MySQL and Redis

Exploring Infrastructure Level Database Software

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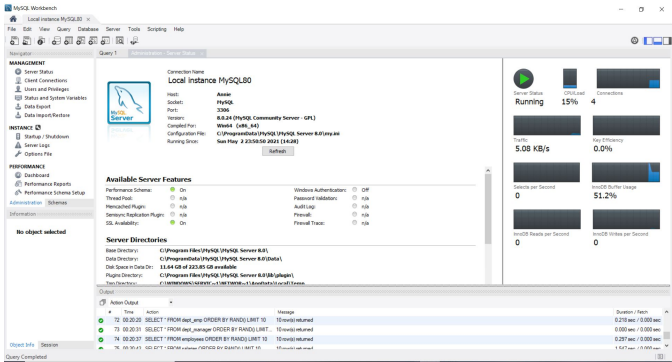
History

- MySQL was initially released in 1995 while Redis was released in 2009
- MySQL uses a “relational” approach while Redis uses a “non-relational or NoSQL” approach
- Both are used to support major companies with Redis taking over support for many of MySQL’s users
- Both are open source
- Both value the platforms that make use of their software
- Redis’ “Hello World” was called “Retwis” a clone of Twitter which was originally hosted by MySQL
- While both software can be used together for even greater results, many choose to compare the software separately

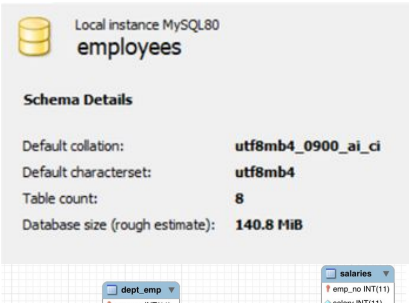
MySQL Setup and Experience

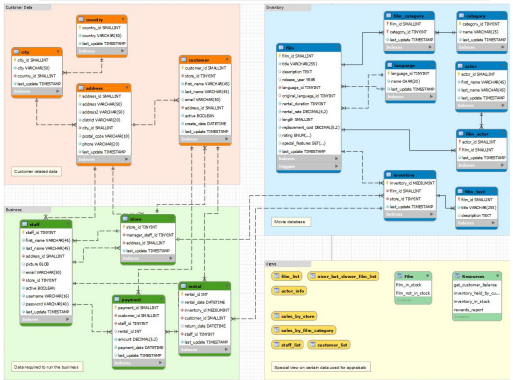
- Overall a relatively simple database hosting platform to set up
- Uses relational databases
- Provides visual diagrams of the database schema
- Can host multiple servers at a time
- Has performance analysis tools on board through MySQL Workbench
- Also has an area to write scripts for the database which can also be saved

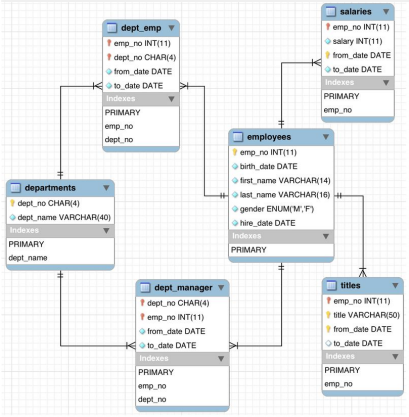


MySQL Analysis

- Compared the Sakila Database to the Employees database
- Both provided by MySQL for testing and learning
- Employees substantially larger to show how workload affects operations
- Both were well optimized

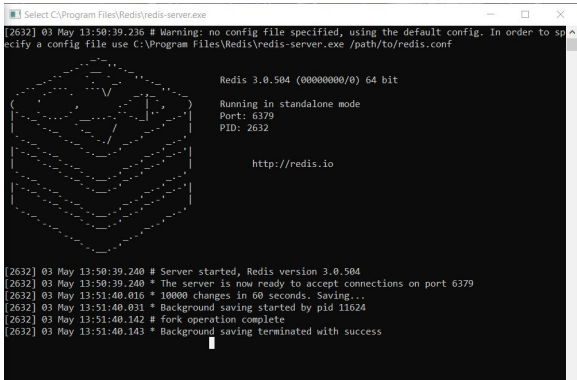






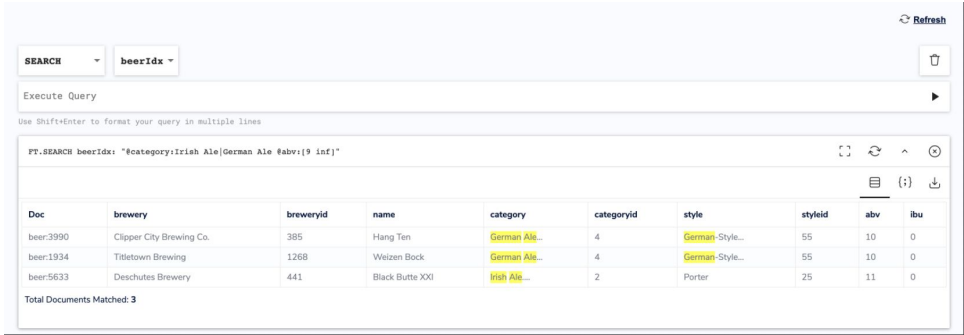
Redis Setup and Experience

- Uses non-relational databases
- Relatively easy to install
- Not supported by windows
- Simple to use but hard to visualize given non-relational databases
- Not particularly difficult to use as a hosting platform but hard to design for



Redis Analysis

- Timing scaled slightly better for larger databases
- Slightly more difficult to view “expensive” operations
- Both were well optimized
- Could see where issues could arise but none present in tested databases
- Compared the Retwis database to the Openbeer database
- Retwis substantially smaller, more of a proof of concept than a full fledged database



Comparison

- Both software are capable for any small project
- Redis can be a bit tricky but is more rewarding in the long run
- MySQL is more forgiving and conceptually easy to understand due to its use of a schema rather than a non-relational database
- Redis appears slightly more ambitious in its development as while it can coexist with MySQL it built its platform on taking over or targeting MySQL users

Pitfalls in Relational Design

- Selecting more data than needed
- Inefficient joins between tables
- Too few or too many indexes
- Too much literal SQL causing parse contention
- Overall PC usage/ network usage
- User and query conflicts

Pitfalls in Non-Relational Design

- Complexity can become an issue
- Consistent JOINS
- The lack of structure can be problematic
- Collaboration can be tricky

Our Review - Which fits your project?

- MySQL and Redis are effectively as efficient for smaller projects
- MySQL is less complex and more conceptually easy to understand
- Redis scales more efficiently
- Redis can be more complex especially when collaborating
- Both are suitable for almost any size project
- Both are open source
- MySQL appears to have more documentation and guides online