***Symbolic Links***

Sometimes called **SEMlinks,** Special type of file that can reference other files

Example: we have /tmp/text.txt

* We can create a link /home/brandon/link.txt that points to /tmp/text.txt

**There are two types of links:**

**Soft**

* Can link between two file systems
* The target that its referencing does not have to exist
  + Dead link
  + When you delete original file, soft link doesn’t get deleted
  + Nor will the reference of its metadata
* Links directly to the inode table and removing it only removes the reference, not the file

**Hard**

* Cannot be used between two file systems
* Target itself must exist

**Dead link**

* When target does not exist
* Good to remove
* Can be used to elevate privileges under specific instances

To create a link

* Ln
* Ln test.txt hard\_link
  + Will create a hard link
* Ln test.txt soft\_link
  + Will create soft link

When using ls, the soft link will actually show where it links to

Cat soft\_link and cat text.txt will print the same output

A Hard-link will also share the same inode number as the original file

* Just a different file name
* Technically point to the same block where the physical data on the disk is sitting

A soft link just points to the inode table as a reference

After removing the original file

* Cat soft\_link
  + Nothing will show / error
* Cat hard\_link
  + Data will show
  + Points to same block on disk so data is still accessible

A soft link also shows that it’s a soft link in its file type whereas hard links don’t

i.e.,

lrwxrwxr-- soft\_link

‘l’ in the file type

-rwxrwxr—Hard\_link

**Searching for a link**

Find command

* Find , -type l
* Will only work for soft links
* This wont work for hard links as they are a different type of file