

RHSA (Admin 1) Red Hat Enterprise Linux 8 Essentials

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Lecture 3

جامعة الجميع الذكية

تسعى لتكون الكيان الأول الذي يتبنى مبدأ المجتمع التعليمي
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Getting help in Red Hat Enterprise Linux



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man command in Linux is used to display the user manual of any command that we can run on the terminal. It provides a detailed view of the command which includes NAME, SYNOPSIS, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUES, ERRORS, FILES, VERSIONS, EXAMPLES, AUTHORS and SEE ALSO.

Every manual is divided into the following sections:

- ❖ Executable programs or shell commands
- ❖ System calls (functions provided by the kernel)
- ❖ Library calls (functions within program libraries)
- ❖ Games
- ❖ Special files (usually found in /dev)
- ❖ File formats and conventions eg /etc/passwd
- ❖ Miscellaneous (including macro packages and conventions), e.g. groff(7)
- ❖ System administration commands (usually only for root)
- ❖ Kernel routines [Non standard]



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SYNOPSIS

```
man [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L locale] [-m
system[,...]] [-M path] [-S list] [-e extension] [-i|-I] [--regex|--wildcard]
[--names-only] [-a] [-u] [--no-subpages] [-P pager] [-r prompt] [-7] [-E encoding]
[--no-hyphenation] [--no-justification] [-p string] [-t] [-T[device]] [-H[browser]]
[-X[dpi]] [-Z] [[section] page ...] ...
man -k [apropos options] regexp ...
man -K [-w|-W] [-S list] [-i|-I] [--regex] [section] term ...
man -f [whatis options] page ...
man -l [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L locale] [-P pager]
[-r prompt] [-7] [-E encoding] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
file ...
man -w|-W [-C file] [-d] [-D] page ...
man -c [-C file] [-d] [-D] page ...
man [-?V]
```



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- ❑ **man** ls Display the manual page for the item (program) ls.
- ❑ **man -a** intro Display, in succession, all of the available intro manual pages contained within the manual. It is possible to quit between successive displays or skip any of them.
- ❖ **man -t** alias | lpr -Pps Format the manual page referenced by 'alias', usually a shell manual page, into the default **troff** or **groff** format and pipe it to the printer named ps. The default output for **groff** is usually PostScript. **man --help** should advise as to which processor is bound to the **-t** option.



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- ❑ **man -k printf** Search the short descriptions and manual page names for the keyword printf as regular expression. Print out any matches. Equivalent to **apropos -r printf**.
- ❑ **man -f smail** Lookup the manual pages referenced by smail and print out the short descriptions of any found. Equivalent to **whatis -r smail**.



NAVIGATE AND SEARCH man PAGES

The ability to efficiently search for topics and navigate man pages is a critical administration skill. The following table lists basic man navigation commands:

Navigating man pages

COMMAND	RESULT
Spacebar	Scroll forward (down) one screen
PageDown	Scroll forward (down) one screen
PageUp	Scroll backward (up) one screen
DownArrow	Scroll forward (down) one line
UpArrow	Scroll backward (up) one line
d	Scroll forward (down) one half-screen
u	Scroll backward (up) one half-screen
/ <i>string</i>	Search forward (down) for <i>string</i> in the man page
n	Repeat previous search forward (down) in the man page
N	Repeat previous search backward (up) in the man page
g	Go to start of the man page.
G	Go to end of the man page.
q	Exit man and return to the command shell prompt

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SEARCHING FOR MAN PAGES BY KEYWORD

A keyword search of man pages is performed using `man -k keyword`, which displays a list of keyword-matching man page topics with section numbers.

```
[student@desktopX ~]$man -k passwd
checkPasswdAccess (3) - query the SELinux policy database in the kernel.
chpasswd (8)          - update passwords in batch mode
ckpasswd (8)          - nnrpd password authenticator
fgetpwent_r (3)       - get passwd file entry reentrantly
getpwent_r (3)        - get passwd file entry reentrantly

...
passwd (1)            - update user's authentication tokens
sslpaswd (1ssl)       - compute password hashes
passwd (5)            - password file
passwd.nntp (5)       - Passwords for connecting to remote NNTP servers
passwd2des (3)        - RFS password encryption
...
```



