

Nix-pkgs

I did some tests, to understand how **nixpkgs** works:

1. building **custom packages** whose successfully installed
2. building **custom packages** whose installation failed
3. check which packages specified in the **cloudbiolinux** environment are available in the **nixpkgs** environment
4. install a version of **nixos**

custom packages installation

The main problems with the **custom packages** are due to at least a couple of issues:

1. the need to identify what are the dependencies
2. find a way to handle the dependencies during the packages building, like **auto-apt** system

some packages CBL successfully installed

Below you can see the configurations of some **custom packages** successfully installed via **nixpkgs** (I didn't do any special configuration, but only what was necessary to installing):

bowtie-1.0.0

```
{ stdenv, fetchurl, zlib, unzip }:  
  
stdenv.mkDerivation {  
  name = "bowtie-1.0.0";  
  
  src = fetchurl {  
    url = "http://downloads.sourceforge.net/project/bowtie-bio/bowtie/1.0.0/bowtie-1.0.0-src.zip";  
    sha256 = "lidsqn48yp1hlxvlfckmf6gv35qzyya4wvz55bw02cq5iskk9r2i";  
  };  
  
  buildInputs = [ zlib unzip ] ;  
  
  installPhase = ''  
    mkdir -p $out/bin  
    echo "BIN_LIST: $(BIN_LIST)"  
    cp bowtie-build bowtie bowtie-inspect $out/bin  
  '' ;  
  
  meta = {  
    description = "test - customcbl";  
    homepage = "http://downloads.sourceforge.net/project/bowtie-bio";  
    license = "GNUv2";  
    platforms = stdenv.lib.platforms.all;  
  };  
}
```

crisp-5

```
{ stdenv, fetchurl, zlib }:  
  
stdenv.mkDerivation {  
  name = "crisp-5";  
  
  src = fetchurl {  
    url = "https://sites.google.com/site/vibansal/software/crisp/CRISP-linux-v5.tar.gz";  
    sha256 = "15ki23iyv75nfypxckl5qmrqf9d9x57nxdljiaf2rkwp36ks6j";  
  };  
  
  buildInputs = [ zlib ] ;  
  
  installPhase = ''  
    mkdir -p $out/bin  
    cp CRISP.py crisp_to_vcf.py sam_to_pileup.py $out/bin  
  '' ;  
  
  meta = {  
    description = "test - customcbl";  
    homepage = "https://sites.google.com/site/vibansal/software/crisp";  
    license = "GNUv2";  
    platforms = stdenv.lib.platforms.all;  
  };  
}
```

gmap-2012-11-09

```
{ stdenv, fetchurl, zlib }:  
  
stdenv.mkDerivation {  
  name = "gmap-2012-11-09";  
  
  src = fetchurl {  
    url = "http://research-pub.gene.com/gmap/src/gmap-gsnap-2012-11-09.tar.gz";  
    sha256 = "0cv9n0lz1rhxvxiqshcgqf55qcdaskjmwgk9z0xrgvk7fiydibwx";  
  };  
  
  buildInputs = [ zlib ] ;  
  
  meta = {  
    description = "test - customcbl";  
    homepage = "http://research-pub.gene.com/gmap/src/gmap-gsnap";  
    license = "GNUv2";  
    platforms = stdenv.lib.platforms.all;  
  };  
}
```

lastz-1.02.00

```
{ stdenv, fetchurl, zlib }:  
  
stdenv.mkDerivation {  
  name = "lastz-1.02.00";  
  
  src = fetchurl {
```

```

url = "http://www.bx.psu.edu/miller_lab/dist/lastz-1.02.00.tar.gz";
sha256 = "08aa249749rwvynpj6bsp9smapiv20hs8k78sbrr54yzgrrlai85";
};

buildInputs = [ zlib ] ;

preBuild =
''
substituteInPlace make-include.mak --replace "LASTZ_INSTALL" "out"
substituteInPlace make-include.mak --replace "out}" "out}/bin"
cd src
substituteInPlace Makefile --replace " -Werror" ""
cd ..
'';

meta = {
description = "customcbl - lastz";
homepage = "http://www.bx.psu.edu/miller_lab";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

ray-2.2.0

