

Shell Commands

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Shell Commands

cat	head	pico	tail
cut	history	ps	touch
cc	kill	pwd	tr
cd	ls	rm	uname
chmod	man	rmdir	vi
cp	mkdir	scp	wc
echo	more	sed	which
find	mv	sort	whoami
grep	od	ssh	xxd

ps, kill to be introduced later

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Shell Commands

man	help manual online specification for shell commands
	"space" to next page "b" for previous page "q" to quit

Shell Commands

more	display page by page
	more [file] ...
	"page up" for previous screen "space" for next screen "q" for quit
	e.g. <div> <div>> more computer</div> <div># similar to</div> <div># > cat computer</div> </div> <div>> history more</div>

Shell Commands

cat	concatenate and print files
	cat [file] ...
	e.g. > cat dog

Shell Commands

ls	list directory contents
	ls -a do not ignore entries starting with .
	ls -R recursively
	ls -l use a long listing format

Shell Commands

file type
number of hard links
group name
time stamp

`-rwxr-xr-x 1 xjchen 1002 49 Apr 9 14:08 myscript`

permissions
owner name
size in bytes
file name

```

Terminal — ssh — 80x24
~/60256/demo> ls -l
total 7
drwxr-xr-x 2 xjchen 1002  2 Mar 28 17:06 assignment1
drwxr-xr-x 2 xjchen 1002  2 Mar 28 17:20 assignment2
-rwxr-xr-x 1 xjchen 1002 109 Apr  1 10:32 grep
-rwxr-xr-x 1 xjchen 1002  49 Apr  9 14:08 myscript
drwxr-xr-x 2 xjchen 1002  5 Apr 10 10:22 text
~/60256/demo>

```

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Shell Commands

chmod	change file modes
	e.g. chmod 755 filename chmod u+x filename chmod +x filename chmod go-rwx filename

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Shell Commands

cd	change directory
----	------------------

```
> cd                # change to home directory
> cd ..            # change to parent directory
> cd /etc/passwd
> cd 60-256/demo
```

Shell Commands

mkdir	make directories
rm	remove files and directories
	rm -i # prompt for each removal
	rm -r # can remove non-empty directory
	e.g. rm * rm *.* rm -r directoryname
rmdir	remove empty directories
	directories will not be removed if they are not empty

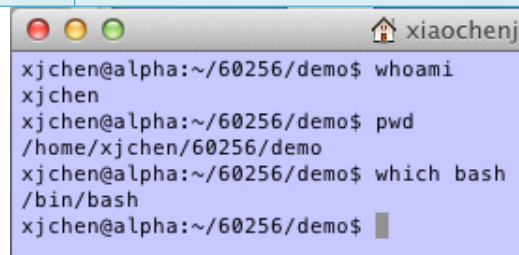
Shell Commands

mv	move (rename) files
	<i>mv source destination</i>
cp (scp)	copy files and directories
	<i>cp source destination</i>

source and *destination* can be either directory name or file name

Shell Commands

whoami	print effective user id
pwd	print current/working directory
which	locate a command
uname	print system information
ps	display the status of current processes
kill	send a signal to a process



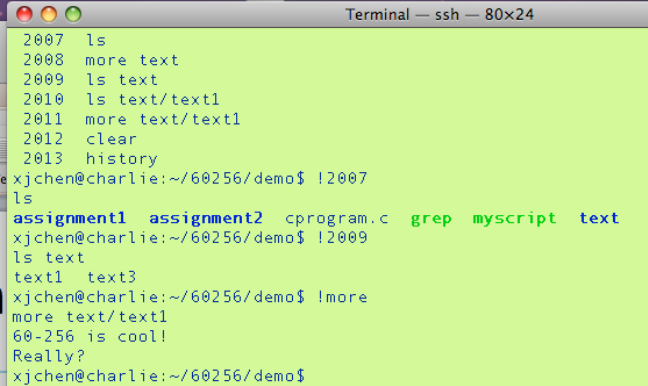
```

xjchen@alpha:~/60256/demo$ whoami
xjchen
xjchen@alpha:~/60256/demo$ pwd
/home/xjchen/60256/demo
xjchen@alpha:~/60256/demo$ which bash
/bin/bash
xjchen@alpha:~/60256/demo$

