2piQA: Crowd-Sourcing R Package Quality Assessment

Paul D. Gilbert

No Fixed Affiliation

Statistics Society of Canada
Edmonton
May, 2013

Outline

1. History and Motivation
2. 2piQA casual user (viewer)
3. snippet contributions
4. Package maintainer interfaces
5. How it works, and helping

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

History and Motivation

- Statlib (no testing, documentation, ...)
- package build/check ensures a minimum level of quality/conformity
- CRAN package testing is also for testing R
- CRAN number of packages causes conflict: package testing vs R testing
- CRAN R-forge
- CRAN daily

CRAN daily

Maintainer	Package	Version	r-devel Linux x86_64 (Debian GCC)	r-devel Linux x86_64 (Fedora GCC)	r-devel Linux x86_64 (Fedora Clang)	r-devel Windows ix86+x86_64	r-patched Linux x86_64	r-patched Solaris sparc	r-patched Solaris x86	r-release Linux ix86	r-relea Linu x86_6
A. Alexander Beaujean	BaylorEdPsych	0.5	OK	OK	OK	OK	OK	OK	OK	OK	OK
Aaron A. King	ouch	2.8-2	OK	OK	OK	OK	OK	OK	OK	OK	OK
Aaron A. King	pomp	0.43-8	OK	OK	OK	OK	OK	OK*	OK	OK	OK
Aaron A. King	subplex	1.1-3	OK	OK	OK	OK	OK	OK	OK	OK	OK
Aaron Childs	MFSAS	1.0-0	OK	OK	OK	OK	OK	OK	OK	OK	OK
Aaron Robotham	celestial	1.0	OK	OK	OK	OK	OK	OK	OK	OK	OK
Aaron Robotham	magicaxis	1.4	OK	NOTE	OK	OK	OK	OK	OK	OK	OK
Aaron Robotham	sphereplot	1.3	OK	NOTE	OK	OK	OK	OK	OK	OK	OK
Aaron Statham	imguR	0.1.5	OK	NOTE	OK	OK	OK	OK	OK	OK	OK
Abdelmoneim Amer Desouki	sybilDynFBA	0.0.2	OK	NOTE	OK	OK	OK	OK	OK	OK	OK
Abdollah Jalilian	ETAS	0.0-1	OK	OK	OK	OK	OK	OK	OK	OK	OK
Abdolreza Mohammadi	BDgraph	2.3									
Abdolreza Mohammadi	BDgraph	2.6	OK	NOTE	OK	OK	OK	OK	OK	OK	OK
Abhilash Gangadharan	abcdeFBA	0.4	OK	OK	OK	OK	OK	OK	OK	OK	OK

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

History and Motivation

- how package developers avoid the boot
  - no examples (or dont run)
  - no demos
  - no vignettes
  - no tests
  - (possibly .Rbuildignore tests)
- (all somewhat encouraged by CRAN)

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

Motivation: 2piQA

- package tests provided by people other than package maintainer
  - users may rely on some features the maintainer does not check
  - users may have access to resources the maintainer does not
  - (users may notice that some maintainers do not check much)
- latest released R
- latest released packages
- multiple platforms

2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

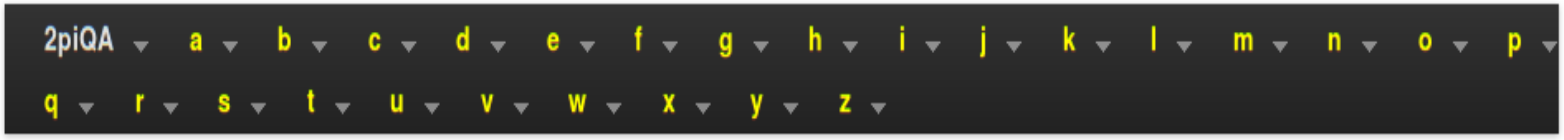
2piQA.org Casual User

- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

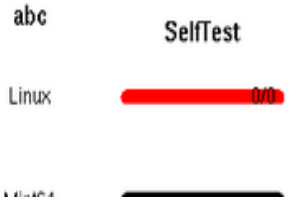
- why you would look at 2piQA
  - what's tested by the maintainer
  - what's used
  - what works
  - what's actively maintained
- also, snippets could be useful examples
- what you will see

