GCC

GCC Versions that are already installed on CS infrastructure

Usually, we install multiple versions. The default version of GCC probably won't be changed system wide... ever.

Here is a list of packages we install as of 2017-05-02:

```
gcc
gcc-4.7-uofc-cs
gcc-4.9-uofc-cs
gcc-5
gcc-5-base:amd64
gcc-5-multilib
gcc-5.4-uofc-cs
gcc-6-base:amd64
gcc-6-base:i386
gcc-6.3-uofc-cs
gcc-7.1-uofc-cs
```

We are now taking more advantage of environment modules. This means depending on when you read this you could load the version of GCC you want to use.

```
kauffman3@green:~$ $ module --terse avail
/etc/environment-modules/modules:
cmake/3.1.1
cmake/3.8.0
gcc/4.7.4
gcc/4.9.3
gcc/5.4.0
gcc/6.3.0
gcc/7.1.0


kauffman3@green:~$ module load gcc/4.7.4

kauffman3@green:~$ echo "$PATH | $INCLUDE | $LD_LIBRARY_PATH | $MANPATH"
/usr/local/gcc/4.7.4/bin:/home/kauffman3/bin:/usr/local/bin:/usr/bin:/bin:/u
sr/local/games:/usr/games:/opt/puppetlabs/bin
| /usr/local/gcc/4.7.4/include | /usr/local/gcc/4.7.4/lib |
/usr/local/gcc/4.7.4/man:/usr/share/man

kauffman3@green:~$ gcc --version
gcc (GCC) 4.7.4

kauffman3@green:~$ module unload gcc/4.7.4
```

```
kauffman3@green:~$ gcc --version
gcc (Ubuntu 4.9.4-2ubuntu1~14.04.1) 4.9.4
```

Building GCC in your home directory

https://gcc.gnu.org/wiki/InstallingGCC

You will want to prepare a sandwich and a drink once we start compiling.

Requirements

1. About 6.5G of scratch space.
2. ~1G for the actual install. This means if you require a higher quota you will need to request this before proceeding.

You will want to use /var/tmp, /tmp, or /local as the place to checkout and build GCC.

Example

```
#!/bin/bash

PREFIX="$HOME/.local/gcc/4.9.3"

# Building gcc in $HOME

INSTALLDIR=/tmp/$USER
mkdir -p $INSTALLDIR
cd $INSTALLDIR

svn co svn://gcc.gnu.org/svn/gcc/tags/gcc_4_9_3_release gcc-4.9.3
cd gcc-4.9.3
./contrib/download_prerequisites
cd ../
mkdir objdir
cd objdir
$PWD/../gcc-4.9.3/configure \
  --prefix=$PREFIX \
  --enable-languages=c,c++,fortran,go \
  --enable-shared \
  --enable-multiarch \
  --enable-threads=posix
make -j4
make install

# clean up
rm -r $INSTALLDIR/objdir
```

```
export PATH=$HOME/$PREFIX/bin:$PATH
export LD_LIBRARY_PATH=$HOME/$PREFIX/lib:$LD_LIBRARY_PATH

echo "You should add the following to your .bashrc"
echo "to make the exports permanent"
echo "  export PATH=\$HOME/$PREFIX/bin:\$PATH"
echo "  export LD_LIBRARY_PATH=\$HOME/$PREFIX/lib:\$LD_LIBRARY_PATH"
```

If building a package you will want to use `checkinstall`. Replace `make install` something like the following:

```
checkinstall \
  --strip=no \
  --stripso=no \
  --umask=022 \
  --install=no \
  --pkgname='gcc-uofc-cs' \
  --pkgversion='4.9.3' \
  --pkgrelease='1' \
  --pkggroup='devel' \
  --maintainer='Techstaff \<techstaff@cs.uchicago.edu\>' \
  --review-control \
  make install
```

From:
https://howto.cs.uchicago.edu/ - **How do I?**

Permanent link:
https://howto.cs.uchicago.edu/nix:gcc?rev=1494875868

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