

实验三 文档和文本编辑器

课程名称: Unix基础与应用

实验项目名称: 实验三 文档和文本编辑器

专业班级: 软件1902

姓名: 侯荣元

学号: 201926010214

指导教师: 肖雄仁

完成时间: 2021年4月12日

3.1 Linux文档

1. 实验目的

够探索和练习man和info命令, 阅读FAQ和HOWTO文档。通过完成本实验, 掌握下列技能:

1. man命令
2. 使用info命令
3. 查找并使用其他Linux文档

2. 实验环境

2.1 软件环境:

1. CentOS Linux release 7.9.2009
2. VMware Workstation Pro 15
3. MobaXterm v20.0

2.2 硬件环境:

1. 阿里云云服务器ECS, 共享计算型实例, 配置 (CPU 1核\内存 2GB\带宽 1Mbps)
2. 个人笔记本, 配置 (建议内存>4G)

3. 实验内容和方法

3.1 手册页(man)

1. 打开终端软件ssh会话, 连接云服务器ECS, 登录

```
CentOS Linux 7 (Core)
Kernel 3.10.0-1160.el7.x86_64 on an x86_64

localhost login: monkeyman
Password:
Last login: Mon Apr  5 03:23:34 on tty1
[monkeyman@localhost ~]$
```

2. 显示man命令的手册页

```
MAN(1)                                Manual pager utils                                MAN(1)

NAME
  man - an interface to the on-line reference manuals

SYNOPSIS
  man [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L locale] [-m sys-
  tem[,...]] [-M path] [-S list] [-e extension] [-i|-I] [--regex|--wildcard] [--names-only]
  [-a] [-u] [--no-subpages] [-P pager] [-r prompt] [-?] [-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 [-wi-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] [-?] [-E encoding] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
  file ...
  man -wi-W [-C file] [-d] [-D] page ...
  man -c [-C file] [-d] [-D] page ...
  man [-?U]

DESCRIPTION
  man is the system's manual pager. Each page argument given to man is normally the name of
  a program, utility or function. The manual page associated with each of these arguments
  is then found and displayed. A section, if provided, will direct man to look only in that
  section of the manual. The default action is to search in all of the available sections,
  following a pre-defined order and to show only the first page found, even if page exists
  in several sections.

  The table below shows the section numbers of the manual followed by the types of pages
  they contain.

  1 Executable programs or shell commands
  2 System calls (functions provided by the kernel)
  3 Library calls (functions within program libraries)
  4 Special files (usually found in /dev)
  Manual page man(1) line 1 (press h for help or q to quit)
```

3. 手册页中搜索字符串pager

```
MAN(1)                                Manual pager utils                                MAN(1)

NAME
  man - an interface to the on-line reference manuals

SYNOPSIS
  man [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L locale] [-m sys-
  tem[,...]] [-M path] [-S list] [-e extension] [-i|-I] [--regex|--wildcard] [--names-only]
  [-a] [-u] [--no-subpages] [-P pager] [-r prompt] [-?] [-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 [-wi-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] [-?] [-E encoding] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
  file ...
  man -wi-W [-C file] [-d] [-D] page ...
  man -c [-C file] [-d] [-D] page ...
  man [-?U]

DESCRIPTION
  man is the system's manual pager. Each page argument given to man is normally the name of
  a program, utility or function. The manual page associated with each of these arguments
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  Manual page man(1) line 1 (press h for help or q to quit)
```

4. 使用q键结束man命令

```
MAN(1)                                Manual pager utils                                MAN(1)

NAME
    man - an interface to the on-line reference manuals

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] [-?] [-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] [-?] [-E encoding] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
    file ...
    man -wi|-W [-C file] [-d] [-D] page ...
    man -e [-C file] [-d] [-D] page ...
    man [-?U]

DESCRIPTION
    man is the system's manual pager. Each page argument given to man is normally the name of
    a program, utility or function. The manual page associated with each of these arguments
    is then found and displayed. A section, if provided, will direct man to look only in that
    section of the manual. The default action is to search in all of the available sections,
    following a pre-defined order and to show only the first page found, even if page exists
    in several sections.

    The table below shows the section numbers of the manual followed by the types of pages
    they contain.

    1   Executable programs or shell commands
    2   System calls (functions provided by the kernel)
    3   Library calls (functions within program libraries)
    4   Special files (usually found in /dev)
[monkeyman@localhost ~]$
```