```

{ stdenv, fetchurl, zlib, mpich2 }:

stdenv.mkDerivation {
name = "ray-2.2.0";

src = fetchurl {
url = "http://downloads.sourceforge.net/project/denovoassembler/Ray-v2.2.0.tar.bz2";
sha256 = "1bqf0wsihli398ax6kpm9305inalbiql2kp3a9aillpr5nzglxpl";
};

buildInputs = [ zlib mpich2 ] ;

buildPhase = ''
make PREFIX=/home/piero/ray-build
'';

postInstall = ''
ls $PREFIX
#mpiexec -n 1 /home/piero/ray-build/Ray -o test -p test_1.fastq test_2.fastq -k 31
'';

meta = {
description = "customcbl - Ray";
homepage = "http://downloads.sourceforge.net/project/denovoassembler";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

samtools-0.1.19

```

{ stdenv, fetchurl, zlib }:

stdenv.mkDerivation {
name = "samtools-0.1.19";

src = fetchurl {
url = "http://downloads.sourceforge.net/project/samtools/samtools/0.1.19/samtools-0.1.19.tar.bz2";
sha256 = "1m33xsfwz0s8qi45lylagflqg7fphf4dr0780rsvw75av9wk06h";
};

buildInputs = [ zlib ] ;

preBuild =
''
make clean
substituteInPlace Makefile --replace "-D_CURSES_LIB=1" "-D_CURSES_LIB=0"
substituteInPlace Makefile --replace "-lcurses" "# -lcurses"
'';

installPhase = ''
mkdir -p $out/bin
cp samtools bcftools/bcftools/bcftools/vcfutils.pl misc/wgsim $out/bin
'';

meta = {
description = "test - customcbl";
homepage = "http://downloads.sourceforge.net/project/samtools";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

star-2.3.1p

```

{ stdenv, fetchurl, zlib }:

stdenv.mkDerivation {
name = "star-2.3.1p";

src = fetchurl {
url = "ftp://ftp2.cshl.edu/gingeraslab/tracks/STARrelease/Alpha/STAR_2.3.1p.tgz";
sha256 = "0abpal8iyd9m70g00v9awzk9msnw232xn8748l14cbhng5627h94";
};

buildInputs = [ zlib ] ;

installPhase = ''
mkdir -p $out/bin
cp STAR STARStatic $out/bin
'';

meta = {
description = "test - customcbl";
homepage = "ftp://ftp2.cshl.edu/gingeraslab/tracks/STARrelease/Alpha";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

tabix-0.2.6

```

{ stdenv, fetchurl, zlib }:

```

```
stdenv.mkDerivation {
  name = "tabix-0.2.6";

  src = fetchurl {
    url = "http://downloads.sourceforge.net/project/samtools/tabix/tabix-0.2.6.tar.bz2";
    sha256 = "0wvbs4380dvbw2vavmfl6qqg12xlvrhbqs87bhv23knn1p4";
  };

  buildInputs = [ zlib ];

  installPhase = ''
    mkdir -p $out/bin
    cp tabix bgzip tabix.py $out/bin
  '';

  meta = {
    description = "test - customcbl";
    homepage = "http://downloads.sourceforge.net/project/samtools/tabix";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}
```

tophat-2.0.9

```
{ stdenv, fetchurl, zlib } :

stdenv.mkDerivation {
  name = "tophat-2.0.9";

  src = fetchurl {
    url = "http://tophat.cbcb.umd.edu/downloads/tophat-2.0.9.Linux_x86_64.tar.gz";
    sha256 = "1whdawmmsy236bfh09jk11f38axrl9vy0fllld9yrmj1czhx06";
  };

  buildInputs = [ zlib ];
  installPhase = ''
    mkdir -p $out/bin
    find . -perm -100 -type f -exec cp '{}' $out/bin \;
    #cp tophat* $out/bin
  '';

  meta = {
    description = "test - customcbl";
    homepage = "http://tophat.cbcb.umd.edu/downloads";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}
```

fastqc & jre

In this case the installation seems to be done successfully, but when you run the application, it doesn't find the interpreter *java*:

```
piro@ubuntu1204-tesi-nix:~$ ./result/bin/fastqc
Can't exec "java": File o directory non esistente at ./result/bin/fastqc line 183.
```

I tried to insert *java* or *jre* in the list of dependencies, but without any result.

