Franz Allegro Common Lisp Meets Demand for High Performance Artificial Intelligence in Big Data Applications

Allegro CL 10 Gains Parallel Memory Management to Power Complex, Mission-critical Applications that are Robust, Extensible and Easy to Evolve

OAKLAND, Calif. – October 7, 2015 – Franz, Inc., an early innovator in Artificial Intelligence (AI) and leading supplier of Common Lisp (CL) development tools and Semantic Graph Database technology, today announced Allegro CL 10, which includes key performance enhancements now available within the most effective system for developing and deploying applications to solve the problems in the field of Artificial Intelligence.

"Demand for faster, more intelligent and scalable applications is increasing with the Big Data onslaught that is impacting applications in traditional AI industries like National Defense, but also in Life Sciences, Manufacturing and Financial Analytics," said Dr. Jans Aasman, CEO of Franz Inc. "The complexity of today's software applications and the explosion of data size is pervasive. With Allegro CL 10, machine intelligence developers now have a high performance tool to scale their applications and deliver innovative products to market."

Interest in Artificial Intelligence has surged recently. According to CB Insights data, venture capital investments in companies developing and commercializing AI-related products and technology have exceeded \$2 billion since 2011.

"Common Lisp remains one of the best languages for Artificial Intelligence applications, its flexibility enables rapid experimentation and deployment", said Professor Ken Forbus, Walter P. Murphy Professor of Computer Science at Northwestern University. "Today's Lisp compilers are robust and flexible allowing development entirely within Lisp or in combination with other languages. For example, our CyclePad system for helping engineering students learn thermodynamics is written entirely in Allegro CL. Similarly, our sketch understanding system, CogSketch, which is a novel platform for both cognitive science research and education is primarily written in Allegro CL with two modules in C."

Allegro CL is a powerful, dynamic Artificial Intelligence development system that is especially well-suited for enterprise-wide, machine intelligence development. Now applications with billions of objects are made easy with Allegro CL 10, the industry's leading Common Lisp based development environment. Allegro CL 10 delivers parallel memory management capabilities including parallel garbage collection and fast memory recycling.

"Allegro CL 10 confirms Franz's commitment to providing a leading Common Lisp platform," said Jason Cornez, CTO, RavenPack. "The upgrade path is completely smooth and the under-the-hood improvements, especially in the garbage collector, make it a worthy successor to what remains one of the best environments for developing and delivering amazing software."

"Financial professionals rely on RavenPack for its speed and accuracy in analyzing large amounts of unstructured content. RavenPack's clients use news analytics to enhance returns, reduce risk or increase efficiency by systematically incorporating the effects of public information in their models or workflows." stated Dr. Aasman. "Allegro CL's new capabilities will continue to facilitate Ravenpack's low latency text and sentiment analysis that they deliver as a real-time data feed."

"Allegro CL 10 with AllegroCache continues to deliver performance improvements that facilitate the success of our products with the U.S. Dept of Defense," said Glenn D. House Sr., President 2Is Inc., "Lisp is the ideal implementation vehicle for our machine learning algorithms and large scale, parallelized stochastic simulation product sets. We are delighted with the Garbage Collection enhancements in Allegro CL 10."

"2Is is the leader in logistics decision support and price analytics enterprise systems that have demonstrated tens of millions of dollars in reduced total cost of inventory ownership for the military and OEM supply chain," added Dr. Aasman. "2Is applications have been repeatedly proven under multiple DOD Test and Evaluation contracts and Allegro CL 10 will continue to facilitate 2Is successful deliveries."

New Key Features and updates in Allegro CL 10:

- Parallel Global Garbage Collection
- New Payback Analysis for optimized Global Garbage Collection
- Precise Garbage Collection of stack slots for fast memory recycling
- Touchscreen and Alpha blending on Windows in Common Graphics
- API generator builds Lisp interface functions from information in Java class libraries
- Various Source Level debugging improvements
- Plus over 700 enhancements and updates, see the Release Notes for the details

About Lisp

Lisp is one of the first high-level programming languages and still in widespread use today. Lisp was originally created as a practical mathematical notation for computer programs and quickly became the favored programming language for artificial intelligence (AI) research. The most widely known generalpurpose Lisp dialects are Common Lisp and Scheme. Allegro CL is the Common Lisp language developed and sold by Franz Inc.

