

Use and Manage Local Documentation

Information

These notes were originally written in the year 2000 as part of a set of LPI Exam 101 training materials. The LPI training course at Bromley College was subsequently discontinued and some of the sections of the notes modified and incorporated into our one-day System Administration Courses. The remainder of the notes have now been made publicly available on the linuxtraining.org.uk website.

If you are a beginner please do not be put off of training courses by these notes, as they are rather technical. On the other hand if you are a more experienced Linux user we hope you find the coverage of this topic refreshingly clear.

For full details of our current Linux training please visit the site:

<http://ce.bromley.ac.uk/linux>

If you have reached this page from a search engine and wish to see the full contents list for the published notes please visit the site:

<http://www.linuxtraining.org.uk>

We hope you find these notes useful, but please remember that they apply to the 2.2 kernel. I will update them when I have the time.

Clive Gould - 21st December 2004

Use and Manage Local Documentation

Objective 1

Use and Manage Local System Documentation: Use and administer the man facility and the material in /usr/doc/. Includes finding relevant man pages, searching man page sections, finding commands and man pages related to one, configuring access to man sources and the man system, using system documentation stored in /usr/doc/ and related places, determining what documentation to keep in /usr/doc/.

Finding Information

A large amount of documentation is provided with Linux. However, this documentation can be fragmented and duplicated.

The main local sources of documentation are:

- The online manual pages - man
- The information pages - info
- Application documentation
- HOWTOs and mini HOWTOs
- Frequently Asked Questions - FAQ's

Format and Display the On-line Manual Pages - man

The man pages are the first place the experienced user looks for information, but may seem a bit daunting to the beginner. There is a man page for every command and important system configuration file. Man pages are installed in nroff (a text formatting program - new run off a copy) source form, in appropriate directories under **/usr**. The exact directory location will depend on your distribution.

By default the man command searches for the relevant man page and then uncompresses and formats each page for display.

The syntax for the man command is shown below:

```
man option section topic
```

Use and Manage Local Documentation

Some useful man options are:

<i>Option</i>	<i>Explanation</i>
-a	By default, man will exit after displaying the first manual page it finds. Using this option forces man to display all the manual pages that match the topic, not just the first.
-C	Specify a different man configuration file to use. The default is /etc/man.config.
-f	Equivalent to using the whatis command. Searches the whatis database of man page headers and displays a brief summary of each topic. The whatis database can be updated by running the makewhatis command.
-k	Equivalent to using the apropos command. Searches the whatis database of brief topic summaries, (rather than just the man page headers), for matching strings and displays a brief summary of each topic.
-K	Searches for the specified topic in all man pages and displays the names of man pages which contain the topic with an option to view each in turn. Slow

The man pages are organised into subdirectories below /usr/man as shown in the table below:

<i>Directory</i>	<i>Section</i>	<i>Explanation</i>
/usr/man/man1	1	User commands
/usr/man/man2	2	System calls
/usr/man/man3	3	Functions and library routines
/usr/man/man4	4	Special files, device drivers and hardware
/usr/man/man5	5	Configuration files and file formats
/usr/man/man6	6	Games and demos
/usr/man/man7	7	Miscellaneous : character sets, filesystem types, etc.
/usr/man/man8	8	System administration and maintenance commands
/usr/man/man9	9	Documentation on Linux kernel source routines

The man command searches the sections in a predefined order:

1,8,2,3,4,5,6,7,9.

Assuming the less pager is being used you can use the following keys when you are viewing a man page:

Use and Manage Local Documentation

Key	Explanation
[Page-Up] or ↑	Scrolls upwards
[Page-Down] or ↓	Scrolls downwards
[q]	Quits man and returns you to the shell prompt
/STRING	Used to search a man page. Once you press the enter key the cursor will advance to the first match for <i>STRING</i> on the page. Pressing the n key advances you to the next match.

Examples of using the man command are illustrated below:

```
[clive@redhat clive]$ man -f samba
Samba (7) - A Windows SMB/CIFS fileserver for UNIX
```

In the above example just the man page name, samba, has been matched and a brief summary returned.

```
[clive@redhat clive]$ man -k samba
Samba (7) - A Windows SMB/CIFS fileserver for UNIX
lmhosts (5) - The Samba NetBIOS hosts file
make_codepage (1) - Construct a codepage file for Samba
smb.conf (5) - The configuration file for the Samba suite
smbpasswd (5) - The Samba encrypted password file
smbstatus (1) - report on current Samba connections
swat (8) - swat - Samba Web Administration Tool
```

In the above example the string, samba, has been matched in the brief summary field and a list of pages and their associated summaries returned.

```
[clive@redhat clive]$ man 6 intro
INTRO(6) Linux Programmer's Manual INTRO
(6)
NAME intro - Introduction to games
DESCRIPTION
This chapter describes all the games and funny little programs
available on the system.
```

In the above example man would normally return the first match for intro, which would be intro (1). Specifying section 6 has caused man to return the intro for the games section.

