

CSCI 211

UNIX Lab

Advanced Unix Commands (3)

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Today's Focus

- Show part of a file
- Combine data
- Check spelling
- Command line calculator
- Check disk space usage
- Get command path

head

- Show the first 10 lines

```
head file
```

- Show the first 20 lines

```
head -20 file
```

```
head -n 20 file
```

- Show all but the last 20 lines

```
head -n -20 file
```

- Show the first 20 characters

```
head -c 20 file
```

- Show all but the last 20 characters

```
head -c -20 file
```

tail

- Show the last 10 lines

```
tail file
```

- Show the last 20 lines

```
tail -20 file
```

```
tail -n 20 file
```

- Show everything starting from the 20th line

```
tail -n +20 file
```

- Show the last 20 characters

```
tail -c 20 file
```

- Show everything starting from the 20th character

```
tail -c +20 file
```

cut

- Show the first character of each line

```
cut -c1 file
```

- Show the 3rd to 5th character of each line

```
cut -c3-5 file
```

- Show all the characters starting at the 5th one of each line

```
cut -c5- file
```

- Show the 3rd to 5th, and 11th to 20th character of each line

```
cut -c3-5,11-20 file
```

- Show the second field (default delimiter: TAB)

```
cut -f2 file
```

- Show the second field with the comma as delimiter

```
cut -f2 -d',' file
```

paste

- **Syntax**

```
paste [-d char] filename
```

- **Example**

```
cut -c1-3 sourcefile > data1
```

```
cut -f 1 sourcefile > data2
```

```
cut -f 2 -d, sourcefile > data3
```

```
paste data2 data3 data1 > targetfile
```

```
paste -d' ' data2 data3 data1 > targetfile
```

```
paste -d, data2 data3 data1 > targetfile
```

Check Spelling

- Content of 'words'

potatoe

banana

aple

turkey

- Command example

spell words

- Output

aple

potatoe

Calculator (1)

- Syntax for interactive processing

`bc` (Integer calculation by default)

`bc -l` (Floating point calculation by default)

- Check/set number of digits after decimal

`scale`

`scale=n`

- Some command operators

modulo: `%`, exponentiation: `^`, square root: `sqrt`

- Exit

`quit` or `ctrl-d`

Calculator (2)

- Syntax for non-interactive processing

```
bc file
```

```
echo "2 % sqrt(4)" | bc
```

- File example

```
scale=4
```

```
1 / 3 + 4.5
```

```
2^(3 / 4)
```

```
quit
```

Disk Space Usage (1)

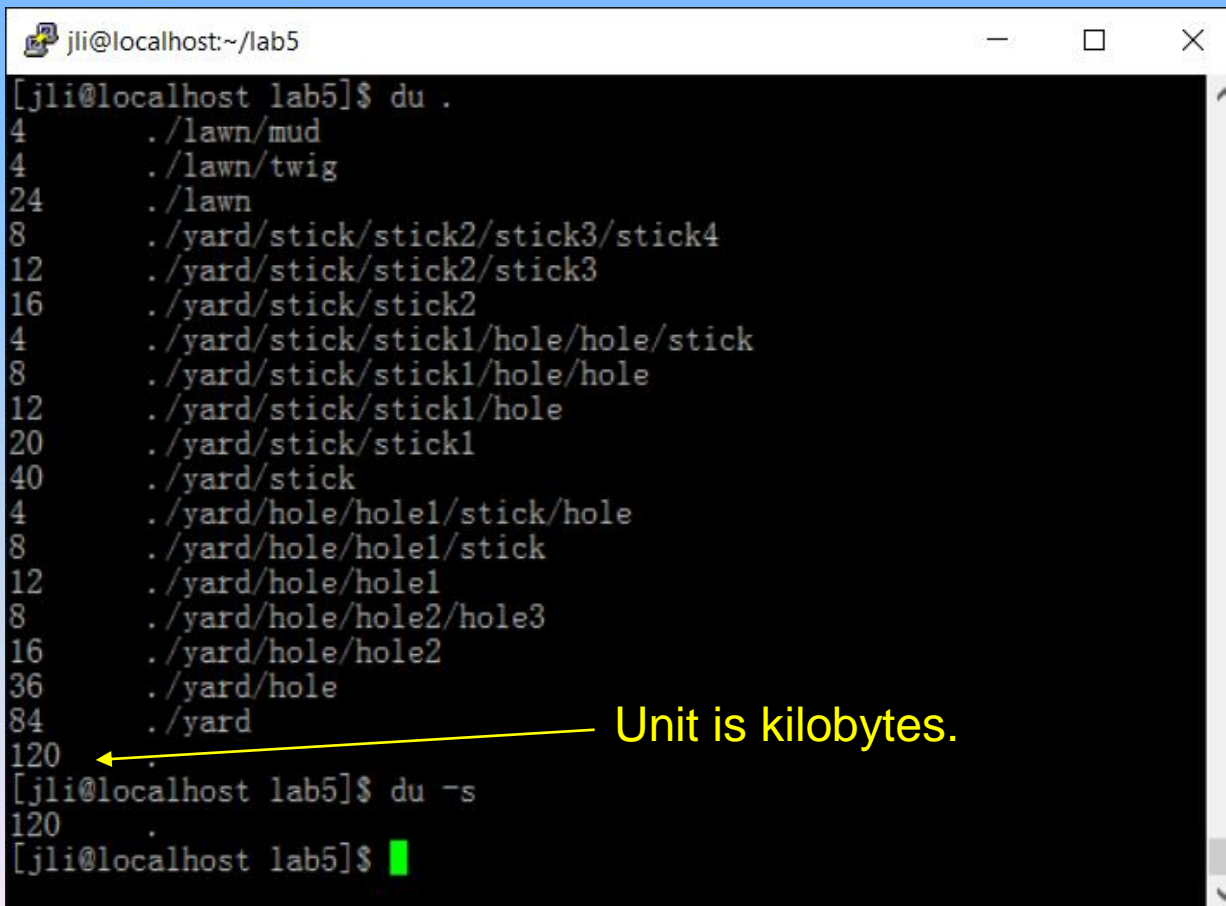
- How much is used overall? - df

```
jli@localhost:~/lab5
[jli@localhost lab5]$ df
Filesystem            1K-blocks      Used Available Use% Mounted on
/dev/mapper/VolGroup-lv_root
                    51606140    5377844  43606856   11% /
tmpfs                  491108         240    490868    1% /dev/shm
/dev/sda1              495844      29022    441222    7% /boot
/dev/mapper/VolGroup-lv_home
                    99728888    4760236  89902720    6% /home
[jli@localhost lab5]$
```

