2022.1 Stack

- Summary
- What is new
  - Distribution Mechanism
  - Gentoo Prefix Middle Layer
  - Native Lua module files for LMod
- What this all means
  - Running software packages
    - CUDA GPU
    - MPI
    - Development
- Software list

Summary

The 2022.1 Argon Software Stack is quite a bit different on the backend from previous stacks. This leads to some differences in behavior when interacting with the stack and this will be discussed below. The goal is that using this stack should be familiar but hopefully a little better as well. Many packages have been updated and new packages have been added and more will be added over time. As always, please report any issues to research-computing@uiowa.edu.

What is new

Distribution Mechanism

Up until now all of the software stacks have been distributed to login and compute nodes via NFS (Network File System). Beginning with the 2022.1 stack the distribution mechanism will use the CernVM File System, also known as CVMFS. This is designed for software distribution over a wide network and it is felt that this will be an improvement in how software is delivered to the Argon login and compute nodes. Note that this does not apply to the older software stacks which will continue to be deployed via NFS. In addition, for technical reasons, the environment module files and links to binaries are still served via NFS. Finally, licensed software on Argon will continue to be distributed via NFS. This is to avoid violating license terms when the Argon stack is eventually made available to run on systems other than Argon.

Gentoo Prefix Middle Layer

A Gentoo Prefix layer is put on top of the OS layer and the software packages are linked to the libraries of this middle layer. This layer is exported via CVMFS along with the software packages. The goal of this is to make the packages as independent of the underlying OS as possible. The primary motivation for this is to make it possible to upgrade or change the underlying OS without breaking the ability of the software to run on the newer OS. This also lays the foundation for being able to run the Argon software stack on non-Argon systems, but that is further down the road. Finally, this can also play a role in software reproducibility. This is effectively a cross-compiled environment and there are some caveats that come with that, which will be discussed below. Note that there could be some issues due to using a middle layer, so please report if something seems odd or broken.

Native Lua module files for LMod

Argon uses Lmod for environment modules but previous software stacks used TCL based environment module files for historical and technical reasons. Those TCL files needed to be converted to Lua files on the fly, and while that is a pretty fast conversion it does add overhead. The Lmod Lua files should provide a performance boost for searching for and loading modules and also provides extra capabilities.

What this all means

Running software packages

In prior stacks the only purpose of the "stack" environment module was to manipulate the module path such that the respective packages of that stack were made available to load. With the middle layer, loading the "stack/2022.1" module will not only manipulate the module path but it will effectively load a new Linux environment. This will replace many of the OS commands. One of the issues that has been present is that loading an environment module can alter the environment such that system commands break. Good examples of that were editors like vim and emacs. That was alleviated by providing packages for vim and emacs to replace the system ones. The concept is the same here except that now the replacements will be in the stack module itself, with no need to load additional modules. In addition to many common system commands, below is a list of some important packages that are loaded in the environment by the stack/2022.1 module:

- GCC
- autotools utilities
- cmake
- gmake
- tar
- meson
- git
The caveat here is that since many commands are replaced, with newer versions than the system commands, there could be differences in behavior when switching between using the 2022.1 stack and other stacks.

Another change in behavior is with regard to environment module dependencies. Since the 2022.1 stack uses Lmod native Lua files now, module dependencies are handled in a more intelligent way. As always, when loading a module, modules for dependencies are also loaded. What is different now is the unloading behavior. Previously, unloading a module would only unload the specified module, leaving the rest of the stack in place, which is probably more modules than desired. With the 2022.1 stack, unloading a module will also unload the dependencies that were previously loaded. In addition, if an underlying dependency is unloaded a message will be printed so at least you know about the now missing dependency. Here is an example to illustrate.

```
module load stack/2022.1
module list

Currently Loaded Modules:
  1) stack/2022.1
```

Load a module with dependencies
module load py-tensorflow-estimator
module list
Currently Loaded Modules:
  1) stack/2022.1
  2) cuda/11.4.4_gcc-9.4.0
  3) cudnn/8.2.4.15-11.4_gcc-9.4.0
  4) python/3.9.9_gcc-9.4.0
  5) flatbuffers/1.12.0_gcc-9.4.0
  6) intel-oneapi-mkl/2022.0.2_gcc-9.4.0
  7) rdma-core/39.0_gcc-9.4.0
  8) ncc1/2.11.4-1_gcc-9.4.0
  9) libpciaccess/0.16_gcc-9.4.0
  10) libiconv/1.16_gcc-9.4.0
  11) zstd/1.4.26_gcc-9.4.0
  12) hdf5/1.12.1_gcc-9.4.0-mpi
  13) libxml2/2.9.12_gcc-9.4.0
  14) ncurses/6.2_gcc-9.4.0
  15) hwloc/2.7.0_gcc-9.4.0
  16) opensl/1.1.1_gcc-9.4.0
  17) libevent/2.1.12_gcc-9.4.0
  18) numactl/2.0.14_gcc-9.4.0
  19) opa-psm2/11.2.206_gcc-9.4.0
  20) ucx/1.10.1_gcc-9.4.0
  21) libfabric/1.14.0_gcc-9.4.0
  22) openssh/8.8p1_gcc-9.4.0
  23) openmpi/4.2.2_gcc-9.4.0
  24) protobuf/3.17.3_gcc-9.4.0
  25) py-six/1.16.0_gcc-9.4.0
  26) py-absl-py/0.13.0_gcc-9.4.0
  27) py-wheel/0.37.0_gcc-9.4.0
  28) py-astunparse/1.6.3_gcc-9.4.0
  29) py-gast/0.4.0_gcc-9.4.0
  30) google-pasta/0.2.0_gcc-9.4.0
  31) c-ares/1.15.0_gcc-9.4.0
  32) re2/2021-06-01_gcc-9.4.0
  33) libgpr/1.43.0_gcc-9.4.0
  34) libaec/1.0.5_gcc-9.4.0
  35) pkgconf/1.8.0_gcc-9.4.0
  36) hdf5/1.12.1_gcc-9.4.0-mpi
  37) py-mpi4py/3.1.2_gcc-9.4.0
  38) py-setuptools/59.4.0_gcc-9.4.0
  39) py-numpy/1.21.5_gcc-9.4.0
  40) py-h5py/3.6.0_gcc-9.4.0-mpi
  41) py-keras-preprocessing/1.1.2_gcc-9.4.0
  42) py-libclang/11.1.0_gcc-9.4.0
  43) py-opt-einsum/3.3.0_gcc-9.4.0
  44) py-protobuf/3.17.3_gcc-9.4.0
  45) py-cachetools/4.2.4_gcc-9.4.0
  46) py-caffe2/1.6.0_gcc-9.4.0
  47) py-pyasn1/0.4.8_gcc-9.4.0
  48) py-rsa/4.7.2_gcc-9.4.0
  49) py-google-auth/2.3.2_gcc-9.4.0
  50) py-blinker/1.4_gcc-9.4.0
  51) libffi/3.4.2_gcc-9.4.0
  52) py-pycparser/2.20_gcc-9.4.0
  53) py-cffi/1.15.0_gcc-9.4.0
  54) py-semantic-version/2.0.0_gcc-9.4.0
  55) py-toml/0.10.2_gcc-9.4.0
  56) rust/1.58.1_gcc-9.4.0
  57) py-setuptools-rust/0.12.1_gcc-9.4.0
  58) py-cryptography/36.0.1
  59) py-pyjwt/2.1.0_gcc-9.4.0
  60) py-oauthlib/3.1.0_gcc-9.4.0
  61) py-certifi/2021.10.8
  62) py-charset-normalizer/2.1.0_gcc-9.4.0
  63) py-idna/3.3_gcc-9.4.0
  64) py-urllib3/1.26.6_gcc-9.4.0
  65) py-requests/2.26.0
  66) py-requests-oauthlib/1.3.0_gcc-9.4.0
  67) py-google-auth/2.3.2_gcc-9.4.0
  68) py-markdown/3.3.4_gcc-9.4.0
  69) py-tensorboard-data/2.7.0_gcc-9.4.0
  70) py-tensorboard-plugin-wit/1.8.1_gcc-9.4.0
  71) py-werkzeug/2.0.2_gcc-9.4.0
  72) py-tensorboard/2.7.0_gcc-9.4.0
  73) py-tensorflow/2.7.0_gcc-9.4.0

module unload py-tensorflow-estimator
module list
Currently Loaded Modules:
  1) stack/2022.1

module unload py-tensorflow-estimator
module list
Currently Loaded Modules:
  1) stack/2022.1
CUDA GPU

Software that uses CUDA ultimately depends on a kernel module to access the hardware. The library interfaces to the kernel module must be part of the OS layer. In order to facilitate communication between the software packages and the kernel drivers, the libraries are linked in the middle layer. This is the same thing that is done with container images. What is important to note is that there can only be one driver at a time and it will likely change as OS updates happen. This is no different from the past stacks which would have a locked version of cuda, but would use whatever driver is installed in the OS. In other words, there is no Nvidia CUDA driver version that is part of the 2022.1 stack, or any stack, or any container. The only difference here is that there is now a set of links that are part of the stack, but what they point to is part of the OS. This may also become important if the Argon software stack is run on a non-Argon system.

MPI

Similar to CUDA, there are drivers at the OS layer that provide access to the high speed interconnect fabric. The abstracted fabric layers should be able to interface to the underlying drivers, but again, there is a dependency on the underlying OS, where things could change over time or vary across systems.

Development

While the primary purpose of the software stack is for running software the environment modules also provide variables needed for development. This may look a little different with the 2022.1 stack as it is a cross-compiled environment. It is possible that software developed using previous stacks will not run in this environment and would need to be recompiled. This would be due to the use of a different SYSROOT. If you are developing software that uses the 2022.1 stack you will need to make sure that you are not picking up any headers or libraries from the OS in your build system, ie.,

- /lib
- /lib64
- /usr/lib
- /usr/lib64
- /usr/include

Instead, the above should be prefixed with ${EPREFIX}, which points to the SYSROOT used by the stack. In addition, use the gcc or oneapi compilers from this environment, which are already aware of the SYSROOT. Note that the NVHPC compiler is untested.