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- ❑ **IMPORTANT** The **man command -K** option performs a full-text page search, not just titles and descriptions like the **-k**. A full-text search can use greater systems resources and take more time.
- ❑ **Finding relevant information by using man options and arguments** . Perform the following steps on server X unless directed otherwise:

- ▶ **1.** View the **gedit(1)** man page.

```
[student@serverX ~]$  
man 1 gedit
```

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2. Research how to edit a specific file using gedit from the command line.

gedit filename

3. Research the gedit option used to begin an editing session with the cursor at the end of the file.

gedit + filename

► 4. Research the **su(1)** man page.

```
[student@serverX ~]$  
man 1 su
```



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5. Research what su does when the username argument is omitted.

su assumes a username of root.

6. Research how su behaves when a single dash option is used.

su starts a child login shell (creating login environment by sourcing login scripts). Without the single dash, a non-login child shell is created, matching the user's current environment.

7. Consult the passwd(1) man page. Determine the options that will lock and unlock a user account when this command is used by root.

```
[student@serverX ~]$  
man 1 passwd
```

```
passwd -l username
```

```
passwd -u username
```



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- ▶ 8. Locate the two principles to remember according to the **passwd** man page authors. Search for the word “principle”.
 - Protect your password.
 - Choose a hard-to-guess password.
- ▶ 9. Consult the man page documenting the syntax of the **/etc/passwd** file. What is stored in the third field of each line?
The relevant man page is **passwd(5)**, found with **man -f passwd**.
The UID (numeric user ID) for each account.
- ▶ 10. Which command will list detailed information about a **zip** archive?
zipinfo(1) found with **man -k zip**
- ▶ 11. Which man page contains a list of parameters that can be passed to the kernel at boot time?
bootparam(7) found with **man -k boot**
- ▶ 12. Which command is used to tune **ext4** file system parameters?
tune2fs(8) found with **man -k ext4**

READING DOCUMENTATION USING PINFO

Some commands and utilities have both man pages and info documentation; usually, the info documentation will be more in-depth. Compare the differences in tar documentation using man and pinfo:

```
[student@desktopX ~]$man tar[student@desktopX ~]$pinfo tar
```

The pinfo info reader is more advanced than the original info command. Designed to match the lynx text web browser keystrokes, it also adds color. Info nodes for a particular topic are browsed with pinfo topic. Enter only pinfo for the info topics directory. New documentation nodes become available in pinfo when their corresponding software packages are installed.



READING DOCUMENTATION USING PINFO

pinfo and man, key binding comparison

NAVIGATION	PINFO	MAN
Scroll forward (down) one screen	PageDown or Space	PageDown or Space
Scroll backward (up) one screen	PageUp or b	PageUp or b
Display the directory of topics	d	-
Scroll forward (down) one half-screen	-	d
Display the parent node of a topic	u	-
Display the top (up) of a topic	HOME	1G
Scroll backward (up) one half-screen	-	u
Scroll forward (down) to next hyperlink	DownArrow	-
Open topic at cursor location	Enter	-
Scroll forward (down) one line	-	DownArrow or Enter
Scroll backward (up) to previous hyperlink	UpArrow	-
Scroll backward (up) one line	-	UpArrow
Search for a pattern	/ string	/ string



READING DOCUMENTATION USING PINFO

Display next node (chapter) in topic	n	-
Repeat previous search forward (down)	/ then Enter	n
Display previous node (chapter) in topic	p	-
Repeat previous search backward (up)	-	N
Quit the program	q	q



USING THE PINFO COMMAND

Perform the following steps on serverX unless directed otherwise.

