井 HPC.NRW

INTRODUCTION TO LINUX

(in an HPC context)

Version 20.09 | HPC.NRW Competence Network



THE COMPETENCE NETWORK FOR HIGH-PERFORMANCE COMPUTING IN NRW.

USERS AND PERMISSIONS

HPC.NRW Competence Network

INTRODUCTION TO LINUX



INNOVATION THROUGH COOPERATION.



- Linux is a *multi-user* system
 - Everyone should only be able to access own files
 - Others only see / change what you want them to
 - Some files / directories should only be accessible to admins
- Everyone is logged in as a specific <u>user</u> (account)
 - Every user has certain permissions
- Only admins can set permissions for others





Each file and directory has certain permissions

- Determines what you can do
 - You can't break what you can't use!
- root user (superuser) can do everything
- Users may get temporary root permissions sudo <Command>
- Users belong to groups
 - Each user has a primary group





- Read:

- Who can read contents of file/directory
- Write:
 - Who can change contents of file/directory
- Execute:
 - File: who can execute file (like any program)
 - Directory: who can traverse directory
 - Can execute files inside but not see them

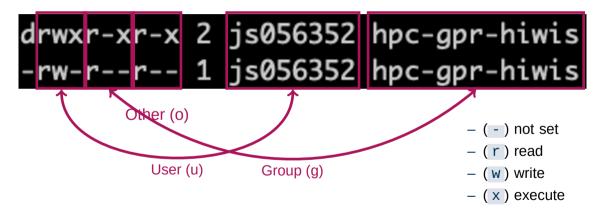




ls	Is it a file, link (1) or directory (d)?									
	Permissions (ky bit, setuid, setgid)								
	Number of links to this									
		Owner Owning group				Size (directories: not size of files inside)				
						Last modified			Filename	
		og	in1 linu>	_demo]\$ ll						
ĺ	nsgesamt 8	L								
-	rwxrr	1	js056352	hpc-gpr-hiwis	85	15.	Jan	2019	demofile1.sh	
1	rwxrwxrwx	1	js056352	hpc-gpr-hiwis	12	15.	Jan	2019	<pre>lndemo -> demofile1.sh</pre>	
d	rwxr-xr-x	2	js056352	hpc-gpr-hiwis	4096	15.	Jan	2019	testdir3	
-	rw-rr	1	js056352	hpc-gpr-hiwis	6	15.	Jan	2019	var.txt	











- Modify owner/group (needs root):
 - chown <NewOwner> <filename>
 - chown <NewOwner>:<NewGroup> <filename>
- Modify permissions:

```
- chmod u+x <Filename>
u = User, g = Group, o = Other, a = All
+ or -
r = Read, w = Write, x = Execute
```