Software list

<table>
<thead>
<tr>
<th>Package (links to external page)</th>
<th>Versions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>gurobi</td>
<td>9.5.1</td>
<td>The Gurobi Optimizer was designed from the ground up to be the fastest, most powerful solver available for your LP, QP, QCP, and MIP (MILP, MIQP, and MIQCP) problems.</td>
</tr>
<tr>
<td>hwloc</td>
<td>2.7.0</td>
<td>The Hardware Locality (hwloc) software project.</td>
</tr>
<tr>
<td>intel-oneapi-mkl</td>
<td>2022.0.2</td>
<td>Intel oneAPI MKL.</td>
</tr>
<tr>
<td>libevent</td>
<td>2.1.12</td>
<td>The libevent API provides a mechanism to execute a callback function when a specific event occurs on a file descriptor or after a timeout has been reached. Furthermore, libevent also support callbacks due to signals or regular timeouts.</td>
</tr>
<tr>
<td>libfabric</td>
<td>1.14.0</td>
<td>The Open Fabrics Interfaces (OFI) is a framework focused on exporting fabric communication services to applications.</td>
</tr>
<tr>
<td>libiconv</td>
<td>1.16</td>
<td>GNU libiconv provides an implementation of the iconv() function and the iconv program for character set conversion.</td>
</tr>
<tr>
<td>libpciaccess</td>
<td>0.16</td>
<td>Generic PCI access library.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td></td>
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</tr>
<tr>
<td>libxml2</td>
<td>2.9.12</td>
<td></td>
</tr>
<tr>
<td>libxsm2</td>
<td>1.9.3</td>
<td></td>
</tr>
<tr>
<td>netlib-scalapack</td>
<td>R2021b</td>
<td></td>
</tr>
<tr>
<td>numactl</td>
<td>2.0.14</td>
<td></td>
</tr>
<tr>
<td>OpenSSH</td>
<td>8.8p1</td>
<td></td>
</tr>
<tr>
<td>opa-psm2</td>
<td>11.2.206</td>
<td></td>
</tr>
<tr>
<td>openmpi</td>
<td>4.1.2</td>
<td></td>
</tr>
<tr>
<td>openssl</td>
<td>1.1.1m</td>
<td></td>
</tr>
<tr>
<td>popLib</td>
<td>1.16</td>
<td></td>
</tr>
<tr>
<td>python</td>
<td>3.9.9</td>
<td></td>
</tr>
<tr>
<td>rsync</td>
<td>3.2.3</td>
<td></td>
</tr>
<tr>
<td>util-macro</td>
<td>1.19.3</td>
<td></td>
</tr>
<tr>
<td>vasp</td>
<td>6.2.1</td>
<td></td>
</tr>
<tr>
<td>xxhash</td>
<td>0.8.0</td>
<td></td>
</tr>
<tr>
<td>xz</td>
<td>5.2.5</td>
<td></td>
</tr>
<tr>
<td>zlib</td>
<td>1.2.11</td>
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<tr>
<td>zstd</td>
<td>1.5.2</td>
<td></td>
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<tr>
<td>abaqus</td>
<td>2021</td>
<td></td>
</tr>
<tr>
<td>gaussian</td>
<td>09-D.01</td>
<td></td>
</tr>
<tr>
<td>star-ccm-plus</td>
<td>16.06.008</td>
<td></td>
</tr>
<tr>
<td>tecplot</td>
<td>2021r2</td>
<td></td>
</tr>
<tr>
<td>intel-oneapi-compilers</td>
<td>2022.0.2</td>
<td></td>
</tr>
<tr>
<td>nvhpc</td>
<td>22.2</td>
<td></td>
</tr>
<tr>
<td>intel-oneapi-ccl</td>
<td>2021.5.1</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
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<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>intel-oneapi-dal</td>
<td>2021.5.3</td>
<td>Intel oneAPI DAL.</td>
</tr>
<tr>
<td>intel-oneapi-dnn</td>
<td>2022.0.2</td>
<td>Intel oneAPI DNN.</td>
</tr>
<tr>
<td>intel-oneapi-ipp</td>
<td>2021.5.2</td>
<td>Intel oneAPI IPP.</td>
</tr>
<tr>
<td>intel-oneapi-ippc</td>
<td>2021.5.1</td>
<td>Intel oneAPI IPP Crypto.</td>
</tr>
<tr>
<td>intel-oneapi-mkl</td>
<td>2022.0.2</td>
<td>Intel oneAPI MKL.</td>
</tr>
<tr>
<td>intel-oneapi-mpi</td>
<td>2021.5.1</td>
<td>Intel oneAPI MPI.</td>
</tr>
<tr>
<td>intel-oneapi-tbb</td>
<td>2021.5.1</td>
<td>Intel oneAPI TBB.</td>
</tr>
<tr>
<td>intel-oneapi-vpl</td>
<td>2022.0.0</td>
<td>Intel oneAPI VPL.</td>
</tr>
<tr>
<td>rdma-core</td>
<td>39.0</td>
<td>RDMA core userspace libraries and daemons</td>
</tr>
<tr>
<td>abinit</td>
<td>9.6.1_gcc-9.4.0</td>
<td>ABINIT is a package whose main program allows one to find the total energy, charge density and electronic structure of systems made of electrons and nuclei (molecules and periodic solids) within Density Functional Theory (DFT), using pseudopotentials and a planewave or wavelet basis.</td>
</tr>
<tr>
<td>adios</td>
<td>1.13.1_gcc-9.4.0</td>
<td>ADIOS provides a simple, flexible way for scientists to describe the data in their code that may need to be written, read, or processed outside of the running simulation.</td>
</tr>
<tr>
<td>adios2</td>
<td>2.7.1_gcc-9.4.0</td>
<td>The Adaptable Input Output System version 2, developed in the Exascale Computing Program</td>
</tr>
<tr>
<td>alsa-lib</td>
<td>1.2.3.2_gcc-9.4.0</td>
<td>The Advanced Linux Sound Architecture (ALSA) provides audio and MIDI functionality to the Linux operating system. alsa-lib contains the user space library that developers compile ALSA applications against.</td>
</tr>
<tr>
<td>apache-ant</td>
<td>1.10.7_gcc-9.4.0</td>
<td>Apache Ant is a Java library and command-line tool whose mission is to drive processes described in build files as targets and extension points dependent upon each other.</td>
</tr>
<tr>
<td>antlr</td>
<td>2.7.7_gcc-9.4.0</td>
<td>ANTLR (ANother Tool for Language Recognition) is a powerful parser generator for reading, processing, executing, or translating structured text or binary files. It’s widely used to build languages, tools, and frameworks. From a grammar, ANTLR generates a parser that can build and walk parse trees.</td>
</tr>
<tr>
<td>armadillo</td>
<td>10.5.0_gcc-9.4.0</td>
<td>Armadillo is a high quality linear algebra library (matrix maths) for the C++ language, aiming towards a good balance between speed and ease of use.</td>
</tr>
<tr>
<td>arpack-ng</td>
<td>3.8.0_gcc-9.4.0</td>
<td>ARPACK-NG is a collection of Fortran77 subroutines designed to solve large scale eigenvalue problems.</td>
</tr>
<tr>
<td>asciidoce</td>
<td>9.1.0_gcc-9.4.0</td>
<td>A presentable text document format for writing articles, UNIX man pages and other small to medium sized documents.</td>
</tr>
<tr>
<td>assimp</td>
<td>5.2.2_gcc-9.4.0</td>
<td>Open Asset Import Library (Assimp) is a portable Open Source library to import various well-known 3D model formats in a uniform manner.</td>
</tr>
<tr>
<td>atk</td>
<td>2.36.0_gcc-9.4.0</td>
<td>ATK provides the set of accessibility interfaces that are implemented by other toolkits and applications. Using the ATK interfaces, accessibility tools have full access to view and control running applications.</td>
</tr>
<tr>
<td>atompaw</td>
<td>4.1.1.0_gcc-9.4.0</td>
<td>A Projector Augmented Wave (PAW) code for generating atom-centered functions.</td>
</tr>
<tr>
<td>at-spi2-atk</td>
<td>2.38.0_gcc-9.4.0</td>
<td>The At-Spi2 Atk package contains a library that bridges ATK to At-Spi2 D-Bus service.</td>
</tr>
<tr>
<td>at-spi2-core</td>
<td>2.40.1_gcc-9.4.0</td>
<td>The At-Spi2 Core package provides a Service Provider Interface for the Assistive Technologies available on the GNOME platform and a library against which applications can be linked.</td>
</tr>
<tr>
<td>augustus</td>
<td>3.4.0_gcc-9.4.0</td>
<td>AUGUSTUS is a program that predicts genes in eukaryotic genomic sequences.</td>
</tr>
<tr>
<td>autoconf-archive</td>
<td>2019.01.06_gcc-9.4.0</td>
<td>The GNU Autoconf Archive is a collection of more than 500 macros for GNU Autoconf.</td>
</tr>
<tr>
<td>autodock-vina</td>
<td>1.1.2_gcc-9.4.0</td>
<td>AutoDock Vina is an open-source program for doing molecular docking.</td>
</tr>
<tr>
<td>bamtools</td>
<td>2.5.1_gcc-9.4.0</td>
<td>C++ API &amp; command-line toolkit for working with BAM data.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BART</td>
<td>0.7.00_gcc-9.4.0</td>
<td>Toolbox for Computational Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>Bazel</td>
<td>4.0.0_gcc-9.4.0</td>
<td>Open-source build and test tool similar to Make, Maven, and Gradle. It uses a human-readable, high-level build language. Bazel supports projects in multiple languages and builds outputs for multiple platforms. Bazel supports large codebases across multiple repositories, and large numbers of users.</td>
</tr>
<tr>
<td>BCFTools</td>
<td>1.14_gcc-9.4.0</td>
<td>A set of utilities that manipulate variant calls in the Variant Call Format (VCF) and its binary counterpart BCF. All commands work transparently with both VCFs and BCFs, both uncompressed and BgzF-compressed.</td>
</tr>
<tr>
<td>BFDToPCF</td>
<td>1.0.5_gcc-9.4.0</td>
<td>A font compiler for the X server and font server. Fonts in Portable Compiled Format can be read by any architecture, although the file is structured to allow one particular architecture to read them directly without reformatting. This allows fast reading on the appropriate machine, but the files are still portable (but read more slowly) on other machines.</td>
</tr>
<tr>
<td>BDW-GC</td>
<td>8.0.6_gcc-9.4.0</td>
<td>The Boehm-Demers-Weiser conservative garbage collector is a garbage collecting replacement for C malloc or C++ new.</td>
</tr>
<tr>
<td>BEDTools2</td>
<td>2.30.0_gcc-9.4.0</td>
<td>Collectively, the bedtools utilities are a swiss-army knife of tools for a wide-range of genomics analysis tasks. The most widely-used tools enable genome arithmetic: that is, set theory on the genome.</td>
</tr>
<tr>
<td>BEAST</td>
<td>1.10.4_gcc-9.4.0</td>
<td>A cross-platform program for Bayesian analysis of molecular sequences using MCMC.</td>
</tr>
<tr>
<td>BISMART</td>
<td>2.30.0_gcc-9.4.0</td>
<td>The Boehm-Demers-Weiser conservative garbage collector is a garbage collecting replacement for C malloc or C++ new.</td>
</tr>
<tr>
<td>BLAST-Plus</td>
<td>2.12.0_gcc-9.4.0</td>
<td>A tool to map bisulfite converted sequence reads and determine cytosine methylation states</td>
</tr>
<tr>
<td>BLAT</td>
<td>35_gcc-9.4.0</td>
<td>BLAT (BLAST-like alignment tool) is a pairwise sequence alignment algorithm.</td>
</tr>
<tr>
<td>Boost</td>
<td>1.65.0_gcc-9.4.0</td>
<td>Provides free peer-reviewed portable C++ source libraries, emphasizing libraries that work well with the C++ Standard Library.</td>
</tr>
<tr>
<td>BOWTIE</td>
<td>1.3.0_gcc-9.4.0</td>
<td>Bowie is an ultrafast, memory-efficient short read aligner for short DNA sequences (reads) from next-gen sequencers.</td>
</tr>
<tr>
<td>BOWTIE2</td>
<td>2.4.2_gcc-9.4.0</td>
<td>Bowie 2 is an ultrafast and memory-efficient tool for aligning sequencing reads to long reference sequences</td>
</tr>
<tr>
<td>BRAKER</td>
<td>2.1.6_gcc-9.4.0</td>
<td>BRAKER is a pipeline for unsupervised RNA-Seq-based genome annotation that combines the advantages of GeneMark-ET and AUGUSTUS</td>
</tr>
<tr>
<td>BWA</td>
<td>0.7.17_gcc-9.4.0</td>
<td>Burrow-Wheeler Aligner for pairwise alignment between DNA sequences.</td>
</tr>
<tr>
<td>BZIP2</td>
<td>1.0.8_gcc-9.4.0</td>
<td>BZIP2 is a freely available, patent free high-quality data compressor. It typically compresses files to within 10% to 15% of the best available techniques (the PPM family of statistical compressors), whilst being around twice as fast at compression and six times faster at decompression.</td>
</tr>
<tr>
<td>CAIRO</td>
<td>1.16.0_gcc-9.4.0</td>
<td>Cairo is a 2D graphics library with support for multiple output devices.</td>
</tr>
<tr>
<td>CA-ARES</td>
<td>1.15.0_gcc-9.4.0</td>
<td>c-ares: A C library for asynchronous DNS requests</td>
</tr>
<tr>
<td>C-BLOSC</td>
<td>1.21.1_gcc-9.4.0</td>
<td>Blosc, an extremely fast, multi-threaded, meta-compressor library</td>
</tr>
<tr>
<td>CDO</td>
<td>2.0.4_gcc-9.4.0</td>
<td>CDO is a collection of command line Operators to manipulate and analyse Climate and NWP model Data.</td>
</tr>
<tr>
<td>CFITSIO</td>
<td>4.0.0_gcc-9.4.0</td>
<td>CFITSIO is a library of C and Fortran subroutines for reading and writing data files in FITS (Flexible Image Transport System) data format.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>cgal</td>
<td>5.0.3_gcc-9.4.0</td>
<td>The Computational Geometry Algorithms Library (CGAL) is a C++ library that aims to provide easy access to efficient and reliable algorithms in computational geometry. CGAL is used in various areas needing geometric computation, such as geographic information systems, computer aided design, molecular biology, medical imaging, computer graphics, and robotics.</td>
</tr>
<tr>
<td>check</td>
<td>0.12.0_gcc-9.4.0</td>
<td>Check is a unit testing framework for C. It features a simple interface for defining unit tests, putting little in the way of the developer. Tests are run in a separate address space, so both assertion failures and code errors that cause segmentation faults or other signals can be caught. Test results are reportable in the following: Subunit, TAP, XML, and a generic logging format.</td>
</tr>
<tr>
<td>cistem</td>
<td>1.0.0-beta_gcc-9.4.0</td>
<td>cisTEM is user-friendly software to process cryo-EM images of macromolecular complexes and obtain high-resolution 3D reconstructions from them.</td>
</tr>
<tr>
<td>cffhep</td>
<td>2.4.5.1_gcc-9.4.0</td>
<td>CLHEP is a C++ Class Library for High Energy Physics.</td>
</tr>
<tr>
<td>cmake</td>
<td>5.3.1_gcc-9.4.0</td>
<td>Code base for the U.S. EPA's Community Multiscale Air Quality Model (CMAQ).</td>
</tr>
<tr>
<td>cnvmator</td>
<td>0.3.3_gcc-9.4.0</td>
<td>A tool for CNV discovery and genotyping from depth-of-coverage by mapped reads.</td>
</tr>
<tr>
<td>coreutils</td>
<td>8.32_gcc-9.4.0</td>
<td>The GNU Core Utilities are the basic file, shell and text manipulation utilities of the GNU operating system. These are the core utilities which are expected to exist on every operating system.</td>
</tr>
<tr>
<td>cp2k</td>
<td>9.1_gcc-9.4.0</td>
<td>CP2K is a quantum chemistry and solid state physics software package that can perform atomistic simulations of solid state, liquid, molecular, periodic, material, crystal, and biological systems.</td>
</tr>
<tr>
<td>cpio</td>
<td>2.13_gcc-9.4.0</td>
<td>GNU cpio copies files into or out of a cpio or tar archive and the file system. The archive can be another file on the disk, a magnetic tape, or a pipe.</td>
</tr>
<tr>
<td>cppzmq</td>
<td>4.7.1_gcc-9.4.0</td>
<td>C++ binding for OMQ</td>
</tr>
<tr>
<td>ctffind</td>
<td>4.1.14_gcc-9.4.0</td>
<td>Fast and accurate defocus estimation from electron micrographs.</td>
</tr>
<tr>
<td>cu</td>
<td>1.12.0-rc0_gcc-9.4.0</td>
<td>CUB is a C++ header library of cooperative threadblock primitives and other utilities for CUDA kernel programming.</td>
</tr>
<tr>
<td>cuda</td>
<td>11.4.4_gcc-9.4.0</td>
<td>CUDA is a parallel computing platform and programming model invented by NVIDIA. It enables dramatic increases in computing performance by harnessing the power of the graphics processing unit (GPU).</td>
</tr>
<tr>
<td>cudnn</td>
<td>8.2.4-15-11.4_gcc-9.4.0</td>
<td>NVIDIA cuDNN is a GPU-accelerated library of primitives for deep neural networks</td>
</tr>
<tr>
<td>cufflinks</td>
<td>2.2.1_gcc-9.4.0</td>
<td>Cufflinks assembles transcripts, estimates their abundances, and tests for differential expression and regulation in RNA-Seq samples.</td>
</tr>
<tr>
<td>curl</td>
<td>7.78.0_gcc-9.4.0 7.81.0_gcc-9.4.0</td>
<td>cURL is an open source command line tool and library for transferring data with URL syntax</td>
</tr>
<tr>
<td>czmq</td>
<td>4.1.1_gcc-9.4.0</td>
<td>A C interface to the ZMQ library</td>
</tr>
<tr>
<td>damageproto</td>
<td>1.2.1_gcc-9.4.0</td>
<td>X Damage Extension.</td>
</tr>
<tr>
<td>darshan-run</td>
<td>3.3.1_gcc-9.4.0</td>
<td>Darshan is a scalable HPC I/O characterization tool designed to capture an accurate picture of application I/O behavior, including properties such as patterns of access within files, with minimum overhead. DarshanRuntime package should be installed on systems where you intend to instrument MPI applications.</td>
</tr>
<tr>
<td>darshan-util</td>
<td>3.3.1_gcc-9.4.0</td>
<td>Darshan (util) is collection of tools for parsing and summarizing log files produced by Darshan (runtime) instrumentation. This package is typically installed on systems (front-end) where you intend to analyze log files produced by Darshan (runtime).</td>
</tr>
<tr>
<td>davivi</td>
<td>0.7.6_gcc-9.4.0</td>
<td>High-performance file management over WebDAV/HTTP.</td>
</tr>
<tr>
<td>dbus</td>
<td>1.12.8_gcc-9.4.0</td>
<td>D-Bus is a message bus system, a simple way for applications to talk to one another. D-Bus supplies both a system daemon (for events such as new hardware device printer queue) and a per-user-login-session daemon (for general IPC needs among user applications). Also, the message bus is built on top of a general one-to-one message passing framework, which can be used by any two applications to communicate directly (without going through the message bus daemon).</td>
</tr>
<tr>
<td>dcm2niix</td>
<td>1.0.20210317_gcc-9.4.0</td>
<td>DICOM to NIfTI converter</td>
</tr>
<tr>
<td>Software</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DIAMOND</td>
<td>2.0.11_gcc-9.4.0 default</td>
<td>DIAMOND is a sequence aligner for protein and translated DNA searches, designed for high performance analysis of big sequence data.</td>
</tr>
<tr>
<td>dicom3tools</td>
<td>1.00_screenshot_202010300000017_gcc-9.4.0 default</td>
<td>Command line utilities for creating, modifying, dumping and validating files of DICOM attributes, and conversion of proprietary image formats to DICOM. Can handle older ACR/NEMA format data, and some proprietary versions of that such as SPI.</td>
</tr>
<tr>
<td>docbook-xml</td>
<td>4.4_gcc-9.4.0 4.5_gcc-9.4.0 default</td>
<td>Docbook DTD XML files.</td>
</tr>
<tr>
<td>docbook-xsl</td>
<td>1.79.2_gcc-9.4.0-xml44 1.79.2_gcc-9.4.0-xml45 default</td>
<td>DocBook XSLT 1.0 Stylesheets.</td>
</tr>
<tr>
<td>double-conversion</td>
<td>3.15_gcc-9.4.0 default</td>
<td>This project (double-conversion) provides binary-decimal and decimal-binary routines for IEEE doubles.</td>
</tr>
<tr>
<td>doxygen</td>
<td>1.9.3_gcc-9.4.0 1.9.3_intel-2021.5.0 default</td>
<td>Doxygen is the de facto standard tool for generating documentation from annotated C++ sources, but it also supports other popular programming languages such as C, Objective-C, C#, PHP, Java, Python, IDL (Corba, Microsoft, and UNO/OpenOffice flavors), Fortran, VHDL, Tcl, and to some extent D..</td>
</tr>
<tr>
<td>dsfmt</td>
<td>2.2.5_gcc-9.4.0 default</td>
<td>Double precision SIMD-oriented Fast Mersenne Twister</td>
</tr>
<tr>
<td>eccodes</td>
<td>2.24.2_gcc-9.4.0 default</td>
<td>ecCodes is a package developed by ECMWF for processing meteorological data in GRIB (1/2), BUFR (3/4) and GTS header formats.</td>
</tr>
<tr>
<td>eigen</td>
<td>3.4.0_gcc-9.4.0 default</td>
<td>Eigen is a C++ template library for linear algebra matrices, vectors, numerical solvers, and related algorithms.</td>
</tr>
<tr>
<td>elfutils</td>
<td>0.186_gcc-9.4.0 default</td>
<td>elfutils is a collection of various binary tools such as eu-objdump, eu-readelf, and other utilities that allow you to inspect and manipulate ELF files. Refer to Table 5.1. Tools included in elfutils for Red Hat Developer for a complete list of binary tools that are distributed with the Red Hat Developer Toolset version of elfutils.</td>
</tr>
<tr>
<td>esmf</td>
<td>8.2.0_gcc-9.4.0-hdf5110 default</td>
<td>The Earth System Modeling Framework (ESMF) is high-performance, flexible software infrastructure for building and coupling weather, climate, and related Earth science applications. The ESMF defines an architecture for composing complex, coupled modeling systems and includes data structures and utilities for developing individual models.</td>
</tr>
<tr>
<td>exonerate</td>
<td>2.4.0_gcc-9.4.0 default</td>
<td>Pairwise sequence alignment of DNA and proteins</td>
</tr>
<tr>
<td>expat</td>
<td>2.4.6_gcc-9.4.0 default</td>
<td>Expat is an XML parser library written in C.</td>
</tr>
<tr>
<td>fastqc</td>
<td>0.11.9_gcc-9.4.0 default</td>
<td>A quality control tool for high throughput sequence data.</td>
</tr>
<tr>
<td>fastx-toolkit</td>
<td>0.0.14_gcc-9.4.0 default</td>
<td>The FASTX-Toolkit is a collection of command line tools for Short-Reads FASTA/FASTQ files preprocessing.</td>
</tr>
<tr>
<td>ffmpeg</td>
<td>4.4.1_gcc-9.4.0 default</td>
<td>FFmpeg is a complete, cross-platform solution to record, convert and stream audio and video.</td>
</tr>
<tr>
<td>fftw</td>
<td>3.3.10_gcc-9.4.0 3.3.10_intel-2021.5.0 default</td>
<td>FFTW is a C subroutine library for computing the discrete Fourier transform (DFT) in one or more dimensions, of arbitrary input size, and of both real and complex data (as well as of even/odd data, i.e. the discrete cosine/sine transforms or DCT/DST). We believe that FFTW, which is free software, should become the FFT library of choice for most applications.</td>
</tr>
<tr>
<td>fixesproto</td>
<td>5.0_gcc-9.4.0 default</td>
<td>X Fixes Extension.</td>
</tr>
<tr>
<td>flac</td>
<td>1.3.3_gcc-9.4.0 default</td>
<td>Encoder/decoder for the Free Lossless Audio Codec</td>
</tr>
<tr>
<td>flatbuffers</td>
<td>1.12.0_gcc-9.4.0 default</td>
<td>Memory Efficient Serialization Library</td>
</tr>
<tr>
<td>flex</td>
<td>2.6.4_gcc-9.4.0 default</td>
<td>Flex is a tool for generating scanners.</td>
</tr>
<tr>
<td>fltk</td>
<td>1.37_gcc-9.4.0 default</td>
<td>FLTK (pronounced 'fulltick') is a cross-platform C++ GUI toolkit for UNIX/Linux (X11), Microsoft Windows, and MacOS X. FLTK provides modern GUI functionality without the bloat and supports 3D graphics via OpenGL and its built-in GLUT emulation.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Dependencies</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>fontconfig</td>
<td>2.13.94_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>fontsproto</td>
<td>2.1.3_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>font-util</td>
<td>1.3.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>fox</td>
<td>1.6.57_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>freeglut</td>
<td>3.2.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>freetype</td>
<td>2.11.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>frxdbd</td>
<td>1.0.5_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>ftp</td>
<td>2.4.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>fxdiv</td>
<td>2020-04-17_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4abl</td>
<td>3.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4emlow</td>
<td>7.13_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4en/sddata</td>
<td>2.3_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4int</td>
<td>1.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4nks</td>
<td>4.6_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4particlexs</td>
<td>3.1.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4photonova</td>
<td>5.7_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4pil</td>
<td>1.3_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4radioactive</td>
<td>5.6_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4real/sfa</td>
<td>2.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>g4saiddata</td>
<td>2.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gate</td>
<td>9.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gateto2stir</td>
<td>1.3.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gate/tools</td>
<td>0.11.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gatetools</td>
<td>4.2.2.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gdal</td>
<td>2.4.4_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>gdal</td>
<td>3.4.1_gcc-9.4.0</td>
<td>proj8</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>gdk-pixbuf</td>
<td>2.42.6</td>
<td>The Gdk Pixbuf is a toolkit for image loading and pixel buffer manipulation. It is used by GTK+ 2 and GTK+ 3 to load and manipulate images. In the past it was distributed as part of GTK+ 2 but it was split off into a separate package for the change to GTK+ 3.</td>
</tr>
<tr>
<td>gstreamer</td>
<td>1.15.13</td>
<td>A bundle package to hold Gstreamer data packages</td>
</tr>
<tr>
<td>introspection</td>
<td>4.65.1</td>
<td>Gene Prediction in Bacteria, archaea, Metagenomes and Metatranscriptomes. When downloaded this file is named the same for all versions. Spack will search your current directory for the download file. Alternatively, add this file to a mirror so that Spack can find it. For instructions on how to set up a mirror, see <a href="https://spack.readthedocs.io/en/latest/mirrors.html">https://spack.readthedocs.io/en/latest/mirrors.html</a>.</td>
</tr>
<tr>
<td>gstreamer-data</td>
<td>1.15.13</td>
<td>A bundle package to hold Gstreamer data packages</td>
</tr>
<tr>
<td>genmark-et</td>
<td>0.6.0</td>
<td>Genrich is a peak-caller for genomic enrichment assays.</td>
</tr>
<tr>
<td>golang</td>
<td>3.9.1</td>
<td>GEOS (Geometry Engine - Open Source) is a C++ port of the Java Topology Suite (JTS). As such, it aims to contain the complete functionality of JTS in C++. This includes all the OpenGIS Simple Features for SQL spatial predicate functions and spatial operators, as well as specific JTS enhanced topology functions.</td>
</tr>
<tr>
<td>gettext</td>
<td>0.21</td>
<td>GNU internationalization (i18n) and localization (l10n) library.</td>
</tr>
<tr>
<td>gflags</td>
<td>2.2.2</td>
<td>The gflags package contains a C++ library that implements commandline flags processing. It includes built-in support for standard types such as string and the ability to define flags in the source file in which they are used. Online documentation available at: <a href="https://gflags.github.io/gflags">https://gflags.github.io/gflags</a>.</td>
</tr>
<tr>
<td>ghostscript</td>
<td>9.54.0</td>
<td>An interpreter for the PostScript language and for PDF.</td>
</tr>
<tr>
<td>ghostscript-fonts</td>
<td>8.11</td>
<td>Ghostscript Fonts</td>
</tr>
<tr>
<td>giflib</td>
<td>5.2.1</td>
<td>The GIFLIB project maintains the giflib service library, which has been pulling images out of GIFs since 1989.</td>
</tr>
<tr>
<td>git</td>
<td>2.34.1</td>
<td>Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.</td>
</tr>
<tr>
<td>gl2ps</td>
<td>1.4.2</td>
<td>GL2PS is a C library providing high quality vector output for any OpenGL application.</td>
</tr>
<tr>
<td>glew</td>
<td>2.1.0</td>
<td>The OpenGL Extension Wrangler Library.</td>
</tr>
<tr>
<td>glib</td>
<td>2.70.4</td>
<td>GLib provides the core application building blocks for libraries and applications written in C.</td>
</tr>
<tr>
<td>glibc</td>
<td>4.65.1</td>
<td>The GLPK (GNU Linear Programming Kit) package is intended for solving large-scale linear programming (LP), mixed integer programming (MIP), and other related problems. It is a set of routines written in ANSI C and organized in the form of a callable library.</td>
</tr>
<tr>
<td>glibproto</td>
<td>1.4.17</td>
<td>OpenGL Extension to the X Window System.</td>
</tr>
<tr>
<td>gmp</td>
<td>6.2.1</td>
<td>GMP is a free library for arbitrary precision arithmetic, operating on signed integers, rational numbers, and floating-point numbers.</td>
</tr>
<tr>
<td>gnutls</td>
<td>3.6.15</td>
<td>GnuTLS is a secure communications library implementing the SSL, TLS and DTLS protocols and technologies around them. It provides a simple C language application programming interface (API) to access the secure communications protocols as well as APIs to parse and write X.509, PKCS #12, OpenPGP and other related structures. It is aimed to be portable and efficient with focus on security and interoperability.</td>
</tr>
<tr>
<td>gobject-introspection</td>
<td>1.56.1</td>
<td>The GObject Introspection is used to describe the program APIs and collect them in a uniform, machine readable format. Cairo is a 2D graphics library with support for multiple output.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>go-bootstrap</td>
<td>1.4-bootstrap-20170303_gcc-9.4.0</td>
<td>Old C-bootstrapped go to bootstrap real go</td>
</tr>
<tr>
<td>googletest</td>
<td>1.10.0_gcc-9.4.0</td>
<td>Google test framework for C++. Also called gtest.</td>
</tr>
<tr>
<td>gperf</td>
<td>3.1_gcc-9.4.0</td>
<td>GNU gperf is a perfect hash function generator. For a given list of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>strings, it produces a hash function and hash table, in form of C or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C++ code, for looking up a value depending on the input string. The</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hash function is perfect, which means that the hash table has no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>collisions, and the hash table lookup needs a single string</td>
</tr>
<tr>
<td></td>
<td></td>
<td>comparison only.</td>
</tr>
<tr>
<td>gperftools</td>
<td>2.9.1_gcc-9.4.0</td>
<td>Google's fast malloc/free implementation, especially for multi-threaded</td>
</tr>
<tr>
<td></td>
<td></td>
<td>applications. Contains tcmalloc, heap-checker, heap-profiler, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cpu-profiler.</td>
</tr>
<tr>
<td>gpu-burn</td>
<td>1.1_gcc-9.4.0</td>
<td>Multi-GPU CUDA stress test.</td>
</tr>
<tr>
<td>graphicsmagick</td>
<td>1.33.4_gcc-9.4.0</td>
<td>GraphicsMagick is the Swiss army knife of image processing.</td>
</tr>
<tr>
<td>graphite2</td>
<td>1.3.13_gcc-9.4.0</td>
<td>Graphite is a system that can be used to create 'smart fonts' capable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of displaying writing systems with various complex behaviors. A smart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>font contains not only letter shapes but also additional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>instructions indicating how to combine and position the letters in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>complex ways.</td>
</tr>
<tr>
<td>graphviz</td>
<td>2.49.0_gcc-9.4.0</td>
<td>Graph Visualization Software</td>
</tr>
<tr>
<td>gromacs</td>
<td>2021.5_gcc-9.4.0</td>
<td>GROMACS (GROningen MAchine for Chemical Simulations) is a molecular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dynamics package primarily designed for simulations of proteins,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lipids and nucleic acids. It was originally developed in the Biophysical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chemistry department of University of Groningen, and is now</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maintained by contributors in universities and research centers across</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the world.</td>
</tr>
<tr>
<td>gnu</td>
<td>2.7_gcc-9.4.0</td>
<td>The GNU Scientific Library (GSL) is a numerical library for C and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C++ programmers. It is free software under the GNU General Public</td>
</tr>
<tr>
<td></td>
<td></td>
<td>License. The library provides a wide range of mathematical routines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>such as random number generators, special functions and least-squares</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fitting. There are over 1000 functions in total with an extensive test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>suite.</td>
</tr>
<tr>
<td>gtkplus</td>
<td>3.24.29_gcc-9.4.0</td>
<td>The GTK+ package contains libraries used for creating graphical user</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interfaces for applications.</td>
</tr>
<tr>
<td>guile</td>
<td>2.2.6_gcc-9.4.0</td>
<td>Guile is the GNU Ubiquitous Intelligent Language for Extensions, the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>official extension language for the GNU operating system.</td>
</tr>
<tr>
<td>gftp</td>
<td>1.11_gcc-9.4.0</td>
<td>GNU Gzip is a popular data compression program originally written by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jean-loup Gailly for the GNU project.</td>
</tr>
<tr>
<td>harfbuzz</td>
<td>2.9.1_gcc-9.4.0</td>
<td>The Harfbuzz package contains an OpenType text shaping engine.</td>
</tr>
<tr>
<td>hdf</td>
<td>4.2.16_gcc-9.4.0, 4.2.15_intel-2021.5.0</td>
<td>HDF4 (also known as HDF) is a library and multi-object file format for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>storing and managing data between machines.</td>
</tr>
<tr>
<td>hdf5</td>
<td>1.10.8_gcc-9.4.0, 1.12.1_gcc-9.4.0, 1.12.1_gcc-9.4.0-mpi, 1.12.1_intel-2021.5.0</td>
<td>HDF5 is a data model, library, and file format for storing and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>managing data. It supports an unlimited variety of datatypes, and is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>designed for flexible and efficient I/O and for high volume and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>complex data.</td>
</tr>
<tr>
<td>hdf-eos</td>
<td>2.20v1.00_gcc-9.4.0</td>
<td>HDF-EOS (Hierarchical Data Format - Earth Observing System) is a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>self-describing file format based upon HDF for standard data products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>that are derived from EOS missions. HDF-EOS2 is based upon HDF4.</td>
</tr>
<tr>
<td>hdf-eos5</td>
<td>5.1.16_gcc-9.4.0</td>
<td>HDF-EOS (Hierarchical Data Format - Earth Observing System) is a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>self-describing file format based upon HDF for standard data products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>that are derived from EOS missions. HDF-EOS5 is based upon HDF5.</td>
</tr>
<tr>
<td>heasoft</td>
<td>6.29_gcc-9.4.0</td>
<td>A Unified Release of the FTOOLS and XANADU Software Packages.</td>
</tr>
<tr>
<td>hepmc</td>
<td>2.06.11_gcc-9.4.0</td>
<td>The HepMC package is an object oriented, C++ event record for High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Physics Monte Carlo generators and simulation.</td>
</tr>
<tr>
<td>hepmc4</td>
<td>3.2.4_gcc-9.4.0</td>
<td>The HepMC package is an object oriented, C++ event record for High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy Physics Monte Carlo generators and simulation.</td>
</tr>
<tr>
<td>Package</td>
<td>Version/Build</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>highfive</td>
<td>2.4.1_gcc-9.4.0</td>
<td>HighFive - Header only C++ HDFS interface</td>
</tr>
<tr>
<td>hmmr</td>
<td>3.3.2_gcc-9.4.0</td>
<td>HMMER is used for searching sequence databases for sequence homologs, and for making sequence alignments. It implements methods using probabilistic models called profile hidden Markov models (profile HMMs).</td>
</tr>
<tr>
<td>hpl</td>
<td>2.3_gcc-9.4.0</td>
<td>HPL is a software package that solves a (random) dense linear system in double precision (64 bits) arithmetic on distributed-memory computers. It can thus be regarded as a portable as well as freely available implementation of the High Performance Computing Linpack Benchmark.</td>
</tr>
<tr>
<td>htslib</td>
<td>1.13_gcc-9.4.0</td>
<td>C library for high-throughput sequencing data formats.</td>
</tr>
<tr>
<td>hwloc</td>
<td>2.7_gcc-9.4.0</td>
<td>The Hardware Locality (hwloc) software project.</td>
</tr>
<tr>
<td>hypre</td>
<td>2.23.0_gcc-9.4.0</td>
<td>Hypre is a library of high performance preconditioners that features parallel multigrid methods for both structured and unstructured grid problems.</td>
</tr>
<tr>
<td>icu4c</td>
<td>67.1_gcc-9.4.0</td>
<td>ICU is a mature, widely used set of C/C++ and Java libraries providing Unicode and Globalization support for software applications. ICU4C is the C/C++ interface.</td>
</tr>
<tr>
<td>id3lib</td>
<td>3.8.3_gcc-9.4.0</td>
<td>Library for manipulating ID3v1 and ID3v2 tags</td>
</tr>
<tr>
<td>ilmbase</td>
<td>2.3.0_gcc-9.4.0</td>
<td>OpenEXR ILM Base libraries (high dynamic-range image file format)</td>
</tr>
<tr>
<td>imagemagick</td>
<td>7.0.8-7_gcc-9.4.0</td>
<td>ImageMagick is a software suite to create, edit, compose, or convert bitmap images.</td>
</tr>
<tr>
<td>imake</td>
<td>1.0.7_gcc-9.4.0</td>
<td>The imake build system.</td>
</tr>
<tr>
<td>infernal</td>
<td>1.1.2_gcc-9.4.0</td>
<td>Infernal (INFERence of RNA ALignmment) is for searching DNA sequence databases for RNA structure and sequence similarities. It is an implementation of a special case of profile stochastic context-free grammars called covariance models (CMs).</td>
</tr>
<tr>
<td>inputproto</td>
<td>2.3.2_gcc-9.4.0</td>
<td>X Input Extension.</td>
</tr>
<tr>
<td>intel-oneapi-mkl</td>
<td>2022.0.2_gcc-9.4.0</td>
<td>Intel oneAPI MKL.</td>
</tr>
<tr>
<td>int</td>
<td>xapi</td>
<td>2021.5.1_gcc-9.4.0</td>
</tr>
<tr>
<td>intel-xed</td>
<td>12.0.1_gcc-9.4.0</td>
<td>The Intel X86 Encoder Decoder library for encoding and decoding x86 machine instructions (64- and 32-bit). Also includes libxed-ild, a lightweight library for decoding the length of an instruction.</td>
</tr>
<tr>
<td>interproscan</td>
<td>4.8_gcc-9.4.0</td>
<td>InterProScan is the software package that allows sequences (protein and nucleic) to be scanned against InterPro’s signatures. Signatures are predictive models, provided by several different databases, that make up the InterPro consortium.</td>
</tr>
<tr>
<td>inttools</td>
<td>0.51.0_gcc-9.4.0</td>
<td>inttool is a set of tools to centralize translation of many different file formats using GNU gettext-compatible PO files.</td>
</tr>
<tr>
<td>itk</td>
<td>5.2.1_gcc-9.4.0</td>
<td>The Insight Toolkit (ITK) is an open-source, cross-platform toolkit for N-dimensional scientific image processing, segmentation, and registration.</td>
</tr>
<tr>
<td>jags</td>
<td>4.3.0_gcc-9.4.0</td>
<td>JAGS is Just Another Gibbs Sampler. It is a program for analysis of Bayesian hierarchical models using Markov Chain Monte Carlo (MCMC) simulation not wholly unlike BUGS</td>
</tr>
<tr>
<td>jasper</td>
<td>2.0.32_gcc-9.4.0</td>
<td>Library for manipulating JPEG-2000 images</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>jellyfish</td>
<td>2.2.7</td>
<td>JELLYFISH is a tool for fast, memory-efficient counting of k-mers in DNA.</td>
</tr>
<tr>
<td>jq</td>
<td>1.6</td>
<td>jq is a lightweight and flexible command-line JSON processor.</td>
</tr>
<tr>
<td>json-c</td>
<td>0.15</td>
<td>A JSON implementation in C.</td>
</tr>
<tr>
<td>jsoncpp</td>
<td>1.9.4</td>
<td>JsonCpp is a C++ library that allows manipulating JSON values, including</td>
</tr>
<tr>
<td></td>
<td></td>
<td>serialization and deserialization to and from strings. It can also preserve</td>
</tr>
<tr>
<td></td>
<td></td>
<td>existing comment in unserialization/serialization steps, making it a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>convenient format to store user input files.</td>
</tr>
<tr>
<td>julia</td>
<td>1.7.2</td>
<td>The Julia Language: A fresh approach to technical computing</td>
