The QEF Quick Reference Card (October, 2005)

User Setup

- Set **$QTREE** to **Q-Tree** directory tree to be used:
  export QTREE=*qtree-root* (possibly ‘lclqtree‘)
- Add **$QTREE/bin** to your **$PATH**
  export PATH=$QTREE/bin:$PATH
- Define **qd** used to chdir using **qds**:
  eval ‘qfunc qd‘ *# add −c if using csh*
- A useful function to edit a file from the source path:
  eds() { $EDITOR $(sls $*) ; }
- To set up **~/.qtree** directory:
  dirsetup −d $HOME dotqtree
- To set up **~/.qtree** directory with alternative name:
  dirsetup −d $HOME −m .qtree=*name* dotqtree
  export HOME_QTREE=$HOME/*name*

Documentation

- Manual pages are in **$QTREE/man**
- **qefgui** can be used to view man pages and **x_db** databases
- Every **Q-Tree** program has an **−x** flag that outputs synopsis, one line description, summary of flags and options.
- **quete** or **xdbs** can be used to list or query **x_db** databases
  xdbs will list available x-* databases
- www.qef.com contains The Guide and other documentation

Documentation Conventions

- *topic*(**x-***dbnm*) refers to entry called *topic* in the **x_db** database *dbnm*. To access this topic use: **x-***dbnm topic*
- @**Variable** refers to a **qvrs** variable. For documentation on such a variable use: **x-qvrs** *Variable*

Navigating the Forest

Fields of a **qdsrv** path records:
Index Project Revision TreeType User Host Config Pathdirs **...**

qds selection flags (i.e., a *path-spec*):
−p *project* *; **−r** *revision* *; **−t** *treetype* **;
−u *user* *; **−h** *host* *; **−c** *config*
-*num* − explicit path number
* use ‘.’ for current value; automatically applied, if necessary, unless the **−a** flag is specified.
** **−o == −tobject, −b == −tbaseline, −w == −tworking**

qds −b −p*proj* # Find the baseline for project *proj*
qds −u. −a # Find all your paths
qds −R # Find the path of the current tree
qdid −s123 # Bind user’s qdid to a specific path (e.g., 123)
qdid −s # Bind user’s qdid to the current tree
qd −i # chdir to current path bound to user’s **qdid** identifier
qd −I *path-spec* # chdir to selected path and simultaneously bind user’s qdid to it
qd −n # chdir to next (i.e., parent) tree in current **@RootPath**
qd *path-spec subdir* # chdir to *subdir* of selected path; use /*subdir* to choose directory relative to root
qdmgt list −P # list current projects in the database
qdmgt −X # list messages supported by **qdsrv**
qdchk # check user’s paths on current host
qhost *host* # check access to host and retrieve qtree and home

Setting Up Working and Object Trees

qd −p*project* **−b** # chdir to *project*’s baseline tree
mkqtree −w *working-dir* [*sub-dirs* **...**] # create working tree; use argument ‘.’ to suppress creation of sub-dirs
qd -*pathnum* # chdir to new working tree
mkqtree −o *object-directory* # create an object tree
treedirs [*sub-dirs* **...**] # create a tree’s sub-directories − defaults to all sub-trees. If in object tree, defaults to those sub-trees in the working directory.

Examining Your Current Configuration

qvrs # list current qvrs variables
qvrs −f # list current qvrs files
qvrs −Pr # output **root.vrs**
qvrs −Pc # output **conf.vrs**
confvrs # output settings by **conf.vrs**
confvrs −d # compare **conf.vrs** to default
qvrs @*Variable* **...** # retrieve value of a **qvrs** variable
qvrs −W *Var* **...** # list where **qvrs** variables set
qvrs −l # list library mapping controls
qvrs −XI # list **cc −I** flags
qvrs −VD # output value of **@_DestDir_**
qvrs −V? # output list of **−V** and **−X** short-cuts

