

10 September 2020

Lab 1

1. `$ ssh`
 - a. `$ssh cs45aa06@209.129.148.10`
2. `$ id`
 - a. `uid=1006(cs45aa06) gid=1006(cs45aa06) groups=1006(cs45aa06)`
`context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023`
3. `$ id -r/-u`
 - a. `$id -r`
 - i. Real user id: who you actually are before switching users
 1. `id`: cannot print only names or real IDs in default format
 - b. `$id -u`
 - i. Effective user id: who you currently are
 1. 1006
4. `$ who`

```
cs45aa10 pts/0      2020-09-05 12:33 (c-71-202-169-193.hsd1.ca.comcast.net)
cs45aa04 pts/1      2020-09-05 13:54 (65.sub-174-194-202.myvzw.com)
cs45aa18 pts/2      2020-09-05 13:33 (99-119-199-17.lightspeed.sntcca.sbcglobal.net)
cs45aa10 pts/3      2020-09-05 13:33 (c-71-202-169-193.hsd1.ca.comcast.net)
cs45aa14 pts/4      2020-09-05 14:10 (c-71-202-157-46.hsd1.ca.comcast.net)
cs45aa07 pts/5      2020-09-05 13:39 (c-73-15-53-94.hsd1.ca.comcast.net)
cs45aa16 pts/6      2020-09-05 13:40 (c-73-231-234-240.hsd1.ca.comcast.net)
cs45aa24 pts/7      2020-09-05 13:40 (c-73-15-56-126.hsd1.ca.comcast.net)
cs45aa05 pts/8      2020-09-05 13:41 (c-73-231-130-237.hsd1.ca.comcast.net)
cs45aa17 pts/9      2020-09-05 13:41 (76.14.9.205)
cs45aa03 pts/10     2020-09-05 14:25 (73.252.240.255)
cs45aa28 pts/11     2020-09-05 13:42 (73.93.152.138)
cs45aa08 pts/12     2020-09-05 15:11 (73.63.216.8)
hcampbell pts/13     2020-09-05 14:37 (c-73-41-184-155.hsd1.ca.comcast.net)
cs45aa15 pts/14     2020-09-05 14:37 (c-98-234-14-245.hsd1.ca.comcast.net)
cs45aa40 pts/15     2020-09-05 14:41 (107-128-208-37.lightspeed.sntcca.sbcglobal.net)
cs45aa19 pts/17     2020-09-05 15:04 (108-244-96-210.lightspeed.sntcca.sbcglobal.net)
cs45aa06 pts/18     2020-09-05 15:05 (c-69-181-254-78.hsd1.ca.comcast.net)
cs45aa21 pts/19     2020-09-05 15:07 (99-6-85-229.lightspeed.sntcca.sbcglobal.net)
```

