LINUX FILE PERMISSIONS

```
sysxplore@zorinos:~$ ls -l
total 93792
-rwx-rw-r--  1  sysxplore  sysxplore  20    Jul  18 19:14  backup.sh
-rw-rw-r--   1  traw       traw       0     Jun  23 12:59  demo
drwxr-xr-x   2  traw       traw       4096  May  15 10:42  Desktop
```

- `-rwx-rw-r--` — File type
- `rwx` — User permissions
- `rw-` — Group permissions
- `r--` — Other (everyone) permissions
- `1` / `1` / `2` — Number of linked hard-links
- `sysxplore` / `traw` / `traw` — Owner of the file
- `sysxplore` / `traw` / `traw` — Group that own the file
- `20` / `0` / `4096` — File size in bytes
- `Jul 18 19:14` / `Jun 23 12:59` / `May 15 10:42` — File modification date and time
- `backup.sh` / `demo` / `Desktop` — File name

-rwxrw-r--

- `-` — File type
- `rwx` — User Owner Permissions
- `rw-` — Group Owner Permissions
- `r--` — Other Permissions

r	Read	4	7
w	Write	2	
x	Execute	1	

r	Read	4	6
w	Write	2	
-	No permission	0	

r	Read	4	4
-	No permission	0	
-	No permission	0	

-rwsrw-r--

- `-` — SUID Permission
- `rws` — User Owner Permissions
- `rw-` — Group Owner Permissions
- `r--` — Other Permissions

$ chmod u+s file

drwxrwsr--

- `drwx` — User Owner Permissions
- `rws` — Group Owner Permissions
- `r--` — Other Permissions
- `rws` — SGID Permission

$ chmod g+s directory_name

drwxrwxrwt

- `drwx` — User Owner Permissions
- `rwx` — Group Owner Permissions
- `rwt` — Other Permissions
- `t` — Sticky Bit Permission

$ chmod +t directory_name

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

Owner			Group			Other		
r	w	x	r	w	x	r	w	x
		S			S			T
		s			s			t

Capital S is an error it occurs if you set SUID bit or SGID bit to a file without execute (x) bit set

Capital T is an error it occurs if you set Sticky bit to a file without execute (x) bit set

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