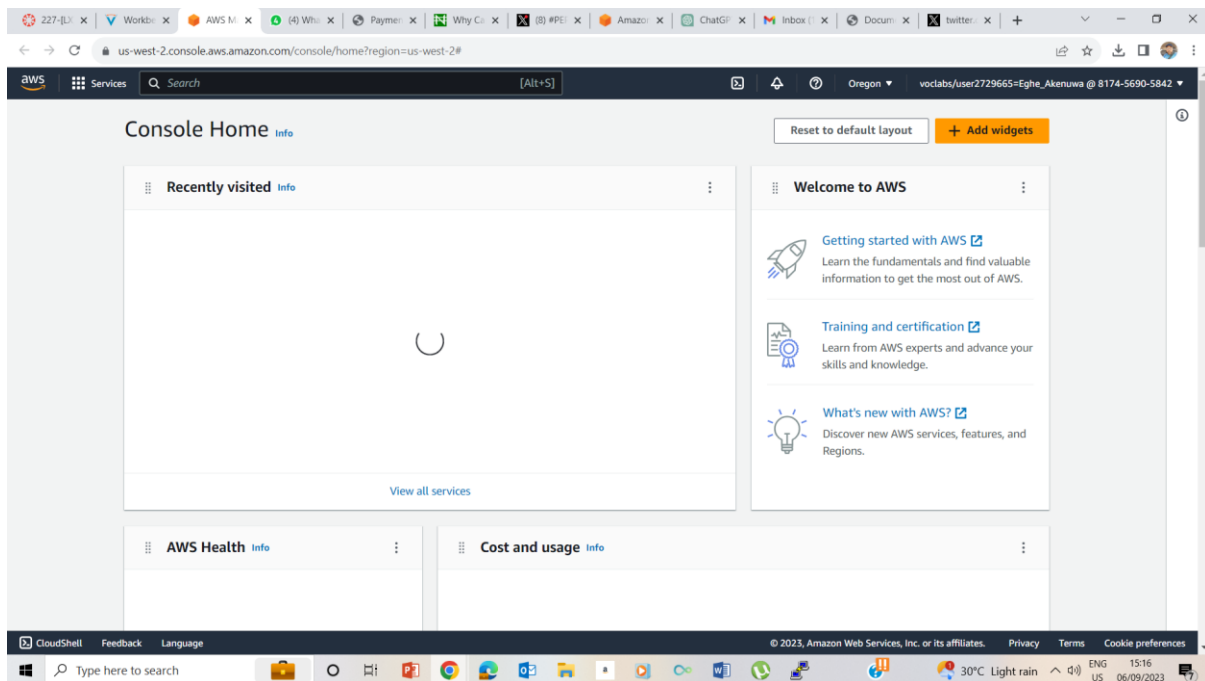


# Linux Command Line Lab

---

## Accessing the AWS Management Console

---



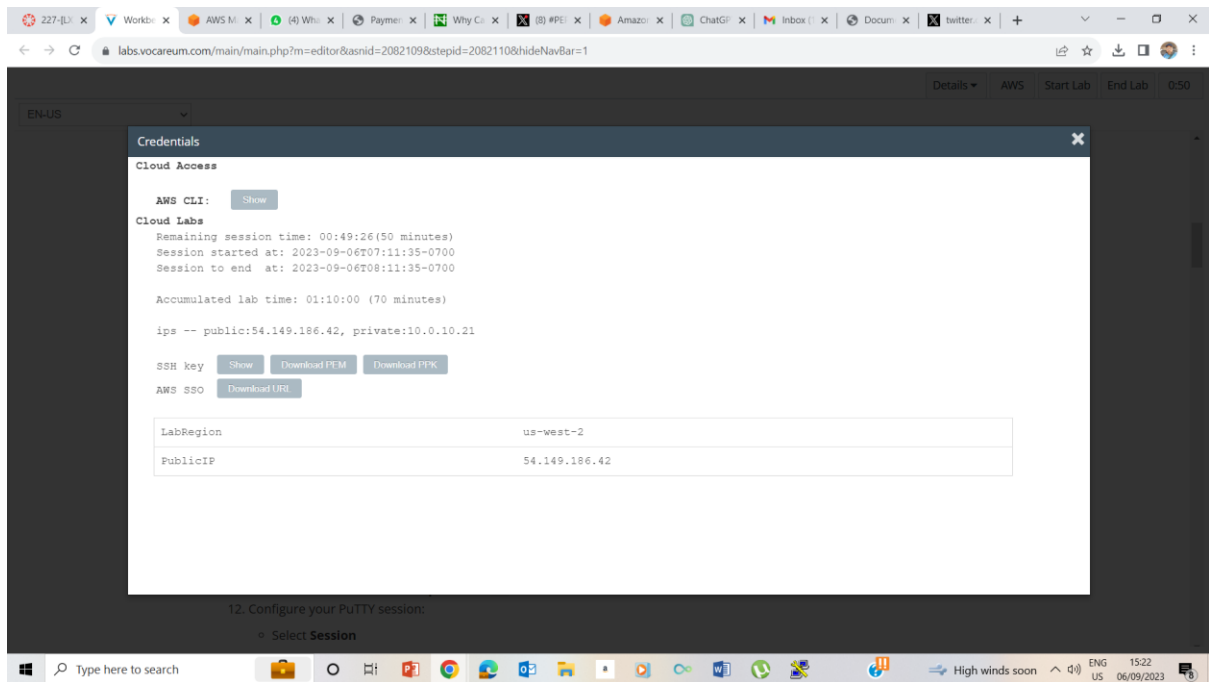
I started the Lab and on its ready prompt, I clicked on AWS button to take me to the AWS Management console