Configuring Tree’s root.vrs & conf.vrs

rootvrs −d *dir* # set **_DestDir_**
rootvrs −A *dir* # set **RootAlias**
rootvrs −c *conf* # set **ConfigName**
rootvrs −B *host* # set **BuildHost** − use . for current host
rootvrs −h *sys* # name type of build system
rootvrs −H # equivalent to **−h** ‘**system**‘
rootvrs −u # update current **root.vrs** from parent’s **root.vrs**
Note: Can use +*Variable*=*value* to set variable
Note: Some settings may result in creation of new qdsrv path. Use ‘**qdmgt delete** −*number*’ to delete obsolete entry.
qconfset −v *V*=*Val* # add/change variable to **conf.vrs**
qconfset −o *Opt* # turn on option *Opt*
qconfset −n *Opt* # turn off option *Opt*

Reduced Qef −x

qef [−x2cFkMntvX] [−A**...**] [−d dir] [-[DUGL]**...**] [−P process] [−f file] [−T {012}] [−m <num>] [args **...**]

−x	display this explanation
−c	suppress the **@ForbidQef** check − use at own risk
−t	suppress the time check − use at own risk
−n	suppress execution by backend
−F	force execution by backend
−v	report all subcommands
−D mac=value	set macro to value − see **qefdirs**
−L var=value	define qvrs value (e.g., −LDEBUGGING)
−P process	apply special process − see below
−d dir	chdir to dir
−m <num>	set maximum parallel processes to <num>
args **...**	arguments to backend − assigned to **@QefArgs** defaults to **@_DefaultArgs_**

Commonly Used −P Processes

halt	halt qefs started from directory (chmod −w %qef*.hlt)
ppscript	output macro processed script
script	output script but don’t process it
targets	list target descriptions for directory
treewalk	walk tree, but do nothing
inclswalk	walk tree refresning running incls

Detaching Long Running Processes, etc.

go *cmmd* # detaches command − merged outputs to ,.g
go −d *cmmd* # detaches command − merged output to ~/.qtree/goes/<host>/<pid><key>,g
g # view newest go file − add **−d** to see go **−d** output
g −o # view second newest go file
g −*num* # view *num*th newest go file
g −O # view oldest go file
g −l # list go files
g −h # output head of selected go file
g −t # output tail of selected go file
g −q # show current qefs for all gofiles
g −Q # show qef termination lines for all gofiles
g −f # tail −f ,.g
g −R # remove go file and show next
goes # show go audit trail for current host
goes −h*host* # show go audit trail for specified *host*
goes −h # show audit trails for all hosts
goes −p # purge completed jobs from current host go audit
gomonitor # monitors go messages

Running a Remote Command

qremote *cmmd* # run command on appropriate **@BuildHost**
qremote −<*num*> *cmmd* # run command in path number <num>
qremote −g ... # go −d the command on the selected host
qremote −v ... # verbosely report the full command
qremote −S*service* **...** # run on one **@_Servers_[service]** hosts

Sls, Libs, Incls, Qhy, Qsg, Qefdirs ...

sls # list the files in the source path
sls −c # do it in columns
sls *fname* # find and list 1st file called *fname* in path
sls −a *fname* # find and list all files called *fname* in path
sls −S *suffix* # find all *.*suffix* files in source path
sls −g t_* # find files that match t_* in path
sls −n *fname* # find and list file *fname* but not in cwd
libs *file* # list libraries for ‘**sls** *file*‘
libs −a *file* # list libraries − all forms
incls *file* # list includes for ‘**sls** *file*‘
qhy *module* # output why and how *module* was last built
qhy −r *module* # qhy for *module* and each of its prereqs
qsg −M # most common script generator − **qsg** the qeffile using srclist._ as arguments − usually generated by **sls −Ls**
qsg −c *command* **...** # run **qsg** *command*
qsgdump −S hanoi # view source for **qsg** hanoi script
x-qsg −L *scripts # list **qsg** scripts
qefdirs −L # show levels for current directory
− use qef −DIto=4 to suppress Installs up to level 4
− use qef −DDoto=8 to suppress builds after level 8
qefdirs −l*dir* # show *dir*’s level
cush −d *dir* **−E** *eset* **−s***Var*=*Val cmmd* **...** # run *cmmd* in directory *dir*, using **envset** set *eset*, setting environment variable $*Var* to *Val*