5. 显示ls命令的手册页。浏览手册页

```
LS(1)                                User Commands                                LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default). Sort entries alpha-
    betically if none of -cftuvSUX nor --sort is specified.

    Mandatory arguments to long options are mandatory for short options too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file

    -b, --escape
        print C-style escapes for nongraphic characters

    --block-size=SIZE
        scale sizes by SIZE before printing them; e.g., '--block-size=M' prints sizes in
        units of 1,048,576 bytes; see SIZE format below

    -B, --ignore-backups
        do not list implied entries ending with ~

    -c
        with -lt: sort by, and show, ctime (time of last modification of file status infor-
        mation); with -l: show ctime and sort by name; otherwise: sort by ctime, newest
        first
Manual page ls(1) line 1 (press h for help or q to quit)
```

```

SIZE is an integer and optional unit (example: 10M is 10*1024*1024). Units are K, M, G,
T, P, E, Z, Y (powers of 1024) or KB, MB, ... (powers of 1000).

Using color to distinguish file types is disabled both by default and with --color=never.
With --color=auto, ls emits color codes only when standard output is connected to a termi-
nal. The LS_COLORS environment variable can change the settings. Use the dircolors com-
mand to set it.

Exit status:
0      if OK,

1      if minor problems (e.g., cannot access subdirectory),

2      if serious trouble (e.g., cannot access command-line argument).

GNU coreutils online help: <http://www.gnu.org/software/coreutils/> Report ls translation
bugs to <http://translationproject.org/team/>

AUTHOR
Written by Richard M. Stallman and David MacKenzie.

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Copyright © 2013 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or
later <http://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it. There is NO WARRANTY,
to the extent permitted by law.

SEE ALSO
The full documentation for ls is maintained as a Texinfo manual. If the info and ls pro-
grams are properly installed at your site, the command

    info coreutils 'ls invocation'

should give you access to the complete manual.

GNU coreutils 8.22                        August 2019                        LS(1)
Manual page ls(1) line 204/241 (END) (press h for help or q to quit)

```

6. 关闭man命令

```

SIZE is an integer and optional unit (example: 10M is 10*1024*1024). Units are K, M, G,
T, P, E, Z, Y (powers of 1024) or KB, MB, ... (powers of 1000).

Using color to distinguish file types is disabled both by default and with --color=never.
With --color=auto, ls emits color codes only when standard output is connected to a termi-
nal. The LS_COLORS environment variable can change the settings. Use the dircolors com-
mand to set it.

Exit status:
0      if OK,

1      if minor problems (e.g., cannot access subdirectory),

2      if serious trouble (e.g., cannot access command-line argument).

GNU coreutils online help: <http://www.gnu.org/software/coreutils/> Report ls translation
bugs to <http://translationproject.org/team/>

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to the extent permitted by law.

SEE ALSO
The full documentation for ls is maintained as a Texinfo manual. If the info and ls pro-
grams are properly installed at your site, the command

    info coreutils 'ls invocation'

should give you access to the complete manual.

GNU coreutils 8.22                        August 2019                        LS(1)
[monkeyman@localhost ~]$ _