- a. 2020-09-05 14:37 (c-73-41-184-155.hsd1.ca.comcast.net)
5. `$ tty`
 - a. `/dev/pts/18`
6. `$ w`

```

15:14:18 up 1 day, 15:20, 20 users, load average: 0.00, 0.01, 0.05
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
cs45aa10 pts/0     c-71-202-169-193 12:33    1:53m  0.10s  0.10s -bash
cs45aa04 pts/1     65.sub-174-194-2 13:54    3:06   0.05s  0.00s less -s
cs45aa18 pts/2     99-119-199-17.1i 13:33    2:58   0.03s  0.03s -bash
cs45aa10 pts/3     c-71-202-169-193 13:33    3:06   0.05s  0.05s -bash
cs45aa14 pts/4     c-71-202-157-46. 14:10    2:00s  0.11s  0.11s -bash
cs45aa07 pts/5     c-73-15-53-94.hs 13:39    8:18   0.04s  0.04s -bash
cs45aa16 pts/6     c-73-231-234-240 13:40    2:58   0.06s  0.06s -bash
cs45aa24 pts/7     c-73-15-56-126.h 13:40    2:10   0.10s  0.10s -bash
cs45aa05 pts/8     c-73-231-130-237 13:41    3:14   0.04s  0.04s -bash
cs45aa17 pts/9     76.14.9.205      13:41    1:14   0.07s  0.07s -bash
cs45aa03 pts/10    73.252.240.255   14:25    1:46   0.06s  0.06s -bash
cs45aa28 pts/11    73.93.152.138    13:42    1:30   0.11s  0.00s less -s
cs45aa08 pts/12    73.63.216.8      15:11    58.00s 0.03s  0.03s -bash
ncampbel pts/13    c-73-41-184-155. 14:37    10.00s 0.09s  0.00s less -s
cs45aa15 pts/14    c-98-234-14-245. 14:37    4:50   0.03s  0.03s -bash
cs45aa40 pts/15    107-128-208-37.1 14:41    2:34   0.04s  0.04s -bash
cs45aa27 pts/16    c-73-162-174-173 14:50    5:06   0.03s  0.03s -bash
cs45aa19 pts/17    108-244-96-210.1 15:04    3:06   0.04s  0.04s -bash
cs45aa06 pts/18    c-69-181-254-78. 15:05    2:00s  0.03s  0.00s w
cs45aa21 pts/19    99-6-85-229.11h 15:07    10.00s 0.04s  0.04s -bash

```

a.

7. \$ man w

```

NAME
    w - Show who is logged on and what they are doing.

SYNOPSIS
    w [options] user [...]

DESCRIPTION
    w displays information about the users currently on the machine, and their processes. The header shows, in this order, the current time, how long the system has been running, how many users are currently logged on, and the system load averages for the past 1, 5, and 15 minutes.

    The following entries are displayed for each user: login name, the tty name, the remote host, login time, idle time, JCPU, PCPU, and the command line of their current process.

    The JCPU time is the time used by all processes attached to the tty. It does not include past background jobs, but does include currently running background jobs.

    The PCPU time is the time used by the current process, named in the "what" field.

COMMAND-LINE OPTIONS
    -h, --no-header
        Don't print the header.

    -u, --no-current
        Ignores the username while figuring out the current process and cpu times. To demonstrate this, do a "su" and do a "w" and a "w -u".

    -s, --short
        Use the short format. Don't print the login time, JCPU or PCPU times.

    -f, --from
        Toggle printing the from (remote hostname) field. The default as released is for the from field to not be printed, although your system administrator or distribution maintainer may have compiled a version in which the from field is shown by default.

Manual page w(1) line 1 (press h for help or q to quit)

```

a.

8. \$ info man

```

File: *manpages*, Node: man, Up: (dir)

MAN(1)                                Manual pager utils                                MAN(1)

NAME
    man - an interface to the on-line reference manuals

SYNOPSIS
    man [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L
    locale] [-m system[,...]] [-M path] [-S list] [-e extension] [-i|-I]
    [--regex|--wildcard] [--names-only] [-a] [-u] [--no-subpages] [-P
    pager] [-r prompt] [-7] [-E encoding] [--no-hyphenation] [--no-justifi-
    cation] [-p string] [-t] [-T[device]] [-H[browser]] [-X[dpi]] [-Z]
    [[section] page ...] ...
    man -k [apropos options] regexp ...
    man -K [-w|-W] [-S list] [-i|-I] [--regex] [section] term ...
    man -f [whatis options] page ...
    man -l [-C file] [-d] [-D] [--warnings[=warnings]] [-R encoding] [-L
    locale] [-P pager] [-r prompt] [-7] [-E encoding] [-p string] [-t]
    [-T[device]] [-H[browser]] [-X[dpi]] [-Z] file ...
    man -w|-W [-C file] [-d] [-D] page ...
    man -c [-C file] [-d] [-D] page ...
    man [-?V]

DESCRIPTION
    man is the system's manual pager. Each page argument given to man is
    normally the name of a program, utility or function. The manual page
    associated with each of these arguments is then found and displayed. A
    section, if provided, will direct man to look only in that section of
    the manual. The default action is to search in all of the available
    sections, following a pre-defined order and to show only the first page
    found, even if page exists in several sections.

-----Info: (*manpages*)man, 1245 lines --Top-----
Welcome to Info version 5.1. Type h for help, m for menu item.

