CSE 384 LECTURES

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LECTURE 2: FILE PERMISSION

REFERENCES

- Understanding Linux file permissions [link]

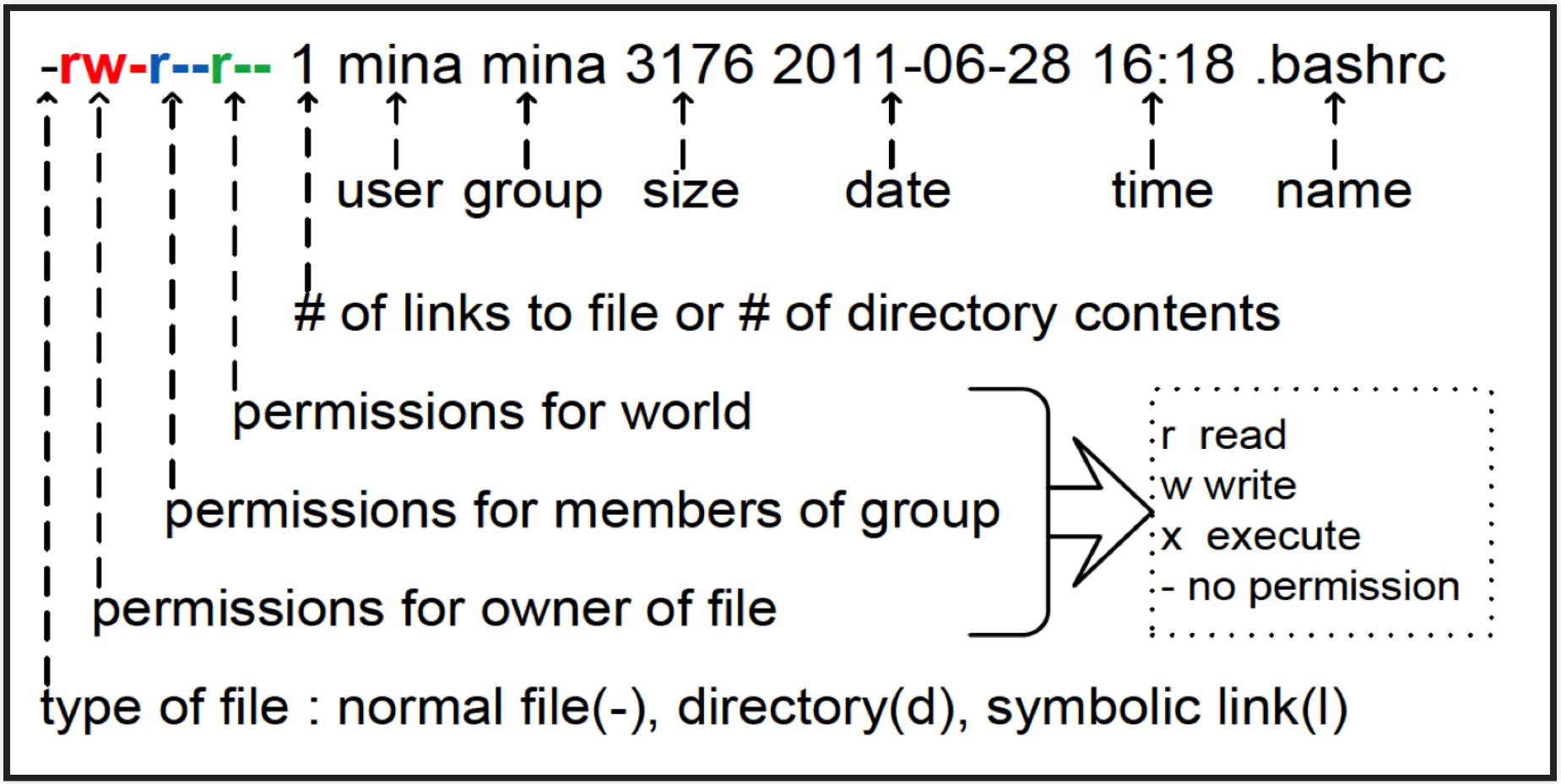
BASIC CONCEPT

- User account: username, password
- **User role**: Owner, group, all users
  - Group: group of users and files.
- **Operation**: an action that a user can do on a file
  - read, write, execute
- **File permission**: access right, or file mode
  - given a Linux file, the permission states what operations are allowed to a user role.