About Franz Inc.

Franz Inc. is an innovative technology company with expert knowledge in developing and deploying Graph Search solutions. AllegroGraph, Franz's flagship, high-performance, transactional, and scalable Graph Database, provides the solid storage layer for powerful Enterprise grade NoSQL solutions. AllegroGraph's Activity Recognition capabilities provides a powerful means to aggregate and analyze data about individual and organizational behaviors, preferences, relationships, plus spatial and temporal linkages between individuals and groups.

For additional Franz Inc customer success stories please visit:

- AllegroGraph http://franz.com/agraph/success/
- Allegro CL http://franz.com/success/

Franz's Professional Service team is in the business of helping companies turn Data into Information and Information into Knowledge. We combine Data, Business Intelligence, and Analytics consulting services under one roof for our customers.

Franz, an American owned company based in Oakland, California, is committed to market-driven product development, the highest levels of product quality and responsive customer support and service. Franz customers include Fortune 500 companies in the government, life sciences and telecommunications industries. Franz has demonstrated consistent growth and profitability since inception. For more information, visit franz.com.

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AllegroGraph Named as Leading Database Solution by CIOReview

Graph Database Market Continues Explosive Growth

OAKLAND, Calif. – September 15, 2015 – Franz, Inc., the leading supplier of Semantic Graph Database technology technology has been named CIOReview Magazine's Top 20 Most Promising Database Technology Solution providers. The award comes on the heals of Franz's recent announcement of the first Semantic Data Lake (SDL) for Healthcare, which was created in collaboration with Montefiore Medical Center (the eighth largest hospital group in the U.S.), Intel, Cloudera and Cisco. The SDL for Healthcare is a scalable and extensible Healthcare platform designed for Accountable Care and Personalized Medicine initiatives.

"Franz has been leading the burgeoning Graph Database revolution with a highly sophisticated, yet elegant Semantic Graph database solution," said Harvi Sachar, Publisher & Founder, CIO Review. "Franz's AllegroGraph continues to break new ground in predictive analytics and visual graph discovery capabilities- benefiting organizations around the globe within Healthcare, Intelligence/National Security, Life Sciences and Financial Services. We're excited to include Franz as one of our 20 Most Promising Database Solution Providers."

CIOReview is a technology magazine that showcases enterprise solutions capable of redefining the business goals of enterprises. It is a neutral source of information for technology decision makers that constantly endeavors to identify "The Best" in a variety of areas important to the technology industry.

"Since our inception, we have always been in the business of 'solving complexity' through our Semantic Graph technologies," said Dr. Jans Aasman, CEO, Franz Inc.. "From our origins in the Artificial Intelligence boom, through our advanced capabilities in Graph search and now as part of our Semantic Data Lake project, we provide powerful solution to complex challenges in the Enterprise."

The popularity of Graph databases has skyrocketed – growing nearly 400% in the past two years, according to a DBMS ranking by DB-Engines.

A recent Forrester Research report stated, "Graph databases are a powerful optimized technology that link billions of pieces of connected data to help create new sources of value for customers and increase operational agility for customer service. Because graph databases track connections among entities and offer links to get more detailed information, they are well-suited for scenarios in which relationships are important, such as cybersecurity, social network analysis, eCommerce recommendations, dependence analysis, and predictive analytics." (Source: Forrester Research, Market Overview: Graph Databases, May 28, 2015)

During the recent Smart Data Conference, Dr. Parsa Mirhaji MD. PhD., Montefiore Medical Center and Dr. Jans Aasman, CEO of Franz Inc., introduced the AllegroGraph powered Semantic Data Lake. The need for semantic consistency within Data Lakes is a driving force for the Semantic Data Lake Healthcare platform. Adding semantics to a Data Lake dramatically eases the transformation and integration of multi-source, heterogeneous unstructured and structured data including free text clinical narratives.

