

X Windows

If you can make X-Windows work on your system, then I suggest you have your system set up to allow X-Windows. Windows users may need to run something like Xming or CYGWIN in order to get a server. If you are doing ssh from the command line then you will probably need to start ssh with `ssh -X` so that you can run X. If you are on Putty or Bitvise you will need to enable X-11 tunneling through ssh.

Review of processes

1. The first video, "Unit 08 30 Processes" is actually a rerun from last week. If you can answer the following question, then you may skip the video. If you can't answer the question, the rewatch the video.

Question: What is the difference between the command `ps` and the command `ps -x`?

Unit 09_010 — Foreground, Background, and Killing

2. How many processes can you have running in the foreground? How many in the background?
3. Based on my struggles with `xeyes` in the video, should X applications generally be run in the foreground or background? Why? What command allows you to run `xeyes` so that you may still use the keyboard?
4. What are two different ways to put a process in the background?
5. Why is the `sl` command effectively blocked when it runs in the background? Why aren't X applications like `xeyes` and `xclock` blocked when they are in the background?
6. Why is "killing a process" and "Asking a program to end" an important difference? Why would we want a program to take responsibility for killing itself?
7. What is the difference between the `-2` and `-9` options on the `kill` command?
8. Why is closing the terminal effectively the same as killing background processes with `kill -1`

9. What does the `kill -19` do? How do you release a job from -19.
10. How is `killall` different from `kill`? Does `killall` actually kill all of your processes?

Unit 09_020 — Jobs

11. What does the `fg` command do?
12. What does the `jobs` command do?
13. In the video the `killall -2 xlogos` did not kill the xlogos. However, the command `killall -9 xlogos` did kill them. Why did -9 work, but -2 did not?

Unit 09_030 — nice

14. What is the motivation for running processes in the background?
15. Does the `nice` command actually do anything nice? Explain your answer.
16. What do high values of nice mean?
17. Write the command needed to run the `sl` command at "maximum niceness."

Unit 09_040 — nohup

18. What does the `nohup` command do? Why is it often done with an `&` at the end of the line?
19. What happens to the output of the `nohup` command by default?
20. What is the difference between `disown` and `nohup`?