Unix Tools

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Overview

- Editors
  - nedit
  - vi
- Browsers/HTML Editors
- Mail Tools
- Utilities
  - xv
  - xman
  - ftp
Editors

- There are a variety of editors
  - vi and pico
  - emacs and xemacs
  - Nedit

- The line editors are vi (universal), pico (very simple), emacs (very powerful).

- The graphical editors are nedit (powerful but simple) and xemacs (very powerful and not too hard to learn)
Nedit as an editor

- You must be in an X Window System environment to run nedit.
- It is relatively simple to use and has a little built-in help.
- It is important to keep in mind:
  - Preferences are at two levels, immediate and saved.
  - Really useful for programming – syntax, braces, include files, indents, etc.
Nedit Preferences Menu

- Default Settings
- Save Defaults...
- Statistics Line
  - Incremental Search Line
  - Show Line Numbers
- Language Mode
- Auto Indent
- Wrap
- Tabs...
- Text Font...
- Highlight Syntax
- Make Backup Copy (*.bck)
- Incremental Backup
- Show Matching (...)
- Overtype
  - Ctrl+B
- Read Only
Nedit File Menu

New Ctrl+N
Open... Ctrl+O
Open Selected Ctrl+Y
Open Previous
Close Ctrl+W
Save Ctrl+S
Save As...
Revert to Saved
Include File... Alt+I
Load Macro File...
Load Tags File...
Unload Tags File...
Print... Ctrl+P
Print Selection...
Exit Ctrl+Q

Line 1, col 0, 0 bytes
vi as an editor

vi is a modal editor

- To shift between command and entry mode:
  - Type “ESC” to get to command mode
  - Type i(insert), a(append) R(replace), and others to go to edit mode

vi is a very simple but powerful line editor

- There are 75+ commands, but a dozen will do

Commands in vi can be:

- character or sequence optionally preceded by a num
- : command – a : followed by one or more characters
- command preceded by a \ or !
Starting vi

- Type vi filename to edit a file
  - If file exists, it is opened, if not it is created
- vi displays lines beyond the end of file by using the “~” character
- The line at the bottom of the screen is used to enter commands
- For practice purposes, use a Unix command to generate fodder for a file to be edited
  - ls -la > testfile.dat
  - vi testfile.dat
Basic vi commands

Some of the important file handling commands are:
- :w (write) or :r (read) file
- :q quit
- :wq will save the file, if it had been named, and exit
- :q! will quit abandoning any changes

The basic movement commands are:
- h – left
- j – down
- k – up
- l – right

PC cursor keys may work as well
The command u undoes the last edit – it is only one deep
vi – getting around

- In command mode most commands can be preceded by a number

- Other movement commands include:
  - H top line, M middle line, L last line
  - ^F,^B one screen forward, backward

- Searching commands include:
  - /text – searches forward for text
  - &text – searches backward for text
  - /, & repeat last search, either forward of backward

- nG will take you to line n, G will take you to the last line
vi – entering text

- From command mode, a number of commands can be issued to enter text:
  - `i` will start text insert mode just before the current position – this is basically the only command you need
  - `a` will start append mode – right after the current position
  - `r` will replace the current character and return to command mode
  - `R` will go into replacement mode

- These modes (with the exception of `r`) continue until the user types the ESC key
Vi – deleting and modifying text

- Commands to delete text include:
  - x delete a single character
  - dd delete current line
  - D delete remainder of line
  - dw delete word

- Commands to copy text include
  - yy will copy a single line
  - p will put it down – works on both dd and yy

- Both yy and dd take number prefixes, p doesn’t use a number
More commands

Movement
- 0 moves to the start of the current line
- $ moves to the end of the current line
- W, w, B, b move forward and backward words
- u will undo the last command
- . Will repeat the last command
- J will join two lines
vi – executing commands

- `:! cmd` will execute the command cmd presenting the output in vi. Hitting the enter key will return to vi.

- `:!! cmd` will pipe the result of command into the current cursor location.

- `%! cmd` will pipe the current contents to cmd and replace the editor contents with the result.

  - Take care in that a bad command will cause the error message to replace the current contents.
The .exrc file

- vi is based on the ex editor
- The .exrc file thus defines resources or startup conditions for ex and vi
- Some common setting might include:
  - `set number`
  - `set showmode`
  - `set ignorecase`
  - `set wm=10`
  - `ab tstr rstr`
  - `map c commandsequence`
Browsers/HTML Editors

- Netscape is the default browser on Unix
- Hotjava also is installed on solaris
- Netscape can be used:
  - For viewing web sites
  - Editing webpages (composer)
  - Keeping address books
  - Reading imap mail
Welcome!(RealAudio) You have reached the site for Michael B. Spring, a faculty member in the Department of Information Science and Telecommunications at the University of Pittsburgh. Some may have reached this site looking for materials I use in teaching. Those materials are now located at my class site www2.sis.pitt.edu/~mbsclass/. These pages present information about teaching, research, publications, as well as information about my background and personal interests. (Here are copies of the welcome message in WAV and AIF format.)

