Using the Linux Lab Manual

Introduction

The best way to learn almost anything is to do it yourself. You can learn something by attending lectures, or reading books, or watching videos; but it's been proven that for most people will retain much more if they are able to apply a skill on their own. This is why I spent so much time and effort putting together the Lab Manual for you.

As you use the Lab Manual you'll notice that each chapter has different sections and types of exercises. You will be required to upload some of your Lab Manual answers in Canvas. This document explains the expectations for each section in the Lab Manual, what you should turn in for each exercise, the appropriate file type for your answers, how to upload your file in Canvas, and provides an example of what you need to turn in for the Lab Manual for the various exercise types.

Exercises vs. Review Questions

The first thing to note is that each chapter of the Lab Manual has different sections. There's an Introduction section which explains the learning objectives for the chapter, followed by an **Exercises** section which contains the exercises you are expected to complete and turn in. The last thing in each chapter is a set of **Review Questions**.

Exercises
You will need to complete and turn in everything in each Exercise section of the Lab Manual. Some exercises require you to "do something" while others require you to answer a question. For the exercises where you are performing some action(s), there will be clear instructions about what you need to turn in. This will either be a screenshot showing the results of you action(s), or questions where you are required to provide an answer.

Review Questions
The end of most chapters in the Lab Manual contains a set of Review Questions. You do **NOT** need to turn in the answers to the review questions. I suggest you at least look at these questions and make sure that you know the answers, but you do not have to turn them in. These questions were designed to provide you immediate feedback regarding your learning and comprehension of the material in the chapter. That is, if you can formulate answers for the questions, it's feedback that you understand the material. However, if you can't think of an answer, it's a sign that you may want to spend more time with the material in the chapter.

Submitting Your Lab Manual Answers
How to Turn In Your Answers
To receive credit for your Lab Manual answers you must upload them in the appropriate section in Canvas. In the past, before the advent of online learning, you had to turn in a physical copy of your Lab Manual So … there still may be some references in the class material to turning in your Lab Manual by bringing in a physical copy or emailing it to the instructor. Please ignore these and ensure that you upload your answers in the appropriate place in Canvas.

Uploading in Canvas

You must create a single file for each chapter of the Lab Manual. (The details of what you should put in this document are provided below.) This file must then be uploaded in Canvas. To upload the file with your answers, follow these steps:

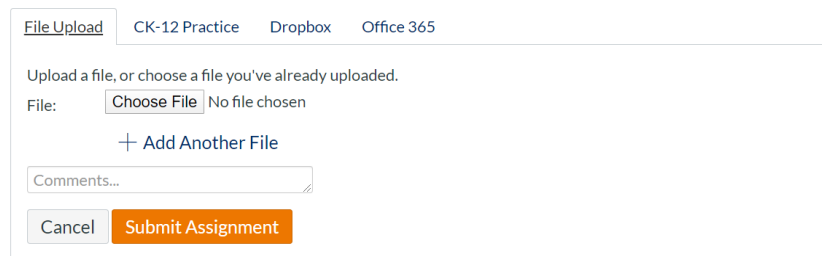1. Open the Assignment in Canvas. Select the **Submit Assignment** button or link.

> › Assignments › 1 Introduction to UNIX Labs
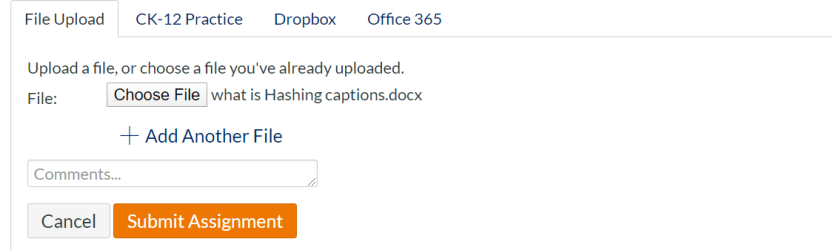>
> ---
>
> ## 1 Introduction to UNIX Labs
> [Submit Assignment]
>
> **Due** Saturday by 11:59pm   **Points** 0   **Submitting** a file upload
> **File Types** doc, docx, pdf, and odt   **Available** until Apr 25 at 11:59pm

2. The File Upload dialog box will be displayed. Select **Choose File** and navigate to find the file with your Lab Manual answers. Select this file and the click **Open**.

