

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 |
| G | |
| 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 |
| H | |
| hdf | 4.2.13 |
| hdf5 | 1.8.12 |
| I | |
| imagemagick | 6.7.8.9 |
| imake | 1.0.5 |
| imlib | 1.9.15 |
| imlib2 | 1.4.5 |
| J | |
| jasper | 1.900.1 |
| java | 1.8.0 |
| K | |
| ksh | 20120801 |
| L | |
| 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 |
| M | |
| 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 |
| N | |
| 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 |
| O | |
| octave | 3.8.2 |
| ogdi | 3.2.0 |
| openjpeg2 | 2.3.0 |
| openmpi | 1.10.7, 3.0.2 |
| openssh | 7.4p1 |
| P | |
| 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 |
| Q | |
| qhull | 2003.1 |
| qrupdate | 1.1.2 |
| qt | 4.8.5 |
| qt3 | 3.3.8b |
| qt5 | 5.6.2 |
| R | |
| rcs | 5.9.0 |
| readline | 6.2 |
| ruby | 2.0.0.648 |
| S | |
| 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 |
| T | |
| 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 |
| U | |
| udunits2 | 2.2.20 |
| units | 2.01 |
| unzip | 6.0 |
| V | |
| vim | 7.4.160 |
| W | |
| 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 |
| D | |
| 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 |
| E | |
| emboss | 6.6.0 |
| enrichm | 0.5.0 , 0.6.3 |
| exonerate | 2.4.0 |
| F | |
| 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 |
| G | |
| 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 |
| H | |
| 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 |
| I | |
| iqtree | 2.1.2 |
| itsx | 1.1.3 |
| J | |
| jags | 4.3.0 |
| jellyfish | 2.2.10 |
| julia | 1.0.3 , 1.1.1 |
| K | |
| 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 |
| L | |
| lastz | 10.4 |
| libgdal | 3.3.0 |
| libnetcdf | 4.8.0 |
| M | |
| 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 |

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|-----------------|-----------------|
| 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 |
| N | |
| 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 |
| O | |
| orfm | 1.3 |
| orthofinder | 2.2.6 , 2.5.2 |
| P | |
| 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 |
| D | |
| diamond | 0.9.22 |
| dmd | 2.079.0 , 2.096.0 |
| E | |
| exabayes | 1.5 |
| exiftool | 10.60 |
| F | |
| 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 |
| G | |
| 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 |
| H | |
| 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 |

| I | |
|---------------|--------------------------------|
| interproscan | 5.47 |
| iqtree | 1.6.9 , 2.0.8 , 2.1.0 |
| isl | 0.18 |
| itsx | 1.0.11 |
| J | |
| 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 |
| K | |
| kraken | 1.0 |
| L | |
| 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 |
| M | |
| 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 |
| N | |

| | |
|----------------|-----------------|
| 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 |
| O | |
| onedrive | 2.4.11 |
| openblas | 0.3.10 |
| opencoarrays | 2.9.2 |
| openmpi | 4.1.1 |
| P | |
| 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 |
| Q | |
| qgis | 3.12.2 |
| R | |
| 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 |
| S | |
| 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 |
| T | |
| 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 |
| U | |
| units | 2.16 |
| V | |
| vcflib | 1.0.0 |

| | |
|-----------|----------|
| vcftools | 0.1.13 |
| velvet | 20140816 |
| vsearch | 2.7.1 |
| W | |
| wolfpsort | 0.2 |
| wxWidgets | 3.1.1 |
| X | |
| xz | 5.2.3 |
| Y | |
| yasm | 1.3.0 |
| Z | |
| zeromq | 4.2.3 |
| zlib | 1.2.11 |