2piQA.org Casual User

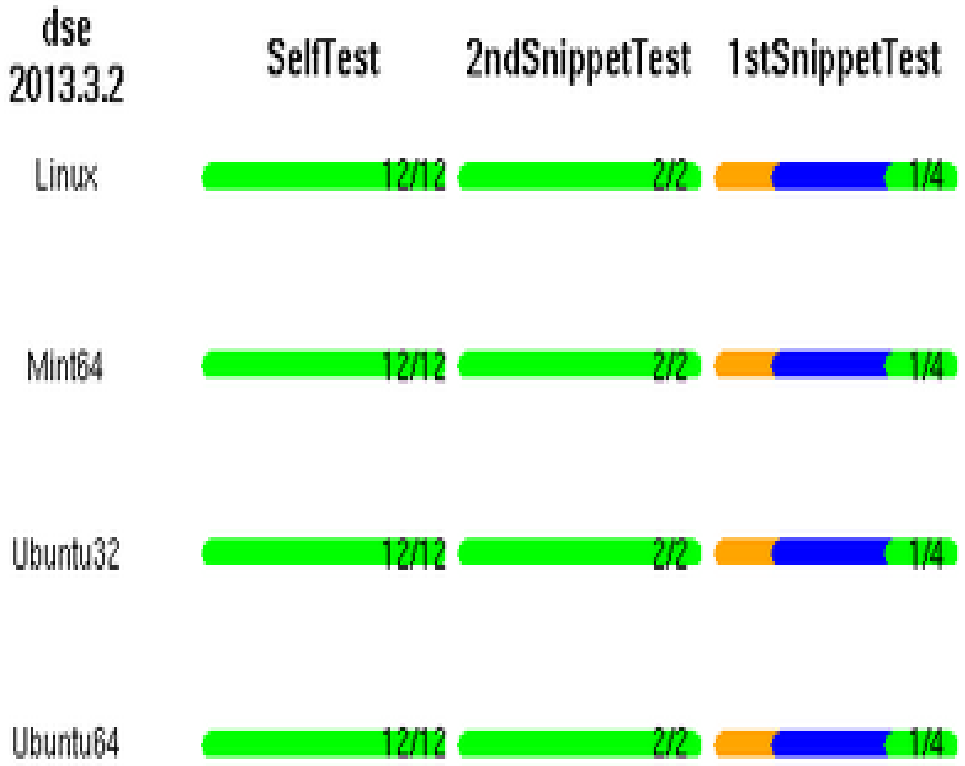


testing R-3.0.1 . If snippet details indicate an older R then tests with this version have not yet been run.

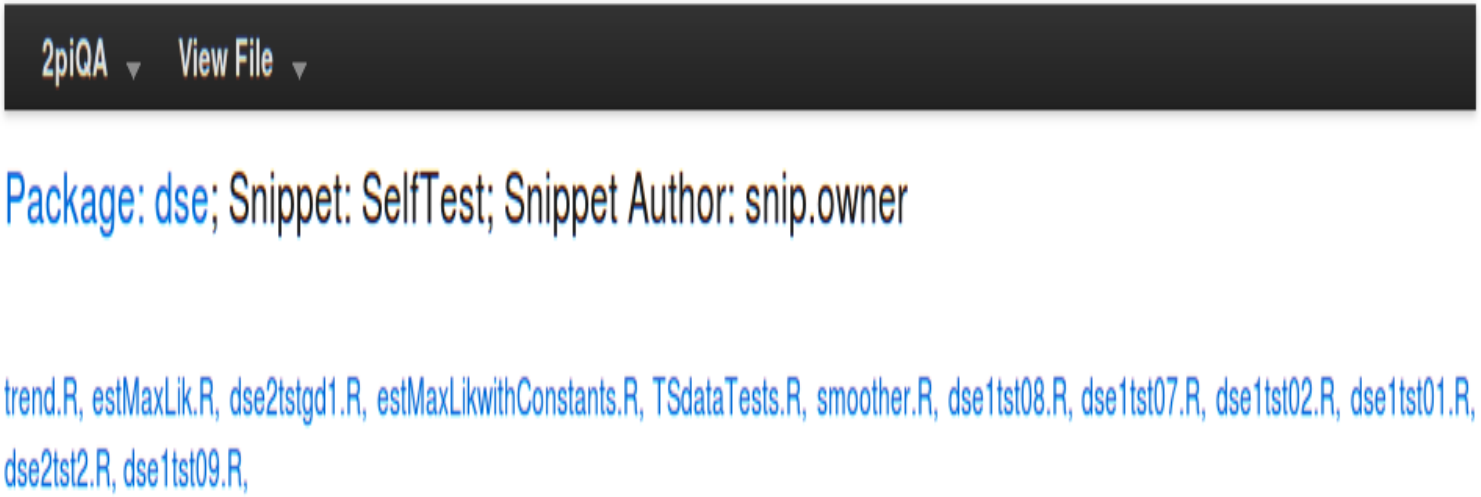
tests fail or no tests; tests fail, recognized bug; tests fail, feature request; tests pass; no server with resources to test.



