

1.108.1 Use and manage local system documentation Weight 4

Linux Professional Institute Certification — 102

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2005 July

Outline

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1 Context

Topic 108 Documentation [8]

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1.108.2 Find Linux documentation on the Internet [3]

1.108.5 Notify users on system-related issues [1]

2 Objective

Use and Manage Local System Documentation

Candidates should be able to use and administer the `man` facility and the material in `/usr/share/doc/`.

This objective includes finding relevant `man` pages, searching `man` page sections, finding commands and `man` pages related to them, and configuring access to `man` sources and the `man` system.

It also includes using system documentation stored in `/usr/share/doc/` and determining what documentation to keep in `/usr/share/doc/`.

Use and Manage Local System Documentation

MANPATH — an environment variable that specifies a search path for `man` pages

man — the program that accesses `man` pages

apropos — searches descriptions of `man` pages, returning all matches; same as `man -k`

what is — returns descriptions of matching `man` page; same as `man -f`

3 what is and apropos

3.1 what is

Using what is

- `what is` searches the manual page names and displays the manual page descriptions of any name matched.

- `$ whatis nmap` ↵
nmap (1) - Network exploration tool
and security scanner
- (in Debian and Ubuntu but not Red Hat/Fedora)
 - r, --regex Interpret each name as
a regular expression.
- `$ whatis -r ^ifc` ↵
ifconfig (8) - configure a network interface
- Is equivalent to
`$ man -f` ↵
- This may have been asked in previous exams
- Nick's silly mnemonic: What the `-f`... is...

3.2 apropos

Using apropos

Each manual page has a short description available within it. `apropos` searches the descriptions for instances of keyword.

```
$ apropos nmap ↵
mmap (2)          - map or unmap files or devices into memory
munmap (2)       - map or unmap files or devices into memory
nmap (1)         - Network exploration tool and security scanner
Tk_MapWindow (3tk) - map or unmap a window
...
```

- Is equivalent to
`$ man -k` ↵
- This may have been asked in previous exams
- Nick's silly mnemonic: `apropos -kan` produce many lines of output

3.3 Building whatis/appropos database

Database for whatis and apropos

- Both `textttwhatis` and `apropos` use a common simple text file database
- Built by a nightly cron job script in `/etc/cron.daily`
- Red Hat/Fedora runs a shell script `/usr/sbin/makewhatis`
- Ubuntu runs a program `/usr/bin/mandb`

4 man

Using man

```
$ man man ↵
man(1)
```

```
NAME
man - format and display the on-line manual pages
manpath - determine user's search path for man pages
```

```
SYNOPSIS
man [-acdfhKktwW] [--path] [-m system] [-p string]
[-C config_file] [-M pathlist] [-P pager] [-S section_list]
[section] name ...
```

```
DESCRIPTION
man formats and displays the on-line manual pages.
```

4.1 man options

Using man

- k Equivalent to `apropos`
- f Equivalent to `whatis`
- K Search for the specified string in *all* man pages. Warning: this is probably very slow! It helps to specify a section. (Just to give a rough idea, on my machine this takes about a minute per 500 man pages.)
- a Show all matching man pages from all sections; for example, `man -a passwd` shows the man pages both for `passwd(1)` and `passwd(5)`.

4.2 man — configuring

Configuring how man finds manpages

- The configuration file for man is:
 - Red Hat/Fedora systems: `/etc/man.config`
 - Ubuntu: `/etc/manpath.config`
- can override the search paths specified in the configuration files using the `MANPATH` environment variable

– MANPATH is a colon-separated list of directories to search

- You can see the existing search path with `$ man --path ↵` or:

```
$ manpath ↵
/usr/local/man:/usr/local/share/man:/usr/share/man:/usr/X11R6/man
```

4.3 man section numbers

The Manual Section Numbers

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

Navigating in man (really less)

The man program actually calls many other programs, displaying the result, by default, with the less program:

```
$ man -d man 2>&1 | tail -n 1 ↵ (cd /usr/share/man/en && (echo
".pl 11i"; /usr/bin/gunzip -c '/usr/share/man/en/man1/man.1.gz')
| /usr/bin/gtbl | /usr/bin/nroff -c -legacy ISO-8859-1 -mandoc
2>/dev/null | /usr/bin/less -is)
```

h Show detailed help on using the less program

q Quit

g Go to beginning of man page

G Go to end of man page

/string Search for string.

n repeat previous search forwards

?string Search for string backwards

N repeat previous search backwards

ESC-u Undo (toggle) search highlighting.

5 GNU info

GNU info

```
File: info.info, Node: Top, Next: Getting Started, Up: (dir)
```

```
Info: An Introduction
*****
```

The GNU Project distributes most of its on-line manuals in the "Info format", which you read using an "Info reader". You are probably using an Info reader to read this now.

There are two primary Info readers: 'info', a stand-alone program designed just to read Info files, and the 'info' package in GNU Emacs, a general-purpose editor. At present, only the Emacs reader supports using a mouse.

If you are new to the Info reader and want to learn how to use it, type the command 'h' now. It brings you to a programmed instruction sequence.

To read about expert-level Info commands, type 'n' twice. This brings you to 'Info for Experts', skipping over the 'Getting Started' chapter.

* Menu:

```
* Getting Started::      Getting started using an Info reader.
* Expert Info::         Info commands for experts.
* Creating an Info File:: How to make your own Info file.
* Index::               An index of topics, commands, and variables.
-zz-Info: (info.info.gz)Top, 29 lines -Top-----
Welcome to Info version 4.8. Type ? for help, m for menu item.
```

5.1 Navigation in info

GNU info Navigation

Tab Move among hyperlinks

Enter Follow hyperlinks

d Return to the top

? List these info commands

n Move to the "next" node of this node.

p Move to the "previous" node of this node.

u Move "up" from this node.

q Quit Info altogether.

h Show a primer for first time users.

/string Search for string.

6 /usr/share/doc

/usr/share/doc/

General information about packages and programs.

\$ **ls /usr/share/doc/** ↵

```
a2ps-4.13b          macutils-2.0b3
a52dec-0.7.4       Maelstrom-3.0.6
aalib-1.4.0        MagicPoint-1.11b
abiword-2.4.1     mailman-2.1.5
abook-0.5.4       make-3.80
ac-archive-0.5.39 MAKEDEV-3.19
acl-2.2.23        man-pages-1.67
adjtimex-1.20     man-pages-cs-0.16
aiksaurus-1.2.1  man-pages-da-0.1.1
alchemist-1.0.36  man-pages-de-0.4
alchemist-devel-1.0.36 man-pages-es-1.28
alsa-lib-1.0.9rf  man-pages-fr-0.9.7
```

/usr/share/doc/

\$ **ls /usr/share/doc/acl-2.2.23** ↵

```
CHANGES.gz  LICENSE  PORTING  README
```

/usr/share/doc/

\$ **head /usr/share/doc/acl-2.2.23/README** ↵

```
Access control list package README
```

See the file doc/INSTALL for build, installation and post-install configuration steps.

Refer to the acl(5) manual page for general access control list information and references to other related manual pages.

The extended attributes and access control list project for the ext2 and ext3 filesystems is located at:

<http://acl.bestbits.at/>

For more information and details on how to contribute to the XFS project see the web pages at:

<http://oss.sgi.com/projects/xfst/>

/usr/share/doc/

\$ **firefox /usr/share/doc/xfig/html/index.html** ↵

... or open this file URL:

<file:///usr/share/doc/xfig/html/index.html>

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