```

7. 查找标题中包含字 password 的手册页。然后查看每一页，并提供正确的部分编号

```

[monkeyman@localhost ~]$ make -k passwd
make: *** No rule to make target 'passwd'.
[monkeyman@localhost ~]$ apropos passwd
chgrp(8)          - update group passwords in batch mode
chpasswd(8)       - update passwords in batch mode
gpasswd(1)        - administer /etc/group and /etc/gshadow
grub2-mkpasswd-pbkdf2(1) - Generate a PBKDF2 password hash.
lpasswd(1)        - Change group or user password
pam_localuser(8)  - require users to be listed in /etc/passwd
passwd(1)         - update user's authentication tokens
sslpw(1ssl)       - compute password hashes
pwhistory_helper(8) - Helper binary that transfers password hashes from passwd or shadow to opasswd
[monkeyman@localhost ~]$ _

```

笔记：如果man -k或apropos命令不起作用，则需要以root用户身份运行makewhatis命令。

```
PASSWD(1)                                User utilities                                PASSWD(1)

NAME
    passwd - update user's authentication tokens

SYNOPSIS
    passwd [-k] [-l] [-u [-f]] [-d] [-e] [-n mindays] [-x maxdays] [-w warndays] [-i inactive-
    days] [-S] [--stdin] [username]

DESCRIPTION
    The passwd utility is used to update user's authentication token(s).

    This task is achieved through calls to the Linux-PAM and Libuser API. Essentially, it
    initializes itself as a "passwd" service with Linux-PAM and utilizes configured password
    modules to authenticate and then update a user's password.

    A simple entry in the global Linux-PAM configuration file for this service would be:

        #
        # passwd service entry that does strength checking of
        # a proposed password before updating it.
        #
        passwd password requisite pam_cracklib.so retry=3
        passwd password required pam_unix.so use_authtok
        #

    Note, other module types are not required for this application to function correctly.

OPTIONS
    -k, --keep
        The option -k is used to indicate that the update should only be for expired
        authentication tokens (passwords); the user wishes to keep their non-expired tokens
        as before.

    -l, --lock
        This option is used to lock the password of specified account and it is available
        Manual page passwd(1) line 1 (press h for help or q to quit)

NAME
    shadow - shadowed password file

DESCRIPTION
    shadow is a file which contains the password information for the system's accounts and
    optional aging information.

    This file must not be readable by regular users if password security is to be maintained.

    Each line of this file contains 9 fields, separated by colons (":"), in the following
    order:

    login name
        It must be a valid account name, which exist on the system.

    encrypted password
        Refer to crypt(3) for details on how this string is interpreted.

        If the password field contains some string that is not a valid result of crypt(3), for
        instance ! or *, the user will not be able to use a unix password to log in (but the
        user may log in the system by other means).

        This field may be empty, in which case no passwords are required to authenticate as
        the specified login name. However, some applications which read the /etc/shadow file
        may decide not to permit any access at all if the password field is empty.

        A password field which starts with an exclamation mark means that the password is
        locked. The remaining characters on the line represent the password field before the
        password was locked.

    date of last password change
        The date of the last password change, expressed as the number of days since Jan 1,
        1970 00:00 UTC.

        The value 0 has a special meaning, which is that the user should change her password
        Manual page shadow(5) line 2 (press h for help or q to quit)
```

3.2 info命令

1. 查看finger命令的信息文档

```

File: dir      Node: Top      This is the top of the INFO tree

This (the Directory node) gives a menu of major topics.
Typing "q" exits, "?" lists all Info commands, "d" returns here,
"h" gives a primer for first-timers,
"mEmacs<Return>" visits the Emacs topic, etc.

In Emacs, you can click mouse button 2 on a menu item or cross reference
to select it.

* Menu:

Archiving
* Cpio: (cpio).          Copy-in-copy-out archiver to tape or disk.
* Tar: (tar).           Making tape (or disk) archives.

Basics
* Common options: (coreutils)Common options.
* Coreutils: (coreutils).    Core GNU (file, text, shell) utilities.
* Date input formats: (coreutils)Date input formats.
* File permissions: (coreutils)File permissions.
                                Access modes.
* Finding files: (find).     Operating on files matching certain criteria.

Compression
* Gzip: (gzip).           General (de)compression of files (lzw).

Emacs
* IDN Library: (libidn)Emacs API.
                                Emacs API for IDN functions.

GNU Gettext Utilities
* autopoint: (gettext)autopoint Invocation.
                                Copy gettext infrastructure.
* envsubst: (gettext)envsubst Invocation.
-----Info: (dir)Top, 291 lines --Top-----
No menu item 'finger' in node '(dir)Top'.

