

1.108.1

Use and manage local system documentation

Weight 4

Linux Professional Institute Certification — 102

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2005 July

Outline

Context

Objective

what is and apropos

what is

apropos

Building

what is/apropos

database

man

man options

man — configuring

man section numbers

GNU info

Navigation in info

/usr/share/doc

License Of This Document

Topic 108 Documentation [8]

Where we are up to

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos
man

GNU info

/usr/share/doc

License Of This
Document

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

what is and apropos

man

GNU info

/usr/share/doc

License Of This Document

Use and Manage Local System

Documentation

Key files, terms, and utilities

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

GNU info

/usr/share/doc

License Of This
Document

`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`

Outline

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building `what is/apropos`
database

`man`

`man options`

`man — configuring`

`man section numbers`

GNU info

Navigation in info

`/usr/share/doc`

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building

`what is/apropos`
database

`man`

GNU info

`/usr/share/doc`

License Of This
Document

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...

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Outline

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building `what is/apropos`
database

`man`

`man options`

`man — configuring`

`man section numbers`

GNU info

Navigation in info

`/usr/share/doc`

License Of This Document

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building

`what is/apropos`
database

`man`

GNU info

`/usr/share/doc`

License Of This
Document

Using apropos

search the manual page names and descriptions

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

what is

apropos

Building

what is/apropos

database

man

GNU info

/usr/share/doc

License Of This
Document

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

Using apropos

search the manual page names and descriptions

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

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Context

Objective

what is and apropos

what is

apropos

Building

what is/apropos

database

man

GNU info

/usr/share/doc

License Of This
Document

Using apropos

search the manual page names and descriptions

1.108.1
Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

what is

apropos

Building

what is/apropos

database

man

GNU info

/usr/share/doc

License Of This
Document

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Outline

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building `what is/apropos`
database

`man`

`man options`

`man — configuring`

`man section numbers`

GNU info

Navigation in info

`/usr/share/doc`

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building
`what is/apropos`
database

`man`

GNU info

`/usr/share/doc`

License Of This
Document

Database for `what is` and `apropos`

- ▶ Both `textttwhat is` 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/makewhat is`
- ▶ Ubuntu runs a program `/usr/bin/mandb`

1.108.1

Use and manage local system documentation
Weight 4

Geoffrey Robertson

Context

Objective

`what is` and `apropos`

`what is`

`apropos`

Building
`what is/apropos`
database

`man`

GNU info

`/usr/share/doc`

License Of This Document

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 [-acdfFhkKtwW] [--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

what is and apropos

man

man(1)

man — configuring

man section numbers

GNU info

/usr/share/doc

License Of This
Document

Outline

Context

Objective

what is and apropos

what is

apropos

Building whatis/apropos
database

man

man **options**

man — configuring

man section numbers

GNU info

Navigation in info

/usr/share/doc

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is 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 `what is`
- 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)`.

Outline

Context

Objective

what is and apropos

what is

apropos

Building whatis/apropos
database

man

man options

man — configuring

man section numbers

GNU info

Navigation in info

/usr/share/doc

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

man options

man — configuring

man section numbers

GNU info

/usr/share/doc

License Of This
Document

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`

Outline

Context

Objective

what is and apropos

what is

apropos

Building whatis/apropos
database

man

man options

man — configuring

man **section numbers**

GNU info

Navigation in info

/usr/share/doc

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

man options

man — configuring

man **section numbers**

GNU info

/usr/share/doc

License Of This
Document

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.

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, 

Context

Objective

what is and apropos
man

GNU info

Navigation in info

/usr/share/doc

License Of This
Document

Outline

Context

Objective

what is and apropos

what is

apropos

Building whatis/apropos
database

man

man options

man — configuring

man section numbers

GNU info

Navigation in info

/usr/share/doc

License Of This Document

1.108.1

Use and manage local
system documentation

Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

GNU info

Navigation in info

/usr/share/doc

License Of This
Document

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.

General information about packages and programs.

```
$ ls /usr/share/doc/ ↵
```

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

/usr/share/doc/

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

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is 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/`

`$ firefox /usr/share/doc/xfig/html/index.html` ↔

... or open this file URL:

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

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

GNU info

/usr/share/doc

License Of This
Document

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man options`

`man — configuring`

`man section numbers`

`GNU info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` options

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` options

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` options

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` options

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` options

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

what is **and** apropos

what is

apropos

Building what is/apropos database

man

man options

man — configuring

man section numbers

GNU info

Navigation in info

/usr/share/doc

License Of This Document

1.108.1

Use and manage local
system documentation
Weight 4

Geoffrey Robertson

Context

Objective

what is and apropos

man

GNU info

/usr/share/doc

License Of This
Document

Topics Covered

Context

Objective

`what is` **and** `apropos`

`what is`

`apropos`

Building `what is/apropos` database

`man`

`man` **options**

`man` — configuring

`man` section numbers

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

1.108.1

Use and manage local
system documentation

Weight 4

Geoffrey Robertson

Context

Objective

`what is` and `apropos`

`man`

GNU `info`

`/usr/share/doc`

License Of This
Document

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

License Of This Document

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

Topics Covered

Context

Objective

`whatis` and `apropos`

`whatis`

`apropos`

Building `whatis/apropos` database

`man`

`man` **options**

`man` — **configuring**

`man` **section numbers**

GNU `info`

Navigation in `info`

`/usr/share/doc`

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Weight 4

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Context

Objective

`whatis` and `apropos`

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