- ▶ 1. Invoke **pinfo** without arguments.

```
[student@serverX ~]$  
pinfo
```

- ▶ 2. Navigate to the **Common options** topic.
Use **UpArrow** or **DownArrow** until **(coreutils) Common options** is highlighted. Press **Enter** to view this topic.
- ▶ 3. Browse through this **info** topic. Learn if long-style options can be abbreviated.
Use **PageUp** and **PageDown** to navigate through the topic. Yes, many programs allow long options to be abbreviated.
- ▶ 4. Determine what the symbols **--** signify when used as a command argument.
The symbols **--** signify the end of command *options* and the start of command *arguments* in complex commands where the shell's command-line parser might not correctly make the distinction.
- ▶ 5. Without exiting **pinfo**, move up to the **GNU Coreutils** node.
Press **u** to move up to the top node of the topic.
- ▶ 6. Move up again, to the top topic.
Press **u** again. Observe that when positioned at the top of a topic node, moving up returns



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- ▶ 7. Search for the pattern **nano** and select that topic.
Press **/** followed by the search pattern "nano". With the topic highlighted, press **Enter**.
- ▶ 8. In the **Introduction**, locate and select **Command Line Options**. Browse the topic.
Press **Enter** to select **Introduction**, then **DownArrow** and **Enter** to select **Command Line Options**. Use the arrow keys to browse the topic.
- ▶ 9. Move up one level to return to **Introduction**. Move to the next topic.
Press **u** to move up one level. The new location will be **nano's** topic **1 Introduction**. Now press **n**. You will have moved to **nano's** topic **2 Editor Basics**.
- ▶ 10. Exit **pinfo**.
Press **q** to quit **pinfo**.
- ▶ 11. Invoke **pinfo** again, specifying **nano** as the destination topic from the command line.

```
[student@serverX ~]$  
pinfo nano
```

- ▶ 12. Select the **Editor Basics** topic.
Press **DownArrow** to highlight **Editor Basics**, then press **Enter** to select this topic.
- ▶ 13. Read the **Entering Text** and **Special Functions** subtopics.
Use arrow keys to highlight a topic, **PageUp** and **PageDown** to browse the text, then press **u** to move up one level. Press **q** to quit **pinfo** when you are finished.



VIEWING AND PRINTING HELP DOCUMENTATION

Perform the following steps on serverX unless directed otherwise.

1. Research **man**(1) to determine how to prepare a man page for printing. What format or rendering language is commonly used?

```
[student@serverX ~]$ man man
```

man uses **-t** to prepare a man page for printing, using PostScript.

2. Create a formatted output file of the **passwd** man page. Determine the file content format.

```
[student@serverX ~]$ man -t passwd > passwd.ps [student@serverX ~]$ file  
passwd.ps [student@serverX ~]$ less passwd.ps
```

The file is in PostScript format, learned using the **file** command and confirmed by viewing the file contents. Notice the header lines of PostScript information.

3. Research using **man** to learn the command(s) used for viewing or printing PostScript files after updating the manual page index cache.

```
[student@serverX ~]$ su -  
Password: redhat  
[root@serverX ~]# mandb  
[root@serverX ~]# exit  
[student@serverX ~]$ man -k postscript viewer
```



VIEWING AND PRINTING HELP DOCUMENTATION

Using multiple words with the **-k** option finds man pages matching *either* word; those with "postscript" or "viewer" in their descriptions. Notice the **evince(1)** and **ghostscript(1)** (or **gs(1)**) commands in the output.

4. Research **evince(1)** using **man** to learn how to use the viewer in preview mode. Also, determine how to open a document starting on a specific page.



VIEWING AND PRINTING HELP DOCUMENTATION

```
[student@serverX ~]$ man evince
```

The **-w** (or **--preview**) option opens **evince** in preview mode. The **-i** option is used to specify a starting page.

5. View your PostScript file using the various **evince** options you researched. Close your document file when you are finished.

```
[student@serverX ~]$ evince passwd.ps [student@serverX ~]$ evince -w  
passwd.ps [student@serverX ~]$ evince -i 3 passwd.ps
```

While normal **evince** mode allows full-screen and presentation-style viewing, the **evince** preview mode is useful for quick browsing and printing. Notice the print icon at the top.

