

CST8207-13F

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Lab Worksheet 8: Linux File System Permissions

Exercise 4: Minimum Permissions for Common File Operations

Instructions: Find minimum rwx symbolic permissions required to perform commands

1# Copy a File – New file name and content

Command: `cp srcdir/srcfile targetdir/`

Initial permissions setup: `chmod -R 700 srcdir`

Step #1 - targetdir			Step #2 – srcdir			Step#3 -srcfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 1	000	PD	Case 5	000	PD	Case 7	000	PD
Case 2	100	PD	Case 6	100	OK	Case 8	100	PD
Case 3	200	PD				Case 9	200	PD
Case 4	300	OK				Case 10	300	PD
						Case 11	400	OK
Result Permissions: (-wx)			Result Permissions: (--x)			Result Permissions: (r--)		

2# Move a File – Rename to new file name

Command: `mv srcdir/srcfile targetdir/`

Initial permissions setup: `chmod -R 700 srcdir`

Step #1 - targetdir			Step #2 – srcdir			Step#3 -srcfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 12	000	PD	Case 16	000	PD	Case 20	000	OK
Case 13	100	PD	Case 17	100	PD			
Case 14	200	PD	Case 18	200	PD			
Case 15	300	OK	Case 19	300	OK			
Result Permissions: (-wx)			Result Permissions: (-wx)			Result Permissions: (---)		

3# Link to a file – Add new file name

Command: ln srcdir/srcfile targetdir/

Initial permissions setup: chmod -R 700 srcdir

Step #1 - targetdir			Step #2 – srcdir			Step#3 -srcfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 21	000	PD	Case 25	000	PD	Case 27	000	OK
Case 22	100	PD	Case 26	100	OK			
Case 23	200	PD						
Case 24	300	OK						
Result Permissions: (-wx)			Result Permissions: (--x)			Result Permissions: (---)		

4# Delete a file – Remove an existing file name

Command: rm srcdir/srcfile

Initial permissions setup: chmod -R 700 srcdir

Step #1 – srcdir			Step#2 -srcfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 28	000	PD	Case 32	000	OK
Case 29	100	PD			
Case 30	200	PD			
Case 31	300	OK			
Result Permissions: (-wx)			Result Permissions: (---)		

5# Read a file – Display an existing file name

Command: cat srcdir/srcfile

Initial permissions setup: chmod -R 700 srcdir

Step #1 – srcdir			Step#2 -srcfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 33	000	PD	Case 35	000	PD
Case 34	100	OK	Case 36	100	PD
			Case 37	200	PD
			Case 38	300	PD
			Case 39	400	OK
Result Permissions: (--x)			Result Permissions: (r--)		

6# Modify an existing file – add data to an existing file

Command: date >> dir/oldfile

Initial permissions setup: chmod -R 700 dir

Step #1 – dir			Step#2 - oldfile		
Case #:	chmod:	Result:	Case #:	chmod:	Result:
Case 40	000	PD	Case 42	000	PD
Case 41	100	OK	Case 43	100	PD
			Case 44	200	OK
Result Permissions: (--x)			Result Permissions: (-w-)		

7# Create a new file – create a new file in an existing directory

Command: date > dir/newfile

Initial permissions setup: none required

Step#1 - dir		
Case #:	chmod:	Result:
Case 45	000	PD
Case 46	100	PD
Case 47	200	PD
Case 48	300	OK
Result Permissions: (-wx)		

Results Summary:

Table of MINIMUM rwx symbolic permissions needed to perform each of the above commands			
Command used	on the (source) directory	on the (source) file	on the target directory
1. copy a file	- - x	r - -	- w x
2. move a file	- w x	- - -	- w x
3. link to a file	- - x	- - -	- w x
4. delete a file	- w x	- - -	N/A
5. read a file	- - x	r - -	N/A
6. modify an existing file	- - x	- w -	N/A
7. create a new file	- w x	N/A	N/A