```

2. 使用space和del键浏览此页面

```

- Update a PO file from template.
* msgunfmt: (gettext)msgunfmt Invocation.
                                Uncompile MO file into PO file.
* msguniq: (gettext)msguniq Invocation.
                                Unify duplicates for PO file.
* ngettext: (gettext)ngettext Invocation.
                                Translate a message with plural.
* xgettext: (gettext)xgettext Invocation.
                                Extract strings into a PO file.

GNU Libraries
* libgomp: (libgomp).      GNU OpenMP runtime library

GNU organization
* Standards: (standards).  GNU coding standards.

GNU Utilities
* gpg-agent: (gnupg).      The secret key daemon.
* gpg2: (gnupg).          OpenPGP encryption and signing tool.
* gpgsm: (gnupg).         S/MIME encryption and signing tool.
* pinentry: (pinentry).    Ask securely for a passphrase or PIN.

Individual utilities
* addr2line: (binutils)addr2line.    Convert addresses to file and
                                      line.
* ar: (binutils)ar.             Create, modify, and extract
                                      from archives.
* arch: (coreutils)arch invocation.  Print machine hardware name.
* awk: (gawk)Invoking gawk.        Text scanning and processing.
* base64: (coreutils)base64 invocation.  Base64 encode/decode data.
* basename: (coreutils)basename invocation.  Strip directory and suffix.
* c++filt: (binutils)c++filt.      Filter to demangle encoded C++
                                      symbols.
* cat: (coreutils)cat invocation.   Concatenate and write files.
* chcon: (coreutils)chcon invocation.  Change SELinux CTX of files.
-----Info: (dir)Top, 291 lines --22%-----

```

3. 阅读有关info命令的帮助

```

File: dir      Node: Top      This is the top of the INFO tree

This (the Directory node) gives a menu of major topics.
Typing "q" exits, "?" lists all Info commands, "d" returns here,
"h" gives a primer for first-timers,
"mEmacs<Return>" visits the Emacs topic, etc.

In Emacs, you can click mouse button 2 on a menu item or cross reference
to select it.

* Menu:

Archiving
* Cpio: (cpio).      Copy-in-copy-out archiver to tape or disk.
* Tar: (tar).        Making tape (or disk) archives.

Basics
* Common options: (coreutils)Common options.
-----Info: (dir)Top, 291 lines --Top-----
Basic Info command keys

x      Close this help window.
q      Quit Info altogether.
H      Invoke the Info tutorial.

Up      Move up one line.
Down    Move down one line.
DEL     Scroll backward one screenful.
SPC     Scroll forward one screenful.
Home    Go to the beginning of this node.
End     Go to the end of this node.

TAB     Skip to the next hypertext link.
RET     Follow the hypertext link under the cursor.
l      Go back to the last node seen in this window.
-----Info: *Info Help*, 386 lines --Top-----
This window has no additional nodes

```

```

File: dir      Node: Top      This is the top of the INFO tree

This (the Directory node) gives a menu of major topics.
Typing "q" exits, "?" lists all Info commands, "d" returns here,
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* Menu:

Archiving
* Cpio: (cpio).      Copy-in-copy-out archiver to tape or disk.
* Tar: (tar).        Making tape (or disk) archives.

Basics
* Common options: (coreutils)Common options.
-----Info: (dir)Top, 291 lines --Top-----
TAB     (move-to-next-xref)Move to the next cross reference
LFD     (select-reference-this-line)Select reference or menu item appearing on this line
C-l     (redraw-display)Redraw the display
RET     (select-reference-this-line)Select reference or menu item appearing on this line
C-n     (next-line)Move down to the next line
C-p     (prev-line)Move up to the previous line
C-r     (isearch-backward)Search interactively for a string as you type it
C-s     (isearch-forward)Search interactively for a string as you type it
C-u     (universal-argument)Start (or multiply by 4) the current numeric argument
C-v     (scroll-forward-page-only)Scroll forward in this window staying within node
C-x C-b (list-visited-nodes)
        Make a window containing a menu of all of the currently visited nodes
C-x C-c (quit)Quit using Info
C-x C-f (view-file)Read the name of a file and select it
C-x C-g (abort-key)Cancel current operation
C-x C-v (view-file)Read the name of a file and select it
-----Info: *Info Help*, 386 lines --14%-----

