Texas Advanced Computing Center

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 file2if 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
sinc –i inputfile –o output   create a tar bz file of inputfile and place as outputfile on the tape archive system
unsinc –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

www.tacc.utexas.edu

info@tacc.utexas.edu

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

SGE Batch Script (MPI)

```
#$ -S /bin/csh
#$ -V                  # Inherit environment
#$ -pe 16way 32        # Number of nodes x16
#$ -N hello            # Job name
#$ -o ${JOB_ID}J.out   # Stdout file name
#$ -e ${JOB_ID}J.err   # Stderr file name
#$ -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
```