

Management of External Dependencies

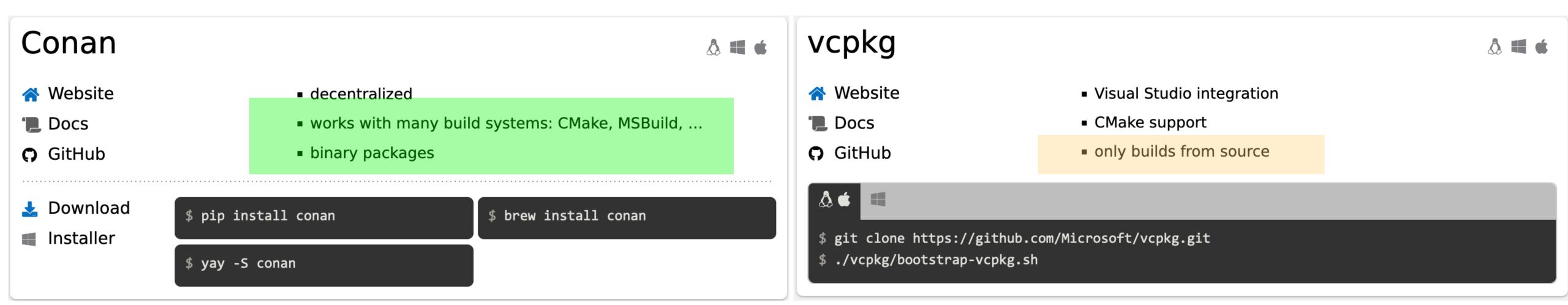
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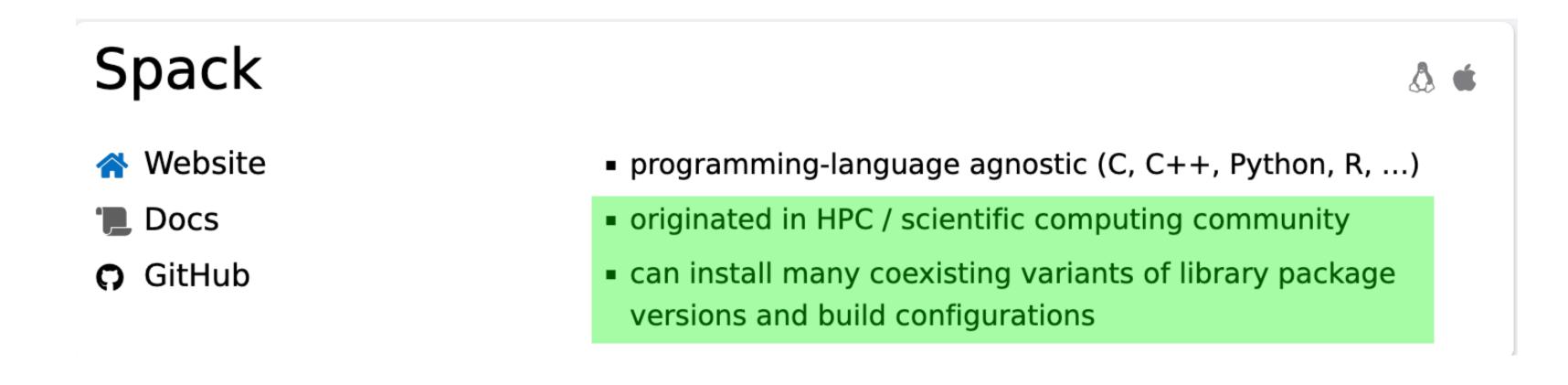
Reminder: Why externals Management

- CORSIKA 8 depends on external packages
- From system
 - Shareable
 - Version system and/or installation dependent
- Installed in user space
 - Fix versions
 - Fix options (if needed)
 - Need tool to manage
 - Cannot request user to pre-install manually
 - Need disk space
 - Disk space cheaper than developer time
 - Look for easy, controlled (by CORSIKA team) installation
 - Accept duplication

Package managers for C++

• https://hackingcpp.com/cpp/tools/package_managers.html





... and a few more

Conan

- Upgrade to conan >= 2 pending
 - Install of packages works (Jean-Marco)
 - cmake needs fixing
- pip install conan is very simple
 - better in venv...
- Problems with new compilers etc
 - Sometimes no binary for package/compiler combination
 - clang more problematic than gcc
 - can / have to build from source
- Non-standard cmake integration
 - changed in version 2
 - cannot switch to system or local installation of package

spack

- HPC standard
 - generate module tool interface
- Installation slightly more involved
- Freezes dependency resolution: automatically (stability!)
- Less than 1 day of work to get all of CORSIKA8
 - including new recipes for PROPOSAL and cubic interpolation
- Provides file-system view of installed packages
- Standard cmake tools for finding packages
 - findpackge, pkgconfig, ...

spack testing

- Need to update CORSIKA 8 cmake
- Looks promising
- In the future: spack install corsika8
- Wrapper and documentation for CORSIKA 8...

ninja support

- Faster than make
 - Better dependency tracking
 - Reliable parallel build
 - Thread or load limits to determine threads
- Problems with pythia
- FORTRAN support fixed ...