INTERNATIONAL ATOMIC ENERGY AGENCY
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS
34100 TRIESTE (ITALY) - P.O.B. 586 - MIRAMARE - STRADA COSTIERA 11 - TELEPHONE: 2240-1
CABLE: CENTRATOM - TELEX 460392 - I

SMR/406-14

THIRD AUTUMN WORKSHOP ON ATMOSPHERIC
RADIATION AND CLOUD PHYSICS
27 November - 15 December 1989

"How to Use the ICTP Unix Workstations: A Guide for the Workshop on Clouds and Radiations"

Jorgen JENSEN
Commonwealth Scientific & Industrial Research Organization
Divison of Atmospheric Research
Victoria
AUSTRALIA

Please note: These are preliminary notes intended for internal distribution only.

HOW TO USE THE ICTP UNIX WORKSTATIONS: A GUIDE FOR THE THIRD WORKSHOP ON CLOUDS AND RADIATION.

Alan M. Blyth and Jørgen B. Jensen

1. Introduction.

ICTP has a large number of Sun workstations installed for general usage. Five of these are located in the computer room in the basement of the Adriatico Guesthouse. These workstations are all connected to one another and to the main center computer (Convex 210) by means of ethernet. In the Adriatico computer room there are in addition a large number of PC's, which are also connected by ethernet to the Sun workstations. The Sun workstations all use Unix as their primary operating system. The PC's run DOS, but once they are used for logging onto the Sun stations, then they will act as terminals and normal Unix commands can be executed.

Unix will be used as the primary operating system for the cloud physics computer models and data analysis during the workshop. This manual describes how to use the Unix system (logging on, compiling, executing programs, printing results etc.) and how to transfer files from the PC to the Unix stations and vice versa. There is a separate manual describing the usage of the usual Unix editor, `vi`. There are only few manuals describing `vi`, so please do not remove them from the computer room.

If you desire to use DOS for your computer needs, then feel free to do so. However, the present author has almost no DOS knowledge, so you will be completely on your own! The only help we can give relates how to transfer files back and forth between the Unix stations and the PC's.

2. How to log onto the Sun stations.

The Sun workstations have a powerfull and complicated windows environment. It is not recommended that you use the Sun stations directly, unless you are already familiar with their windows environment. It is much simpler to use the PC's as Unix terminals; hence the following description will assume that you use one of the PC's in the Adriatico computer rooms.

Log on consists of the following steps:

1: Turn the PC on (if it is not already on).

2: It should now prompt you for you login name. You can type in any name, but it is suggested that you use your own name.

3: The PC will want you to verify your login name. Type `Y`.

4: The PC will give a series of messages relating tc the ethernet. once it prompts you with `C:USERS/YOURNAME>`, then type `telnet ictpsun1`. (You can type any number of 1-13, but it is recommended that you use numbers between 1-5 and above 10). This will assign your login session to the Sun workstation 1.

5: From now on all commands you execute will be on the Unix computer. The Unix computer will prompt you to login. Your login name will be `cloud`n, where n is a number between 1 and 10. The number should be the number under which you have signed up on the signup sheet in the lecture room. Use the same login name *every time.*

6: When prompted for password, type your login name once again. (Do not try to change your password; many other people as well as instructors will be using it).

7: You have now logged on to the Unix workstation, and you are positioned in a directory called /home/cloud$n$.

Before getting to work, it seems appropriate to list the commands for logging off the Unix system. When ready to log off, type `logout`, and you will be back

on the PC in DOS mode. **After you have logged off**, you may reset the PC by pushing the reset button on the front of the PC if you desire.

The first time you are in cloud*n*, you should create a directory of your own. All others who use the cloud*n* login should have their own directories. Suppose your name is Fred, then create a directory with your name by typing `mkdir fred`.

Next you should change into this directory by typing `cd fred`. In this directory you should have all your personal files, programs, output etc.

3. Basic Unix commands.

`mkdir dirname`. Make a new directory, e.g. `mkdir fred`.

`rmdir dirname`. Remove a directory, e.g. `rmdir fred`. In order to execute this command you must be one level above the directory to be removed.

`cd dirname` . Change to a directory, e.g. `cd fred`. Suppose you are in directory /home/cloud1/fred, and you want to go to directory /home/cloud2/peter, then type `cd ~ cloud2/peter`. In order to go one level up in the directory structure type `cd ..`

`pwd` . Show the name of the current directory.

`ls` . List the names of files in the current directory.

`ls -l` . List the names of files in the current directory, and adds more information regarding file size etc.

`cp file1 file2` . Copy a file, e.g. `cp file1 file2` will create a copy of file1 and call it file2.

`rm filename` . Remove (delete) a file called filename. ONLY TO BE USED IN YOUR OWN DIRECTORY.

`lpr -Plsr2 filename` . Print a file called filename on the laser printer in the Adriatico computer room.

`more filename` . Print a file on your terminal screen. Only the first page will show up, to display the next you must hit the space bar.

`cat file1 >> file2` . Append file1 on the end of file2.

`vi filename` . Invoke the standard Unix editor. See a separate document on the features of the `vi` editor.

`f77 prog.f -o prog` . Fortran compile the source file called prog.f and give the executable file the name prog. In order to run the program you must type `prog argument1 argument2` ..... Here argument1 and argument2 may be input and output file names. The number of arguments depend on files you wish to open in the program. For example, if you only want to have two open files, then insert the following statements in your fortran program:

```
character*50 file1,file2

call getarg(1,file1)

open(3,file=file1)

call getarg(2,file2)

open(4,file=file2)
```

You can now read from unit 3 and write to unit 4.

`who` . List who is logged on to the computer you are logged onto.

`ps` . List status of jobs running under your login name.

Using ftp to transfer files between Unix stations and PC.

In order to transfer files between Unix stations and the PC's, you should use the `ftp` command. In order to invoke this command, you must be in DOS mode on the PC. Hence you may have to log out of the Unix system first, see description above (type `logout`).

After logging off you should select the "Go to Exit Menu" option by using the down-arrow and then hit the enter (return) key.

Next you should select the "Exit to DOS...Keep Terminal Emulator Resident" option by using the down-arrow and then hit the enter (return) key.

Once you are on the DOS mode, you type `ftp ictpsun`*n*, where *n* is a number just as described in section 1. The Unix system will then prompt you to logon; do so just as you would have done in any other session. After that you change into your own directory by using the `cd dir_name` command.

You can now issue two commands: `get filename` to transfer a file from the Unix machine to the PC, and `put filename` to transfer a file from the PC to the Unix machine.

When you are done with the file transfer, type `bye` to return to the DOS environment on the PC. At this point you can copy files to the floppy disk using the usual DOS commands.