```bash
 1  #! /usr/bin/env bash
 2  printf "%s\n" "$(date), $(tput bold)${BASH_SOURCE[0]}$(tput sgr0)"
 3
 4  # source /repos/github/builds/scripts-docker/genesis/phase-02.sh
 5
 6  source /repos/github/builds/scripts-docker/bash-inits/paths.sh
 7
 8  # export dist="ubuntu" ; export release="22.0" ; export tag="${dist}-${release}"
 9
10  # defined in bash init
11  #    repo_scripts_docker (e.g. /Volumes/repos/github/builds/scripts-spack)
12  # define functions new_step, sub_step, sub_sub_step
13  source ${repo_scripts_spack}/shared/common-header.sh
14
15  export tag="${dist}-${release}"
16  export mySpack="${tag}-${USER}-docker-spack"
17
18  #  #  #  ========================================= declarations begin
19
20  export generic_seconds=${SECONDS}
21
22  export       USER="dantopa"
23  export        ego="${USER}"  # latin: ego = I, me
24  export  git_user="Daniel Topa"
25  export git_email="dantopa@gmail.com"
26  # export  git_user="Danny Shanahan"
27  # export git_email="dshanaberger@aer.com"
28  # export        ego="magneto"  # latin: ego = I, me
29  # export  git_user="Erik Magnus Lehnsherr"
30  # export git_email="magneto@aer.com"
31
32  #  #  #  ========================================= declarations end
33
34  echo "\${mySpack} = ${mySpack}"
35  pause
36
37  #  #  #  ========================================= configure git
38
39  new_step "Configure git"
40  sub_step_counter=0
41
42      sub_step "git config --global pull.rebase false"
43              git config --global pull.rebase false
44
45      sub_step "git config --global user.name ${git_user}"
46              git config --global user.name ${git_user}
47
48      sub_step "git config --global user.email ${git_email}"
49              git config --global user.email ${git_email}
50
51      sub_step "git config --global pull.rebase false"
52              git config --global pull.rebase false
53
54      sub_step "git config --global push.default simple"
55              git config --global push.default simple
56
57      sub_step "git config --global color.ui true"
58              git config --global color.ui true
59
60      sub_step "git config --global rerere.enabled true"
61              git config --global rerere.enabled true
62
63      sub_step "git config --global merge.tool 'meld'"
64              git config --global merge.tool 'meld'
65
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 66      sub_step "git config --global core.editor 'vim'"
 67              git config --global core.editor 'vim'
 68
 69      sub_step "git config --global init.defaultBranch main"
 70              git config --global init.defaultBranch main
 71
 72 #sub_step 'git config --global merge.tool  vimdiff'
 73 #          git config --global merge.tool  vimdiff
 74
 75 #  #  #  ========================================= create subdirectories
 76
 77 new_step "Create subdirectories"
 78 sub_step_counter=0
 79      sub_step "mkdir -p /home/${ego}/scratch"
 80              mkdir -p /home/${ego}/scratch
 81
 82      sub_step "mkdir -p /home/${ego}/.info"
 83              mkdir -p /home/${ego}/.info
 84
 85      sub_step "mkdir -p /home/${ego}/repos/bitbucket"
 86              mkdir -p /home/${ego}/repos/bitbucket
 87
 88      sub_step "mkdir -p /home/${ego}/repos/github"
 89              mkdir -p /home/${ego}/repos/github
 90
 91      sub_step "mkdir -p /home/${ego}/repos/gitlab"
 92              mkdir -p /home/${ego}/repos/gitlab
 93
 94 #  #  #  ========================================= spack
 95
 96 new_step "Install spack"
 97 sub_step_counter=0
 98
 99      sub_step "mkdir -p /home/${ego}/spacktivity"
100              mkdir -p /home/${ego}/spacktivity
101
102      sub_step "cd /home/${ego}/spacktivity"
103              cd /home/${ego}/spacktivity
104
105      sub_step "git clone --depth=1 https://github.com/spack/spack ${mySpack}"
106              git clone --depth=1 https://github.com/spack/spack ${mySpack}
107
108      sub_step "cd ${mySpack}"
109              cd ${mySpack}
110
111      sub_step "mkdir -p ${ego}/build-logs"
112              mkdir -p ${ego}/build-logs
113
114      sub_step "mkdir -p ${ego}/specs"
115              mkdir -p ${ego}/specs
116
117      sub_step "mkdir -p ${ego}/info"
118              mkdir -p ${ego}/info
119
120      sub_step "mkdir -p ${ego}/shell-scripts"
121              mkdir -p ${ego}/shell-scripts
122
123      sub_step "source share/spack/setup-env.sh"
124              source share/spack/setup-env.sh
125
126 new_step "Build cdf"
127 sub_step_counter=0
128
129      sub_step "mkdir -p ${HOME}/apps/shell-scripts"
130              mkdir -p ${HOME}/apps/shell-scripts
```

```
131
132      sub_step "cp ${repo_scripts_spack}/transport/build-cdf.sh ${HOME}/apps/shell-scripts/."
133              cp ${repo_scripts_spack}/transport/build-cdf.sh ${HOME}/apps/shell-scripts/.
