



Documentation and Help

Initial conditions/prerequisites:

- To start this lab, you need a computer with the knoppix cd booted up on it.
- To do some exercises, you need to be connected to the internet.

Goals:

- To learn some of the basic ways to find help in Linux.
- To learn some basic commands by finding documentation on them

Lets say your new to linux and you want to know how to do something that you've always done in windows, like changing a password. Theres several ways in Linux to go from knowing what you want to do into finding the right command to do it. Each section has a number. When youve read it, go to the back and answer the questions on the workdheet.

Procedure	Explanation / Background
<p>1. man The man command is really useful. It searches thousands of manual pages for the word you type after typing man Once youve found the man page your looking for, you might need to search for a word in it. To do that, type / and the search term inside a man page, and every instance of that word will be highlighted. Then type n to go to the next instance of that word. If your satisfied, type q to leave the man page. If you want to save a man page in text form, type man command col -b command.mantxt</p>	<p>By default, man will bring up the page whose name matches what you entered. Other options include: it can show you all the pages that have that word, or you can restrict it to certain sections or paths. For more detailed information on the man command, simply type man man. At the top of a man page theres the list of options that go along with a command.</p>
<p>2. whatis The whatis command is usualy used to help you understand a command you've already found. It doesnt give as much information as a man page, but its usually more readable. It prints the results to the standard output and doesnt make you leave the command line. It searches the whatis database for one word only. To make a whatis database, from root type makewhatis.</p>	

Procedure	Explanation / Background
<p>3. apropos apropos is similar to the whatism command but it searches the whatism database for strings.</p>	<p>Sometimes there's too much printout from apropos or whatism to see it all on one screen. Since you can't scroll up and down without a graphical user interface, there are some tools that let you scroll through the output. Try typing apropos lib less Type q to leave less. Besides just apropos, any output can be "piped" (the is called pipe, and it's a way to direct the flow of output from one program to another) into less.</p>
<p>4. slocate The slocate command lets you search for specific filenames. Like whatism, you have to make an index of the files for slocate to look through. You do this by typing slocate -u. It then gives the path to the results.</p>	<p>slocate stands for secure locate. It won't display files you aren't authorized to see. You don't actually need to type the 's', just locate will execute a slocate command.</p>
<p>5. find This command searches the directory structure for filenames and starts by default in the directory you are already in. To search the whole directory, type find / , since the / directory is the highest directory. Make sure to separate the search expression and the path or paths you want to search through with a comma or the search will display every file in the system.</p>	
<p>6. which If you need to know where a command is in your system, you use the which command. It prints out the path to the command.</p>	<p>Try finding a command in your normal user then switch to root and try again.</p>

These were all commands, but sometimes finding help isn't as simple as just entering a command. In the next section, you'll go through some ways to find documentation that are either arguments to a command, or just

common files you'll see around. If all else fails, you'll look in the source code itself for instructions.

7. Help

If the man pages aren't detailed enough, the command itself might have more information you can access. Try typing the command then **-h**, or **help**

if you just want to know what the inputs to a command are, you can also try **-q** or **-?**

8. Readme

If youve just downloaded a program, its man pages haven't yet been linked to your **man** command, so man wont work. Neither will **whatis** for the same reason. Look in the directory of the program for a readme file. Usually the file is in all caps, like README. Other clues that its the readme? Its a regular text file and not an executable.

To see this in action, download the file hpl.tgz by typing the command

wget

<http://www.netlib.org/benchmark/hpl/hpl.tgz>

then unzip and untar it using the commands

gunzip hpl.tgz and **tar -xf hpl.tar**. Open the hpl

directory and look for documentation. Now go

back to the website this program came from

(<http://www.netlib.org/benchmark/hpl>) and look for the same information.

9. Code

If the program youve downloaded doesnt come in its own directory, like if youve just downloaded a source code for a program and don't know how to compile it, the only documentation available may be in the source code itself. Open the code in a text editor and look for comments from the programmer. Usually these will either appear as a different color from the rest of the text or will each start with **//**, **/***, or **#**.

Download the file

<http://www.netlib.org/benchmark/linpackd> with

the command **wget** and open it using a text editor.

10. websites

There are tons of places online to find Linux help.

Try going to

<http://www.linux.org/docs/>

They list some of the official sources for online Linux help. These are things like FAQ's, HowTos, and online reproductions of **man** pages just in case yours are made inaccessible.

For recent news got to Slashdot.org. They also have open dicussion boards where people discuss problems that they're having and any other issues that come to mind. A post on a discussion board is one of the best ways to find out about something that doesnt bring much up with a google search. Just don't feel hurt if you're made fun of for having such a stupid question, sometimes Linux nerds are merciless. Some good acronyms to know:

RTFM is Read The Fricken Manual,

FOOBAR is Fouled Up Beyond All Recognition

11. Review

Now that I've outlined some places to look for help, lets try some examples. Lets say your trying to figure out how to change your password. You might try a **man** or a **whatis** search on the word password.

Neither of those bring anything up. At least that tells you the command isn't password. Now type it into **apropos** which will search for the string password. This lists a bunch of commands that feature the word password in their **whatis** pages. Since each of these is a command you know exists, you can use **man** or **whatis** on each of them. In fact, many of these commands can be used to change your password. One of the amazing things about linux is the number of ways something can be done. Only time, experience and lots of **man** pages can show you which is the best way. Theres one more important way to get information from linux -- the auto-complete feature. Just type in the beginning of a command or filename, then press tab. Linux will either complete the command for you or tell you some of the options that it could put in (if theres more than one). For example, type **pass** then press tab.

Date: _____

- 1.a) Type `man vim`. What is `vim` especially useful for? _____
- b) An RPM is a type of compressed package that has to be installed. How do you install an RPM? Try typing `man rpm` to find out. What letter preceded by a dash (called a modifier or a flag) installs a package? _____
What modifier upgrades a package? _____
- c) To rename or move a file, you use the move command `mv`. My sys-admin Wale always forgets which goes first: the source file or the destination? Help him out with the answer. _____
- d) There's a way to tell your computer to shut down after a certain period of time. Can you find it within the `man` pages? _____
- 2.a) What's the purpose of the command `lsmod`? _____
- b) `tee`? _____
- c) `pwd`? _____
- 3.a) What happens when you use the `whatism` command to search for `mpi` (the protocol by which clusters communicate)? _____
- b) What about when you use the `apropos` command to search for `mpi`? Do you get more results? _____
- 4.a) What happens when you type `slocate slocate`? _____
- 5.a) Look in the `man` page for `find`. What option lets you set the number of directory levels down the search gets? _____
- 6.a) Where is `startx`, the command you use to start up the graphical user interface? _____
- b) Use `which` on a command as the user Knoppix, then switch to the root superuser by typing `su -` and use `which` to search for it again. What's different? _____
- 7.a) What do you get if you type `grep -??`? _____
- b) What do you get if you type `grep -h`? _____
- c) What do you get if you type `grep --help`? _____
- d) What could you do to see more of the last page? _____
- 8.a) From what URL did this same information as the README come from? _____
- 9.a) What year was this program last updated? _____
- 10.a) If I'm wondering about a common problem, where would be a good first place to look for the solution? _____
- b) If I'm trying to parallel process on a linux machine, find the URL for a how-to. _____