## CYSE 270: Linux System for Cybersecurity Assignment 2

Steps 1-5: Opened my terminal, used command **pwd** to display my working directory. This helps me know where I am in the system. Then to switch to a different directory I used and absolute pathname **cd /etc**. For step four, I used a relative pathname to move into a different directory. The difference is before I used absolute and now I am using relative, **cd skel**. For step five, I used a relative pathname again to move up one directory, **cd ..** Notice I went back into /etc directory seen in the terminal below as (kali@kali)-[/etc].

What is the difference between relative and absolute pathnames? I liked this image to explain.

## ABSOLUTE PATH VERSUS RELATIVE PATH

Absolute Path	Relative Path			
It points to a specific location in the file system, irrespective of the current working directory.	It points to the location of a directory using current directory as a reference.			
It is also referred to as full path or file path.	It is also referred to as non-absolute path.			
It refers to the location of a file or directory (filesystem) relative to the root directory in Linux.	It refers to the location of a file or directory (filesystem) relative to the current directory.			
Absolute URLs are used to link to other websites that are not located on the same domain.	Relative URLs are used to link to other websites that are located on the same domain.			
For example: If your pictures are in C:\Sample\Pictures and index in C:\Sample\Index, then the absolute path for pictures is C:\Sample\ Pictures.	For example: If your pictures are in C:\Sample\Pictures and index in C:\ Sample\Index, the relative path is "\Pictures". Difference BetweenInet			

Screenshot Steps 1-5



Step 6: I used the **ls** command to display the files in my cwd, my cwd at this time was /etc. Screenshot Step 6

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📉 🎃 着 💼 🔁	✓ 1 2 3 4				
Trash	File Actions Edit View I	PS> I Help	kali@kali: /etc		
0	Path				
File System	/home/kali				
-	<pre>(kali@kali)-[/home/ka PS&gt; cd /etc</pre>	li]			1
Home	<pre>(kali@kali)-[/etc] PS&gt; cd skel</pre>				
Tionic	<pre>(kali@ kali)-[/etc/ske PS&gt; cd</pre>	1]			
	(kali@kali)-[/etc]				
	adduser.conf	grub.d	modules-load.d	scalpel	2
	alternatives	gshadow-	mosquitto	screenrc sddm.conf.d	
	apparmor	gtk-2.0	mysql	searchsploit_rc security	
	apparmor.d apt	gtk-3.0 guymager	nanorc netconfig	selinux sensors3.conf	
	arp-scan avahi	gvm hdparm.conf	network	sensors.d services	
	bash.bashrc bash_completion	host.conf hostname	NetworkManager networks	sgml shadow	
	<pre>bash_completion.d bindresvport.blacklist</pre>	hosts hosts.allow	nfs.conf nfs.conf.d	shadow- shells	
	binfmt.d bluetooth	hosts.deny idmapd.conf	nftables.conf nginx	skel smartd.conf	
	ca-certificates ca-certificates.conf	ifplugd ImageMagick-6	nikto.conf nsisconf.nsh	smartmontools smi.conf	
	chatscripts	inetsim	nsswitch.conf	snmp snach_dispatcher	
	chromium.d	initramfs-tools	ODBCDataSources	sqlmap	
	cloud	inputrc insserv.conf.d	odbc.ini odbcinst.ini	ssl	
/	colord console-setup	ipp-usb ipsec.conf	openal OpenCL	sslsplit strongswan.conf	
	cracklib credstore	ipsec.d ipsec.secrets	openni2 opensc	strongswan.d stunnel	
1	credstore.encrypted	issue issue.net	openvas	subgid subgid-	
1 .	cron.daily	java-21-openjdk	opt os_release	subuid	
	cron.monthly	john kali manu	pam.conf	subversion	
	cron.weekly	kernel	pam.u papersize	sudoers	- 1
	cron.yearly cryptsetup-initramfs	keyutils kismet	passwd passwd-	sudoers.d sudo_logsrvd.conf	
	cryptsetup-nuke-password crypttab	ldap ld.so.cache	perl php	supercat sv	
	cupshelpers dbus-1	ld.so.conf ld.so.conf.d	plymouth polkit-1	sysctl.d sysstat	
	dconf debconf.conf	legion.conf	postgresql	systemd terminfo	
	debian_version	libao.conf	powershell-empire	texmf	
	deluser.conf	libblockdev	profile	timezone	
	dhcp dhcpcd.conf	libccid_Info.plist libnl-3	profile.d protocols	timidity tmpfiles.d	
	dictionaries-common dns2tcpd.conf	libpaper.d lightdm	proxychains4.conf pulse	ts.conf ucf.conf	
	doc-base dpkg	lighttpd locale.alias	python2.7 python3	udev udisks2	
	e2scrub.conf	locale.conf	python3.12 radcli	ufw unicornscan	
	emacs	localtime	rc0.d	updatedb.conf	
	environment.d	login.defs	rc2.d	UPower	
	ethertypes ettercap	logrotate.conf logrotate.d	rc3.d rc4.d	usb_modeswitch.conf usb_modeswitch.d	
	firebird firefox-esr	macchanger machine-id	rc5.d rc6.d	vconsole.conf vdpau_wrapper.cfg	
	fonts freetds	magic magic.mime	rcS.d reader.conf.d	vim vpnc	
	fstab fuse.conf	mailcap mailcan order	rearj.cfg redis	vulkan	
	gai.conf	manpath.config	redsocks.conf	wireshark	
	ghostscript	mime.types	request-key.com	X11	3
	glvhd gnome-system-tools	minicom miredo	resolv.con† responder	xdtr.cont xdg	
	gophish gprofng.rc	miredo.conf mke2fs.conf	rmt rpc	xtce4 xml	
	groff group	ModemManager modprobe.d	runit samba	xrdp zsh	
A N	group-	modules	sane.d	zsh_command_not_found	

