Scot's Brief Introduction to BBSO Linux Machines

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May 5, 1997

1 Introduction

Recently (April 1997), we have installed a number of Linux PCs here at BBSO. Linux is a free Unix-like operating system available for many different platforms, but run here on Intel machines instead of Windows 95. I have found on the Net, a variety of Unix tutorials that I think are useful to the new Unix user which I describe below. I have modified some of them to pertain more to the systems at BBSO, or to include slightly different information than they had originally. Others are left more or less as they were, so they may describe things that are a bit different than the situation here. Please ask me if you have any questions with any of this material.

In this document I mean to cover whatever I don't think has been covered well by the other tutorials, most notably the X-window system and the window manager I've installed by default for each user.

The other tutorials I found can be found in **/home/begonias/sjk/unixtut** or on the WWW at **http://begonias.bbso.caltech.edu**. Arranged in the order I suggest reading them, they are:

1.1 bbsolinux.ps

This is the postscript version of the document you are reading now. You will need to print it out to read it. There is also an HTML format available that you can read on the Web.

1.2 UnixBareMn.txt

This describes the Bare Minimum needed to get started with Unix. I recommend reading this one first. It covers basic Unix commands and a brief introduction to that standard, but dreaded Unix editor, **vi**.

1.3 unix.txt

A very brief introduction to Unix. I would just scan this after reading UnixBareMn.txt. It is only 3 pages long.

1.4 unix_intro.txt

Another short intro to Unix. It includes a few commands the other ones don't. Again, just skim through it until you find new stuff.

1.5 unix.tutorial.txt

A somewhat longer introduction than the above, but it includes things like running jobs in the background, talk, write, and more. I would skip past most of the first part which covers the same material as the other documents and go to the new stuff towards the end.

1.6 Network.txt

A few pages on mail and FTP.

1.7 FileSyst.txt

This describes how to navigate through directory structures, tell a text file from an executable, protect files so all or no one can read them, etc. Much of this is reviewed in the above documents, but it's done a little more thoroughly here. Still, it's only a few pages.

1.8 4ltrwrd.ps

This is a postscript file, meaning you can't look at it directly, but must see my copy or print one out yourself. It is a much longer introduction to Unix and VI. It may be better overall than the others, but it's longer, so I didn't put it first. The best way to learn Unix is to learn the basics then experiment with the commands and man and man -k to learn more, but this reference looks like it is pretty good (I admit I did not read it very carefully) so have a look at it after you get going and add a few more tricks to your bag.

1.9 Online Tutorials

If you prefer to learn via the WWW and Netscape, there are a number of on-line HTML tutorials you can check out. The ones that I found that looked good are:

- Unix Survival: http://gc.bcm.tmc.edu:8088/gc_help/unix.html
- UNIX help for users: http://www.wh.whoi.edu/Unixhelp/TOP_.html

- NACSE - Unix Tutorial: http://www.nacse.org/demos/coping-with-unix/frames2.html
- UnixWorld Online: http://www.wcmh.com/uworld/archives/95/tutorial/009/009.html
- Unix is a Four Letter Word: http://albrecht.ecn.purdue.edu/ taylor/4ltrwrd/html/unixman.html

There are links to these sites at **http://begonias.bbso.caltech.edu**. Also on this site are copies of this and all the other documents mentioned above.

2 X Windows

X, or X11, or X-Windows, is simply a windowing environment that runs over Unix, like Windows 3.1 and MS-DOS. There are other windowing environments available for Unix including some that let you manipulate files almost entirely through icons, but X11 is the standard and is what each new BBSO Linux account has by default. Within X there are various different window managers available. The window managers decide how the icons and windows will look. *fvwm* is the standard one for Linux and is again, what all initial accounts have available on startup. There are other managers that do similar things in slightly different ways, including some that mimic the look and feel of Windows95 (gack!) and even the Amiga (cool!) environment.

If you login to a Linux machine via QVT on a W95 PC, for example, you will not be running X at all — you will have a direct link to your command shell. When you logon via the Linux console, however, you can either work at the command shell you get when you login, or type **startx** to start X running.

When X starts, it probably won't look quite right; you'll need to select the screen mode you want to use. To cycle through the available screen modes, hold the Ctrl and Alt keys down simultaneously with the Keypad plus or minus key. The (+) key cycles you one way, and the (–) goes the other. You must use the (+) or (–) on the keypad — the QWERTY (+) and (–) will not work.

