

UNIX & LINUX

COMMAND REFERENCE GUIDE

SEARCHING	
grep pattern file	search for a pattern in file, will return each matching line
find ./ -name filename	search the working directory structure for filename
command grep pattern	search output of command for pattern
which command	locate the full path of command

FILE COMMANDS	
ls	directory listing
ls -la	directory listing for hidden files
cd	change to \$HOME
pwd	show current working directory
mkdir dir	create directory dir
rm file	delete file
rm -r dir	delete directory dir
rm -rf dir	force deletion of directory dir
cp file1 file2	copy file1 to file2
cp -r dir1 dir2	copy dir1 to dir2, will create dir2 if it does not exist
mv file1 file2	moves file1 to file2 if file2 is a directory file1 will be moved into file2
cat file	display file to stdout
less	– display file to stdout, but will allow backwards and forwards movement
diff file1 file2	show the text differences between file1 and file2

ENVIRONMENT	
echo \$SHELL	display the value of the \$SHELL environment variable
module	list, load, unload, and swap modules
setenv, env, export	set and display environment variables (varies with shell)
dos2unix	convert DOS file to UNIX format

EDITORS	
vi, vim	standard UNIX/Linux editors
emacs	powerful, customizable, but complicated text editor
pico, nano	simple editors, similar to Windows notepad

GETTING HELP	
man <command>	display the manual page for a command
man [section] <command>	display the manual for a command in a specific section
man -k <keyword>	search the manuals based on keyword
command --help	get usage information

REMOTE MACHINE INTERACTION	
ssh user@host	connect to remote machine host as user
rls \${ARCHIVE}	perform a remote 'ls' into the archive directory
sync -i inputfile -o output	create a tar bz file of inputfile and place as outputfile on the tape archive system
unsync -i remote	untar and uncompress remote tarfile from the tape archive system into the local directory

SYSTEM INTERACTION	
top	show interactive system load and utilization
uptime	show system load and uptime
ps	show information on running processes on the system
kill	stop a process on the system

REDIRECTION	
command1 command2	the 'pipe' operator ' ' will chain the output of command1 to the input of command2
command tee file	splits output of command to screen and file
command < file	redirect input from command to a file instead of standard input
command > file	redirect output from command to a file
command >> file	append output of command to file

JOB INFORMATION (ALL BATCH SYSTEMS)	
showq -u	show jobs belonging to your userid
showq -sfa _remaining,+core	sorts jobs by decending remaining field, increasing core field

SGE (SUN GRIDENGINE)

RANGER AND LONESTAR

SGE BATCH COMMANDS

qacct -j <jobid>	history of a job
qstat	see the status of jobs in the queue
qdel <jobid>	kill a running job
bpeek	access the output and error files of a job
qstat -r -j <jobid>	information about batch queues
qhold -r <jobid>	resumes suspended job(s)
qhold <jobid>	suspends unfinished jobs
qsub	submit a batch job to the system

SGE ENVIRONMENT VARIABLES

JOB_ID	batch job id
TASK_ID	task id of an array job subtask
JOB_NAME	name user assigned to the job

SGE JOB SUBMISSION

qsub job_script	NO redirect
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SGE BATCH SCRIPT (MPI)

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#$ -S /bin/csh
#$ -V           # Inherit environment
#$ -pe 16way 32 # Number of nodes x16
#$ -N hello     # Job name
#$ -o ${JOB_ID}.out # Stdout file name
#$ -e ${JOB_ID}.err # Stderr file name
#$ -q normal    # Submission queue
#$ -A account   # Charge to project
#$ -l h_rt=0.15 # Max Run Time (15 min)
#$ -hold_jid 1123 # Dependency
#$ -M myEmailAddress # Email address
#$ -m be       # Email @ Begin and End
ibrun ./hello  # on Ranger
```