

The Shell: Anatomy Navigation Permissions

Live Learning Session

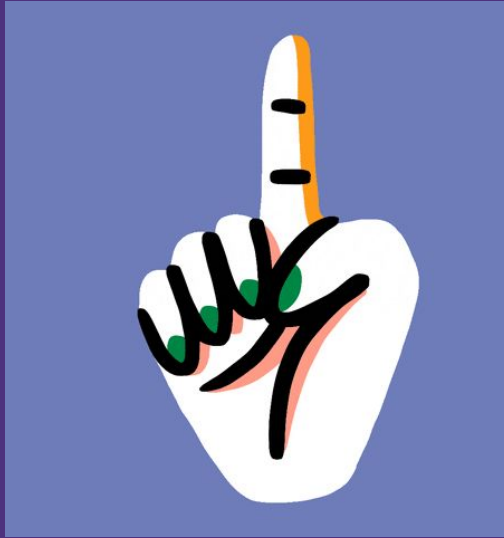


Agenda

- Introduction
- Recap - anatomy
- Shell navigation
- Shell permission



Check-In Prompt



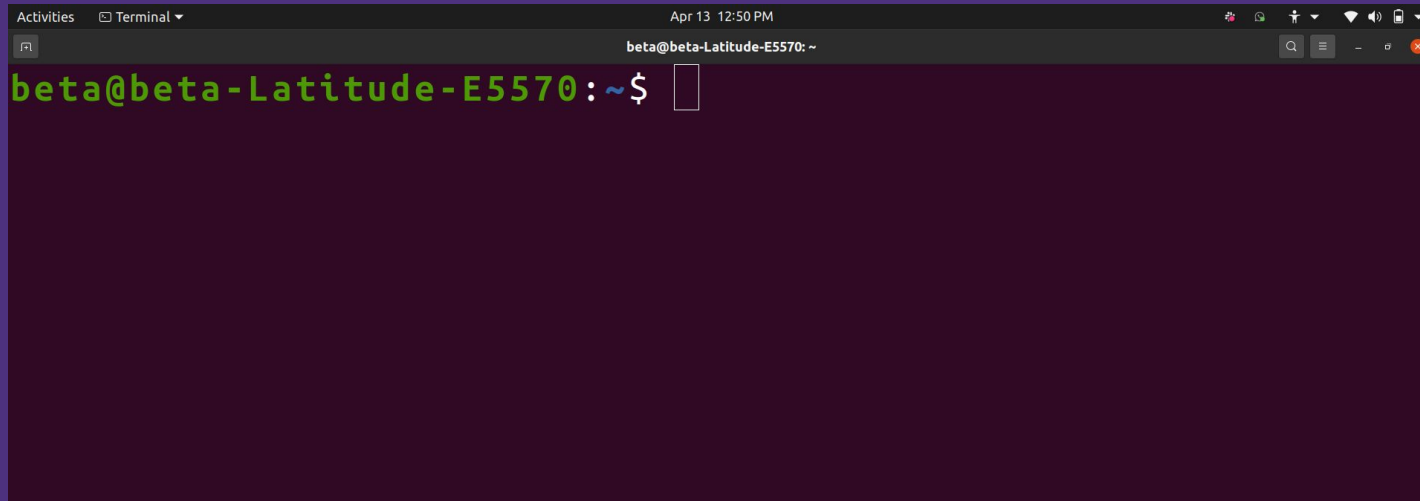
In 5 seconds, mention one concept that you want to improve on this week.

\$

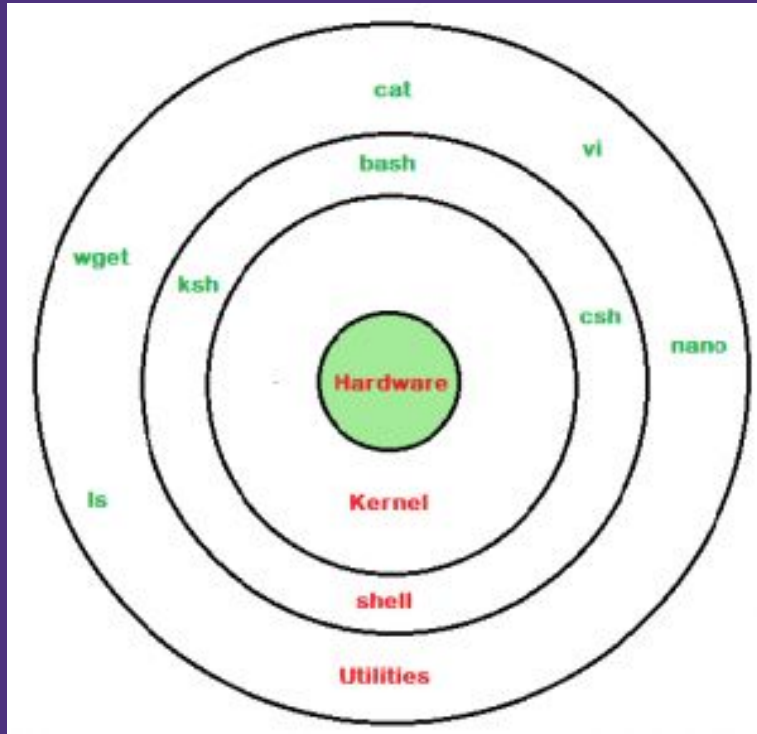




- User interfaces like GUI, CLI
- We use a shell to interact with the terminal



What is kernel? Shell? terminal?