Once you have the proper screen mode set, you will have a mailbox for the machine you're on in the upper left, indicating whether or not you have unread mail, a clock directly below it, and a graph which shows how heavily used the system is. At the bottom left is a system console where system messages should appear. At the bottom right is a 4-squared box which is your gateway to virtual windows. Try clicking around in it with all 3 mouse buttons to see what happens. (The middle mouse button, if you have only a 2-button mouse is emulated by pressing both the left and right buttons simultaneously.)

In the middle of the screen, towards the top, is your command shell — the same thing you get when you login via a terminal program on your PC. It is here where you will run your Unix commands.

2.1 Menus

Unix is multi-tasking, so you can have many command shells and programs open at once. To open a new window to login to a different (or another session on the current machine) hold the left mouse button down on a blank area of the screen. You will get a menu of options including:

- Logins
- Applications
- Netstuff
- Shells
- Games
- etc.
- Quit!

Not all of these functions are fully working yet, but the main ones you will need to use are Logins, Netstuff and Quit! Logins, as the name implies, allows you to open new sessions on other machines, or more sessions on the same machine. So still holding the left button down move the mouse over to the arrow after *Logins* and a new menu will appear with machine names. Bring the mouse to the machine you want and let release the left button. If you have an account on that machine, a new window will appear with a command shell on that machine. The machine *Local* refers to the machine you are currently on and will open another shell on that computer. If at any time a box outline and arrow appear on your screen, that's the computer asking you where to put the new window — just move your mouse and click the left button to place the window somewhere; you can always move it again later.

Under *Netstuff* are the two Linux browsers, **Netscape** and **Arena**. **Netscape** is not fully supported under Linux, so you may notice some bugs, but it works well most of the time. **Arena** is a very simple browser with few features (it doesn't do frames (ack!) for example), but it might work in a pinch.

The last item on the left-mouse-button menu is *Quit!* When you are done and have logged out of all your command shells, and closed all your other windows (you can leave the console, mailbox, clock, graph, and virtual gateway open), select *Quit!* and you will return back to the screen from where you typed **startx**. Type **logout** again and you are now done with this Unix session.

You actually don't have to logout of your shells and close your other windows before you *Quit!*, but it's considered good practice to do so.

The middle mouse button produces a menu of window options to move, resize, etc. windows. You can do all these things directly as well, but if a window is hard to get to, sometimes it helps to select an operation from this menu, then go attack the desired window.

The right mouse button just produces a list of open windows. Releasing the right mouse button over a window name will take you to that window immediately.

Your *.fvwmrc* file controls all these menus. Change it and you can completely change how your menus operate.

2.2 Window Operations

Each window has a variety of gadgets that allow you to move it, resize it, close it, minimize it, raise it to the top, etc. When I say click here, I mean click with the left mouse button. Other buttons have different effects; try them and see.

Clicking anywhere in a window makes it the *active* window. Any keyboard activity will now go to this process. Clicking inside the window does not, however, bring it to the top. To do this, you must click on the main border at the top or any of the thin borders at the sides and bottom.

Each corner contains a resizing section. Click and hold on it to drag the window to a new size. To move the window, click and drag on any other section of the border.

The little bar at the upper left gives you a menu of operations. Usually you won't use this, but when you do, it'll probably be to delete, or close the window. Be careful using destroy, as it may also close other related windows that produced this one. For example, if you select delete on a Netscape bookmark window, the bookmark window goes away nicely and Netscape remains; select destroy and the bookmark window **and** Netscape go away.

The dot on the upper right iconizes the window. Double-click the icon to bring it back. The square next to the dot changes the window size; click it again to bring it back.

3 Other

I prefer to have my Control key near the *a* key and the Caps-Lock key below the shift key. Most PC keyboards however, have these reversed. In your .xinitrc file, are some lines which will reverse these two keys from whatever they are. If there is a # in front of the lines (they are commented above, so it should be easy to see which lines I'm referring to), then the lines are commented out and will not be run. If you want to switch the two keys, remove the initial # from each line and restart X. Likewise, if they are being switched and you don't want them to be, add a # at the beginning of each of these lines.

You will want to change your password probably. Some of the other documents described earlier say how to do this, but just type **passwd** and follow the instructions if you can't wait.

There! Any questions or suggestions on improving this document, please see me. Remember, Unix is a protected operating system, so it is *pretty hard* to mess anything up but your own files by experimenting, so don't be afraid.