

Rapidly deploy, scale, and adapt with graph-wide analytics

Rocketgraph on IBM Power11 delivers near real-time insights with scalable, AI-optimized infrastructure

Highlights

Up to 3.37X faster queries on 3.9 billion records with Rocketgraph on Power11 compared to x86 ¹

Rocketgraph reports that running Rocketgraph Accelerator on IBM Power11 delivers 100X faster query response compared to running Cypher engine on x86²

As data complexity grows, so does the need for faster, smarter analytics. The combination of Rocketgraph on IBM® Power11 allows enterprises and government agencies to analyze massive property graphs with billions of edges, uncovering hidden patterns in cybersecurity, fraud detection, infrastructure, and more. With native support for Cypher queries, GenAI-powered assistance, and integration with existing data sources, Rocketgraph empowers analysts to work like graph experts.

Running on IBM Power11's AI-accelerated architecture, organizations gain performance alongside scalability, energy efficiency, and hybrid cloud flexibility. Together, Rocketgraph and IBM Power11 help to redefine what's possible in near real-time graph analytics at enterprise scale.



Accelerating graph insights with Rocketgraph on IBM Power11

Accelerate fraud detection at scale

It is now possible to detect complex fraud patterns in massive datasets beyond the reach of traditional SQL. Rocketgraph on IBM Power11 delivers up to 3.37X faster query performance on 3.9 billion records compared to x86¹ and, as reported by Rocketgraph, delivers 100X faster query response compared to running Cypher engine on x86² helping to minimize revenue loss and enabling near real-time insights.

Rocketgraph is a graph analytics platform that enables enterprises and government agencies to discover the hardest-to-find insights by analyzing property graphs that scales up to hundreds of billions of edges. Running on IBM Power11, Rocketgraph enables accelerated iterative analysis. Rocketgraph's search ingests data from Oracle, MongoDB, Databricks, Snowflake, and many other sources like TigerGraph or Neo4j, so organizations don't have to change their data workflows. It provides GenAI assistance with the organization's large language model (LLM) of choice to help every analyst work like a graph expert by leveraging natural language interfaces that enable non-experts to interact with massive datasets.

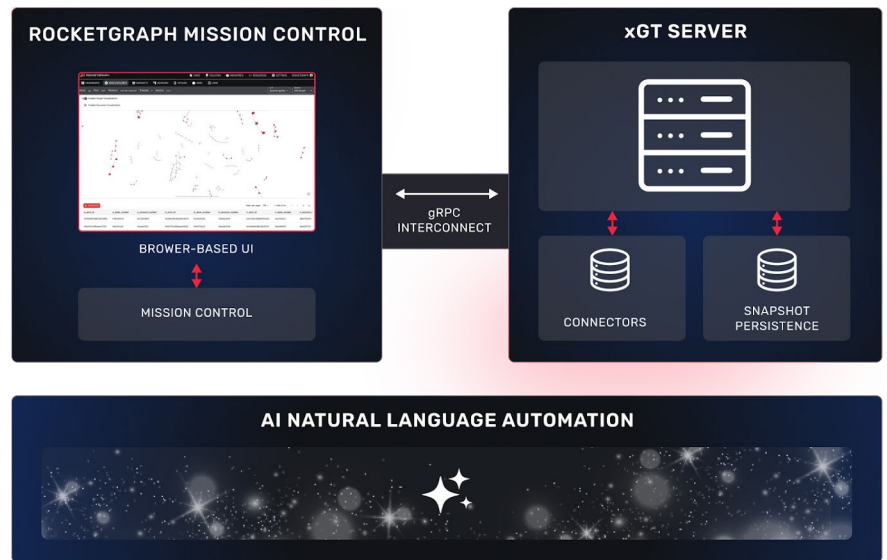


Figure 1: Rocketgraph mission control

High performance on IBM Power11

IBM Power11 servers are superscalar, multithreaded, and multicore with embedded AI acceleration technology. Power11 is designed for high performance workloads like graph analytics. Running Rocketgraph search engine on Power11 offers many computational performance advantages as shown in Figure 2 and Figure 3.

Turn complexity into insight at scale

Rocketgraph running on IBM Power11 allows clients to perform iterative analysis with large, complicated datasets supported by infrastructure designed to manage high performance workloads, allowing for faster insights, deeper pattern recognition, and near real-time decision-making at enterprise scale.

Comparing Rocketgraph Accelerator on x86 (8 cores) and Power E1180 (8 cores) synthetic graph

Rocketgraph Accelerator on x86 (8 cores) Rocketgraph Accelerator on Power E1180 (8 cores)

Quantifying the capabilities of IBM Power11, the Rocketgraph Performance Lab (RPL) team conducted several performance tests comparing the Accelerator on x86 and Power E1180. The results, reported by Rocketgraph, revealed that Rocketgraph Accelerator on IBM Power11 delivers 1.9X faster query response when processing a 1 billion edge synthetic graph versus running Accelerator on x86 and 3.37x faster when processing a real-world cyber security graph data set with 3.9 billion netflow edges¹. The cyber security data set was queried to find lateral movement and data exfiltration patterns.

Edge count	Ingest (seconds)	Query (seconds)	Ingest (seconds)	Query (seconds)	Times faster to query on Power11
1 Million	1.77	0.41	1.64	0.15	2.74X
10 Million	9.42	5.44	7.18	1.97	2.48X
100 Million	27.43	70.57	26.60	27.43	2.31X
1 Billion	382.54	943.09	264.10	451.83	1.88X

Comparing Rocketgraph Accelerator on x86 (8 cores) and Power E1180 (8 cores) Netflow cyber security graph

Rocketgraph Accelerator on x86 (8 cores) Rocketgraph Accelerator on Power E1180 (8 cores)

Edge count	Ingest (seconds)	Query (seconds)	Ingest (seconds)	Query (seconds)	Times faster to query on Power11
2 Billion	296.85	164.29	145.58	50.14	3.25x
3.9 Billion	650.68	1211.06	272.47	359.02	3.37x

“Rocketgraph on IBM Power11 delivers fast, scalable graph analytics for near real-time decision making. Based on IBM Power’s industry-leading architecture with eight threads per core for massive parallelism, we help organizations uncover hidden threats, map critical relationships, and dive deep into operational insights.”

