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Indice

A Brief Introduction to Graph Data Platforms

Relational databases dominates the market but fails to adapt easily to the complexity of data, its context and its interconnections, they are the wrong tool for many business challenges.

What Are Graph Databases Good for?

- Fraud Detection & Analytics
- Artificial Intelligence & Machine Learning
- Real-Time Recommendation Engines
- Knowledge Graphs
- Network & Database Infrastructure Monitoring
- Master Data Management (MDM)

Traditional Technology Choices Do Not Consider How Data Is Interrelated

Data and applications today require elasticity, agility, speed and interconnectivity but relational databases are not well-suited for modeling and storing today's highly connected and agile datasets. It has a difficult time expressing and revealing how real and virtual entities are related.

Collections vs. Connections

SQL & NoSQL Systems Focus on Data Aggregation & Collection.

SQL and NoSQL are collection-centric storages designed to efficiently divide and store data.

SQL databases were designed to minimize storage of duplicative data because disk space was costly

NoSQL databases lack relationships (lack data structure). Data is easily storage and retrieve without the need to mantain integrity and without the concern of distributed JOINs.

Graph Systems Focus on Data Connections

Graph databases technologies focus on how data elements are interrelated and contextualized as connected data.

Connected data is the materialization and harnessing of relationships between data elements, which is modeled as a property graph. A property graph is a data model designed to express data connectedness as nodes connected via relationships to other nodes.

Property Graphs Are Intentionally Simple

- You can change or update a property graph easily, because its agile design eliminates most of the structural overhead of traditional database schemas.
- You can quickly program property graphs because their query language expresses and follows relationships

- You can rapidly determine data context when property graph queries are executed in hyper-fast native graph platforms built on reliable, scalable database architectures.

Benefits of Graph Databases

- Simple and natural data modeling
- Flexibility for evolving data structures
- Simultaneous support for real-time updates and queries
- Better, faster and more powerful querying and analytics

Use Cases for Graph Technology

Five of the top use cases for graph technology

Fraud detection

Data is ripe by graph-native machine learning techniques to find fraud. It usses Neo4j to power a proprietary fraud detection application.

Real-Time Recommendations

Contextual and instantaneous recommendations. Running Neo4j makes possible a recommentation system that generates a detailed model of all the actions a customer makes.

Bill of Materials

Neo4j rapidly collect and combine massive bill of materials information to answer immediately. It can forecast the need for replacement parts by accurately calculating mean time to failure.

Track & Trace

Graph data models enables traceability for things like routing, logistics, supply, chain management, and compliance.

Network & IT Ops

A network is a graph. It enables to conduct sophisticated impact analyses. Graph query determines which applications, services, and customers will be affected if a particular network element fails.