## Task 1: Use SSH to connect to an Amazon Linux EC2 instance

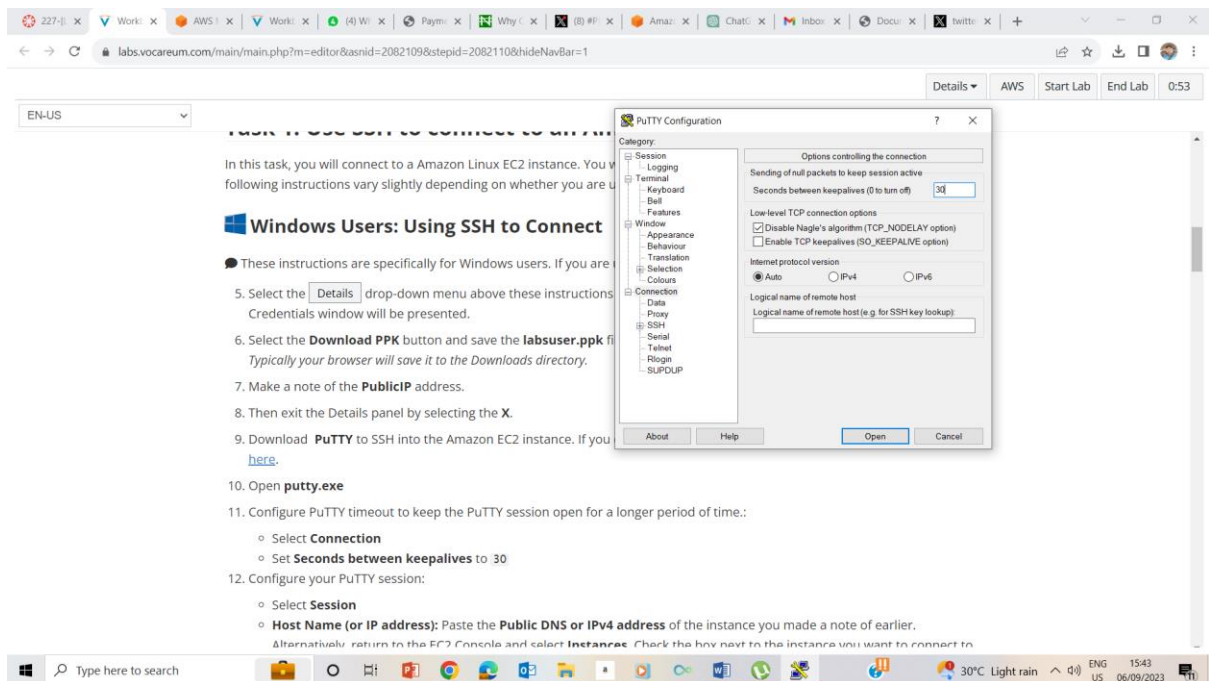
---

I

Windows Users: Using SSH to Connect



5-7 I clicked on the details drop down box, selected show, downloaded PPK, made a note of the Public Ip address



9-10 Downloaded putty, opened putty.exe, selected connection and set the seconds between keepalives to be 30

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Details AWS Start Lab End Lab 0:50

EN-US

- Configure PuTTY timeout to keep the PuTTY session open for a
  - Select **Connection**
  - Set **Seconds between keepalives** to **30**
- Configure your PuTTY session:
  - Select **Session**
  - Host Name (or IP address)**: Paste the **Public DNS or IPv4** Alternatively, return to the EC2 Console and select **Instance** and in the **Description** tab copy the **IPv4 Public IP** value.
  - Back in PuTTY, in the **Connection** list, expand **SSH**
  - Select **Auth** (don't expand it)
  - Select **Browse**
  - Browse to and select the lab#.ppk file that you downloaded
  - Select **Open** to select it
  - Select **Open** again.
- Select **Yes**, to trust and connect to the host.
- When prompted **login as**, enter: **ec2-user**  
This will connect you to the EC2 instance.
- Windows Users: [Select here to skip ahead to the next task.](#)

**macOS and Linux Users**

These instructions are specifically for Mac/Linux users. If you are a Windows user, [skip ahead to the next task.](#)

16. Select the **Details** drop-down menu above these instructions you are currently reading, and then select **Show** L A

12. selected session , and entered the public ip address in the Host Name (or IP address) space and configured the Putty session

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Details AWS Start Lab End Lab 0:48

EN-US

54.149.186.42 - PuTTY

**PuTTY Security Alert**

The host key is not cached for this server:  
54.149.186.42 (port 22)  
You have no guarantee that the server is the computer you think it is.  
The server's ssh-ed25519 key fingerprint is:  
ssh-ed25519 255 SHA256:BUQ4MULR4Ylv3AH4K5mJoneYqnikAXL2ABHfBmxQORU  
If you trust this host, press "Accept" to add the key to PuTTY's cache and carry on connecting.  
If you want to carry on connecting just once, without adding the key to the cache, press "Connect Once".  
If you do not trust this host, press "Cancel" to abandon the connection.