> File Upload   CK-12 Practice   Dropbox   Office 365
>
> Upload a file, or choose a file you've already uploaded.
> File: [Choose File] No file chosen
>   + Add Another File
> [Comments...]
> [Cancel] [Submit Assignment]

3. The name of the file you selected should appear next to the **Choose File** button. Ensure that this is the correct file and click the **Submit Assignment** button.

> File Upload   CK-12 Practice   Dropbox   Office 365
>
> Upload a file, or choose a file you've already uploaded.
> File: [Choose File] what is Hashing captions.docx
>   + Add Another File
> [Comments...]
> [Cancel] [Submit Assignment]

Acceptable File Formats

When you create the document with your answers it needs to be in a format that Canvas will display natively. I suggest you use Microsoft Word or Google Docs for your answers and save your file as a .doc or .docx for Word; or .odt or .pdf for Google Docs. If you use a different file format Canvas won't be able to display it. Just to be clear, to receive credit the file you upload must be in one of the following formats:

- .doc
- .docx
- .pdf
- .odt

If you try and submit a file of a different format you will receive a pretty clear error message saying:

> This file type is not allowed. Accepted file types are: doc, docx, pdf, and odt

What to Turn In

Once again, the main thing to remember is that you will need to turn in something for almost every Exercise, but you do NOT need to turn in answers to any of the Review Questions found at the end of each chapter.

For each exercise you must include:

A. The exercise number for each exercise. You don't need to provide the entire text, but you do need to provide the exercise number.

B. For the exercises that ask you to do perform some action there will be instructions to create screenshot(s) at some point in the exercise. I suggest you use the Windows Snipping tool to create screenshots as this will allow you to easily paste the screenshot into a document. Using a camera to create the screenshots is NOT acceptable. If you do this your work will not be graded. If you need help learning how to create and use screenshots there are hundreds of tutorials on the Internet.

C. For exercises that ask you a question or ask you to provide a command, enter the answer(s).
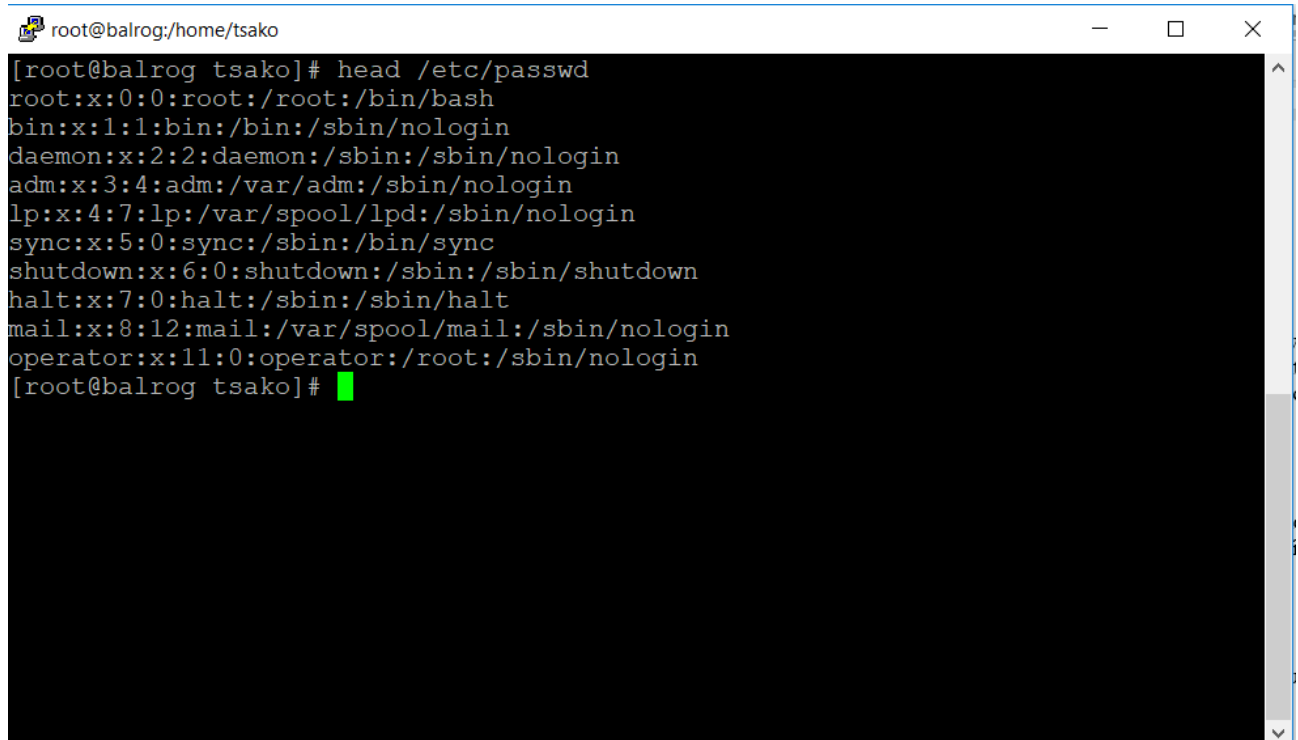
The following provides an example of what should be turned in for exercises 3.1 – 3.4. Note that the exercise numbers may not be exactly the same as in your version of the Lab Manual.