```

a.

9. \$ hostname

a. mc-redhat01

10. \$ hostname --help

```

mc-redhat01
[cs45aa06@mc-redhat01 ~]$ hostname --help
Usage: hostname [-b] {hostname|-F file}          set host name (from file)
        hostname [-a|-A|-d|-f|-i|-I|-s|-y]        display formatted name
        hostname                                     display host name

        {yp,nis,}domainname {nisdomain|-F file}    set NIS domain name (from file)
        {yp,nis,}domainname                        display NIS domain name

        dnsdomainname                               display dns domain name

        hostname -V|--version|-h|--help           print info and exit

Program name:
        {yp,nis,}domainname=hostname -y
        dnsdomainname=hostname -d

Program options:
        -a, --alias                alias names
        -A, --all-fqdns            all long host names (FQDNs)
        -b, --boot                 set default hostname if none available
        -d, --domain              DNS domain name
        -f, --fqdn, --long        long host name (FQDN)
        -F, --file                read host name or NIS domain name from given file
        -i, --ip-address          addresses for the host name
        -I, --all-ip-addresses    all addresses for the host
        -s, --short               short host name
        -y, --yp, --nis          NIS/YP domain name

Description:
    This command can get or set the host name or the NIS domain name. You can
    also get the DNS domain or the FQDN (fully qualified domain name).
    Unless you are using bind or NIS for host lookups you can change the
    FQDN (Fully Qualified Domain Name) and the DNS domain name (which is
    part of the FQDN) in the /etc/hosts file.

```

a.

b. -i, --ip-address

- c. long host name (FQDN)
- 11. \$ man -k
 - a. \$ man -s3p printf
 - b. man printf just shows the options for printf(1) while man -s3p printf shows the full manual for the specific command
 - c. printf(1)
- 12. 'curl'
 - a. Curl is a tool to transfer data from or to a server, using one of the supported protocols
- 13. 'wget'
 - a. GNU Wget is a free utility for non-interactive download of files from the Web
- 14. \$ echo \$0
 - a. -bash
- 15. \$ echo \$SHELL
 - a. /bin/bash
- 16. \$ echo \$PATH
 - a. /usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/cs45aa06/.local/bin:/home/cs45aa06/bin
- 17. \$ pizza
 - a. bash: pizza: command not found...
- 18. \$ su - mr-tester
 - a. \$ pwd
 - i. /home/mr-tester
 - b. \$ whoami
 - i. mr-tester
 - c. \$ who am i
 - i. cs45aa06 pts/0
 - d. \$ whoami shows which user you are currently accessing and \$ who am i displays the name of your real user
 - e. \$ whoami
 - i. cs45aa06
- 19. \$ su mr-tester
 - a. \$ pwd

- i. `/home/cs45aa06`
- b. `$ whoami`
 - i. `mr-tester`
- c. `$ who am i`
 - i. `cs45aa06 pts/0`
- d. The working directory points to my own user instead of mr-tester's
- e. `$ whoami`
 - i. `cs45aa06`

