

# Software availability

The most up-to-date listing of software installed on HPC can be obtained by running

```
module avail
```

on a HPC cluster login node. The listing below may not exactly match the output from the above command at any point in time.

## Software provided by RedHat

A	
armadillo	8.600.1
arpack	3.1.3
atlas	3.10.1
autoconf	2.69
automake	1.13.4
B	
bakefile	0.2.9
bash	4.2.46
bc	1.06.95
blas	3.4.2
blas64	3.4.2
blt	2.4
boost	1.53.0
bwidget	1.9.0
bzip2	1.0.6
C	
cairo	1.15.12
cfitsio	3.370
clipper	2.1
cmake	2.8.12.2
cogl	1.22.2
curl	7.29.0
cvs	1.11.23
D	
docker	1.13.1
D	
ed	1.9
emacs	24.3
F	
fftw	3.3.3
fftw2	2.1.5

filezilla	3.7.4.1
freexl	1.0.6
<b>G</b>	
gawk	4.0.2
gcc	4.8.5
gd	2.0.35
gdal	1.11.4
gdl	0.9.7
ghc	7.6.3
giflib	4.1.6
git	1.8.3.1
glibc	2.17
glpk	4.52.1
gmp	6.0.0
gnuplot	4.6.2
gnutls	3.3.26
graphicsmagick	1.3.29
graphviz	2.30.1
grass	6.4.4
gsl	1.15
gzip	1.5
<b>H</b>	
hdf	4.2.13
hdf5	1.8.12
<b>I</b>	
imagemagick	6.7.8.9
imake	1.0.5
imlib	1.9.15
imlib2	1.4.5
<b>J</b>	
jasper	1.900.1
java	1.8.0
<b>K</b>	
ksh	20120801
<b>L</b>	
lapack	3.4.2
lapack64	3.4.2
lesstif	0.95.2
libccp4	6.4.6

libexif	0.6.21
libgeotiff	1.2.5
libjpeg-turbo	1.2.90
libmng	1.0.10
libmpc	1.0.1
libpng	1.5.13
libquadmath	4.8.5
librsvg2	2.40.20
libtiff	4.0.3
libtool	2.4.2
lzo	2.06
<b>M</b>	
make	3.82
maxima	5.41.0
mercurial	2.6.2
motif	2.3.4
mpfr	3.1.1
mpich	3.0, 3.2
mvapich	2.0, 2.2, 2.3
<b>N</b>	
nano	2.3.1
ncl	6.3.0
nco	4.4.4
ncurses	5.9
netcdf	4.3.3.1
netpbm	10.79.00
nettle	2.7.1
<b>O</b>	
octave	3.8.2
ogdi	3.2.0
openjpeg2	2.3.0
openmpi	1.10.7, 3.0.2
openssh	7.4p1
<b>P</b>	
p11-kit	0.23.5
p7zip	16.02
pzip2	1.1.12
pcre	8.32
pcre2	10.23

perl	5.16.3
plplot	5.10.0
proj4	4.8.0
python	2.7.5
<b>Q</b>	
qhull	2003.1
qrupdate	1.1.2
qt	4.8.5
qt3	3.3.8b
qt5	5.6.2
<b>R</b>	
rcs	5.9.0
readline	6.2
ruby	2.0.0.648
<b>S</b>	
sdl	1.2.15
sed	4.2.2
singularity	2.6.0
snappy	1.1.0
sqlite	3.7.17
subversion	1.7.14
suitesparse	4.0.2
superlu	5.2.0
<b>T</b>	
tar	1.26
tcl	8.5.13
tclx	8.4.0
tcsh	6.18.01
tix	8.4.3
tk	8.5.13
tkinter	2.7.5
<b>U</b>	
udunits2	2.2.20
units	2.01
unzip	6.0
<b>V</b>	
vim	7.4.160
<b>W</b>	
wavpack	4.60.1