Step 7: I used the **ls** -**l** command to display a more detailed list of files in my cwd, my cwd at this time was /etc. Notice the difference between **ls** and **ls** -**l**. I like this image to remember.

The Luit view Search	п теппіпас пеф					
[root@Server1	~]# ls -l	size	di	ite/tim	e	
- iotal 12 - W	root root root root	1336 45 6 635 1808 6 6 6 6	Nov May Nov Nov Nov Nov Nov Nov	11 3 24 3 3 11 3 3 3 3 3	2022 06:03 2022 2022 2022 2022 05:15 2022 2022 2022 2022 2022 2022 2022	anaconda-ks.cfg data new Desktop Documents Downloads example.com initial-setup-ks.cfg Music Pictures Public Templates
Iroot@Server1	root root	6	NOV	3	2022	videos

kali-linux-2024.4-virtualbox-amo

## Screenshot Step 7

	File Action	s Edit Vie 1 root 3 root 2 root 8 root 3 root	root	Pis kali@kali./etc	
	drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	1 root 3 root 8 root 3 root	root		
	(kališk PS> 1s -1 total 1548 -rw-r-r-r- drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	1 root 3 root 2 root 8 root 3 root	root		
	total 1548 -rw-rr drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	1 root 3 root 2 root 8 root 3 root	root		
	drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	3 root 2 root 8 root 3 root	reat	1386 Jun 27 2023 adduser conf	
	drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	2 root 8 root 3 root	root	4096 Nov 30 07:16 alsa	
	drwxr-xr-x drwxr-xr-x drwxr-xr-x drwxr-xr-x	3 root	root	20480 Nov 30 07:33 alternatives 4096 Nov 30 07:33 apache2	1
	drwxr-xr-x drwxr-xr-x	9 root	root	4096 Nov 30 09:26 apparmor 4096 Nov 30 09:26 apparmor.d	
	OLMXL-XL-X	8 root	root	4096 Nov 30 07:14 apt	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:19 avahi	
	- rw- r r	1 root	root	1997 Oct 20 07:19 bash.bashrc 45 May 1 2024 bash completion	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:30 bash_completion.d	
	drwxr-xr-x	1 root 2 root	root	4096 Sep 10 12:28 binfmt.d	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:19 bluetooth	
	-rw-rr	1 root	root	6288 Nov 30 07:15 ca-certificates.conf	
	drwxr-s-	2 root 2 root	root	4096 Nov 30 07:19 chatscripts 4096 Nov 30 07:30 chromium	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:30 chromium.d	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:18 cloud	
	drwxr-xr-x drwxr-xr-x	2 colord 2 root	colord root	4096 Jan 16 12:13 colord 4096 Jan 16 12:11 console-setup	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:19 cracklib	
	drwx —	2 root 2 root	root	4096 Sep 10 12:28 credstore 4096 Sep 10 12:28 credstore.encrypted	
	drwxr-xr-x	2 root 2 root	root	4096 Nov 30 07:31 cron.d 4096 Nov 30 07:33 cron.daily	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:14 cron.hourly	
	drwxr-xr-x -rw-rr	2 root 1 root	root	4096 Nov 30 07:14 cron.monthly 1042 Mar 26 2024 crontab	
	drwxr-xr-x	2 root	root	4096 Nov 30 87:15 cron.weekly	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:30 cryptsetup-initramfs	
1	drwxr-xr-x	2 root 1 root	root	4096 Mar 10 2024 cryptsetup-nuke-password 54 Nov 30 07:24 crypttab	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:31 cupshelpers	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:15 dous-1 4096 Nov 30 07:16 dconf	
	- rw-rr	1 root 1 root	root	2967 Jul 8 2024 debconf.conf 13 Nov 14 20:33 debian version	
	drwxr-xr-x	3 root	root	4096 Nov 30 09:27 default	
	drwxr-xr-x	4 root	root	4096 Nov 30 07:14 dhcp	
	-rw-rr drwxr-xr-x	1 root 2 root	root	1429 Oct 5 01:24 dhcpcd.conf 4096 Nov 30 07:20 dictionaries-common	
	-rw-r-r-	1 root	root	214 Apr 4 2020 dns2tcpd.conf	
	drwxr-xr-x drwxr-xr-x	3 root 4 root	root	4096 Nov 30 07:32 dpkg	
	-rw-rr	1 root	root	685 Oct 28 13:31 e2scrub.conf	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:16 emacs	
	-rw-rr drwxr-xr-x	1 root 2 root	root	553 Nov 30 07:19 environment 4096 Nov 30 07:20 environment.d	
	- rw-rr	1 root	root	1853 Oct 17 2022 ethertypes	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:25 firebird	
	drwxr-xr-x drwxr-xr-x	4 root 4 root	root	4096 Nov 30 07:20 firefox-esr 4096 Nov 30 07:19 fonts	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:30 freetds	
	- rw-r r	1 root	root	694 Sep 21 08:06 fuse.conf	
	-rw-r-r	1 root	root	2584 Jul 21 2024 gai.conf 4096 Nov 30 07:29 geoclue	1. 1. 1.
	drwxr-xr-x	4 root	root	4096 Nov 30 07:15 ghostscript	
	drwxr-xr-x drwxr-xr-x	3 root 2 root	root	4096 Nov 30 07:16 glvnd 4096 Nov 30 07:20 gnome-system-tools	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:30 gophish	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:15 groff	
	- rw-r r	1 root 1 root	root	1325 Nov 30 09:27 group 1321 Nov 30 09:26 group-	
	drwxr-xr-x	2 root	root	4096 Nov 30 09:26 grub.d	
	-rw-r	1 root	shadow	1111 Nov 30 09:27 gshadow 1107 Nov 30 09:26 gshadow-	
	drwxr-xr-x	3 root	root	4096 Nov 30 07:14 gss 4096 Nov 30 07:19 gtk-2.0	
	drwxr-xr-x	2 root	root	4096 Nov 30 07:20 gtk-3.0	
	drwxr-xr-x drwxr-xr-x	2 root 2 root	root	4096 Nov 30 07:31 guymager 4096 Nov 30 07:33 gvm	
	- rw-r r	1 root	root	4448 Apr 16 2024 hdparm.conf	
	-r-r-r-	1 root	root	5 Nov 30 07:15 hostname	
	- rw-rr	1 root 1 root	root	124 Nov 30 07:35 hosts 411 Nov 30 07:19 hosts,allow	
	-rw-r-r-	1 root	root	711 Nov 30 07:19 hosts.deny	

