Lab 235

Working with the File System

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Bootcamp: Forge AWS re/Start UYMON5
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Objectives

In this lab, you will:

- Create a backup file of an entire folder structure using **tar**
- Log the creation of the backup in a file with the date, time, and file name of the backup file
- Transfer the backup file to another folder

Accessing the AWS Management Console

1. At the top of these instructions, choose Start Lab to launch your lab. A **Start Lab** panel opens, and it displays the lab status.

   Tip: If you need more time to complete the lab, choose the Start Lab button again to restart the timer for the environment.

2. Wait until you see the message *Lab status: ready*, then close the **Start Lab** panel by choosing the **X**.
3. At the top of these instructions, choose AWS. This opens the AWS Management Console in a new browser tab. The system will automatically log you in.

   Tip: If a new browser tab does not open, a banner or icon is usually at the top of your browser with a message that your browser is preventing the site from opening pop-up windows. Choose the banner or icon and then choose **Allow pop ups**.

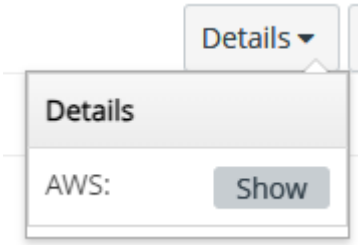
4. Arrange the AWS Management Console tab so that it displays alongside these instructions. Ideally, you will be able to see both browser tabs at the same time so that you can follow the lab steps more easily.

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

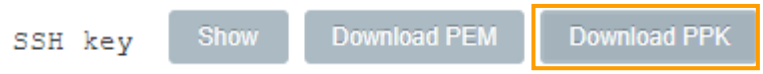
In this task, you will connect to a Amazon Linux EC2 instance. You will use an SSH utility to perform all of these operations.

Windows Users: Using SSH to Connect

1. Select the Details drop-down menu above these instructions you are currently reading, and then select Show. A Credentials window will be presented.



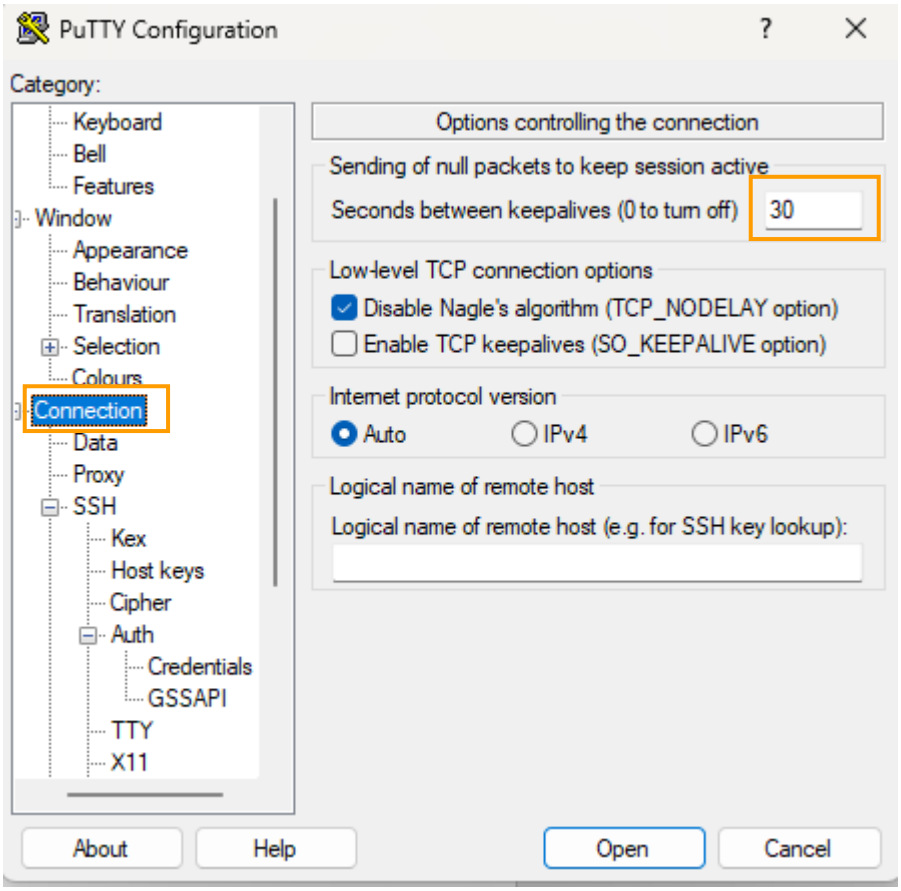
2. Select the **Download PPK** button and save the **labsuser.ppk** file.



