Review Chapter 8: Linux Utilities

File Processing Utilities:

Command	Brief Description of Function
awk	Processes files
cat	Displays files (and is used with other tools to concatenate files)
cmp	Compares two files
comm	Compares sorted files, and shows differences
cp	Copies files
cpio	Copies and backs up files to an archive
cut	Selects characters or fields from input lines
dd	Copies and converts input records
diff	Compares two text files, and shows differences
dump	Backs up files
fdformat	Formats a floppy disk at a low level
file	Displays the file type
find	Finds files within file tree
fmt	Formats text very simply
grep	Matches patterns in a file
groff	Processes embedded text formatting codes
gzip	Compresses or decompresses files
head	Displays the first part of a file (first 10 lines by default)
ispell	Checks one or more files for spelling errors
less	Displays files allowing for scrolling forward and backward (pauses when screen is full)
ln	Creates a link to a file
lpr	Sends a file to a printer or printer device
ls	Lists file and directory names and attributes
man	Displays documentation for commands
mkbootdisk	Creates a CD (or floppy disk on older distributions) from which to boot a system
mkdir	Creates a new directory
mkfs	Builds a UNIX/Linux file system
mount	Mounts file systems and devices
mv	Renames and moves files and directories
newfs	Creates a new file system (used in UNIX systems in particular)
od	Formats and displays data from a file in octal, hexadecimal, and ASCII formats
paste	Concatenates files horizontally
pr	Formats text files for printing and displays them
pwd	Shows the directory you are in
rdev	Queries or sets the root image device
restore	Restores files (from a dump)
rm	Removes files
rmdir	Removes directories
sed	Edits streams (noninteractive)
sort	Sorts or merges files
tail	Displays the last lines of files (last 10 lines by default)
tar	Copies and backs up files to a tape archive
touch	Changes file modification dates
uniq	Displays unique lines of a sorted file
wc	Counts lines, words, and bytes
whereis	Locates information about a specific file

System Status Utilities

Command	Brief Description of Function
date	Sets and displays date and time
df	Displays the amount of free space remaining on disk
du	Summarizes file space usage
file	Determines file type (for example: shell script, executable, ASCII text, and others)
finger	Displays detailed information about users who are logged in
free	Displays amount of free and used memory in the system
edquota	Displays user disk quotas and enables them to be changed
kill	Terminates a running process
ps	Displays process status by process identification number and name
sleep	Suspends process execution for a specified time
top	Dynamically displays the status of processes in real time, focusing on those processes that are using the most CPU resources
uname	Shows information about the operating system
vmstat	Shows information about virtual memory use
w	Displays detailed information about the users who are logged in
who	Displays brief information about the users who are logged in

Network Utilities

Command	Brief Description of Function
ftp	Transfers files over a network
ifconfig	Sets up a network interface
netstat	Shows network connection information
nfsstat	Shows statistics for Network File System (NFS; file upload and download) activity
ping	Polls another network station (using TCP/IP); great for a fast determination about whether your network connection is working
scp	Remotely copies a file from a network computer
ssh	Logs in to a remote computer
route	Displays routing table information, and can be used to configure routing
ssh	Executes commands on a remote computer
showmount	Lists clients that have mounted volumes on a server
telnet	Connects to a remote computer on a network (replaced by ssh)
traceroute	Shows the route along a network between the source device and the destination, such as from a computer to a server
wvdial	Controls a modem dialer for dial-up connections over a phone line

Communications Utilities

Command	Brief Description of Function
mail	Sends electronic mail messages
mesg	Denies (mesg n) or accepts (mesg y) messages
talk	Lets users simultaneously type messages to each other
wall	Sends a message to all logged in users (who have permissions set to receive messages)
write	Sends a message to another user

Security Utilities

Command	Brief Description of Function
chgrp	Changes the group associated with a file or the file's group ownership
chmod	Changes the access permissions of a file or directory
chown	Changes the owner of a file
ipchains	Manages a firewall and packet filtering (do not use if you are using iptables instead)
iptables	Manages a firewall and packet filtering (do not use if you are using ipchains instead)
passwd	Changes a password

Programming Utilities

Command	Brief Description of Function
configure	Configures program source code automatically
g++	Compiles a C++ program
gcc	Compiles a C program
make	Maintains program source code
patch	Updates source code

Source code management Utilities

Command	Brief Description of Function
ci	Creates changes in Revision Control Systems (RCS)
co	Retrieves an unencoded revision of an RCS file
cvs	Manages concurrent access to files in a hierarchy
rcs	Creates or changes the attributes of an RCS file
rlog	Prints a summary of the history of an RCS file

Miscellaneous Utilities

Command	Brief Description of Function
at	Executes a command or script at a specified time
atq	Shows the jobs (commands or scripts) already scheduled to run
atrm	Enables you to remove a job (command or script) that is scheduled to run
batch	Runs a command or script, and is really a subset of the at command that takes you to the at> prompt, if you type only batch (in Fedora, Red Hat Enterprise Linux, or SUSE, a command or script is run when the system load is at an acceptable level)
cal	Displays a calendar for a month or year
cd	Changes to a directory
crontab	Schedules a command to run at a preset time
expr	Evaluates expressions (used for arithmetic and string manipulations)
fsck	Checks and fixes problems on a file system (repairs damage)
printenv	Prints environment variables
tee	Clones output stream to one or more files
tr	Replaces specified characters (a translation filter)
tty	Displays terminal path name
xargs	Converts standard output of one command into arguments for another

Examples of Linux System Utilities

#See how full the directories are in human-readable form
df -h

#See the size of /var/log
du -sh /var/log

#See the top running processes
top

#See how long the computer has been running
uptime

#See how much RAM memory is free
free

#Run a process in the background
./script.sh &

#list running processes on machine
ps -fax

#stop a running process, replace 2222 with the id of the process
kill -9 2222

#compare two documents by character, may be binary
cmp today.bmp yesterday.bmp

#to get information about your network connection
ifconfig

#to test communication between you and a server
ping www.ibm.com

#to check the path
traceroute www.google.com

#more network information
netstat

#manage daemons
systemctl restart httpd