</tr>
<tr>
<td>kbproto</td>
<td>1.0.7</td>
<td>X Keyboard Extension.</td>
</tr>
<tr>
<td>krb5</td>
<td>1.19.2</td>
<td>Network authentication protocol.</td>
</tr>
<tr>
<td>laszip</td>
<td>3.4.1</td>
<td>Free and lossless LiDAR compression</td>
</tr>
<tr>
<td>lcm</td>
<td>2.9</td>
<td>Little cms is a color management library. Implements fast transforms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>between ICC profiles. It is focused on speed, and is portable across</td>
</tr>
<tr>
<td></td>
<td></td>
<td>several platforms (MIT license).</td>
</tr>
<tr>
<td>leptonica</td>
<td>1.81.0</td>
<td>Leptonica is an open source library containing software that is broadly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>useful for image processing and image analysis applications.</td>
</tr>
<tr>
<td>libaac</td>
<td>1.0.5</td>
<td>Libaec provides fast lossless compression of 1 up to 32 bit wide signed or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unsigned integers (samples). It implements Golomb-Rice compression method</td>
</tr>
<tr>
<td></td>
<td></td>
<td>under the BSD license and includes a free drop-in replacement for the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SZIP library.</td>
</tr>
<tr>
<td>libaio</td>
<td>0.3.110</td>
<td>Linux native Asynchronous I/O interface library.</td>
</tr>
<tr>
<td>libaio</td>
<td>1.2.2</td>
<td>A Cross-platform Audio Library.</td>
</tr>
<tr>
<td>libarchive</td>
<td>3.5.2</td>
<td>libarchive: C library and command-line tools for reading and writing tar,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cpio, zip, ISO, and other archive formats.</td>
</tr>
<tr>
<td>libatomic-ops</td>
<td>7.6.12</td>
<td>This package provides semi-portable access to hardware-provided atomic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>memory update operations on a number architectures.</td>
</tr>
<tr>
<td>libbeagle</td>
<td>3.1.2</td>
<td>Beagle performs genotype calling, genotype phasing, imputation of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ungenotyped markers, and identity-by-descent segment detection.</td>
</tr>
<tr>
<td>libblasrampoline</td>
<td>3.1.0</td>
<td>Using PLT trampolines to provide a BLAS and LAPACK demuxing library.</td>
</tr>
<tr>
<td>libbsd</td>
<td>0.11.5</td>
<td>This library provides useful functions commonly found on BSD systems, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lacking on others like GNU systems, thus making it easier to port projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>with strong BSD origins, without needing to embed the same code over and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>over again on each project.</td>
</tr>
<tr>
<td>libcm</td>
<td>1.3</td>
<td>A self-contained C library providing complex error functions, based on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faddeeva's plasma dispersion function w(z). Also provides Dawson's integral</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and Voigt's convolution of a Gaussian and a Lorentian.</td>
</tr>
<tr>
<td>libcrypto</td>
<td>0.6.13</td>
<td>Libcrypto is a standalone css2 parsing and manipulation library.</td>
</tr>
<tr>
<td>libdeflate</td>
<td>1.7</td>
<td>Heavily optimized library for DEFLATE/zlib/gzip compression and decompression</td>
</tr>
<tr>
<td>libdrm</td>
<td>2.4.110</td>
<td>A userspace library for accessing the DRM, direct rendering manager, on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Linux, BSD and other systems supporting the ioctl interface.</td>
</tr>
<tr>
<td>libedit</td>
<td>3.1</td>
<td>An autotools compatible port of the NetBSD edfline library.</td>
</tr>
<tr>
<td>libepoxy</td>
<td>1.4.3</td>
<td>Epoxy is a library for handling OpenGL function pointer management for you.</td>
</tr>
<tr>
<td>Library</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
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</tr>
<tr>
<td>libevent</td>
<td>2.1.12</td>
<td>The libevent API provides a mechanism to execute a callback function when a specific event occurs on a file descriptor or after a timeout has been reached. Furthermore, libevent also supports callbacks due to signals or regular timeouts.</td>
</tr>
<tr>
<td>libfabric</td>
<td>1.14.0</td>
<td>The Open Fabrics Interfaces (OFI) is a framework focused on exporting fabric communication services to applications.</td>
</tr>
<tr>
<td>libffi</td>
<td>3.4.2</td>
<td>The libffi library provides a portable, high-level programming interface to various calling conventions. This allows a programmer to call any function specified by a calling interface description at runtime.</td>
</tr>
<tr>
<td>libfontenc</td>
<td>1.1.3</td>
<td>libfontenc - font encoding library.</td>
</tr>
<tr>
<td>libgcrypt</td>
<td>1.9.4</td>
<td>Cryptographic library based on the code from GnuPG.</td>
</tr>
<tr>
<td>libgd</td>
<td>2.2.4</td>
<td>GD is an open source code library for the dynamic creation of images by programmers. GD is written in C, and ‘wrappers’ are available for Perl, PHP and other languages. GD creates PNG, JPEG, GIF, WebP, XPM, BMP images, among other formats. GD is commonly used to generate charts, graphics, thumbnails, and most anything else, on the fly. While not restricted to use on the web, the most common applications of GD involve website development.</td>
</tr>
<tr>
<td>libgeotiff</td>
<td>1.4.3</td>
<td>GeoTIFF represents an effort by over 160 different remote sensing, GIS, cartographic, and surveying related companies and organizations to establish a TIFF based interchange format for georeferenced raster imagery.</td>
</tr>
<tr>
<td>libgit2</td>
<td>1.1.1</td>
<td>libgit2 is a portable, pure C implementation of the Git core methods provided as a re-entrant linkable library with a solid API, allowing you to write native speed custom Git applications in any language which supports C bindings.</td>
</tr>
<tr>
<td>libgpg-error</td>
<td>1.4.3</td>
<td>Common error values for all GnuPG components.</td>
</tr>
<tr>
<td>libgpg-error</td>
<td>0.7.6</td>
<td>Make a common GPU ndarray(n dimensions array) that can be reused by all projects that is as future proof as possible, while keeping it easy to use for simple need/quick test.</td>
</tr>
<tr>
<td>libgtextutils</td>
<td>0.7</td>
<td>Gordon's Text utils Library.</td>
</tr>
<tr>
<td>libicce</td>
<td>1.0.9</td>
<td>libICE - Inter-Client Exchange Library.</td>
</tr>
<tr>
<td>libiconv</td>
<td>1.16</td>
<td>GNU libiconv provides an implementation of the iconv() function and the iconv program for character set conversion.</td>
</tr>
<tr>
<td>libid3tag</td>
<td>0.15.1b</td>
<td>library for id3 tagging</td>
</tr>
<tr>
<td>libidn2</td>
<td>2.3.0</td>
<td>Libidn2 is a free software implementation of IDNA2008, Punycode and TR46. Its purpose is to encode and decode internationalized domain names.</td>
</tr>
<tr>
<td>libint</td>
<td>2.6.0</td>
<td>Libint is a high-performance library for computing Gaussian integrals in quantum mechanics.</td>
</tr>
<tr>
<td>libjpeg-turbo</td>
<td>2.1.0</td>
<td>libjpeg-turbo is a fork of the original IJG libjpeg which uses SIMD to accelerate baseline JPEG compression and decompression.</td>
</tr>
<tr>
<td>liblas</td>
<td>1.8.1</td>
<td>libLAS is a C/C++ library for reading and writing the very common LAS LiDAR format.</td>
</tr>
<tr>
<td>libm</td>
<td>1.0.4</td>
<td>This library provides message digest functions found on BSD systems either on their libc (NetBSD, OpenBSD) or libm (FreeBSD, DragonflyBSD, macOS, Solaris) libraries and lacking on others like GNU systems.</td>
</tr>
<tr>
<td>libmng</td>
<td>2.0.3</td>
<td>THE reference library for reading, displaying, writing and examining Multiple-Image Network Graphics. MNG is the animation extension to the popular PNG image format.</td>
</tr>
<tr>
<td>libogg</td>
<td>1.3.5</td>
<td>Ogg is a multimedia container format, and the native file and stream format for the Xiph.org multimedia codecs.</td>
</tr>
<tr>
<td>libpaper</td>
<td>1.1.28</td>
<td>The paper library and accompanying files are intended to provide a simple way for applications to take actions based on a system- or user-specified paper size.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
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<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>libpciaccess</td>
<td>0.16_gcc-9.4.0</td>
<td>Generic PCI access library.</td>
</tr>
<tr>
<td>libpng</td>
<td>1.6.37_gcc-9.4.0</td>
<td>libpng is the official PNG reference library.</td>
</tr>
<tr>
<td>libthread-stubs</td>
<td>0.4_gcc-9.4.0</td>
<td>The libthread-stubs package provides weak aliases for pthread functions not provided in libc or otherwise available by default.</td>
</tr>
<tr>
<td>libsvg</td>
<td>2.51.0_gcc-9.4.0</td>
<td>Library to render SVG files using Cairo</td>
</tr>
<tr>
<td>libsm</td>
<td>1.2.3_gcc-9.4.0</td>
<td>libSM - X Session Management Library.</td>
</tr>
<tr>
<td>libsndfile</td>
<td>1.0.28_gcc-9.4.0</td>
<td>Libsndfile is a C library for reading and writing files containing sampled sound (such as MS Windows WAV and the Apple/SGI AIFF format) through one standard library interface. It is released in source code format under the Gnu Lesser General Public License.</td>
</tr>
<tr>
<td>libsodium</td>
<td>1.0.18_gcc-9.4.0</td>
<td>Sodium is a modern, easy-to-use software library for encryption, decryption, signatures, password hashing and more.</td>
</tr>
<tr>
<td>libssh2</td>
<td>1.10.0_gcc-9.4.0</td>
<td>libssh2 is a client-side C library implementing the SSH2 protocol</td>
</tr>
<tr>
<td>libtiff</td>
<td>4.3.0_gcc-9.4.0</td>
<td>LibTIFF - Tag Image File Format (TIFF) Library and Utilities.</td>
</tr>
<tr>
<td>libtirpc</td>
<td>1.2.6_gcc-9.4.0</td>
<td>Libtirpc is a port of Suns Transport-Independent RPC library to Linux.</td>
</tr>
<tr>
<td>libtool</td>
<td>2.4.6_gcc-9.4.0</td>
<td>libtool – library building part of autotools.</td>
</tr>
<tr>
<td>libunistring</td>
<td>0.9.10_gcc-9.4.0</td>
<td>This library provides functions for manipulating Unicode strings and for manipulating C strings according to the Unicode standard.</td>
</tr>
<tr>
<td>libunwind</td>
<td>1.5.0_gcc-9.4.0</td>
<td>A portable and efficient C programming interface (API) to determine the call-chain of a program.</td>
</tr>
<tr>
<td>libvorbis</td>
<td>1.3.7_gcc-9.4.0</td>
<td>Ogg Vorbis is a fully open, non-proprietary, patent-and-royalty-free, general-purpose compressed audio format for mid to high quality (8kHz-48.0kHz, 16+bit, polyphonic) audio and music at fixed and variable bitrates from 16 to 128 kbps/channel.</td>
</tr>
<tr>
<td>libwebp</td>
<td>1.2.0_gcc-9.4.0</td>
<td>WebP is a modern image format that provides superior lossless and lossy compression for images on the web. Using WebP, webmasters and web developers can create smaller, richer images that make the web faster.</td>
</tr>
<tr>
<td>libwhich</td>
<td>1.1.0_gcc-9.4.0</td>
<td>Libwhich: the functionality of which for libraries.</td>
</tr>
<tr>
<td>libX11</td>
<td>1.7.0_gcc-9.4.0</td>
<td>libX11 - Core X11 protocol client library.</td>
</tr>
<tr>
<td>libXau</td>
<td>1.0.8_gcc-9.4.0</td>
<td>The libXau package contains a library implementing the X11 Authorization Protocol. This is useful for restricting client access to the display.</td>
</tr>
<tr>
<td>libXaw</td>
<td>1.0.13_gcc-9.4.0</td>
<td>Xaw is the X Athena Widget Set. Xaw is a widget set based on the X Toolkit Intrinsics ( Xt) Library.</td>
</tr>
<tr>
<td>libxc</td>
<td>5.1.7_gcc-9.4.0</td>
<td>Libxc is a library of exchange-correlation functionals for density-functional theory.</td>
</tr>
<tr>
<td>libxcb</td>
<td>1.14_gcc-9.4.0</td>
<td>The X protocol C-language Binding (XCB) is a replacement for Xlib featuring a small footprint, latency hiding, direct access to the protocol, improved threading support, and extensibility.</td>
</tr>
<tr>
<td>libXcursor</td>
<td>1.14_gcc-9.4.0</td>
<td>libXcursor - X Window System Cursor management library.</td>
</tr>
<tr>
<td>libXdamage</td>
<td>1.14_gcc-9.4.0</td>
<td>This package contains the library for the X Damage extension.</td>
</tr>
<tr>
<td>libXdmcp</td>
<td>1.12_gcc-9.4.0</td>
<td>libXdmcp - X Display Manager Control Protocol library.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Type</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>libxext</td>
<td>1.3.3_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libfixes</td>
<td>5.0.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxfixes</td>
<td>1.5.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxft</td>
<td>2.3.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxpm</td>
<td>1.7.6_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxinerama</td>
<td>1.1.3_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxkbcommon</td>
<td>0.8.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxkbfile</td>
<td>1.0.9_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxml2</td>
<td>2.9.12_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxmu</td>
<td>1.1.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxpm</td>
<td>3.5.12_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxrandr</td>
<td>1.5.0_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxrender</td>
<td>0.9.10_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxscrnsaver</td>
<td>1.2.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxml</td>
<td>1.1.33_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxsmm</td>
<td>1.17_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxml</td>
<td>1.1.5_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxslt</td>
<td>1.2.2_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libxsl6vm</td>
<td>1.1.4_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libyaml</td>
<td>0.2.5_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>libzmq</td>
<td>4.3.4_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>llvm</td>
<td>11.0.1_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>lmdb</td>
<td>0.9.29_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>lp-solve</td>
<td>5.5.2.11_gcc-9.4.0</td>
<td>Default</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>lz4</td>
<td>1.9.3_gcc-9.4.0</td>
<td>LZ4 is a lossless compression algorithm, providing compression speed at 400 MB/s per core, scalable with multi-cores CPU. It also features an extremely fast decoder, with speed in multiple GB/s per core, typically reaching RAM speed limits on multi-core systems.</td>
</tr>
<tr>
<td>lzo</td>
<td>2.10_gcc-9.4.0</td>
<td>Real-time data compression library</td>
</tr>
<tr>
<td>math</td>
<td>7.481_gcc-9.4.0</td>
<td>MAFFT is a multiple sequence alignment program for unix-like operating systems. It offers a range of multiple alignment methods, L-INS-i (accurate; for alignment of &lt;~200 sequences), FFT-NS-2 (fast; for alignment of &lt;~30,000 sequences), etc.</td>
</tr>
<tr>
<td>magma</td>
<td>2.6.1_gcc-9.4.0</td>
<td>The MAGMA project aims to develop a dense linear algebra library similar to LAPACK but for heterogeneous/hybrid architectures, starting with current 'Multicore+GPU' systems.</td>
</tr>
<tr>
<td>makedepend</td>
<td>1.0.5_gcc-9.4.0</td>
<td>makedepend - create dependencies in makefiles.</td>
</tr>
<tr>
<td>maker</td>
<td>3.01.03_gcc-9.4.0</td>
<td>MAKER is a portable and easily configurable genome annotation pipeline. It's purpose is to allow smaller eukaryotic and prokaryotic genome projects to independently annotate their genomes and to create genome databases. MAKER identifies repeats, aligns ESTs and proteins to a genome, produces ab-initio gene predictions and automatically synthesizes these data into gene annotations having evidence-based quality values. MAKER is also easily trainable: outputs of preliminary runs can be used to automatically retrain its gene prediction algorithm, producing higher quality gene-models on subsequent runs. MAKER's inputs are minimal and its outputs can be directly loaded into a GMOD database. They can also be viewed in the Apollo genome browser; this feature of MAKER provides an easy means to annotate, view and edit individual contigs and BACs without the overhead of a database. MAKER should prove especially useful for emerging model organism projects with minimal bioinformatics expertise and computer resources.</td>
</tr>
<tr>
<td>mariadb-client</td>
<td>3.2.6_gcc-9.4.0</td>
<td>MariaDB turns data into structured information in a wide array of applications, ranging from banking to websites. It is an enhanced, drop-in replacement for MySQL. MariaDB is used because it is fast, scalable and robust, with a rich ecosystem of storage engines, plugins and many other tools make it very versatile for a wide variety of use cases. This package comprises only the standalone 'C Connector', which enables connections to MariaDB and MySQL servers.</td>
</tr>
<tr>
<td>maven</td>
<td>3.8.4_gcc-9.4.0</td>
<td>Apache Maven is a software project management and comprehension tool.</td>
</tr>
<tr>
<td>mbedTLS</td>
<td>2.24.0_gcc-9.4.0</td>
<td>mbed TLS (formerly known as PolarSSL) makes it trivially easy for developers to include cryptographic and SSL/TLS capabilities in their (embedded) products, facilitating this functionality with a minimal coding footprint.</td>
</tr>
<tr>
<td>mesa</td>
<td>21.3.1_gcc-9.4.0</td>
<td>Mesa is an open-source implementation of the OpenGL specification - a system for rendering interactive 3D graphics.</td>
</tr>
<tr>
<td>mesa-gl</td>
<td>9.0.1_gcc-9.4.0</td>
<td>This package provides the Mesa OpenGL Utility library.</td>
</tr>
<tr>
<td>mesquite</td>
<td>2.99_gcc-9.4.0</td>
<td>Mesquite (Mesh Quality Improvement Toolkit) is designed to provide a stand-alone, portable, comprehensive suite of mesh quality improvement algorithms and components that can be used to construct custom quality improvement algorithms. Mesquite provides a robust and effective mesh improvement toolkit that allows both meshing researchers application scientists to benefit from the latest developments in mesh quality control and improvement.</td>
</tr>
<tr>
<td>metis</td>
<td>5.1.0_gcc-9.4.0</td>
<td>METIS is a set of serial programs for partitioning graphs, partitioning finite element meshes, and producing fill reducing orderings for sparse matrices. The algorithms implemented in METIS are based on the multilevel recursive-bisection, multilevel k-way, and multi-constraint partitioning schemes.</td>
</tr>
<tr>
<td>mfem</td>
<td>4.3.0_gcc-9.4.0</td>
<td>Free, lightweight, scalable C++ library for finite element methods.</td>
</tr>
<tr>
<td>mklfontdeled</td>
<td>1.0.7_gcc-9.4.0</td>
<td>mklfontdeled creates the fonts.dir files needed by the legacy X server core font system. The current implementation is a simple wrapper script around the mklfontscale program, which must be built and installed first.</td>
</tr>
<tr>
<td>mklfontscale</td>
<td>1.1.2_gcc-9.4.0</td>
<td>mklfontscale creates the fonts.scale and fonts.dir index files used by the legacy X11 font system.</td>
</tr>
<tr>
<td>mono</td>
<td>6.12.0.122_gcc-9.4.0</td>
<td>Mono is a software platform designed to allow developers to easily create cross platform applications. It is an open source implementation of Microsoft’s .NET Framework based on the ECMA standards for C# and the Common Language Runtime.</td>
</tr>
<tr>
<td>motioncor2</td>
<td>1.4.7_gcc-9.4.0</td>
<td>MotionCor2 is a multi-GPU program that corrects beam-induced sample motion recorded on dose fractionated movie stacks. It implements a robust iterative alignment algorithm that delivers precise measurement and correction of both global and non-uniform local motions at single pixel level, suitable for both single-particle and tomographic images. MotionCor2 is sufficiently fast to keep up with automated data collection.</td>
</tr>
<tr>
<td>mpg</td>
<td>1.2.1_gcc-9.4.0</td>
<td>Gnu Mpc is a C library for the arithmetic of complex numbers with arbitrarily high precision and correct rounding of the result.</td>
</tr>
<tr>
<td>mpi</td>
<td>1.5.4_gcc-9.4.0</td>
<td>Library for arbitrary precision interval arithmetic based on MPFI.</td>
</tr>
<tr>
<td>mpfr</td>
<td>4.1.0_gcc-9.4.0</td>
<td>The MPFR library is a C library for multiple-precision floating-point computations with correct rounding.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Compiler</td>
</tr>
<tr>
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</tr>
<tr>
<td>mumax</td>
<td>3.10</td>
<td>gcc</td>
</tr>
<tr>
<td>mumps</td>
<td>5.4.0</td>
<td>gcc</td>
</tr>
<tr>
<td>muparser</td>
<td>2.2.6.1</td>
<td>gcc</td>
</tr>
<tr>
<td>mysql++</td>
<td>2.11.0</td>
<td>gcc</td>
</tr>
<tr>
<td>nasm</td>
<td>2.15.0</td>
<td>gcc</td>
</tr>
<tr>
<td>ncbi-rmblastn</td>
<td>2.11.0</td>
<td>gcc</td>
</tr>
<tr>
<td>nco</td>
<td>2.11.4</td>
<td>gcc</td>
</tr>
<tr>
<td>ncurses</td>
<td>6.6.2</td>
<td>gcc</td>
</tr>
<tr>
<td>nco-5.0.1</td>
<td>gcc</td>
<td>9.4.0 default</td>
</tr>
<tr>
<td>ncurses-6.2</td>
<td>gcc</td>
<td>9.4.0, intel 2021.5.0 default</td>
</tr>
<tr>
<td>ncview</td>
<td>2.1.8</td>
<td>gcc</td>
</tr>
<tr>
<td>netcdf-4.8.1</td>
<td>gcc</td>
<td>9.4.0, hdf5110 default</td>
</tr>
<tr>
<td>netcdf-4.3.1</td>
<td>gcc</td>
<td>9.4.0, intel 2021.5.0 default</td>
</tr>
<tr>
<td>netcdf-fortran-4.5.3</td>
<td>gcc</td>
<td>9.4.0, hdf5110 default</td>
</tr>
<tr>
<td>netlib-scalapack</td>
<td>2.1.0</td>
<td>gcc</td>
</tr>
<tr>
<td>netlink</td>
<td>3.4.1</td>
<td>gcc</td>
</tr>
<tr>
<td>nextflow</td>
<td>21.10.6</td>
<td>gcc</td>
</tr>
<tr>
<td>nghttp2</td>
<td>1.44.0</td>
<td>gcc</td>
</tr>
<tr>
<td>ngmerge</td>
<td>0.3</td>
<td>gcc</td>
</tr>
<tr>
<td>nlohmann- json</td>
<td>3.10.5</td>
<td>gcc</td>
</tr>
<tr>
<td>Package Name</td>
<td>Version</td>
<td>Compiler</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>nlopt</td>
<td>2.7.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>numactl</td>
<td>2.0.14_gcc-9.4.0</td>
<td>default</td>
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<tr>
<td>ocaml</td>
<td>4.13.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave</td>
<td>6.4.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-arduino</td>
<td>0.2.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-control</td>
<td>3.2.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-gs</td>
<td>2.1.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-instrctrl</td>
<td>0.3.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-io</td>
<td>2.6.3_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-signal</td>
<td>1.4.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-splines</td>
<td>1.3.3_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-statistics</td>
<td>1.4.2_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>octave-symbolic</td>
<td>2.9.0_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>oniguruma</td>
<td>6.9.4_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openbabel</td>
<td>11.2.206_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openexr</td>
<td>2.3.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openjpeg</td>
<td>8_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>opencv</td>
<td>4.5.4_gcc-9.4.0</td>
<td>default</td>
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<tr>
<td>openfoam</td>
<td>2.3.0_gcc-9.4.0</td>
<td>default</td>
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<tr>
<td>openfoam-ctrl</td>
<td>8_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openj Geb</td>
<td>11.0.12_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openjpeg</td>
<td>2.3.1_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>openlibm</td>
<td>0.7.5_gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>openmp</td>
<td>4.1.2_gcc-9.4.0</td>
<td>An open source Message Passing Interface implementation.</td>
</tr>
<tr>
<td>openscenegraph</td>
<td>3.6.5_gcc-9.4.0</td>
<td>OpenSceneGraph is an open source, high-performance 3D graphics toolkit that's used in a variety of visual simulation applications.</td>
</tr>
<tr>
<td>openssh</td>
<td>8.1p1_gcc-9.4.0</td>
<td>OpenSSH is the premier connectivity tool for remote login with the SSH protocol. It encrypts all traffic to eliminate eavesdropping, connection hijacking, and other attacks. In addition, OpenSSH provides a large suite of secure tunneling capabilities, several authentication methods, and sophisticated configuration options.</td>
</tr>
<tr>
<td>openssh</td>
<td>1.11m_gcc-9.4.0</td>
<td>OpenSSL is an open source project that provides a robust, commercial-grade, and full-featured toolkit for the Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols. It is also a general purpose cryptography library.</td>
</tr>
<tr>
<td>opium</td>
<td>4.1_gcc-9.4.0</td>
<td>DFT pseudopotential generation project.</td>
</tr>
<tr>
<td>opus</td>
<td>13.1_gcc-9.4.0</td>
<td>Opus is a totally open, royalty-free, highly versatile audio codec.</td>
</tr>
<tr>
<td>oracle-instant-client</td>
<td>21.1.0.0.0_gcc-9.4.0</td>
<td>Oracle instant client.</td>
</tr>
<tr>
<td>p7zip</td>
<td>16.02_gcc-9.4.0</td>
<td>A Unix port of the 7z file archiver.</td>
</tr>
<tr>
<td>pandoc</td>
<td>2.14.0.3_gcc-9.4.0</td>
<td>If you need to convert files from one markup format into another, pandoc is your swiss-army knife.</td>
</tr>
<tr>
<td>pango</td>
<td>1.42.0_gcc-9.4.0</td>
<td>Pango is a library for laying out and rendering of text, with an emphasis on internationalization. It can be used anywhere that text layout is needed, though most of the work on Pango so far has been done in the context of the GTK+ widget toolkit.</td>
</tr>
<tr>
<td>papi</td>
<td>6.0.0.1_gcc-9.4.0</td>
<td>PAPI provides the tool designer and application engineer with a consistent interface and methodology for use of the performance counter hardware found in most major microprocessors. PAPI enables software engineers to see, in near real time, the relation between software performance and processor events. In addition, Component PAPI provides access to a collection of components that expose performance measurement opportunities across the hardware and software stack.</td>
</tr>
<tr>
<td>parallel-netcdf</td>
<td>1.12.2_gcc-9.4.0</td>
<td>PnetCDF (Parallel netCDF) is a high-performance parallel I/O library for accessing files in format compatibility with Unidata's NetCDF, specifically the formats of CDF-1, 2, and 5.</td>
</tr>
<tr>
<td>parmetis</td>
<td>4.0.3_gcc-9.4.0</td>
<td>ParMETIS is an MPI-based parallel library that implements a variety of algorithms for partitioning unstructured graphs, meshes, and for computing fill-reducing orderings of sparse matrices.</td>
</tr>
<tr>
<td>patchelf</td>
<td>0.14.1_gcc-9.4.0</td>
<td>PatchELF is a small utility to modify the dynamic linker and RPATH of ELF executables.</td>
</tr>
<tr>
<td>pcrc</td>
<td>8.45_gcc-9.4.0</td>
<td>The PCRE package contains Perl Compatible Regular Expression libraries. These are useful for implementing regular expression pattern matching using the same syntax and semantics as Perl 5.</td>
</tr>
<tr>
<td>pcree2</td>
<td>10.39_gcc-9.4.0</td>
<td>The PCRE2 package contains Perl Compatible Regular Expression libraries. These are useful for implementing regular expression pattern matching using the same syntax and semantics as Perl 5.</td>
</tr>
<tr>
<td>perl</td>
<td>5.34.0_gcc-9.4.0</td>
<td>Perl 5 is a highly capable, feature-rich programming language with over 27 years of development.</td>
</tr>
<tr>
<td>perl-acme-damn</td>
<td>0.08_gcc-9.4.0</td>
<td>Acme::Damn provides a single routine, damn(), which takes a blessed reference (a Perl object), and unblesses it, to return the original reference.</td>
</tr>
<tr>
<td>perl-algorithm-diff</td>
<td>1.1903_gcc-9.4.0</td>
<td>Compute 'intelligent' differences between two files / lists</td>
</tr>
<tr>
<td>perl-alien-base</td>
<td>1.86_gcc-9.4.0</td>
<td>This module provides tools for building external (non-CPAN) dependencies for CPAN. It is mainly designed to be used at install time of a CPAN client, and work closely with Alien::Base which is used at runtime.</td>
</tr>
<tr>
<td>perl-alien-libxml2</td>
<td>0.10_01_gcc-9.4.0</td>
<td>This module provides libxml2 for other modules to use.</td>
</tr>
<tr>
<td>perl-bioperl</td>
<td>1.7.6_gcc-9.4.0</td>
<td>BioPerl is the product of a community effort to produce Perl code which is useful in biology. Examples include Sequence objects, Alignment objects and database searching objects. These objects not only do what they are advertised to do in the documentation, but they also interact. Alignment objects are made from the Sequence objects, Sequence objects have access to Annotation and SeqFeature objects and databases. Blast objects can be converted to Alignment objects, and on so. This means that the objects provide a coordinated and extensible framework to do computational biology.</td>
</tr>
<tr>
<td>Module</td>
<td>Version</td>
<td>Dependencies</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td>perl-bit-vector</td>
<td>7.4_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-capture-tiny</td>
<td>0.46_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-carp-cIar</td>
<td>6.06_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-cgi</td>
<td>4.53_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-class-data-inheritable</td>
<td>0.08_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-clone-choose</td>
<td>0.010_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-data-dump</td>
<td>2.173_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-data-stage</td>
<td>0.14_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-dbd-mysql</td>
<td>4.043_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-dbix-pg</td>
<td>3.10.0_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-dbd-sqlite</td>
<td>1.59_01_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-db-file</td>
<td>1.840_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-dev-stacktrace</td>
<td>2.02_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-devsymdump</td>
<td>2.0604_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-encode-locale</td>
<td>1.05_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-error</td>
<td>0.17028_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-exception-class</td>
<td>1.43_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-exporter-tiny</td>
<td>1.000000_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-extutils-config</td>
<td>0.008_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-extutils-helpers</td>
<td>0.026_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-extutils-installpaths</td>
<td>0.012_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-extutils-maker</td>
<td>7.24_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-fli-checklib</td>
<td>0.25_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>perl-file-chdir</td>
<td>0.1011_gcc-9.4.0 default</td>
<td></td>
</tr>
<tr>
<td>Module</td>
<td>Version</td>
<td>GCC Version</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>perl-file-copy-recursive</td>
<td>0.40</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-file-homedir</td>
<td>1.004</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-file-listing</td>
<td>6.04</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-file-shared-install</td>
<td>0.11</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-file-which</td>
<td>1.22</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-forks</td>
<td>0.36</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-graph</td>
<td>0.9704</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-hash-merge</td>
<td>0.300</td>
<td>gcc-9.4.0</td>
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<td>perl-html-parser</td>
<td>3.72</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-html-tagset</td>
<td>3.20</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-http-cookies</td>
<td>6.04</td>
<td>gcc-9.4.0</td>
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<td>perl-http-daemon</td>
<td>6.01</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-http-date</td>
<td>6.02</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-http-message</td>
<td>6.13</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-http-negotiate</td>
<td>6.01</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-inline</td>
<td>0.89</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-inline-c</td>
<td>0.78</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-io-all</td>
<td>0.87</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-io-html</td>
<td>6.01</td>
<td>gcc-9.4.0</td>
</tr>
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<td>perl-io-promp</td>
<td>0.997004</td>
<td>gcc-9.4.0</td>
</tr>
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<td>perl-io-string</td>
<td>1.08</td>
<td>gcc-9.4.0</td>
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<td>perl-io-string-private</td>
<td>2.111</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-io-ty</td>
<td>1.13</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-ipc-run</td>
<td>20180525.0</td>
<td>gcc-9.4.0</td>
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<tr>
<td>perl-libwww-perl</td>
<td>6.33</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>perl-libxml-perl</td>
<td>0.08</td>
<td>gcc-9.4.0</td>
</tr>
<tr>
<td>Name</td>
<td>Version</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>perl-list-moreutils</td>
<td>0.428_gcc-9.4.0 default</td>
<td>Provide the stuff missing in List::Util</td>
</tr>
<tr>
<td>perl-list-moreutils-xs</td>
<td>0.428_gcc-9.4.0 default</td>
<td>List::MoreUtils::XS is a backend for List::MoreUtils. Even if it’s possible (because of user wishes) to have it practically independent from List::MoreUtils, it technically depend on List::MoreUtils. Since it’s only a backend, the API is not public and can change without any warning.</td>
</tr>
<tr>
<td>perl-logger-simple</td>
<td>2.0_gcc-9.4.0 default</td>
<td>Implementation of the Simran-Log-Log and Simran-Error-Error modules</td>
</tr>
<tr>
<td>perl-lwp-mediatypes</td>
<td>6.02_gcc-9.4.0 default</td>
<td>Guess media type for a file or a URL</td>
</tr>
<tr>
<td>perl-mailtools</td>
<td>2.21_gcc-9.4.0 default</td>
<td>Perl module for handling mail</td>
</tr>
<tr>
<td>perl-mce</td>
<td>1.874_gcc-9.4.0 default</td>
<td>MCE - Many-Core Engine for Perl providing parallel processing capabilities.</td>
</tr>
<tr>
<td>perl-module-build</td>
<td>0.4224_gcc-9.4.0 default</td>
<td>Module::Build is a system for building, testing, and installing Perl modules. It is meant to be an alternative to ExtUtils::MakeMaker. Developers may alter the behavior of the module through subclassing in a much more straightforward way than with MakeMaker. It also does not require a make on your system - most of the Module::Build code is pure-perl and written in a very cross-platform way.</td>
</tr>
<tr>
<td>perl-module-build-tiny</td>
<td>0.009_gcc-9.4.0 default</td>
<td>Module::Build::Tiny - A tiny replacement for Module::Build</td>
</tr>
<tr>
<td>perl-net-http</td>
<td>6.17_gcc-9.4.0 default</td>
<td>Low-level HTTP connection (client)</td>
</tr>
<tr>
<td>perl-object-insideout</td>
<td>4.05_gcc-9.4.0 default</td>
<td>Implements inside-out objects as anonymous scalar references that are blessed into a class with the scalar containing the ID for the object (usually a sequence number).</td>
</tr>
<tr>
<td>perl-parallel-forkmanager</td>
<td>1.19_gcc-9.4.0 default</td>
<td>A simple parallel processing fork manager</td>
</tr>
<tr>
<td>perl-parse-recdescent</td>
<td>1.967015_gcc-9.4.0 default</td>
<td>Generate Recursive-Descent Parsers</td>
</tr>
<tr>
<td>perl-path-tiny</td>
<td>0.108_gcc-9.4.0 default</td>
<td>This module provides a small, fast utility for working with file paths. It is friendlier to use than File::Spec and provides easy access to functions from several other core file handling modules. It aims to be smaller and faster than many alternatives on CPAN, while helping people do many common things in consistent and less error-prone ways.</td>
</tr>
<tr>
<td>perl-ppegex</td>
<td>0.64_gcc-9.4.0 default</td>
<td>Acmeist PEG Parser Framework</td>
</tr>
<tr>
<td>perl-perl-unsafe-signal</td>
<td>0.03_gcc-9.4.0 default</td>
<td>Quoting perl581delta:</td>
</tr>
<tr>
<td>perl-readonly</td>
<td>2.05_gcc-9.4.0 default</td>
<td>Readonly - Facility for creating read-only scalars, arrays, hashes</td>
</tr>
<tr>
<td>perl-scalar-list-util</td>
<td>1.50_gcc-9.4.0 default</td>
<td>Scalar::Util - A selection of general-utility scalar subroutines</td>
</tr>
<tr>
<td>perl-scalar-util-numeric</td>
<td>0.40_gcc-9.4.0 default</td>
<td>This module exports a number of wrappers around perl’s builtin grok_number function, which returns the numeric type of its argument, or 0 if it isn’t numeric.</td>
</tr>
<tr>
<td>perl-set-scalar</td>
<td>1.29_gcc-9.4.0 default</td>
<td>Set::Scalar - basic set operations</td>
</tr>
<tr>
<td>perl-sub-uplevel</td>
<td>0.28000_gcc-9.4.0 default</td>
<td>apparently run a function in a higher stack frame</td>
</tr>
<tr>
<td>perl-sys-signal</td>
<td>0.23_gcc-9.4.0 default</td>
<td>Prior to version 5.8.0 perl implemented ‘unsafe’ signal handling. The reason it is consider unsafe, is that there is a risk that a signal will arrive, and be handled while perl is changing internal data structures. This can result in all kinds of subtle and not so subtle problems. For this reason it has always been recommended that one do as little as possible in a signal handler, and only variables that already exist be manipulated.</td>
</tr>
<tr>
<td>perl-termreadkey</td>
<td>2.38_gcc-9.4.0 default</td>
<td>Term::ReadKey is a compiled perl module dedicated to providing simple control over terminal driver modes (cbreak, raw, cooked, etc.) support for non-blocking reads, if the architecture allows, and some generalized handy functions for working with terminals. One of the main goals is to have the functions as portable as possible, so you can just plug in ‘use Term::ReadKey’ on any architecture and have a good likelihood of it working.</td>
</tr>
<tr>
<td>perl-test-deep</td>
<td>1.127_gcc-9.4.0 default</td>
<td>Extremely flexible deep comparison</td>
</tr>
<tr>
<td>perl-test-differences</td>
<td>0.64_gcc-9.4.0 default</td>
<td>Test strings and data structures and show differences if not ok</td>
</tr>
<tr>
<td>perl-test-exception</td>
<td>0.43_gcc-9.4.0 default</td>
<td>Test exception-based code</td>
</tr>
</tbody>
</table>
This module provides a way to process XML documents. It is built on top of XML::Parser.