2piQA Casual User



2piQA Casual User



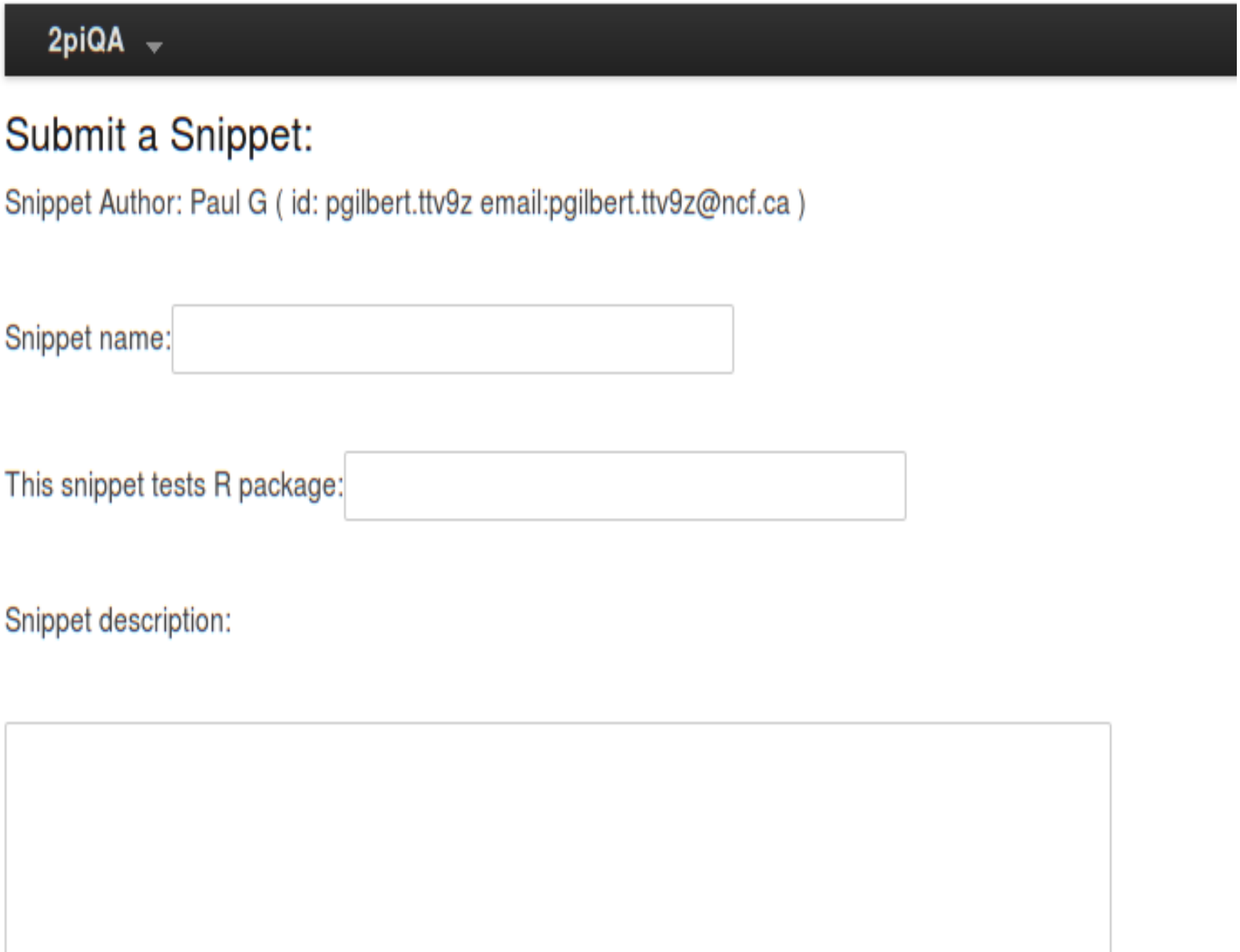
Snippet Contributer

- snippet contributer interfaces.
- need login

Snippet Contributer

- snippet contributer interfaces.
- need login

submit snippet



submit snippet

First test file name:

First test file description:

First test file contents:

Snippet Contributer

- there is also an interface for editing snippets

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Why contribute?

- help package maintainers by testing features they may not check
- test features you rely on for your own package(s)
- test features you rely on for your own work
- test features you rely on for your business or institution's work
- "vote" for packages that work
- highlight packages that are broken and/or not maintained
- highlight packages that are platform specific

Package Maintainer Interface

- Selftest
- (other tests? .Rbuildignore tests?)
- categorization: known bug / feature request

Package Maintainer Interface

- Selftest
- (other tests? .Rbuildignore tests?)
- categorization: known bug / feature request

Package Maintainer Interface

- Selftest
- (other tests? .Rbuildignore tests?)
- categorization: known bug / feature request

platform testers (compute servers / server farm)

- different platforms
- especially platforms with special resources

platform testers (compute servers / server farm)

- different platforms
- especially platforms with special resources

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin: possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Resource demands

- space about 300M for CRAN selftests, one platform output, etc
- site-library-fresh about 4G for CRAN
- need latest R and latest packages (consider RoboAdmin)
- admin time
  - not duplicate time if you already maintain a full R installation
  - with RoboAdmin, possible savings
- bandwidth / compute time