Help More info... Accept Connect Once Cancel

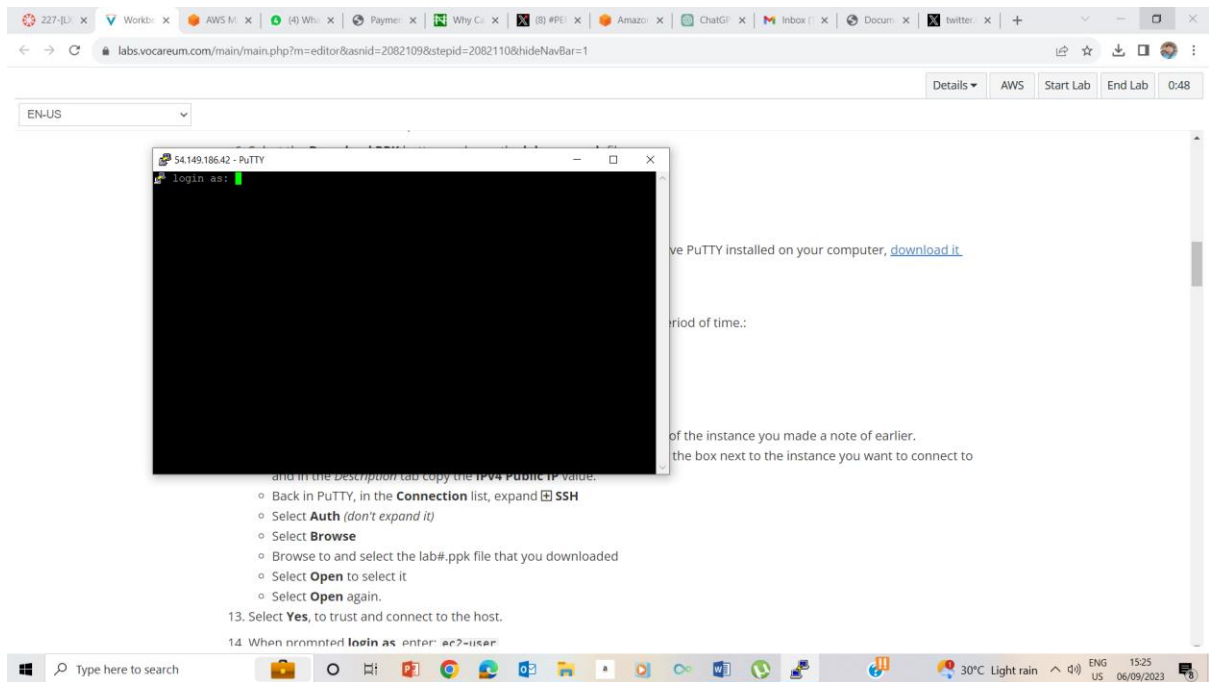
Back in PuTTY, in the **Connection** list, expand **SSH**

- Select **Auth** (don't expand it)
- Select **Browse**
- Browse to and select the lab#.ppk file that you downloaded
- Select **Open** to select it
- Select **Open** again.