Navigation



Flying within the terminal world

- Knowing the hills and valleys of your favorite world will enhance your adventure

/ "root"

/bin

"essential user
command binaries"

bash
cat
chmod
cp
date
echo
grep
gunzip
gzip
hostname
kill
less
ln
ls
mkdir
more
mount
mv
nano
open
ping
ps
pwd
rm
sh
su
tar
touch
umount
uname

/etc

"configuration files
for the system"

crontab
cups
fonts
fstab
host.conf
hostname
hosts
hosts.allow
hosts.deny
init
init.d
issue
machine-id
mtab
mttools.conf
nanorc
networks
passwd
profile
protocols
resolv.conf
rpc
securetty
services
shells
timezone

/sbin

"essential system
binaries"

fdisk
fsck
getty
halt
ifconfig
init
mkfs
mkswap
reboot
route

/usr

"read-only user application
support data & binaries"

/usr/bin

"most user
commands"

/usr/include

"standard include
files for 'C' code"

/usr/lib

"obj, bin, lib
files for coding
& packages"

/usr/local

"local software"

/usr/local/bin

/usr/local/lib

/usr/local/man

/usr/local/sbin

/usr/local/share

/usr/share

"static data sharable
across all architectures"

/usr/share/man

"manual pages"

/var

"variable data files"

/var/cache

"application
cache data"

/var/lib

"data modified as
programmes run"

/var/lock

"lock files to track
resources in use"

/var/log

"log files"

/var/opt

"variable data for
installed packages"

/var/spool

"tasks waiting to
be processed"

/var/spool/cron

/var/spool/cups

/var/spool/mail

/var/tmp

"temporary files saved
between reboots"

/dev

"device files
incl. /dev/null"

/home

"user home
directories"

/lib

"libraries &
kernel modules"

/mnt

"mount files for
temporary
filesystems"

/opt

"optional software
applications"

/proc

"process & kernel
information files"

/root

"home dir. for
the root user"

Permissions



chmod

- File permissions are core to the security model used by Linux systems.
- They determine who can access files and directories on a system and how.

```
-rw-r--r-- 1 zaira zaira 1513 Apr 5 20:46 LICENSE.md
-rw-r--r-- 1 zaira zaira 19933 Apr 5 20:46 README.md
drwxr-xr-x 4 zaira zaira 4096 Apr 6 22:45 api-server
-rw-r--r-- 1 zaira zaira 67 Apr 5 20:46 babel.config.js
drwxr-xr-x 10 zaira zaira 4096 Apr 6 22:55 client
drwxr-xr-x 5 zaira zaira 4096 Apr 6 22:54 config
```

MODE

OWNER

GROUP

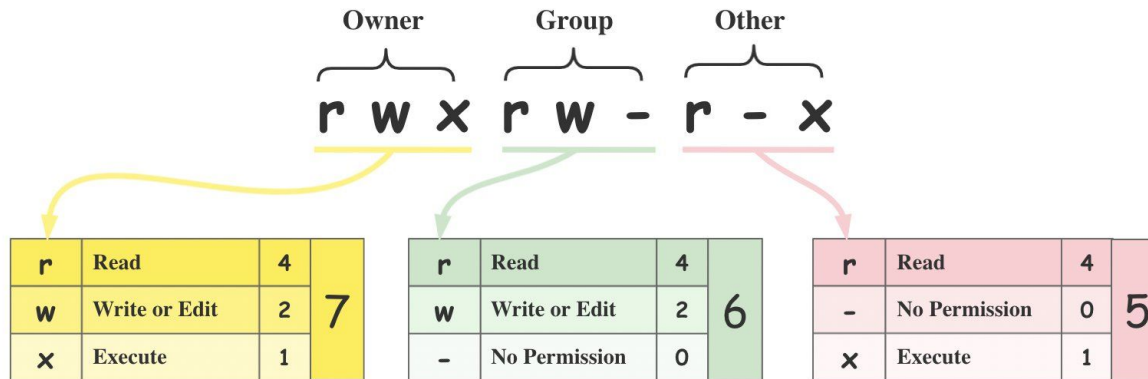
SIZE

MODIFICATION DATE

FILE/FOLDER NAME

Linux File Permissions

Binary	Octal	String Representation	Permissions
000	0 (0+0+0)	---	No Permission
001	1 (0+0+1)	--x	Execute
010	2 (0+2+0)	-w-	Write
011	3 (0+2+1)	-wx	Write + Execute
100	4 (4+0+0)	r--	Read
101	5 (4+0+1)	r-x	Read + Execute
110	6 (4+2+0)	rw-	Read + Write
111	7 (4+2+1)	rwX	Read + Write + Execute



Resources

1. [Navigating the command line](#)
2. [Commands reference](#)
3. [All about file permissions](#)
4. [RedHat permissions tutorial](#)
5. [Github QuickStart tutorial](#)

Announcements

- Use @c14mentors tag, do NOT DM Beta
- Slack! Slack! USE SLACK!
- Pay attention to the announcement channel
- Learn with your ambassadors.
- Your sandbox is amazing! Explore it!
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