Use and Manage Local Documentation

Each individual man page has a general structure, although not all man pages use all these headings. Some of the typical headings used in man pages are explained in the table below:

<i>Heading</i>	<i>Content</i>
NAME	The name and a brief description of the topic
SYNOPSIS	The syntax for using the command
DESCRIPTION	Explanation of the topic
OPTIONS	The options associated with the command
SEE ALSO	Related man pages
DIAGNOSTICS	Explanation of error messages
FILES	List of the files used by the command
BUGS	List of known problems
HISTORY	Development history
AUTHOR	Author and contributors

The syntax used in the synopsis section is illustrated below using the synopsis for the kill command, as an example:

```
kill [ -s signal | -p ] [ -a ] pid ...
kill -l [ signal ]
```

In the above example there are two different possible forms that the syntax can take. Anything in square brackets [] is optional. The essential elements in the first example are the command and the pid, in the second example the command and the switch -l. Where an ellipsis ... is shown this means that there can be one or more argument, i.e. in the above example you can either provide just one pid or a list of process id's.

The default configuration file for man is **/etc/man.config**. This file lets you set the search path for man, specify the path for programs such as the pagers less and more used by man, list man page uncompressors etc.

You can change the pager used by man by defining a PAGER environment variable and exporting it along with the MANPATH variable which defines where the pages are located.

Use and Manage Local Documentation

Information Pages - info

If you cannot find what you are looking for in the man pages, the `info` command searches for corresponding information from the compressed GNU info format files typically located in the directory `/usr/info`.

The syntax for the `info` command is shown below:

`info topic`

Its use is illustrated below:

```
[root@ext7144 Applix]# info info
␣ File: info.info, Node: Top, Next: Getting Started, Up: (dir)

Info: An Introduction
*****

    Info is a program for reading documentation, which you are using now.

    To learn how to use Info, type the command `h'. It brings you to a
    programmed instruction sequence.

    To learn advanced 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.
* Advanced Info::          Advanced commands within Info.
* Create an Info File::     How to make your own Info file.
* The Standalone Info Program: (info-stnd.info).

--zz-Info: (info.info.gz)Top, 20lines--All-----
Welcome to Info version 3.12f. "C-h" for help, "m" for menu item.--zz-
```

The following keys are useful when you are viewing an info page:

<i>Key</i>	<i>Explanation</i>
↑ or ↓	Scrolls upwards or downwards (also <Delete> key and <spacebar>)
n or p	Displays the next or the previous page respectively
m	Allows you to access the menu options for a page. Type the first letter of the menu option you require at the menu item: prompt
q	Quits info and returns you to the shell prompt

Use and Manage Local Documentation

Application Documentation

When a package is installed it also typically creates a subdirectory of `/usr/doc` and places application specific documentation in it. The name of the subdirectory depends on the package name and the version number.

The head of a listing for a typical `/usr/doc` directory is illustrated below:

```
[root@ext7144 doc]# ls -la
total 1384
drwxr-xr-x 331 root  root   8192 Apr 12 07:57 .
drwxr-xr-x  20 root  root   4096 Nov 15  1999 ..
drwxr-xr-x   6 root  root   4096 Nov 15  1999 AfterStep-1.7.142
drwxr-xr-x   2 root  root   4096 Nov 15  1999 AnotherLevel-1.0
drwxr-xr-x   2 root  root   4096 Nov 15  1999 ElectricFence-2.1
drwxr-xr-x   5 root  root   4096 Nov 15  1999 FAQ
drwxr-xr-x   2 root  root   4096 Nov 15  1999 GXedit-1.23
drwxr-xr-x   5 root  root   4096 Sep 20  1999 HOWTO
drwxr-xr-x   3 root  root   4096 Nov 15  1999 HTML
drwxr-xr-x   3 root  root   4096 Nov 15  1999 ImageMagick-4.2.9
drwxr-xr-x   6 root  root   4096 Nov 15  1999 LDP
drwxr-xr-x   3 root  root   4096 Dec 20 13:34 ORBit-0.5.0
```

The contents of a typical application subdirectory are illustrated below:

```
[root@ext7144 doc]# cd zip-2.2
[root@ext7144 zip-2.2]# ls -la
total 116
drwxr-xr-x  2 root  root   4096 Nov 15  1999 .
drwxr-xr-x 331 root  root   8192 Apr 12 07:57 ..
-rw-r--r--  1 root  root    356 Dec 14  1996 BUGS
-rw-r--r--  1 root  root  22635 Nov  3  1997 CHANGES
-rw-r--r--  1 root  root 35344 Oct 15  1997 MANUAL
-rw-r--r--  1 root  root   6720 Nov  4  1997 README
-rw-r--r--  1 root  root   2834 Oct 25  1997 TODO
-rw-r--r--  1 root  root    765 Oct 15  1997 WHATSNEW
-rw-r--r--  1 root  root 16717 Nov  3  1997 WHERE
-rw-r--r--  1 root  root   3395 Dec 14  1996 algorithm.txt
[root@ext7144 zip-2.2]#
```

The `less` command is useful when viewing application documentation.