--------------------------- Example of what to turn in for exercises 3.1 – 3.4 --
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3.1

/etc	`ls /etc	more`
/usr/sbin	`ls /usr/sbin	more`
/dev	`ls /dev	more`
/usr/lib	`ls /usr/lib	more`

3.2

```
root@balrog:/home/tsako                                    —    □    ✕

[root@balrog tsako]# head /etc/passwd
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
[root@balrog tsako]# █
```

```
root@balrog:/home/tsako                                    —    □    ✕
[root@balrog tsako]# head /etc/passwd
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
[root@balrog tsako]# tail /etc/passwd
student41:x:1150:1150::/home/student41:/bin/tcsh
student42:x:1151:1151::/home/student42:/bin/tcsh
student43:x:1152:1152::/home/student43:/bin/tcsh
student44:x:1153:1153::/home/student44:/bin/tcsh
student45:x:1154:1154::/home/student45:/bin/tcsh
student46:x:1155:1155::/home/student46:/bin/tcsh
student47:x:1156:1156::/home/student47:/bin/tcsh
student48:x:1157:1157::/home/student48:/bin/tcsh
student49:x:1158:1158::/home/student49:/bin/tcsh
student50:x:1159:1159::/home/student50:/bin/tcsh
[root@balrog tsako]# █
```



```
root@balrog:/home/tsako                                    —    □    ✕
student50:x:1159:1159::/home/student50:/bin/tcsh
[root@balrog tsako]# head -20 /etc/passwd
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:99:99:Nobody:/:/sbin/nologin
avahi-autoipd:x:170:170:Avahi IPv4LL Stack:/var/lib/avahi-autoipd:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:999:998:User for polkitd:/:/sbin/nologin
tss:x:59:59:Account used by the trousers package to sandbox the tcsd daemon:/dev
/null:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
chrony:x:998:997::/var/lib/chrony:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
[root@balrog tsako]# █
```

3.3

1ˢᵗ 15 lines of /etc/Muttrc	head /etc/Muttrc
Last 5 lines of /etc/init.d/sshd	tail /etc/init.d/sshd
The /usr/lib/rpm/macros, one page at a time	more /usr/lib/rpm/macros

Last 20 lines of the file in current directory named junk	`tail junk`
A file in your bin directory named fix.sh, one page at a time	`more bin/fix.sh`
The contents of the /bin directory, one page at a time	`ls /bin	more`