```

4. 结束info命令

```

File: dir      Node: Top      This is the top of the INFO tree

This (the Directory node) gives a menu of major topics.
Typing "q" exits, "?" lists all Info commands, "d" returns here,
"h" gives a primer for first-timers,
"mEmacs<Return>" visits the Emacs topic, etc.

In Emacs, you can click mouse button 2 on a menu item or cross reference
to select it.

* Menu:

Archiving
* Cpio: (cpio).          Copy-in-copy-out archiver to tape or disk.
* Tar: (tar).            Making tape (or disk) archives.

Basics
* Common options: (coreutils)Common options.
-----Info: (dir)Top, 291 lines --Top-----
TAB      (move-to-next-xref)Move to the next cross reference
LFD      (select-reference-this-line)Select reference or menu item appearing on this line
C-l      (redraw-display)Redraw the display
RET      (select-reference-this-line)Select reference or menu item appearing on this line
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C-r      (isearch-backward)Search interactively for a string as you type it
C-s      (isearch-forward)Search interactively for a string as you type it
C-u      (universal-argument)Start (or multiply by 4) the current numeric argument
C-v      (scroll-forward-page-only)Scroll forward in this window staying within node
C-x C-b  (list-visited-nodes)
          Make a window containing a menu of all of the currently visited nodes
C-x C-c  (quit)Quit using Info
C-x C-f  (view-file)Read the name of a file and select it
C-x C-g  (abort-key)Cancel current operation
C-x C-v  (view-file)Read the name of a file and select it
-----Info: *Info Help*, 386 lines --14%-----
lmonkeyman@localhost ~1$ a_

```

5. 阅读info命令的info文档

```

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 (*note What is Info?: (info-std)Top.),
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 advanced Info commands, type 'n' twice. This brings
you to 'Advanced Info Commands', skipping over the 'Getting Started'
chapter.

This file describes how to use Info, the on-line, menu-driven GNU
documentation system.

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document under the terms of the GNU Free Documentation License,
Version 1.3 or any later version published by the Free Software
Foundation; with no Invariant Sections, with the Front-Cover texts
being "A GNU Manual," and with the Back-Cover Texts as in (a)
below. A copy of the license is included in the section entitled
"GNU Free Documentation License" in the Emacs manual.

--zz-Info: (info.info.gz)Top, 52 lines --Top-----
Welcome to Info version 5.1. Type h for help, m for menu item.

```



```
File: info.info, Node: Getting Started, Next: Advanced, Prev: Top, Up: Top
```

1 Getting Started

This first part of this Info manual describes how to get around inside of Info. The second part of the manual describes various advanced Info commands. The third part briefly explains how to generate Info files from Texinfo files, and describes how to write an Info file by hand.

* Menu:

- * Help-Small-Screen:: Starting Info on a Small Screen.
- * Help:: How to use Info.
- * Help-P:: Returning to the Previous node.
- * Help-^L:: The Space, DEL, B and ^L commands.
- * Help-Inv:: Invisible text in Emacs Info.
- * Help-M:: Menus.
- * Help-Xref:: Following cross-references.
- * Help-Int:: Some intermediate Info commands.
- * Help-Q:: Quitting Info.

```
--zz-Info: (info.info.gz)Getting Started, 22 lines --All-----
```

6. 通过访问超链接node

```
File: info.info, Node: Search Index, Next: Go to node, Prev: Search Text, Up: Advanced
```

2.2 'i' searches the indices for specific subjects

=====

Since most topics in the manual should be indexed, you should try the index search first before the text search. The 'i' command prompts you for a subject and then looks up that subject in the indices. If it finds an index entry with the subject you typed, it goes to the node to which that index entry points. You should browse through that node to see whether the issue you are looking for is described there. If it isn't, type ',' one or more times to go through additional index entries which match your subject.

