

Unix commands used on workshop

Command	What the command does	Options	What the options do	Example of use
apt-get install	installs software on Ubuntu machines			sudo apt-get install bwa
apt-get update	Updates APTs lists of available software packages and dependencies on Ubuntu machines			sudo apt-get update
cat	Standard Unix utility that reads files sequentially. Can also be used to concatenate several files into one			cat [some_file]
				cat [first_file] [second_file] > [concatenated file]
cd	Changes directory. If you don't specify a directory, you will move to your home directory			cd [some_directory]
		.. (space and two dots)	Go up one directory	cd ..
chmod	Changes the access permissions of files/folders on Mac/Linux			chmod 400 MyKeyPair.pem
cp	Copies a file			cp [some_file.txt] [some_file_copy.txt]
echo	Displays text. It's a handy way to create any text output in your terminal			echo "This is some text to go in a file" > [file.txt]
git clone	git clone is primarily used to point to an existing repo and make a clone or copy of that repo in a new directory, at another location			\$ git clone https://github.com/broadinstitute/picard.git
grep	grep searches a file for a particular pattern of characters, and displays all lines that contain that pattern			zcat NZ_CP009361_SRR4114395.var.raw.vcf.gz vcf-annotate --filter d=30/Q=200/c=2,10 grep "PASS"
		-v	grep now searches for lines that DOES NOT contain the particular pattern of character	zcat NZ_CP009361_SRR4114395.var.raw.vcf.gz vcf-annotate --filter d=30/Q=200/c=2,10 grep -v "#"
gzip	tool for compressing and decompressing files			
		-d	decompresses files to restore their original from	gzip -d [compressed_file.gz]
less	Shows you the content of a file			less [some_file.txt]

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		-S	Lines longer than the screen width is chopped (truncated) rather than wrapped. That is, the portion of a long line that does not fit in the screen width is not shown.	less -S [some_file.txt]
ls	Lists the content of a directory			ls
		-l	Long output format	ls -l
		-a	Also lists hidden files/directories	ls -a
		-R	Also lists all the files inside the directories	ls -R
man	Lists the manual page for a command (on Mac/Linux)			man ls
mkdir	Makes a directory			mkdir [some_directory]
mv	Renames a file			mv [some_file.txt] [new_file.txt]
pip	Installs software packages written in Python			\$ pip install --user --upgrade cutadapt
		--user	Makes pip install packages in your home directory, not a system directory, which would require administrator privileges	
		--upgrade	Upgrade all specified packages to the newest available version	
pwd	List the full path to the directory you are currently in (the working directory)			pwd
rm	Remove files			rm [some_file.txt]
		-rf	Recursively and forcefully remove files and even folders and all their content	rm -rf [some_directory]
make	The purpose of the make utility is to determine automatically which pieces of a large program need to be re-compiled, and issue the commands necessary to recompile them			make
rmdir	Removes empty directories			rmdir [some_directory]
		-rf (only on Mac/Linux)	Recursively and forcefully remove files and even folders and all their content	rmdir -rf [some_directory]

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scp	Securely transfers computer files between a local host and a remote host			
		-i	Points to an identity file, e.g., the KeyPair.pem file	scp -i ~/.ssh/[KeyPair.pem] ec2-user@[IP-Address]:~/data/SRR4114395_2_5end_trimmed.fastq.gz/ .
		-r	Copy an entire folder and all its content	scp -i ~/.ssh/[KeyPair.pem] -r user@[IP-Address]:~/assembly_untrimmed .
ssh	Accesses remote Linux servers			
		-i	Points to an identity file, e.g., the KeyPair.pem file	ssh -i ~/.ssh/[KeyPair.pem] ec2-user@[IP-Address]
sudo	Allows an ordinary user to run commands as administrator (root user)			sudo apt-get update
tar	Creates a tarball (a computer file format that combines and compresses multiple files)			
		-xzf	Extracts files from a tar archive and unzips the files	tar -xzf SPAdes-3.12.0-Linux.tar.gz
yum install	installs software on RedHat machines			sudo yum update
yum update	Updates APTs lists of available software packages and dependencies on RedHat machines			sudo yum install git
zcat	zcat uncompresses files and writes the uncompressed data to standard output			zcat NZ_CP009361_SRR4114395.var.raw.vcf.gz
wc	Reads either standard input or files and generates the following statistics: line count, word count, and byte count			wc [some_file]
wget	Retrieves content from web servers			wget http://cab.spbu.ru/files/release3.12.0/SPAdes-3.12.0-Linux.tar.gz
Shortcuts				
CTRL+C	control-C is used to abort the current task and regain user control			
Arrow up	Find your previous commands in the same session			
CTRL+A	Go to the start of a command			
CTRL+E	Go to the end of a command			