

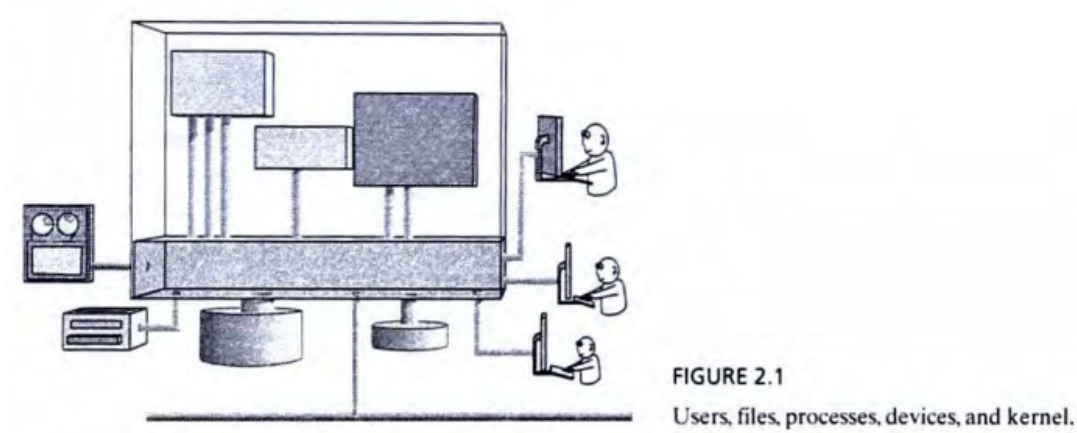
# 【Linux Programming】 Day3(2)

▼ Class	Understanding Linux/Unix Programming
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## 【Ch2】 Users, Files and the Manual

### 2.2 Asking About who

Recall this picture of a Unix system:



The large box is **computer memory**; it is divided into **user space** and **system space**.

Users **connect to the system from terminals**. This system has two hard disks, shown as large cylinders, and one printer. Various programs are running in user space and communicate to the outside world through the kernel.

#### 2.2.1 Commands are Programs

Almost all Unix commands like `who` and `ls`, **are simply programs** written by a variety of people.

Adding new commands to Unix is easy. We write a new program and have the executable file stored in one of the standard system directories such as `/bin`, `/usr/bin`, `/usr/local/bin`.

### 2.3 Question 1: What does who do?

If we want to know who is using the system, we type the command `who`:

```
$ who
heckerl    ttyt1    Jul 21 19:51    (tide75.surfcity.com)
nlopez     ttyt2    Jul 21 18:11    (roam163-141.student.ivy.edu)
dgsulliv   ttyt3    Jul 21 14:18    (h004005a8bd64.ne.mediaone.net)
ackerman   ttyt4    Jul 15 22:40    (asd1-254.fas.state.edu)
wwchen     ttyt5    Jul 21 19:57    (circle.square.edu)
barbier    ttyt6    Jul  8 13:08    (labpc18.elsie.special.edu)
ramakris   ttyt7    Jul 13 08:51    (roam157-97.student.ivy.edu)
czhu       ttyt8    Jul 21 12:47    (spa.sailboat.edu)
bpsteven   ttyt9    Jul 21 18:26    (207.178.203.99)
molay      ttyt10   Jul 21 20:00    (xyz73-200.harvard.edu)
$
```

Each line represents one log-in session.

The first item on the line is **the username** of the user, the next column is **the name of the terminal** at which the user is logged in. The third part tells **when the person logged in**, and the last part tells from where the user logged in.

#### 2.3.1 Reading the Manual

Running `who` provides some information about what the command does.

The manual is on the disk, and the command to read a page from the manual is `man`.

```
$ man who
who(1)                                who(1)

NAME

  who - Identifies users currently logged in

SYNOPSIS

  who [-a] [-AbdhHlMpqrsTu] [file]
  who am i
  who am I
  whoami

Some Unix software supplements the traditional man documentation with references using the info system
or with a linked collection of HTML pages.
```

```
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The who command displays information about users and processes on the
local system.

STANDARDS

  Interfaces documented on this reference page conform to industry
  standards as follows:

  who: XPG4, XPG4-UNIX

  Refer to the standards(5) reference page for more information about
  industry standards and associated tags.

OPTIONS

  -a Specifies all options; processes /var/adm/utmp or the named file
      with all options on. Equivalent to using the -b, -d, -l, -p, -r,
      -t, -T, and -u options.
more (10%)
```

All manual pages, often called [manpages](#), have the same basic format.

The top line tells the name of the command and the section of the manual in which it appears. This example shows `who(1)`; the command is called `who` and the section number is 1. Section 1 contains documentation for all user commands.

The [NAME](#) section of a manpage contains the name of the command and a one-line summary of what the command does.

The [SYNOPSIS](#) section shows how to use the command. It shows what to type and lists the arguments and options the command accepts. An [option](#) is usually a dash followed by one or more letters.

Manpages use square brackets( `[-a]` ) to indicate items that may be included but are not required by the command.

This page for `who` shows that we can type `who` by itself, you can type `who -a`, or we can type `who` followed by a dash and any combination of `AbdhHlMpqrsTu`, followed by a filename if we like.