X	
xfig	3.2.5
xz	5.2.2
Z	
zlib	1.2.7
zsh	5.0.3

## Conda Environments

A	
abyss	2.2.4 , 2.3.1
ac-diamond	1.0
admixturetools	6.0 , 7.0.1
admixture	1.3.0
angsd	0.931 , 0.935
assemblyscan	0.3.0
assemblystats	1.0.1
astral	5.7.3
augustus	3.3.3 , 3.4.0
B	
bamm	1.7.3
bamtools	2.5.1
bayescan	2.0.1
bazel	2.1.0 , 4.1.0
bcftools	1.9 , 1.12
beast	1.10.4
beast2	2.6.3
bedtools	2.30.0
biopython	1.70 , 1.78
bismark	0.22.3 , 0.23.0
blast	2.9.0 , 2.11.0
blat	36
boost-cpp	1.76.0
bowtie2	2.4.1 , 2.4.3
busco	3.0.2 , 5.1.3
bwa	0.7.17
C	
cairocffi	1.2.0
canu	1.4 , 2.1.1
cap3	10.2011
cd-hit	4.8.1

checkmgenome	1.1.3
cloog	0.18.0
corset	1.09
coverm	0.5.0 , 0.6.1
cufflinks	2.2.1
cutadapt	2.8 , 3.4
<b>D</b>	
dadi	2.1.1
das_tool	1.1.2
diamond	2.0.9
diamond_add_taxonomy	0.1.2
dlcpar	1.0
dmd	2.065.0
drep	2.6.2 , 3.2.0
<b>E</b>	
emboss	6.6.0
enrichm	0.5.0 , 0.6.3
exonerate	2.4.0
<b>F</b>	
fasta3	36.3.8
fastai	2.3.1
fastme	2.1.5
fastp	0.20.1
fastqc	0.11.9
faststructure	1.0
fastx_toolkit	0.0.14
ffmpeg	4.3.1
flye	2.7 , 2.8.3
freebayes	1.3.5
freexl	1.0.6
<b>G</b>	
gatk	3.8
gatk4	4.1.7.0 , 4.2.0.0
gblocks	0.91b
gdal	3.0.4 , 3.3.0
gdc	2.0
glpk	4.65
gmap	2021.03.08
gmsh	4.5.3 , 4.8.4

gnuplot	5.4.1
gradle	6.2.2 , 7.0.2
graftm	0.13.1
graftm_genome	20210528
gtdbtk	1.5.0
<b>H</b>	
hdf4	4.2.15
hdf5	1.10.6 , 1.12.0
hisat2	2.2.1
hmmer	3.3 , 3.3.2
hmmer2	2.3.2
<b>I</b>	
iqtree	2.1.2
itsx	1.1.3
<b>J</b>	
jags	4.3.0
jellyfish	2.2.10
julia	1.0.3 , 1.1.1
<b>K</b>	
kmer-jellyfish	2.3.0
kraken	1.1.1
kraken2	2.0.8 , 2.1.2
krakenuniq	0.5.8
krona	2.7.1 , 2.8
<b>L</b>	
lastz	10.4
libgdal	3.3.0
libnetcdf	4.8.0
<b>M</b>	
mafft	7.475
mapdamage2	2.2.1
maxbin2	2.2.7
mcl	14.137
medaka	1.0.3 , 1.3.3
megahit	1.2.9
metabat2	2.15
metawrapmg	1.3.2
metis	5.1.0
mfqe	0.5.0