Special @ Sequences in Qvrs

@@	A literal @
@<newline>	Replaced by a space − used to split up long lines
@.	Null − used to terminate variable name
@#	A literal #
@NotSet	Replaced by **@NotSet**
@*var* *	Replaced by value of variable *var*
@*var[index]* *	*index* evaluated before lookup done
@(*func* **...**) *	Call to function *func* − see **functions(x-qvrs)**
@*char*	Replaced by *char*

* may be followed by ~ operators − see **tildeops(x-qsg)**

See also: syntax(x-qvrs) expansion(x-qvrs) keywords(x-qvrs)

Special @ Sequences in Qsg

@<newline>	Replaced by space − used to split up long lines
@<space>	A literal space
@<tab>	A literal tab
@@	A literal @
@#**...**	Ignore balance of the line or function arguments
@*var* *	A value of variable *var*
@(*name* **...**) *	Call to function *name*
@[*Var List* **...**] *	Value of *List* assigned to *Var*
@[/*List* **...**]	Global variable named by first element set to balance of list and list returned
@{*Var*} *	Replaced by **qvrs** variable *Var*
@<*script* **...**> *	Invokes named *script*

* may be followed by ~ operators − see **tildeops(x-qsg)**

See also: qsg-input(x-qsg) qsg-syntax(x-qsg) functions(x-qsg) faq2 faq3

For qefdirs syntax see: qefdirs-input(x-qefdirs)

The Qef Subset of the Q-Tree Tool-Set

adjmat	produce adjacency matrix
arccentre	computes the centre point of a three point arc
artimes	set last modification times for files of an archive
arupdate	update an archive according to specified list of members
ascii	print a table of the ASCII character set
bfsic	build file system integrity check and db maintenance
bp	deliver source code boiler plate
c%;	cannot use sh command interpreter
cancreat	check if file can be created
cc_g	eliminate stupid copyright notices or gratuitous warnings
cc_z	eliminate stupid copyright notices or gratuitous warnings
cerrs	parse input extracting cc errors and warnings
chkfile	check all files exist killing argument pid on failure
chstat	change the status of files named in list or arguments
cleanilog	clean up instal [sic] log file
clrstr	output terminal clear string in readable form
clump	convert file:lineno input to ranges
cmdcmp	compare the outputs of two commands
com	compile or process file using embedded command
commw	print input terms not in dictionaries
company	output company information
condln	link file1 to file2, removing file2 if necessary
confvrs	create or compare qvrs config file
contax	output selected contax database entries