```

Shell Commands

history	print previous commands
	"!" for executing a previous command in history



The terminal window shows a list of commands and their outputs. The history list includes: 2007 ls, 2008 more text, 2009 ls text, 2010 ls text/text1, 2011 more text/text1, 2012 clear, and 2013 history. Below the history list, the user enters `!2007`, which executes the `ls` command from the history. The output shows files: `assignment1 assignment2 cprogram.c grep myscript text`. The user then enters `!2009`, which executes the `ls text` command, showing `text1 text3`. Finally, the user enters `!more`, which executes the `more text/text1` command, displaying the contents of the file: `60-256 is cool!` and `Really?`.

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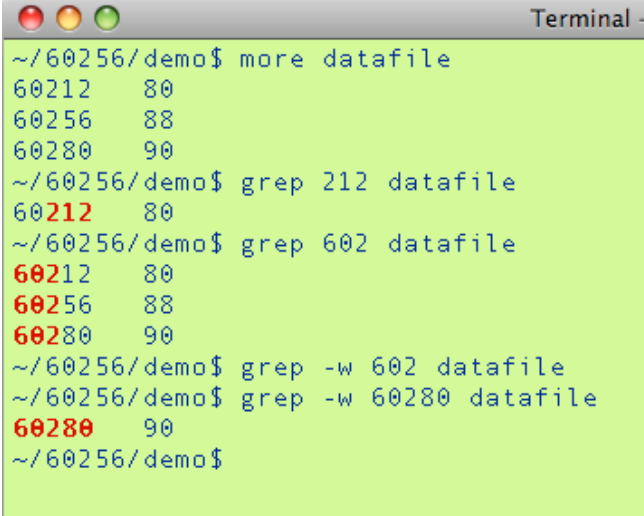
grep	print lines matching a pattern
	> <code>grep -w Pattern [File] ...</code> use <code>-w</code> to match the pattern as a word, not a substring of a word

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Shell Commands



```

~/60256/demo$ more datafile
60212    80
60256    88
60280    90
~/60256/demo$ grep 212 datafile
60212    80
~/60256/demo$ grep 602 datafile
60212    80
60256    88
60280    90
~/60256/demo$ grep -w 602 datafile
~/60256/demo$ grep -w 60280 datafile
60280    90
~/60256/demo$
  
```

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Shell Commands

find	search for files in a directory hierarchy
	find . -name only base name used for matching
	find . -path complete path name used for matching

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Shell Commands

wc	print newline, word and byte counts for each file
	> wc -l [File] # count number of lines
	> wc -w [File] # count number of words
	> wc -c [File] # count number of bytes

```

Terminal — ssh —
xjchen@charlie:~/60256/demo$ more text1
60-256 is cool !
No. It's cooler.
Ha Ha...
xjchen@charlie:~/60256/demo$ wc -l text1
3 text1
xjchen@charlie:~/60256/demo$ wc -w text1
9 text1
xjchen@charlie:~/60256/demo$ wc -c text1
43 text1
xjchen@charlie:~/60256/demo$

```

check this number 43 with file size

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Shell Commands

head	output first part of files
	head [-n lines -c bytes] [File] ...

```

Terminal — ssh —
xjchen@charlie:~/60256/demo$ more text1
60-256 is cool !
No. It's cooler.
Ha Ha...
xjchen@charlie:~/60256/demo$ head -n 2 text1
60-256 is cool !
No. It's cooler.
xjchen@charlie:~/60256/demo$

```

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Shell Commands

tail	output last part of files
	tail [-n lines -c bytes] [File ...]