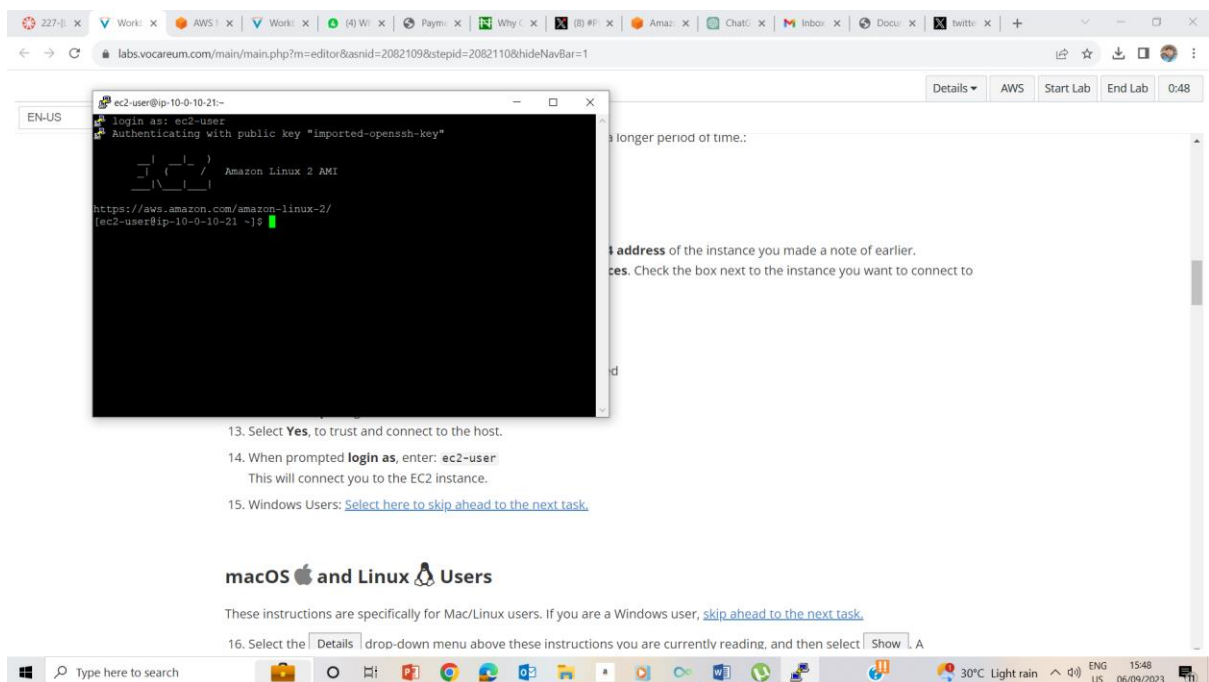
13. Select **Yes**, to trust and connect to the host.

14. When prompted **login as**, enter: **ec2-user**

13. Clicked on accept to trust and connect to the host



14 logged in as ec2-user



15. connection achieved.

## Task 2: Run familiar commands

Task 2: Run familiar commands

In this exercise, you run a few commands to gain some general knowledge of the system and session that you are using.

24. From the terminal, enter `whoami` and press Tab. Notice that the auto-complete feature displays the full command, `whoami`.

25. Press Enter to display your current username.

26. Enter `hostname -s` and press Enter to display a shortened version of the system's hostname.

27. Enter `uptime -p` and press Enter to display the uptime of the system.

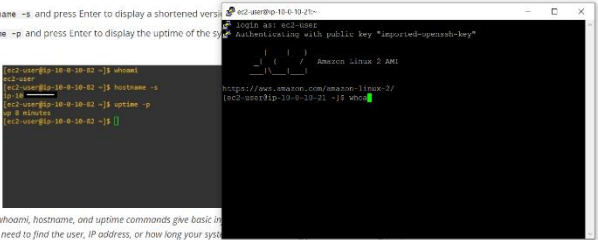


Figure: The `whoami`, `hostname`, and `uptime` commands give basic information about the system and session that you are using. This information is useful if you need to find the user, IP address, or how long your system has been up.

28. From the terminal, enter `who -ik` and press Enter to retrieve information about the users who are logged in and some

Task 2: Run familiar commands

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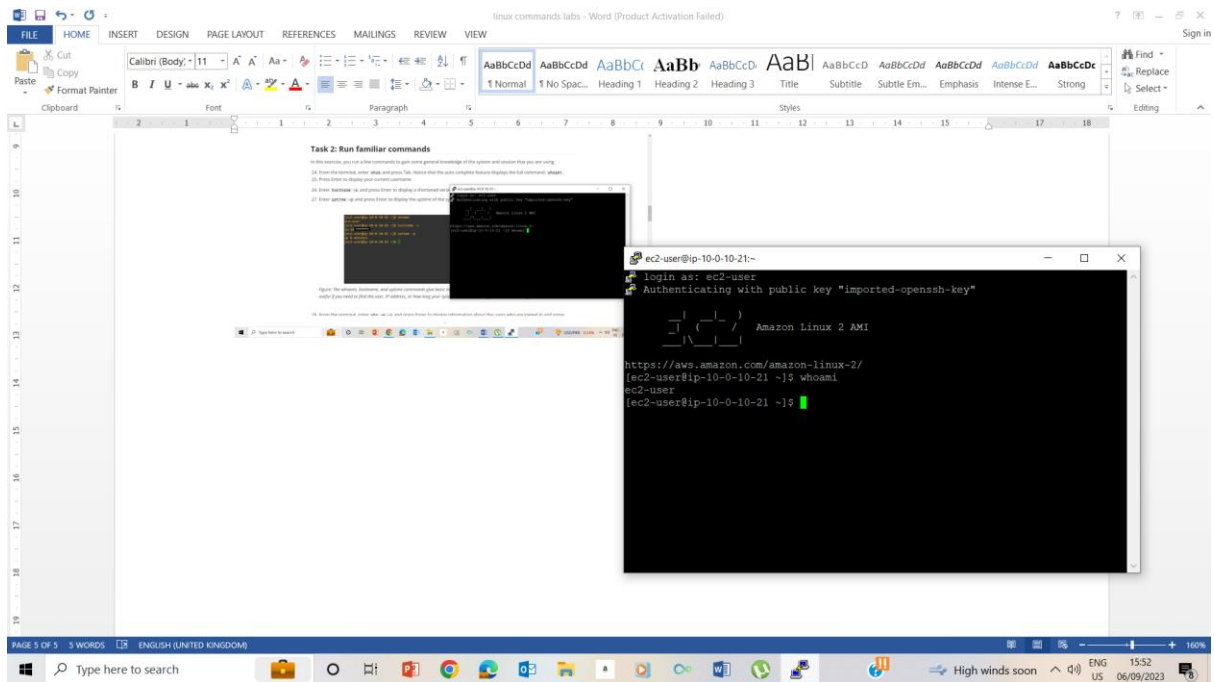


