Semantic Graph Databases at Morgan Stanley

Matthias Autrata
Enterprise Infrastructure, Morgan Stanley, New York City, NY, USA
matthias.autrata@morganstanley.com

The operation and management of large IT infrastructures requires resource information from many sources to be aggregated and integrated. It is important to understand the relationships between different resource types in order to address problems such as incident management, threat analysis, or capacity planning.

This data is modelled using a set of linked ontologies and represented in a graph with a semantic inference model. This supports a number of different applications and analytics over the graph.

Figure 1: A small example of inventory and relationships

We discuss the approach being taken at Morgan Stanley. We touch on the use of semantic web standards to build the solution and discuss its merits by outlining use-cases and examples.

Further reading:

- http://www.linkeddatatools.com/introducing-rdf
- http://www.cambridgesemantics.com/semantic-university/sparql-by-example
- http://www.w3.org/TR/rdf-sparql-query
Dr. Matthias Autrata received his Ph.D. in Mathematics from University of Ulm, Germany and earned an MS in Mathematics from University of Southern California. Dr. Autrata is an executive director at Morgan Stanley where he is responsible for asset and configuration data management globally. He is also a member of the corporate architecture team responsible for setting the Firm’s IT strategy. Previously, Matthias worked at a number of international banks, including UBS, Deutsche Bank, and ABN AMRO. His professional interests include data-management, real-time, event-driven architecture, and applications of semantic web and linked data technologies.