20. `$ last`

```
[cs45aa06@mc-redhat01 ~]$ [cs45aa06@mc-redhat01 ~]$ last
cs45aa29 pts/5      75-25-124-58.lig Fri Sep 11 02:11   still logged in
cs45aa30 pts/1      c-73-241-231-46. Fri Sep 11 02:11 - 02:20 (00:08)
cs45aa28 pts/4      c-73.93.155.39   Fri Sep 11 01:40   still logged in
cs45aa06 pts/0      c-69-181-254-78. Fri Sep 11 01:04   still logged in
cs45aa17 pts/3      76.14.9.205     Fri Sep 11 00:55   still logged in
slah     pts/0      c-73-70-6-171.hs Fri Sep 11 00:47 - 00:58 (00:10)
slah     pts/0      c-73-70-6-171.hs Fri Sep 11 00:27 - 00:47 (00:19)
cs45aa38 pts/1      c-73-189-185-243 Thu Sep 10 23:54 - 01:45 (01:50)
cs45aa01 pts/2      c-73-222-22-44.h Thu Sep 10 22:04   still logged in
cs45aa16 pts/3              Thu Sep 10 21:49 - 21:52 (00:02)
cs45aa16 pts/3              Thu Sep 10 21:20 - 21:26 (00:05)
cs45aa20 pts/0      45-23-136-8.ligh Thu Sep 10 20:57 - 00:00 (03:02)
cs45aa16 pts/3              Thu Sep 10 20:30 - 20:34 (00:04)
cs45aa16 pts/2      c-73-231-234-240 Thu Sep 10 20:26 - 21:52 (01:26)
cs45aa03 pts/1      73.252.240.255   Thu Sep 10 20:25 - 23:47 (03:22)
cs45aa20 pts/0      45-23-136-8.ligh Thu Sep 10 20:13 - 20:55 (00:42)
cs45aa29 pts/1      75-25-124-58.lig Thu Sep 10 17:53 - 18:41 (00:47)
cs45aa16 pts/0      c-73-231-234-240 Thu Sep 10 15:57 - 19:38 (03:41)
cs45aa15 pts/0      8.33.138.40     Thu Sep 10 13:25 - 15:22 (01:56)
cs45aa15 pts/0      c-98-234-14-245. Thu Sep 10 10:02 - 10:36 (00:33)
cs45aa16 pts/1              Thu Sep 10 04:12 - 04:12 (00:00)
cs45aa16 pts/1              Thu Sep 10 04:00 - 04:00 (00:00)
cs45aa16 pts/0      c-73-231-234-240 Thu Sep 10 03:57 - 05:38 (01:41)
cs45aa16 pts/0      c-73-231-234-240 Thu Sep 10 03:23 - 03:57 (00:33)
cs45aa07 pts/0      c-98-234-76-68.h Thu Sep 10 01:19 - 02:42 (01:23)
ncampbe1 pts/0      c-73-41-184-155. Wed Sep 9 18:26 - 21:17 (02:51)
cs45aa24 pts/1      64-79-120-230.st Wed Sep 9 17:41 - 18:33 (00:51)
cs45aa24 pts/1      64-79-120-230.st Wed Sep 9 17:07 - 17:40 (00:33)
a. ncampbe1 pts/0      c-73-41-184-155. Wed Sep 9 14:53 - 18:25 (03:32)
```

- b. `$ last mr-tester`
 - i. `wtmp begins Thu Sep 3 23:10:23 2020`

21. `$ pinky`

- a. `$ pinky cs45aa06`

```
[cs45aa06@mc-redhat01 ~]$ pinky cs45aa06
Login Name TTY Idle When Where
cs45aa06 pts/0 2020-09-11 01:04 c-69-181-254-78.hsd1.ca.comcast.net
```

- b. `$ pinky -l cs45aa06`

```
Login Name TTY Idle When Where
cs45aa06 pts/0 2020-09-11 01:04 c-69-181-254-78.hsd1.ca.comcast.net
[cs45aa06@mc-redhat01 ~]$
[cs45aa06@mc-redhat01 ~]$ pinky -l cs45aa06
Login name: cs45aa06 In real life:
Directory: /home/cs45aa06 Shell: /bin/bash
```

