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| **Topic** | **Feature** | **Neo4j** | **Spanner / Spanner‑Graph** | **Which is better fit?** |
| **RAG** | Integration with RAG | Via **Neo4jGraph / Neo4jVector** and plugins | Via **SpannerVectorStore & SpannerGraphStore** in LangChain; custom logic still needed for deep graph reasoning | **Neo4j** remains best for graph‑centric RAG; Spanner can be a workable option |
|  | Suitability | Good for knowledge‑graph‑powered RAG (GraphRAG) | Relational + graph + vector (from 2025) but still needs extra reasoning layers |  |
| **GraphRAG** | Native graph model | Native **property graph** | **Spanner‑Graph (ISO GQL compatible, GA Feb 2025)** | **Neo4j** (purpose‑built, faster deep traversals) |
|  | LangChain integration | Supported via **Neo4jGraph** | Built‑in via **SpannerGraphStore** |  |
|  | Semantic graphs | KG + vector context out of the box | Full graph schema + optional vector attributes; tooling still maturing |  |
|  | Traversal performance | Optimized Cypher engine | Traversals planned in SQL / GQL; generally slower |  |
| **LangChain integration** | LangChain modules | Built‑in **Neo4jGraph, Neo4jVector** | **SpannerVectorStore, SpannerGraphStore** (by Google Cloud) | Neo4j is simpler for hybrid graph + vector |
|  | Ease of use | Straightforward (Cypher + LangChain) | Moderate: official package, but GQL fluency required |  |
|  | Knowledge‑graph tooling | Rich KG ingestion & querying | Early KG tooling (Graph schema designer, Graph Notebook) |  |
| **Vector store** | Native vector support | Neo4j Vector Index (public beta 5.11, GA 5.13) | **Built‑in KNN vector search** (preview 2024, GA 2025) | Both native; **Neo4j** for graph + vector fusion, **Spanner** for planet‑scale throughput |
|  | Indexing | HNSW‑based indexes | Native KNN index; no FAISS needed |  |
|  | Integration | LangChain, LlamaIndex, etc. | LangChain support; SQL & GQL APIs |  |
| **Vector DB** | Semantic search | Vector fields + Cypher | VECTOR\_COSINE\_DISTANCE(), etc. | Both qualify; Neo4j still adds richer graph joins |
|  | Multimodal search | Embeddings + metadata | Supported when embeddings stored with rows; external embedding generation |  |
|  | Vector‑graph fusion | Native graph + vector similarity | Via **SpannerGraphVectorContextRetriever**(LangChain) |  |
| **Graph  visualisation  &  UI** | Graphiti compatibility | Directly supported (Bolt) | Not supported | **Neo4j only** |
|  | Visualisation | Bloom, GraphXR, Graphiti | Spanner Studio & Graph Notebook (basic) |  |
|  | Developer UX | Visual query builder, semantic exploration | Console / Notebook experience; less mature |  |