3. Make a note of the **PublicIP** address.

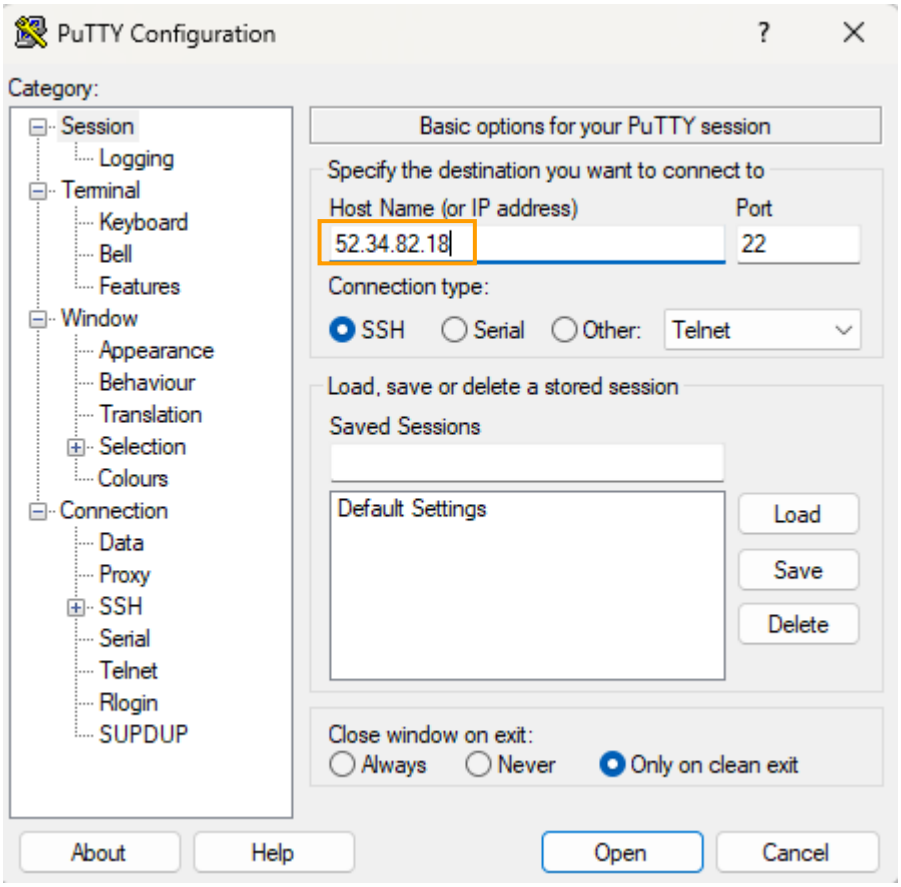
4. Then exit the Details panel by selecting the **X**.
5. Download **PuTTY** to SSH into the Amazon EC2 instance. If you do not have PuTTY installed on your computer.
6. Open **putty.exe**
7. Configure PuTTY timeout to keep the PuTTY session open for a longer period of time.:

- Select **Connection**
- Set **Seconds between keepalives** to `30`

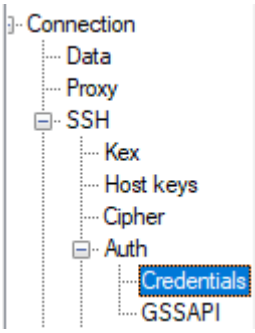


8. Configure your PuTTY session:
   - Select **Session**

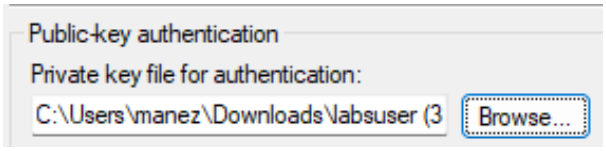
- **Host Name (or IP address):** Paste the **Public DNS or IPv4 address** of the instance you made a note of earlier. Alternatively, return to the EC2 Console and select **Instances**. Check the box next to the instance you want to connect to and in the *Description* tab copy the **IPv4 Public IP** value



- Back in PuTTY, in the **Connection** list, expand **SSH** and select **Auth** *(don't expand it)*

