Introduction to R

http://tinyurl.com/qgb-r-slides

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What is R?

An environment that combines:

- effective handling of big data
- collection of integrated tools
- graphical facilities
- simple and effective programming language

Visualization

Open source

Data science

Platform agnostic

Computational statistics

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Available CRAN Packages By Name

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A3	Accurate, Adaptable, and Accessible Error Metrics for Predictive Models
abbyyR	Access to Abbyy Optical Character Recognition (OCR) API
abc	Tools for Approximate Bayesian Computation (ABC)
ABCanalysis	Computed ABC Analysis
abc.data	Data Only: Tools for Approximate Bayesian Computation (ABC)
abcdeFBA	ABCDE_FBA: A-Biologist-Can-Do-Everything of Flux Balance Analysis with this package
ABCoptim	Implementation of Artificial Bee Colony (ABC) Optimization
ABCp2	Approximate Bayesian Computational Model for Estimating P2
abcrf	Approximate Bayesian Computation via Random Forests

CRAN (Comprehensive R Archive Network)

- a repository for packages; source available for download or install directly within R

https://cran.r-project.org/

- An alternative package repository; "..provides tools for the analysis and comprehension of *high-throughput genomic data*."
- Includes (but is not limited to) tools for:
  - performing statistical analysis
  - accessing public datasets
- Open source and open development
- Free

www.bioconductor.org

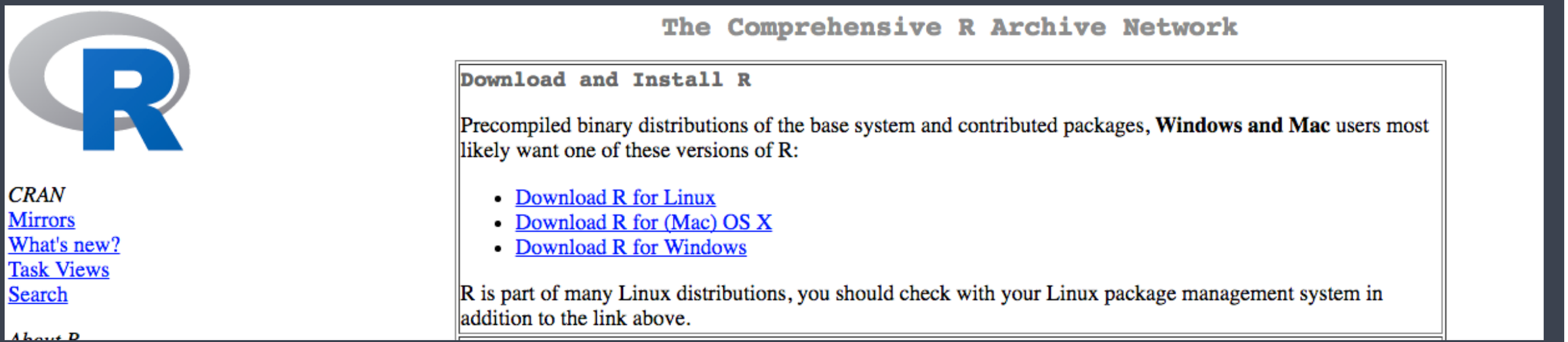
Integrated Development Environment (IDE)

- Graphical user interface, not just a command prompt
- Great learning tool
- Free for academic use
- Program agnostic
- Open source

www.rstudio.com

Installations

R: https://cran.r-project.org/



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Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