6. Using **man**, research **lp(1)** to determine how to print any document starting on a specific page. Without actually entering any commands (since there are no printers), what would be the syntax, on one command line, to print only pages 2 and 3 of your PostScript file?

```
[student@serverX ~]$  
man lp
```

One answer is **lp passwd.ps -P 2-3**.

From **lp(1)**, learn that the **-P** option specifies pages. The **lp** command spools to the *default* printer, sending only the page range starting on 2 and ending on 3.



VIEWING AND PRINTING HELP DOCUMENTATION

7. Using **pinfo**, look for GNU info about the **evince** viewer.

```
[student@serverX ~]$ pinfo evince
```

Notice that the **evince(1)** man page displays instead. The **pinfo** document viewer looks for the relevant man page when no appropriate GNU documentation node exists for the requested topic. Press **q** to close **pinfo**.

8. As an opportunity to observe the abundance of GNU fundamental utilities, use **pinfo** to locate and browse all document nodes for the *coreutils* commands and programs.

```
[student@serverX ~]$ pinfo
```

From the directory node, press **DownArrow** until the link is selected for **Coreutils: Core GNU (file, text, shell) utilities**. Press **Enter** to follow the link to **GNU Coreutils**. Notice the long menu listing, with **Introduction** currently selected. Press **Enter**. At the top of the screen, pay attention to the header, which displays the previous, current, and next nodes. Browse the information, press **n** for the next node, and repeat. Browse each screen, simply noticing the commands and their descriptions. Continue until node **29 Opening the Software Toolbox** is reached. Read this chapter in its entirety.



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9. Using **firefox**, open the system's package documentation directory and browse into the **man-db** package subdirectory. View the provided manual(s).

```
[student@serverX ~]$ firefox /usr/share/doc
```

Remember that bookmarks can be made for any directories that are frequently used. After browsing to the **man-db** directory, click to open and view the text version of the manual, then close it. Click to open the PostScript version. As observed earlier, **evince** is the system's default viewer for PostScript and PDF documents. You may wish to return to these documents later to become more knowledgeable about **man**. When finished, close the **evince** viewer.

10. Using the open **Firefox** browser, locate and browse into the **initscripts** package subdirectory. View the **sysconfig.txt** file, which describes important system configuration options stored in the **/etc/sysconfig** directory.

Notice how useful a browser is for locating and viewing local system documentation. Close the document when finished, but leave Firefox open.



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Support cases can also be viewed, modified, and closed by you as the subscriber:

```
Command (? for help): listcases
```

```
Type the number of the case to view or 'e' to return to the previous menu.
```

```
1 [Waiting on Red Hat] System fails to run without power
```

```
No more cases to display
```

```
Select a Case: 1
```

```
Type the number of the section to view or 'e' to return to the previous menu.
```

```
1 Case Details
```

```
2 Modify Case
```

```
3 Description
```

```
4 Recommendations
```

```
5 Get Attachment
```

```
6 Add Attachment
```

```
7 Add Comment
```

```
End of options.
```

```
Option: q
```

```
Select a Case: q
```

```
Command (? for help):q
```

```
[student@desktopX ~]$ redhat-support-tool modifycase --status=Closed 01034421
```

```
Successfully updated case 01034421
```

```
[student@desktopX ~]$
```



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- ❑ The Red Hat Support Tool has advanced application diagnostic and analytic capabilities. Using kernel crash dump core files, `redhat-support-tool` can create and extract a backtrace, a report of the active stack frames at the point of a crash dump, to provide onsite diagnostics and open a support case.
- ❑ The tool also provides log file analysis. Using the tool's `analyze` command, log files of many types, including operating system, JBoss, Python, Tomcat, oVirt, and others, can be parsed to recognize problem symptoms, which can then be viewed and diagnosed individually. Providing preprocessed analysis, as opposed to raw data such as crash dump or log files, allows support cases to be opened and made available to engineers more quickly.





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