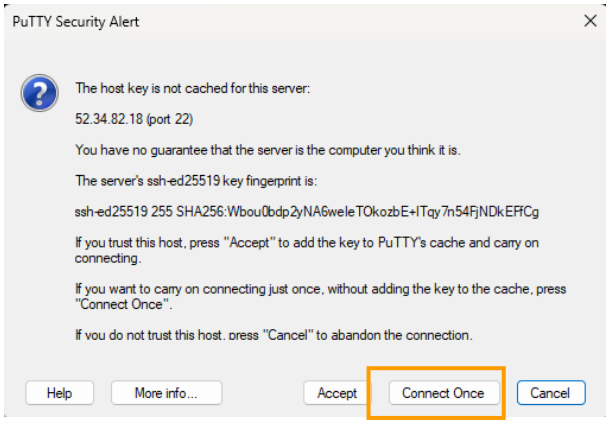


- Select **Browse** and select the lab#.ppk file that you downloaded

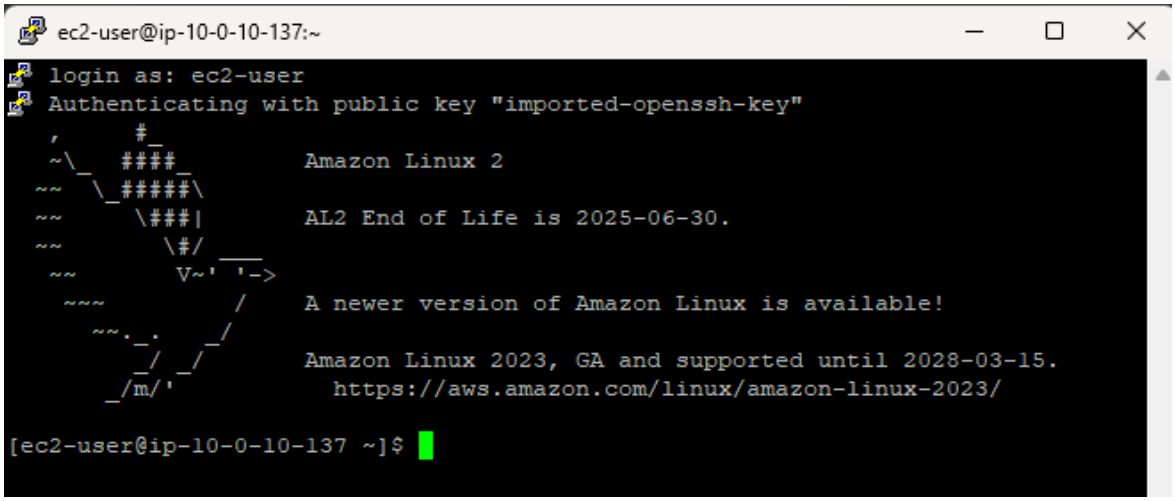


- Select **Open** to select it and then select **Open** again.

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



10. When prompted **login as**, enter: `ec2-user` This will connect you to the EC2 instance.



Task 2: Create a backup

In this task, you create a backup of an entire file structure.

Your work environment has the following folder structure:

```
/home/ec2-user/CompanyA/
/home/ec2-user/CompanyA/Employees/
/home/ec2-user/CompanyA/Employees/Schedules.csv
/home/ec2-user/CompanyA/Finance/
/home/ec2-user/CompanyA/Finance/Salary.csv
/home/ec2-user/CompanyA/HR/
/home/ec2-user/CompanyA/HR/Assessments.csvv
/home/ec2-user/CompanyA/HR/Managers.csv
/home/ec2-user/CompanyA/IA/
/home/ec2-user/CompanyA/Management/
/home/ec2-user/CompanyA/Management/Promotions.csv
/home/ec2-user/CompanyA/Management/Sections.csv
/home/ec2-user/CompanyA/SharedFolders.csv
```