Use and Manage Local Documentation

HOWTO's and FAQ's

The HOWTO files are tutorials on various Linux related topics and are typically stored in the directory `/usr/doc/HOWTO`. A HOWTO document usually covers a complex subject and as such tends to be rather long.

The HOWTO files are developed as part of the Linux Documentation Project (LDP). Below is a list of just some of the HOWTO files supplied with a typical distribution:

```
[root@ext7144 HOWTO]# ls
3Dfx-HOWTO           Mail-User-HOWTO
AX25-HOWTO           Modem-HOWTO
Access-HOWTO         Multi-Disk-HOWTO
Alpha-HOWTO          Multicast-HOWTO
Assembly-HOWTO       NET-3-HOWTO
Bash-Prompt-HOWTO   NET3-4-HOWTO
Belgian-HOWTO        NFS-HOWTO
Benchmarking-HOWTO  NIS-HOWTO
Beowulf-HOWTO        Networking-Overview-HOWTO
BootPrompt-HOWTO    Optical-Disk-HOWTO
Bootdisk-HOWTO       Oracle-HOWTO
Busmouse-HOWTO       PCI-HOWTO
CD-Writing-HOWTO     PCMCIA-HOWTO
CDROM-HOWTO          PPP-HOWTO
COPYRIGHT            PalmOS-HOWTO
Chinese-HOWTO         Parallel-Processing-HOWTO
Commercial-HOWTO     Pilot-HOWTO
Config-HOWTO          Plug-and-Play-HOWTO
Consultants-HOWTO    Polish-HOWTO
Cyrillic-HOWTO        Portuguese-HOWTO
DNS-HOWTO             PostgreSQL-HOWTO
DOS-Win-to-Linux-HOWTO Printing-HOWTO
DOS-to-Linux-HOWTO   Printing-Usage-HOWTO
DOSEMU-HOWTO          Quake-HOWTO
Danish-HOWTO          README
Diskless-HOWTO        RPM-HOWTO
Distribution-HOWTO    Reading-List-HOWTO
ELF-HOWTO             Root-RAID-HOWTO
Ecology-HOWTO         SCSI-Programming-HOWTO
Emacspeak-HOWTO       SMB-HOWTO
Esperanto-HOWTO       SRM-HOWTO
Ethernet-HOWTO        Security-HOWTO
Finnish-HOWTO         Serbian-HOWTO
Firewall-HOWTO        Serial-HOWTO
Framebuffer-HOWTO    Serial-Programming-HOWTO
French-HOWTO          Shadow-Password-HOWTO
```

Use and Manage Local Documentation

In addition to the HOWTOs, the directory `/usr/doc/HOWTO/mini` contains a great number of mini-HOWTOs which are smaller and more specific than the HOWTOs.

Below is a list of just some of the mini-HOWTOs supplied with a typical distribution:

```
[clive@redhat mini]$ ls
3-Button-Mouse      IP-Masquerade      Proxy-ARP-Subnet
ADSL                IP-Subnetworking   Public-Web-Browser
ADSM-Backup         ISP-Connectivity   Qmail+MH
AI-Alive           Install-From-ZIP    Quota
Advocacy            Kerneld             RCS
Alsa-sound          LBX                 README
Apache+SSL+PHP+fp  LILO                RPM+Slackware
Automount           Large-Disk          Remote-Boot
Backup-With-MSDOS  Leased-Line         Remote-X-Apps
Battery-Powered     Linux+DOS+Win95+OS2 SLIP-PPP-Emulator
Boca                Linux+FreeBSD       Secure-POP+SSH
```

The **FAQ's** are answers to Frequently Asked Questions by Linux users and are typically stored in the directory `/usr/doc/FAQ`. FAQ's are intended to be read in conjunction with the HOWTO files and are usually available in separate subdirectories in HTML, Postscript and text formats. Below is a list of the text FAQ's supplied with a typical distribution:

```
[root@ext7144 /]# cd /usr/doc/FAQ/txt
[root@ext7144 txt]# ls
ATAPI-FAQ      BLFAQ  Ftape-FAQ      Linux-FAQ      SMP-FAQ
AfterStep-FAQ  FAQ    GCC-SIG11-FAQ  PPP-FAQ
```

The **less** pager is very useful for navigating text based HOWTO and FAQ files.

HOWTO pages and FAQ's are frequently updated and new ones published, so you should check from time to time that you have the most up to date version. You can obtain the latest HOWTO's and FAQ's from the Linux Documentation Project web site at the following address:

www.linuxdoc.org