

Franz's AllegroGraph 7.1 Accelerates Complex Reasoning Across Massive, Distributed Knowledge Graphs and Data Fabrics

Distributed FedShard Queries Improved 10X. New SPARQL, RDF* and SHACL Features Added.*

Lafayette, Calif., February 8, 2021 – Franz Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Graph Database technology for AI Knowledge Graph Solutions, today announced AllegroGraph 7.1, which provides optimizations for deeply complex queries across FedShard™ deployments – making complex reasoning up to 10X faster. AllegroGraph with FedShard offers a breakthrough solution that allows infinite data integration through a patented approach unifying all data and siloed knowledge into an Entity-Event Knowledge Graph solution for Enterprise scale analytics. AllegroGraph's unique capabilities drive 360-degree insights and enable complex reasoning across enterprise-wide Knowledge Fabrics in Healthcare, Media, Smart Call Centers, Pharmaceuticals, Financial and much more.

"The proliferation of Artificial Intelligence has resulted in the need for increasingly complex queries over more data," said Dr. Jans Aasman, CEO of Franz Inc. "AllegroGraph 7.1 addresses two of the most daunting challenges in AI – continuous data integration and the ability to query across all the data. With this new version of AllegroGraph, organizations can create Data Fabrics underpinned by AI Knowledge Graphs that take advantage of the infinite data integration capabilities possible with our FedShard technology

and the ability to query across all the data – both sharded and unsharded – delivering holistic insights instantaneously.”

According to Gartner, “Data management teams are under constant pressure to provide faster access to integrated data across increasingly distributed landscapes. Data and analytics leaders must upgrade to a Data Fabric design that enables dynamic and augmented data integration in support of their data management strategy.” (*Source: Gartner, Data Fabrics Add Augmented Intelligence to Modernize Your Data Integration.*)

FedShard Query Optimizations

The AllegroGraph 7.1 release further accelerates complex reasoning across enterprise-scale data by providing users with additional query options. Franz’s Research and Development team discovered an innovative approach that can significantly improve certain SPARQL Path Expression queries across database shards. AllegroGraph’s advanced caching methods and merge join operations provide optimizations to the highly scalable, parallel distributed query approach that is offered via FedShard.

RDF* and SPARQL* Support

RDF* (pronounced RDF Star) is an evolving W3C extension to the Resource Description Framework (RDF) standard which adds attributes via embedded triples. This extends the RDF standard to include relationships between more than two entities, add metadata to existing relationships, and add provenance information to all triples. SPARQL* (pronounced Sparkle Star) extends the W3C standard query language to use RDF* extensions. AllegroGraph supports RDF* via Turtle* and TriG* formats using AllegroGraph’s agtool loader. For several years, AllegroGraph has provided RDF* type functionality via Triple Attributes. Triple Attribute offers an approach that is more powerful than Labeled Property Graph databases and uniquely offers unprecedented level of security

to protect every RDF Triple (edge) in an AllegroGraph database, comparable to cell level security in a commercial relational database. Extending AllegroGraph to support RDF* provides users with added choice and flexibility.

Extended SHACL Support

AllegroGraph 7.1 also provides support for SHACL-SPARQL, which consists of all features of SHACL (SHApe Constraint Language) Core plus the expressive power of SPARQL-based constraints and an extension mechanism to declare new constraint components. Users can define SHACL constraints based on SPARQL SELECT or ASK queries.

Semantic Entity-Event Data Modeling

Big Data predictive analytics requires a new data model approach that unifies typical enterprise data with knowledge bases such as taxonomies, ontologies, industry terms and other domain knowledge. The Entity-Event Data Model utilized by AllegroGraph puts core 'entities' such as customers, patients, students or people of interest at the center and then collects several layers of knowledge related to the entity as 'events'. The events represent activities that transpire in a temporal context. Using this novel data model approach, organizations gain a holistic view of customers, patients, students or important entities and the ability to discover deep connections, uncover new patterns and attain explainable results.

AllegroGraph FedShard™

Most AI applications and complex reasoning analytics require information from both databases and knowledge bases that contain domain information, taxonomies and ontologies in order to conduct queries. However, many large-scale knowledge bases cannot be sharded because they contain highly interconnected data. Franz's patented FedShard technology shards data with any large-scale knowledge base – providing a novel way to

shard knowledge bases without duplicating knowledge bases in every shard.

AllegroGraph efficiently combines partitioned data with domain knowledge through an innovative process that keeps as much of the data in RAM as possible to speed data access and fully utilize the processors of the query servers. This approach creates a modern analytic system that integrates data in context (ontologies, metadata, domain knowledge, terminology systems) and time (temporal relationships between components of data). The result is a rich functional and contextual integration of data suitable for large scale analytics, predictive modeling and artificial intelligence.

Gruff – Industry Leading Graph Visualization and Query Builder

AllegroGraph 7.1 includes Gruff, the most advanced Knowledge Graph visualization application on the market, which is now integrated into AllegroGraph. Gruff enables users to create visual Knowledge Graphs that display data relationships in views that are driven by the user. Ad hoc and exploratory analysis can be performed by simply clicking on different graph nodes to answer questions. Gruff's unique 'Time Machine' feature provides the capability to explore temporal context and connections within data. The visual query builder within Gruff empowers both novice and expert users to create simple to highly complex queries without writing any code.

Gruff is a browser-based application that does not require an additional download or application installation once AllegroGraph is installed. All AllegroGraph users need is a web browser and internet connection to login. This approach gives users the convenience to access Gruff from anywhere on any type of system, while also simplifying deployment and streamlining updates within enterprise environments. Work with Gruff at the [Gruff Demo Site](#).

AllegroGraph 7.1 Availability

AllegroGraph 7.1 is immediately available directly from Franz Inc. For more information, go to [AllegroGraph.com](https://allegrograph.com).

Enterprise Data World – April 18-23 , 2021

Dr. Jans Aasman, CEO, Franz Inc., will be presenting a talk at the Knowledge Graph Conference entitled, “Entity-Event Knowledge Graphs for Data-Centric Organizations” on April 21st at 10AM Pacific. Register for the Conference.

About Franz Inc.

Franz Inc. is an early innovator in Artificial Intelligence (AI) and leading supplier of Graph Database technology with expert knowledge in developing and deploying Knowledge Graph solutions. The foundation for Knowledge Graphs and AI lies in the facets of semantic technology provided by AllegroGraph and Allegro CL. AllegroGraph is a graph based platform that enables businesses to extract sophisticated decision insights and predictive analytics from highly complex, distributed data that cannot be uncovered with conventional databases. Unlike traditional relational databases or other NoSQL databases, AllegroGraph employs semantic graph technologies that process data with contextual and conceptual intelligence. AllegroGraph is able run queries of unprecedented complexity to support predictive analytics that help organizations make more informed, real-time decisions. AllegroGraph is utilized by dozens of the top Fortune 500 companies worldwide. To learn more about Franz and AllegroGraph, go to <https://franz.com/>.

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