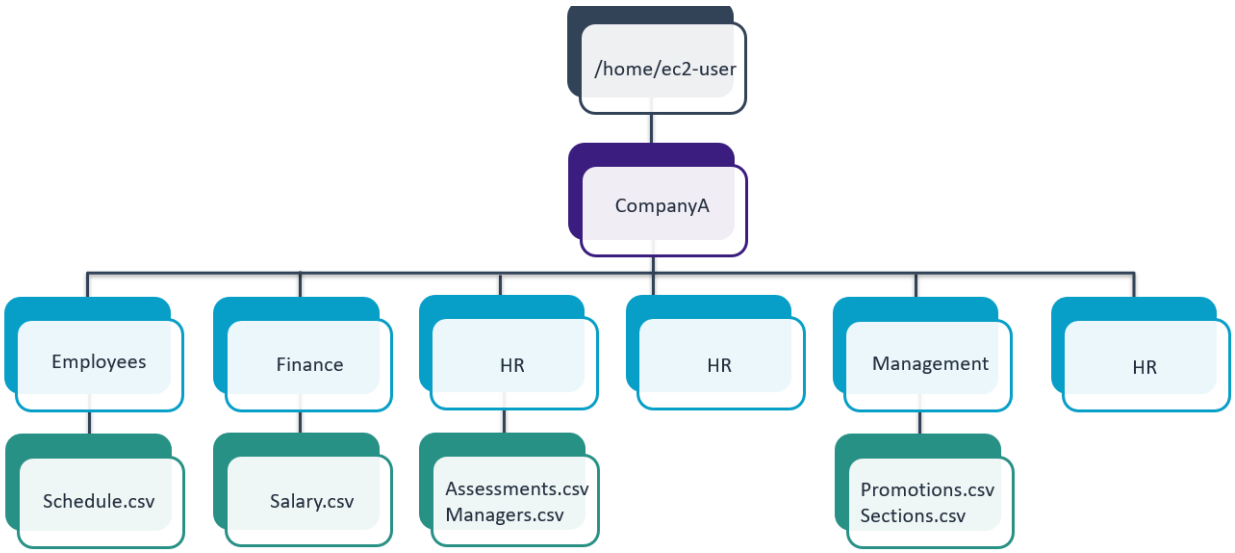


Figure: The image above shows the current folder structure with /home/ec2-user as the top with CompanyA directly below it. Within CompanyA, you have the following folders with corresponding files: Employees (Schedules.csv), Finance (Salary.csv), HR (Managers.csv and Assessments.csv), IA, Management (Promotions.csv and Sections.csv), and SharedFolders.

You use **tar** to create a backup.

24. To ensure that you are in the **/home/ec2-user/** folder, enter the following command into the terminal and press Enter.

```
pwd
```

Expected output:

```
[ec2-user@ip-10-0-10-103 ~]$ pwd
/home/ec2-user
```

25. To validate that the **CompanyA** folder exists, enter the following command into the terminal and press Enter.

```
ls -R CompanyA
```

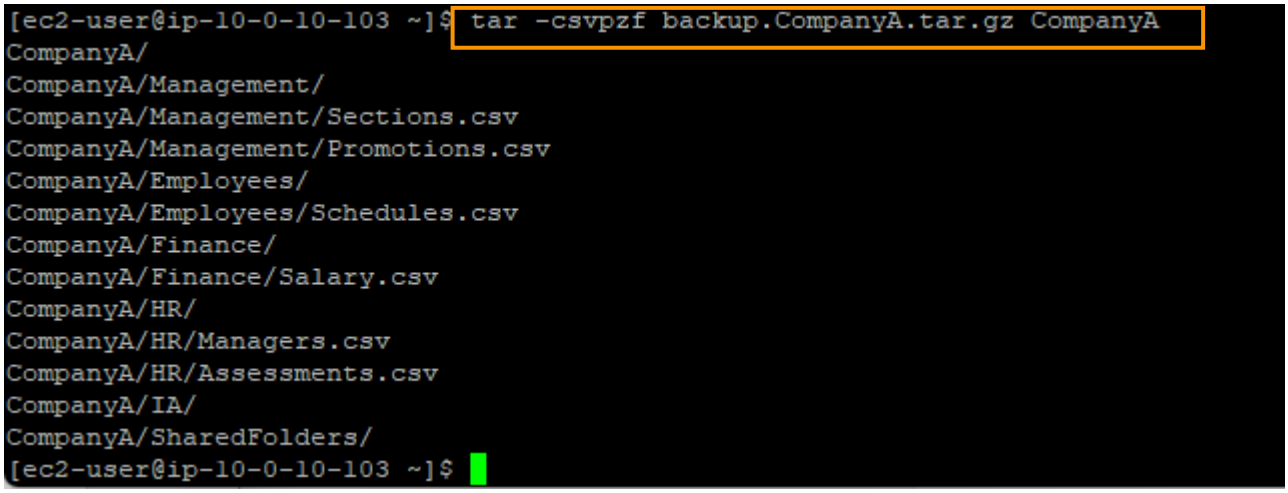
Expected output:

```
[ec2-user@ip-10-0-10-103 ~]$ ls -R CompanyA
CompanyA:
Employees  Finance  HR  IA  Management  SharedFolders

CompanyA/Employees:
Schedules.csv

CompanyA/Finance:
Salary.csv

CompanyA/HR:
Assessments.csv  Managers.csv

CompanyA/IA:

CompanyA/Management:
Promotions.csv  Sections.csv

CompanyA/SharedFolders:
[ec2-user@ip-10-0-10-103 ~]$
```

26. To back up the entire **CompanyA** folder structure recursively, enter the following command and press Enter.

```
tar -csvpzf backup.CompanyA.tar.gz CompanyA
```

Expected output:



27. To verify that the archive was created, enter the following command and press Enter.

```
ls
```

Expected output:

The **backup.CompanyA.tar.gz** folder contains all the folders and files in the **CompanyA** folder. You can copy it and unzip it to get the entire structure on another location or host.