My research projects have their own sites with a lot more data.

- **CASCADE** was a major project looking at collaborative authoring over wide area networks. The project is now pretty much shut down although the software continues to be used and is available for others to use. The project was funded by the National Institute for Standards and Technology for four years.
- **ESPEAK** is an active project that is exploring the development of network based services. It is funded by HP as a part of their E'Speak University initiative.
- **Distributed Computing** is a little project related to the E'Speak effort. It was a class project aimed at developing a demonstration web site that would provide information about distributed computing. It is a work in progress.

You are currently reading the welcome panel. Access the other information panels by clicking the
Course Information

- Here are my recent copies of course syllabi. The older the syllabus, the more likely the requirements and readings will be changed. Very old syllabi are in PDF.

  - Current Courses -- for the Spring Term 2002 -- January 2002–April 2002
    - DIST 2000: Introduction to Information Science is the introductory course in the Masters Program. This course provides a blend of theory and technology with a heavy dose of history and concepts. The syllabus provided here is still preliminary, but the required materials and assignments are accurate.
    - DIST 2770: Document Processing (formerly IS2080)
      IS2770 is focused on Web Document Systems. It covers structured document languages such as HTML, XML and SGML. It covers web page and site design. It explores server and spider design and development as well as the design and development of collaborative editing tools. The syllabus provided here is still preliminary, but the required materials and assignments are accurate. We would like to acknowledge the contribution of the Cutting Edge software XML Spy by Altova, GmbH for use in this and other courses.
  - Online Notes: Special Topics
    - Theory and Technology for E-Business
      These lectures provide an overview of E-Business with a focus on technology. I have used the lectures for seminars offered in Norway and
The mail tools used on Unix are multiple and all are imap and pop compliant:

- pine exists as a command line mail tool
- mailtool is the default solaris mailtool
- netscape provides a powerful mail capability
pine

File  Edit  Options  Fonts  Help

<table>
<thead>
<tr>
<th>Key</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>HELP</td>
<td>Get help using Pine</td>
</tr>
<tr>
<td>C</td>
<td>COMPOSE MESSAGE</td>
<td>Compose and send/post a message</td>
</tr>
<tr>
<td>I</td>
<td>MESSAGE INDEX</td>
<td>View messages in current folder</td>
</tr>
<tr>
<td>L</td>
<td>FOLDER LIST</td>
<td>Select a folder OR news group to view</td>
</tr>
<tr>
<td>A</td>
<td>ADDRESS BOOK</td>
<td>Update address book</td>
</tr>
<tr>
<td>S</td>
<td>SETUP</td>
<td>Configure Pine Options</td>
</tr>
<tr>
<td>Q</td>
<td>QUIT</td>
<td>Leave the Pine program</td>
</tr>
</tbody>
</table>

Copyright 1989-1998. PINE is a trademark of the University of Washington.

HOST: mail.sis.pitt.edu  ENTER LOGIN NAME: spring
Subject: URL of 2770 project

Date: Mon, 17 Dec 2001 14:49:53 -0500 (EST)
From: Man Luo <mluo@mail.sis.pitt.edu>
To: "M. Spring Class Account" <mbs.class@mail.sis.pitt.edu>
CC: lqxi+@pitt.edu, su_wenqi@hotmail.com

Dr. Spring:

Sorry for forgetting to tell you the URL of our spider project.

It is http://www2.sis.pitt.edu/~mluo/cgi-bin/is2770/final/spider.html

Mann Luo
Utilities

✦ There are numerous utilities on Unix
✦ Two of the command line utilities are:
  - grep
  - ftp
✦ Two of the graphical utilities are:
  - xv
  - xman
**grep**