jre

Therefore I had to manually install the *jre* package, but even this procedure has failed:

```
piro@ubuntu1204-tesi-nix:~$ sudo nix-env -i jre
installing `jre-1.7.0_45'
these derivations will be built:
  /nix/store/nw0px55rx0qy3lfphc5cqv96w2q7am4-restrict-message.drv
  /nix/store/w747a34ynk8zf9lsmmyj1prmrn6jz5xc-jre-1.7.0_45.drv
  /nix/store/x95f05pqq91fl6hsi4cfpvazcda4g38l-jdk-7u45-linux-i586.tar.gz.drv
these paths will be fetched (2.93 MiB download, 13.14 MiB unpacked):
  /nix/store/5pw211k0r0ks34gcr10bibxlgmp48ym9-printproto-1.0.5
  /nix/store/854izdn4j2xrnk3wn2g4bmmvn6n7vhpdl-libXp-1.0.2
  /nix/store/h52nqxzjwmg7xh8xnlz453rgv3lmbhc-util-linux-2.24
  /nix/store/q3jgg28fvwg1pr7xgxra9kps6f9cn96-libXt-1.1.4
  /nix/store/qfqs3njdymirnlqk7bzkm0zb2x9qhb7-linux-pam-1.1.6
  /nix/store/qg9id1bh7dggp814l2acw48knj620g-libSM-1.2.1
  /nix/store/r02l9phzr0q74944hyph8kdcwjlvcgw-libICE-1.0.8
  /nix/store/vc3pfj6m5rnr5karkx2g705bzv9i2rah-cracklib-2.9.1
fetching path `/nix/store/r02l9phzr0q74944hyph8kdcwjlvcgw-libICE-1.0.8' ...

...
building path(s) `/nix/store/rc8njrh158cq9wx484q4c66z69myq9s7-jdk-7u45-linux-i586.tar.gz'

Unfortunately, we may not download file jdk-7u45-linux-i586.tar.gz automatically.
Please, go to http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.html, download it yourself, and add it to the Nix store using either
nix-store --add-fixed sha256 jdk-7u45-linux-i586.tar.gz
or
nix-prefetch-url file://path/to/jdk-7u45-linux-i586.tar.gz
***

builder for `/nix/store/x95f05pqq91fl6hsi4cfpvazcda4g38l-jdk-7u45-linux-i586.tar.gz.drv' failed to produce output path `/nix/store/rc8njrh158cq9wx484q4c66z69myq9s7-jdk-7u45-linux-i586.tar.gz': cannot build derivation `/nix/store/w747a34ynk8zf9lsmmyj1prmrn6jz5xc-jre-1.7.0_45.drv': 1 dependencies couldn't be built
error: build of `/nix/store/w747a34ynk8zf9lsmmyj1prmrn6jz5xc-jre-1.7.0_45.drv' failed
```

It was necessary to proceed with these steps:

1. manual download of the tarball **jdk-7u51-linux-i586.tar.gz** (this is the latest version available)
2. `sudo nix-prefetch-url file://jdk-7u51-linux-i586.tar.gz [file://jdk-7u51-linux-i586.tar.gz]`
3. edit the file `~/.nix-defexpr/channels/nixpkgs/pkgs/development/compilers/jdk/jdk7-linux.nix` for upgrade the version
4. run again `nix-env -i jre`

fastqc-0.10.1

After this it was possible to proceed with the package installation:

```
{ stdenv, fetchurl, zlib, unzip, jre } :

stdenv.mkDerivation {
  name = "fastqc-0.10.1";

  src = fetchurl {
```

```

url = "http://www.bioinformatics.bbsrc.ac.uk/projects/fastqc/fastqc_v0.10.1.zip";
sha256 = "160h137j1l62k8cig3s0v2k56i6x35rp982d4c490891hwz0xcjh";
};

buildInputs = [ zlib unzip jre ] ;

installPhase = ''
mkdir -p $out/bin
mkdir -p /home/piero/fastqc
chmod a+wx fastqc
#cp fastqc* /home/piero/fastqc
cp -r * /home/piero/fastqc/
'';

meta = {
description = "test - customcbl";
homepage = "http://www.bioinformatics.bbsrc.ac.uk/projects/fastqc";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

some packages CBL whose installation failed

Below you can see the results of some **custom packages** (these information were found in the files `cloudbiolinux/cloudbio/custom/bio_nextgen.py`, downloaded from **git clone** [git://github.com/chapmanb/cloudbiolinux.git](https://github.com/chapmanb/cloudbiolinux.git) [[git://github.com/chapmanb/cloudbiolinux.git](https://github.com/chapmanb/cloudbiolinux.git)]) whose installation failed:

delly