'Data Lakes' have become one of the most discussed information management approaches over the past few years. According to Gartner Research Director Nick Heudecker, "Data Lakes typically begin as ungoverned data stores. Meeting the needs of wider audiences require curated repositories with governance, semantic consistency and access controls…" (Source: Press Release, Gartner Says Beware of the Data Lake Fallacy, July 28, 2014)

About AllegroGraph

Unlike traditional relational databases or Property Graph 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 the first Graph Database to support analysis across N-dimensions – any conceivable measurement of an object, property or operation. For example, AllegroGraph can analyze temporal (time) and geospatial (location) dimensions relative to any 'event,' such as a disease, drug interaction, genetic combination, biomarkers, observations, image or physical sensors.

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Franz and Montefiore Medical Center Team up to Deliver the First Semantic Data Lake for

Healthcare

Accountable Care and Personalized Medicine Initiatives Propelled by Unique Semantic Analytic Platform

San Jose, Calif., Smart Data Conference, August 13, 2015 – Franz Inc., the leading supplier of Semantic Graph Database technology, in collaboration with Montefiore Medical Center (the eighth largest hospital in the U.S.), Intel, Cloudera and Cisco, announced the first Semantic Data Lake (SDL) for Healthcare, a scalable and extensible Healthcare platform designed for Accountable Care and Personalized Medicine initiatives.

Montefiore Medical Center is developing the SDL Healthcare platform to enable and scale knowledge-based analytics, classification, pattern recognition, predictive modeling, and simulations. The platform integrates complex information for basic science, clinical, population, community, environmental, behavioral and wellness research data.

On August 18 during the Smart Data Conference, Dr. Parsa Mirhaji MD. PhD., Montefiore Medical Center and Dr. Jans Aasman, CEO of Franz Inc., will introduce the concept of SDL for Healthcare and associated smart applications such as for personalized medicine, care management, decision support, fraud detection, risk management, signal detection and risk assessments.

'Data Lakes' have become one of the most discussed information management approaches over the past few years. According to Gartner Research Director Nick Heudecker, "Data Lakes typically begin as ungoverned data stores. Meeting the needs of wider audiences require curated repositories with governance, semantic consistency and access controls…" (Source: Press Release, Gartner Says Beware of the Data Lake Fallacy, July 28, 2014) The need for semantic consistency within Data Lakes is a driving force for the SDL Healthcare platform. Adding semantics to a Data Lake dramatically eases the transformation and integration of multi-source, heterogeneous unstructured and structured data including free text clinical narratives. The SDL Healthcare platform creates a self-descriptive repository of graph data that can be queried in real-time to deliver critical answers to complex questions.

"The ability to conduct real-time analysis over new combinations of data such as patient information, genetic data, medical device data, clinical trials, drug information and public health data — will fuel discoveries, significantly improve efficiencies and personalize care," said Dr. Parsa Mirhaji MD. PhD., Associate Professor of Systems and Computational Biology and the Director of Clinical Research Informatics at the Albert Einstein College of Medicine and Montefiore Medical Center-Institute for Clinical Translational Research.

The SDL at Montefiore, which is expected to grow to trillions of edges by 2016, links and fuses domain specific models (ontologies), biomedical terminologies and taxonomy systems, and other contextual metadata with ERP data, Electronic Medical Records, and medical device data in massive volumes. The SDL for Healthcare provides a uniform, semantically integrated, self-descriptive information repository based on graph representations of multi-source, heterogeneous data – including free text clinical narratives.

"Making sense out of big data is a challenge, particularly in the healthcare industry where information comes from a variety of sources and in different forms including structured, unstructured, images, temporal, geo-location and signal data," Dr. Jans Aasman, CEO, Franz Inc. "With the SDL for Healthcare we quickly ingest many types of data into a single system and apply Artificial Intelligence, machine learning and visual data exploration to discover new relationships between data that can save lives and improve care."

The SDL for Healthcare is a big data platform built on Cloudera's Hadoop distribution and Franz's AllegroGraph, a high performance Semantic Graph Database that enables analytics by leveraging the W3C industry standards. AllegroGraph empowers organizations to extract sophisticated decision insights and predictive analytics from highly complex, distributed data that isn[] possible using conventional databases.