A new XML Writer was needed to match the SAX2 effort because quite naturally no existing writer understood SAX2. My first intention had been to start unchanged. It can be useful to use this module as a base class so you don’t have to, for example, implement the characters() callback.

This module has a very simple task - to be a base class for PerlSAX drivers and filters. It’s default behaviour is to pass the input directly to the output returning any SAX parser installed on the user’s system.

This module extends the XML::Parser module by Clark Cooper. The XML::Parser module is built on top of XML::Parser::Expat, which is a lower level interface and a XML::XPath-like interface to XPath API of libxml2. The module is split into several packages which are not described in this section; unless stated otherwise, you only need to use XML::LibXML; in your programs.

This module offers a simple to process namespaced XML names (unames) from within any application that may need them. It also helps maintain a prefix to namespace URI map, and provides a number of basic checks.

XML::DOM::XPath allows you to use XML::XPath methods to query a DOM. This is often much easier than relying only on getElementsByTagName.

This is a very simple filter. One common cause of grief (and programmer error) is that XML parsers aren’t required to provide character events in one chunk. They can, but are not forced to, and most don’t. This filter does the trivial but oft-repeated task of putting all characters into a single event.

This module is an interface to libxml2, providing XML and HTML parsers with DOM, SAX and XMLReader interfaces, a large subset of DOM Layer 3 interface and a XML::XPath-like interface to XPath API of libxml2. The module is split into several packages which are not described in this section; unless stated otherwise, you only need to use XML::LibXML; in your programs.

This module offers a simple to process namespaced XML names (unames) from within any application that may need them. It also helps maintain a prefix to namespace URI map, and provides a number of basic checks.

This module provides functions to quote/dequote strings in ‘xml’-way.

This package contains regular expressions for the following XML tokens: BaseChar, Ideographic, Letter, Digit, Extender, CombiningChar, NameChar, EntityRef, CharRef, Reference, Name,NmToken, and AttValue.

XML::SAX is a SAX parser access API for Perl. It includes classes and APIs required for implementing SAX drivers, along with a factory class for returning any SAX parser installed on the user’s system.

This module has a very simple task - to be a base class for PerlSAX drivers and filters. It’s default behaviour is to pass the input directly to the output unchanged. It can be useful to use this module as a base class so you don’t have to, for example, implement the characters() callback.

XML::XPath provides a simple to process namespaced XML names (unames) from within any application that may need them. It also helps maintain a prefix to namespace URI map, and provides a number of basic checks.