```

{ stdenv, fetchurl, zlib, boost }:

stdenv.mkDerivation {
name = "delly-0.0.11";

src = fetchurl {
#url = "http://www.embl.de/~rausch/delly_v0.0.11.tar.gz";
url = "http://www.embl.de/~rausch/delly_source_v0.0.11.tar.gz";
sha256 = "18wh0s7zjkhzms5ys91aiwajlkaId6p75mdjk29rg7y38ng8jb";
};

buildInputs = [ zlib boost ] ;

buildPhase = ''
cd pemgr/
make clean
make
'';

installPhase = ''
mkdir -p $out/bin
cp delly duppy invy jumpy $out/bin
'';

meta = {
description = "test - customcbl";
homepage = "http://www.embl.de/~rausch";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

The packages http://www.embl.de/~rausch/delly_v0.0.11.tar.gz [http://www.embl.de/~rausch/delly_v0.0.11.tar.gz] is a 64-bit binary. I tried to download the sources http://www.embl.de/~rausch/delly_source_v0.0.11.tar.gz [http://www.embl.de/~rausch/delly_source_v0.0.11.tar.gz], but the code requires files/libraries not available:

```

building clean
rm -f delly/delly duppy/duppy invy/invy jumpy/jumpy delly/delly.o duppy/duppy.o invy/invy.o jumpy/jumpy.o
building delly/delly
g++ -isystem /g/solexa/bin/software/boost_1_53_0/include -isystem /g/solexa/bin/software/bamtools//include -I../torali -O9 -pedantic -W -Wall delly/delly.o
In file included from /nix/store/sxgxyhldi2cxdk4fmlq8yagvdjffzsh8-boost-1.55.0/include/boost/date_time/posix_time/posix_time_system.hpp:14:0,
from /nix/store/sxgxyhldi2cxdk4fmlq8yagvdjffzsh8-boost-1.55.0/include/boost/date_time/posix_time/ptime.hpp:12,
from /nix/store/sxgxyhldi2cxdk4fmlq8yagvdjffzsh8-boost-1.55.0/include/boost/date_time/posix_time/posix_time.hpp:15,
from delly/delly.cpp:34:
/nix/store/sxgxyhldi2cxdk4fmlq8yagvdjffzsh8-boost-1.55.0/include/boost/date_time/time_system_split.hpp:41:1: warning: use of C++0x long long integer con
..../torali/bam_file_adapter.h:31:27: fatal error: api/BamReader.h: No such file or directory
compilation terminated.
make: *** [delly/delly] Error 1
note: keeping build directory `/tmp/nix-build-delly-0.0.11.drv-1'
builder for `/nix/store/vgq7maw5hncpi6d1i10lm43v6zp7dlhfh-delly-0.0.11.drv' failed with exit code 2
error: build of `/nix/store/vgq7maw5hncpi6d1i10lm43v6zp7dlhfh-delly-0.0.11.drv' failed
piero@ubuntu1204-tes1-nix:~$ nix-build -K pkgs/pkgs/top-level/all-packages.nix -A delly
error: an anonymous function at `/home/piero/pkgs/pkgs/development/cbl/delly/default.nix:1:1' called without required argument `bamtools'

```

The library **bamtools** is not available in the `nixpkgs` store:

```

File /nix-defexpr/channels/nixpkgs/pkgs/top-level/all-packages.nix saved
piero@ubuntu1204-tes1-nix:~$ nix-env --query --available bamtools
error: selector `bamtools' matches no derivations

```

bfast

```

{ stdenv, fetchurl, zlib }:

stdenv.mkDerivation {
name = "bfast-0.7.0a";

src = fetchurl {
url = "http://downloads.sourceforge.net/project/bfast/bfast/0.7.0/bfast-0.7.0a.tar.gz";
sha256 = "0plr8j21hksgksar0qacxpvcz94qh3j4dggvgaqfnhnjfbf93gd";
};

buildInputs = [ zlib ] ;

meta = {
description = "test - customcbl";
homepage = "http://downloads.sourceforge.net/project/bfast/bfast";
license = "GNUv2";
platforms = stdenv.lib.platforms.all;
};
}