Step 8: I needed a list of all the files within /etc that started with s. I used the command **ls** -d s\* . I enjoyed this reference for future reference.

The default directory list utility $1s$ can be used in combination with the shell's wildcards . To search for all files with pattern $abc$ :
<pre>ls -d abc* # list all files starting with abc ls -d *abc* # list all files containingabc ls -d *abc # list all files ending withabc</pre>

Screenshot Step 8

**1**s

		PS> kali@ka	$\bigcirc \bigcirc \bigotimes$		
File Actions Ed	it View Help				
—(kali⊛kali)- —PS> ls -d s★	[/etc]				
samba sane.d scalpel screenrc sddm.conf.d searchsploit_rc security	selinux sensors3.conf sensors.d services sgml shadow shadow-	shells skel smartd.conf smartmontools smi.conf snmp speech-dispatcher	sqlmap ssh ssl sslsplit strongswan.conf strongswan.d stunnel	subgid subgid- subuid subuid- subversion sudo.conf sudoers	sudoers.d sudoelogsrvd.conf supercat sv sysctl.d sysstat svstemd

Step 9: I used command file /etc/group to determine the contents of the file.

Step 10: I used command **tail -n 5** /**etc/group** to display the last five lines of the /etc/group file. Step 11: I used command **cd** ~ to return to my home directory.

Step 12: I made a directory named data in my cwd with command **mkdir data** and also checked if this command was successful by listing the directory in my cwd with the **ls** command. Screenshot 9 - 12



Step 13: I copied the /etc/passwd file into the data directory with command **cp** /etc/passwd data/ and then used command **ls data** to double check if it worked. Screenshot 13



Step 14: I copied the /etc/ppp directory into my cwd (cp -r /etc/ppp) and ignored and permission denied error messages (2>/dev/null) with command **cp -r /etc/ppp . 2>/dev/null**.



Step 15 - 16: I renamed the ppp directory in my cwd to peers and then double checked to verify the name change with command **mv ppp peers** and then **ls**.



Steps 17 - 20: To create a new empty file named test in the data directory I used command **touch data/test**. I check if it worked with the command **ls data**. To delete the data/passwd file I use command **rm data/passwd**. I then use command **ls data** to verify if it worked. To delete the peers directory I used command **rm -r peers**. I executed **ls** command to check for the removal. Screenshot 17 - 20