conv convert input characters to readable form
count produce numbers
cpifdif compare new and old and copy if different
ct cut input into cut file
cush cannot use sh command interpreter
depsmap create file mapping suffixes to mkdeps file
detox remove toxic waste normally found in dos files
dirlist produce list of all directories for input file list
dirname output directory pathname for files
dirsetup extract files and information from a directory setup file
divide split files at specified pattern
dmpdeps dump or test deps object
dosmap change Unix paths to DOS paths
double output differing lines of files separated by tab
dry run dhry stone tests
elimso eliminate n/troff inclusions
environ list arguments, user info, open files, $vars, and ignored signals
envset output environment setting commands
envstd list arguments, open files and ignored signals
fcmp compares new and old
fdate output formatted date string
fexists output file names that match specified attributes
ffill fill in suppressed fields
filelist maintain a file list and their collective modification time
finclude output file resolving includes
finda find and replace Ada variables
findc find and replace C variables
findf find and replace tabbed fields
findw find and replace words
fixflist remove non-existent files from a file list
flcomm comm(1) like but columns put into files
fnd find a command
fndstr find a string in a file and output offset
form text formatter and macro processor
fparens check bracket, brace and double quote balancing in form input
ftest test argument file attributes
g process go files
go detach a command
goes remove completed jobs from go message files
gomonitor display go message files as updated
gotstr output names of files that contain argument string
grpsort sort groups of lines specified by ranges
hhmmss output a banner of the time
hoff hell of a lot faster than nroff
howto output selected howto information
incls output embedded include dependencies
instal meticulously install a file and audit it
instdir install a directory
instfls install files, but only if necessary, according to script
jlines join up selected lines
josh run jobs selecting from job file
kdbm extract data from dbm database
l list files in columns
lash long argument list shell interface
lc list files by type in columns
lcmp compare two files
ldbm extract lines from dbm database
ledmp display current lefile values
leset set up line editing keyfile
liborder process nm of a library to produce dependency graph
libs output libs information for named file
lines print first N and last M lines
linked list files with multiple links
lls ls for input files with selected fields output
lninsert replace characters in master by lines from source
lntree create tree of symbolic links to input file list
man3db apply trg script to selected items from man3 TIPs database
manprep prepare xdb or manual section for qefgui help display
mimk issue updating commands according to a dependency script
mkalltraits run mktraits on remote hosts
mkddt create ddt declaration
mkdeps compile incls scanner file
mkerrs process error databases to produce other source
mkopts create options header file
mkqtree set up new qef tree
mkquete produce manual section index
mksolib create shared library externs list
mktraits process traits source to produce binary file
mkvernum create or change version string
mnfadd add a new manifest to manifest database
mnfchk check manifest database for syntax and consistency
mnfcmp compare two manifests
mnfdb output manifest database release information
mnfdel delete releases from manifest database
mnfput output a manifest or manifest database
necho echo arguments with special character interpretation
numb produce numbered lines
olex lexical analyser builder
p4files list p4 files for the current root
p4mnf list p4 files for the current root
pa output, list, or delete cut files
parmsdb output parms database in variety of formats
pathclash produce list of duplicated executables in path
pathto map argument file to special directory
pdirs manipulate a directory stack
ph output phone numbers for selected contax database entries
putifdif copy input to ofile if different
qconfset add variable setting to the conf.vrs file
qdchk check host's qdsrv database entries
qdid assign qdsrv ident and/or bind to path
qdmgt general interface to qef directory server
qds output name of directory selected from list of qdsrv paths
qdsrv qef directory database server
qdupd add new or update existing path in qdsrv database
qed somewhere between a line editor and a command interpreter
qedbufs output qed save file structures
qef quod erat faciendum - that which was to be done
qefdirs qef script generator for multiple directories
qefgui qef graphical interface
qefinfo qef graphical interface
qenv output environment variables in sorted usable form
qfunc output selected qfunc function/alias file
qgdiff graphical file difference viewer
qhost qtree host server
qhy report qhy targets were built
qlex interface to lex
qmsdev Microsoft Developer's Studio project file generator
qmsg send a message or mail to designated users
qremote run a command on a remote host