3.4 Using FTP -
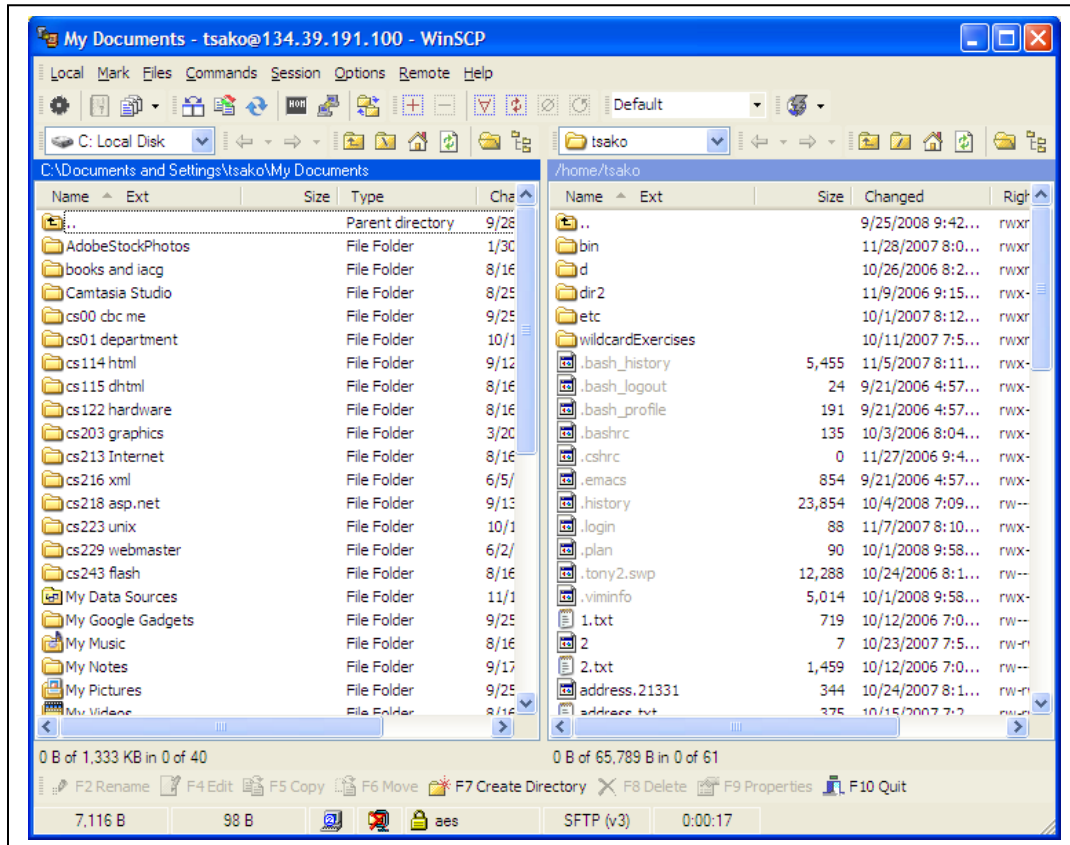
What Will Be Graded

To get credit for the hardcopy Lab Manual you will have to submit each section in Canvas so I can check your answers. I will not be grading every exercise from the Lab Manual, only one or two from each section. This is because there's way too much to check. And honestly, the purpose of the Lab Manual is to provide you practice and hands-on experience, which is where I feel most of your learning occurs. But I will be checking a few random problems from each section of the Lab Manual when you turn it in. To get credit for each section you must provide the answer(s) or required screenshot(s) for every question and have correctly completed the problems that are checked. You really want to do this work as it's a great tool for improving your learning experience.

After you submit your work in Canvas you'll be able to download a file that contains the answers. Since I don't check all of your answers, I strongly urge you to check your submission against the correct answers. And, since you get to see the answers after you submit your work you will NOT be able to resubmit your work, so make sure and do complete every exercise and ask the instructor if you have any questions before uploading your submission.

And here's a note for those of you who like to put off starting your homework until the last minute. There's a lot of work to do in most sections of the Lab Manual and it may take several hours to complete. If you find yourself running out of time keep in mind that it's better to finish all the work as opposed to turning in an incomplete assignment. If you don't provide answers for all the questions you won't get any points, but if you

complete everything and turn your work in up to 7 days late you can still receive 20 out of the 25 points, assuming you provide the correct answers on the graded questions.