Figure: The `whoami`, `hostname`, and `uptime` commands give basic information about the system and session that you are using. This information is useful if you need to find the user, IP address, or how long your system has been up.

28. From the terminal, enter `who -ik` and press Enter to retrieve information about the users who are logged in and some

24 whoami command



## 26 & 27 hostname -s

in the *Description* tab copy the **IPv4 Public IP** value:

```
ssh -i labsuser.pem ec2-user@<public-ip>
```

23. Type **yes** when prompted to allow the first connection to this remote SSH server.  
Because you are using a key pair for authentication, you will not be prompted for a password.

**Task 2: Run familiar commands**

In this exercise, you run a few commands to gain some general knowledge of the system and system that you are using.

24. From the terminal, enter **whoami** and press Tab. Notice that the auto-completion suggests the full command, **whoami**.

25. Press Enter to display your current username.

26. Enter **hostname -s** and press Enter to display a shortened version of the system's hostname.

27. Enter **uptime -p** and press Enter to display the uptime of the system.

```
[ec2-user@ip-10-0-10-82 ~]$ whoami
ec2-user
[ec2-user@ip-10-0-10-82 ~]$ hostname -s
ip-10
[ec2-user@ip-10-0-10-82 ~]$ uptime -p
up 8 minutes
[ec2-user@ip-10-0-10-82 ~]$
```

## 27. uptime -p command

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labs.vocareum.com/main.php?m=editor&asnid=2082109&stepid=2082110&hideNavBar=1

EN-US

Figure: The `whoami`, `hostname`, and `uptime` commands give basic information about the system you are currently using. This can be useful if you need to find the user, IP address, or how long your system has been up.

28. From the terminal, enter `who -H -a` and press Enter to display additional information.

```

[ec2-user@ip-10-0-10-82 ~]$ who -H -a
NAME          LINE          TIME          IDLE          PID COMMENT
system boot   2021-09-02 01:10
LOGIN tty0        2021-09-02 01:10 2212 id=tty0
LOGIN tty1        2021-09-02 01:10 2217 id=tty1
run-level 5   2021-09-02 01:10
ec2-user + pts/0 2021-09-02 01:14 00:07 7317 (205.251)
ec2-user + pts/1 2021-09-02 01:25 . 7411 (205.251)
[ec2-user@ip-10-0-10-82 ~]$

```

Figure: The `who -H -a` command displays the information about the event occurred, idle time of the user, Process Identifier (PID), comment.

29. Enter `TZ=America/New_York date` and press Enter. Then enter `TZ=America/Los_Angeles date` and press Enter. These commands identify the date and time of alternate locations in the world.

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EN-US

29. `who -H -a` to display information about users who are logged in.

29

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labs.vocareum.com/main.php?m=editor&asnid=2082109&stepid=2082110&hideNavBar=1

EN-US

28. From the terminal, enter `who -H -a` and press Enter to display information about the users who are logged in and some additional information.

```

[ec2-user@ip-10-0-10-82 ~]$ who -H -a
NAME          LINE          TIME          IDLE          PID COMMENT EXIT
system boot   2021-09-02 01:10
LOGIN tty0        2021-09-02 01:10 2212 id=tty0
LOGIN tty1        2021-09-02 01:10 2217 id=tty1
run-level 5   2021-09-02 01:10
ec2-user + pts/0 2021-09-02 01:14 00:07 7317 (205.251)
ec2-user + pts/1 2021-09-02 01:25 . 7411 (205.251)
[ec2-user@ip-10-0-10-82 ~]$

```

Figure: The `who -H -a` command displays the information about the event occurred, idle time of the user, Process Identifier (PID), comment.

29. Enter `TZ=America/New_York date` and press Enter. Then enter `TZ=America/Los_Angeles date` and press Enter. These commands identify the date and time of alternate locations in the world.

```

[ec2-user@ip-10-0-10-82 ~]$ TZ=America/New_York date
Wed Sep 1 21:27:26 EDT 2021
[ec2-user@ip-10-0-10-82 ~]$ TZ=America/Los_Angeles date
Wed Sep 1 18:27:35 PDT 2021
[ec2-user@ip-10-0-10-82 ~]$

```

Figure: The `TZ=America/New_York date` and `TZ=America/Los_Angeles date` commands identify the date, time, timezone, and year. In this example the output for Los Angeles is Wed Sep 1 18:27:35 PDT 2021.

