# Working with Files

## Scenario

This week, Mrs. Y has informed you that you were assessed and are in the top three candidates for the new position. She says a majority of your final assessment will be done over the next three weeks of task performances. Mrs. Y’s tasks for this week are a bit lengthy and require some file management and network tool sets. The job is to back up the company folder structure and ensure that it gets sent to IA.

## Objectives

In this lab, you will:

* Create a backup file of the entire folder structure of the company using tar
* Log the creation of the backup in a file with date, time, and filename of the backup file
* Transfer the backup file to the IA team
* Turn this process into an automated hourly cron job

## Exercise 1: Create a Backup

Beginning this week, you find out that you are in the running for the promotion. Extra money is a huge motivator. First task: create a backup of the entire folder structure for the company.

Helpful Hint

You may have to use **sudo** to complete this exercise if you are not root.

### TODO

Using **tar**, create a backup file of the entire folder structure.

### Steps

1. Validate that the **companyA** folder exists by using the below command on the terminal and pressing ENTER.

ls /home/labsuser/companyA  
Expected Output:  
[labsuser@centos ~]$ ls /home/labsuser/companyA Employees FolderListing.csv HR Management Roster.csv SharedFolders

1. Ensure you are in the /home/labsuser/ folder by using the below command on the terminal and pressing

Pwd

Expected Output:  
[labsuser@centos ~]$ pwd /home/labsuser

1. Back up the entire companyA folder structure recursively by typing the below command and pressing ENTER.

tar -csvpzf backup.companyA.tar.gz companyA

Expected Output:  
[labsuser@centos ~]$ tar -csvpzf backup.companyA.tar.gz companyA  
companyA/  
companyA/Management/  
companyA/Employees/  
companyA/Roster.csv  
companyA/.CEO/  
companyA/.CEO/CompanyAudit.csv  
companyA/HR/  
companyA/HR/Management/  
companyA/HR/Management/Losses.csv  
companyA/HR/Management/Orders.csv  
companyA/HR/Management/Sections.csv  
companyA/HR/Management/Repairs.csv  
companyA/HR/Management/Profits.csv  
companyA/HR/Management/Managers.csv  
companyA/HR/Management/Schedule.csv  
companyA/HR/Employees/  
companyA/HR/Employees/YearlyAssessments.csv  
companyA/HR/Employees/MonthlyAssessments.csv  
companyA/HR/Employees/Layoffs.csv  
companyA/HR/NewHires/  
companyA/HR/NewHires/Assessments.csv  
companyA/HR/NewHires/TrialPeriod.csv  
companyA/HR/Finance/  
companyA/HR/Finance/Salary.csv  
companyA/HR/Finance/Hourly.csv  
companyA/HR/Finance/IncomeGeneration.csv  
companyA/HR/Finance/ProfitAndLossStatements.csv  
companyA/securecopy.txt  
companyA/Shipping/  
companyA/IA/  
companyA/IA/filteredAudit.csv  
companyA/Sales/  
companyA/SharedFolders/  
companyA/SharedFolders/processes.csv  
companyA/SharedFolders/logins.csv  
companyA/SharedFolders/CompanyAudit.csv  
companyA/SharedFolders/filteredAudit.csv  
companyA/FolderListing.csv  
[labsuser@centos ~]$ ls  
asnlib backup.companyA.tar.gz companyA work

## Exercise 2: Log the Backup

Time to step up your “A” game. You really want that promotion. Create a log file that has some basic information on when you created the backup and what the date/time was.

Helpful Hint

You may have to use **sudo** to complete this exercise if you are not root.

### TODO

Create a csv file for logging the date, time, and filename of the backup tar file you created.

### Additional Challenge

Add the date, time, filename to the next line in **backups.csv** without using the echo command.