migrate-n	3.6.11
minimap2	2.17 , 2.20
mirdeep2	2.0.1.2
mrbayes	3.2.7
multiqc	1.9 , 1.10.1
muscle	3.8.1551
<b>N</b>	
netcdf4	1.5.6
netcdf-cxx4	4.3.1
netcdf Fortran	4.5.2
nettle	3.4.1 , 3.7
newick_utils	1.6
nlopt	2.6.1 , 2.7.0
<b>O</b>	
orfm	1.3
orthofinder	2.2.6 , 2.5.2
<b>P</b>	
pal2nal	14.1
paml	4.9
pandoc	2.9.2 , 2.13
parallel	20210422
pblat	2.5
pcre	8.44
pcre2	10.31 , 10.36
pear	0.9.6
petsc	3.12.4 , 3.15.0
phyluce	1.7.0
picard	2.22.0 , 2.25.5
pipits	2.5 , 2.7
plink	1.90b6.21
pplacer	1.1a19
prodigal	2.6.3
proj	8.0.1
proj4	6.1.1
proteinortho	6.0.14 , 6.0.30
purge_haplotigs	1.1.1
pyfasta	0.5.2
pyfastaq	3.17.0
pyfastx	0.6.7 , 0.8.3
pyproj	2.6.1 , 3.1.0



Q	
qualimap	2.2.2d
quast	5.0.2
R	
R	3.6.1, 4.0.3, 4.1.0
r-rstan	2.21.2
rcorrector	1.0.4
rdp_classifier	2.2, 2.13
repeatmodeler	2.0.1
rnastructure	6.1
S	
salmon	1.1.0, 1.5.0
samtools	1.9, 1.12
scalpel	0.5.4
seqtk	1.3
sga	0.10.15
shannon_cpp	0.5.0
shovill	0.9.0, 1.1.0
slim	3.3.2, 3.6
sortmerna	4.2.0, 4.3.3
spades	3.14.0, 3.15.2
sparsehash	2.0.3
sra-tools	2.10.3, 2.11.0
stacks	2.52, 2.55
star	2.7.3a, 2.7.9a
stringtie	2.1.1, 2.1.5
structure	2.3.4
T	
tensorflow	2.4.1
tpv	5.0.0
transdecoder	5.5.0
transrate	1.0.3
treemix	1.13
treeshrink	1.3.4, 1.3.9
trimal	1.4.1
trim-galore	0.6.6
trimmomatic	0.39
trinity	2.9.1, 2.12.0
trinotate	3.2.1

U	
ucsc-blat	377
V	
vcflib	1.0.2
vcftools	0.1.16
velvet	1.2.10
vsearch	2.14.2 , 2.17.0

## Custom Software Installations

A	
abyss	2.0.3
admb	12.0
anaconda2	2019.10
angsd	0.920
armadillo	10.1.0
augustus	3.3
automake	1.14.1
B	
bamm	2.5.0
bamaddrg	20180316
bamtools	2.4.1
bayesass	3.04
bayescan	2.1
bayescenv	1.1
bazel	0.15.0
bcftools	1.3 , 1.5 , 1.7
beast	2.4.6 , 2.4.8 , 2.6.0 , 2.6.1
bedtools	2.1.2
bedtools2	2.25.0
bfast	0.6.5a
boost	1.73.0
bowtie	1.2.2
bowtie2	2.3.4.1
C	
cd-hit	4.6.8
cloog	0.18.4
cmake	3.13.4
colony2	20170630
conda3	2019.10
corset	1.07

curl	7.58.0
<b>D</b>	
diamond	0.9.22
dmd	2.079.0 , 2.096.0
<b>E</b>	
exabayes	1.5
exiftool	10.60
<b>F</b>	
fasta	36.3.8g
fastp	0.20.0
fastqc	0.11.7
fastsimcoal2	2.6.0.3
faststructure	<i>20190710</i>
fastx	0.0.14
ffmpeg	3.4.2
fpart	1.0.0
freebayes	1.3.1
<b>G</b>	
gblocks	0.91b
gcc	8.4 10.1
gdal	2.2.3 , 2.2.4 , 3.0.1
gdc	2.068.2
glassfish	4.1.1
glpk	4.65
gmap	<i>20180311</i>
gmp	6.1.2
gmsh	3.0.6
gnuplot	5.2.2
gradle	4.6
graphbin	1.3
grass	7.4.0 , 7.8.0
gsl	2.4
gzip	1.9
<b>H</b>	
hdf5	1.10.1 , 1.10.5
hisat2	2.1.0
hmmer	2.3.2 , 3.1b2
htslib	1.3 , 1.5 , 1.7
hybpiper	1.3.1