```

The library **bzlib** is missing:

```
checking bzip2.h presence... no
checking for bzip2.h... no
configure: error: "could not find the bzip2 library. Please use --disable-bzip2 if you wish to disable bzip2 support."
note: keeping build directory `/tmp/nix-build-bfast-0.7.0a.drv-1'
builder for `/nix/store/5iid28f1bb399fpap4hmgiaipibif0n8a-bfast-0.7.0a.drv' failed with exit code 1
error: build of `/nix/store/5iid28f1bb399fpap4hmgiaipibif0n8a-bfast-0.7.0a.drv' failed
```

but seems not to be available:

```
piero@ubuntu1204-tesi-nix:~/nix-defexpr/channels/nixpkgs/pkgs/development/cbl$ nix-env --query --available bzip2
error: selector `bzip2' matches no derivations
```

bwa

```
{ stdenv, fetchurl, zlib } :

stdenv.mkDerivation {
  name = "bwa-0.7.5a";

  src = fetchurl {
    url = "http://downloads.sourceforge.net/project/bio-bwa/bwa-0.7.5a.tar.bz2";
    sha256 = "1pfpzxnmz9m5fgfh3r5cnzgd5hxx74jycn9fmc24f5r22bxfmyi";
  };

  buildInputs = [ zlib ];

  preBuild = ''
    substituteInPlace Makefile --replace "-O2 -m64" "-O2"
  '';

  installPhase = ''
    mkdir -p $out/bin
    cp bwa qualfa2fq.pl $out/bin
  '';

  meta = {
    description = "customcbl - bwa";
    homepage = "http://downloads.sourceforge.net/project/bio-bwa";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}
```

Also this package seems to be a 64-bit version, but in the test with **checkinstall** and **auto-apt**, removing the parameter **-64** building package has been successfully completed. In these case, even changing the parameter, the source requires libraries not available and the building package fails:

```
...
building utils.o
gcc -c -g -Wall -O2 -DHAVE_PTHREAD -DUSE_MALLOC_WRAPPERS utils.c -o utils.o
building kstring.o
gcc -c -g -Wall -O2 -DHAVE_PTHREAD -DUSE_MALLOC_WRAPPERS kstring.c -o kstring.o
building ksw.o
gcc -c -g -Wall -O2 -DHAVE_PTHREAD -DUSE_MALLOC_WRAPPERS ksw.c -o ksw.o
In file included from ksw.c:28:0:
/nix/store/2xgz1lqh8n2qk48zf3q8anz9qpqha6jq-gcc-4.6.3/lib/gcc/i686-pc-linux-gnu/4.6.3/include/emmintrin.h:32:3: error: #error "SSE2 instruction set not supported"
ksw.c:48:2: error: unknown type name `__m128i'
ksw.c: In function `ksw_qinit':
ksw.c:71:11: error: `__m128i' undeclared (first use in this function)
ksw.c:71:11: note: each undeclared identifier is reported only once for each function it appears in
ksw.c:71:19: error: expected expression before `)' token
ksw.c: In function `ksw_u8':
ksw.c:114:2: error: unknown type name `__m128i'
ksw.c:130:2: warning: implicit declaration of function `__mm_setl_epi32' [-Wimplicit-function-declaration]
ksw.c:131:2: warning: implicit declaration of function `__mm_setl_epi8' [-Wimplicit-function-declaration]
ksw.c:137:3: warning: implicit declaration of function `__mm_store_si128' [-Wimplicit-function-declaration]
ksw.c:144:3: error: unknown type name `__m128i'
ksw.c:145:3: warning: implicit declaration of function `__mm_load_si128' [-Wimplicit-function-declaration]
ksw.c:146:3: warning: implicit declaration of function `__mm_slli_si128' [-Wimplicit-function-declaration]
ksw.c:154:4: warning: implicit declaration of function `__mm_adds_epu8' [-Wimplicit-function-declaration]
ksw.c:155:4: warning: implicit declaration of function `__mm_subs_epu8' [-Wimplicit-function-declaration]
ksw.c:157:4: warning: implicit declaration of function `__mm_max_epu8' [-Wimplicit-function-declaration]
ksw.c:181:5: warning: implicit declaration of function `__mm_movemask_epi8' [-Wimplicit-function-declaration]
ksw.c:181:5: warning: implicit declaration of function `__mm_cmpeq_epi8' [-Wimplicit-function-declaration]
ksw.c:187:3: warning: implicit declaration of function `__mm_srli_si128' [-Wimplicit-function-declaration]
ksw.c:187:3: warning: implicit declaration of function `__mm_extract_epi16' [-Wimplicit-function-declaration]
ksw.c: In function `ksw_il6':
ksw.c:232:2: error: unknown type name `__m128i'
ksw.c:248:2: warning: implicit declaration of function `__mm_setl_epi16' [-Wimplicit-function-declaration]
ksw.c:260:3: error: unknown type name `__m128i'
ksw.c:264:4: warning: implicit declaration of function `__mm_adds_epi16' [-Wimplicit-function-declaration]
ksw.c:266:4: warning: implicit declaration of function `__mm_max_epi16' [-Wimplicit-function-declaration]
ksw.c:270:4: warning: implicit declaration of function `__mm_subs_epu16' [-Wimplicit-function-declaration]
ksw.c:286:5: warning: implicit declaration of function `__mm_cmpgt_epi16' [-Wimplicit-function-declaration]
make: *** [ksw.o] Error 1
builder for `/nix/store/2lbysplg1mxz6f1hpiw4x9cpj91alcc8-bwa-0.7.5a.drv' failed with exit code 2
error: build of `/nix/store/2lbysplg1mxz6f1hpiw4x9cpj91alcc8-bwa-0.7.5a.drv' failed
```

