



# FedCentric Technologies Memory Centric DataBase geo (MCDBg) Accelerator Solution Frequently Asked Questions

## Overview:

MCDBg includes a scalable, distributed database called GPUdb, which includes SQL-style query potential, capable of storing Big Data. Developers using the GPUdb API add data, and query the data with operations like select, group by, and join. GPUdb includes many operations not available in other offerings.

## Why Is MCDBg So Exciting?

MCDBg applies a new (patented) concept in database design GPUdb that puts emphasis on leveraging the growing trend of many-core devices and memory centric systems to provide unprecedented improvement in processing your data.

## Does MCDBg Acceleration replace Traditional Disk-based RDBMS?

There will always be a place for disk-based RDBMS, but a broad class of applications will benefit from the performance advantages of MCDBg acceleration. MCDBg will be able to give you queryable insight into the data that is flowing into your organization in real time. More importantly MCDBg provides the capability to construct queries that can be run against all of your organization's data. This means you can do much more insightful analysis of incoming real time data because you can literally compare it to every piece of data that was ever added before it.

## Why is MCDBg Different?

MCDBg applies a new (patented) concept in database design that puts emphasis on leveraging the growing trend of many-core devices. By building GPUdb from the ground up around this new concept we are able to provide a system that merges the query needs of the traditional relational database developer with the scalability demands of the modern enterprise.

## When does MCDBg become a compelling technology?

**High Throughput Applications**-where disk based systems cannot provide enough bandwidth and throughput due to slowest component issues.

**Lengthy Query Times** – caused by spinning disk latency issues and / or code path bottlenecks.

**Data Center Constraints** – many data centers are running out of floor space, power and cooling capacity. MCDB helps by providing orders of magnitude performance without adding significantly more disk. When viewed in this light, MCDBg provides a very “Green” environmental approach.

**Applications that Require Real Time and Actionable Business Results** – Using MCDBg, FedCentric has reduced operations that took hours to perform and produced results in seconds.

**Applications that Use Geo Spatial Databases** – FedCentric has experienced, orders of magnitude performance improvement, over traditional approaches.

## When should you Proceed with an MCDBg Solution?

You have optimized all aspects of your traditional system and still cannot achieve application performance requirements and results.

You have tried to build a home-grown, in-memory solution; including, Java hash tables, graph query languages and/or object oriented databases.

You are using or considering Geo Spatial technologies from Oracle and others.

## Typical Questions that FedCentric Would Like to Discuss with You.

1. What database(s) do you currently use?
2. What application would you most like to accelerate?
3. If we could offer you a 1 to 3 orders of magnitude increase (10-1000x) in performance, which applications would you accelerate?
4. Have you tried to improve performance with certain applications? Which applications? How well did this turn out?
5. Do you have any concerns about running new applications on your existing system? How might the new applications impact your current system?
6. Is your data center or facility experiencing shortages of space, power and cooling capacity?
7. Have you tried to write your own codes to alleviate a performance problem, i.e. Java Hash Tables, Graphs, Object Databases?
8. What would you do with an order of magnitude increase in database performance?
9. Is your current system written using “standards compliant” SQL?

## Summary

There is a class of problem that exceeds the performance capabilities of traditional disk-based RDBMS systems. Business success will increasingly demand high performance and throughput to meet processing requirements, while operating within power and space constraints.

FedCentric Technologies looks forward to working with you to determine if MCDBg is the right approach for your application requirements.

### **“What would you do with an order of magnitude increase in database performance?”**

Please contact us at:

**FedCentric Technologies LLC**

8315 Lee Highway, Ste 500

Fairfax, VA 22031

[gerry.kolosvary@fedcentric.com](mailto:gerry.kolosvary@fedcentric.com)

[joseph.conway@fedcentric.com](mailto:joseph.conway@fedcentric.com)

301 263-0030

# MCDBg Appliance

## Hardware/Software Bundle

**Exponential Performance**

**Scalable Hardware**

**All-in-One**

### 4u PCIe Expansion Unit

- Up to 9 double wide K40 GPU
  - 25,920 CUDA core
- Up to 18 single-wide FIO cards
  - 115 TB of Storage (raw)

### MCDBg Data Manager

- Memory Centric Database
- Geospatial
- GPU accelerated
- Large memory NUMA support
- NoSQL



# MCDBg Appliance – Rear View

## 4u PCIe Expansion Unit

Up to 9 double wide K40 GPU

- 25,920 CUDA core

Up to 18 single-wide FIO cards

- 115 TB of Storage (raw)

N+1 Power Supplies

- Hot Replaceable

N+1 Fans

- Hot Replaceable

Out of Band Management