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Shell Commands

default: tab

cut	remove sections from each line of files
	> cut -d DELIM -f range1,range2,... [File] ...
	select fields in range1, range2, etc.
	use delimiter DELIM instead of TAB for field delimiter
	range:
N	the Nth field
N-	from N to end
N-M	from N to M
-M	from 1 to M

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Shell Commands

```

Terminal — ssh — 80x24
xjchen@bravo:~/60256/demo$ more text1
100 Honda CRV 2010 188,910
101 Toyota Highlander 2013 80,010
xjchen@bravo:~/60256/demo$ cut -f 1 text1
100 Honda CRV 2010 188,910
101 Toyota Highlander 2013 80,010
xjchen@bravo:~/60256/demo$ cut -d " " -f 1 text1
100
101
xjchen@bravo:~/60256/demo$ cut -d " " -f 2-3 text1
Honda CRV
Toyota Highlander
xjchen@bravo:~/60256/demo$ cut -d " " -f 1,3-4 text1
100 CRV 2010
101 Highlander 2013
xjchen@bravo:~/60256/demo$ █

```

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Shell Commands

tr	translate or delete characters
	from standard input to standard output
	e.g.
<div>not</div> <div>> tr old new filename</div>	> tr old new < filename # translation
	> tr -d old # deletion

```

[>>>> more demo
Welcome to COMP-2560
[>>>> tr " " "\n" < demo
Welcome
to
COMP-2560
>>>> █

```

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Shell Commands

tr	translate or delete characters
	from standard input to standard output
	e.g. > tr old new < filename # translation > tr -d old # deletion

to delete all digits:

```
tr -d [:digit:]
tr -d [0-9]
```

Shell Commands

sed	stream editor
	> sed -i 1 ... [File] in-place editing: modify the supplied file rather than displaying modified file
	e.g. > sed -i 1 s/old/new/g datafile

Shell Commands

```
[>>>> more unix
unix is cool.
many useful commands in unix
[>>>> sed s/unix/Unix/g unix
Unix is cool.
many useful commands in Unix
[>>>> sed -i .backup s/unix/Unix/g unix
[>>>> more unix
Unix is cool.
many useful commands in Unix
[>>>> more unix.backup
unix is cool.
many useful commands in unix
>>>> █
```

For *in place* substitution, the file will be changed.
The original file is saved into *unix.name* where
name is given by user

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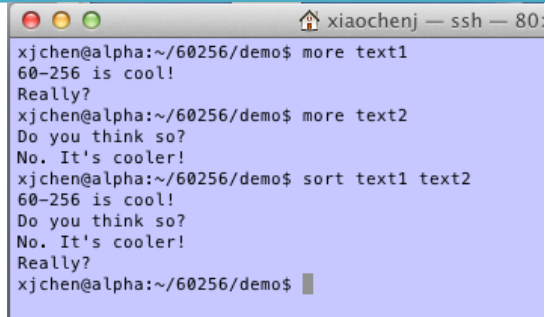
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Shell Commands

sort [file] ...

sort lines of text files
concatenate all files
sort by line
write to standard output



```
xiaochenj — ssh — 80:
xjchen@alpha:~/60256/demo$ more text1
60-256 is cool!
Really?
xjchen@alpha:~/60256/demo$ more text2
Do you think so?
No. It's cooler!
xjchen@alpha:~/60256/demo$ sort text1 text2
60-256 is cool!
Do you think so?
No. It's cooler!
Really?
xjchen@alpha:~/60256/demo$ █
```

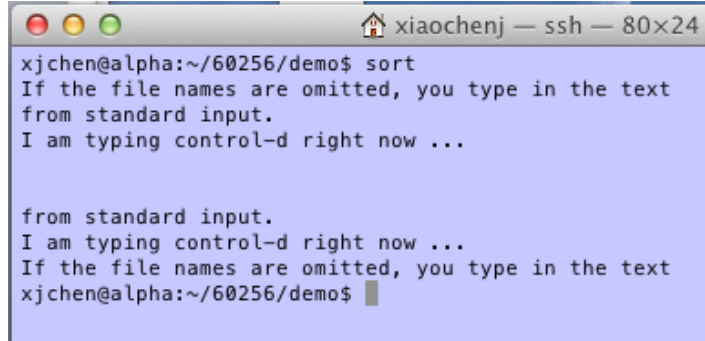
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Shell Commands

sort [file] ...	sort lines of text files concatenate all files sort by line write to standard output
-----------------	---



```
xjchen@alpha:~/60256/demo$ sort
If the file names are omitted, you type in the text
from standard input.
I am typing control-d right now ...

from standard input.
I am typing control-d right now ...
If the file names are omitted, you type in the text
xjchen@alpha:~/60256/demo$
```