varscan

```
{ stdenv, fetchurl, zlib, unzip, jre } :

stdenv.mkDerivation {
  name = "varscan-2.3.6";

  src = fetchurl {
    url = "http://downloads.sourceforge.net/project/varscan/VarScan.v2.3.6.jar";
    sha256 = "1f5403fw6x7fx9xq35r2156x4fq5v7073744qlvx9f8g3iaxv8k";
  };

  buildInputs = [ zlib unzip jre ];

  installPhase = ''
    mkdir -p $out/bin
    cp varscan* $out/bin
  '';

  meta = {
    description = "test - customcbl";
    homepage = "http://downloads.sourceforge.net/project/varscan";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}
```

When the package is a **java/jar** does not seem to be able to handle it:

```
piero@ubuntu1204-tesi-nix:~$ nix-build -K .nix-defexpr/channels/nixpkgs/pkgs/top-level/all-packages.nix -A varscan
these derivations will be built:
```

```

/nix/store/3n8700wzi55322iv9vzrfpl97yjk6d0-varscan-2.3.6.drv
building path(s) /nix/store/1r9pn5pbkbg1ps6nx705ma8g2l97b4qy-varscan-2.3.6'
building /nix/store/1r9pn5pbkbg1ps6nx705ma8g2l97b4qy-varscan-2.3.6
unpacking sources
unpacking source archive /nix/store/v2pfqb5b491bx8j554j33af893abx0vb-VarScan.v2.3.6.jar
source archive /nix/store/v2pfqb5b491bx8j554j33af893abx0vb-VarScan.v2.3.6.jar has unknown type
note: keeping build directory /tmp/nix-build-varscan-2.3.6.drv-0'
builder for /nix/store/3n8700wzi55322iv9vzrfpl97yjk6d0-varscan-2.3.6.drv' failed with exit code 1
error: build of /nix/store/3n8700wzi55322iv9vzrfpl97yjk6d0-varscan-2.3.6.drv' failed

```

pbgzip

```

{ stdenv, fetchurl, zlib, git }:

stdenv.mkDerivation {
  name = "pbgzip-2cce3ffa97";

  src = fetchurl {
    #url = "https://github.com/chapmanb/samtools.git";
    url = "git clone https://github.com/chapmanb/samtools.git";
    sha256 = "0rfn0d66p0h9y8hph09zwx08nd4ba6qqyixv8m7hkd5n0fjam0l";
  };

  buildInputs = [ zlib git ] ;

  installPhase = ''
    mkdir -p $out/bin
    cp pbgzip $out/bin
  '';

  meta = {
    description = "test - customcbl";
    homepage = "https://github.com/chapmanb/samtools.git";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}