The 'i' command and subsequent ',' commands find all index entries which include the string you typed as a substring. For each match, Info shows in the echo area the full index entry it found. Often, the text of the full index entry already gives you enough information to decide whether it is relevant to what you are looking for, so we recommend that you read what Info shows in the echo area before looking at the node it displays.

Since 'i' looks for a substring, you can search for subjects even if you are not sure how they are spelled in the index. For example, suppose you want to find something that is pertinent to commands which complete partial input (e.g., when you type <TAB>). If you want to catch index entries that refer to "complete," "completion," and "completing," you could type 'icomplet<RET>'.

Info documents which describe programs should index the commands, options, and key sequences that the program provides. If you are looking for a description of a command, an option, or a key, just type their names when 'i' prompts you for a topic. For example, if you want to read the description of what the 'C-l' key does, type 'iC-l<RET>' literally.

```
--zz-Info: (info.info.gz)Search Index, 47 lines --Top-----
```

7. 通过访问菜单node

```

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 (*note What is Info?: (info-std)Top.),
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 advanced Info commands, type 'n' twice. This brings
you to 'Advanced Info Commands', skipping over the 'Getting Started'
chapter.

This file describes how to use Info, the on-line, menu-driven GNU
documentation system.

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document under the terms of the GNU Free Documentation License,
Version 1.3 or any later version published by the Free Software
Foundation; with no Invariant Sections, with the Front-Cover texts
--zz-Info: (info.info.gz)Top, 52 lines --Top-----
4 completions:
Advanced      Expert Info      Getting Started  Index
-----Info: *Completions*, 3 lines --All-----
Menu item:

```

8. 使用H进入info命令教程

```

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 (*note What is Info?: (info-std)Top.),
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.

--zz-Info: (info.info.gz)Top, 52 lines --Top-----
Basic Info command keys
x          Close this help window.
q          Quit Info altogether.
H          Invoke the Info tutorial.

Up         Move up one line.
Down       Move down one line.
DEL        Scroll backward one screenful.
SPC        Scroll forward one screenful.
Home       Go to the beginning of this node.
End        Go to the end of this node.

TAB        Skip to the next hypertext link.
RET        Follow the hypertext link under the cursor.
l          Go back to the last node seen in this window.
-----Info: *Info Help*, 386 lines --Top-----

```

3.3 其他文档

1. 列出/usr/share/doc目录中的所有目录

```

iwl3945-firmware-15.32.2.9
iwl4965-firmware-228.61.2.24
iwl5000-firmware-8.83.5.1_1
iwl5150-firmware-8.24.2.2
iwl6000-firmware-9.221.4.1
iwl6000g2a-firmware-18.168.6.1
iwl6000g2b-firmware-18.168.6.1
iwl6050-firmware-41.28.5.1
iwl7260-firmware-25.30.13.0
jansson-2.10
json-c-0.11
kbd-1.15.5
kexec-tools-2.0.15
keyutils-libs-1.5.8
kmod-20
krb5-libs-1.15.1
less-458
libaio-0.3.109
libassuan-2.1.0
libblkid-2.23.2
libcap-2.22
libcap-ng-0.7.5
libcom_err-1.42.9
libcroco-0.6.12
libdaemon-0.14
libdb-5.3.21
libdrm-2.4.97
libedit-3.0
libestr-0.1.9
libfastjson-0.99.4
libffi-3.0.13
libgcc-4.8.5
libgcrypt-1.5.3
libgomp-4.8.5
libgpg-error-1.12
libidn-1.28
libidn-1.28
[monkeyman@localhost ~]$ a_

python-urlgrabber-3.10
pyxattr-0.5.1
qrencode-libs-3.4.1
readline-6.2
redhat-release
rpm-4.11.3
rsyslog-8.24.0
sed-4.2.2
setup-2.8.71
shadow-utils-4.6
shared-mime-info-1.8
slang-2.2.4
snappy-1.1.0
sqlite-3.7.17
sudo-1.8.23
systemd
sysvinit-tools-2.88
tar-1.26
tcp_wrappers-libs-7.6
teamd-1.29
tuned-2.11.0
tzdata-2020a
ustr-1.0.4
util-linux-2.23.2
virt-what-1.18
which-2.20
wpa_supplicant-2.6
xfsprogs-4.5.0
xmlsec1-1.2.20
xz-5.2.2
xz-libs-5.2.2
yum-3.4.3
yum-metadata-parser-1.1.4
yum-plugin-fastestmirror-1.1.31
zlib-1.2.7

