



Synthesys®

Entity Oriented Analytics for Cloud-Scale Data Understanding

Digital Reasoning introduces a new era in data analytics with Synthesys.

Built to address the most complex data analytics challenges, Synthesys® excels at extracting, resolving, and linking entities and concepts from unstructured and structured data. Uncovering hidden connections by reading and processing data in advance, Synthesys empowers the analyst to make smart decisions faster. Synthesys automates the understanding of cloud-scale data and uncovers the hidden connections of entities that lie within.

Entity Oriented Analytics

Synthesys takes a new approach to large scale data understanding by focusing analytics on the entity. By transforming documents and files into their underlying people, places, locations, and other entities, Synthesys reduces the reading burden for analysts and empowers new discovery and analytics. Entities and concepts are resolved into their unique characteristics while underlying connections are identified based on usage. Synthesys does not start with a preconception of the data model or the meanings of words. Instead, Synthesys learns the meaning of words

the way humans do — by analyzing the context around the entity and comparing that context signature across the entire corpus. In this way, Synthesys uniquely uncovers non-obvious connections and hidden meanings buried in spelling problems, dirty data or code words.

Cloud-Scale Data Challenges

Enterprises and government agencies are dealing with data challenges that reach into the hundreds of millions of documents and more. Synthesys was built for these “big data” challenges. In

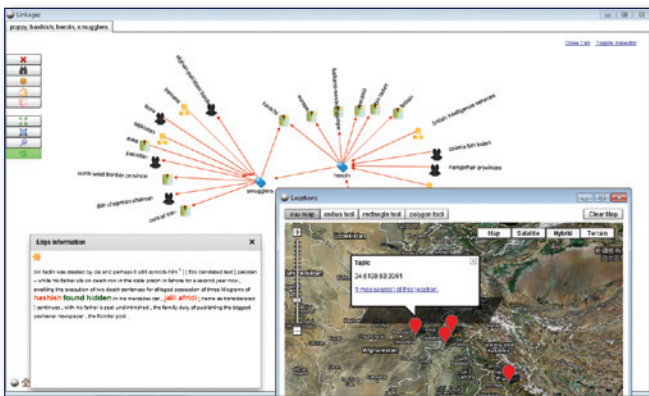
order to understand data in real time, Synthesys compares new data to the corpus already ingested and analyzed without re-indexing. Synthesys maintains all attributes about entities and context, continually comparing new data to the existing analysis. This allows Synthesys to constantly update the associations, similarities and the resulting link analysis. This allows Synthesys to maintain the associations, similarities and the resulting link analysis.



Synthesys® 3.0

“Synthesys is the culmination of 10 years of efforts working on the most critical data analytics challenges in the intelligence community.”

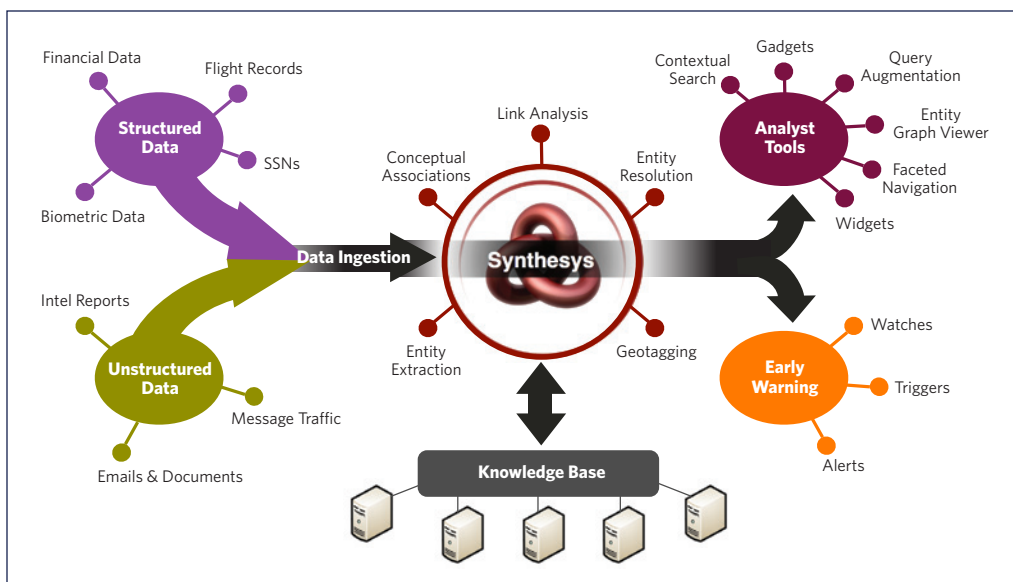
Tim Estes
Founder and CEO
Digital Reasoning Systems



Synthesys Analysis Tools

Entity Graph Viewer, Associative Net, GeoLocator





Synthesisys Architectural Diagram

Knowledge Base

Synthesisys maintains data attributes in the Knowledge Base. The knowledge base is built on a horizontally scalable architecture including tight integration with Hadoop and Cassandra. By combining these best-of-breed Internet technologies, Synthesisys delivers advanced analytical capabilities with high performance and horizontal scalability.

Associative Net

Associative Net is one of the most powerful and unique aspects of Synthesisys. It identifies synonyms or closely related entities as well as strength of relationship scores for entities in the corpus. For example, Associative Net would show "stinger missile" and "blow pipe" as synonymous because of their use in the corpus. Similarly, one person's connection to another person or place can be identified and the relationship strength scored. Associative Net provides confidence to the analyst that all connections, relationships and synonyms are being considered — including intentionally coded language

Entity Graph Viewer (EGV)

The Entity Graph Viewer is a visualization tool that allows the analyst to view the connections and social "maps" identified by Synthesisys. Working in combination with GeoLocator and Associative Net, EGV provides the analyst with unique insight into the underlying facts in the data. EGV shows the connection of entities both in terms of "how" as well as the direction of the connection (i.e. who knows who). With this visualization, the analyst can clearly see how one entity is connected to another and can quickly drill into the abstract or context supporting the identification of this linkage. If the abstract is not sufficient, it is possible to drill further down to the original document where the evidence of the linkage originated. With this ability to show high-level linkage and drill down to the supporting data, Synthesisys simplifies the analyst's job by first identifying underlying facts and, only if needed, allowing the analyst to read the complete document. By pushing the time-intensive reading tasks later into their process, Synthesisys enables the analyst to spend more time interpreting and taking action."

Synthesisys® — make better decisions, faster.

Product Features

- Entity Extraction
- Entity Resolution
- Link analysis
- Unstructured Data Analytics
- Analytics tools and visualizations
- Geolocation extraction
- Machine generated abstracts of documents
- Built on Cloudera Distribution of Hadoop (CDH3)
- Built on Cassandra v0.7

Product Requirements

Minimum requirements:

- 7 nodes of commodity servers
- Node details:
 - Memory - 8GB
 - CPU - 2 Cores
 - Storage - 850GB
 - Platform - 64 bit

Typical requirements:

- 20 nodes of commodity servers
- Node details:
 - Memory - 16GB
 - CPU - 4 Cores
 - Storage - 1.5TB
 - Platform - 64 bit

Operating Systems

- Red Hat® Enterprise Linux (or compatible)
- Runtime Platform - Java® 6



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For more information
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