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labs.vocareum.com/main.php?m=editor&asnid=2082109&stepid=2082110&hideNavBar=1

EN-US

06 September 2023  
Wednesday

29



28. From the terminal, enter `who -H -a` and press Enter to display information about the users who are logged in and some additional information.

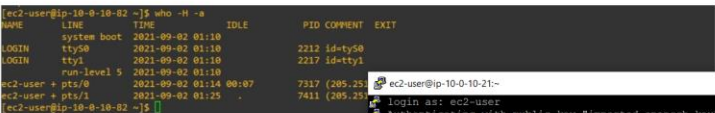


Figure: The `who -H -a` command displays the information about the event occurred, idle time of the user, Process Identifier (PID), comment, and exit status.

29. Enter `TZ=America/New_York date` and press Enter. Then enter `TZ=America/Los_Angeles date` and press Enter. These commands identify the date and time of alternate location.

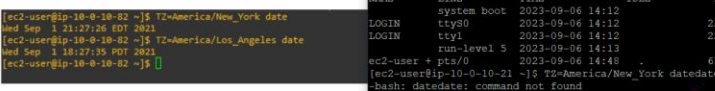


Figure: The `TZ=America/New_York date` and `TZ=America/Los_Angeles date` commands display the date, time, timezone, and year. In this example the output for Los Angeles is Wed Sep 1 18:27:35 PDT 2021.

28. From the terminal, enter `who -H -a` and press Enter to display information about the users who are logged in and some additional information.

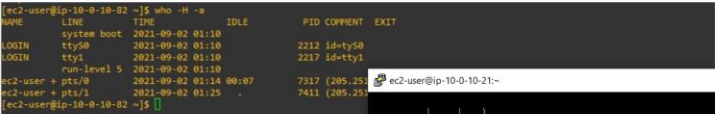


Figure: The `who -H -a` command displays the information about the event occurred, idle time of the user, Process Identifier (PID), comment, and exit status.

29. Enter `TZ=America/New_York date` and press Enter. Then enter `TZ=America/Los_Angeles date` and press Enter. These commands identify the date and time of alternate location.

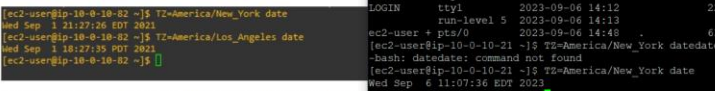


Figure: The `TZ=America/New_York date` and `TZ=America/Los_Angeles date` commands display the date, time, timezone, and year. In this example the output for Los Angeles is Wed Sep 1 18:27:35 PDT 2021.



EN-US

Figure: The TZ=America/New\_York date and TZ=America/Los\_Angeles date will give you the output of the current weekday, month, date, time, timezone, and year. In this example the output for Los Angeles is Wed Sep 1 18:27:35 PDT 2021.

Note

If your time on your system is not set properly, you will receive a time that is incorrect.

30. Some professions use the Julian date to conduct business. The Julian date is a date at 1 at the beginning of each month. For example, in the Julian format, the day after January 31 is February 1. However, in the Julian format, the day after January 31 is February 1 by entering `cal -j` in your terminal to see the Julian dates for you.





Figure: The `cal -j` command will give the output of the current month, 2021, Thursday, day 245.

31. Enter the `cal -s` or `cal -m` commands to display alternate view



New York and Los Angeles date and time. TZ=America/New\_York date and TZ=America/Los\_Angeles date

32

EN-US

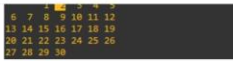


Figure: The `cal -s` command gives the output of September from Sunday through Saturday. The `cal -m` command gives the output from Monday through Sunday.

Note

There are many options to display calendars. Check the `cal` man page for more information.

32. For your last command, enter `id ec2-user` into the terminal, and see the output. This command will give you information about your specific user.

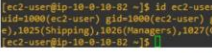
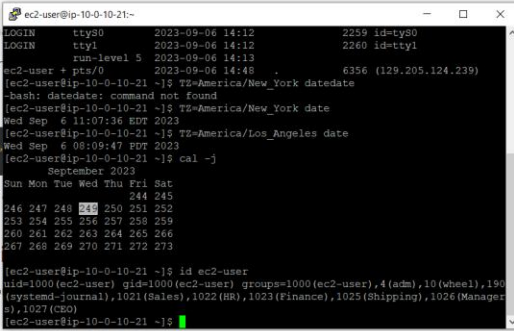


Figure: The output of the `id ec2-user` gives the user id, group id, and group names.

### Task 3: Improve workflow through history

In this task, you attempt to ease your overall workload by reusing commands from the bash history log, and reuse of the last command.

33. Start by viewing the current bash history. Enter `history` and press ENTER. In the output, check if the commands that you see are the commands that you used in task 2.