```

Even when you must download the package via **[git clone]**, does not seem to be able to handle it:

```

piro@ubuntu1204-tesi-nix:~$ nix-build -K .nix-defexpr/channels/nixpkgs/pkgs/top-level/all-packages.nix -A pbgzip
these derivations will be built:
/nix/store/wk63pyxj00qk2mav01kd3gcqpmfviiiv-pbgzip-2cce3ffa97.drv
building path(s) /nix/store/yip0907fas66l2z3qrsjxz41778453z-pbgzip-2cce3ffa97'
building /nix/store/yip0907fas66l2z3qrsjxz41778453z-pbgzip-2cce3ffa97
unpacking sources
unpacking source archive /nix/store/86z9xvghdxhzmfg5dmqx4wmc86rx0mms-samtools.git
source archive /nix/store/86z9xvghdxhzmfg5dmqx4wmc86rx0mms-samtools.git has unknown type
note: keeping build directory /tmp/nix-build-pbgzip-2cce3ffa97.drv-0'
builder for /nix/store/wk63pyxj00qk2mav01kd3gcqpmfviiiv-pbgzip-2cce3ffa97.drv' failed with exit code 1
error: build of /nix/store/wk63pyxj00qk2mav01kd3gcqpmfviiiv-pbgzip-2cce3ffa97.drv' failed

```

mutec

```

{ stdenv, fetchurl, zlib, unzip }:

stdenv.mkDerivation {
  name = "mutec-1.1.5";

  src = fetchurl {
    url = "https://github.com/broadinstitute/mutect/releases/download/1.1.5/muTect-1.1.5-bin.zip";
    sha256 = "1pq7iv720bp970qsyshwk98xdb7naw56y6gk9cpj6bmm08z9v3";
  };

  buildInputs = [ zlib unzip ] ;

  installPhase = ''
    mkdir -p $out/bin
    cp cp *.jar version.txt LICENSE* $out/bin
  '';

  meta = {
    description = "test - customcbl";
    homepage = "https://github.com/broadinstitute/mutect";
    license = "GNUv2";
    platforms = stdenv.lib.platforms.all;
  };
}

```

In this case does not seem to be able to handle a different path during unpacking package:

```

piro@ubuntu1204-tesi-nix:~$ nix-build -K .nix-defexpr/channels/nixpkgs/pkgs/top-level/all-packages.nix -A mutec
these derivations will be built:
/nix/store/ph2aay1mx2b7wmq4aydka7dw5f4jpmiz-mutec-1.1.5.drv
building path(s) /nix/store/ls16lqa7spgy0di8gqwpb69jxvfd1073-mutec-1.1.5'
building /nix/store/ls16lqa7spgy0di8gqwpb69jxvfd1073-mutec-1.1.5
unpacking sources
unpacking source archive /nix/store/x78d3hvk1kxrbzd4451lsa0lv8f6fmi-muTect-1.1.5-bin.zip
unpacker appears to have produced no directories
note: keeping build directory /tmp/nix-build-mutec-1.1.5.drv-3'
builder for /nix/store/ph2aay1mx2b7wmq4aydka7dw5f4jpmiz-mutec-1.1.5.drv' failed with exit code 1
error: build of /nix/store/ph2aay1mx2b7wmq4aydka7dw5f4jpmiz-mutec-1.1.5.drv' failed

```

standard packages installation

The ***.yaml** files in the directory **cloudbiolinux/config/** (downloaded from git clone git://github.com/chapmanb/cloudbiolinux.git [git://github.com/chapmanb/cloudbiolinux.git]) have been processed to verify which of the packages are available in the **nixpkgs** environment, but is very high the number of packages not available.

Probably not all packages are required for the CBL environment, ma to understand this, it would need to identify which are the **standard packages** and which of these are **essential** for the CBL environment.

I think that in some cases the difference could be due only to the naming of the packages:

package-base	nixpkgs
bzr	bzr-tools ?
gcc	gcc-w rapper ?
make	makeself ?
openssh-server	openssh ?
libc6	libc++ ?

libxml2-dev	libxml2 ?
apache2	apache-httpd ?
libyaml-dev	libyaml ?
ncurses-dev	ncurses ?
sqlite3	sqlite ?
gfortran	gfortran-wrapper ?
muscle	muscletool ?
...	...

so, I think it would be useful try to identify uniquely the packages.