```

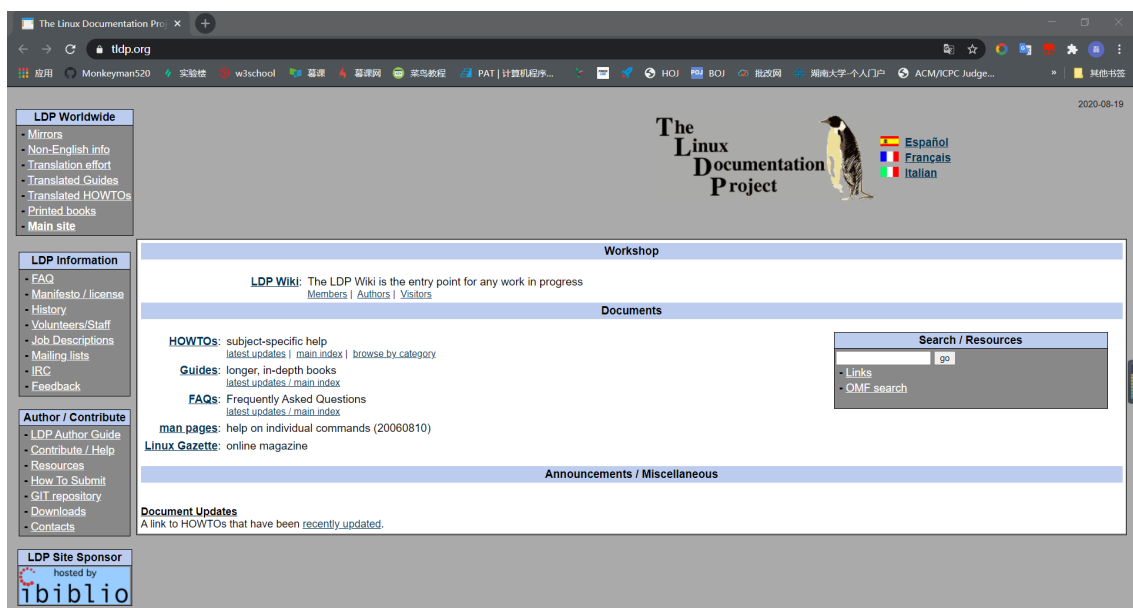
2. 浏览其中一些目录以查看可用的信息种类

```

[monkeyman@localhost ~]$ cd /usr/share/doc/libidn-1.28
[monkeyman@localhost libidn-1.28]$ ls
AUTHORS COPYING.LESSERv2 COPYINGv2 FAQ README
COPYING COPYING.LESSERv3 COPYINGv3 NEWS THANKS
[monkeyman@localhost libidn-1.28]$ _

