

Review of Package Managers for Bioinformatics Software Distribution

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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
ApplImage	appimage.org	something	blah	whatever