22. `$ cal`

- a. `$ cal 2020`

2020																				
January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4							1	1	2	3	4	5	6	7
5	6	7	8	9	10	11	2	3	4	5	6	7	8	8	9	10	11	12	13	14
12	13	14	15	16	17	18	9	10	11	12	13	14	15	15	16	17	18	19	20	21
19	20	21	22	23	24	25	16	17	18	19	20	21	22	22	23	24	25	26	27	28
26	27	28	29	30	31		23	24	25	26	27	28	29	29	30	31				
April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4						1	2	1	2	3	4	5	6	
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30				
							31													
July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4							1	1	2	3	4	5		
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31		23	24	25	26	27	28	29	27	28	29	30			
							30	31												
October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3		1	2	3	4	5	6	7	1	2	3	4	5		
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

i.

b. \$ cal 1999

1999																				
January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2			1	2	3	4	5	6		1	2	3	4	5	6	
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28							28	29	30	31			
31																				
April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3							1		1	2	3	4	5		
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30			
							30	31												
July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3		1	2	3	4	5	6	7	1	2	3	4			
4	5	6	7	8	9	10	8	9	10	11	12	13	14	5	6	7	8	9	10	11
11	12	13	14	15	16	17	15	16	17	18	19	20	21	12	13	14	15	16	17	18
18	19	20	21	22	23	24	22	23	24	25	26	27	28	19	20	21	22	23	24	25
25	26	27	28	29	30	31	29	30	31					26	27	28	29	30		
October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2			1	2	3	4	5	6		1	2	3	4			
3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	

i.

c. cal 10 2025

October 2025						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

i.

23. \$ date

a. \$ date

i. Fri Sep 11 02:31:08 EDT 2020

- b. `$ date +%F`
 - i. 2020-09-11
- c. `$ date +%m`
 - i. 09
- d. `$ date +%m-%d`
 - i. 09-11
- e. 09-05-2020
 - i. `date +%m-%d-%y`

24. `$ pwd`

- a. `$ pwd`
 - i. `/home/cs45aa06`
- b. `$ dir`
 - i. Using 'dir' on it's own returns nothing
 - ii. The command's purpose is to list directory contents

25. `$ pwd`

- a. `$ pwd`
 - i. `/home/cs45aa06`
- b. `$ cd /tmp`
 - i. `$ pwd`
 - 1. `/tmp`
 - ii. `$ ls`

```

1.
anaconda.log      systemd-private-fec502a6b9904027a522561f4521303d-bolt.service-tak4di
nsperfdata_hcampbell systemd-private-fec502a6b9904027a522561f4521303d-chronyd.service-1UkWbX
nsperfdata_root  systemd-private-fec502a6b9904027a522561f4521303d-color.service-ZNXfHP
ifcfg.log        systemd-private-fec502a6b9904027a522561f4521303d-cups.service-trYkC0
ks-script-KbzCqY systemd-private-fec502a6b9904027a522561f4521303d-fwupd.service-zs8IsP
lua_LKS32c       systemd-private-fec502a6b9904027a522561f4521303d-rtkit-daemon.service-DLJ8yU
packaging.log    tracker-extract-files.1000
program.log      vmware-root_825-4248221703
pulse-1HROJioqngGy vmware-root_845-4021653450
sensitive-info.log yum.log
storage.log      yum_save_tx.2020-09-03.23-24.z2HHd7.yumtx

```

- c. `$ ls -a`

```

systemd-private-fec502a6b9904027a522561f4521303d-bolt.service-tak4di
systemd-private-fec502a6b9904027a522561f4521303d-chronyd.service-1UkWbX
anaconda.log systemd-private-fec502a6b9904027a522561f4521303d-colord.service-ZNXfHP
.esd-1000 systemd-private-fec502a6b9904027a522561f4521303d-cups.service-trYkC0
.font-unix systemd-private-fec502a6b9904027a522561f4521303d-fwupd.service-zs8IsP
nsperfdata_hcampbell systemd-private-fec502a6b9904027a522561f4521303d-rtkit-daemon.service-DLJ8yU
nsperfdata_root .Test-unix
.ICE-unix tracker-extract-files.1000
ifcfg.log vmware-root_825-4248221703
ks-script-KbzCqY vmware-root_845-4021653450
lua_LKS32c .X0-lock
packaging.log .X11-unix
program.log .XIM-unix
pulse-1HR0JioqngGy yum.log
sensitive-info.log yum_save_tx.2020-09-03.23-24.z2HHd7.yumtx
storage.log