This module provides a way to process XML documents. It is build on top of XML::Parser.
<table>
<thead>
<tr>
<th>Package</th>
<th>Version(s)</th>
<th>Compiler(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>perl-xml-writer</td>
<td>0.625_gcc-9.4.0 default</td>
<td></td>
<td>XML::Writer is a helper module for Perl programs that write an XML document. The module handles all escaping for attribute values and character data and constructs different types of markup, such as tags, comments, and processing instructions.</td>
</tr>
<tr>
<td>perl-xmlexpathengine</td>
<td>0.14_gcc-9.4.0 default</td>
<td></td>
<td>This module provides an XPath engine, that can be re-used by other module/classes that implement trees.</td>
</tr>
<tr>
<td>perl-yaml</td>
<td>1.27_gcc-9.4.0 default</td>
<td></td>
<td>This module has been released to CPAN as YAML::Old, and soon YAML.pm will be changed to just be a frontend interface module for all the various Perl YAML implementation modules, including YAML::Old</td>
</tr>
<tr>
<td>perl-yaml-libyaml</td>
<td>0.67_gcc-9.4.0 default</td>
<td></td>
<td>Perl YAML Serialization using XS and libyaml</td>
</tr>
<tr>
<td>petsc</td>
<td>3.16.4_gcc-9.4.0 3.16.4_intel-2021.5.0 default</td>
<td></td>
<td>PETSc is a suite of data structures and routines for the scalable (parallel) solution of scientific applications modeled by partial differential equations.</td>
</tr>
<tr>
<td>pixman</td>
<td>0.40.0_gcc-9.4.0 default</td>
<td></td>
<td>The Pixman package contains a library that provides low-level pixel manipulation features such as image compositing and trapezoid rasterization.</td>
</tr>
<tr>
<td>pkgconf</td>
<td>1.8.0_gcc-9.4.0 1.8.0_intel-2021.5.0 default</td>
<td></td>
<td>pkgconf is a program which helps to configure compiler and linker flags for development frameworks. It is similar to pkg-config from freedesktop.org, providing additional functionality while also maintaining compatibility.</td>
</tr>
<tr>
<td>plumed</td>
<td>2.6.3_gcc-9.4.0 default</td>
<td></td>
<td>PLUMED is an open source library for free energy calculations in molecular systems which works together with some of the most popular molecular dynamics engines.</td>
</tr>
<tr>
<td>poppler</td>
<td>0.79.0_gcc-9.4.0 default</td>
<td></td>
<td>Poppler is a PDF rendering library based on the xpdf-3.0 code base.</td>
</tr>
<tr>
<td>poppler-data</td>
<td>0.4.9_gcc-9.4.0 default</td>
<td></td>
<td>This package consists of encoding files for use with poppler. The encoding files are optional and poppler will automatically read them if they are present.</td>
</tr>
<tr>
<td>pop</td>
<td>1.16_gcc-9.4.0 default</td>
<td></td>
<td>The pop library parses command line options.</td>
</tr>
<tr>
<td>postgresql</td>
<td>12.2_gcc-9.4.0 14.0_gcc-9.4.0 default</td>
<td></td>
<td>PostgreSQL is a powerful, open source object-relational database system. It has more than 15 years of active development and a proven architecture that has earned it a strong reputation for reliability, data integrity, and correctness.</td>
</tr>
<tr>
<td>proj</td>
<td>5.2.0_gcc-9.4.0 8.1.0_gcc-9.4.0 default</td>
<td></td>
<td>PROJ is a generic coordinate transformation software, that transforms geospatial coordinates from one coordinate reference system (CRS) to another. This includes cartographic projections as well as geodetic transformations.</td>
</tr>
<tr>
<td>protobuf</td>
<td>3.17.3_gcc-9.4.0 3.18.0_gcc-9.4.0 default</td>
<td></td>
<td>Google's data interchange format.</td>
</tr>
<tr>
<td>psimod</td>
<td>2020-05-17_gcc-9.4.0 default</td>
<td></td>
<td>Portable 128-bit SIMD intrinsics.</td>
</tr>
<tr>
<td>pthreadpool</td>
<td>2021-04-13_gcc-9.4.0 default</td>
<td></td>
<td>pthreadpool is a portable and efficient thread pool implementation.</td>
</tr>
<tr>
<td>py-absl-py</td>
<td>0.13.0_gcc-9.4.0 default</td>
<td></td>
<td>This repository is a collection of Python library code for building Python applications.</td>
</tr>
<tr>
<td>py-agate</td>
<td>1.6.1_gcc-9.4.0 default</td>
<td></td>
<td>agate is a Python data analysis library that is optimized for humans instead of machines. It is an alternative to numpy and pandas that solves real-world problems with readable code.</td>
</tr>
<tr>
<td>py-agate-dbf</td>
<td>0.2.1_gcc-9.4.0 default</td>
<td></td>
<td>agate-dbf adds read support for dbf files to agate.</td>
</tr>
<tr>
<td>py-agate-excel</td>
<td>0.2.3_gcc-9.4.0 default</td>
<td></td>
<td>agate-excel adds read support for Excel files (xls and xlsx) to agate.</td>
</tr>
<tr>
<td>py-agate-sql</td>
<td>0.5.4_gcc-9.4.0 default</td>
<td></td>
<td>agate-sql adds SQL read/write support to agate.</td>
</tr>
<tr>
<td>py-alabaster</td>
<td>0.7.12_gcc-9.4.0 default</td>
<td></td>
<td>Alabaster is a visually (c)lean, responsive, configurable theme for the Sphinx documentation system.</td>
</tr>
<tr>
<td>py-anyio</td>
<td>3.5.0_gcc-9.4.0 default</td>
<td></td>
<td>High level compatibility layer for multiple asynchronous event loop implementations.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Python</td>
<td>Default</td>
</tr>
<tr>
<td>-----------------</td>
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<td>---------</td>
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<tr>
<td>py-appdirs</td>
<td>1.4.4</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-argon2-clib</td>
<td>21.3.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-argon2-cffi-bindings</td>
<td>21.2.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-arviz</td>
<td>3.21.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-asttokens</td>
<td>2.0.5</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-astunparse</td>
<td>1.6.3</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-attrs</td>
<td>21.4.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-audiofile</td>
<td>2.1.8</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-automaton</td>
<td>20.2.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-auxlib</td>
<td>0.0.43</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-awkward0</td>
<td>0.15.5</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-babel</td>
<td>2.9.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-backcall</td>
<td>0.2.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-backports-entry-points-selectable</td>
<td>1.1.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-backports-weakref</td>
<td>1.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-beautifulsoup</td>
<td>4.10.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-beverage</td>
<td>0.4.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-biopython</td>
<td>1.79</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-bitarray</td>
<td>0.8.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-black</td>
<td>22.1.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-bleach</td>
<td>4.1.0</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-blinker</td>
<td>1.4.1</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>py-boto</td>
<td>1.18.12</td>
<td>gcc-9.4</td>
<td>default</td>
</tr>
<tr>
<td>Package</td>
<td>Version/Commit</td>
<td>Install Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>py-bottleneck</td>
<td>1.3.2_gcc-9.4.0</td>
<td>default</td>
<td>A collection of fast NumPy array functions written in Cython.</td>
</tr>
<tr>
<td>py-bx-python</td>
<td>0.8.8_gcc-9.4.0</td>
<td>default</td>
<td>The bx-python project is a python library and associated set of scripts to allow for rapid implementation of genome scale analyses.</td>
</tr>
<tr>
<td>py-cachetools</td>
<td>4.2.4_gcc-9.4.0</td>
<td>default</td>
<td>This module provides various memoizing collections and decorators, including variants of the Python 3 Standard Library @lru_cache function decorator.</td>
</tr>
<tr>
<td>py-certifi</td>
<td>2021.10.8_gcc-9.4.0</td>
<td>default</td>
<td>Certifi: A carefully curated collection of Root Certificates for validating the trustworthiness of SSL certificates while verifying the identity of TLS hosts.</td>
</tr>
<tr>
<td>py-cffi</td>
<td>1.15.0_gcc-9.4.0</td>
<td>default</td>
<td>Foreign Function Interface for Python calling C code</td>
</tr>
<tr>
<td>py-cftime</td>
<td>1.0.3_gcc-9.4.0</td>
<td>default</td>
<td>Python library for decoding time units and variable values in a netCDF file conforming to the Climate and Forecasting (CF) netCDF conventions</td>
</tr>
<tr>
<td>py-charset-normalizer</td>
<td>2.0.12_gcc-9.4.0</td>
<td>default</td>
<td>The Real First Universal Charset Detector. Open, modern and actively maintained alternative to Chardet.</td>
</tr>
<tr>
<td>py-click</td>
<td>8.0.3_gcc-9.4.0</td>
<td>default</td>
<td>Python composable command line interface toolkit.</td>
</tr>
<tr>
<td>py-colorama</td>
<td>0.4.4_gcc-9.4.0</td>
<td>default</td>
<td>Cross-platform colored terminal text.</td>
</tr>
<tr>
<td>py-colors</td>
<td>1.4.2_gcc-9.4.0</td>
<td>default</td>
<td>Simple library for color and formatting to terminal</td>
</tr>
<tr>
<td>py-configargpar se</td>
<td>1.2.3_gcc-9.4.0</td>
<td>default</td>
<td>Applications with more than a handful of user-settable options are best configured through a combination of command line args, config files, hard-coded defaults, and in some cases, environment variables.</td>
</tr>
<tr>
<td>py-connectionp ool</td>
<td>0.0.3_gcc-9.4.0</td>
<td>default</td>
<td>Thread-safe connection pool for python.</td>
</tr>
<tr>
<td>py-constantly</td>
<td>0.3.5_gcc-9.4.0</td>
<td>default</td>
<td>Symbolic constants in Python</td>
</tr>
<tr>
<td>py-cppy</td>
<td>1.1.0_gcc-9.4.0</td>
<td>default</td>
<td>C++ headers for C extension development</td>
</tr>
<tr>
<td>py-cryptography</td>
<td>36.0.1_gcc-9.4.0</td>
<td>default</td>
<td>cryptography is a package which provides cryptographic recipes and primitives to Python developers</td>
</tr>
<tr>
<td>py-csvkit</td>
<td>1.0.4_gcc-9.4.0</td>
<td>default</td>
<td>A library of utilities for working with CSV, the king of tabular file formats</td>
</tr>
<tr>
<td>py-cutadapt</td>
<td>2.10_gcc-9.4.0</td>
<td>default</td>
<td>Cutadapt finds and removes adapter sequences, primers, poly-A tails and other types of unwanted sequence from your high-throughput sequencing reads.</td>
</tr>
<tr>
<td>py-cycle</td>
<td>0.11.0_gcc-9.4.0</td>
<td>default</td>
<td>Composable style cycles.</td>
</tr>
<tr>
<td>py-cython</td>
<td>0.29.24_gcc-9.4.0</td>
<td>default</td>
<td>The Cython compiler for writing C extensions for the Python language.</td>
</tr>
<tr>
<td>py-datare</td>
<td>0.8.2_gcc-9.4.0</td>
<td>default</td>
<td>Super-fast, efficiently stored Trie for Python (2.x and 3.x). Uses libdatrie.</td>
</tr>
<tr>
<td>py-dbftools</td>
<td>2.0.7_gcc-9.4.0</td>
<td>default</td>
<td>DBF is a file format used by databases such dBase, Visual FoxPro, and FoxBase+. This library reads DBF files and returns the data as native Python data types for further processing. It is primarily intended for batch jobs and one-off scripts.</td>
</tr>
<tr>
<td>py-debugpy</td>
<td>1.5.1_gcc-9.4.0</td>
<td>default</td>
<td>An implementation of the Debug Adapter Protocol for Python.</td>
</tr>
<tr>
<td>py-decorator</td>
<td>4.4.2_gcc-9.4.0</td>
<td>default</td>
<td>The aim of the decorator module is to simplify the usage of decorators for the average programmer, and to popularize decorators by showing various non-trivial examples.</td>
</tr>
<tr>
<td>py-defusedxml</td>
<td>0.7.1_gcc-9.4.0</td>
<td>default</td>
<td>defusing XML bombs and other exploits</td>
</tr>
<tr>
<td>py-deprecation</td>
<td>2.1.0_gcc-9.4.0</td>
<td>default</td>
<td>The deprecation library provides a deprecated decorator and a fail_if_not_removed decorator for your tests.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Default</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>py-distlib</td>
<td>0.3.4_gcc-9.4.0</td>
<td>default</td>
<td>Distribution utilities</td>
</tr>
<tr>
<td>py-distro</td>
<td>1.6.0_gcc-9.4.0</td>
<td>default</td>
<td>Distro - an OS platform information API.</td>
</tr>
<tr>
<td>py-dnai</td>
<td>0.4.2_gcc-9.4.0</td>
<td>default</td>
<td>Read and write FASTQ and FASTA</td>
</tr>
<tr>
<td>py-docopt</td>
<td>0.6.2_gcc-9.4.0</td>
<td>default</td>
<td>Command-line interface description language.</td>
</tr>
<tr>
<td>py-docutils</td>
<td>0.17.1_gcc-9.4.0</td>
<td>default</td>
<td>Docutils is an open-source text processing system for processing plaintext documentation into useful formats, such as HTML, LaTeX, man-pages, OpenDocument or XML. It includes reStructuredText, the easy to read, easy to use, what-you-see-is-what-you-get plaintext markup language.</td>
</tr>
<tr>
<td>py-entrypoints</td>
<td>0.4_gcc-9.4.0</td>
<td>default</td>
<td>Discover and load entry points from installed packages.</td>
</tr>
<tr>
<td>py-et-xmlfile</td>
<td>1.0.1_gcc-9.4.0</td>
<td>default</td>
<td>An implementation of lxml.etree for the standard library.</td>
</tr>
<tr>
<td>py-executing</td>
<td>0.8.2_gcc-9.4.0</td>
<td>default</td>
<td>Get the currently executing AST node of a frame, and other information.</td>
</tr>
<tr>
<td>py-filelock</td>
<td>3.5.0_gcc-9.4.0</td>
<td>default</td>
<td>A platform-independent file lock for Python.</td>
</tr>
<tr>
<td>py-fisher</td>
<td>0.1.9_gcc-9.4.0</td>
<td>default</td>
<td>Fisher's Exact Test.</td>
</tr>
<tr>
<td>py-flake8</td>
<td>2.0.2_gcc-9.4.0</td>
<td>default</td>
<td>A simple framework for building complex web applications.</td>
</tr>
<tr>
<td>py-flit</td>
<td>3.6.0_gcc-9.4.0</td>
<td>default</td>
<td>Flit is a simple way to put Python packages and modules on PyPI.</td>
</tr>
<tr>
<td>py-flit-core</td>
<td>3.2.0_gcc-9.4.0</td>
<td>default</td>
<td>Distribution-building parts of Flit.</td>
</tr>
<tr>
<td>py-fonttools</td>
<td>4.29.1_gcc-9.4.0</td>
<td>default</td>
<td>fontTools is a library for manipulating fonts, written in Python.</td>
</tr>
<tr>
<td>py-future</td>
<td>0.18.2_gcc-9.4.0</td>
<td>default</td>
<td>Clean single-source support for Python 3 and 2</td>
</tr>
<tr>
<td>py-gast</td>
<td>0.4.0_gcc-9.4.0</td>
<td>default</td>
<td>Python AST that abstracts the underlying Python version</td>
</tr>
<tr>
<td>py-gevent</td>
<td>21.12.0_gcc-9.4.0</td>
<td>default</td>
<td>gevent is a coroutine-based Python networking library.</td>
</tr>
<tr>
<td>py-gitdb</td>
<td>4.0.9_gcc-9.4.0</td>
<td>default</td>
<td>The GitDB project implements interfaces to allow read and write access to git repositories.</td>
</tr>
<tr>
<td>py-gitpython</td>
<td>3.1.24_gcc-9.4.0</td>
<td>default</td>
<td>GitPython is a python library used to interact with Git repositories.</td>
</tr>
<tr>
<td>py-google-auth</td>
<td>2.3.2_gcc-9.4.0</td>
<td>default</td>
<td>This library simplifies using Google's various server-to-server authentication mechanisms to access Google APIs.</td>
</tr>
<tr>
<td>py-google-auth-oauthlib</td>
<td>0.4.6_gcc-9.4.0</td>
<td>default</td>
<td>This library provides oauthlib integration with google-auth.</td>
</tr>
<tr>
<td>py-gpytorch</td>
<td>1.2.1_gcc-9.4.0</td>
<td>default</td>
<td>GPyTorch is a Gaussian process library implemented using PyTorch. GPyTorch is designed for creating scalable, flexible, and modular Gaussian process models with ease.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Python</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>py-graphviz</td>
<td>0.13.2_gcc-9.4.0 default</td>
<td>Simple Python interface for Graphviz</td>
<td></td>
</tr>
<tr>
<td>py-greenlet</td>
<td>1.1.2_gcc-9.4.0 default</td>
<td>Lightweight in-process concurrent programming</td>
<td></td>
</tr>
<tr>
<td>py-grpcio</td>
<td>1.43.0_gcc-9.4.0 default</td>
<td>HTTP/2-based RPC framework</td>
<td></td>
</tr>
<tr>
<td>py-h5py</td>
<td>3.6.0_gcc-9.4.0 default</td>
<td>The h5py package provides both a high- and low-level interface to the HDFS library from Python.</td>
<td></td>
</tr>
<tr>
<td>py-html5lib</td>
<td>1.1_gcc-9.4.0 default</td>
<td>HTML parser based on the WHATWG HTML specification.</td>
<td></td>
</tr>
<tr>
<td>py-htsqg</td>
<td>0.11.2_gcc-9.4.0 default</td>
<td>HTSeq is a Python package that provides infrastructure to process data from high-throughput sequencing assays.</td>
<td></td>
</tr>
<tr>
<td>py-hyperlink</td>
<td>21.0.0_gcc-9.4.0 default</td>
<td>A featureful, immutable, and correct URL for Python.</td>
<td></td>
</tr>
<tr>
<td>py-hypothesis</td>
<td>6.23.1_gcc-9.4.0 default</td>
<td>A library for property based testing.</td>
<td></td>
</tr>
<tr>
<td>py-idna</td>
<td>3.3_gcc-9.4.0 default</td>
<td>Internationalized Domain Names for Python (iDNA 2008 and UTS #46)</td>
<td></td>
</tr>
<tr>
<td>py-imageio</td>
<td>2.16.0_gcc-9.4.0 default</td>
<td>Python library for reading and writing image data.</td>
<td></td>
</tr>
<tr>
<td>py-imageio-ffmpeg</td>
<td>0.4.5_gcc-9.4.0 default</td>
<td>The purpose of this project is to provide a simple and reliable ffmpeg wrapper for working with video files. It implements two simple generator functions for reading and writing data from/to ffmpeg, which reliably terminate the ffmpeg process when done. It also takes care of publishing platform-specific wheels that include the binary ffmpeg executables.</td>
<td></td>
</tr>
<tr>
<td>py-imagesize</td>
<td>1.3.0_gcc-9.4.0 default</td>
<td>Parses image file headers and returns image size. Supports PNG, JPEG, JPEG2000, and GIF image file formats.</td>
<td></td>
</tr>
<tr>
<td>py-importlib-metadata</td>
<td>4.11.1_gcc-9.4.0 default</td>
<td>Read metadata from Python packages.</td>
<td></td>
</tr>
<tr>
<td>py-incremental</td>
<td>21.3.0_gcc-9.4.0 default</td>
<td>A small library that versions your Python projects.</td>
<td></td>
</tr>
<tr>
<td>py-iniconfig</td>
<td>1.1.1_gcc-9.4.0 default</td>
<td>iniconfig: brain-dead simple parsing of ini files</td>
<td></td>
</tr>
<tr>
<td>py-ipykernel</td>
<td>6.9.1_gcc-9.4.0 default</td>
<td>IPython Kernel for Jupyter</td>
<td></td>
</tr>
<tr>
<td>py-ipython</td>
<td>8.0.1_gcc-9.4.0 default</td>
<td>IPython provides a rich toolkit to help you make the most out of using Python interactively.</td>
<td></td>
</tr>
<tr>
<td>py-ipython-genutils</td>
<td>0.2.0_gcc-9.4.0 default</td>
<td>Vestigial utilities from IPython</td>
<td></td>
</tr>
<tr>
<td>py-ipywidgets</td>
<td>7.6.5_gcc-9.4.0 default</td>
<td>IPython widgets for the Jupyter Notebook</td>
<td></td>
</tr>
<tr>
<td>py-isodate</td>
<td>0.6.1_gcc-9.4.0 default</td>
<td>This module implements ISO 8601 date, time and duration parsing. The implementation follows ISO8601:2004 standard, and implements only date/time representations mentioned in the standard. If something is not mentioned there, then it is treated as non existent, and not as an allowed option.</td>
<td></td>
</tr>
<tr>
<td>py-iterative</td>
<td>5.1.2_gcc-9.4.0 default</td>
<td>ITK is an open-source toolkit for multidimensional image analysis</td>
<td></td>
</tr>
<tr>
<td>py-itdangerous</td>
<td>2.0.1_gcc-9.4.0 default</td>
<td>Various helpers to pass trusted data to untrusted environments.</td>
<td></td>
</tr>
<tr>
<td>py-jdcas</td>
<td>1.3_gcc-9.4.0 default</td>
<td>Julian dates from proleptic Gregorian and Julian calendars</td>
<td></td>
</tr>
<tr>
<td>py-jedi</td>
<td>0.18.1_gcc-9.4.0 default</td>
<td>An autocompletion tool for Python that can be used for text editors.</td>
<td></td>
</tr>
<tr>
<td>py-jinja2</td>
<td>3.0.3_gcc-9.4.0 default</td>
<td>Jinja2 is a template engine written in pure Python. It provides a Django inspired non-XML syntax but supports inline expressions and an optional sandboxed environment.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>py-jmespath</td>
<td>0.10.0_gcc-9.4.0_default</td>
<td>JSON Matching Expressions.</td>
<td></td>
</tr>
<tr>
<td>py-joblib</td>
<td>1.1.0_gcc-9.4.0_default</td>
<td>Lightweight pipelining with Python functions.</td>
<td></td>
</tr>
<tr>
<td>py-json</td>
<td>0.9.6_gcc-9.4.0_default</td>
<td>The JSON Data Interchange Format (JSON) is a superset of JSON that aims to alleviate some of the limitations of JSON by expanding its syntax to include some productions from ECMAScript 5.1.</td>
<td></td>
</tr>
<tr>
<td>py-jsonschema</td>
<td>4.4.0_gcc-9.4.0_default</td>
<td>JSONschema: An(other) implementation of JSON Schema for Python.</td>
<td></td>
</tr>
<tr>
<td>py-jupyter</td>
<td>1.0.0_gcc-9.4.0_default</td>
<td>Jupyter metapackage. Install all the Jupyter components in one go.</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-client</td>
<td>7.1.2_gcc-9.4.0_default</td>
<td>Jupyter protocol client APIs</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-console</td>
<td>6.4.0_gcc-9.4.0_default</td>
<td>Jupyter Terminal Console</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-core</td>
<td>4.9.2_gcc-9.4.0_default</td>
<td>Core Jupyter functionality</td>
<td></td>
</tr>
<tr>
<td>py-jupyterlab</td>
<td>3.2.9_gcc-9.4.0_default</td>
<td>JupyterLab is the next-generation web-based user interface for Project Jupyter.</td>
<td></td>
</tr>
<tr>
<td>py-jupyterlab-pygments</td>
<td>0.1.2_gcc-9.4.0_default</td>
<td>Pygments theme using JupyterLab CSS variables.</td>
<td></td>
</tr>
<tr>
<td>py-jupyterlab-server</td>
<td>2.10.3_gcc-9.4.0_default</td>
<td>A set of server components for JupyterLab and JupyterLab like applications</td>
<td></td>
</tr>
<tr>
<td>py-jupyterlab-widgets</td>
<td>1.0.2_gcc-9.4.0_default</td>
<td>A JupyterLab extension.</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-packaging11</td>
<td>0.11.1_gcc-9.4.0_default</td>
<td>Jupyter Packaging Utilities, version 11.</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-packaging7</td>
<td>0.7.12_gcc-9.4.0_default</td>
<td>Jupyter Packaging Utilities, version 7.</td>
<td></td>
</tr>
<tr>
<td>py-jupyter-server</td>
<td>1.13.5_gcc-9.4.0_default</td>
<td>The Jupyter Server provides the backend (i.e. the core services, APIs, and REST endpoints) for Jupyter web applications like Jupyter notebook, JupyterLab, and Voila.</td>
<td></td>
</tr>
<tr>
<td>py-keras</td>
<td>2.7.0_gcc-9.4.0_default</td>
<td>Deep Learning library for Python. Convnets, recurrent neural networks, and more. Runs on Theano or TensorFlow.</td>
<td></td>
</tr>
<tr>
<td>py-keras-preprocessing</td>
<td>1.1.2_gcc-9.4.0_default</td>
<td>Utilities for working with image data, text data, and sequence data.</td>
<td></td>
</tr>
<tr>
<td>py-kiwisolver</td>
<td>1.3.2_gcc-9.4.0_default</td>
<td>A fast implementation of the Cassowary constraint solver</td>
<td></td>
</tr>
<tr>
<td>py-leather</td>
<td>0.3.3_gcc-9.4.0_default</td>
<td>Leather is the Python charting library for those who need charts now and don’t care if they’re perfect.</td>
<td></td>
</tr>
<tr>
<td>py-libclang</td>
<td>11.1.0_gcc-9.4.0_default</td>
<td>The repository contains code that taken from the LLVM project, to make it easier to install clang’s python bindings.</td>
<td></td>
</tr>
<tr>
<td>py-librosa</td>
<td>0.7.2_gcc-9.4.0_default</td>
<td>A python package for music and audio analysis.</td>
<td></td>
</tr>
<tr>
<td>py-livnite</td>
<td>0.38.0_gcc-9.4.0_default</td>
<td>A lightweight LLVM python binding for writing JIT compilers</td>
<td></td>
</tr>
<tr>
<td>py-lz4</td>
<td>3.1.3_gcc-9.4.0_default</td>
<td>lz4 (compression library) bindings for Python</td>
<td></td>
</tr>
<tr>
<td>py-m2r</td>
<td>0.2.1_gcc-9.4.0_default</td>
<td>M2R converts a markdown file including reStructuredText (rst) markups to a valid rst format.</td>
<td></td>
</tr>
<tr>
<td>py-mako</td>
<td>1.1.6_gcc-9.4.0_default</td>
<td>A super-fast templating language that borrows the best ideas from the existing templating languages.</td>
<td></td>
</tr>
<tr>
<td>py-markdown</td>
<td>3.3.4_gcc-9.4.0_default</td>
<td>This is a Python implementation of John Gruber’s Markdown. It is almost completely compliant with the reference implementation, though there are a few very minor differences. See John’s Syntax Documentation for the syntax rules.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Dependencies</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>MarkupSafe</td>
<td>2.0.1_gcc-9.4.0 default</td>
<td>MarkupSafe is a library for Python that implements a unicode string that is aware of HTML escaping rules and can be used to implement automatic string escaping. It is used by Jinja 2, the Mako templating engine, the Pylons web framework and many more.</td>
<td></td>
</tr>
<tr>
<td>Matplotlib</td>
<td>3.5.1_gcc-9.4.0 default</td>
<td>Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python.</td>
<td></td>
</tr>
<tr>
<td>Inline Matplotlib</td>
<td>0.1.3_gcc-9.4.0 default</td>
<td>Inline Matplotlib backend for Jupyter.</td>
<td></td>
</tr>
<tr>
<td>MISOSy</td>
<td>0.5.4_gcc-9.4.0 default</td>
<td>MISOSy (Mixture of Isoforms) is a probabilistic framework that quantitates the expression level of alternatively spliced genes from RNA-Seq data, and identifies differentially regulated isoforms or exons across samples.</td>
<td></td>
</tr>
<tr>
<td>Mistune</td>
<td>0.8.4_gcc-9.4.0 default</td>
<td>A sane Markdown parser with useful plugins and renderers.</td>
<td></td>
</tr>
<tr>
<td>Mock</td>
<td>4.0.3_gcc-9.4.0 default</td>
<td>mock is a library for testing in Python. It allows you to replace parts of your system under test with mock objects and make assertions about how they have been used.</td>
<td></td>
</tr>
<tr>
<td>MoviePy</td>
<td>1.0.3_gcc-9.4.0 default</td>
<td>MoviePy is a Python module for video editing, which can be used for basic operations (like cuts, concatenations, title insertions), video compositing (a.k.a. non-linear editing), video processing, or to create advanced effects. It can read and write the most common video formats, including GIF.</td>
<td></td>
</tr>
<tr>
<td>MPI4Py</td>
<td>3.1.2_gcc-9.4.0 default</td>
<td>This package provides Python bindings for the Message Passing Interface (MPI) standard. It is implemented on top of the MPI-1/MPI-2 specification and exposes an API which grounds on the standard MPI-2 C++ bindings.</td>
<td></td>
</tr>
<tr>
<td>Mpmath</td>
<td>1.2.1_gcc-9.4.0 default</td>
<td>A Python library for arbitrary-precision floating-point arithmetic.</td>
<td></td>
</tr>
<tr>
<td>MyPy Extensions</td>
<td>0.4.3_gcc-9.4.0 default</td>
<td>Experimental type system extensions for programs checked with the mypy typechecker.</td>
<td></td>
</tr>
<tr>
<td>Nbclassic</td>
<td>0.3.5_gcc-9.4.0 default</td>
<td>Jupyter Notebook as a Jupyter Server Extension.</td>
<td></td>
</tr>
<tr>
<td>Nbclient</td>
<td>0.5.5_gcc-9.4.0 default</td>
<td>A client library for executing notebooks.</td>
<td></td>
</tr>
<tr>
<td>Nbconvert</td>
<td>6.4.2_gcc-9.4.0 default</td>
<td>Jupyter Notebook Conversion</td>
<td></td>
</tr>
<tr>
<td>Nbformat</td>
<td>5.1.3_gcc-9.4.0 default</td>
<td>The Jupyter Notebook format</td>
<td></td>
</tr>
<tr>
<td>Nest-asyncio</td>
<td>1.5.4_gcc-9.4.0 default</td>
<td>Patch asyncio to allow nested event loops.</td>
<td></td>
</tr>
<tr>
<td>NetCDF4</td>
<td>1.5.3_gcc-9.4.0 default</td>
<td>Python interface to the netCDF Library.</td>
<td></td>
</tr>
<tr>
<td>NetworkX</td>
<td>2.6.3_gcc-9.4.0 default</td>
<td>NetworkX is a Python package for the creation, manipulation, and study of the structure, dynamics, and functions of complex networks.</td>
<td></td>
</tr>
<tr>
<td>Notebook</td>
<td>6.4.5_gcc-9.4.0 default</td>
<td>Jupyter Interactive Notebook</td>
<td></td>
</tr>
<tr>
<td>NumPy</td>
<td>0.55.1_gcc-9.4.0 default</td>
<td>NumPy aware dynamic Python compiler using LLVM</td>
<td></td>
</tr>
<tr>
<td>Numexpr</td>
<td>2.7.3_gcc-9.4.0 default</td>
<td>Fast numerical expression evaluator for NumPy</td>
<td></td>
</tr>
<tr>
<td>NumPy</td>
<td>1.21.5_gcc-9.4.0 default</td>
<td>NumPy is the fundamental package for scientific computing with Python. It contains among other things: a powerful N-dimensional array object, sophisticated (broadcasting) functions, tools for integrating C/C++ and Fortran code, and useful linear algebra, Fourier transform, and random number capabilities</td>
<td></td>
</tr>
<tr>
<td>NumPydoc</td>
<td>1.1.0_gcc-9.4.0 default</td>
<td>numpydoc - Numpy's Sphinx extensions</td>
<td></td>
</tr>
<tr>
<td>OAuthlib</td>
<td>3.1.0_gcc-9.4.0 default</td>
<td>A generic, spec-compliant, thorough implementation of the OAuth request-signing logic</td>
<td></td>
</tr>
<tr>
<td>OpenPyX</td>
<td>3.0.3_gcc-9.4.0 default</td>
<td>A Python library to read/write Excel 2010 xlsx/xlsm files</td>
<td></td>
</tr>
<tr>
<td>Opt-einsum</td>
<td>3.3.0_gcc-9.4.0 default</td>
<td>Optimized Einsum: A tensor contraction order optimizer.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Status</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ordereddict</td>
<td>1.1</td>
<td>default</td>
<td>A drop-in substitute for Py2.7's new collections. OrderedDict that works in Python 2.4-2.6.</td>
</tr>
<tr>
<td>packaging</td>
<td>21.3</td>
<td>default</td>
<td>Core utilities for Python packages.</td>
</tr>
<tr>
<td>pandas</td>
<td>1.4.1</td>
<td>default</td>
<td>pandas is a fast, powerful, flexible and easy to use open source data analysis and manipulation tool, built on top of the Python programming language.</td>
</tr>
<tr>
<td>pandocfilters</td>
<td>1.5.0</td>
<td>default</td>
<td>A python module for writing pandoc filters</td>
</tr>
<tr>
<td>parsedatetime</td>
<td>2.5</td>
<td>default</td>
<td>Parse human-readable date/time strings.</td>
</tr>
<tr>
<td>parso</td>
<td>0.8.2</td>
<td>default</td>
<td>Parso is a Python parser that supports error recovery and round-trip parsing for different Python versions (in multiple Python versions). Parso is also able to list multiple syntax errors in your python file.</td>
</tr>
<tr>
<td>pathspec</td>
<td>0.9.0</td>
<td>default</td>
<td>pathspec extends the test loading and running features of unittest, making it easier to write, find and run tests.</td>
</tr>
<tr>
<td>patsy</td>
<td>0.5.1</td>
<td>default</td>
<td>A Python package for describing statistical models and for building design matrices.</td>
</tr>
<tr>
<td>pexpy</td>
<td>4.8.0</td>
<td>default</td>
<td>Pexpect allows easy control of interactive console applications.</td>
</tr>
<tr>
<td>pickleshare</td>
<td>0.7.5</td>
<td>default</td>
<td>Tiny 'shelf'-like database with concurrency support</td>
</tr>
<tr>
<td>pillow</td>
<td>9.0.0</td>
<td>default</td>
<td>Pillow is a fork of the Python Imaging Library (PIL). It adds image processing capabilities to your Python interpreter. This library supports many file formats, and provides powerful image processing and graphics capabilities.</td>
</tr>
<tr>
<td>pip</td>
<td>21.3.1</td>
<td>default</td>
<td>The PyPA recommended tool for installing Python packages.</td>
</tr>
<tr>
<td>pkgconfig</td>
<td>1.5.5</td>
<td>default</td>
<td>Interface Python with pkg-config.</td>
</tr>
<tr>
<td>platformdirs</td>
<td>2.4.0</td>
<td>default</td>
<td>A small Python module for determining appropriate platform-specific dirs, e.g. a 'user data dir'</td>
</tr>
<tr>
<td>pluggy</td>
<td>1.0.0</td>
<td>default</td>
<td>Plugin and hook calling mechanisms for python.</td>
</tr>
<tr>
<td>ply</td>
<td>3.11</td>
<td>default</td>
<td>Python Lex &amp; Yacc.</td>
</tr>
<tr>
<td>poetry-core</td>
<td>1.0.7</td>
<td>default</td>
<td>Poetry PEP 517 Build Backend.</td>
</tr>
<tr>
<td>prolog</td>
<td>0.1.9</td>
<td>default</td>
<td>Prolog is a progress logging system for Python. It allows to build complex libraries while giving the user control on the management of logs, callbacks and progress bars.</td>
</tr>
<tr>
<td>prometheus-client</td>
<td>0.12.0</td>
<td>default</td>
<td>Prometheus instrumentation library for Python applications.</td>
</tr>
<tr>
<td>prompt-toolkit</td>
<td>3.0.24</td>
<td>default</td>
<td>Library for building powerful interactive command lines in Python.</td>
</tr>
<tr>
<td>protobuf</td>
<td>3.17.3</td>
<td>default</td>
<td>Protocol buffers are Google's language-neutral, platform-neutral, extensible mechanism for serializing structured data - think XML, but smaller, faster, and simpler. You define how you want your data to be structured once, then you can use special generated source code to easily write and read your structured data to and from a variety of data streams and using a variety of languages.</td>
</tr>
<tr>
<td>psutil</td>
<td>5.8.0</td>
<td>default</td>
<td>psutil is a cross-platform library for retrieving information on running processes and system utilization (CPU, memory, disks, network) in Python.</td>
</tr>
<tr>
<td>psycopg2</td>
<td>2.9.1</td>
<td>default</td>
<td>Python interface to PostgreSQL databases</td>
</tr>
<tr>
<td>pyprocess</td>
<td>0.7.0</td>
<td>default</td>
<td>Run a subprocess in a pseudo terminal</td>
</tr>
<tr>
<td>pulp</td>
<td>2.6.0</td>
<td>default</td>
<td>PuLP is an LP modeler written in Python. PuLP can generate MPS or LP files and call GLPK, COIN-OR CLP/CBC, CPLEX, GUROBI, MOSEK, XPRESS, CHOCO, MIPCL, SCIP to solve linear problems.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Dependencies</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>py-pure-eval</td>
<td>0.2.2 gcc-9.4.0 default</td>
<td></td>
<td>Safely evaluate AST nodes without side effects.</td>
</tr>
<tr>
<td>py-py</td>
<td>1.11.0 gcc-9.4.0 default</td>
<td></td>
<td>Library with cross-python path, ini-parsing, io, code, log facilities</td>
</tr>
<tr>
<td>py-pyasn1</td>
<td>0.4.8 gcc-9.4.0 default</td>
<td></td>
<td>Pure-Python implementation of ASN.1 types and DER/BER/CER codecs (X.208).</td>
</tr>
<tr>
<td>py-pyasn1-modules</td>
<td>0.2.8 gcc-9.4.0 default</td>
<td></td>
<td>A collection of ASN.1 modules expressed in form of pyasn1 classes. Includes protocols PDUs definition (SNMP, LDAP etc.) and various data structures (X.509, PKCS etc.).</td>
</tr>
<tr>
<td>py-pybigwig</td>
<td>0.3.12 gcc-9.4.0 default</td>
<td></td>
<td>A package for accessing bigWig files using libBigWig.</td>
</tr>
<tr>
<td>py-pybind11</td>
<td>2.6.2 gcc-9.4.0 default</td>
<td></td>
<td>pybind11 – Seamless operability between C++11 and Python.</td>
</tr>
<tr>
<td>py-pycifrw</td>
<td>4.4.1 gcc-9.4.0 default</td>
<td></td>
<td>Python library for interacting with Crystallographic Information Framework (CIF) files.</td>
</tr>
<tr>
<td>py-pycparser</td>
<td>2.20 gcc-9.4.0 default</td>
<td></td>
<td>A complete parser of the C language, written in pure python.</td>
</tr>
<tr>
<td>py-pydicom</td>
<td>2.1.2 gcc-9.4.0 default</td>
<td></td>
<td>Pure python package for DICOM medical file reading and writing</td>
</tr>
<tr>
<td>py-pydo</td>
<td>1.4.2 gcc-9.4.0 default</td>
<td></td>
<td>Python interface to Graphviz’s Dot language</td>
</tr>
<tr>
<td>py-pymgments</td>
<td>2.10.0 gcc-9.4.0 default</td>
<td></td>
<td>Pygments is a syntax highlighting package written in Python.</td>
</tr>
<tr>
<td>py-pygp</td>
<td>0.7.6 gcc-9.4.0 default</td>
<td></td>
<td>Python package for the libgpuarray C library.</td>
</tr>
<tr>
<td>py-pyjwt</td>
<td>2.1.0 gcc-9.4.0 default</td>
<td></td>
<td>JSON Web Token implementation in Python</td>
</tr>
<tr>
<td>py-pyjec</td>
<td>3.8 gcc-9.4.0 default</td>
<td></td>
<td>PyMC3 is a Python package for Bayesian statistical modeling and Probabilistic Machine Learning focusing on advanced Markov chain Monte Carlo (MCMC) and variational inference (VI) algorithms. Its flexibility and extensibility make it applicable to a large suite of problems.</td>
</tr>
<tr>
<td>py-pymysql</td>
<td>0.9.2 gcc-9.4.0 default</td>
<td></td>
<td>Pure-Python MySQL client library</td>
</tr>
<tr>
<td>py-pyparsing</td>
<td>3.0.6 gcc-9.4.0 default</td>
<td></td>
<td>A Python Parsing Module.</td>
</tr>
<tr>
<td>py-pyqt</td>
<td>5.13.1 gcc-9.4.0 default</td>
<td></td>
<td>PyQt is a set of Python v2 and v3 bindings for The Qt Company’s Qt application framework and runs on all platforms supported by Qt including Windows, OS X, Linux, iOS and Android. PyQt5 supports Qt v5.</td>
</tr>
<tr>
<td>py-pyrsistent</td>
<td>0.18.0 gcc-9.4.0 default</td>
<td></td>
<td>Pyrsistent is a number of persistent collections (by some referred to as functional data structures). Persistent in the sense that they are immutable.</td>
</tr>
<tr>
<td>py-pysam</td>
<td>0.18.0 gcc-9.4.0 default</td>
<td></td>
<td>A python module for reading, manipulating and writing genomic data sets.</td>
</tr>
<tr>
<td>py-pytest</td>
<td>6.2.5 gcc-9.4.0 default</td>
<td></td>
<td>pytest: simple powerful testing with Python.</td>
</tr>
<tr>
<td>py-pytest-runner</td>
<td>5.3.1 gcc-9.4.0 default</td>
<td></td>
<td>Invoke py.test as distutils command with dependency resolution.</td>
</tr>
<tr>
<td>py-python-bbox</td>
<td>5.3.0 gcc-9.4.0 default</td>
<td></td>
<td>Advanced Python dictionaries with dot notation access</td>
</tr>
<tr>
<td>py-python-dateutil</td>
<td>2.8.2 gcc-9.4.0 default</td>
<td></td>
<td>Extensions to the standard Python datetime module.</td>
</tr>
<tr>
<td>py-python-louvain</td>
<td>0.15 gcc-9.4.0 default</td>
<td></td>
<td>This module implements community detection. It uses the louvain method described in Fast unfolding of communities in large networks, Vincent D Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Renaud Lethebvre, Journal of Statistical Mechanics: Theory and Experiment 2008(10), P10008 (12pp)</td>
</tr>
<tr>
<td>py-python-slughf</td>
<td>4.0.0 gcc-9.4.0 default</td>
<td></td>
<td>A Python Slugify application that handles Unicode</td>
</tr>
<tr>
<td>py-python-antlr</td>
<td>0.10.0 gcc-9.4.0 default</td>
<td></td>
<td>Ahead of Time compiler for numeric kernels.</td>
</tr>
</tbody>
</table>
### PyPI Packages