Unit is kilobytes.

Disk Space Usage (2)

- How much space is used by a file/directory? - du

A terminal window titled 'jli@localhost:~/lab5' showing the output of the 'du' command. The output lists various subdirectories and their sizes in kilobytes. A yellow arrow points from the text 'Unit is kilobytes.' to the final line of the 'du .' command output, which is '120'. Below this, the command 'du -s' is shown, also outputting '120'.

```
jli@localhost:~/lab5
[jli@localhost lab5]$ du .
4      ./lawn/mud
4      ./lawn/twig
24     ./lawn
8      ./yard/stick/stick2/stick3/stick4
12     ./yard/stick/stick2/stick3
16     ./yard/stick/stick2
4      ./yard/stick/stick1/hole/hole/stick
8      ./yard/stick/stick1/hole/hole
12     ./yard/stick/stick1/hole
20     ./yard/stick/stick1
40     ./yard/stick
4      ./yard/hole/hole1/stick/hole
8      ./yard/hole/hole1/stick
12     ./yard/hole/hole1
8      ./yard/hole/hole2/hole3
16     ./yard/hole/hole2
36     ./yard/hole
84     ./yard
120    .
[jli@localhost lab5]$ du -s
120    .
[jli@localhost lab5]$
```

Unit is kilobytes.

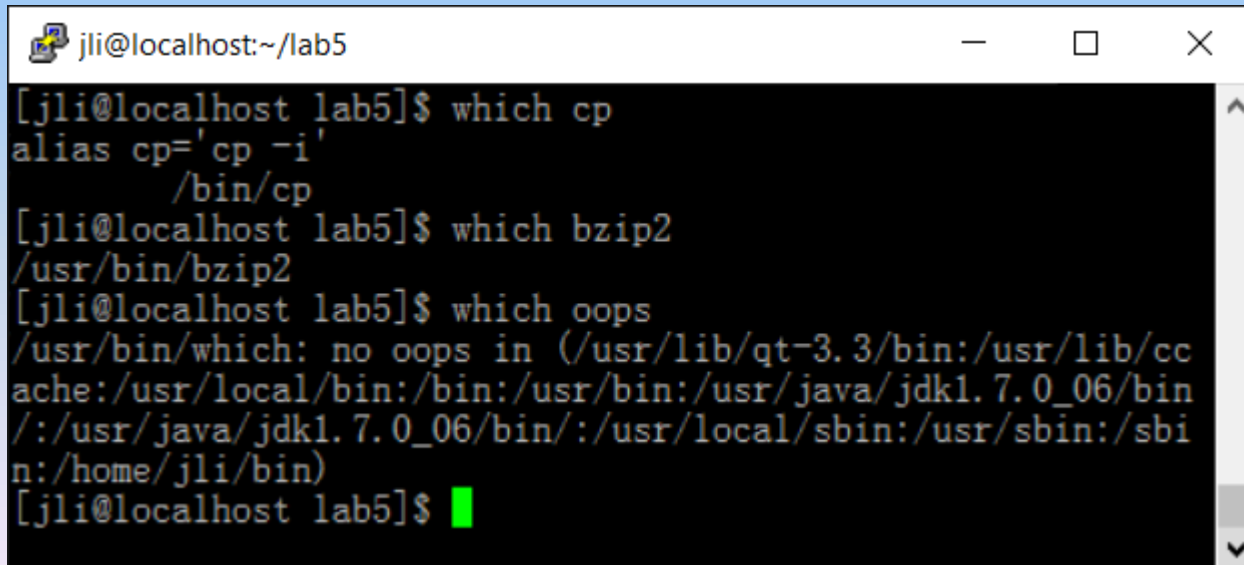
Where is a command located?

- Command

`which <command>`

- Example

`which ls`

A terminal window titled 'jli@localhost:~/lab5' with standard window controls. The terminal shows the following commands and output:

```
[jli@localhost lab5]$ which cp
alias cp='cp -i'
/bin/cp
[jli@localhost lab5]$ which bzip2
/usr/bin/bzip2
[jli@localhost lab5]$ which oops
/usr/bin/which: no oops in (/usr/lib/qt-3.3/bin:/usr/lib/ccache:/usr/local/bin:/bin:/usr/bin:/usr/java/jdk1.7.0_06/bin:/usr/java/jdk1.7.0_06/bin:/usr/local/sbin:/usr/sbin:/sbin:/home/jli/bin)
[jli@localhost lab5]$
```