When data volume explodes and mission-critical performance matters, Rocketgraph and IBM Power deliver exceptional intelligence.”

Erik Rottsolk

Head of Sales and Partnerships
Rocketgraph

Cross-industry benefits

GenAI assistance with pluggable LLMs

Rocketgraph supports the Cypher query language, commonly used across industries and major commercial enterprises. In addition, analysts can talk to their data through GenAI: write a question in natural language, and Rocketgraph Mission Control will turn that question into a Cypher query. Rocketgraph can even create AI-generated graph schemas and explain the Cypher queries it generates. Rocketgraph Mission Control provides pluggable integrations to OpenAI ChatGPT, Anthropic Claude, Meta Llama AI, and AWS Bedrock. If you run your private LLM on premises, you can also plug that in.

Support for hybrid environments

Power11 can scale to run multiple databases on the same on-premises server and access servers in the cloud. Organizations can run Cypher workloads faster and more efficiently by co-locating the Rocketgraph search engine with existing databases. Extensive datasets can be searched locally for speed and efficiency, while the cloud can be leveraged for less time-sensitive searches.

Cross-industry use cases complementing AI with Rocketgraph

Cybersecurity

Graph analytics enhance threat detection by modeling relationships across users, devices, and applications. This approach allows for early identification of anomalies in network traffic, helping security teams proactively mitigate risks and respond to emerging threats.

Healthcare fraud detection

By analyzing relationships among patients, providers, and claims, graph-based models uncover hidden patterns indicative of fraudulent activity. This helps improve detection accuracy and accelerates investigation timelines, with the goal of reducing financial losses and compliance risks.

Infrastructure and facility management

Model relationships between different components of critical infrastructure, such as power grids, transportation systems, and communication networks, helps to optimize maintenance, identify vulnerabilities, and plan for resilience.

Customer relationship management (CRM)

Build customer graphs to model customer relationships, purchase history, preferences, and interactions, enabling more effective segmentation. CRM helps create targeted marketing campaigns and personalized recommendations, improving customer satisfaction and touchpoints.

Supply chain optimization

Analyze suppliers, distributors, and logistics relationships to optimize the supply chain. Graph analytics can help identify bottlenecks, streamline inventory management, and improve efficiency through data-driven decision making.

Conclusion

Rocketgraph on IBM Power11 processor-based servers are helping to redefine what is possible in real-time graph analytics by combining AI acceleration, massive scalability, and unparalleled performance. Together, Rocketgraph and Power11 empower organizations to turn complex data into actionable intelligence-detecting fraud, uncovering hidden relationships, and driving mission-critical decisions faster. With GenAI integration and hybrid cloud flexibility, enterprises can analyze billions of connections while maintaining a secured environment, efficiency, and control.

For more information

Contact your IBM representative, IBM Business Partner, or visit www.rocketgraph.com

1. Based on Rocketgraph internal testing of Rocketgraph Accelerator 2.4 query response time for graphs from 2 to 3.9 billion netflow edges. Comparison is based on IBM Power E1180 (8 cores/2TB) running Linux 9.4 versus Intel Xeon x86 (8 cores/2TB) systems running Rocky Linux 9. Results valid as of Sept. 25, 2025, and conducted under laboratory conditions, individual results can vary based on workload size, use of storage subsystems and other conditions.

2. Based on Rocketgraph internal testing of Rocketgraph Accelerator 2.4 query response time for graphs from 10K to 1 billion netflow edges. Comparison is based on running Rocketgraph Accelerator 2.4 versus Neo4j both running on Intel Xeon x86 (48 cores/384GB) systems running Rocky Linux 9. Results valid as of Sept. 25, 2025, and conducted under laboratory conditions, individual results can vary based on workload size, use of storage subsystems and other conditions.

3. Based on Rocketgraph internal testing of Rocketgraph Accelerator 2.4 query performance (response time) for a 1 billion edge synthetic graph. Comparison is based on IBM Power E1180 (8 cores/2TB) running Linux 9.4 versus Intel Xeon x86 (8 cores/2TB) systems running Rocky Linux 9. Results valid as of Sept. 25, 2025, and conducted under laboratory conditions, individual results can vary based on workload size, use of storage subsystems and other conditions.

*Based on Rocketgraph internal testing of Rocketgraph Accelerator 2.4 query response time for graphs from 2 to 3.9 billion netflow edges. Comparison is based on IBM Power E1180 (8 cores/2TB) running Linux 9.4 versus Intel Xeon x86 (8 cores/2TB) systems running Rocky Linux 9. Results valid as of Sept. 25, 2025, and conducted under laboratory conditions, individual results can vary based on workload size, use of storage subsystems and other conditions.

**Based on Rocketgraph internal testing of Rocketgraph Accelerator 2.4 on AWS x2iezn.4xlarge with 8 Intel Xeon cores (16 vCPUs) and Rocketgraph Accelerator on a Power E1180 LPAR with 8 cores and 2TB of RAM. Graphs from 2 to 3.9 billion netflow edges were used to run the queries. "Times Faster to Query on Power11" quantifies the difference in "Query seconds" rounded to the nearest decimal. Individual results may vary.

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