### Steps

Validate that you are in the **companyA** folder by typing the below commands and pressing ENTER.

cd /home/labsuser/companyA

Pwd

Expected Output:  
[labsuser@centos ~]$ cd /home/labsuser/companyA [labsuser@centos companyA]$ pwd /home/labsuser/companyA

1. Type the below command and pressing ENTER to create an empty backup file.

touch SharedFolders/backups.csv

Expected Output:  
[labsuser@centos companyA]$ touch SharedFolders/backups.csv

1. View the backup file properties by typing the below command and pressing ENTER.

file ../backup.companyA.tar.gz

Expected Output:  
[labsuser@centos companyA]$ file ../backup.companyA.tar.gz ../backup.companyA.tar.gz: gzip compressed data, from Unix, last modified: Fri Apr 23 03:28:31 2021

1. View the file properties by typing the below command and pressing ENTER. Ensure that *labsuser* is the owner of the file.

ls -la ../backup.companyA.tar.gz

Expected Output:  
[labsuser@centos companyA]$ ls -la ../backup.companyA.tar.gz -rw-rw-r-- 1 labsuser labsuser 1698 Apr 23 01:51 ../backup.companyA.tar.gz

Note  
If your username is not the owner, type: **sudo chown labsuser:IA ../backup.companyA.tar.gz**

1. Add the date, time, filename to the backups.csv file by typing the below command and pressing ENTER.

echo "25 Aug 25 2019, 16:59, backup.companyA.tar.gz" | sudo tee SharedFolders/backups

Expected Output:  
[labsuser@centos companyA]$ echo "25 Aug 25 2019, 16:59, backup.companyA.tar.gz" | sudo tee SharedFolders/backups 25 Aug 25 2019, 16:59, backup.companyA.tar.gz

## Exercise 3: Transfer the Backup File

Almost there, and your set of tasks are looking good. Transfer the backup you have created to the IA machine.

Helpful Hint

You may have to use sudo to complete this exercise if you are not root.

### TODO

Transfer the backup to the IA team folder.

### Steps

1. Validate that you are in the **companyA** folder in the terminal by typing the below command and pressing ENTER.

Pwd

Expected Output:  
[labsuser@centos companyA]$ pwd /home/labsuser/companyA

Transfer the backup file to the IA team computer by typing the below command and pressing ENTER.

mkdir /home/labsuser/companyA/IA

cp ../backup.companyA.tar.gz /home/labsuser/companyA/IA/backup.companyA.tar.gz

Expected Output:  
[labsuser@centos companyA]$ mkdir /home/labsuser/companyA/IA [labsuser@centos companyA]$ cp ../backup.companyA.tar.gz /home/labsuser/companyA/IA/backup.companyA.tar.gz

## Exercise 4: Create a cron Job

To end the week, stop recreating the wheel and make this backup process a little more automated. Create a cron job for backing up the data securely. Use the previous exercises as a guide to creating the cron job.

Helpful Hint

You may have to use sudo to complete this exercise if you are not root.

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### TODO

Create a cron job to automate exercises 1, 2, and 3 of this lab.

### Steps

1. Validate that you are in the companyA folder in the terminal by typing the below command and pressing ENTER.

Pwd

Expected Output:  
[labsuser@centos companyA]$ pwd /home/labsuser/companyA

1. Create a cron job by typing the below command and pressing ENTER.  
   sudo crontab -e  
   Expected Output:  
   [labsuser@centos companyA]$ sudo crontab -e ~  
   ~  
   ~  
   ~  
   ~  
   "/tmp/crontab.qJREJG" 0L, 0C
2. In your default text editor, move to the last line of the crontab and type:

0 \* \* \* \* tar -csvpzf /home/labsuser/backup.companyA.tar.gz /home/labsuser/companyA && file /root/backup.companyA.tar.gz | awk -F " " '{print $10, $11, $13",", $12",", $1}'

Expected Output:  
[labsuser@centos companyA]$ sudo crontab -e no crontab for root - using an empty one crontab: installing new crontab

1. Once you have added the hourly backup to the crontab, use your editor save method and exit.
2. Validate your work by typing **sudo crontab -l** and comparing it with the following output.

sudo crontab -l

Expected Output:  
[labsuser@centos companyA]$ sudo crontab -l 0 tar -csvpzf /home/labsuser/backup.companyA.tar.gz /home/labsuser/companyA && file /root/backup.companyA.tar.gz | awk -F " " '{print $10, $11, $13",", $12",", $1}'

## Lab Complete

<https://aws.amazon.com/training/>