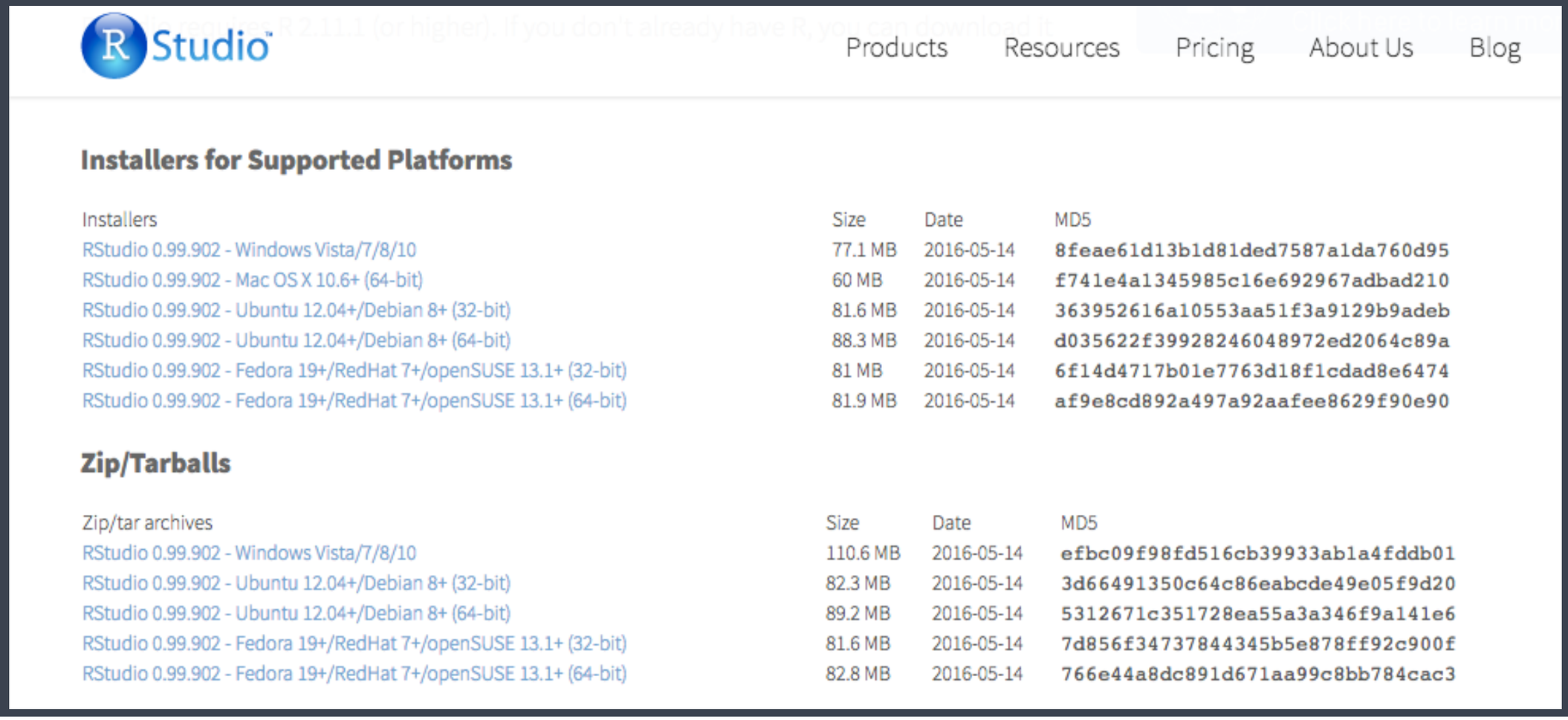
- Download R for Linux
- Download R for (Mac) OS X
- Download R for Windows

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Installations

RStudio:

https://www.rstudio.com/products/rstudio/download/



Links to materials

01 : R & RStudio :: **http://tinyurl.com/qgb-r-intro01**

02 : Data Structures in R :: **http://tinyurl.com/qgb-r-intro02**

03 : Data Manipulation :: **http://tinyurl.com/qgb-r-intro03**

*04 : Matching in R :: **http://tinyurl.com/qgb-r-intro04***

*05 : Nested Function :: **http://tinyurl.com/qgb-r-intro05***

*06 : Asking for R help :: **http://tinyurl.com/qgb-r-intro06***