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or HashDist: How I stopped worrying and learned to love my software stack

https://github.com/hashdist/hashdist

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"We are building the car, not reinventing the wheel."

–Sage Developers

HashDist is for Developers

- *The typical high-level application sits atop many libraries*

- *SciPy "stack"*

  - *numpy, scipy, matplotlib, ipython, pandas, sympy, nose*

- *PETSc (typical install):*

  - *mpi, blas, lapack, hdf5, superlu, umfpack, parmetis*

What is a developer to do?

- *Use a system package manager*

  - *But then what happens when your users are on a different platform or release?*

- *Use a language package manager*

  - *But then what happens when your code relies on multiple languages?*

- ***Build it yourself...***

Homemade Install is Hard

- *Visit (15.2K line Bash Script)*

- *PETSc BuildSystem (31.6K Python Module)*

- *Dorsal (7.3K Bash Script)*

What is HashDist?

* *HashDist:*

  * *A user-local tool for developing, managing, versioning, and deploying software builds*

* *HashStack2*

  * *A collection of package specifications for building software using HashDist*

Current Features

- *Python and PETSc stacks (~100 packages) on:*

  - *Windows (via Cygwin)*

  - *OS X*

  - *Linux*

  - *HPC Resources*

- *Parametrized builds*

- *Cached builds, downloads, profiles*

- *Build versioning (think Git for your builds)*

Roadmap

- *End of 2013*

  - *Initial package manager integration (Homebrew, EasyBuild)*

  - *Fundamental build system for Proteus*

- *2014*

  - *More reproducibility-aiding features*

  - *More package managers*

  - *More packages*