Cal -j is the Julian format of the calendar

The terminal window shows the following commands and output:

```

[ec2-user@ip-10-0-10-166 ~]$ whoami
ec2-user
[ec2-user@ip-10-0-10-166 ~]$ hostname -s
ip-10-0-10-166
[ec2-user@ip-10-0-10-166 ~]$ uptime -p
up 5 minutes
[ec2-user@ip-10-0-10-166 ~]$ who -H -a
NAME          LINE    TIME          IDLE          PID COMMENT  EXIT
LOGIN         ttyS0   2023-09-23 09:54  2245 id=ttyS0
LOGIN         ttyL    2023-09-23 09:54  2249 id=ttyL
run-level 5   2023-09-23 09:55
ec2-user + pts/0 2023-09-23 09:57 . 6281 (102.89.32.56)
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/New_York date
Sat Sep 23 06:01:34 EDT 2023
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/Los_Angeles date
Sat Sep 23 03:01:57 PDT 2023
[ec2-user@ip-10-0-10-166 ~]$ cal -j
September 2023
Sun Mon Tue Wed Thu Fri Sat
                1 244 245
246 247 248 249 250 251 252
253 254 255 256 257 258 259
260 261 262 263 264 265 266
267 268 269 270 271 272 273

[ec2-user@ip-10-0-10-166 ~]$ cal -s
September 2023
Su Mo Tu We Th Fr Sa
                1 2
 3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ cal -m
September 2023
Mo Tu We Th Fr Sa Su
                1 2 3
 4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$

```

The web browser shows the output of the 'cal' command in a terminal window. The output is as follows:

```

[ec2-user@ip-10-0-10-166 ~]$ cal -j
September 2023
Sun Mon Tue Wed Thu Fri Sat
                1 244 245
246 247 248 249 250 251 252
253 254 255 256 257 258 259
260 261 262 263 264 265 266
267 268 269 270 271 272 273

[ec2-user@ip-10-0-10-166 ~]$ cal -s
September 2023
Su Mo Tu We Th Fr Sa
                1 2
 3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ cal -m
September 2023
Mo Tu We Th Fr Sa Su
                1 2 3
 4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

```

Figure: The `cal -j` command will give the output of the current month in Julian date. In this example, the output given is September 2021, Thursday, day 245.

31. Enter the `cal -s` or `cal -m` commands to display alternate views of the calendar.

Figure: The `cal -s` command gives the output of September from Sunday through Saturday. The `cal -m` command gives the output from Monday through Sunday.

Note

There are many options to display calendars. Check the `cal` man page for details.

Cal `-s` and `cal -m` displays calendar month starting from Sunday and Monday respectively.

The terminal window shows the following commands and output:

```

[ec2-user@ip-10-0-10-166 ~]$ whoami
ec2-user
[ec2-user@ip-10-0-10-166 ~]$ hostname -s
ip-10-0-10-166
[ec2-user@ip-10-0-10-166 ~]$ uptime -p
up 5 minutes
[ec2-user@ip-10-0-10-166 ~]$ who -H -a
NAME          LINE    TIME          IDLE          PID COMMENT  EXIT
LOGIN         ttyS0   2023-09-23 09:54  2245 id=ttyS0
LOGIN         ttyL    2023-09-23 09:54  2249 id=ttyL
run-level 5   2023-09-23 09:55
ec2-user + pts/0 2023-09-23 09:57 . 6281 (102.89.32.56)
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/New_York date
Sat Sep 23 06:01:34 EDT 2023
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/Los_Angeles date
Sat Sep 23 03:01:57 PDT 2023
[ec2-user@ip-10-0-10-166 ~]$ cal -j
September 2023
Sun Mon Tue Wed Thu Fri Sat
                1 244 245
246 247 248 249 250 251 252
253 254 255 256 257 258 259
260 261 262 263 264 265 266
267 268 269 270 271 272 273

[ec2-user@ip-10-0-10-166 ~]$ cal -s
September 2023
Su Mo Tu We Th Fr Sa
                1 2
 3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ cal -m
September 2023
Mo Tu We Th Fr Sa Su
                1 2 3
 4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ id ec2-user
uid=1000(ec2-user) gid=1000(ec2-user) groups=1000(ec2-user),4(admin),10(wheel),190(system-journal),1021(Sales),1022(HR),1023(Finance),1025(Shipping),1026(Managers),1027(CSO)
[ec2-user@ip-10-0-10-166 ~]$

```

The web browser shows the output of the 'id' command in a terminal window. The output is as follows:

```

[ec2-user@ip-10-0-10-166 ~]$ id ec2-user
uid=1000(ec2-user) gid=1000(ec2-user) groups=1000(ec2-user),4(admin),10(wheel),190(system-journal),1021(Sales),1022(HR),1023(Finance),1025(Shipping),1026(Managers),1027(CSO)
[ec2-user@ip-10-0-10-166 ~]$

```

Figure: The output of the `id ec2-user` gives the user id, group id, and groups that the user is apart of.

