1.108.1
Use and manage local system documentation
Weight 4

Linux Professional Institute Certification — 102

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Outline

Topic 108 Documentation [8]
Where we are up to

1.108.1
Use and manage local
system documentation
Weight 4

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Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

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1.108.1 **Use and manage local system documentation [4]**

1.108.2 Find Linux documentation on the Internet [3]

1.108.5 Notify users on system-related issues [1]

Use and Manage Local System Documentation
Objective

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/`.

1.108.1
Use and manage local system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

License Of This Document

Use and Manage Local System Documentation
Key files, terms, and utilities

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

whatis — returns descriptions of matching man page; same as man -f

Using whatis
display manual page descriptions

- ▶ whatis 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...

Using `apropos`
search the manual page names and descriptions

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 **-k**an produce many lines
  of output

Database for `whatis` and `appropos`

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and appropos
whatis
appropos
Building
whatis/appropos
database

man

GNU info

/usr/share/doc

License Of This
Document

- Both texttttwhatis and `appropos` 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`

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 [-acdfFhKtwW]  [--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.
```

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man
man **options**
man — configuring
man section numbers

GNU info

/usr/share/doc

License Of This
Document

- **−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)`.

Configuring how man finds manpages

- The configuration file for man is:
  - Red Hat/Fedora sytems: /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
  ```

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.

1.108.1
Use and manage local system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man
man options
man — configuring
man section numbers

GNU info

/usr/share/doc

License Of This Document

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.
```

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.

/usr/share/doc/

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

License Of This
Document

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/

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

License Of This
Document

```
$ ls /usr/share/doc/acl-2.2.23 ↩
CHANGES.gz  LICENSE  PORTING  README
```

/usr/share/doc/

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

License Of This
Document

```
$ 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/xfs/
```

/usr/share/doc/

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

whatis and apropos

man

GNU info

/usr/share/doc

License Of This
Document

$ **firefox /usr/share/doc/xfig/html/index.html** ↩

. . . or open this file URL:

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

Topics Covered

Context

Objective

whatis and apropos
   whatis
   apropos
   Building whatis/appropos database

man
   man options
   man — configuring
   man section numbers

GNU info
   Navigation in info

/usr/share/doc

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