<table>
<thead>
<tr>
<th>Package</th>
<th>Version</th>
<th>Dependencies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pytimeparse</td>
<td>1.1.8</td>
<td>gcc-9.4.0 default</td>
<td>A small Python library to parse various kinds of time expressions.</td>
</tr>
<tr>
<td>pytorch-gradual-warmup-lr</td>
<td>0.3.2</td>
<td>gcc-9.4.0 default</td>
<td>Gradually warm-up (increasing) learning rate for pytorch’s optimizer.</td>
</tr>
<tr>
<td>py-pylib</td>
<td>2021.3</td>
<td>gcc-9.4.0 default</td>
<td>World timezone definitions, modern and historical.</td>
</tr>
<tr>
<td>py-pyweb</td>
<td>0.6.8</td>
<td>gcc-9.4.0 default</td>
<td>A Variant Call Format reader for Python</td>
</tr>
<tr>
<td>py-pywavelets</td>
<td>1.1.1</td>
<td>gcc-9.4.0 default</td>
<td>PyWavelets is a free Open Source library for wavelet transforms in Python</td>
</tr>
<tr>
<td>py-pyyaml</td>
<td>6.0</td>
<td>gcc-9.4.0 default</td>
<td>PyYAML is a YAML parser and emitter for Python.</td>
</tr>
<tr>
<td>py-pyzmq</td>
<td>22.3.0</td>
<td>gcc-9.4.0 default</td>
<td>PyZMQ: Python bindings for zeromq.</td>
</tr>
<tr>
<td>py-qtconsole</td>
<td>5.2.0</td>
<td>gcc-9.4.0 default</td>
<td>Jupyter Qt console</td>
</tr>
<tr>
<td>py-qtpy</td>
<td>1.11.2</td>
<td>gcc-9.4.0 default</td>
<td>QtPy: Abstraction layer for PyQt5/PyQt4/PySide/PySide2</td>
</tr>
<tr>
<td>py-ratelimiter</td>
<td>1.2.0</td>
<td>gcc-9.4.0 default</td>
<td>Simple Python module providing rate limiting.</td>
</tr>
<tr>
<td>py-rdiff</td>
<td>6.0.2</td>
<td>gcc-9.4.0 default</td>
<td>RDFLib is a pure Python package for working with RDF. RDFLib contains most things you need to work with RDF, including: parsers and serializers for RDF/XML, N3, NTriples, N-Quads, Turtle, TriX, Trig and JSON-LD (via a plugin), a Graph interface which can be backed by any one of a number of Store implementations store implementations for in-memory storage and persistent storage on top of the Berkeley DB and supporting SPARQL 1.1 implementation - supporting SPARQL 1.1 implementation and SPARQL 1.1 Update statements.</td>
</tr>
<tr>
<td>py-rendev</td>
<td>3.5.1</td>
<td>gcc-9.4.0 default</td>
<td>Change Python (.py) files to use 4-space indents and no hard tab characters. Also trim excess spaces and tabs from ends of lines, and remove empty lines at the end of files. Also ensure the last line ends with a newline.</td>
</tr>
<tr>
<td>py-reportlab</td>
<td>3.4.0</td>
<td>gcc-9.4.0 default</td>
<td>RSeQC package provides a number of useful modules that can comprehensively evaluate high throughput sequence data especially RNA-seq data.</td>
</tr>
<tr>
<td>py-requests</td>
<td>2.26.0</td>
<td>gcc-9.4.0 default</td>
<td>Python HTTP for Humans.</td>
</tr>
<tr>
<td>py-requests-oauthlib</td>
<td>1.3.0</td>
<td>gcc-9.4.0 default</td>
<td>This project provides first-class OAuth library support for Requests.</td>
</tr>
<tr>
<td>py-resampy</td>
<td>0.2.2</td>
<td>gcc-9.4.0 default</td>
<td>Efficient sample rate conversion in python</td>
</tr>
<tr>
<td>py-rypy</td>
<td>3.0.4</td>
<td>gcc-9.4.0 default</td>
<td>PyRpy is a redesign and rewrite of rpy. It is providing a low-level interface to R from Python, a proposed high-level interface, including wrappers to graphical libraries, as well as R-like structures and functions.</td>
</tr>
<tr>
<td>py-rsa</td>
<td>4.7.2</td>
<td>gcc-9.4.0 default</td>
<td>Pure-Python RSA implementation</td>
</tr>
<tr>
<td>py-rseqc</td>
<td>3.0.1</td>
<td>gcc-9.4.0 default</td>
<td>RSeQC package provides a number of useful modules that can comprehensively evaluate high throughput sequence data especially RNA-seq data.</td>
</tr>
<tr>
<td>py-rst2pdf</td>
<td>0.99</td>
<td>gcc-9.4.0 default</td>
<td>Convert reStructured Text to PDF via ReportLab.</td>
</tr>
<tr>
<td>py-nameyam</td>
<td>0.17.16</td>
<td>gcc-9.4.0 default</td>
<td>A YAML parser/emitter that supports roundtrip preservation of comments, seq/map flow style, and map key order</td>
</tr>
<tr>
<td>py-s3transfer</td>
<td>0.5.0</td>
<td>gcc-9.4.0 default</td>
<td>S3transfer is a Python library for managing Amazon S3 transfers.</td>
</tr>
<tr>
<td>py-sckit-build</td>
<td>0.12.0</td>
<td>gcc-9.4.0 default</td>
<td>scikit-build is an improved build system generator for CPython C/C++/Fortran/Cython extensions. It provides better support for additional compilers, build systems, cross compilation, and locating dependencies and their associated build requirements.</td>
</tr>
<tr>
<td>py-sckit-image</td>
<td>0.18.3</td>
<td>gcc-9.4.0 default</td>
<td>Image processing algorithms for SciPy, including IO, morphology, filtering, warping, color manipulation, object detection, etc.</td>
</tr>
<tr>
<td>py-sckit-learn</td>
<td>1.0.2</td>
<td>gcc-9.4.0 default</td>
<td>A set of python modules for machine learning and data mining.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>py-sklearn-extra</td>
<td>0.2.0 gcc-9.4.0 default</td>
<td>A set of useful tools compatible with scikit-learn</td>
<td></td>
</tr>
<tr>
<td>py-sklearn-optimizer</td>
<td>0.5.2 gcc-9.4.0 default</td>
<td>Scikit-Optimize, or skopt, is a simple and efficient library to minimize (very) expensive and noisy black-box functions. It implements several methods for sequential model-based optimization. skopt aims to be accessible and easy to use in many contexts.</td>
<td></td>
</tr>
<tr>
<td>py-scipy</td>
<td>1.8.0 gcc-9.4.0 default</td>
<td>SciPy (pronounced ‘Sigh Pie’) is a Scientific Library for Python. It provides many user-friendly and efficient numerical routines such as routines for numerical integration and optimization.</td>
<td></td>
</tr>
<tr>
<td>py-semantic-version</td>
<td>2.8.2 gcc-9.4.0 default</td>
<td>This small python library provides a few tools to handle SemVer in Python. It follows strictly the 2.0.0 version of the SemVer scheme.</td>
<td></td>
</tr>
<tr>
<td>py-send2trash</td>
<td>1.0.0 gcc-9.4.0 default</td>
<td>Python library to send files to Trash/Recycle on all platforms.</td>
<td></td>
</tr>
<tr>
<td>py-sentencepiece</td>
<td>0.1.91 gcc-9.4.0 default</td>
<td>Unsupervised text tokenizer for Neural Network-based text generation.</td>
<td></td>
</tr>
<tr>
<td>py-setuptools</td>
<td>0.12.1 gcc-9.4.0 default</td>
<td>A Python utility that aids in the process of downloading, building, upgrading, installing, and uninstalling Python packages.</td>
<td></td>
</tr>
<tr>
<td>py-setuptools-rust</td>
<td>6.3.2 gcc-9.4.0 default</td>
<td>Setup tools rust extension plugin.</td>
<td></td>
</tr>
<tr>
<td>py-setuptools-scm</td>
<td>1.1 gcc-9.4.0 default</td>
<td>The blessed package to manage your versions by scm tags.</td>
<td></td>
</tr>
<tr>
<td>py-setuptools-scm-git- archive</td>
<td>0.8.1 gcc-9.4.0 default</td>
<td>This is a setuptools_scm plugin that adds support for git archives (for example the ones GitHub automatically generates).</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>4.19.21 gcc-9.4.0-qg5 default</td>
<td>A Python bindings generator for C/C++ libraries.</td>
<td></td>
</tr>
<tr>
<td>py-sip</td>
<td>1.16.0 gcc-9.4.0 default</td>
<td>Python 2 and 3 compatibility utilities.</td>
<td></td>
</tr>
<tr>
<td>py-smmap</td>
<td>5.2.1 gcc-9.4.0 default</td>
<td>smart_open is a Python 2 &amp; Python 3 library for efficient streaming of very large files from/to S3, HDFS, WebHDFS, HTTP, or local storage. It supports transparent, on-the-fly (de-)compression for a variety of different formats.</td>
<td></td>
</tr>
<tr>
<td>py-smmap</td>
<td>2.0.1 gcc-9.4.0 default</td>
<td>smartypants is a Python fork of SmartyPants.</td>
<td></td>
</tr>
<tr>
<td>py-smmap</td>
<td>3.0.4 gcc-9.4.0 default</td>
<td>A pure Python implementation of a sliding window memory map manager</td>
<td></td>
</tr>
<tr>
<td>py-smmap</td>
<td>1.2.0 gcc-9.4.0 default</td>
<td>This is a tiny package whose only purpose is to let you detect which async library your code is running under.</td>
<td></td>
</tr>
<tr>
<td>py-smmap</td>
<td>2.0.0 gcc-9.4.0 default</td>
<td>This package provides 16 stemmer algorithms (15 + Porter English stemmer) generated from Snowball algorithms.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>1.0.0 gcc-9.4.0 default</td>
<td>Sorted Containers is an Apache2 licensed sorted collections library, written in pure-Python, and fast as C-extensions.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>0.10.3 post1 gcc-9.4.0 default</td>
<td>SoundFile is an audio library based on libsndfile, CFFI and NumPy.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>2.2.1 gcc-9.4.0 default</td>
<td>A modern CSS selector implementation for Beautiful Soup.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>4.4.0 gcc-9.4.0 default</td>
<td>Sphinx Documentation Generator.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>1.0.1 gcc-9.4.0 default</td>
<td>sphinxcontrib-applehelp is a sphinx extension which outputs Apple help books.</td>
<td></td>
</tr>
<tr>
<td>py-simplegeneric</td>
<td>1.0.1 gcc-9.4.0 default</td>
<td>sphinxcontrib-devhelp is a sphinx extension which outputs Devhelp document.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
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<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>py-sphinxcontrib-htmlhelp</td>
<td>2.0.0 gcc-9.4.0 default</td>
<td>A sphinx extension which outputs HTMLHelp document.</td>
<td></td>
</tr>
<tr>
<td>py-sphinxcontrib-jsmath</td>
<td>1.0.1 gcc-9.4.0 default</td>
<td>A sphinx extension which renders display math in HTML via JavaScript.</td>
<td></td>
</tr>
<tr>
<td>py-sphinxcontrib-qthelp</td>
<td>1.0.2 gcc-9.4.0 default</td>
<td>A sphinx extension which outputs QtHelp document.</td>
<td></td>
</tr>
<tr>
<td>py-sphinxcontrib-serializinghtml</td>
<td>1.1.5 gcc-9.4.0 default</td>
<td>py-sphinxcontrib-serializinghtml is a sphinx extension which outputs 'serialized' HTML files (json and pickle).</td>
<td></td>
</tr>
<tr>
<td>py-sqlalchemy</td>
<td>1.4.20 gcc-9.4.0 default</td>
<td>The Python SQL Toolkit and Object Relational Mapper</td>
<td></td>
</tr>
<tr>
<td>py-stack-data</td>
<td>0.2.0 gcc-9.4.0 default</td>
<td>Extract data from python stack frames and tracebacks for informative displays.</td>
<td></td>
</tr>
<tr>
<td>py-stopit</td>
<td>1.1.2 gcc-9.4.0 default</td>
<td>Raise asynchronous exceptions in other threads, control the timeout of blocks or callables with two context managers and two decorators.</td>
<td></td>
</tr>
<tr>
<td>py-sympy</td>
<td>1.8 gcc-9.4.0 default</td>
<td>SymPy is a Python library for symbolic mathematics.</td>
<td></td>
</tr>
<tr>
<td>py-tables</td>
<td>3.6.1 gcc-9.4.0 default</td>
<td>PyTables is a package for managing hierarchical datasets and designed to efficiently and easily cope with extremely large amounts of data.</td>
<td></td>
</tr>
<tr>
<td>py-tabulate</td>
<td>0.9 gcc-9.4.0 default</td>
<td>Pretty-print tabular data</td>
<td></td>
</tr>
<tr>
<td>py-tensorboard</td>
<td>2.7.0 gcc-9.4.0 default</td>
<td>TensorBoard is a suite of web applications for inspecting and understanding your TensorFlow runs and graphs.</td>
<td></td>
</tr>
<tr>
<td>py-tensorboard-data-server</td>
<td>0.6.1 gcc-9.4.0 default</td>
<td>Fast data loading for TensorBoard</td>
<td></td>
</tr>
<tr>
<td>py-tensorboard-plugin-wit</td>
<td>1.8.1 gcc-9.4.0 default</td>
<td>The What-If Tool makes it easy to efficiently and intuitively explore up to two models’ performance on a dataset. Investigate model performances for a range of features in your dataset, optimization strategies and even manipulations to individual datapoint values. All this and more, in a visual way that requires minimal code.</td>
<td></td>
</tr>
<tr>
<td>py-tensorflow</td>
<td>2.7.0 gcc-9.4.0 default</td>
<td>TensorFlow is an Open Source Software Library for Machine Intelligence</td>
<td></td>
</tr>
<tr>
<td>py-tensorflow-estimator</td>
<td>2.7.0 gcc-9.4.0 default</td>
<td>TensorFlow Estimator is a high-level TensorFlow API that greatly simplifies machine learning programming.</td>
<td></td>
</tr>
<tr>
<td>py-termcolor</td>
<td>1.1.0 gcc-9.4.0 default</td>
<td>ANSI Color formatting for output in terminal.</td>
<td></td>
</tr>
<tr>
<td>py-terminado</td>
<td>0.12.1 gcc-9.4.0 default</td>
<td>Terminals served to term.js using Tornado websockets</td>
<td></td>
</tr>
<tr>
<td>py-testpath</td>
<td>0.5.0 gcc-9.4.0 default</td>
<td>Testpath is a collection of utilities for Python code working with files and commands.</td>
<td></td>
</tr>
<tr>
<td>py-text-unidecode</td>
<td>1.3 gcc-9.4.0 default</td>
<td>text-unidecode is the most basic port of the Text::Unidecode Perl library.</td>
<td></td>
</tr>
<tr>
<td>py-theano</td>
<td>1.0.5 gcc-9.4.0 default</td>
<td>Optimizing compiler for evaluating mathematical expressions on CPUs and GPUs.</td>
<td></td>
</tr>
<tr>
<td>pythia</td>
<td>8.306 gcc-9.4.0 default</td>
<td>The Pythia program is a standard tool for the generation of events in high-energy collisions, comprising a coherent set of physics models for the evolution from a few-body hard process to a complex multiparticle final state.</td>
<td></td>
</tr>
<tr>
<td>python</td>
<td>3.9.9 gcc-9.4.0 default</td>
<td>The Python programming language.</td>
<td></td>
</tr>
<tr>
<td>py-threadpoolctl</td>
<td>3.0.0 gcc-9.4.0 default</td>
<td>Python helpers to limit the number of threads used in the threadpool-backed of common native libraries used for scientific computing and data science (e.g. BLAS and OpenMP).</td>
<td></td>
</tr>
<tr>
<td>py-tiff</td>
<td>2021.11.2 gcc-9.4.0 default</td>
<td>Read and write image data from and to TIFF files.</td>
<td></td>
</tr>
<tr>
<td>py-toml</td>
<td>0.10.2 gcc-9.4.0 default</td>
<td>A Python library for parsing and creating TOML configuration files. For more information on the TOML standard, see <a href="https://github.com/toml-lang/toml.git">https://github.com/toml-lang/toml.git</a>.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>py-toml</td>
<td>1.2.2_gcc-9.4.0_default</td>
<td>Tomli is a Python library for parsing TOML.</td>
<td></td>
</tr>
<tr>
<td>py-tomli-w</td>
<td>1.0.0_gcc-9.4.0_default</td>
<td>A lil’ TOML writer.</td>
<td></td>
</tr>
<tr>
<td>py-tomlki</td>
<td>0.7.2_gcc-9.4.0_default</td>
<td>Style preserving TOML library.</td>
<td></td>
</tr>
<tr>
<td>py-toposort</td>
<td>1.6_gcc-9.4.0_default</td>
<td>Implements a topological sort algorithm.</td>
<td></td>
</tr>
<tr>
<td>py-torch</td>
<td>1.10.2_gcc-9.4.0_default</td>
<td>Tensors and Dynamic neural networks in Python with strong GPU acceleration.</td>
<td></td>
</tr>
<tr>
<td>py-torchaudio</td>
<td>0.4.0_gcc-9.4.0_default</td>
<td>The aim of torchaudio is to apply PyTorch to the audio domain. By supporting PyTorch, torchaudio follows the same philosophy of providing strong GPU acceleration, having a focus on trainable features through the autograd system, and having consistent style (tensor names and dimension names). Therefore, it is primarily a machine learning library and not a general signal processing library. The benefits of PyTorch is be seen in torchaudio through having all the computations be through PyTorch operations which makes it easy to use and feel like a natural extension.</td>
<td></td>
</tr>
<tr>
<td>py-torch-cluster</td>
<td>1.5.8_gcc-9.4.0_default</td>
<td>This package consists of a small extension library of highly optimized graph cluster algorithms for the use in PyTorch.</td>
<td></td>
</tr>
<tr>
<td>py-torchlib</td>
<td>0.1.0_gcc-9.4.0_default</td>
<td>Mostly direct port of the torch7 Lua and C serialization implementation to Python, depending only on numpy (and the standard library: array and struct). Sharing of objects including torch.Tensors is preserved.</td>
<td></td>
</tr>
<tr>
<td>py-torch-geometric</td>
<td>1.6.3_gcc-9.4.0_default</td>
<td>PyTorch Geometric (PyG) is a geometric deep learning extension library for PyTorch. It consists of various methods for deep learning on graphs and other irregular structures, also known as geometric deep learning, from a variety of published papers. In addition, it consists of an easy-to-use mini-batch loader for many small and single giant graphs, multi-gpu-support, a large number of common benchmark datasets (based on simple interfaces to create your own), and helpful transforms, both for learning on arbitrary graphs as well as on 3D meshes or point clouds.</td>
<td></td>
</tr>
<tr>
<td>py-torch-nvidia-apex</td>
<td>2020-10-19_gcc-9.4.0_default</td>
<td>A PyTorch Extension: Tools for easy mixed precision and distributed training in Pytorch</td>
<td></td>
</tr>
<tr>
<td>py-torch-scatter</td>
<td>2.0.5_gcc-9.4.0_default</td>
<td>This package consists of a small extension library of highly optimized sparse update (scatter and segment) operations for the use in PyTorch, which are missing in the main package.</td>
<td></td>
</tr>
<tr>
<td>py-torch-sparse</td>
<td>0.6.8_gcc-9.4.0_default</td>
<td>This package consists of a small extension library of optimized sparse matrix operations with autograd support.</td>
<td></td>
</tr>
<tr>
<td>py-torch-spline-conv</td>
<td>1.2.0_gcc-9.4.0_default</td>
<td>This is a PyTorch implementation of the spline-based convolution operator of SplineCNN.</td>
<td></td>
</tr>
<tr>
<td>py-torchsummary</td>
<td>1.5.1_gcc-9.4.0_default</td>
<td>Keras has a neat API to view the visualization of the model which is very helpful while debugging your network. Here is a barebone code to try and mimic the same in PyTorch. The aim is to provide information complementary to, what is not provided by print(your_model) in PyTorch.</td>
<td></td>
</tr>
<tr>
<td>py-torchtext</td>
<td>0.5.0_gcc-9.4.0_default</td>
<td>Text utilities and datasets for PyTorch.</td>
<td></td>
</tr>
<tr>
<td>py-torchvision</td>
<td>0.11.3_gcc-9.4.0_default</td>
<td>The torchvision package consists of popular datasets, model architectures, and common image transformations for computer vision.</td>
<td></td>
</tr>
<tr>
<td>py-tornado</td>
<td>6.1_gcc-9.4.0_default</td>
<td>Tornado is a Python web framework and asynchronous networking library.</td>
<td></td>
</tr>
<tr>
<td>py-tqdm</td>
<td>4.62.3_gcc-9.4.0_default</td>
<td>A Fast, Extensible Progress Meter</td>
<td></td>
</tr>
<tr>
<td>py-traitlets</td>
<td>5.1.1_gcc-9.4.0_default</td>
<td>Traitlets Python config system</td>
<td></td>
</tr>
<tr>
<td>py-twisteds</td>
<td>21.7.0_gcc-9.4.0_default</td>
<td>An asynchronous networking framework written in Python</td>
<td></td>
</tr>
<tr>
<td>py-typing-extension</td>
<td>3.10.0.2_gcc-9.4.0_default</td>
<td>The typing_extensions module contains both backports of these changes as well as experimental types that will eventually be added to the typing module, such as Protocol (see PEP 544 for details about protocols and static duck typing).</td>
<td></td>
</tr>
<tr>
<td>py-uproot</td>
<td>3.14.4_gcc-9.4.0_default</td>
<td>ROOT I/O in pure Python and Numpy.</td>
<td></td>
</tr>
<tr>
<td>py-uproot-methods</td>
<td>0.10.1_gcc-9.4.0_default</td>
<td>Pythonic mix-ins for ROOT classes.</td>
<td></td>
</tr>
<tr>
<td>py-urlib</td>
<td>1.26.6_gcc-9.4.0_default</td>
<td>HTTP library with thread-safe connection pooling, file post, and more.</td>
<td></td>
</tr>
<tr>
<td>py-virtualenv</td>
<td>20.10.0_gcc-9.4.0_default</td>
<td>virtualenv is a tool to create isolated Python environments.</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Version</td>
<td>Dependencies</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>py-wcwidth</td>
<td>0.2.5</td>
<td>gcc-9.4.0</td>
<td>Measures number of Terminal column cells of wide-character codes</td>
</tr>
<tr>
<td>py-webkitencodings</td>
<td>0.5.1</td>
<td>gcc-9.4.0</td>
<td>This is a Python implementation of the WHATWG Encoding standard.</td>
</tr>
<tr>
<td>py-websocket-client</td>
<td>1.2.1</td>
<td>gcc-9.4.0</td>
<td>WebSocket client for Python. hybi13 is supported.</td>
</tr>
<tr>
<td>py-werkzeug</td>
<td>2.0.2</td>
<td>gcc-9.4.0</td>
<td>The Swiss Army knife of Python web development</td>
</tr>
<tr>
<td>py-wget</td>
<td>3.2</td>
<td>gcc-9.4.0</td>
<td>pure python download utility</td>
</tr>
<tr>
<td>py-wheel</td>
<td>0.37</td>
<td>gcc-9.4.0</td>
<td>A built-package format for Python.</td>
</tr>
<tr>
<td>py-widgetsnbextension</td>
<td>3.5.1</td>
<td>gcc-9.4.0</td>
<td>IPython HTML widgets for Jupyter</td>
</tr>
<tr>
<td>py-wrap</td>
<td>1.13.3</td>
<td>gcc-9.4.0</td>
<td>Module for decorators, wrappers and monkey patching.</td>
</tr>
<tr>
<td>py-xarray</td>
<td>0.18.2</td>
<td>gcc-9.4.0</td>
<td>N-D labeled arrays and datasets in Python</td>
</tr>
<tr>
<td>py-xing</td>
<td>2.0.1</td>
<td>gcc-9.4.0</td>
<td>Library for developers to extract data from Microsoft Excel (tm) spreadsheet files</td>
</tr>
<tr>
<td>py-xopen</td>
<td>0.8.4</td>
<td>gcc-9.4.0</td>
<td>This small Python module provides a xopen function that works like the built-in open function, but can also deal with compressed files. Supported compression formats are gzip, bzip2 and xz. They are automatically recognized by their file extensions .gz, .bz2 or .xz.</td>
</tr>
<tr>
<td>py-xxhash</td>
<td>2.0.2</td>
<td>gcc-9.4.0</td>
<td>xxhash is a Python binding for the xxHash library by Yann Collet.</td>
</tr>
<tr>
<td>py-youtube-dl</td>
<td>2021.12.17</td>
<td>gcc-9.4.0</td>
<td>Command-line program to download videos from YouTube.com and other video sites.</td>
</tr>
<tr>
<td>py-zip</td>
<td>3.6.0</td>
<td>gcc-9.4.0</td>
<td>Backport of pathlib-compatible object wrapper for zip files.</td>
</tr>
<tr>
<td>py-zope-event</td>
<td>4.5.0</td>
<td>gcc-9.4.0</td>
<td>Very basic event publishing system.</td>
</tr>
<tr>
<td>py-zope-interface</td>
<td>5.4.0</td>
<td>gcc-9.4.0</td>
<td>This package provides an implementation of ‘object interfaces’ for Python. Interfaces are a mechanism for labeling objects as conforming to a given API or contract. So, this package can be considered as implementation of the Design By Contract methodology support in Python.</td>
</tr>
<tr>
<td>qhull</td>
<td>2020.2</td>
<td>gcc-9.4.0</td>
<td>Qhull computes the convex hull, Delaunay triangulation, Voronoi diagram, halfspace intersection about a point, furthest-site Delaunay triangulation, and furthest-site Voronoi diagram. The source code runs in 2-d, 3-d, 4-d, and higher dimensions. Qhull implements the Quickhull algorithm for computing the convex hull. It handles roundoff errors from floating point arithmetic. It computes volumes, surface areas, and approximations to the convex hull.</td>
</tr>
<tr>
<td>qrupdate</td>
<td>1.1.2</td>
<td>gcc-9.4.0</td>
<td>qrupdate is a Fortran library for fast updates of QR and Cholesky decompositions.</td>
</tr>
<tr>
<td>qt</td>
<td>4.8.7</td>
<td>gcc-9.4.0</td>
<td>Qt is a comprehensive cross-platform C++ application framework.</td>
</tr>
<tr>
<td>quantum-espresso</td>
<td>7.0</td>
<td>gcc-9.4.0</td>
<td>Quantum ESPRESSO is an integrated suite of Open-Source computer codes for electronic-structure calculations and materials modeling at the nanoscale. It is based on density-functional theory, plane waves, and pseudopotentials.</td>
</tr>
<tr>
<td>qwt</td>
<td>6.1.6</td>
<td>gcc-9.4.0</td>
<td>The Qwt library contains GUI Components and utility classes which are primarily useful for programs with a technical background. Beside a framework for 2D plots it provides scales, sliders, dials, compasses, thermometers, wheels and knobs to control or display values, arrays, or ranges of type double.</td>
</tr>
<tr>
<td>r</td>
<td>4.1.3</td>
<td>gcc-9.4.0</td>
<td>R is ‘GNU S’, a freely available language and environment for statistical computing and graphics which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc. Please consult the R project homepage for further information.</td>
</tr>
<tr>
<td>r-abind</td>
<td>1.4-5</td>
<td>gcc-9.4.0</td>
<td>Combine Multidimensional Arrays.</td>
</tr>
<tr>
<td>r-ade4</td>
<td>1.7-18</td>
<td>gcc-9.4.0</td>
<td>Exploratory and Euclidean Methods in Environmental Sciences.</td>
</tr>
<tr>
<td>r-adegenet</td>
<td>2.1.5</td>
<td>gcc-9.4.0</td>
<td>Exploratory Analysis of Genetic and Genomic Data.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-adegraphics</td>
<td>1.0-16_gcc-9.4.0</td>
<td>An S4 Lattice-Based Package for the Representation of Multivariate Data.</td>
<td></td>
</tr>
<tr>
<td>r-adephylo</td>
<td>1.1-11_gcc-9.4.0</td>
<td>Exploratory Analyses for the Phylogenetic Comparative Method.</td>
<td></td>
</tr>
<tr>
<td>r-adespatial</td>
<td>0.3-14_gcc-9.4.0</td>
<td>Multivariate Multiscale Spatial Analysis.</td>
<td></td>
</tr>
<tr>
<td>r-adgoftest</td>
<td>0.3_gcc-9.4.0</td>
<td>Anderson-Darling GoF test.</td>
<td></td>
</tr>
<tr>
<td>r-affy</td>
<td>1.72.0_gcc-9.4.0</td>
<td>Methods for Affymetrix Oligonucleotide Arrays.</td>
<td></td>
</tr>
<tr>
<td>r-affyio</td>
<td>1.64.0_gcc-9.4.0</td>
<td>Tools for parsing Affymetrix data files.</td>
<td></td>
</tr>
<tr>
<td>randrproto</td>
<td>1.5.0_gcc-9.4.0</td>
<td>X Resize and Rotate Extension (RandR).</td>
<td></td>
</tr>
<tr>
<td>r-annotate</td>
<td>1.72.0_gcc-9.4.0</td>
<td>Annotation for microarrays.</td>
<td></td>
</tr>
<tr>
<td>r-annotationdbi</td>
<td>1.56.2_gcc-9.4.0</td>
<td>Manipulation of SQLite-based annotations in Bioconductor.</td>
<td></td>
</tr>
<tr>
<td>r-annotationfilter</td>
<td>1.18.0_gcc-9.4.0</td>
<td>Facilities for Filtering Bioconductor Annotation Resources.</td>
<td></td>
</tr>
<tr>
<td>r-annotationhub</td>
<td>3.2.1_gcc-9.4.0</td>
<td>Client to access AnnotationHub resources.</td>
<td></td>
</tr>
<tr>
<td>r-aok</td>
<td>1.3.1_gcc-9.4.0</td>
<td>Analysis of Overdispersed Data.</td>
<td></td>
</tr>
<tr>
<td>r-apo</td>
<td>5.6-1_gcc-9.4.0</td>
<td>Analyses of Phylogenetics and Evolution.</td>
<td></td>
</tr>
<tr>
<td>rapjson</td>
<td>1.2.0-2021-08-13_gcc-9.4.0</td>
<td>A fast JSON parser/generator for C++ with both SAX/DOM style API</td>
<td></td>
</tr>
<tr>
<td>r-aroma-light</td>
<td>3.24.0_gcc-9.4.0</td>
<td>Light-Weight Methods for Normalization and Visualization of Microarray Data using Only Basic R Data Types.</td>
<td></td>
</tr>
<tr>
<td>r-askpass</td>
<td>1.1_gcc-9.4.0</td>
<td>Safe Password Entry for R, Git, and SSH.</td>
<td></td>
</tr>
<tr>
<td>r-asserthub</td>
<td>0.2.1_gcc-9.4.0</td>
<td>Easy Pre and Post Assertions.</td>
<td></td>
</tr>
<tr>
<td>r-backports</td>
<td>1.4.1_gcc-9.4.0</td>
<td>Reimplementations of Functions Introduced Since R-3.0.0.</td>
<td></td>
</tr>
<tr>
<td>r-base64</td>
<td>2.0_gcc-9.4.0</td>
<td>Base64 Encoder and Decoder.</td>
<td></td>
</tr>
<tr>
<td>r-base64enc</td>
<td>0.1-3_gcc-9.4.0</td>
<td>Tools for base64 encoding.</td>
<td></td>
</tr>
<tr>
<td>r-bayesplot</td>
<td>1.8.1_gcc-9.4.0</td>
<td>Plotting for Bayesian Models.</td>
<td></td>
</tr>
<tr>
<td>r-beachmat</td>
<td>2.10.0_gcc-9.4.0</td>
<td>Compiling Bioconductor to Handle Each Matrix Type.</td>
<td></td>
</tr>
<tr>
<td>r-bearplot</td>
<td>1.2_gcc-9.4.0</td>
<td>Visualization via Beanplots (like Boxplot/Stripchart/Violin Plot).</td>
<td></td>
</tr>
<tr>
<td>r-bi</td>
<td>1.78.0-0_gcc-9.4.0</td>
<td>Boost C++ Header Files.</td>
<td></td>
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<tr>
<td>r-biasedurn</td>
<td>1.07_gcc-9.4.0</td>
<td>Biased Urn Model Distributions.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-biobase</td>
<td>2.54.0_gcc-9.4.0_default</td>
<td>Biobase: Base functions for Bioconductor.</td>
<td></td>
</tr>
<tr>
<td>r-biocfilecache</td>
<td>2.2.1_gcc-9.4.0_default</td>
<td>Manage Files Across Sessions.</td>
<td></td>
</tr>
<tr>
<td>r-biocgenerics</td>
<td>0.40.0_gcc-9.4.0_default</td>
<td>S4 generic functions used in Bioconductor.</td>
<td></td>
</tr>
<tr>
<td>r-bioc</td>
<td>1.4.0_gcc-9.4.0_default</td>
<td>Standard Input and Output for Bioconductor Packages.</td>
<td></td>
</tr>
<tr>
<td>r-biocmanager</td>
<td>1.30.16_gcc-9.4.0_default</td>
<td>Access the Bioconductor Project Package Repository.</td>
<td></td>
</tr>
<tr>
<td>r-biocparallel</td>
<td>1.28.3_gcc-9.4.0_default</td>
<td>Bioconductor facilities for parallel evaluation.</td>
<td></td>
</tr>
<tr>
<td>r-biocversion</td>
<td>3.14.0_gcc-9.4.0_default</td>
<td>Set the appropriate version of Bioconductor packages.</td>
<td></td>
</tr>
<tr>
<td>r-biomatic</td>
<td>2.50.3_gcc-9.4.0_default</td>
<td>Interface to BioMart databases (i.e. Ensembl).</td>
<td></td>
</tr>
<tr>
<td>r-biomaticr</td>
<td>0.9.2_gcc-9.4.0_default</td>
<td>Genomic Data Retrieval.</td>
<td></td>
</tr>
<tr>
<td>r-biostrings</td>
<td>2.62.0_gcc-9.4.0_default</td>
<td>Efficient manipulation of biological strings.</td>
<td></td>
</tr>
<tr>
<td>r-biovizbase</td>
<td>1.42.0_gcc-9.4.0_default</td>
<td>Basic graphic utilities for visualization of genomic data.</td>
<td></td>
</tr>
<tr>
<td>r-bi</td>
<td>4.0.4_gcc-9.4.0_default</td>
<td>Classes and Methods for Fast Memory-Efficient Boolean Selections.</td>
<td></td>
</tr>
<tr>
<td>r-bit64</td>
<td>4.0.5_gcc-9.4.0_default</td>
<td>A S3 Class for Vectors of 64bit Integers.</td>
<td></td>
</tr>
<tr>
<td>r-bitops</td>
<td>1.0.7_gcc-9.4.0_default</td>
<td>Bitwise Operations.</td>
<td></td>
</tr>
<tr>
<td>r-biavaan</td>
<td>0.4-1_gcc-9.4.0_default</td>
<td>Bayesian Latent Variable Analysis.</td>
<td></td>
</tr>
<tr>
<td>r-blob</td>
<td>1.2.2_gcc-9.4.0_default</td>
<td>A Simple S3 Class for Representing Vectors of Binary Data ('BLOBS').</td>
<td></td>
</tr>
<tr>
<td>r-bmp</td>
<td>0.3_gcc-9.4.0_default</td>
<td>Read Windows Bitmap (BMP) Images.</td>
<td></td>
</tr>
<tr>
<td>r-boot</td>
<td>1.3-28_gcc-9.4.0_default</td>
<td>Bootstrap Functions (Originally by Angelo Canty for S).</td>
<td></td>
</tr>
<tr>
<td>r-brew</td>
<td>1.0-6_gcc-9.4.0_default</td>
<td>Templating Framework for Report Generation.</td>
<td></td>
</tr>
<tr>
<td>r-bridgesampling</td>
<td>1.1-2_gcc-9.4.0_default</td>
<td>Bridge Sampling for Marginal Likelihoods and Bayes Factors.</td>
<td></td>
</tr>
<tr>
<td>r-brock</td>
<td>1.1.3_gcc-9.4.0_default</td>
<td>Basic R Input Output.</td>
<td></td>
</tr>
<tr>
<td>r-brms</td>
<td>2.16.3_gcc-9.4.0_default</td>
<td>Bayesian Regression Models using 'Stan'.</td>
<td></td>
</tr>
<tr>
<td>r-brdodinlag</td>
<td>1.2-7_gcc-9.4.0_default</td>
<td>Very Large Numbers in R.</td>
<td></td>
</tr>
<tr>
<td>r-bsgenome</td>
<td>1.62.0_gcc-9.4.0_default</td>
<td>Software infrastructure for efficient representation of full genomes and their SNPs.</td>
<td></td>
</tr>
<tr>
<td>r-bsgenome-hsapiens-ucsc-hg19</td>
<td>1.4.3_gcc-9.4.0_default</td>
<td>Full genome sequences for Homo sapiens (UCSC version hg19, based on GRCh37.p13).</td>
<td></td>
</tr>
<tr>
<td>r-bslib</td>
<td>0.3.1_gcc-9.4.0_default</td>
<td>Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'markdown'.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-bsseq</td>
<td>1.30.0_gcc-9.4.0 default</td>
<td>Analyze, manage and store bisulfite sequencing data.</td>
<td></td>
</tr>
<tr>
<td>r-bumphunter</td>
<td>1.36.0_gcc-9.4.0 default</td>
<td>Bump Hunter.</td>
<td></td>
</tr>
<tr>
<td>r-cachem</td>
<td>1.0.6_gcc-9.4.0 default</td>
<td>Cache R Objects with Automatic Pruning.</td>
<td></td>
</tr>
<tr>
<td>r-callr</td>
<td>3.7.0_gcc-9.4.0 default</td>
<td>Call R from R.</td>
<td></td>
</tr>
<tr>
<td>r-car</td>
<td>3.0-12_gcc-9.4.0 default</td>
<td>Companion to Applied Regression.</td>
<td></td>
</tr>
<tr>
<td>r-cardata</td>
<td>3.0-5_gcc-9.4.0 default</td>
<td>Companion to Applied Regression Data Sets.</td>
<td></td>
</tr>
<tr>
<td>r-care</td>
<td>6.0-90_gcc-9.4.0 default</td>
<td>Classification and Regression Training.</td>
<td></td>
</tr>
<tr>
<td>r-catoools</td>
<td>1.18.2_gcc-9.4.0 default</td>
<td>Moving Window Statistics, GIF, Base64, ROC AUC, etc.</td>
<td></td>
</tr>
<tr>
<td>r-champ</td>
<td>2.24.0_gcc-9.4.0 default</td>
<td>Chip Analysis Methylation Pipeline for Illumina HumanMethylation450 and EPIC.</td>
<td></td>
</tr>
<tr>
<td>r-champdata</td>
<td>2.26.0_gcc-9.4.0 default</td>
<td>Packages for ChAMP package.</td>
<td></td>
</tr>
<tr>
<td>r-checkmate</td>
<td>2.0.0_gcc-9.4.0 default</td>
<td>Fast and Versatile Argument Checks.</td>
<td></td>
</tr>
<tr>
<td>r-class</td>
<td>7.3-20_gcc-9.4.0 default</td>
<td>Functions for Classification.</td>
<td></td>
</tr>
<tr>
<td>r-classint</td>
<td>0.4-3_gcc-9.4.0 default</td>
<td>Choose Univariate Class Intervals.</td>
<td></td>
</tr>
<tr>
<td>r-cli</td>
<td>3.2.0_gcc-9.4.0 default</td>
<td>Helpers for Developing Command Line Interfaces.</td>
<td></td>
</tr>
<tr>
<td>r-clr</td>
<td>0.7.1_gcc-9.4.0 default</td>
<td>Read and Write from the System Clipboard.</td>
<td></td>
</tr>
<tr>
<td>r-clue</td>
<td>0.3-60_gcc-9.4.0 default</td>
<td>Cluster Ensembles.</td>
<td></td>
</tr>
<tr>
<td>r-cluster</td>
<td>2.1.2_gcc-9.4.0 default</td>
<td>‘Finding Groups in Data’: Cluster Analysis Extended Rousseeuw et al.</td>
<td></td>
</tr>
<tr>
<td>r-coda</td>
<td>0.19-4_gcc-9.4.0 default</td>
<td>Output Analysis and Diagnostics for MCMC.</td>
<td></td>
</tr>
<tr>
<td>r-codetools</td>
<td>0.2-18_gcc-9.4.0 default</td>
<td>Code analysis tools for R.</td>
<td></td>
</tr>
<tr>
<td>r-colorspace</td>
<td>2.0-2_gcc-9.4.0 default</td>
<td>A Toolbox for Manipulating and Assessing Colors and Palettes.</td>
<td></td>
</tr>
<tr>
<td>r-colourpicker</td>
<td>1.1.1_gcc-9.4.0 default</td>
<td>A Colour Picker Tool for Shiny and for Selecting Colours in Plots.</td>
<td></td>
</tr>
<tr>
<td>r-combinat</td>
<td>0.0-8_gcc-9.4.0 default</td>
<td>combinatorics utilities.</td>
<td></td>
</tr>
<tr>
<td>r-commonmark</td>
<td>1.7_gcc-9.4.0 default</td>
<td>High Performance CommonMark and Github Markdown Rendering in R.</td>
<td></td>
</tr>
<tr>
<td>r-compquadform</td>
<td>1.4.3_gcc-9.4.0 default</td>
<td>Distribution Function of Quadratic Forms in Normal Variables.</td>
<td></td>
</tr>
<tr>
<td>r-copula</td>
<td>1.0-1_gcc-9.4.0 default</td>
<td>Multivariate Dependence with Copulas.</td>
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<tr>
<td>Package</td>
<td>Version</td>
<td>Build</td>
<td>Type</td>
</tr>
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<tr>
<td>r-covr</td>
<td>3.5.1</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-cowplot</td>
<td>1.1.1</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-cpp11</td>
<td>0.4.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-crayon</td>
<td>1.4.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-credentials</td>
<td>1.3.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-crosscall</td>
<td>1.2.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-cubature</td>
<td>2.0.4.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
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<td>r-cue</td>
<td>4.3.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-data-table</td>
<td>1.1.4.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-db</td>
<td>1.1.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-dbply</td>
<td>2.1.1</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-delayedarray</td>
<td>0.20.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
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<td>r-delayedmatrixstats</td>
<td>1.16.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
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<td>r-deidro</td>
<td>1.0.6</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-dendextend</td>
<td>1.15.2</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-desc</td>
<td>1.4.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-desseq</td>
<td>1.34.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-devtools</td>
<td>2.4.3</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-diagrammer</td>
<td>1.0.8</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-dichromat</td>
<td>2.0.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-diffobj</td>
<td>0.3.5</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-digest</td>
<td>0.6.29</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
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<td>r-distributional</td>
<td>0.3.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>rdma-core</td>
<td>39.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>rdmcate</td>
<td>2.8.5</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>r-dnacopy</td>
<td>1.68.0</td>
<td>gcc-9.4.0</td>
<td>default</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
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</tr>
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<tr>
<td>r-doparallel</td>
<td>1.0.16_gcc-9.4.0</td>
<td>Foreach Parallel Adaptor for the 'parallel' Package.</td>
<td></td>
</tr>
<tr>
<td>r-dorng</td>
<td>1.8.2_gcc-9.4.0</td>
<td>Generic Reproducible Parallel Backend for 'foreach' Loops.</td>
<td></td>
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<tr>
<td>r-downloader</td>
<td>0.4_gcc-9.4.0</td>
<td>Download Files over HTTP and HTTPS.</td>
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</tr>
<tr>
<td>r-dplyr</td>
<td>1.0.7_gcc-9.4.0</td>
<td>A Grammar of Data Manipulation.</td>
<td></td>
</tr>
<tr>
<td>r-dqrng</td>
<td>0.3.0_gcc-9.4.0</td>
<td>Fast Pseudo Random Number Generators.</td>
