Review of Package Managers for Bioinformatics Software Distribution

This manuscript (permalink) was automatically generated from sbpw/pkg-manager-review@5a6920b on July 9, 2020.

Authors

- **Sharon Waymost**
  0000-0003-1176-5386 · sbpw
  CS Dept, UCLA

Abstract

Introduction

Discussion

Existing problems with software distribution and installation

- root access limitations
- reproducibility of findings
- version conflicts
- dependency resolution

Definitions and explanations of distribution system types

- package managers – definition – benefits for the developer — mature technology - higher degree of familiarity — allows dependency specification (including versions) –limitations for the developer — can't always use to install missing dependencies for end-user – benefits for the end-user — package size is minimal (dependencies aren't duplicated) — installs missing dependencies – limitations for the end-user — not always accessible (unless admin user) — can't install multiple versions of same software
- containerization – definition – "Why containers?" Comic – benefits for the developer — include specific versions of dependencies — known running environment —- fewer test variables —- reproducibility of results – limitations for the developer — learn a new system instead of focusing on research – benefits for the end-user — no installation (except possible runtime) — no dependency issues — sandbox provides computer system security – limitations for the end-user — container size — duplication of dependencies — root access requirement to install runtime — configuration in cluster
- centralized repositories – definition – benefits — known download site — hosting is taken of – limitations — repo specific restrictions

Glossary

Acknowledgements

Author Contributions

References

Tables

Distribution System Name	URL	Publication	Type	Licensing
AppImage	appimage.org	something	blah	whatever