```

i.

d. \$ cd /

i. \$ ls -F

1. bin@ boot/ dev/ etc/ home/ lib@ lib64@ media/ mnt/ opt/ proc/
root/ run/ sbin@ srv/ sys/ tmp/ usr/ var/

e. \$ cd /tmp; ls -a; pwd; date

```

systemd-private-fec502a6b9904027a522561f4521303d-bolt.service-tak4di
systemd-private-fec502a6b9904027a522561f4521303d-chronyd.service-1UkWbX
anaconda.log systemd-private-fec502a6b9904027a522561f4521303d-colord.service-ZNXfHP
.esd-1000 systemd-private-fec502a6b9904027a522561f4521303d-cups.service-trYkC0
.font-unix systemd-private-fec502a6b9904027a522561f4521303d-fwupd.service-zs8IsP
nsperfdata_hcampbell systemd-private-fec502a6b9904027a522561f4521303d-rtkit-daemon.service-DLJ8yU
nsperfdata_root .Test-unix
.ICE-unix tracker-extract-files.1000
ifcfg.log vmware-root_825-4248221703
ks-script-KbzCqY vmware-root_845-4021653450
lua_LKS32c .X0-lock
packaging.log .X11-unix
program.log .XIM-unix
pulse-1HR0JioqngGy yum.log
sensitive-info.log yum_save_tx.2020-09-03.23-24.z2HHd7.yumtx
storage.log
/tmp
Fri Sep 11 02:38:08 EDT 2020

```

i.

26. \$ cd

a. \$ cd ~; ls -l

i. total 0

b. \$ cd ; ls -al

```

total 24
drwx-----. 5 cs45aa06 cs45aa06 144 Sep  5 15:17 .
drwxr-xr-x. 48 root      root      4096 Sep  5 01:11 ..
-rw-----. 1 cs45aa06 cs45aa06  204 Sep  5 15:32 .bash_history
-rw-r--r--. 1 cs45aa06 cs45aa06   18 Aug 21  2019 .bash_logout
-rw-r--r--. 1 cs45aa06 cs45aa06  193 Aug 21  2019 .bash_profile
-rw-r--r--. 1 cs45aa06 cs45aa06  231 Aug 21  2019 .bashrc
drwxrwxr-x. 3 cs45aa06 cs45aa06   18 Sep  4 21:58 .cache
drwxrwxr-x. 3 cs45aa06 cs45aa06   18 Sep  4 21:58 .config
-rw-----. 1 cs45aa06 cs45aa06   35 Sep  5 15:17 .lessshst
drwxr-xr-x. 4 cs45aa06 cs45aa06   39 Sep  3 22:26 .mozilla

```

i.

c. \$ cd \$HOME; ls -a

- i.bash_history .bash_logout .bash_profile .bashrc .cache .config .lessht
.mozilla
- d. \$ cd /tmp; pwd
 - i. /tmp
- e. \$ cd - ; pwd
 - i. /home/cs45aa06
 - ii. /home/cs45aa06
 - iii. Adding a dash returns you to the directory you were in previously
- f. \$ cd ~mr-tester ; pwd
 - i. /home/mr-tester
- g. \$ cd /; ls
 - i. bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys
tmp usr var
- h. \$ cd ~; pwd
 - i. /home/cs45aa06
- i. \$ cd .. ; pwd
 - i. /home
 - ii. It takes you to the parent directory
- j. \$ pwd; cd ~
 - i. /home
- k. \$ ls -a .
 - i.bash_history .bash_logout .bash_profile .bashrc .cache .config .lessht
.mozilla

27. Memory

- a. \$ free

	total	used	free	shared	buff/cache	available
Mem:	5944904	578084	2856124	316964	2510696	4752080
Swap:	6160380	0	6160380			

- b. \$ free -h

	total	used	free	shared	buff/cache	available
Mem:	5.7G	562M	2.7G	309M	2.4G	4.5G
Swap:	5.9G	0B	5.9G			

- c. \$ free --help ; man free

```

OPTIONS
-b, --bytes
    Display the amount of memory in bytes.

-k, --kilo
    Display the amount of memory in kilobytes. This is the default.

-m, --mega
    Display the amount of memory in megabytes.

-g, --giga
    Display the amount of memory in gigabytes.

--tera Display the amount of memory in terabytes.