<b>I</b>	
interproscan	5.47
iqtree	1.6.9 , 2.0.8 , 2.1.0
isl	0.18
itsx	1.0.11
<b>J</b>	
jags	4.3.0
java	1.6.0 , 1.7.0 , 1.8.0 , 11.0.1
jbigkit	2.1
jellyfish	2.2.10
jpeg	6b
julia	1.2.0 , 1.4.1 , 1.6.1
<b>K</b>	
kraken	1.0
<b>L</b>	
lastz	1.04.00
libcerf	1.3
libffi	3.2.1
libgd	2.2.5
libgeotiff	1.4.2
libgtextutils	0.7
libpng	1.6.34
libtiff	4.0.9
libtasn1	4.13
lzo	2.10
<b>M</b>	
maespa	20180227
mafft	7.394
matlab	2018a , 2019b , 2020b
megax	10.1.8
migrate	3.7.0
minimap2	2.17
molphy	2.3b3
mpc	1.1.0
mpfr	4.0.1
mrBayes	3.2.7
muscle	3.8.31
mvcli	4.1.13.31
<b>N</b>	

ncurses	6.1
netbeans	8.2
netcdf	4.6.0
netcdf Fortran	4.4.4
netphos	1.0
nettle	3.4
NGSadmix	32
nlopt	2.4.2
<b>O</b>	
onedrive	2.4.11
openblas	0.3.10
opencoarrays	2.9.2
openmpi	4.1.1
<b>P</b>	
parallel	20180122
paup	4b10 , 4a154
pbmpi	20180308
pcre	8.41
pcre2	10.31
pear	0.9.10 , 0.9.11
perl	5.26.1
petsc	3.10.0
pftools	2.3
pgdspider	2.1.1.2
phyutility	2.7.1
phyx	1.1
picard	2.18.1
pipits	1.5.0
proj	4.9.3 , 6.1.1
psort	2
python	2.7.14
python3	3.6.5
<b>Q</b>	
qgis	3.12.2
<b>R</b>	
R	3.6.1
r8s	1.8.1
raxml	8.2.11
rclone	1.53.1

rdp_classifier	2.12
readline	7.0
rnammer	1.2
rsem	1.3.0 , 1.3.1
rstudio	1.2.5001
ruby	2.5.0
<b>S</b>	
salmon	0.9.1 , 0.10.0 , 0.13.1
samtools	1.3 , 1.5 , 1.7
secretomep	1.0
SEG	20180228
seqtk	1.3
signalp	3.2.4.1
slim (hydro.)	?
slim/SLiM	3.3
SOAPnuke	2.1.0
spades	3.12.0
sparsehash	2.0.3
sratools	2.9.0 , 2.9.4
star	2.7.0e
stringtie	2.0.4
structure	2.3.4
swig	4.0.2
<b>T</b>	
termcap	1.3.1
tiff	4.0.9
tiger	202001
tmhmm	2.0c
tophat	2.1.1
transdecoder	3.0.0
trimal	1.2
trimgalore	0.5.0
trimmomatic	0.38
trinityrnaseq	2.6.6
trinotate	3.0.1
<b>U</b>	
units	2.16
<b>V</b>	
vcflib	1.0.0

vcftools	0.1.13
velvet	20140816
vsearch	2.7.1
<b>W</b>	
wolfpsort	0.2
wxWidgets	3.1.1
<b>X</b>	
xz	5.2.3
<b>Y</b>	
yasm	1.3.0
<b>Z</b>	
zeromq	4.2.3
zlib	1.2.11