Elastic-R, a Google docs-like portal for data analysis in the Cloud

Karim Chine, Cloud Era Ltd

Abstract: Cloud computing represents a new way to deploy computing technology, where dynamically scalable and virtualized resources are provided as a service over the Internet. Amazon Elastic Cloud (EC2) is an example of 'Infrastructure-as-a-Service' that anyone can use today to access infinite computing capacity on demand. This new environment enables collaboration, resources sharing and provides the tools for traceable and reproducible computational research. This model of allocating processing power holds the promise of a revolution in scientific and statistical computing. However, bringing new era for research and education still requires new software that bridges the gap between the scientist's everyday tools and the cloud. For instance, making R available as a service in the cloud and allowing its use without any memory or computing constraints would benefit the broad population of statisticians and research professionals. This is what Elastic–R (www.elasticr.net) delivers. It provides a Google docs-like portal and workbench for data analysis that makes using R on the cloud even simpler than using it locally. Elastic-R enables scientists, educators and students to use cloud resources seamlessly, work with R engines and use their full capabilities from within any standard web browser. For example, they can collaborate in real time, create, share and reuse machines, sessions, data, functions, spreadsheets, dashboards, etc. Compute-intensive algorithms can easily be run on any number of virtual machines that are controlled from within a standard R session. Elastic-R is also an applications platform that allows anyone to assemble statistical methods and data with interactive user interfaces for the end user. These interfaces and dashboards are created visually, and are automatically published and delivered as simple web applications.

Karim Chine, "Scientific Computing Environments in the age of virtualization toward a universal platform for the Cloud" pp. 44-48, 2009 IEEE International Workshop on Open-source Software for Scientific Computation (OSSC), 2009

Karim Chine, "Open Science in the Cloud: Towards a Universal Platform for Scientific and Statistical Computing", Chapter 19 in "Handbook of Cloud Computing", Springer, 2010 (in Press)