Task 3: Improve workflow through history and search

Id `ec2-user` brings out unique identity of the user.

## Task 3: Improve workflow through history and search

EN-US

Task 3: Improve workflow through history and search

In this task, you attempt to ease your overall workload by reusing commands through search techniques, manual visualization of the bash history log, and reuse of the last command.

33. Start by viewing the current bash history. Enter `history` and press ENTER. In the output, check if the commands that you see are the commands that you used in task 2.

```
[ec2-user@ip-10-0-10-82 ~]$ history
1  who -H -a
2  TZ=America/New_York date
3  TZ=America/Los_Angeles date
4  cal -j
5  cal -s
6  cal -m
7  id ec2-user
8  history
```

Figure: When the history command is entered, you should see a list of all of the commands that were used within this lab.

34. To search your previous history, press CTRL+R to bring up a reverse history search. In the reverse history search feature of the terminal, enter `TZ` and press Tab. This step brings up an old use of the `date` command that you can edit. Using your arrow buttons, you can now edit the command inline.

```
run-level 5 2023-09-23 09:55
ec2-user + pts/0 2023-09-23 09:57 6281 (102.89.32.56)
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/New_York date
Sat Sep 23 06:01:34 EDT 2023
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/Los_Angeles date
Sat Sep 23 03:01:57 PDT 2023
[ec2-user@ip-10-0-10-166 ~]$ cal -j
September 2023
Sun Mon Tue Wed Thu Fri Sat
246 247 248 249 250 251 252
253 254 255 256 257 258 259
260 261 262 263 264 265 266
267 268 269 270 271 272 273

[ec2-user@ip-10-0-10-166 ~]$ cal -s
September 2023
Su Mo Tu We Th Fr Sa
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ cal -m
September 2023
Mo Tu We Th Fr Sa Su
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ id ec2-user
uid=1000(ec2-user) gid=1000(ec2-user) groups=1000(ec2-user),4(adm),10(wheel),190(systemd-journal),1021(Sales),1022(HR),1023(Finance),1025(Shipping),1026(Managers),1027(CEO)
[ec2-user@ip-10-0-10-166 ~]$ history
1  whoami
2  hostname -s
3  uptime -p
4  who -H -a
5  TZ=America/New_York date
6  TZ=America/Los_Angeles date
7  cal -j
8  cal -s
9  cal -m
10  id ec2-user
11  history
[ec2-user@ip-10-0-10-166 ~]$
```

### 33. history commands brings out all previous commands entered

EN-US

Figure: When the history command is entered, you should see a list of all of the commands that were used within this lab.

34. To search your previous history, press CTRL+R to bring up a reverse history search. In the reverse history search feature of the terminal, enter `TZ` and press Tab. This step brings up an old use of the `date` command that you can edit. Using your arrow buttons, you can now edit the command inline.

Note

This is a history searching feature that gives you the ability to edit the command that you search for. You must use Tab autocomplete to edit and run the commands.

```
[ec2-user@ip-10-0-10-82 ~]$ date
Thu Sep 2 01:43:39 UTC 2021
[ec2-user@ip-10-0-10-82 ~]$ !!
date
Thu Sep 2 01:43:41 UTC 2021
[ec2-user@ip-10-0-10-82 ~]$ !!
```

Figure: To run a reverse history search, press CTRL+R. Typing TZ (from the previous steps) then the Tab button will bring up the use of the date command. In this example, the up and down arrows were used to bring up the date command.

```
run-level 5 2023-09-23 09:55
ec2-user + pts/0 2023-09-23 09:57 6281 (102.89.32.56)
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/New_York date
Sat Sep 23 06:01:34 EDT 2023
[ec2-user@ip-10-0-10-166 ~]$ TZ=America/Los_Angeles date
Sat Sep 23 03:01:57 PDT 2023
[ec2-user@ip-10-0-10-166 ~]$ cal -j
September 2023
Sun Mon Tue Wed Thu Fri Sat
246 247 248 249 250 251 252
253 254 255 256 257 258 259
260 261 262 263 264 265 266
267 268 269 270 271 272 273

[ec2-user@ip-10-0-10-166 ~]$ cal -s
September 2023
Su Mo Tu We Th Fr Sa
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ cal -m
September 2023
Mo Tu We Th Fr Sa Su
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30

[ec2-user@ip-10-0-10-166 ~]$ id ec2-user
uid=1000(ec2-user) gid=1000(ec2-user) groups=1000(ec2-user),4(adm),10(wheel),190(systemd-journal),1021(Sales),1022(HR),1023(Finance),1025(Shipping),1026(Managers),1027(CEO)
[ec2-user@ip-10-0-10-166 ~]$ history
1  whoami
2  hostname -s
3  uptime -p
4  who -H -a
5  TZ=America/New_York date
6  TZ=America/Los_Angeles date
7  cal -j
8  cal -s
9  cal -m
10  id ec2-user
11  history
(reverse-i-search) 'TZ':
```

### CTRL +R brings out reverse search





