Name:_____

Text Editor

Recap from previous session:

1. Create a new empty file to your home directory.

2. Create a new directory and move the file you created there.

3. Open the empty file using a text editor (try nano and vim, instructions are in the command cheat-sheet)

4. Print out the file you edited on the console.

5. Try changing the linebreaks in the file between dos and unix style. Do you see the difference in a text editor?

Installing programs

Debian-based systems use apt package manager. If you're using some other linux distribution, for example ArchLinux or Gentoo, use their respective package manager.

- Check what dependencies package "htop" has. Print them out. (Hint: "apt-cache")

- Install the package.

- Start a web browser.

- Start htop. Using htop, kill the web browser you just started.

Installing a service

1. Install apache2 ("apt-get install apache2")

2. Test whether it works (`http://localhost/`)

3. Starting and stopping Apache service (requires sudo):

   - apache2ctl (configtest / graceful)
   - service apache2 start/stop

4. Change the default port 80=>8080 (/etc/apache2/ports.conf). Apply the modification (reload configuration) and test `http://localhost:8080/` using a web browser.

5. Turn on per-user web directories (~username/ = public_html)

   - Make a directory named "public_html" to your home directory.
   - Enable Apache userdir module (sudo a2enmod userdir)
   - Change Apache default port back 8080=>80 and restart Apache.
   - Test whether it works (`http://localhost/~username/`)
   - Copy the file "/var/www/html/index.html" to your "public_html" directory.
   - Edit yourself a HTML format "index.html" file.

   Note: A webshare like this is available on Aalto servers. This is handy for sharing stuff done on university computers using public links. All without bloaty dropbox ickyness. `http://users.aalto.fi/username/`

6. PHP example

   - Install php7 package.

- Enable Apache php7 module.
- Create a "hello.php" file to your home directory (/home/username/public_html) and cut-paste there the contents from the page. `http://php.net/manual/en/tutorial.firstpage.php`
- Copy the file also to directory /var/www/html
- Test that the php script works using web browser, from both your home directory and the main directory. Do you notice a difference in the pages? What could be the reason for that? :0

If you don't want to leave Apache running, remove apache2 package at the end of this session.

System logs

1. System logs are found in directory tree at /var/log

2. Apache logs are in /var/log/apache2/

3. Find/grep from logs:

    - Users logging in
    - Root logging in
    - Errors

4. Find something based on timestamp

Network settings

This portion is explained by the assistants.

1. Quick introduction to IP networks

    - IP addresses, subnets and edge routing (gateway)
    - arp / neighbor discovery
    - Internal addresses (10./8, 192.168./16, 172.162/12, 169.254./16)

2. Getting to know NetworkManager

    - Check your own IP address, what is the current value?
    - Change your IP address to a temporary static address of your choice. (Naturally so that the same network mask applies, that the network part doesn't change.)

3. Manual configuration (kill networkmanager)

    - Debian stores network settings to /etc/network
    - Command line tool "ip" (legacy: ifconfig, arp, route)
    - iwconfig (package "wireless-tools"), this command doesn't work in virtual machines. Why not? ;)
    - Check your settings using "ip" command, and also iwconfig if you're using wireless LAN.
    - Alias addresses; add yourself an alias address of 192.168.10.10.