- setup vs check vs new package vs new R

Help

- help developing/maintaining 2piQA infrastructure
  - R, gnu make, rsync
  - platform expertise: Windows / Mac / RH /Solaris? / parallel
- web (web2py)
- openID

Help

- help developing/maintaining 2piQA infrastructure
  - R, gnu make, rsync
  - platform expertise: Windows / Mac / RH /Solaris? / parallel
- web (web2py)
- openID

Help

- help developing/maintaining 2piQA infrastructure
  - R, gnu make, rsync
  - platform expertise: Windows / Mac / RH /Solaris? / parallel
- web (web2py)
- openID

Help

- help developing/maintaining 2piQA infrastructure
  - R, gnu make, rsync
  - platform expertise: Windows / Mac / RH /Solaris? / parallel
- web (web2py)
- openID

Help

- help developing/maintaining 2piQA infrastructure
  - R, gnu make, rsync
  - platform expertise: Windows / Mac / RH /Solaris? / parallel
- web (web2py)
- openID

References / Questions I

questions?

R Core Team, *R: A Language and Environment for Statistical Computing*.
R Foundation for Statistical Computing, Vienna, Austria, 2013.
URL: http://www.R-project.org/.

R Core Team?, Kurt, et al, *CRAN: The Comprehensive R Archive Network*.
R Foundation for Statistical Computing, Vienna, Austria, 2013.
URL: http://CRAN.R-project.org/.

S. Theußl and A. Zeileis, "Collaborative Software Development Using R-Forge," *The R Journal*, vol. 1, pp. 9–14, May 2009.
URL: http://journal.r-project.org/2009-1/RJournal_2009-1_Theussl+Zeileis.pdf.

M. Di Pierro, *Web2py: Enterprise Web Framework*.
Lulu Enterprises Incorporated, 2010.
URL: http://books.google.ca/books?id=d_xRYgEACAAJ;http://www.web2py.com.

P. D. Gilbert, "automater project web site," 2013.
URL: http://automater.r-forge.r-project.org/.

P. D. Gilbert, "Lock-in avoidance and quality assurance." Invited presention at R/Finance 2012: Applied Finance with R., 2012.
URL: http://www.rinfinance.com/RinFinance2012/agenda/.