```

i.

ii. \$ free -g

```

1.

```

	total	used	free	shared	buff/cache	available
Mem:	5	0	2	0	2	4
Swap:	5	0	5			

iii. \$ free -b

```

1.

```

	total	used	free	shared	buff/cache	available
Mem:	6087581696	599650304	2916872192	324571136	2571059200	4858437632
Swap:	6308229120	0	6308229120			

28. 'ls'

a. \$ type ls

i. ls is aliased to 'ls --color=auto'

b. \$ type pwd

i. pwd is a shell builtin

c. \$ type date

i. date is hashed (/usr/bin/date)

29. How much space is being used by each file system on this node?

a. \$ df -h

```

i.

```

Filesystem	Size	Used	Avail	Use%	Mounted on
devtmpfs	2.9G	0	2.9G	0%	/dev
tmpfs	2.9G	0	2.9G	0%	/dev/shm
tmpfs	2.9G	314M	2.6G	11%	/run
tmpfs	2.9G	0	2.9G	0%	/sys/fs/cgroup
/dev/mapper/rhel-root	50G	8.9G	42G	18%	/
/dev/mapper/rhel-home	243G	41M	243G	1%	/home
/dev/sda1	1014M	236M	779M	24%	/boot
tmpfs	581M	12K	581M	1%	/run/user/42
tmpfs	581M	0	581M	0%	/run/user/1001
tmpfs	581M	0	581M	0%	/run/user/1017
tmpfs	581M	0	581M	0%	/run/user/1006
tmpfs	581M	0	581M	0%	/run/user/1029

b. \$ df -hT

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
devtmpfs	devtmpfs	2.9G	0	2.9G	0%	/dev
tmpfs	tmpfs	2.9G	0	2.9G	0%	/dev/shm
tmpfs	tmpfs	2.9G	314M	2.6G	11%	/run
tmpfs	tmpfs	2.9G	0	2.9G	0%	/sys/fs/cgroup
/dev/mapper/rhel-root	xfs	50G	8.9G	42G	18%	/
/dev/mapper/rhel-home	xfs	243G	41M	243G	1%	/home
/dev/sda1	xfs	1014M	236M	779M	24%	/boot
tmpfs	tmpfs	581M	12K	581M	1%	/run/user/42
tmpfs	tmpfs	581M	0	581M	0%	/run/user/1001
tmpfs	tmpfs	581M	0	581M	0%	/run/user/1017
tmpfs	tmpfs	581M	0	581M	0%	/run/user/1006
tmpfs	tmpfs	581M	0	581M	0%	/run/user/1029

i.

30. How much space is being used by the files and directories on the disk?

a. `$ du`

```
0  ./mozilla/extensions
0  ./mozilla/plugins
0  ./mozilla
4  ./cache/abrt
4  ./cache
0  ./config/abrt
0  ./config
24 .
```

i.

b. `$ du -sh .`

i. 24K .

c. `$ du -sh *`

i. `du: cannot access '*': No such file or directory`

d. `$ du -a`

```
0  ./mozilla/extensions
0  ./mozilla/plugins
0  ./mozilla
4  ./bash_logout
4  ./bash_profile
4  ./bashrc
4  ./cache/abrt/lastnotification
4  ./cache/abrt
4  ./cache
0  ./config/abrt
0  ./config
4  ./bash_history
4  ./lessht
24 .
```

i.

e. `$ du -sh /home`