libraries installation

Even with the libraries the identification is not simple, because in nixpkgs the libraries have a name with a *prefix* (python{ver}-, perl-, ruby-, haskell-), with different *separator* (in perl [-] instead of [::]), and often the name is **case-sensitive**:

libraries	nixpkgs
BeautifulSoup	beautifulsoup ?
mako	Mako ?
pycrypto	python{ver}-pycryptopp ?
ipython	python{ver}-ipy ?
pyyaml	python{ver}-PyYAML ?
...	...
Algorithm:C3	perl-Algorithm-C3
Crypt::SSLeay	perl-Crypt-SSLeay
DateTime::TimeZone	perl-DateTime-TimeZone
...	...

nixpkgs & nixos

reproducibility

In the **nixos** environment is possible to replicate an existing system through the use of the configuration file **configuration.nix** and the command **nixos-rebuild --show-trace switch**:

```
[root@nixos:~]# nixos-rebuild --show-trace switch
building Nix...
building the system configuration...
updating GRUB 2 menu...
stopping the following units: local-fs.target, network-interfaces.target, remote-fs.target
activating the configuration...
setting up /etc...
updating groups...
updating users...
starting the following units: default.target, getty.target, local-fs.target, multi-user.target, network-interfaces.target, network.target, paths.target,
```

If you installed only **nixpkgs**, is there still such a procedure, or in this case it is necessary to proceed as in the *fabric* environment (or with a solution like the one I proposed)?

configuration

I tried to configure **configuration.nix** both with *packages standard* and *custom packages*, but something's wrong.

This configuration works fine:

```
{ config, pkgs, ... }:
{
  imports =
    [ # Include the results of the hardware scan.
      ./hardware-configuration.nix
    ];
  ...
  #
  # standard packages
  environment = {
    systemPackages = with pkgs; [
      vim
      joe
      nmap
      tcpdump
    ];
  };
};
```

and even this one:

```
{ config, pkgs, ... }:
{
  imports =
    [ # Include the results of the hardware scan.
      ./hardware-configuration.nix
    ];
  ...
  # custom package example
  environment.systemPackages =
    let
      my-hello = with pkgs; stdenv.mkDerivation rec {
        name = "hello-2.8";
        src = fetchurl {
          url = "mirror://gnu/hello/${name}.tar.gz";
          sha256 = "0wqd8sjmxfskrflaxywc7gqw7sfawrfvdx9skxawzfgyy0pzd6";
        };
      };
    in
    [ my-hello ];
```

but not the configuration shown below, where I tried to import from an external config file:

```

{ config, pkgs, ... }:
{
  imports =
    [ # Include the results of the hardware scan.
      ./hardware-configuration.nix
    ];
  ...
  # custom package import
  environment.systemPackages = [ (import ./my-hello.nix) ];
  ...
}

```

where **my-hello.nix** contains:

```

with <nixpkgs> {}; # bring all of Nixpkgs into scope

stdenv.mkDerivation rec {
  name = "hello-2.8";
  src = fetchurl {
    url = "mirror://gnu/hello/${name}.tar.gz";
    sha256 = "0wqd8sjmxfskrflaxywc7gqw7sfawrfvxd9skxawzfgyy0pzd26";
  };
}

```

although this configuration is shown in the manual <http://nixos.org/nixos/manual/#sec-custom-packages> [<http://nixos.org/nixos/manual/#sec-custom-packages>]

Below you can see the errors:

```

[root@nixos:~]# nixos-rebuild --show-trace switch
building Nix...
building the system configuration...
error: while evaluating the attribute `buildCommand' of the derivation `nixos-13.10.35511.dd717f2' at `/nix/var/nix/profiles/per-user/root/channels/nixos/nixpkgs/nixos/modules/system/etc/et
while evaluating the attribute `sources' of the derivation `etc' at `/nix/var/nix/profiles/per-user/root/channels/nixos/nixpkgs/nixos/modules/system/etc/et
while evaluating an anonymous function at `/nix/var/nix/profiles/per-user/root/channels/nixos/nixpkgs/nixos/modules/system/etc/etc.nix:19:20':
...

```

update

It's right that when you execute the update (***sudo nix-channel -update***), the configuration added in the path `.nix-defexpr/channels/nixpkgs/pkgs/` has been deleted?
 To preserve this situation it's enough to move the configuration in a different path?

/usr/share/dokuwiki/data/pages/univ/tesi/attivita/nix-translate.txt · Ultima modifica: 2014/01/20 01:06 da admin

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