

## The ls -l command output format

Output format example	-rw-r--r--@ 1jdoe staff _ 5111 9 Jun 14:30 readme.rst.txt											
Fields	-	rw-	r--	r--	@	1	jdoe	staff	5111	9 Jun 14:30	readme.rst.txt	
	Device Type:	Owner	Group	Word	Optional Extra field		ownership					
Description	<div><div><div><div><div><div></div><div>-</div></div><div>Regular file.</div></div><div><div><div></div><div>b</div></div><div>Block special file.</div></div><div><div><div></div><div>c</div></div><div>Character special file.</div></div><div><div><div></div><div>C</div></div><div>High performance (contiguous data) file.</div></div><div><div><div></div><div>d</div></div><div>Directory.</div></div><div><div><div></div><div>D</div></div><div>Door (Solaris).</div></div><div><div><div></div><div>I</div></div><div>(letter l) Symbolic link.</div></div><div><div><div></div><div>M</div></div><div>Off-line (migrated) file (Cray DMF).</div></div><div><div><div></div><div>n</div></div><div>Network special file (HP-UX).</div></div><div><div><div></div><div>p</div></div><div>FIFO (named pipe).</div></div><div><div><div></div><div>P</div></div><div>Port (Solaris).</div></div><div><div><div></div><div>s</div></div><div>Socket.</div></div><div><div><div></div><div>?</div></div><div>Some other file type.</div></div></div></div><div>Note: use the <b>info ls</b> command to see more information related to your system.</div><div>See Also: <b>ls @ wikipedia</b> with all the identified external links.</div></div>	Discretionary Access Control (DAC)		Permissions: <div><div><div><div></div><div>read,</div></div><div><div></div><div>write,</div></div><div><div></div><div>other:</div></div><div><div><div><div></div><div>s</div></div><div>: If the set-user-ID or set-group-ID and corresponding executable bit are both set.</div></div><div><div><div></div><div>S</div></div><div>: If the set-user-ID or set-group-ID is set but the corresponding executable bit is not set.</div></div><div><div><div></div><div>t</div></div><div>: If the restricted deletion flag or sticky bit, and the other-executable bit, are both set. The restricted deletion flag is another name of the sticky bit.</div></div><div><div><div></div><div>T</div></div><div>: If the restricted deletion flag or sticky bit is set but the other-executable bit is not set.</div></div><div><div><div></div><div>x</div></div><div>: If the executable bit is set and none of the above apply.</div></div><div><div><div></div><div>-</div></div><div>: otherwise.</div></div></div></div></div>	Apple macOS only: <div><div><div><div></div><div>@</div></div><div>has <b>extended attributes</b>.</div></div><div><div><div></div><div>%</div></div><div>dataless file or directory.</div></div></div>		Number of links or directories	User ownership: user that owns the file or directory	Group ownership	Size in bytes. <div>With <b>ls -lh</b>, size format is human readable with units:<div><div><div></div><div>k</div></div>: kilo</div><div><div><div></div><div>M</div></div>: mega</div><div><div><div></div><div>G</div></div>: giga</div></div>	Date of last modification. <div>Date format might be affected by the LANG environment variable.<div>On Linux, you can change the date format with the <b>-time-style</b> option.<div>For example: ls -l --time-style="long-iso"</div></div></div>	Name of the file.
Extra Notes:	<div><div><div></div><div>POSIX File System Permissions</div></div></div>		<div><div><div></div><div>s</div></div><div><div><div></div><div>S</div></div></div><div>The <b>s</b> and <b>S</b> bits identify whether the set user ID or set group ID permissions are active. These are special permissions bits that allow a program, when run by any user, to be run with the effective UID of the owner (identified by the ownership fields).<div><div><div></div><div>For example, if the user ownership is root and the s bit is set, another user will be able to run the program as if it was root.</div></div>This permission is therefore a security risk and should be restricted to the programs that absolutely require this (as sudo does for example).</div></div></div>									
<div><div><div></div><div>SELinux:</div></div><div>With <b>-Z</b> option:</div></div>	<div><div><div></div><div>SELinux security context</div></div><div><div><div></div><div>Shown only with the -Z option between the ownership and size for the ls -l output.</div></div><div><div><div></div><div>This is where the _ is shown in the first row.</div></div></div></div></div>		<div><div><div></div><div>?</div></div><div>The <b>?</b> is displayed when the file has no associated <b>SELinux security context</b>.</div></div>									
			SELinux contexts follow the SELinux <b>user:role:type:level</b> syntax with the following fields (as described in the <a href="#">SELinux RedHat web page</a> :									
	<div><div><div></div><div>user (..._u)</div></div></div>		The <b>SELinux user</b> identity. This can be associated to one or more roles that the SELinux user is allowed to use.									
	<div><div><div></div><div>role (..._r)</div></div></div>		The <b>SELinux role</b> . This can be associated to one or more types the SELinux user is allowed to access.									
	<div><div><div></div><div>type (..._t)</div></div></div>		The <b>SELinux type</b> of the file (the <b>SELinux object</b> ). It defines what access permissions the SELinux user has to that object.									
<div><div><div></div><div>level</div></div></div>		<div><b>SELinux security level</b> field (or range). It is only present if the policy supports MCS or MLS. The entry can consist of:<div><div><div></div><div>A single security level that contains a <b>sensitivity</b> level and zero or more <b>categories</b> (e.g. s0, s1:c0, s7:c10.c15).</div></div><div><div><div></div><div>A range that consists of two security levels (a low and high) separated by a hyphen (e.g. s0 - s15:c0.c1023).</div></div></div></div></div>										
<div><div><div></div><div>👉 On SELinux:</div></div></div>	The <b>-Z</b> switch is available on several utilities to show or manage SELinux security contexts information. For example: <div><div><div></div><div>ls -IZ</div></div><div><div><div></div><div>ps axZ</div></div></div><div><div><div></div><div>id -Z</div></div></div></div>											