VIEWING PERMISSION

```
ls -l
```

- owner and group
- permissions
  - users: owner (`u`), group (`g`), others (`o`), all users (`a`)
  - type: read (`r`), write (`w`), execute (`x`)


-rw-r--r-- 1 mina mina 3176 2011-06-28 16:18 .bashrc
user
group
size
date
time
name
# of links to file or # of directory contents
permissions for world
permissions for members of group
permissions for owner of file
r read
w write
x execute
- no permission
type of file : normal file(-), directory(d), symbolic link(l)

ls -al

CHANGING PERMISSION

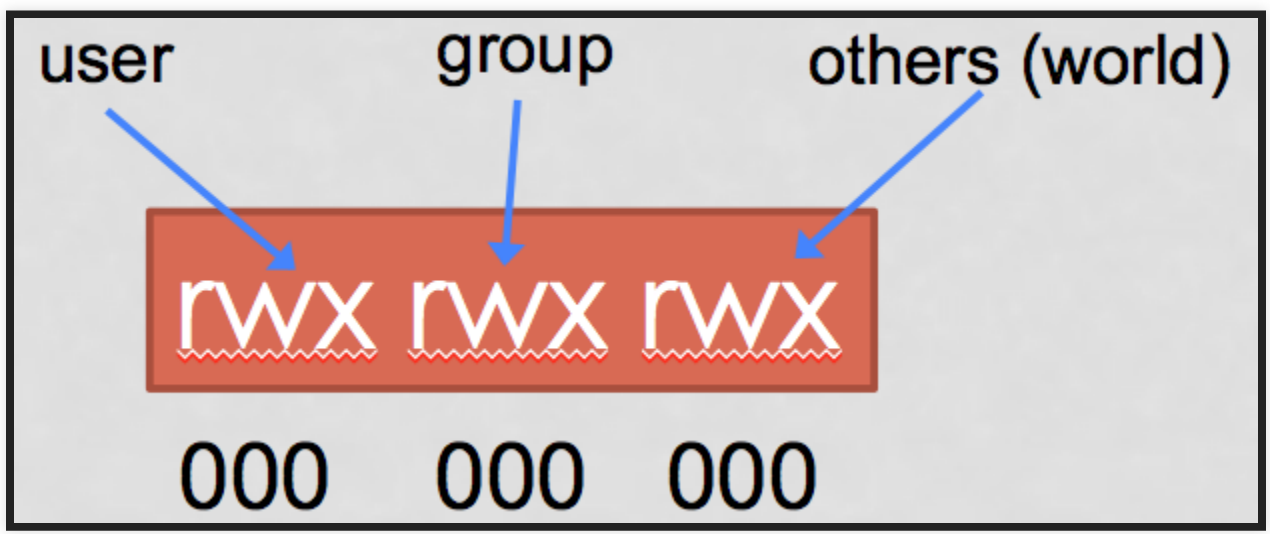
- `chmod`: change mode
  - add +:
    - `chmod a+wx file_a`: add write/execute permission to all users
    - `chmod g+r file_a`: add read permission to group users
  - assign/copy =:
    - `chmod g=rw file_a`: assign read/write permission to group
    - `chmod g=u file_a`: copy owner permission to group permission

CHANGING PERMISSION (2)

Options	Definitions
u	Owner
g	Group
o	Other
a	All (same as ugo)
x	Execute
w	Write
r	Read
+	Add permission
-	Remove permission
=	Set permission

CHANGING PERMISSION: NUMERIC MODE (3)

- `chmod 777 file_a;chmod a+rwx file_a`
  - `chmod 666 file_a;chmod a=rw file_a`
  - `chmod 000 file_a;chmod a-rwx file_a`



CHANGE OWNERSHIP

- `chown owner:group filename`
  - `chown user1:staff file_a`

EXERCISE

1. Run command `chmod o-r file_a; cat file_a`. C&P the printout on BB.
2. Design the command to make a file read-only to group. C&P your command on BB.
3. Design the command to make a file read-only to all users. C&P your command on BB.
4. Convert the following two commands to numeric mode: `chmod a-rwx file_a; chmod o+x file_a`. C&P your command on BB.