qrep another grep
qsg the qef script generator interpreter
qsgcomp compiles a qsg script to object
qsgdump dump a qsg object file
qsh qef shell command interpreter
qtreeinfo output information about the Q-Tree release
quete list x_db topics and quete.db entries that match patterns
qvrs output qvrs settings
qvrsdmp process qvrs binary file
qvrsexpr evaluate and output qvrs expressions
qyacc interface to yacc
r90 reflect lines around diagonal
rcslocks report the RCS locked files in a directory
realdir output real directory name for argument directory
recur execute a command repetitively
rep another grep
resort build new output in order specified by input
revl reverse input lines
rls recursive list of files
rmlist remove files named in input
rmnotnamed remove all files not named by arguments
rmwhite output rpl script to remove redundant white space and newlines
rootvrs create or change root.vrs file
rotf select fields of input lines for output
rpl replace, print, or delete named lines
rtabs align output fields by inserting padding
samefile check if two paths refer to same file
sdba output statistics about sdbm database
setbytes set specified offsets to strings
sfdchk check strfix dictionaries for valid patterns
sfsic source file system integrity check and db maintenance
shfix process input file incorporating output of embedded commands
shuffle shuffle input lines and output
sls source path ls
snm standardized nm output
srclist check the srclist._ file
strfix replace variables according to replacement dictionary
sttyek set or display saved stty erase and kill chars
subdist create sub-distribution from master filelists
summarize summarize selected fields
sumup output summations of selected input fields
suprep suppress repeated fields
sysnm output system name or check if it matches arguments
system output system name or check if it matches arguments
tabrpl replace tabs by spaces or vice versa
tchown change ownership and mode according to a template
tdbkeys list TIPs database index keys and/or files
tdbm create TIPs key files
tdbrg apply trg program against selected TIPs dbm database entries
ted TIPs file editor
termfnd check if termcap/terminfo entry exists
termsa list all Ada variables in files
termsc list all C variables in files
termsf list all tabbed fields in files
termsw list all words in files
tf output name of non-existent comma file
tildes convert between symbolic and real character representations
timeout execute a program with a time limit
tlist formated listing of TIPs data base files
tmkprof create new TIPs data base profile
topolsrt topologically sort input
touchfiles list or create touch files
tprof output TIPs profile in various formats
traits output traits table
transl translate input fields
treedirs mkdir selected or all sub-directories of a qef tree
trg template driven TIPs report generator
trgdmp print trg object file
trgmk compile trg script
tscan interactive TIPs data base scanner
tstrhash test strhash hashing
typset interface to typesetter and printing packages
untouch set file times
upd update conventionally named versions of files
upto print selected lines from named files
vcc create, compile, link, and remove version string source file
vci version control interface interpreter
vernumcomp compress mkvernum database by removing old entries
wcci windows C compiler interface
whats whats 2 + 2
wmode write-protect files
wordidx output input lines followed by lines indicating word count
wot output sccs id strings
x-contax contax use and data bases eXplanatory D.B.
x-eml form eml macros eXplanatory D.B.
x-form form macros and syntax eXplanatory D.B.
x-html html qsg library eXplanatory D.B.
x-ldeps deps library eXplanatory D.B.
x-ldtree dtree library eXplanatory D.B.
x-lledit ledit library eXplanatory D.B.
x-lqvrs qvrs library eXplanatory D.B.
x-ltc tc library eXplanatory D.B.
x-ltips tips library eXplanatory D.B.
x-man the −man macro set eXplanatory D.B.
x-qed qed commands and facilities eXplanatory D.B.
x-qef QEF facilities and tools eXplanatory D.B.
x-qefdirs qefdirs eXplanatory D.B.
x-qefeg prototype qef files eXplanatory D.B.
x-qefgui qef graphical user interface eXplanatory D.B.
x-qefpp qef preprocessor controls and macros eXplanatory D.B.
x-qfsic file system integrity (fsic) package eXplanatory D.B.
x-qmisc Q-Tree miscellany eXplanatory D.B.
x-qmisc Q-Tree miscellany eXplanatory D.B.
x-qproc software process procedures eXplanatory D.B.
x-qsg qsg and its support library eXplanatory D.B.
x-qvrs qvrs variables, facilities, and files eXplanatory D.B.
x-ted ted the TIPs editor eXplanatory D.B.
x-trg TIPs trg functions eXplanatory D.B.
x-tscan tscan facilities and commands eXplanatory D.B.
x-xfig xfig qsg library eXplanatory D.B.
x-xppt xppt qsg library eXplanatory D.B.
x-zr qed function library eXplanatory D.B.
x_db x_db database front end
xdbmk create an x_db data base
xdbs list x_db databases or topics for named databases
xfinterp play with the −x flag formatting
xtty convert stty(1) output to full explanations
younger test if files younger than specified time
zfill zero fill digit string

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