The popularity of Graph databases has skyrocketed – growing nearly 400% in the past two years, according to a DBMS ranking by DB-Engines. A recent Forrester Research report stated, "Graph databases are a powerful optimized technology that link billions of pieces of connected data to help create new sources of value for customers and increase operational agility for customer service. Because graph databases track connections among entities and offer links to get more detailed information, they are well-suited for scenarios in which relationships are important, such as cybersecurity, social network analysis, eCommerce recommendations, dependence analysis, and predictive analytics." (Source: Forrester Research, Market Overview: Graph Databases, May 28, 2015)

"The SDL for Healthcare demonstrates how leveraging Intel's Hadoop investment along with Franz's Semantic Graph Database addresses many of the scale, performance, data integration, and complex analytics challenges that have prohibited real world applications of Precision Medicine and Accountable Care," said Ketan Paranjape, General Manager Life Sciences, Intel. "We are pleased with this important project and looking forward to the discoveries it will fuel."

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Franz's CEO, Jans Aasman to Present at the 2015 NOSQL NOW! Conference in San Jose

OAKLAND, Calif. – May 22, 2015 – Franz Inc.'s CEO, Dr. Jans Aasman, will present at the 2015 NoQL Now! conference this August in San Jose, CA. The fifth annual NoSQL Now! Conference is the largest vendor-neutral forum focused on NoSQL (Not Only SQL) technologies. The conference is intended for every enterprise looking for better, faster and cheaper solutions to manage its growing databases and data stores.

Spark and SPARQL for the Intelligent Data Lake

'Data Lake' refers to the new practice in large enterprises to store all potentially relevant data in a Hadoop infrastructure for later analytics. Data Lakes promise to play a vital role in data analytics and numerous vendors are marketing Data Lakes as an essential part of a comprehensive Big Data strategy. Gartner recently noted that this approach is susceptible to problems with governance, provenance, curation, access control and that it would be very helpful if the data was self describing. So Gartner recommended strategies to add semantic consistency to a Data Lake.

We will present a Semantic Data Lake project, architected on top of Hadoop, that takes as input any data type (i.e. csv files, json, json-ld, XML, unstructured text, etc). The project includes a semantic layer that leverages a distributed parallel semantic indexing engine. This semantically indexed Data Lake can be accessed via map-reduce, Apache SPARK and SPARQL.

The project use case was developed for a hospital chain that already adheres to the Accountable Care Act (ACA) but needed a Data Lake that could provide (predictive) analytics for population research and personalized medicine. The resulting Data Lake contains internal data, data from other hospitals in the same region and publicly available data such as a drug database, clinical trials, etc. All data in the Semantic Data Lake has been curated and transformed to fit ontologies and vocabularies like Mesh, Snomed and UMLS. In addition, all temporal relationships in the hospital data are preserved to provide causal analytics.

About Dr. Aasman

Jans Aasman started his career as an experimental and cognitive psychologist, earning his PhD in cognitive science with a detailed model of car driver behavior using Lisp and Soar. He has spent most of his professional life in telecommunications research, specializing in intelligent user interfaces and applied artificial intelligence projects. From 1995 to 2004, he was also a part-time professor in the Industrial Design department of the Technical University of Delft. Jans is currently the CEO of Franz Inc., the leading supplier of commercial, persistent, and scalable RDF database products that provide the storage layer for powerful reasoning and ontology modeling capabilities for Semantic Web applications.

Accomplishments:

Dr. Aasman has gained notoriety as a conference speaker at such events as Semantic Technologies Conference, International Semantic Web Conference, Java One, Enterprise Data World, Semantics in Healthcare and Life Sciences, Linked Data Planet, INSA, GeoWeb, AAAI, NoSQLNow, Graph Data Management, RuleML, IEEE conferences, and DEBS to name a few.

About Franz Inc.

Franz's semantic technology solutions help bring Web 3.0 ideas

to reality. The company is the leading supplier of commercial, persistent and scalable Graph Database products. AllegroGraph is a high-performance database capable of storing and guerying billions of RDF statements. The product provides solutions for customers to combine unstructured and structured data using W3C standard RDF for creating new Web 3.0 applications as well as identifying new opportunities for Business Intelligence in the Enterprise. AllegroGraph's Activity Recognition package provides a powerful means to aggregate and analyze data about and organizational behaviors, individual preferences, relationships, plus spatial and temporal linkages between individuals and groups. Franz customers include Fortune 500 government, life companies in the sciences and telecommunications industries. For information, more visit www.franz.com.

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