<td></td>
</tr>
<tr>
<td>r-ds</td>
<td>2.42.0_gcc-9.4.0</td>
<td>Dispersion shrinkage for sequencing data.</td>
<td></td>
</tr>
<tr>
<td>r-dp</td>
<td>0.20_gcc-9.4.0</td>
<td>A Wrapper of the JavaScript Library 'DataTables'.</td>
<td></td>
</tr>
<tr>
<td>r-dygraph</td>
<td>1.1.6_gcc-9.4.0</td>
<td>Interface to 'Dygraphs' Interactive Time Series Charting Library.</td>
<td></td>
</tr>
<tr>
<td>r-e1071</td>
<td>1.7-9_gcc-9.4.0</td>
<td>Misc Functions of the Department of Statistics, Probability Theory Group (Formerly: E1071), TU Wien.</td>
<td></td>
</tr>
<tr>
<td>readline</td>
<td>8.1_gcc-9.4.0</td>
<td>The GNU Readline library provides a set of functions for use by applications that allow users to edit command lines as they are typed in. Both Emacs and vi editing modes are available. The Readline library includes additional functions to maintain a list of previously-entered command lines, to recall and perhaps reedit those lines, and perform csh-like history expansion on previous commands.</td>
<td></td>
</tr>
<tr>
<td>recordproto</td>
<td>1.14.2_gcc-9.4.0</td>
<td>X Record Extension.</td>
<td></td>
</tr>
<tr>
<td>r-edge</td>
<td>3.36.0_gcc-9.4.0</td>
<td>Empirical Analysis of Digital Gene Expression Data in R.</td>
<td></td>
</tr>
<tr>
<td>redtools</td>
<td>1.3_2020-08-03_gcc-9.4.0</td>
<td>REDtools: python scripts for RNA editing detection by RNA-Seq data.</td>
<td></td>
</tr>
<tr>
<td>r-effect</td>
<td>4.2-1_gcc-9.4.0</td>
<td>Effect Displays for Linear, Generalized Linear, and Other Models.</td>
<td></td>
</tr>
<tr>
<td>relion</td>
<td>3.13_gcc-9.4.0</td>
<td>RELION (for REgularised Likelihood OptimisatioN, pronounce rely-on) is a stand-alone computer program that employs an empirical Bayesian approach to refinement of (multiple) 3D reconstructions or 2D class averages in electron cryo-microscopy (cryo-EM).</td>
<td></td>
</tr>
<tr>
<td>r-ellipsis</td>
<td>0.3.2_gcc-9.4.0</td>
<td>Tools for Working with ...</td>
<td></td>
</tr>
<tr>
<td>renderproto</td>
<td>0.11.1_gcc-9.4.0</td>
<td>X Rendering Extension.</td>
<td></td>
</tr>
<tr>
<td>r-ensembldb</td>
<td>2.18.3_gcc-9.4.0</td>
<td>Utilities to create and use Ensembl-based annotation databases.</td>
<td></td>
</tr>
<tr>
<td>repeatmasker</td>
<td>4.1.2-p1_gcc-9.4.0</td>
<td>RepeatMasker is a program that screens DNA sequences for interspersed repeats and low complexity DNA sequences.</td>
<td></td>
</tr>
<tr>
<td>r-estimability</td>
<td>1.3_gcc-9.4.0</td>
<td>Tools for Assessing Estimability of Linear Predictions.</td>
<td></td>
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<tr>
<td>r-evaluate</td>
<td>0.14_gcc-9.4.0</td>
<td>Parsing and Evaluation Tools that Provide More Details than the Default.</td>
<td></td>
</tr>
<tr>
<td>r-exomecopy</td>
<td>1.40.0_gcc-9.4.0</td>
<td>Copy number variant detection from exome sequencing read depth.</td>
<td></td>
</tr>
<tr>
<td>r-exomedepth</td>
<td>1.1.15_gcc-9.4.0</td>
<td>Calls Copy Number Variants from Targeted Sequence Data.</td>
<td></td>
</tr>
<tr>
<td>r-experimenthub</td>
<td>2.2.1_gcc-9.4.0</td>
<td>Client to access ExperimentHub resources.</td>
<td></td>
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<tr>
<td>Package</td>
<td>Version</td>
<td>Dependencies</td>
<td>Description</td>
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<td>-----------------------------------------------------------------</td>
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<tr>
<td>r-fansi</td>
<td>1.0.2_gcc-9.4.0</td>
<td>default</td>
<td>ANSI Control Sequence Aware String Functions.</td>
</tr>
<tr>
<td>r-farver</td>
<td>2.1.0_gcc-9.4.0</td>
<td>default</td>
<td>High Performance Colour Space Manipulation.</td>
</tr>
<tr>
<td>r-fastcluster</td>
<td>1.2.3_gcc-9.4.0</td>
<td>default</td>
<td>Fast Hierarchical Clustering Routines for R and 'Python'.</td>
</tr>
<tr>
<td>r-fastica</td>
<td>1.2-3_gcc-9.4.0</td>
<td>default</td>
<td>FastICA Algorithms to Perform ICA and Projection Pursuit.</td>
</tr>
<tr>
<td>r-fastmap</td>
<td>1.1.0_gcc-9.4.0</td>
<td>default</td>
<td>Fast Implementation of a Key-Value Store.</td>
</tr>
<tr>
<td>r-fdb-infiniummethylation-hg18</td>
<td>2.2.0_gcc-9.4.0</td>
<td>default</td>
<td>Annotation package for Illumina Infinium DNA methylation probes.</td>
</tr>
<tr>
<td>r-fdb-infiniummethylation-hg19</td>
<td>2.2.0_gcc-9.4.0</td>
<td>default</td>
<td>Annotation package for Illumina Infinium DNA methylation probes.</td>
</tr>
<tr>
<td>r-filelock</td>
<td>1.0.2_gcc-9.4.0</td>
<td>default</td>
<td>Portable File Locking.</td>
</tr>
<tr>
<td>r-fitdistrplus</td>
<td>1.1-6_gcc-9.4.0</td>
<td>default</td>
<td>Help to Fit of a Parametric Distribution to Non-Censored or Censored Data.</td>
</tr>
<tr>
<td>r-fnn</td>
<td>1.1.3_gcc-9.4.0</td>
<td>default</td>
<td>Fast Nearest Neighbor Search Algorithms and Applications.</td>
</tr>
<tr>
<td>r-fontawesome</td>
<td>0.2.2_gcc-9.4.0</td>
<td>default</td>
<td>Easily Work with 'Font Awesome' Icons.</td>
</tr>
<tr>
<td>r-forcats</td>
<td>0.5.1_gcc-9.4.0</td>
<td>default</td>
<td>Tools for Working with Categorical Variables (Factors).</td>
</tr>
<tr>
<td>r-foreach</td>
<td>1.5.2_gcc-9.4.0</td>
<td>default</td>
<td>Provides Foreach Looping Construct.</td>
</tr>
<tr>
<td>r-foreign</td>
<td>0.8-82_gcc-9.4.0</td>
<td>default</td>
<td>Read Data Stored by 'Minitab', 'S', 'SAS', 'SPSS', 'Stata', 'Stastat', 'Weka', 'dBase', ...</td>
</tr>
<tr>
<td>r-formatr</td>
<td>1.11_gcc-9.4.0</td>
<td>default</td>
<td>Format R Code Automatically.</td>
</tr>
<tr>
<td>r-formula</td>
<td>1.2-4_gcc-9.4.0</td>
<td>default</td>
<td>Extended Model Formulas.</td>
</tr>
<tr>
<td>r-fs</td>
<td>1.5.2_gcc-9.4.0</td>
<td>default</td>
<td>Cross-Platform File System Operations Based on 'libuv'.</td>
</tr>
<tr>
<td>r-futile-logger</td>
<td>1.4.3_gcc-9.4.0</td>
<td>default</td>
<td>A Logging Utility for R.</td>
</tr>
<tr>
<td>r-futile-options</td>
<td>1.0.1_gcc-9.4.0</td>
<td>default</td>
<td>Futile Options Management.</td>
</tr>
<tr>
<td>r-future</td>
<td>1.24.0_gcc-9.4.0</td>
<td>default</td>
<td>Unified Parallel and Distributed Processing in R for Everyone.</td>
</tr>
<tr>
<td>r-future-apply</td>
<td>1.8.1_gcc-9.4.0</td>
<td>default</td>
<td>Apply Function to Elements in Parallel using Futures.</td>
</tr>
<tr>
<td>r-gdata</td>
<td>2.18.0_gcc-9.4.0</td>
<td>default</td>
<td>Various R Programming Tools for Data Manipulation.</td>
</tr>
<tr>
<td>r-genefilter</td>
<td>1.76.0_gcc-9.4.0</td>
<td>default</td>
<td>Methods for filtering genes from high-throughput experiments.</td>
</tr>
<tr>
<td>r-genelendata</td>
<td>1.30.0_gcc-9.4.0</td>
<td>default</td>
<td>Lengths of mRNA transcripts for a number of genomes.</td>
</tr>
<tr>
<td>r-geneplotter</td>
<td>1.72.0_gcc-9.4.0</td>
<td>default</td>
<td>Graphics related functions for Bioconductor.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
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</tr>
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<tr>
<td>r-generics</td>
<td>0.1.1</td>
<td>Common S3 Generics not Provided by Base R Methods Related to Model Fitting.</td>
<td></td>
</tr>
<tr>
<td>r-genomeinfodb</td>
<td>1.30.1</td>
<td>Utilities for manipulating chromosome names, including modifying them to follow a particular naming style.</td>
<td></td>
</tr>
<tr>
<td>r-genomeinfodbdata</td>
<td>1.2.7</td>
<td>for mapping between NCBI taxonomy ID and species. Used by functions in the GenomeInfoDb package.</td>
<td></td>
</tr>
<tr>
<td>r-genomicalignments</td>
<td>1.30.0</td>
<td>Representation and manipulation of short genomic alignments.</td>
<td></td>
</tr>
<tr>
<td>r-genomicfeatures</td>
<td>1.46.4</td>
<td>Conveniently import and query gene models.</td>
<td></td>
</tr>
<tr>
<td>r-genomicranges</td>
<td>1.46.1</td>
<td>Representation and manipulation of genomic intervals.</td>
<td></td>
</tr>
<tr>
<td>r-geoquery</td>
<td>2.62.2</td>
<td>Get data from NCBI Gene Expression Omnibus (GEO).</td>
<td></td>
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<tr>
<td>r-genet</td>
<td>1.5.0</td>
<td>Simple Git Client for R.</td>
<td></td>
</tr>
<tr>
<td>r-getopt</td>
<td>1.20.3</td>
<td>C-Like ‘getopt’ Behavior.</td>
<td></td>
</tr>
<tr>
<td>r-ggmap</td>
<td>3.0.0</td>
<td>Spatial Visualization with ggplot2.</td>
<td></td>
</tr>
<tr>
<td>r-ggplot2</td>
<td>3.3.5</td>
<td>Create Elegant Data Visualisations Using the Grammar of Graphics.</td>
<td></td>
</tr>
<tr>
<td>r-ggpubli</td>
<td>0.9.1</td>
<td>Repulsive Text and Label Geoms for ‘ggplot2’.</td>
<td></td>
</tr>
<tr>
<td>r-gggridges</td>
<td>0.5.3</td>
<td>Ridgeline Plots in ‘ggplot2’.</td>
<td></td>
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<tr>
<td>r-ggvie</td>
<td>0.4.7</td>
<td>Interactive Grammar of Graphics.</td>
<td></td>
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<tr>
<td>r-github</td>
<td>1.3.0</td>
<td>‘GitHub’ ‘API’.</td>
<td></td>
</tr>
<tr>
<td>r-gitcreds</td>
<td>0.1.1</td>
<td>Query ‘git’ Credentials from ‘R’.</td>
<td></td>
</tr>
<tr>
<td>r-glmnet</td>
<td>4.1-3</td>
<td>Lasso and Elastic-Net Regularized Generalized Linear Models.</td>
<td></td>
</tr>
<tr>
<td>r-glmm</td>
<td>0.14.0</td>
<td>Identify Global Objects in R Expressions.</td>
<td></td>
</tr>
<tr>
<td>r-glote</td>
<td>5.48.0</td>
<td>Testing Groups of Covariates/Features for Association with a Response Variable, with Applications to Gene Set Testing.</td>
<td></td>
</tr>
<tr>
<td>r-glue</td>
<td>1.6.1</td>
<td>Interpreted String Literals.</td>
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<tr>
<td>r-gmp</td>
<td>0.6.2.1</td>
<td>Multiple Precision Arithmetic.</td>
<td></td>
</tr>
<tr>
<td>r-go-db</td>
<td>3.14.0</td>
<td>A set of annotation maps describing the entire Gene Ontology.</td>
<td></td>
</tr>
<tr>
<td>r-goftest</td>
<td>1.2-3</td>
<td>Classical Goodness-of-Fit Tests for Univariate Distributions.</td>
<td></td>
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<tr>
<td>r-googleviz</td>
<td>0.6.11</td>
<td>R Interface to Google Charts.</td>
<td></td>
</tr>
<tr>
<td>r-gost</td>
<td>1.46.0</td>
<td>Gene Ontology analyser for RNA-seq and other length biased data.</td>
<td></td>
</tr>
<tr>
<td>r-gower</td>
<td>0.2.2</td>
<td>Gower’s Distance.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
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</tr>
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<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
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<td>r-gplots</td>
<td>3.1.1_gcc-9.4.0</td>
<td>default</td>
<td>Various R Programming Tools for Plotting Data.</td>
</tr>
<tr>
<td>r-gridextra</td>
<td>2.3_gcc-9.4.0</td>
<td>default</td>
<td>Miscellaneous Functions for 'Grid' Graphics.</td>
</tr>
<tr>
<td>r-gsalib</td>
<td>2.1_gcc-9.4.0</td>
<td>default</td>
<td>Utility Functions For GATK.</td>
</tr>
<tr>
<td>r-go</td>
<td>2.1.7-1_gcc-9.4.0</td>
<td>default</td>
<td>Wrapper for the Gnu Scientific Library.</td>
</tr>
<tr>
<td>r-gtable</td>
<td>0.3.0_gcc-9.4.0</td>
<td>default</td>
<td>Arrange 'Grob's in Tables.</td>
</tr>
<tr>
<td>r-gtools</td>
<td>3.9.2_gcc-9.4.0</td>
<td>default</td>
<td>Various R Programming Tools.</td>
</tr>
<tr>
<td>r-gviz</td>
<td>1.38.3_gcc-9.4.0</td>
<td>default</td>
<td>Plotting data and annotation information along genomic coordinates.</td>
</tr>
<tr>
<td>r-hardhat</td>
<td>0.2.0_gcc-9.4.0</td>
<td>default</td>
<td>Construct Modeling Packages.</td>
</tr>
<tr>
<td>r-hash</td>
<td>1.4-2_gcc-9.4.0</td>
<td>default</td>
<td>RHash is a console utility for computing and verifying hash sums of files. It supports CRC32, MD4, MD5, SHA1, SHA256, SHA512, SHA3, Tiger, TTH, Torrent BTIH, AICH, ED2K, GOST R 34.11-94, RIPEMD-160, HAS-160, EDON-R 256/512, WHIRLPOOL and SNEFRU hash sums.</td>
</tr>
<tr>
<td>r-haven</td>
<td>2.4.3_gcc-9.4.0</td>
<td>default</td>
<td>Import and Export 'SPSS', 'Stata' and 'SAS' Files.</td>
</tr>
<tr>
<td>r-hdf5array</td>
<td>1.22.1_gcc-9.4.0</td>
<td>default</td>
<td>HDFS backend for DelayedArray objects.</td>
</tr>
<tr>
<td>r-hero</td>
<td>1.0.1_gcc-9.4.0</td>
<td>default</td>
<td>A Simpler Way to Find Your Files.</td>
</tr>
<tr>
<td>r-high</td>
<td>0.9_gcc-9.4.0</td>
<td>default</td>
<td>Syntax Highlighting for R Source Code.</td>
</tr>
<tr>
<td>r-hmisc</td>
<td>4.6.0_gcc-9.4.0</td>
<td>default</td>
<td>Harrell Miscellaneous.</td>
</tr>
<tr>
<td>r-hms</td>
<td>1.1.1_gcc-9.4.0</td>
<td>default</td>
<td>Pretty Time of Day.</td>
</tr>
<tr>
<td>r-htmltable</td>
<td>2.4.0_gcc-9.4.0</td>
<td>default</td>
<td>Advanced Tables for Markdown/HTML.</td>
</tr>
<tr>
<td>r-htmltools</td>
<td>0.5.2_gcc-9.4.0</td>
<td>default</td>
<td>Tools for HTML.</td>
</tr>
<tr>
<td>r-htmlwidgets</td>
<td>1.5.4_gcc-9.4.0</td>
<td>default</td>
<td>HTML Widgets for R.</td>
</tr>
<tr>
<td>r-httpu</td>
<td>1.6.5_gcc-9.4.0</td>
<td>default</td>
<td>HTTP and WebSocket Server Library.</td>
</tr>
<tr>
<td>r-http</td>
<td>1.4.2_gcc-9.4.0</td>
<td>default</td>
<td>Tools for Working with URLs and HTTP.</td>
</tr>
<tr>
<td>r-ica</td>
<td>1.0-2_gcc-9.4.0</td>
<td>default</td>
<td>Independent Component Analysis.</td>
</tr>
<tr>
<td>r-igraph</td>
<td>1.2.11_gcc-9.4.0</td>
<td>default</td>
<td>Network Analysis and Visualization.</td>
</tr>
<tr>
<td>r-illumina450prvariants.db</td>
<td>1.30.0_gcc-9.4.0</td>
<td>default</td>
<td>Annotation Package combining variant data from 1000 Genomes Project for Illumina HumanMethylation450 Bead Chip probes.</td>
</tr>
<tr>
<td>r-illumina450kanno-methylation450kanno-ilmn12-hg19</td>
<td>0.6.0_gcc-9.4.0</td>
<td>default</td>
<td>Annotation for Illumina’s 450k methylation arrays.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Features</td>
<td></td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>illuminaFM 450kmanifest</td>
<td>0.4.0</td>
<td>Annotation for Illumina's 450k methylation arrays.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.6.0</td>
<td>Annotation for Illumina's EPIC methylation arrays.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.3.0</td>
<td>Manifest for Illumina's EPIC methylation arrays.</td>
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</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.36.0</td>
<td>Parsing Illumina Microarray Output Files.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.42.11</td>
<td>Image Processing Library Based on 'CImg'.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>1.68.0</td>
<td>impute: Imputation for microarray data.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.1.0.1</td>
<td>Software Tools to Quantify Structural Importance of Nodes in a Network.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.3.1</td>
<td>Read and Write '.ini' Files.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.3.19</td>
<td>Functions to Inline C, C++, Fortran Function Calls from R.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.16.0</td>
<td>Easy Access to Model Information for Various Model Objects.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>1.32.0</td>
<td>Base package for enabling powerful shiny web displays of Bioconductor objects.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>0.9.12</td>
<td>Improved Predictors.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>2.28.0</td>
<td>Foundation of integer range manipulation in Bioconductor.</td>
<td></td>
</tr>
<tr>
<td>illuminaFM EPICmanifest</td>
<td>2.3.5</td>
<td>Fast Truncated Singular Value Decomposition and Principal Components Analysis for Large Dense and Sparse Matrices.</td>
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<td>illuminaFM EPICmanifest</td>
<td>0.2.5</td>
<td>Generate Isolines and Isobands from Regularly Spaced Elevation Grids.</td>
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<td>illuminaFM EPICmanifest</td>
<td>1.9</td>
<td>Independent Surrogate Variable Analysis.</td>
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<td>illuminaFM EPICmanifest</td>
<td>1.0.13</td>
<td>Provides Iterator Construct.</td>
<td></td>
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<td>2.0.3</td>
<td>Blind Source Separation Methods Based on Joint Diagonalization and Some BSS Performance Criteria.</td>
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<td>illuminaFM EPICmanifest</td>
<td>0.1-9</td>
<td>Read and write JPEG images.</td>
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<td>illuminaFM EPICmanifest</td>
<td>0.1.4</td>
<td>Obtain 'jQuery' as an HTML Dependency Object.</td>
<td></td>
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<td>1.8.0</td>
<td>A Simple and Robust JSON Parser and Generator for R.</td>
<td></td>
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<td>illuminaFM EPICmanifest</td>
<td>1.34.0</td>
<td>Client-side REST access to KEGG.</td>
<td></td>
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<td>0.9-29</td>
<td>Kernel-Based Machine Learning Lab.</td>
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</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
<td></td>
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<td>-----------</td>
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<td>r-knitr</td>
<td>1.37_gcc-</td>
<td>A General-Purpose Package for Dynamic Report Generation in R.</td>
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<tr>
<td>r-kpmv</td>
<td>0.1.0_gcc-</td>
<td>Known Population Median Test.</td>
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<td>r-labeling</td>
<td>0.4.2_gcc-</td>
<td>Axis Labeling.</td>
<td></td>
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<td>r-lambda</td>
<td>1.2.4_gcc-</td>
<td>Modeling Data with Functional Programming.</td>
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</tr>
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<td>r-later</td>
<td>1.3.0_gcc-</td>
<td>Utilities for Scheduling Functions to Execute Later with Event Loops.</td>
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<td>r-lattice</td>
<td>0.20-45_gcc-9.4.0</td>
<td>Trellis Graphics for R.</td>
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<td>r-latticeextra</td>
<td>0.6-29_gcc-9.4.0</td>
<td>Extra Graphical Utilities Based on Lattice.</td>
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<td>r-lava</td>
<td>1.6.10_gcc-9.4.0</td>
<td>Latent Variable Models.</td>
<td></td>
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<td>r-lavaan</td>
<td>0.6-10_gcc-9.4.0</td>
<td>Latent Variable Analysis.</td>
<td></td>
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<td>r-lazyeva</td>
<td>0.2.2_gcc-9.4.0</td>
<td>Lazy (Non-Standard) Evaluation.</td>
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<td>r-leaflet</td>
<td>2.0.4.1_gcc-9.4.0</td>
<td>Create Interactive Web Maps with the JavaScript 'Leaflet' Library.</td>
<td></td>
</tr>
<tr>
<td>r-leaflet-providers</td>
<td>1.9.0_gcc-9.4.0</td>
<td>Leaflet Providers.</td>
<td></td>
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<td>r-leap</td>
<td>3.1_gcc-9.4.0</td>
<td>Regression Subset Selection.</td>
<td></td>
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<td>r-leiden</td>
<td>0.3.9_gcc-9.4.0</td>
<td>R Implementation of Leiden Clustering Algorithm.</td>
<td></td>
</tr>
<tr>
<td>r-lifecycle</td>
<td>1.0.1_gcc-9.4.0</td>
<td>Manage the Life Cycle of your Package Functions.</td>
<td></td>
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<tr>
<td>r-limma</td>
<td>3.50.0_gcc-9.4.0</td>
<td>Linear Models for Microarray Data.</td>
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</tr>
<tr>
<td>r-listenv</td>
<td>0.8.0_gcc-9.4.0</td>
<td>Environments Behaving (Almost) as Lists.</td>
<td></td>
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<tr>
<td>r-lmeres</td>
<td>3.1-3_gcc-9.4.0</td>
<td>Tests in Linear Mixed Effects Models.</td>
<td></td>
</tr>
<tr>
<td>r-lmeres2</td>
<td>0.9-39_gcc-9.4.0</td>
<td>Testing Linear Regression Models.</td>
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<td>r-lcfl</td>
<td>1.5-9.4_gcc-9.4.0</td>
<td>Local regression, likelihood and density estimation.</td>
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<tr>
<td>r-loo</td>
<td>2.4.1_gcc-9.4.0</td>
<td>Efficient Leave-One-Out Cross-Validation and WAIC for BayesianModels.</td>
<td></td>
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<tr>
<td>r-lubridate</td>
<td>1.8.0_gcc-9.4.0</td>
<td>Make Dealing with Dates a Little Easier.</td>
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<td>r-lumi</td>
<td>2.46.0_gcc-9.4.0</td>
<td>BeadArray Specific Methods for Illumina Methylation and Expression Microarrays.</td>
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<tr>
<td>r-magrittr</td>
<td>2.0.2_gcc-9.4.0</td>
<td>A Forward-Pipe Operator for R.</td>
<td></td>
</tr>
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<td>r-map</td>
<td>3.4.0_gcc-9.4.0</td>
<td>Draw Geographical Maps.</td>
<td></td>
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<tr>
<td>Package</td>
<td>Version</td>
<td>Dependent R</td>
<td>Description</td>
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<td>--------------</td>
<td>---------</td>
<td>-------------</td>
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<td>r-maptools</td>
<td>1.1-2_gcc-9.4.0</td>
<td>default</td>
<td>Tools for Handling Spatial Objects.</td>
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<tr>
<td>r-markdown</td>
<td>1.1_gcc-9.4.0</td>
<td>default</td>
<td>Render Markdown with the C Library 'Sundown'.</td>
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<tr>
<td>r-marray</td>
<td>1.72.0_gcc-9.4.0</td>
<td>default</td>
<td>Exploratory analysis for two-color spotted microarray data.</td>
</tr>
<tr>
<td>r-mass</td>
<td>7.3-55_gcc-9.4.0</td>
<td>default</td>
<td>Support Functions and Datasets for Venables and Ripley’s MASS.</td>
</tr>
<tr>
<td>r-matrix</td>
<td>1.4-0_gcc-9.4.0</td>
<td>default</td>
<td>Sparse and Dense Matrix Classes and Methods.</td>
</tr>
<tr>
<td>r-matrixgenerics</td>
<td>1.6.0_gcc-9.4.0</td>
<td>default</td>
<td>S4 Generic Summary Statistic Functions that Operate on Matrix-Like Objects.</td>
</tr>
<tr>
<td>r-matrixmodels</td>
<td>0.5-0_gcc-9.4.0</td>
<td>default</td>
<td>Modelling with Sparse and Dense Matrices.</td>
</tr>
<tr>
<td>r-matrixstats</td>
<td>0.61.0_gcc-9.4.0</td>
<td>default</td>
<td>Functions that Apply to Rows and Columns of Matrices (and to Vectors).</td>
</tr>
<tr>
<td>r-mdmclust</td>
<td>5.4.9_gcc-9.4.0</td>
<td>default</td>
<td>Gaussian Mixture Modelling for Model-Based Clustering, Classification, and Density Estimation.</td>
</tr>
<tr>
<td>r-mcmcl</td>
<td>0.9-7_gcc-9.4.0</td>
<td>default</td>
<td>Markov Chain Monte Carlo.</td>
</tr>
<tr>
<td>r-memcpack</td>
<td>1.6-0_gcc-9.4.0</td>
<td>default</td>
<td>Markov Chain Monte Carlo (MCMC) Package.</td>
</tr>
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<td>r-memoise</td>
<td>2.0.1_gcc-9.4.0</td>
<td>default</td>
<td>‘Memoisation’ of Functions.</td>
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<tr>
<td>r-methylumi</td>
<td>2.40.1_gcc-9.4.0</td>
<td>default</td>
<td>Handle Illumina methylation data.</td>
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<tr>
<td>r-mgcv</td>
<td>1.8-38_gcc-9.4.0</td>
<td>default</td>
<td>Mixed GAM Computation Vehicle with Automatic Smoothness Estimation.</td>
</tr>
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<td>r-mimem</td>
<td>0.12_gcc-9.4.0</td>
<td>default</td>
<td>Map Filenames to MIME Types.</td>
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<tr>
<td>r-minflew</td>
<td>1.40.0_gcc-9.4.0</td>
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<td>Analyze Illumina Infinium DNA methylation arrays.</td>
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<tr>
<td>r-minium</td>
<td>0.1.1.1_gcc-9.4.0</td>
<td>default</td>
<td>Shiny UI Widgets for Small Screens.</td>
</tr>
<tr>
<td>r-minq</td>
<td>1.2.4_gcc-9.4.0</td>
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<td>Derivative-free optimization algorithms by quadratic approximation.</td>
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<tr>
<td>r-missmethyl</td>
<td>1.28.0_gcc-9.4.0</td>
<td>default</td>
<td>Analysing Illumina HumanMethylation BeadChip Data.</td>
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<td>r-mitools</td>
<td>2.4_gcc-9.4.0</td>
<td>default</td>
<td>Tools for Multiple Imputation of Missing Data.</td>
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<tr>
<td>r-mixtools</td>
<td>1.2.0_gcc-9.4.0</td>
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<td>Tools for Analyzing Finite Mixture Models.</td>
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<tr>
<td>r-mnorm</td>
<td>2.0.2_gcc-9.4.0</td>
<td>default</td>
<td>The Multivariate Normal and t Distributions, and Their Truncated Versions.</td>
</tr>
<tr>
<td>r-modelmetrics</td>
<td>1.2.2.2_gcc-9.4.0</td>
<td>default</td>
<td>Rapid Calculation of Model Metrics.</td>
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<tr>
<td>r-multcomp</td>
<td>1.4-18_gcc-9.4.0</td>
<td>default</td>
<td>Simultaneous Inference in General Parametric Models.</td>
</tr>
<tr>
<td>r-multtes</td>
<td>2.50.0_gcc-9.4.0</td>
<td>default</td>
<td>Resampling-based multiple hypothesis testing.</td>
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<tr>
<td>r-munsell</td>
<td>0.5.0_gcc-9.4.0</td>
<td>default</td>
<td>Utilities for Using Munsell Colours.</td>
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<tr>
<td>Package</td>
<td>Version</td>
<td>Architecture</td>
<td>Description</td>
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<td>r-mvtnorm</td>
<td>1.1-3_gcc-9.4.0 default</td>
<td></td>
<td>Multivariate Normal and t Distributions.</td>
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<tr>
<td>r-ncdf4</td>
<td>1.19_gcc-9.4.0 default</td>
<td></td>
<td>Interface to Unidata netCDF (Version 4 or Earlier) Format Data Files.</td>
</tr>
<tr>
<td>r-networkd3</td>
<td>0.4_gcc-9.4.0 default</td>
<td></td>
<td>D3 JavaScript Network Graphs from R.</td>
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<tr>
<td>r-streams</td>
<td>1.0.1_gcc-9.4.0 default</td>
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<td>Multiple independent streams of pseudo-random numbers.</td>
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<tr>
<td>r-rieqslv</td>
<td>3.3.2_gcc-9.4.0 default</td>
<td></td>
<td>Solve Systems of Nonlinear Equations.</td>
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<tr>
<td>r-nlmix</td>
<td>3.1-155_gcc-9.4.0 default</td>
<td></td>
<td>Linear and Nonlinear Mixed Effects Models.</td>
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<tr>
<td>r-nlopt</td>
<td>2.0.0_gcc-9.4.0 default</td>
<td></td>
<td>R Interface to NLopt.</td>
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<tr>
<td>r-nnet</td>
<td>7.3-17_gcc-9.4.0 default</td>
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<td>Feed-Forward Neural Networks and Multinomial Log-Linear Models.</td>
</tr>
<tr>
<td>r-nnests2</td>
<td>0.5-5_gcc-9.4.0 default</td>
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<td>Tests of Non-Nested Models.</td>
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<tr>
<td>r-nor1mix</td>
<td>1.3-0_gcc-9.4.0 default</td>
<td></td>
<td>Normal aka Gaussian (1-d) Mixture Models (S3 Classes and Methods).</td>
</tr>
<tr>
<td>r-np</td>
<td>0.60-11_gcc-9.4.0 default</td>
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<td>Nonparametric Kernel Smoothing Methods for Mixed Data Types.</td>
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<tr>
<td>r-numderiv</td>
<td>2016.8-1.1_gcc-9.4.0 default</td>
<td></td>
<td>Accurate Numerical Derivatives.</td>
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<tr>
<td>rocksdb</td>
<td>6.20.3_gcc-9.4.0 default</td>
<td></td>
<td>RocksDB: A Persistent Key-Value Store for Flash and RAM Storage</td>
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<tr>
<td>root</td>
<td>6.24.06_gcc-9.4.0 default</td>
<td></td>
<td>ROOT is a data analysis framework.</td>
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<tr>
<td>r-openxlsx</td>
<td>1.4.6_gcc-9.4.0 default</td>
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<td>Toolkit for Encryption, Signatures and Certificates Based on OpenSSL.</td>
</tr>
<tr>
<td>r-org-hs-eg-db</td>
<td>3.14.0_gcc-9.4.0 default</td>
<td></td>
<td>Genome wide annotation for Human.</td>
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<tr>
<td>r-pacakages</td>
<td>0.7.0_gcc-9.4.0 default</td>
<td></td>
<td>A Dependency Management System for Projects and their R Package Dependencies.</td>
</tr>
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<td>r-parallelly</td>
<td>1.30.0_gcc-9.4.0 default</td>
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<td>Enhancing the <code>parallel</code> Package.</td>
</tr>
<tr>
<td>r-patchwork</td>
<td>1.1.1_gcc-9.4.0 default</td>
<td></td>
<td>The Composer of Plots.</td>
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<tr>
<td>r-pbapply</td>
<td>1.5-0_gcc-9.4.0 default</td>
<td></td>
<td>Adding Progress Bar to <code>apply</code> Functions.</td>
</tr>
<tr>
<td>r-pbnorm</td>
<td>0.6.0_gcc-9.4.0 default</td>
<td></td>
<td>Vectorized Bivariate Normal CDF.</td>
</tr>
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<td>r-pbkrtest</td>
<td>0.4-7_gcc-9.4.0 default</td>
<td></td>
<td>Parametric Bootstrap, Kenward-Roger and Satterthwaite Based Methods for Test in Mixed Models.</td>
</tr>
<tr>
<td>r-pcapix</td>
<td>1.9-74_gcc-9.4.0 default</td>
<td></td>
<td>Provides functions for robust PCA by projection pursuit.</td>
</tr>
<tr>
<td>r-permute</td>
<td>0.9-7_gcc-9.4.0 default</td>
<td></td>
<td>Functions for Generating Restricted Permutations of Data.</td>
</tr>
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<td>r-philentropy</td>
<td>0.6.0_gcc-9.4.0 default</td>
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<td>Similarity and Distance Quantification Between Probability Functions.</td>
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<td>r-phylobase</td>
<td>0.8.10_gcc-9.4.0 default</td>
<td></td>
<td>Base Package for Phylogenetic Structures and Comparative Data.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Notes</td>
<td></td>
</tr>
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<td>-----------</td>
<td>------------------</td>
<td>--------------------------------------------</td>
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<td>r-pillar</td>
<td>1.7.0_gcc-9.4.0</td>
<td>Coloured Formatting for Columns.</td>
<td></td>
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<td>r-pixmap</td>
<td>0.4-12_gcc-9.4.0</td>
<td>Bitmap Images ('Pixel Maps').</td>
<td></td>
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<tr>
<td>r-pkgbuild</td>
<td>1.3.1_gcc-9.4.0</td>
<td>Find Tools Needed to Build R Packages.</td>
<td></td>
</tr>
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<td>r-pkgconfig</td>
<td>2.0.3_gcc-9.4.0</td>
<td>Private Configuration for 'R' Packages.</td>
<td></td>
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<tr>
<td>r-pkgload</td>
<td>1.2.4_gcc-9.4.0</td>
<td>Simulate Package Installation and Attach.</td>
<td></td>
</tr>
<tr>
<td>r-plog</td>
<td>0.2.0_gcc-9.4.0</td>
<td>The 'plog' C++ Logging Library.</td>
<td></td>
</tr>
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<td>r-plotly</td>
<td>4.10.0_gcc-9.4.0</td>
<td>Create Interactive Web Graphics via 'plotly.js'.</td>
<td></td>
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<td>r-plotrix</td>
<td>3.8-2_gcc-9.4.0</td>
<td>Various Plotting Functions.</td>
<td></td>
</tr>
<tr>
<td>r-plyr</td>
<td>1.8.6_gcc-9.4.0</td>
<td>Tools for Splitting, Applying and Combining Data.</td>
<td></td>
</tr>
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<td>r-png</td>
<td>0.1-7_gcc-9.4.0</td>
<td>Read and write PNG images.</td>
<td></td>
</tr>
<tr>
<td>r-polyclip</td>
<td>1.10-0_gcc-9.4.0</td>
<td>Polygon Clipping.</td>
<td></td>
</tr>
<tr>
<td>r-poorman</td>
<td>0.2.5_gcc-9.4.0</td>
<td>A Poor Man's Dependency Free Recreation of 'plyr'.</td>
<td></td>
</tr>
<tr>
<td>r-posterior</td>
<td>1.2.0_gcc-9.4.0</td>
<td>Tools for Working with Posterior Distributions.</td>
<td></td>
</tr>
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<td>r-praise</td>
<td>1.0.0_gcc-9.4.0</td>
<td>Praise Users.</td>
<td></td>
</tr>
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<td>r-preprocessco-re</td>
<td>1.56.0_gcc-9.4.0</td>
<td>A collection of pre-processing functions.</td>
<td></td>
</tr>
<tr>
<td>r-prettyscript</td>
<td>0.4.1_gcc-9.4.0</td>
<td>Creating Pretty Documents from R Markdown.</td>
<td></td>
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<td>r-prettyscript</td>
<td>1.1.1_gcc-9.4.0</td>
<td>Pretty, Human Readable Formatting of Quantities.</td>
<td></td>
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<tr>
<td>r-proc</td>
<td>1.18.0_gcc-9.4.0</td>
<td>Display and Analyze ROC Curves.</td>
<td></td>
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<tr>
<td>r-process</td>
<td>3.5.2_gcc-9.4.0</td>
<td>Execute and Control System Processes.</td>
<td></td>
</tr>
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<td>r-prodlim</td>
<td>2019.11.13_gcc-9.4.0</td>
<td>Product-Limit Estimation for Censored Event History Analysis.</td>
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<td>r-progress</td>
<td>1.2.2_gcc-9.4.0</td>
<td>Terminal Progress Bars.</td>
<td></td>
</tr>
<tr>
<td>r-progress</td>
<td>0.10.0_gcc-9.4.0</td>
<td>An Inclusive, Unifying API for Progress Updates.</td>
<td></td>
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<td>r-promises</td>
<td>1.2.0.1_gcc-9.4.0</td>
<td>Abstractions for Promise-Based Asynchronous Programming.</td>
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<td>r-protogensics</td>
<td>1.26.0_gcc-9.4.0</td>
<td>S4 generic functions for Bioconductor proteomics infrastructure.</td>
<td></td>
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<td>r-proxy</td>
<td>0.4-26_gcc-9.4.0</td>
<td>Distance and Similarity Measures.</td>
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</tr>
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<td>r-ps</td>
<td>1.6.0_gcc-9.4.0</td>
<td>List, Query, Manipulate System Processes.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
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<td></td>
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<td>r-pscbs</td>
<td>0.66.0</td>
<td>Analysis of Parent-Specific DNA Copy Numbers.</td>
<td></td>
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<td>r-pspline</td>
<td>1.0-18</td>
<td>Penalized Smoothing Splines.</td>
<td></td>
</tr>
<tr>
<td>r-purr</td>
<td>0.3.4</td>
<td>Functional Programming Tools.</td>
<td></td>
</tr>
<tr>
<td>r-quadprog</td>
<td>1.5-8</td>
<td>Functions to Solve Quadratic Programming Problems.</td>
<td></td>
</tr>
<tr>
<td>r-quantmod</td>
<td>0.4.18</td>
<td>Quantitative Financial Modelling Framework.</td>
<td></td>
</tr>
<tr>
<td>r-quantreg</td>
<td>5.88</td>
<td>Quantile Regression.</td>
<td></td>
</tr>
<tr>
<td>r-qvalue</td>
<td>2.26.0</td>
<td>Q-value estimation for false discovery rate control.</td>
<td></td>
</tr>
<tr>
<td>r-r6</td>
<td>2.5.1</td>
<td>Encapsulated Classes with Reference Semantics.</td>
<td></td>
</tr>
<tr>
<td>r-randomforest</td>
<td>4.6-14</td>
<td>Breiman and Cutler's Random Forests for Classification and Regression.</td>
<td></td>
</tr>
<tr>
<td>r-rann</td>
<td>2.6.1</td>
<td>Fast Nearest Neighbour Search (Wraps ANN Library) Using L2 Metric.</td>
<td></td>
</tr>
<tr>
<td>r-rappdirs</td>
<td>0.3.3</td>
<td>Application Directories: Determine Where to Save Data, Caches, and Logs.</td>
<td></td>
</tr>
<tr>
<td>r-raster</td>
<td>3.5-15</td>
<td>Geographic Data Analysis and Modeling.</td>
<td></td>
</tr>
<tr>
<td>r-r-cache</td>
<td>0.15.0</td>
<td>Fast and Light-Weight Caching (Memoization) of Objects and Results to Speed Up Computations.</td>
<td></td>
</tr>
<tr>
<td>r-rcmdcheck</td>
<td>1.4.0</td>
<td>Run 'R CMD check' from 'R' and Capture Results.</td>
<td></td>
</tr>
<tr>
<td>r-colorbrewer</td>
<td>1.1-2</td>
<td>ColorBrewer Palettes.</td>
<td></td>
</tr>
<tr>
<td>r-rcpp</td>
<td>1.0.8</td>
<td>Seamless R and C++ Integration.</td>
<td></td>
</tr>
<tr>
<td>r-rcppannoy</td>
<td>0.0.19</td>
<td>'Rcpp' Bindings for 'Annoy', a Library for Approximate Nearest Neighbors.</td>
<td></td>
</tr>
<tr>
<td>r-rcpparmadillo</td>
<td>0.10.8.1.0</td>
<td>'Rcpp' Integration for the 'Armadillo' Templated Linear Algebra Library.</td>
<td></td>
</tr>
<tr>
<td>r-rcppeigen</td>
<td>0.3.3.9.1</td>
<td>'Rcpp' Integration for the 'Eigen' Templated Linear Algebra Library.</td>
<td></td>
</tr>
<tr>
<td>r-rcppparallel</td>
<td>5.1.5</td>
<td>Parallel Programming Tools for 'Rcpp'.</td>
<td></td>
</tr>
<tr>
<td>r-rcppprogress</td>
<td>0.4.2</td>
<td>An Interruptible Progress Bar with OpenMP Support for C++ in R Packages.</td>
<td></td>
</tr>
<tr>
<td>r-rcptom</td>
<td>0.1.7</td>
<td>'Rcpp' Bindings to Parser for Tom’s Obvious Markup Language.</td>