```

3. 访问<http://www.tldp.org>网站，查找IPv6的HOWTO



3.2 文本编辑器

1. 实验目的

使用最常见的Linux编辑器vi创建和编辑文件，并尝试使用其他可用的编辑器。通过完成本实验，掌握下列技能：

1. 使用vi创建和编辑文件
 2. 列出并尝试系统上其他可用的编辑器
-

2. 实验环境

2.1 软件环境：

1. CentOS Linux release 7.9.2009
2. VMware Workstation Pro 15
3. MobaXterm v20.0

2.2 硬件环境：

1. 阿里云服务器ECS，共享计算型实例，配置（CPU 1核\内存 2GB\带宽 1Mbps）
 2. 个人笔记本，配置（建议内存>4G）
-

3. 实验步骤和方法

3.1 使用vi

1. 打开终端软件ssh会话，连接云服务器ECS

```
CentOS Linux 7 (Core)
Kernel 3.10.0-1160.el7.x86_64 on an x86_64

Hint: Num Lock on

localhost login: monkeyman
Password:
Last login: Mon Apr 12 12:07:29 on tty1
[monkeyman@localhost ~]$
```

2. 确保位于主目录中。使用vi在主目录中创建一个名为vittest的文件。在vittest文件中键入文本 和字母。

```
[monkeyman@localhost ~]$ pwd
/home/monkeyman
[monkeyman@localhost ~]$ vi vittest
```

3. 返回命令模式，写入并退出文件

[illegible]

1. 再次打开vittest文件（注意：屏幕的底行指示文件名和字符数）
2. 使用H, J, K和L键，练习在文件中移动。

```

a alpha
b bravo
c charfile
x x-ray
y yankee
z zulu

```

3. 使用适当的vi命令在文本中移动。

[illegible]

3.3 使用设置自定义编辑会话

1. 进行在线编号并将制表位设为4

[illegible]

:5

- ### 1. 用制表符替换文件中的所有空格

12

- ## 2. 保存文件

课程资料中列出的编辑器可能在您的发行版上不可用或未安装

```
[monkeyman@localhost ~]$ nano vittest
-bash: nano: command not found
[monkeyman@localhost ~]$ emacs -nw vittest
-bash: emacs: command not found
[monkeyman@localhost ~]$ joe vittest
-bash: joe: command not found
[monkeyman@localhost ~]$ hexedit vittest
-bash: hexedit: command not found
[monkeyman@localhost ~]$
```

```

extras                                     | 2.9 kB  00:00:00
updates                                   | 2.9 kB  00:00:00
(1/2): extras/7/x86_64/primary_db         | 232 kB  00:00:00
(2/2): updates/7/x86_64/primary_db       | 7.1 MB  00:00:10
Resolving Dependencies
--> Running transaction check
--> Package nano.x86_64 0:2.3.1-10.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package                Arch                Version                Repository                Size
=====
Installing:
nano                   x86_64              2.3.1-10.el7           base                      440 k

Transaction Summary
=====
Install 1 Package

Total download size: 440 k
Installed size: 1.6 M
Downloading packages:
nano-2.3.1-10.el7.x86_64.rpm               | 440 kB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : nano-2.3.1-10.el7.x86_64      1/1
  Verifying  : nano-2.3.1-10.el7.x86_64      1/1

Installed:
  nano.x86_64 0:2.3.1-10.el7

Complete!
lmonkeyman@localhost ~1$

```

```

GNU nano 2.3.1                               File: vitest
a      alpha  Apple
b      bravo  Branch
c      charfile  China
x      x-ray  Xorgen
y      yankee  Yaml
z      zulu   Zoo

[ Read 6 lines ]
^G Get Help    ^O WriteOut    ^R Read File   ^Y Prev Page   ^K Cut Text    ^C Cur Pos
^X Exit        ^J Justify     ^W Where Is    ^V Next Page   ^U UnCut Text  ^T To Spell

```

实验总结

1. 如果man -k或apropos命令不起作用，则需要以root用户身份运行makewhatis命令。通常，makewhatis命令会在每晚自动执行，但是由于系统是全新安装的，因此可能尚未发生。