Task 3: Log the backup

In this task, you create a file for logging the date, time, and file name of the backup **tar** file that you created. This file indicates when you created backups and could be useful to avoid creating unnecessary backups in the future.

28. To navigate to the **CompanyA** folder, enter the following command into the terminal and press Enter.

```
cd /home/ec2-user/CompanyA
```

Expected output:

```
[ec2-user@ip-10-0-10-103 ~]$ cd /home/ec2-user/CompanyA
[ec2-user@ip-10-0-10-103 CompanyA]$
```

29. To create an empty backup file named **backups.csv**, enter the following command and press Enter.

```
[ec2-user@ip-10-0-10-103 ~]$ cd /home/ec2-user/CompanyA
[ec2-user@ip-10-0-10-103 CompanyA]$ touch SharedFolders/backups.csv
[ec2-user@ip-10-0-10-103 CompanyA]$
```

30. To add the date, time, and file name to the **backups.csv** file, enter the following command and press Enter.

```
echo "25 Aug 25 2021, 16:59, backup.CompanyA.tar.gz" | sudo tee SharedFolders/backups.csv
```

Expected output:

```
[ec2-user@ip-10-0-10-103 CompanyA]$ echo "25 Aug 25 2021, 16:59, backup.CompanyA
.tar.gz" | sudo tee SharedFolders/backups.csv
25 Aug 25 2021, 16:59, backup.CompanyA.tar.gz
[ec2-user@ip-10-0-10-103 CompanyA]$
```

Note:

You may be unfamiliar with the **tee** command and | redirector, but you will learn about them later. You can use the **tee** command to write information both in the terminal and in a file. The | redirector redirects the output of the **echo** command to the second command, **tee**, which writes it to both the terminal and the **SharedFolders/backups** file.

31. To display the content of the file, enter the following command and press Enter.

```
cat SharedFolders/backups.csv
```

Expected output:

```
[ec2-user@ip-10-0-10-103 CompanyA]$ cat SharedFolders/backups.csv
25 Aug 25 2021, 16:59, backup.CompanyA.tar.gz
```

Task 4: Move the backup file

In this task, you transfer the backup file to the **IA** folder. In a real-life scenario, you could follow these step to make the file accessible to another user or team that does not have access to the folder where you created the backup file.

32. To validate that you are in the **CompanyA** folder in the terminal, enter the following command and press Enter.

```
pwd
```

Expected output:

```
[ec2-user@ip-10-0-10-103 CompanyA]$ pwd
/home/ec2-user/CompanyA
```

33. To transfer the backup file to the IA team computer, enter the following command and press Enter.

```
mv ../backup.CompanyA.tar.gz IA/
```

```
[ec2-user@ip-10-0-10-103 CompanyA]$ mv ../backup.CompanyA.tar.gz IA/
```

34. To verify that the backup file was moved, enter the following command and press Enter.

```
ls . IA
```

Expected output:

```
[ec2-user@ip-10-0-10-103 CompanyA]$ ls . IA
.:
Employees  Finance  HR  IA  Management  SharedFolders

IA:
backup.CompanyA.tar.gz
```

This command lists the content of both the current folder, **CompanyA**, and the **IA** folder. The **b** file is not in the current folder anymore and was moved to the **IA** folder.

Lab Complete

Congratulations! You have completed the lab.

35. Choose **End Lab** at the top of this page, and then select **Yes** to confirm that you want to end the lab.
36. A message *Ended AWS Lab Successfully* is briefly displayed, indicating that the lab has ended.

Commands Used:

On this lab we used several commands to perform different tasks. Here is a summary of the commands used:

Command	*Description*
pwd	Displays the current working directory, showing your current location in the file system.
ls -R	Lists files and directories in the current and all subdirectories, providing a comprehensive view of the directory structure.
tar	Create, manipulate, and extract tar archives. In the context of the lab, it's used to create a backup of files and directories.
ls	Lists files and directories in the current directory. Without arguments, it shows the content of the current directory only.
cd	Changes the current working directory to the specified path, allowing you to navigate to different locations in the file system.
touch	Creates an empty file with the specified name.
echo	Display text on the terminal
cat	Display the content of a file on the terminal.
mv	Move files or directories from one location to another.