134
135      sub_step "cd ${HOME}/apps"
136              cd ${HOME}/apps
137
138      sub_step "source ${HOME}/apps/shell-scripts/build-cdf.sh"
139              source ${HOME}/apps/shell-scripts/build-cdf.sh
140
141  new_step "Bring in system files from GitLab"
142  sub_step_counter=0
143      sub_step "cp ${repo_scripts_docker}/transport/mirrors.yaml ${SPACK_ROOT}/etc/spack/."
144              cp ${repo_scripts_docker}/transport/mirrors.yaml ${SPACK_ROOT}/etc/spack/.
145
146      sub_step "cp ${repo_scripts_docker}/transport/.platform-specific.sh /home/${ego}/."
147              cp ${repo_scripts_docker}/transport/.platform-specific.sh /home/${ego}/.
148
149      sub_step "cp ${repo_scripts_docker}/transport/.vimrc             /home/${ego}/."
150              cp ${repo_scripts_docker}/transport/.vimrc             /home/${ego}/.
151
152  #    sub_step "cp ${repo_scripts_docker}/transport/.*.sh           /home/${ego}/."
153  #            cp ${repo_scripts_docker}/transport/.*.sh           /home/${ego}/.
154
155      sub_step "cp ${repo_scripts_docker}/transport/.${tag}.sh         /home/${ego}/."
156              cp ${repo_scripts_docker}/transport/.${tag}.sh         /home/${ego}/.
157
158  new_step "Build compilers"
159  sub_step_counter=0
160
161  # ubuntu
162  # export SPACK_PYTHON="/usr/bin/python3.9"
163
164      export local_compiler="gcc@7.3.1"
165
166      sub_step "spack install gcc@12.1.0"
167              spack install gcc@12.1.0 2>&1 | tee -a
…  ${SPACK_ROOT}/${USER}/build-logs/gcc@12.1.0.txt
168
169              spack info gcc                          > ${SPACK_ROOT}/${USER}/info/gcc.txt
170              spack spec gcc@12.1.0 % ${local_compiler} > ${SPACK_ROOT}/${USER}/specs/gcc@12.1.0.txt
171
172      sub_step "spack compiler find $(spack location -i gcc@12.1.0)"
173              spack compiler find $(spack location -i gcc@12.1.0)
174
175      # sub_step "spack load gcc@12.1.0"
176      #            spack load gcc@12.1.0
177
178      sub_step "spack install llvm@14.0.6 % ${local_compiler}"
179              spack install llvm@14.0.6 % ${local_compiler} 2>&1 | tee -a
…  ${SPACK_ROOT}/${USER}/build-logs/llvm@14.0.6.txt
180
181              spack info llvm                          > ${SPACK_ROOT}/${USER}/info/llvm.txt
182              spack spec llvm@14.0.6 % ${local_compiler} > ${SPACK_ROOT}/${USER}/specs/llvm@14.0.6.txt
183
184      sub_step "spack compiler find $(spack location -i llvm@14.0.6)"
185              spack compiler find $(spack location -i llvm@14.0.6)
186
187      sub_step "spack install llvm@13.0.1 % ${local_compiler}"
188              spack install llvm@13.0.1 % ${local_compiler} 2>&1 | tee -a
…  ${SPACK_ROOT}/${USER}/build-logs/llvm@13.0.1.txt
189
190              spack spec llvm@13.0.1 % ${local_compiler}     2>&1 | tee -a
…  ${SPACK_ROOT}/${USER}/specs/llvm@13.0.1.txt
191
```

```
192        sub_step "spack compiler find $(spack location -i llvm@13.0.1)"
193                 spack compiler find $(spack location -i llvm@13.0.1)
194
195  #   #   ======================================== post-mortem
196
197 new_step "Probe build"
198 sub_step_counter=0
199
200        sub_step 'spack compiler find'
201                 spack compiler find
202
203 # sub_step 'spack mirror add external-drive file:///spacktivity/mirror'
204 #           spack mirror add external-drive file:///spacktivity/mirror
205 # sub_step 'git config --global  pull.rebase false'
206 #           git config --global  pull.rebase false
207
208        sub_step "gcc --version"
209                 gcc --version
210
211        sub_step "uname -a"
212                 uname -a
213
214        sub_step "cat /proc/version"
215                 cat /proc/version
216
217        sub_step "lsb_release -a"
218                 lsb_release -a
219
220        sub_step "cat /etc/*release"
221                 cat /etc/*release
222
223        sub_step 'echo -e "\n\n\n" | ssh-keygen -o -a 100 -t ed25519 -N ""'
224                 echo -e "\n\n\n" | ssh-keygen -o -a 100 -t ed25519 -N ""
225
226        sub_step 'echo "to view public key: cat /home/${ego}/.ssh/id_ed25519.pub"'
227
228 #   #   #   ======================================== exit
229
230 # new_step "source /repos/github/builds/scripts-docker/genesis/phase-02.sh"
231
232 new_step "print elapsed time used"
233       export generic_seconds=$((${SECONDS}-${generic_seconds}))
234       printf 'time for spack set up and compiler builds: %dh:%dm:%ds\n' $((${generic_seconds}/3600))
 … $((${generic_seconds}%3600/60)) $((${generic_seconds}%60)) | tee -a ${timerFile}
235
236 new_step "$(tput bold)${BASH_SOURCE[0]}$(tput sgr0) script completed at $(date)"
237
```