Building simple Redis data caches

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Redis, an Open Source "No-SQL" in-memory database with disk persistence, has become a key piece of infrastructure for many technology firms.[1] It offers the ability to write large amounts of data, even in bursts, with the ability to serve a large of subscribers. However, use cases from Finance are less well known. This proposed talk aims to present a simple data caching setup suitable for trading and investment environments.

Redis is agnostic to operating systems and programming languages, and in many cases requires only basic tcp/ip networking to interface its backend as the **rredis** package by Lewis has long demonstrated. **Redis** clients can be written in just about every compiled or scripting languages, including R.

Use from *R* is both tempting and convenient as the **rredis** packages takes care of the required serialization of *R* objects for both reading and writing. However, this limits the ability to read / write from other (common) languages which do not have access to R's serialization. Moreover, while **rredis** is convenient for tasks with relatively limited data size or update frequencies, its performance can become a limiting factor.

We introduce the (still evolving) **rhiredis** package which is built on top of the standard **Redis** *C* library **hiredis** using **Rcpp**. We discuss several key design decision, and demonstrate a use case with performance gains of two orders of magnitude enabling use in multi-user multi-display near-real-time data provision suitable for trading environments.

References

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[1]Wikipedia opens its article with *"Redis is an open-source, networked, in-memory, key-value data store with optional durability. It is written in ANSI C. The development of Redis has been sponsored by Pivotal since May 2013;[1] before that, it was sponsored by VMware.[2][3] According to the monthly ranking by DB-Engines.com, Redis is the most popular key-value store.[4]"*.