- The General Regular Expression Program or grep is a program to search streams
  - allows the user to search a standard I/O stream for terms or patterns
  - Allows the numbering or lines
  - Allows non matches to be displayed
  - Allows counts to be developed
- Helps with voluminous data streams
<table>
<thead>
<tr>
<th>User</th>
<th>PID</th>
<th>UserID</th>
<th>Time</th>
<th>UserType</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>wiklom</td>
<td>8472</td>
<td>8372</td>
<td>13:00:50</td>
<td>pts/13</td>
<td>0:01 pine</td>
</tr>
<tr>
<td>rrizzo</td>
<td>10147</td>
<td>10137</td>
<td>15:25:53</td>
<td>pts/23</td>
<td>0:01 pine</td>
</tr>
<tr>
<td>pclark</td>
<td>10271</td>
<td>10264</td>
<td>15:32:22</td>
<td>pts/14</td>
<td>0:00 pine</td>
</tr>
</tbody>
</table>

```
{521}paradox:images$ ps -ef | wc -l
175
```

```
{522}paradox:images$ ps -ef | grep pine
  aliang 10240 10236 0 15:30:45 pts/49 0:00 pine
  mokuda 7466 7462 0 Jan 30 pts/7 0:00 pine
  ahammad 22435 27222 0 Feb 04 pts/18 0:05 pine
  ajamal 5795 5791 0 09:02:26 pts/28 0:01 pine
  spring 10284 10054 0 15:33:45 pts/5 0:00 grep pine
  digernes 7922 7908 0 12:06:15 pts/36 0:01 pine
  jacobson 8725 8721 0 13:25:21 pts/24 0:03 pine
  chatrees 8973 8969 0 13:43:07 pts/50 0:00 pipe -i
  jarauz 9019 9014 0 13:47:04 pts/51 0:00 pine
  ahammad 21334 10555 0 Jan 31 pts/34 0:01 pine
  hkarimi 4930 4926 0 06:27:02 pts/26 0:13 pine
  rflynn 10006 10215 0 15:16:07 pts/4 0:01 pine
  jacobson 19482 19473 0 Feb 04 pts/21 0:02 pine
  swillms 5607 5601 0 08:42:51 pts/39 0:03 pine
  xiaobing 9612 9607 0 14:38:36 pts/44 0:01 pine
  sujata 6347 6332 0 09:55:39 pts/15 0:01 pine
  mheo 9736 9713 0 01:54:44 pts/56 0:01 pine
  gwync 7364 7359 0 11:31:53 pts/40 0:00 pine
  rcox 9703 9325 0 14:46:19 pts/8 0:01 pine
  sujata 7965 7950 0 12:13:28 pts/42 0:02 pine
  cholyeon 9207 8560 0 01:40:01 pts/33 0:01 pine
  siriluck 6617 6613 0 10:20:08 pts/3 0:01 pine
  jacobson 9095 9091 0 13:57:30 pts/47 0:06 pine
  djoudrey 10117 10113 0 15:23:56 pts/29 0:00 pine
  smasters 10041 10037 0 15:18:17 pts/35 0:04 pine
  wiklom 8472 8372 0 13:00:50 pts/13 0:01 pine
  rrizzo 10280 10137 0 15:33:20 pts/23 0:00 pine
  pclark 10271 10264 0 15:32:22 pts/14 0:00 pine
```

```
{523}paradox:images$ 
```
ftp

- ftp stands for file transfer protocol
  - It was one of the first network programs in Unix
  - The ftp works through a client/server program set
  - The host system runs a server called ftpd
  - The client runs a client program normally called ftp
  - Some systems allow restricted “anonymous” ftp

- PC based interfaces tend to hide the underlying ftp commands, Unix ftp is normally command line
  - ftp does automatic conversion of line endings as needed
  - To turn this feature off, use binary mode
Connected to augment.sis.pitt.edu.
220 augment.sis.pitt.edu FTP server (SunOS 5.6) ready.
Name (augment.sis.pitt.edu:spring): spring
331 Password required for spring.
Password:
230 User spring logged in.
ftp> pwd
257 "/export/home/spring" is current directory.
ftp> ls
200 PORT command successful.
150 ASCII data connection for /bin/ls (136.142.116.28,58940) (0 bytes).
2
Chajongs_Parser
G_CASCADE
Mail
NEWFILE.BMP
NEWFILE2.BMP
SISReport
agent.dat
base16.c
bin
cas_ballot
cc
c-temp
curmu1.dat
curmu2.dat
curmu3.dat
docuverse
dp
espeak
htdocs
humor
images
ls
Common ftp Commands

- `get` will get a single file
- `put` will put a single file
- `binary` specifies that files are to be moved byte for byte
  - text mode does PC to UNIX conversion of line endings
- `prompt` turns off prompting for `mget` and `mput`
  - `mget` will get multiple files
  - `Mput` will put multiple files
  - `hash` prints a hash mark for each block moved
- Commands like `cd` and `pwd` operate on the remote system
- “! Command” allows a command to be executed locally from within `ftp`
**XV**

- An image display and manipulation utility
  - Allows editing of the color palette
  - Allows display of image information
  - Allows file type conversion
  - Allows resizing and cropping
xman

A utility to view man pages

- Allows index and pages open simultaneously
- Allows easy browsing – recognition versus recall
- Allows scrolling back and forth
- Allows model of “sections”
NAME
gzip, gunzip, zcat – compress or expand files

SYNOPSIS
gzip [-acdfhIlNrtvV19] [-S suffix] [name ...]
gunzip [-acfhlInrtvV] [-S suffix] [name ...]
zcat [-fhlV] [name ...]

DESCRIPTION
Gzip reduces the size of the named files using Lempel–Ziv coding (LZ77). Whenever possible, each file is replaced by one with the extension .gz, while keeping the same ownership modes, access and modification times. (The default extension is –gz for VMS, z for MSDOS, OS/2 FAT, Windows NT FAT and Atari.) If no files are specified, or if a file name is “–”, the standard input is compressed to the standard out-