<td></td>
</tr>
<tr>
<td>r-rcurl</td>
<td>1.98-1.6</td>
<td>General Network (HTTP/FTP/) Client Interface for R.</td>
<td></td>
</tr>
<tr>
<td>r-readbitmap</td>
<td>0.1.5</td>
<td>Simple Unified Interface to Read Bitmap Images (BMP, JPEG, PNG, TIFF).</td>
<td></td>
</tr>
<tr>
<td>r-readr</td>
<td>2.1.2</td>
<td>Read Rectangular Text Data.</td>
<td></td>
</tr>
<tr>
<td>r-recipes</td>
<td>0.2.0</td>
<td>Preprocessing Tools to Create Design Matrices.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------</td>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>rematch</td>
<td>2.1.2_gcc-9.4.0</td>
<td>default</td>
<td>Tidy Output from Regular Expression Matching.</td>
</tr>
<tr>
<td>remotes</td>
<td>2.4.2_gcc-9.4.0</td>
<td>default</td>
<td>R Package Installation from Remote Repositories, Including 'GitHub'.</td>
</tr>
<tr>
<td>remviz</td>
<td>0.15.2_gcc-9.4.0</td>
<td>default</td>
<td>Project Environments for R packages.</td>
</tr>
<tr>
<td>reshape</td>
<td>0.8.8_gcc-9.4.0</td>
<td>default</td>
<td>Flexibly Reshape Data.</td>
</tr>
<tr>
<td>reshape2</td>
<td>1.4.4_gcc-9.4.0</td>
<td>default</td>
<td>Flexibly Reshape Data: A Reboot of the Reshape Package.</td>
</tr>
<tr>
<td>restfulr</td>
<td>0.0.13_gcc-9.4.0</td>
<td>default</td>
<td>R Interface to RESTful Web Services.</td>
</tr>
<tr>
<td>reticulate</td>
<td>1.24_gcc-9.4.0</td>
<td>default</td>
<td>Interface to 'Python'.</td>
</tr>
<tr>
<td>rev</td>
<td>1.2.1_gcc-9.4.0</td>
<td>default</td>
<td>Friendly Regular Expressions.</td>
</tr>
<tr>
<td>rgdal</td>
<td>1.5.28_gcc-9.4.0</td>
<td>default</td>
<td>Bindings for the 'Geospatial' Data Abstraction Library.</td>
</tr>
<tr>
<td>rgcca</td>
<td>0.5-9_gcc-9.4.0</td>
<td>default</td>
<td>Interface to Geometry Engine - Open Source ('GEOS').</td>
</tr>
<tr>
<td>rgglogs</td>
<td>1.4.5.3_gcc-9.4.0</td>
<td>default</td>
<td>Overlays on Static Maps.</td>
</tr>
<tr>
<td>rgooglemaps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rhdf5</td>
<td>2.38.0_gcc-9.4.0</td>
<td>default</td>
<td>R Interface to HDF5.</td>
</tr>
<tr>
<td>rhdf5filters</td>
<td>1.6.0_gcc-9.4.0</td>
<td>default</td>
<td>HDF5 Compression Filters.</td>
</tr>
<tr>
<td>rhdf5lib</td>
<td>1.16.0_gcc-9.4.0</td>
<td>default</td>
<td>hdf5 library as an R package.</td>
</tr>
<tr>
<td>rhtslib</td>
<td>1.2.6.0_gcc-9.4.0</td>
<td>default</td>
<td>HTSlib high-throughput sequencing library as an R package.</td>
</tr>
<tr>
<td>rjags</td>
<td>4.12_gcc-9.4.0</td>
<td>default</td>
<td>Bayesian Graphical Models using MCMC.</td>
</tr>
<tr>
<td>rjava</td>
<td>1.0-6_gcc-9.4.0</td>
<td>default</td>
<td>Low-Level R to Java Interface.</td>
</tr>
<tr>
<td>rjson</td>
<td>0.2.21_gcc-9.4.0</td>
<td>default</td>
<td>JSON for R.</td>
</tr>
<tr>
<td>rlang</td>
<td>1.0.1_gcc-9.4.0</td>
<td>default</td>
<td>Functions for Base Types and Core R and 'Tidyverse' Features.</td>
</tr>
<tr>
<td>rmariadb</td>
<td>1.2.1_gcc-9.4.0</td>
<td>default</td>
<td>Database Interface and 'MariaDB' Driver.</td>
</tr>
<tr>
<td>rmarkdown</td>
<td>2.11_gcc-9.4.0</td>
<td>default</td>
<td>Dynamic Documents for R.</td>
</tr>
<tr>
<td>r-methods</td>
<td>1.8.1_gcc-9.4.0</td>
<td>default</td>
<td>S3 Methods Simplified.</td>
</tr>
<tr>
<td>rmmp</td>
<td>0.8-7_gcc-9.4.0</td>
<td>default</td>
<td>R MPFR - Multiple Precision Floating-Point Reliable.</td>
</tr>
<tr>
<td>rmmp</td>
<td>0.6-9.2_gcc-9.4.0</td>
<td>default</td>
<td>Interface (Wrapper) to MPI (Message-Passing Interface).</td>
</tr>
<tr>
<td>rmx</td>
<td>0.8.4_gcc-9.4.0</td>
<td>default</td>
<td>An Interface to the Nexus Class Library.</td>
</tr>
<tr>
<td>rnexml</td>
<td>2.4.5_gcc-9.4.0</td>
<td>default</td>
<td>Semantically Rich I/O for the 'NeXML' Format.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Status</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>----------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>r-mgtools</td>
<td>1.5.2</td>
<td>gcc-9.4.0</td>
<td>Utility Functions for Working with Random Number Generators.</td>
</tr>
<tr>
<td>r-roc</td>
<td>1.70.0</td>
<td>gcc-9.4.0</td>
<td>utilities for ROC, with microarray focus.</td>
</tr>
<tr>
<td>r-rocr</td>
<td>1.0-11</td>
<td>gcc-9.4.0</td>
<td>Visualizing the Performance of Scoring Classifiers.</td>
</tr>
<tr>
<td>r-rodbc</td>
<td>1.3-19</td>
<td>gcc-9.4.0</td>
<td>ODBC Database Access.</td>
</tr>
<tr>
<td>r-roo</td>
<td>1.24.0</td>
<td>gcc-9.4.0</td>
<td>R Object-Oriented Programming with or without References.</td>
</tr>
<tr>
<td>r-roxygen2</td>
<td>7.1.2</td>
<td>gcc-9.4.0</td>
<td>In-Line Documentation for R.</td>
</tr>
<tr>
<td>r-rpart</td>
<td>4.1.16</td>
<td>gcc-9.4.0</td>
<td>Recursive Partitioning and Regression Trees.</td>
</tr>
<tr>
<td>r-rpmw</td>
<td>1.25</td>
<td>gcc-9.4.0</td>
<td>Recursively Partitioned Mixture Model.</td>
</tr>
<tr>
<td>r-postgresql</td>
<td>0.7-3</td>
<td>gcc-9.4.0</td>
<td>R Interface to the PostgreSQL Database System.</td>
</tr>
<tr>
<td>r-projroot</td>
<td>2.0.2</td>
<td>gcc-9.4.0</td>
<td>Finding Files in Project Subdirectories.</td>
</tr>
<tr>
<td>r-rsamtools</td>
<td>2.10.0</td>
<td>gcc-9.4.0</td>
<td>Binary alignment (BAM), FASTA, variant call (BCF), and tabix file import.</td>
</tr>
<tr>
<td>r-rsconnect</td>
<td>0.8.25</td>
<td>gcc-9.4.0</td>
<td>Deployment Interface for R Markdown Documents and Shiny Applications.</td>
</tr>
<tr>
<td>r-rspectra</td>
<td>0.16-0</td>
<td>gcc-9.4.0</td>
<td>Solvers for Large-Scale Eigenvalue and SVD Problems.</td>
</tr>
<tr>
<td>r-rsqlite</td>
<td>2.2.10</td>
<td>gcc-9.4.0</td>
<td>'SQLite' Interface for R.</td>
</tr>
<tr>
<td>r-rstan</td>
<td>2.21.3</td>
<td>gcc-9.4.0</td>
<td>R Interface to Stan.</td>
</tr>
<tr>
<td>r-rstantools</td>
<td>2.1.1</td>
<td>gcc-9.4.0</td>
<td>Tools for Developing R Packages Interfacing with Stan.</td>
</tr>
<tr>
<td>r-rstudioapi</td>
<td>0.13</td>
<td>gcc-9.4.0</td>
<td>Safely Access the RStudio API.</td>
</tr>
<tr>
<td>r-rtracklayer</td>
<td>1.54.0</td>
<td>gcc-9.4.0</td>
<td>R interface to genome annotation files and the UCSC genome browser.</td>
</tr>
<tr>
<td>r-rtsne</td>
<td>0.15</td>
<td>gcc-9.4.0</td>
<td>T-Distributed Stochastic Neighbor Embedding using a Barnes-Hut Implementation.</td>
</tr>
<tr>
<td>r-runjags</td>
<td>2.2-0.3</td>
<td>gcc-9.4.0</td>
<td>Interface Utilities, Model Templates, Parallel Computing Methods and Additional Distributions for MCMC Models in JAGS.</td>
</tr>
<tr>
<td>r-rutils</td>
<td>2.11.0</td>
<td>gcc-9.4.0</td>
<td>Various Programming Utilities.</td>
</tr>
<tr>
<td>r-rv</td>
<td>0.9.7.1</td>
<td>gcc-9.4.0</td>
<td>Detect and Remove Unwanted Variation using Negative Controls.</td>
</tr>
<tr>
<td>r-rversions</td>
<td>2.1.1</td>
<td>gcc-9.4.0</td>
<td>Query R Versions, Including 'r-release' and 'r-oldrel'.</td>
</tr>
<tr>
<td>r-rzmq</td>
<td>0.9.8</td>
<td>gcc-9.4.0</td>
<td>R Bindings for 'ZeroMQ'.</td>
</tr>
<tr>
<td>r-s2</td>
<td>1.0.7</td>
<td>gcc-9.4.0</td>
<td>Spherical Geometry Operators Using the S2 Geometry Library.</td>
</tr>
<tr>
<td>r-s4vectors</td>
<td>0.32.3</td>
<td>gcc-9.4.0</td>
<td>Foundation of vector-like and list-like containers in Bioconductor.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-sandwich</td>
<td>3.0-1_gcc-9.4.0</td>
<td>Robust Covariance Matrix Estimators.</td>
<td></td>
</tr>
<tr>
<td>r-sass</td>
<td>0.4.0_gcc-9.4.0</td>
<td>Syntactically Awesome Style Sheets ('Sass').</td>
<td></td>
</tr>
<tr>
<td>r-scales</td>
<td>1.1.1_gcc-9.4.0</td>
<td>Scale Functions for Visualization.</td>
<td></td>
</tr>
<tr>
<td>r-scattermore</td>
<td>0.7_gcc-9.4.0</td>
<td>Scatterplots with More Points.</td>
<td></td>
</tr>
<tr>
<td>r-scrime</td>
<td>1.3.5_gcc-9.4.0</td>
<td>Analysis of High-Dimensional Categorical Data Such as SNP Data.</td>
<td></td>
</tr>
<tr>
<td>r-sctransform</td>
<td>0.3.3_gcc-9.4.0</td>
<td>Variance Stabilizing Transformations for Single Cell UMI Data.</td>
<td></td>
</tr>
<tr>
<td>r-segmented</td>
<td>1.4-0_gcc-9.4.0</td>
<td>Regression Models with Break-Points / Change-Points Estimation.</td>
<td></td>
</tr>
<tr>
<td>r-scales</td>
<td>1.1.1_gcc-9.4.0</td>
<td>Scale Functions for Visualization.</td>
<td></td>
</tr>
<tr>
<td>r-seurat</td>
<td>4.1.0_gcc-9.4.0</td>
<td>Data Structures for Single Cell Data.</td>
<td></td>
</tr>
<tr>
<td>r-sf</td>
<td>1.0-7_gcc-9.4.0</td>
<td>Simple Features for R.</td>
<td></td>
</tr>
<tr>
<td>r-shape</td>
<td>1.4-6_gcc-9.4.0</td>
<td>Functions for Plotting Graphical Shapes, Colors.</td>
<td></td>
</tr>
<tr>
<td>r-shiny</td>
<td>1.7.1_gcc-9.4.0</td>
<td>Web Application Framework for R.</td>
<td></td>
</tr>
<tr>
<td>r-shinyjs</td>
<td>2.1.0_gcc-9.4.0</td>
<td>Easily Improve the User Experience of Your Shiny Apps in Seconds.</td>
<td></td>
</tr>
<tr>
<td>r-shinystan</td>
<td>2.5.0_gcc-9.4.0</td>
<td>Interactive Visual and Numerical Diagnostics and Posterior Analysis for Bayesian Models.</td>
<td></td>
</tr>
<tr>
<td>r-shinythemes</td>
<td>1.2.0_gcc-9.4.0</td>
<td>Themes for Shiny.</td>
<td></td>
</tr>
<tr>
<td>r-siggenes</td>
<td>1.68.0_gcc-9.4.0</td>
<td>Multiple Testing using SAM and Efron's Empirical Bayes Approaches.</td>
<td></td>
</tr>
<tr>
<td>r-stimv</td>
<td>2.0.2_gcc-9.4.0</td>
<td>Parallel Pseudo Random Number Generator (PPRNG) 'sitmo' Header Files.</td>
<td></td>
</tr>
<tr>
<td>r-snow</td>
<td>0.4-4_gcc-9.4.0</td>
<td>Simple Network of Workstations.</td>
<td></td>
</tr>
<tr>
<td>r-source tools</td>
<td>0.1.7_gcc-9.4.0</td>
<td>Tools for Reading, Tokenizing and Parsing R Code.</td>
<td></td>
</tr>
<tr>
<td>r-sp</td>
<td>1.4-6_gcc-9.4.0</td>
<td>Classes and Methods for Spatial Data.</td>
<td></td>
</tr>
<tr>
<td>r-sparse</td>
<td>1.81_gcc-9.4.0</td>
<td>Sparse Linear Algebra.</td>
<td></td>
</tr>
<tr>
<td>r-sparsematrix</td>
<td>1.6.0_gcc-9.4.0</td>
<td>Summary Statistics for Rows and Columns of Sparse Matrices.</td>
<td></td>
</tr>
<tr>
<td>r-spatial core</td>
<td>2.3-2_gcc-9.4.0</td>
<td>Core Functionality of the 'spatstat' Family.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>-------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>r-spatstat-data</td>
<td>2.1-2_gcc-9.4.0</td>
<td>default</td>
<td>Datasets for ‘spatstat’ Family.</td>
</tr>
<tr>
<td>r-spatstat-geom</td>
<td>2.3-1_gcc-9.4.0</td>
<td>default</td>
<td>Geometrical Functionality of the ‘spatstat’ Family.</td>
</tr>
<tr>
<td>r-spatstat-sparse</td>
<td>2.1-0_gcc-9.4.0</td>
<td>default</td>
<td>Sparse Three-Dimensional Arrays and Linear Algebra Utilities.</td>
</tr>
<tr>
<td>r-spatstat-utils</td>
<td>2.3-0_gcc-9.4.0</td>
<td>default</td>
<td>Utility Functions for ‘spatstat’.</td>
</tr>
<tr>
<td>r-spdata</td>
<td>2.0.1_gcc-9.4.0</td>
<td>default</td>
<td>Datasets for Spatial Analysis.</td>
</tr>
<tr>
<td>r-spgen</td>
<td>1.2-2_gcc-9.4.0</td>
<td>default</td>
<td>Spatial Dependence: Weighting Schemes, Statistics.</td>
</tr>
<tr>
<td>r-squarem</td>
<td>2021.1_gcc-9.4.0</td>
<td>default</td>
<td>Squared Extrapolation Methods for Accelerating EM-Like Monotone Algorithms.</td>
</tr>
<tr>
<td>r-stabledist</td>
<td>0.7-1_gcc-9.4.0</td>
<td>default</td>
<td>Stable Distribution Functions.</td>
</tr>
<tr>
<td>r-stanheaders</td>
<td>2.21.0-7_gcc-9.4.0</td>
<td>default</td>
<td>C++ Header Files for Stan.</td>
</tr>
<tr>
<td>r-statmod</td>
<td>1.4.36_gcc-9.4.0</td>
<td>default</td>
<td>Statistical Modeling.</td>
</tr>
<tr>
<td>r-string</td>
<td>1.7.6_gcc-9.4.0</td>
<td>default</td>
<td>Character String Processing Facilities.</td>
</tr>
<tr>
<td>r-stringr</td>
<td>1.4.0_gcc-9.4.0</td>
<td>default</td>
<td>Simple, Consistent Wrappers for Common String Operations.</td>
</tr>
<tr>
<td>r-summarizedexperiment</td>
<td>1.24.0_gcc-9.4.0</td>
<td>default</td>
<td>SummarizedExperiment container.</td>
</tr>
<tr>
<td>r-suppdists</td>
<td>1.1-9.7_gcc-9.4.0</td>
<td>default</td>
<td>Supplementary Distributions.</td>
</tr>
<tr>
<td>r-survey</td>
<td>4.1-1_gcc-9.4.0</td>
<td>default</td>
<td>Analysis of Complex Survey Samples.</td>
</tr>
<tr>
<td>r-survival</td>
<td>3.2-13_gcc-9.4.0</td>
<td>default</td>
<td>Survival Analysis.</td>
</tr>
<tr>
<td>r-sva</td>
<td>3.42.0_gcc-9.4.0</td>
<td>default</td>
<td>Surrogate Variable Analysis.</td>
</tr>
<tr>
<td>r-sync</td>
<td>3.2.3_gcc-9.4.0</td>
<td>default</td>
<td>An open source utility that provides fast incremental file transfer.</td>
</tr>
<tr>
<td>r-syza</td>
<td>3.4_gcc-9.4.0</td>
<td>default</td>
<td>Powerful and Reliable Tools for Running System Commands in R.</td>
</tr>
<tr>
<td>r-tarifx</td>
<td>1.0.6.2_gcc-9.4.0</td>
<td>default</td>
<td>Collection of Utility and Convenience Functions.</td>
</tr>
<tr>
<td>r-tensor</td>
<td>1.5_gcc-9.4.0</td>
<td>default</td>
<td>Tensor product of arrays.</td>
</tr>
<tr>
<td>r-tensora</td>
<td>0.36.2_gcc-9.4.0</td>
<td>default</td>
<td>Advanced Tensor Arithmetic with Named Indices.</td>
</tr>
<tr>
<td>r-terra</td>
<td>1.5-21_gcc-9.4.0</td>
<td>default</td>
<td>Spatial Data Analysis.</td>
</tr>
<tr>
<td>r-testthat</td>
<td>3.1.2_gcc-9.4.0</td>
<td>default</td>
<td>Unit Testing for R.</td>
</tr>
<tr>
<td>r-th-data</td>
<td>1.1-0_gcc-9.4.0</td>
<td>default</td>
<td>TH’s Data Archive.</td>
</tr>
<tr>
<td>r-threejs</td>
<td>0.3.3_gcc-9.4.0</td>
<td>default</td>
<td>Interactive 3D Scatter Plots, Networks and Globes.</td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-tibble</td>
<td>3.1.6_gcc-9.4.0</td>
<td>Simple Data Frames.</td>
<td></td>
</tr>
<tr>
<td>r-tidy</td>
<td>1.1.4_gcc-9.4.0</td>
<td>Tidy Messy Data.</td>
<td></td>
</tr>
<tr>
<td>r-tidyselect</td>
<td>1.1.1_gcc-9.4.0</td>
<td>Select from a Set of Strings.</td>
<td></td>
</tr>
<tr>
<td>r-tiff</td>
<td>0.1-11_gcc-9.4.0</td>
<td>Read and write TIFF images.</td>
<td></td>
</tr>
<tr>
<td>r-timedate</td>
<td>3043.102_gcc-9.4.0</td>
<td>Rmetrics - Chronological and Calendar Objects.</td>
<td></td>
</tr>
<tr>
<td>r-tinytex</td>
<td>0.37_gcc-9.4.0</td>
<td>Helper Functions to Install and Maintain TeX Live, and Compile LaTeX Documents.</td>
<td></td>
</tr>
<tr>
<td>r-tmvnsim</td>
<td>1.0.2_gcc-9.4.0</td>
<td>Truncated Multivariate Normal Simulation.</td>
<td></td>
</tr>
<tr>
<td>r-tr</td>
<td>0.24.3_gcc-9.4.0</td>
<td>Technical Trading Rules.</td>
<td></td>
</tr>
<tr>
<td>r-txdb-</td>
<td>3.2.2_gcc-9.4.0</td>
<td>Annotation package for TxDb object(s).</td>
<td></td>
</tr>
<tr>
<td>hsapiens-</td>
<td>3.2.2_gcc-9.4.0</td>
<td>Annotation package for TxDb object(s).</td>
<td></td>
</tr>
<tr>
<td>ucsc-hg19-</td>
<td>0.2.0_gcc-9.4.0</td>
<td>Time Zone Database Information.</td>
<td></td>
</tr>
<tr>
<td>knowngene</td>
<td>3.2.2_gcc-9.4.0</td>
<td>Time Zone Database Information.</td>
<td></td>
</tr>
<tr>
<td>r-utf8</td>
<td>1.2.2_gcc-9.4.0</td>
<td>A dynamic, open source programming language with a focus on simplicity and productivity.</td>
<td></td>
</tr>
<tr>
<td>r-units</td>
<td>0.8-0_gcc-9.4.0</td>
<td>Measurement Units for R Vectors.</td>
<td></td>
</tr>
<tr>
<td>r-usehidi</td>
<td>2.1.5_gcc-9.4.0</td>
<td>Automate Package and Project Setup.</td>
<td></td>
</tr>
<tr>
<td>r-vgam</td>
<td>1.4.9_gcc-9.4.0</td>
<td>Visualizing Categorical Data.</td>
<td></td>
</tr>
<tr>
<td>r-vgam</td>
<td>0.3.8_gcc-9.4.0</td>
<td>Visualizing Categorical Data.</td>
<td></td>
</tr>
<tr>
<td>r-variantannotiation</td>
<td>1.40.0_gcc-9.4.0</td>
<td>Annotation of Genetic Variants.</td>
<td></td>
</tr>
<tr>
<td>r-vcd</td>
<td>1.4-9_gcc-9.4.0</td>
<td>Visualizing Categorical Data.</td>
<td></td>
</tr>
<tr>
<td>r-vcd</td>
<td>0.25-7_gcc-9.4.0</td>
<td>Visualizing Categorical Data.</td>
<td></td>
</tr>
<tr>
<td>r-vcrtree</td>
<td>0.3.8_gcc-9.4.0</td>
<td>Vector Helpers.</td>
<td></td>
</tr>
<tr>
<td>r-vgam</td>
<td>1.1.5_gcc-9.4.0</td>
<td>Vector Generalized Linear and Additive Models.</td>
<td></td>
</tr>
<tr>
<td>r-viridis</td>
<td>0.6.2_gcc-9.4.0</td>
<td>Colorblind-Friendly Color Maps for R.</td>
<td></td>
</tr>
<tr>
<td>r-viridislite</td>
<td>0.4.0_gcc-9.4.0</td>
<td>Colorblind-Friendly Color Maps (Lite Version).</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>r-visnetwork</td>
<td>2.1.0_gcc-9.4.0</td>
<td>Network Visualization using 'vis.js' Library.</td>
<td></td>
</tr>
<tr>
<td>r-vroom</td>
<td>1.5.7_gcc-9.4.0</td>
<td>Read and Write Rectangular Text Data Quickly.</td>
<td></td>
</tr>
<tr>
<td>r-waldto</td>
<td>0.3.1_gcc-9.4.0</td>
<td>Find Differences Between R Objects.</td>
<td></td>
</tr>
<tr>
<td>r-watermelon</td>
<td>2.0.0_gcc-9.4.0</td>
<td>Illumina 450 methylation array normalization and metrics.</td>
<td></td>
</tr>
<tr>
<td>r-whisker</td>
<td>0.4_gcc-9.4.0</td>
<td>mustache for R, Logicless Templating.</td>
<td></td>
</tr>
<tr>
<td>r-withr</td>
<td>2.4.3_gcc-9.4.0</td>
<td>Run Code 'With' Temporarily Modified Global State.</td>
<td></td>
</tr>
<tr>
<td>r-wk</td>
<td>0.6.0_gcc-9.4.0</td>
<td>Lightweight Well-Known Geometry Parsing.</td>
<td></td>
</tr>
<tr>
<td>r-xfun</td>
<td>0.29_gcc-9.4.0</td>
<td>Supporting Functions for Packages Maintained by 'Yihui Xie'.</td>
<td></td>
</tr>
<tr>
<td>r-xc2nnex</td>
<td>1.0.5_gcc-9.4.0</td>
<td>Excel Connector for R.</td>
<td></td>
</tr>
<tr>
<td>r-xljs</td>
<td>0.6.5_gcc-9.4.0</td>
<td>Read, Write, Format Excel 2007 and Excel 97/2000/XP/2003 Files.</td>
<td></td>
</tr>
<tr>
<td>r-xljsjars</td>
<td>0.6.1_gcc-9.4.0</td>
<td>Package required POI jars for the xlsx package.</td>
<td></td>
</tr>
<tr>
<td>r-xmldom</td>
<td>3.99-0.6_gcc-9.4.0</td>
<td>Tools for Parsing and Generating XML Within R and S-Plus.</td>
<td></td>
</tr>
<tr>
<td>r-xmlobjects</td>
<td>1.3.3_gcc-9.4.0</td>
<td>Package required POI jars for the xlsx package.</td>
<td></td>
</tr>
<tr>
<td>r-xpqr</td>
<td>1.0.0_gcc-9.4.0</td>
<td>Open System Files, 'URLs', Anything.</td>
<td></td>
</tr>
<tr>
<td>r-xtable</td>
<td>1.8-4_gcc-9.4.0</td>
<td>Export Tables to LaTeX or HTML.</td>
<td></td>
</tr>
<tr>
<td>r-xts</td>
<td>0.12.1_gcc-9.4.0</td>
<td>eXtensible Time Series.</td>
<td></td>
</tr>
<tr>
<td>r-xvector</td>
<td>0.34.0_gcc-9.4.0</td>
<td>Foundation of external vector representation and manipulation in Bioconductor.</td>
<td></td>
</tr>
<tr>
<td>r-yaml</td>
<td>2.3.5_gcc-9.4.0</td>
<td>Methods to Convert R Data to YAML and Back.</td>
<td></td>
</tr>
<tr>
<td>r-zip</td>
<td>2.2.0_gcc-9.4.0</td>
<td>Cross-Platform 'zip' Compression.</td>
<td></td>
</tr>
<tr>
<td>r-zlibbio</td>
<td>1.4.0_gcc-9.4.0</td>
<td>An R packaged zlib-1.2.5.</td>
<td></td>
</tr>
<tr>
<td>r-zoo</td>
<td>1.8-9_gcc-9.4.0</td>
<td>S3 Infrastructure for Regular and Irregular Time Series (Z's Ordered Observations).</td>
<td></td>
</tr>
<tr>
<td>samtools</td>
<td>1.13_gcc-9.4.0</td>
<td>SAM Tools provide various utilities for manipulating alignments in the SAM format, including sorting, merging, indexing and generating alignments in a per-position format</td>
<td></td>
</tr>
<tr>
<td>scotch</td>
<td>6.1.1_gcc-9.4.0</td>
<td>Scotch is a software package for graph and mesh/hypergraph partitioning, graph clustering, and sparse matrix ordering.</td>
<td></td>
</tr>
<tr>
<td>somsaverpro</td>
<td>1.2.2_gcc-9.4.0</td>
<td>MIT Screen Saver Extension.</td>
<td></td>
</tr>
<tr>
<td>see</td>
<td>4.2.2_gcc-9.4.0</td>
<td>GNU implementation of the famous stream editor.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>sentencepiece</td>
<td>0.1.91_gcc-9.4.0 default</td>
<td>Unsupervised text tokenizer for Neural Network-based text generation.</td>
<td></td>
</tr>
<tr>
<td>seqprep</td>
<td>1.3.2_gcc-9.4.0 default</td>
<td>SeqPrep is a program to merge paired end Illumina reads that are overlapping into a single longer read.</td>
<td></td>
</tr>
<tr>
<td>shared-mime-info</td>
<td>1.9_gcc-9.4.0 default</td>
<td>Database of common MIME types.</td>
<td></td>
</tr>
<tr>
<td>snakemake</td>
<td>6.15.1_gcc-9.4.0 default</td>
<td>Snakemake is an MIT-licensed workflow management system.</td>
<td></td>
</tr>
<tr>
<td>snap-korf</td>
<td>2021-11-04_gcc-9.4.0 default</td>
<td>SNAP is a general purpose gene finding program suitable for both eukaryotic and prokaryotic genomes.</td>
<td></td>
</tr>
<tr>
<td>snappy</td>
<td>1.1.8_gcc-9.4.0 1.18_intel-2021.5.0 default</td>
<td>A fast compressor/decompressor: <a href="https://code.google.com/p/snappy">https://code.google.com/p/snappy</a></td>
<td></td>
</tr>
<tr>
<td>sox</td>
<td>14.4.2_gcc-9.4.0 default</td>
<td>SoX, the Swiss Army knife of sound processing programs.</td>
<td></td>
</tr>
<tr>
<td>sqlite</td>
<td>3.37.2_gcc-9.4.0 default</td>
<td>SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine.</td>
<td></td>
</tr>
<tr>
<td>sratoolkit</td>
<td>2.10.9_gcc-9.4.0 default</td>
<td>The NCBI SRA Toolkit enables reading (‘dumping’) of sequencing files from the SRA database and writing (‘loading’) files into the .sra format.</td>
<td></td>
</tr>
<tr>
<td>star</td>
<td>2.7.6a_gcc-9.4.0 default</td>
<td>STAR is an ultrafast universal RNA-seq aligner.</td>
<td></td>
</tr>
<tr>
<td>subread</td>
<td>2.0.2_gcc-9.4.0 default</td>
<td>The Subread software package is a tool kit for processing next-gen sequencing data.</td>
<td></td>
</tr>
<tr>
<td>subversion</td>
<td>1.14.1_gcc-9.4.0 default</td>
<td>Apache Subversion - an open source version control system.</td>
<td></td>
</tr>
<tr>
<td>suite-sparse</td>
<td>5.10.1_gcc-9.4.0 default</td>
<td>SuiteSparse is a suite of sparse matrix algorithms</td>
<td></td>
</tr>
<tr>
<td>sumo</td>
<td>1.5.0_gcc-9.4.0 default</td>
<td>Eclipse SUMO is an open source, highly portable, microscopic and continuous road traffic simulation package designed to handle large road networks. It allows for intermodal simulation including pedestrians and comes with a large set of tools for scenario creation.</td>
<td></td>
</tr>
<tr>
<td>superlu</td>
<td>5.3.0_gcc-9.4.0 5.3.0_intel-2021.5.0 default</td>
<td>SuperLU is a general purpose library for the direct solution of large, sparse, nonsymmetric systems of linear equations on high performance machines. SuperLU is designed for sequential machines.</td>
<td></td>
</tr>
<tr>
<td>superlu-dist</td>
<td>7.2.0_gcc-9.4.0 7.2.0_intel-2021.5.0 default</td>
<td>A general purpose library for the direct solution of large, sparse, nonsymmetric systems of linear equations on high performance machines.</td>
<td></td>
</tr>
<tr>
<td>swig</td>
<td>4.0.2_gcc-9.4.0 default</td>
<td>SWIG is an interface compiler that connects programs written in C and C++ with scripting languages such as Perl, Python, Ruby, and Tcl. It works by taking the declarations found in C/C++ header files and using them to generate the wrapper code that scripting languages need to access the underlying C /C++ code. In addition, SWIG provides a variety of customization features that let you tailor the wrapping process to suit your application.</td>
<td></td>
</tr>
<tr>
<td>sz</td>
<td>1.4.12_3_gcc-9.4.0 1.4.12_3_intel-2021.5.0 default</td>
<td>Error-bounded Lossy Compressor for HPC Data</td>
<td></td>
</tr>
<tr>
<td>tabix</td>
<td>2013-12-16_gcc-9.4.0 default</td>
<td>Generic indexer for TAB-delimited genome position files</td>
<td></td>
</tr>
<tr>
<td>tar</td>
<td>1.3_gcc-9.4.0 default</td>
<td>GNU Tar provides the ability to create tar archives, as well as various other kinds of manipulation.</td>
<td></td>
</tr>
<tr>
<td>tcl</td>
<td>8.6.11_gcc-9.4.0 default</td>
<td>Tcl (Tool Command Language) is a very powerful but easy to learn dynamic programming language, suitable for a very wide range of uses, including web and desktop applications, networking, administration, testing and many more. Open source and business-friendly, Tcl is a mature yet evolving language that is truly cross platform, easily deployed and highly extensible.</td>
<td></td>
</tr>
<tr>
<td>tcsh</td>
<td>6.22_02_gcc-9.4.0 default</td>
<td>Tcsh is an enhanced but completely compatible version of csh, the C shell. Tcsh is a command language interpreter which can be used both as an interactive login shell and as a shell script command processor. Tcsh includes a command line editor, programmable word completion, spelling correction, a history mechanism, job control and a C language like syntax.</td>
<td></td>
</tr>
<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>tec2kit</td>
<td>2.5.9_gcc-9.4.0_default</td>
<td>TEKkit is a low-level toolkit intended to be used by applications for conversions between text encodings. For example, it can be used when importing legacy text into a Unicode-based application.</td>
<td></td>
</tr>
<tr>
<td>tesserae2</td>
<td>4.1.1_gcc-9.4.0_default</td>
<td>Tesseract Open Source OCR Engine.</td>
<td></td>
</tr>
<tr>
<td>teXlive</td>
<td>20210325_gcc9.4.0_default live_gcc9.4.0</td>
<td>TeXLive is an easy (we hope) way to get up and running with the TeX document production system. It provides a comprehensive TeX system with binaries for most flavors of Unix, including GNU/Linux, macOS, and also Windows. It includes all the major TeX-related programs, macro packages, and fonts that are free software, including support for many languages around the world.</td>
<td></td>
</tr>
<tr>
<td>tk</td>
<td>8.6.11_gcc-9.4.0_default</td>
<td>Tk is a graphical user interface toolkit that takes developing desktop applications to a higher level than conventional approaches. Tk is the standard GUI not only for Tcl, but for many other dynamic languages, and can produce rich, native applications that run unchanged across Windows, Mac OS X, Linux and more.</td>
<td></td>
</tr>
<tr>
<td>trigalore2</td>
<td>0.6.6_gcc-9.4.0_default</td>
<td>Trim Galore! is a wrapper around Cutadapt and FastQC to consistently apply adapter and quality trimming to FastQ files, with extra functionality for RRBS data.</td>
<td></td>
</tr>
<tr>
<td>uci</td>
<td>1.10.1_gcc-9.4.0_default</td>
<td>A communication library implementing high-performance messaging for MPI/PGAS frameworks</td>
<td></td>
</tr>
<tr>
<td>udunib2</td>
<td>2.2.28_gcc-9.4.0_default</td>
<td>Automated units conversion</td>
<td></td>
</tr>
<tr>
<td>unixodbc</td>
<td>2.3.4_gcc-9.4.0_default</td>
<td>ODBC is an open specification for providing application developers with a predictable API with which to access Data Sources. Data Sources include SQL Servers and any Data Source with an ODBC Driver.</td>
<td></td>
</tr>
<tr>
<td>unuran</td>
<td>1.8.1_gcc-9.4.0_default</td>
<td>Universal Non-Uniform Random number generator.</td>
<td></td>
</tr>
<tr>
<td>utf8proc</td>
<td>2.6.1_gcc-9.4.0_default</td>
<td>A clean C library for processing UTF-8 Unicode data: normalization, case-folding, graphemes, and more</td>
<td></td>
</tr>
<tr>
<td>util-linux-uuid</td>
<td>2.37.4_gcc-9.4.0_default</td>
<td>Util-linux is a suite of essential utilities for any Linux system.</td>
<td></td>
</tr>
<tr>
<td>util-macros</td>
<td>1.19.3_gcc-9.4.0_default 1.19.3_intel-2021.5.0_default</td>
<td>This is a set of autoconf macros used by the configure.ac scripts in other Xorg modular packages, and is needed to generate new versions of their configure scripts with autoconf.</td>
<td></td>
</tr>
<tr>
<td>valgrind</td>
<td>3.18.1_gcc-9.4.0_default</td>
<td>An instrumentation framework for building dynamic analysis.</td>
<td></td>
</tr>
<tr>
<td>vcftools</td>
<td>0.1.14_gcc-9.4.0_default</td>
<td>VCFtools is a program package designed for working with VCF files, such as those generated by the 1000 Genomes Project. The aim of VCFtools is to provide easily accessible methods for working with complex genetic variation data in the form of VCF files.</td>
<td></td>
</tr>
<tr>
<td>vcb</td>
<td>0.4.3_gcc-9.4.0_default</td>
<td>Vectorised math. A collection of fast and inline implementations of mathematical functions.</td>
<td></td>
</tr>
<tr>
<td>wannier90</td>
<td>3.1.0_gcc-9.4.0_default</td>
<td>Wannier90 calculates maximally-localised Wannier functions (MLWFs).</td>
<td></td>
</tr>
<tr>
<td>wxWidgets</td>
<td>3.0.2_gcc-9.4.0 3.1.0_gcc-9.4.0</td>
<td>wxWidgets is a C++ library that lets developers create applications for Windows, Mac OS X, Linux and other platforms with a single code base. It has popular language bindings for Python, Perl, Ruby and many other languages, and unlike other cross-platform toolkits, wxWidgets gives applications a truly native look and feel because it uses the platform's native API rather than emulating the GUI. It's also extensive, free, open-source and mature.</td>
<td></td>
</tr>
<tr>
<td>xcb-proto</td>
<td>1.14.1_gcc-9.4.0_default</td>
<td>xcb-proto provides the XML-XCB protocol descriptions that libxcb uses to generate the majority of its code and API.</td>
<td></td>
</tr>
<tr>
<td>xcb-uuid</td>
<td>0.4.0_gcc-9.4.0_default</td>
<td>The XCB util modules provides a number of libraries which sit on top of libxcb, the core X protocol library, and some of the extension libraries. These experimental libraries provide convenience functions and interfaces which make the raw X protocol more usable. Some of the libraries also provide client-side code which is not strictly part of the X protocol but which have traditionally been provided by Xlib.</td>
<td></td>
</tr>
<tr>
<td>xcb-util-image</td>
<td>0.4.0_gcc-9.4.0_default</td>
<td>The XCB util modules provides a number of libraries which sit on top of libxcb, the core X protocol library, and some of the extension libraries. These experimental libraries provide convenience functions and interfaces which make the raw X protocol more usable. Some of the libraries also provide client-side code which is not strictly part of the X protocol but which have traditionally been provided by Xlib.</td>
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<tr>
<td>xcb-util-keysym</td>
<td>0.4.0_gcc-9.4.0_default</td>
<td>The XCB util modules provides a number of libraries which sit on top of libxcb, the core X protocol library, and some of the extension libraries. These experimental libraries provide convenience functions and interfaces which make the raw X protocol more usable. Some of the libraries also provide client-side code which is not strictly part of the X protocol but which have traditionally been provided by Xlib.</td>
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<tr>
<td>Package</td>
<td>Version</td>
<td>Description</td>
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<tr>
<td>xcb-util-wm</td>
<td>0.4.1 gcc-9.4.0</td>
<td>The XCB util modules provides a number of libraries which sit on top of libxcb, the core X protocol library, and some of the extension libraries. These experimental libraries provide convenience functions and interfaces which make the raw X protocol more usable. Some of the libraries also provide client-side code which is not strictly part of the X protocol but which have traditionally been provided by Xlib.</td>
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<tr>
<td>xclip</td>
<td>0.13 gcc-9.4.0</td>
<td>xclip is a command line utility that is designed to run on any system with an X11 implementation. It provides an interface to X selections (the clipboard) from the command line. It can read data from standard in or a file and place it in an X selection for pasting into other X applications. xclip can also print an X selection to standard out, which can then be redirected to a file or another program.</td>
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</tr>
<tr>
<td>xzpresso</td>
<td>3.2.3 gcc-9.4.0</td>
<td>Xpresso-C++ is a validating XML parser written in a portable subset of C++. Xpresso-C++ makes it easy to give your application the ability to read and write XML data. A shared library is provided for parsing, generating, manipulating, and validating XML documents using the DOM, SAX, and SAX2 APIs.</td>
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<tr>
<td>xfr6vode mode proto</td>
<td>7.3.0 gcc-9.4.0</td>
<td>X Protocol Extensions.</td>
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<tr>
<td>xfp</td>
<td>2.3.1 gcc-9.4.0</td>
<td>XFree86 Video Mode Extension.</td>
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</tr>
<tr>
<td>xgboost</td>
<td>1.5.2 gcc-9.4.0</td>
<td>XGBoost is an optimized distributed gradient boosting library designed to be highly efficient, flexible and portable. It implements machine learning algorithms under the Gradient Boosting framework. XGBoost provides a parallel tree boosting (also known as GBDT, GBM) that solve many data science problems in a fast and accurate way. The same code runs on major distributed environment (Hadoop, SGEM, MPI) and can solve problems beyond billions of examples.</td>
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<tr>
<td>xinerama proto</td>
<td>1.2.1 gcc-9.4.0</td>
<td>X Xinerama Extension.</td>
<td></td>
</tr>
<tr>
<td>xkbcomp</td>
<td>1.4.4 gcc-9.4.0</td>
<td>The X Keyboard (XKB) Extension essentially replaces the core protocol definition of a keyboard. The extension makes it possible to specify clearly and explicitly most aspects of keyboard behaviour on a per key basis, and to track more closely the logical and physical state of a keyboard. It also includes a number of keyboard controls designed to make keyboards more accessible to people with physical impairments.</td>
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<tr>
<td>xkbddata</td>
<td>1.0.1 gcc-9.4.0</td>
<td>The XKB data files for the various keyboard models, layouts, and locales.</td>
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</tr>
<tr>
<td>xorg-cf- files</td>
<td>1.0.6 gcc-9.4.0</td>
<td>The xorg-cf-files package contains the data files for the imake utility, defining the known settings for a wide variety of platforms (many of which have not been verified or tested in over a decade), and for many of the libraries formerly delivered in the X.Org monolithic releases.</td>
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<tr>
<td>xproto</td>
<td>7.0.31 gcc-9.4.0</td>
<td>X Window System Core Protocol.</td>
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<tr>
<td>xrandr</td>
<td>1.5.0 gcc-9.4.0</td>
<td>xrandr - primitive command line interface to X11 Resize, Rotate, and Reflect (RandR) extension.</td>
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</tr>
<tr>
<td>xrootd</td>
<td>5.3.2 gcc-9.4.0</td>
<td>The XROOTD project aims at giving high performance, scalable fault tolerant access to data repositories of many kinds.</td>
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</tr>
<tr>
<td>xtrans</td>
<td>1.3.5 gcc-9.4.0</td>
<td>xtrans is a library of code that is shared among various X packages to handle network protocol transport in a modular fashion, allowing a single place to add new transport types. It is used by the X server, libX11, libICE, the X font server, and related components.</td>
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<tr>
<td>xxhash</td>
<td>0.8.0 gcc-9.4.0</td>
<td>xxHash is an Extremely fast Hash algorithm, running at RAM speed limits. It successfully completes the SMHasher test suite which evaluates collision, dispersion and randomness qualities of hash functions. Code is highly portable, and hashes are identical on all platforms (little / big endian).</td>
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<tr>
<td>xz</td>
<td>5.2.5 gcc-9.4.0</td>
<td>XZ Uits is free general-purpose data compression software with high compression ratio. XZ Uits were written for POSIX-like systems, but also work on some not-so-POSIX systems. XZ Uits are the successor to LZMA Uits.</td>
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<tr>
<td>yasm</td>
<td>1.3.0 gcc-9.4.0</td>
<td>Yasm is a complete rewrite of the NASM-2.11.06 assembler. It supports the x86 and AMD64 instruction sets, accepts NASM and GAS assembler syntaxes and outputs binary, ELF32 and ELF64 object formats.</td>
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<tr>
<td>z3</td>
<td>4.8.14 gcc-9.4.0</td>
<td>Z3 is a theorem prover from Microsoft Research. It is licensed under the MIT license.</td>
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<tr>
<td>zfp</td>
<td>0.5.5 gcc-9.4.0</td>
<td>zfp is a compressed number format for multidimensional floating-point and integer arrays.</td>
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<tr>
<td>zip</td>
<td>3.0 gcc-9.4.0</td>
<td>Zip is a compression and file packaging/archive utility.</td>
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<tr>
<td>zlib</td>
<td>1.2.11 gcc-9.4.0</td>
<td>A free, general-purpose, legally unencumbered lossless data-compression library.</td>
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</tr>
<tr>
<td>zstd</td>
<td>1.5.2 gcc-9.4.0</td>
<td>Zstandard, or zstd as short version, is a fast lossless compression algorithm, targeting real-time compression scenarios at zlib-level and better compression ratios.</td>
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<tr>
<td>zziplib</td>
<td>0.13.72_gcc-9.4.0 default</td>
<td>The zziplib provides read access to zipped files in a zip-archive, using compression based solely on free algorithms provided by zlib. It also provides a functionality to overlay the archive filesystem with the filesystem of the operating system environment.</td>
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